

Multi-national infrastructure projects – Attracting and collaborating with international contractors

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Executive summary

The Swedish Transport Administration (Trafikverket) perceives a need to attract international contractors to secure capacity and keep up competition in the supply market, as well as increasing productivity in infrastructure projects. Due to an increased demand for international contractors, Trafikverket has raised the need for improved understanding of perceived challenges associated with attracting and working with international contractors in multi-national projects. The purpose of this study is therefore to explore previous experiences of multi-national collaboration in infrastructure projects in Sweden, from both a client (Trafikverket) and contractor perspective. Specifically, the study was designed to explore challenges (perceived by both the client and contractor) in both the tendering and execution stages of infrastructure projects. A multiple case study of five multi-national infrastructure projects with international contractors has been conducted to fulfil the purpose. Semi-structured interviews with 22 respondents have been the basis for the analysis and the recommendations presented in the report.

The study has identified major challenges related to three central aspects: *entry barriers*, *cultural differences*, and *language and communication challenges*. The challenges affect the possibilities for Trafikverket to attract and work efficiently with international contractors entering the Swedish infrastructure sector as new actors.

The main challenges connected to *entry barriers* are; policy related norms and country standards, the role and involvement of the client, possibilities for international contractors to utilize in-house design and development competence, and lack of suitable contacts and networks. Additionally, project characteristics such as size and uniqueness are frequently mentioned as important aspects for attracting international contractors to submit tenders. Cultural aspects are of course important to address since people with different cultural backgrounds act and communicate in certain ways.

The main challenge perceived by the respondents in relation to *cultural differences* is Trafikverket's collaborative approach that the international contractors find unusual and

difficult to understand, since they usually have arm-length relationships with their clients. Even though this collaborative approach is perceived as positive from most of the contractors, their inexperience of collaboration results in challenges and sometimes make them a bit hesitant to submit tenders for projects with outspoken high collaborative ambitions. The high power distance in other countries means that people have a high degree of confidence in hierarchical order, and in some circumstances this may complicate cooperation and also affect *communication* aspects.

Communication challenges are central, partly due to the obvious differences in native languages and partly due to different language skills. Of specific importance is the loss of the fine nuances when people do not use their native language. Combining that with the fact that they communicate with people outside their cultural background clearly increase the risk of confusion and misunderstandings.

The report concludes by presenting a list of recommendations, targeting Swedish construction clients (particularly Trafikverket) and international contractors, with the aim of addressing the perceived challenges in both the tendering and execution phase of multi-national infrastructure projects. Recommended actions may serve to overcome the entry barriers and challenges with culture and communication. Recommended actions for international contractors are: adopt a long-term perspective and invest in preparations before the market entry; employ Swedish staff and/or partner with Swedish companies; prepare for multi-cultural and communication aspects; and prepare for collaboration through education and training in partnering arrangements.

Recommended actions for Trafikverket are: conduct market analysis to target recommendations to suitable projects; provide supply market with sufficiently large projects and/or a series of similar projects; conduct roadshows to inform international contractors about Trafikverket's projects, norms and standards, and clarifying roles and responsibilities; provide contractors with sufficient information in the tendering documents; provide enough time for international contractors to submit tenders and establish project organizations; provide sufficient degrees of freedom in tendering documents; initiate dialogues during the tendering phase as well as after the award decision; separate and clarify the border between contract language and work language; establish a hierarchically structured communication scheme; establish separate forums for collaboration for different hierarchical levels and functions; match the organization and its resources to the multi-national project context; and prepare for multi-cultural and communication aspects.

1. Introduction

The number of domestic contractors within the Swedish infrastructure sector is low, whereas the volume of planned and ongoing construction projects is high. Consequently, The Swedish Transport Administration (Trafikverket) perceives a need to attract more international contractors to secure capacity and keep up competition in the supply market, as well as increasing productivity in infrastructure projects. The public procurement act clearly states, as two of the main principles, that all suppliers should be treated equally and without consideration to native country. This means that there cannot be any formal obstacle for international contractors to submit tenders and conduct construction work in Sweden based upon the public procurement act. Nevertheless, historically most submitted tenders are from domestic contractors that have much experience of working within the Swedish infrastructure sector.

This situation can be seen in public procurement all over the European Union (EU) where the average rate of direct cross-border procurement awards is as low as 1.4 percent (Kutlina-Dimitrova & Lakatos, 2014). This average regards all goods and services, whereas the rate for construction is a little bit higher at 12 percent. These numbers are based upon the location of the tendering company, meaning that a foreign supplier with an office or an affiliated company in the same country as the public authority will be regarded as a domestic supplier.

There has however been an evident change during the last decades in how large construction projects are conducted and delivered. Especially in the EU region where many major construction companies have gone from national businesses towards international businesses, working more on a global scale in projects that need multiple skills (Weatherley, 2006). The increased internationalization will increase the cultural diversity of construction projects and thereby create new managerial challenges. Executing construction projects with multi-national teams obviously pose both cultural, communicative and geographical challenges (Weatherley, 2006; Emmitt & Gorse, 2007). Emmitt and Gorse (2007) for example found that the understandable decrease of face-to-face communication (due to language barriers) lead to increased degree of misunderstandings due to the loss of non-verbal signals. This issue subsequently might lead to a struggle in reaching mutual trust and collaboration between people and organizations within multi-national projects.

In recent years, Trafikverket has increasingly attracted international contractors in infrastructure procurements to sustain capacity and competition in the supply market when demand increases. There is however a need of increased understanding of challenges of working with international contractors (e.g., in terms of multi-cultural aspects), not only in the construction stage of the project but also earlier in the tendering stage. The purpose of this study is therefore to explore experiences of multi-national collaboration in infrastructure projects in Sweden, from both a client (Trafikverket) and contractor perspective. Specifically, the study was designed to explore challenges (perceived by both the client and contractor) in both the tendering and execution stages of infrastructure projects. The empirical data underpinning this report is based on 22 semi-structured interviews conducted in five infrastructure projects.

2. Literature review and theoretical framework

A brief literature review has been conducted to identify and discuss different types of relevant challenges when procuring international contractors. The literature on multi-national construction projects, especially in public sectors, is scarce, but some studies have been undertaken in closely related fields, which might help us understand the perceived challenges. Three central aspects are briefly presented below: **entry barriers**, **cultural differences**, and **language and communication challenges**. These aspects contribute to challenges for international contractors entering the Swedish infrastructure sector as new actors and for Trafikverket to work efficiently with them. Therefore, these three aspects form the framework on which the analysis of the empirical data is based.

2.1. Barriers when entering a new market

Barriers for entering new markets are relevant to this study since many international contractors are relatively new in the Swedish market. Jobber (2001) has listed general entry barriers faced by suppliers when they enter a new market:

- Economies of scale
- Capital requirements
- Brand identity
- Access to necessary inputs
- Proprietary learning curves
- Switching costs
- Proprietary product differences
- Proprietary low cost product design
- Government policy
- Expected retaliation
- (*Access to distribution channels*)

Economics of scale is the use of more efficient methods at higher volumes. Overhead cost is often the same (to a certain point) with increasing production and therefore a higher volume is cheaper to produce. This happens up to a point when complexity and personnel difficulties arise and makes it instead diseconomies of scale.

Capital requirements are the capital needed to enter the new market. For interested suppliers this is related to both costs for learning how the Swedish market functions and costs for writing the tender in this new market.

Brand identity is a term for how well customers identify a specific logo, colours or likewise and connect it to a certain supplier. For a new supplier there is a risk that customers in general prefer the already existing suppliers' products and therefore are not willing to change. However, the public procurement act states that public authorities cannot ask for specific brands if not accepting goods or services that are similar. Brand identity is also relevant for new suppliers when searching for employees at a new market or needing to collaborate with other firms.

Access to necessary inputs is referring how easy it is to access the needed raw material, input components and different types of sub-contractor services that are needed in an infrastructure project.

Proprietary learning curves is the effect of people doing the same thing repeatedly over time (and therefore learn to do it more efficiently). However, new technology can result in lowering the experience curve and new suppliers can by that get ahead of more traditional firms even with a lower cumulative output. Although every project is unique, cumulative learning of the Swedish market and the client Trafikverket is relevant.

Switching costs are the customer's costs associated with switching from existing suppliers to new suppliers. These costs are related to the customer's need for investing in learning how to use the new supplier's product. It could also refer to costs associated with start-up meetings and getting to know the new supplier.

Proprietary product differences are depending on if the product is unique or if it is interchangeable with other products. This is also related to the possibilities for standardization and the need for customization to fulfil specific customer requirements.

Proprietary low cost product design means access to product know-how or design characteristics that are protected by patents or secrecy and that a new entry may not be able to access this to a low cost (Porter, 1980). In this study it could refer to an international contractor having access to its own design department abroad.

Government policy affects the entry to a market if there are domestic laws and regulations that are different to the ones in the supplier's existing market. This is highly applicable to this study due to the fact that Trafikverket's policies directly affect the tenderers' ability to submit a competitive tender and subsequently adhere to the policies during execution.

Expected retaliation is actions from the already existing suppliers at the market and their response patterns. This aspect was outside the scope of this study and we have therefore not interviewed Swedish contractors about their opinions and reactions of competition from international contractors. Indirectly, however, this aspect may also be relevant since Swedish contractors may be reluctant to collaborate with international contractors.

Access to distribution is how easy it is to distribute the supplier's products at the new market. Because infrastructure projects are built on site, the finished end product is not in need of transportation and distribution. **Hence, this aspect isn't relevant in this study.**

2.2. Cultural aspects

One important group of aspects, which Jobber's framework on entry barriers did not take in consideration, is the cultural aspect of entering new markets. The framework by Jobber (2001) did not consider culture because the framework is more general, dealing with all types of new markets, not focusing on geographically new markets in foreign countries. The cultural aspect is, however, extremely important when the new market is located in a foreign country. We therefore complemented the entry barrier aspects with a renowned cultural framework based on work done by Hofstede (1984). His four dimensional framework is based on cultural differences among countries/societies. However, it has also previously been used to compare and analyze cross-cultural influences in construction projects (Pheng & Yuquan, 2002). They conducted a quantitative study and found evidence that the framework could be used as a guide for managers to analyze cultural differences within the context of construction projects. Hofstede's framework separates the **cultural differences** into the four dimensions: *individualism vs. collectivism, large vs. small power distance, strong vs. weak uncertainty avoidance, and masculinity vs. femininity* (Hofstede, 1984).

With *individualism* is meant a society/context wherein individuals are supposed to take care of only themselves and their closest family. In such a context, competition is more emphasized than collaboration. *Collectivism* is the opposite and stands for a tightly knit social framework in which individuals can expect their relatives, or other in-group members to look after them in exchange for absolute loyalty. Here collaboration and concern for others is emphasized. The fundamental issue addressed by this dimension is the degree of interdependence a society maintains among individuals.

The second dimension is *power distance*, which is to what extent the members of a society accept that power in e.g. institutions and organizations is distributed unequally. People in contexts with large power distance accept a hierarchical order in which everybody has a place which needs no further justification. The opposite applies for societies with small power distance which strive for power equalization. Here, democracy and joint decision making is emphasized. The fundamental issue addressed by this dimension is how a society handles discriminations among people when they occur. This has obvious consequence for the way people build their institutions and organizations.

The third dimension is *uncertainty avoidance* which is the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. This feeling leads them to beliefs promising certainty and to maintain institutions protecting conformity. Contexts with strong uncertainty avoidance emphasize control to sustain stiff codes of belief and behaviour. In contrast, contexts with weak uncertainty avoidance are more flexible and maintain a more relaxed atmosphere in which practice counts more than principles. Similar to power distance, this dimension has consequences for the way people build their institutions and organizations, based on either control or flexibility.

The fourth and final dimension involves *masculinity* and *femininity*. Masculinity stands for a “macho-related” society, which emphasizes achievement, heroism, assertiveness, and material success. Femininity, on the other hand, stands for a society that emphasizes relationships, modesty, caring for the weak, and the quality of life. This central issue addressed here is the way in which a society distributes social (as opposed to biological) roles to the sexes. The minimum-social-differentiation societies (femininity) will permeate their institutions with a caring, quality-of-life orientated mentality. Such societies become “welfare societies” in which caring for all members is a vital ingredient for men as well as women.

2.3. Language and communication challenges

A third major aspect when entering a new geographical market, and that thereby affects the performance in multi-national construction projects, is the differences in language and communication between countries. This aspect has emerged as one of the most significant challenges in an increasingly international construction market (Tone et al., 2009). This challenge is not only about the obvious barrier of not having the same native language within the project organization, but also the differences in how to communicate. Tone et al. (2009) highlight the importance of applying an appropriate cross-cultural communication process to ensure positive project outcome. Their findings show that communication challenges are closely connected to cultural differences (Hofstede, 1984) since these are largely about how you present and speak in multi-cultural settings. This aspect was further emphasized by Loosemore and Muslmani (1999), which investigated potential communication problems that have the potential to reduce productivity of construction activities in multi-national projects.

Findings show that multi-cultural communication is sensitive and create significant potential for misunderstandings and conflicts. This is mentioned as one of the reasons for why multi-national construction projects have a higher level of conflicts than domestic projects.

3. Method

The data collection for this study involved a multiple case study of five infrastructure projects in different parts of Sweden. The purpose was primarily to have a broad perspective, from several respondents in several projects, on challenges, perceived by both client and contractor, when working in multi-national projects where Trafikverket is the client. Five case study projects with five different international contractors were selected, including both road and rail contracts, to cover a broad range of different views on challenges. The projects were provided to the researchers by Trafikverket and included projects from the two sections Investment (Investering) and Large Projects (Stora projekt). The five case projects are briefly described beneath.

3.1. Sample

Case project A – "Inre kustvägen Båstad och Laholms kommuner" is a project that entails roads and a bridge crossing the river in Båstad from Halladsåsen. This is a rather small infrastructure project, from the Investment section, with duration of one year that ended in December 2015. However, the contractor is still on site handling inspection remarks. The contractor is the Danish company Barslund that has acquired a small Swedish company.

Case project B – "Marieholmstunneln" is a project that entails a new tunnel under the large river (Göta älv) in Göteborg. This is a large and complex ongoing project (at the Large project section), which is a sub-project within the mega project Marieholmsförbindelsen. The contractor is Züblin, which is part of the Austrian STRABAG Group with over 85 000 employees globally.

Case project C – "Bergtunnlar norra+södra Lovö" is a tunnel project to the island Lovö, which entails tunnels but also temporary constructions, such as a harbour to ship out masses. This project, which is run by the Large project section, is a sub-project within the mega project Förbifart Stockholm. The project is on-going for 10 years and will result in one of the longest tunnels in the world in urban environment. The construction company is a consortium (Vianini CMC) of two Italian companies that recently employed a Swedish CEO.

Case project D – "Citybanan-Odenplan" is a railway project that entails a tunnel which will increase the capacity for commuter trains in Stockholm. This project, which is run by the Large project section, is a sub-project within the mega project Citybanan. The project had a duration of almost 10 years and has just been finalized in 2017. The contractor is Implenia (previously Bilfinger), which is a Swiss construction company with over 8000 employees in Europe.

Case project E – "Ombyggnad E6 trafikplats Flädie" entails reconstruction of an existing road junction, including a new bridge over E6 and a new roundabout. This project is run by the Investment section and can be considered as a conventional road project. The construction is in its final stage with Haubau as contractor. Habau is an Austrian construction company with around 6000 employees and a Swedish subsidiary founded in 2012.

3.2. Data collection

Interviews with four to five respondents from each case project have been conducted to gain a broad perspective on perceived challenges from each project. An exception is Project C, in which the researchers were unable to get access to any contractor respondent. For a complete list of respondents and their roles, see Table 1. The interviews were of a semi-structured nature where the researchers and the internal customer at Trafikverket have been involved in development of the interview guide. See appendix for the interview guide for the client respondents. Questions to contractors were similar but adapted to fit the other side of the contract/relationship. The respondents have been free to express opinions outside the guide during the interviews to gain a richer data set and to capture their interpretations and reflections.

Table 1, Information on interviews and respondents

Respondent (nr)	Project (A-E)	Role (occupation)	Actor (organization)	Length (min)
1	A	Project manager	Client	49
2	A	Procurement officer	Client	65
3	A	CEO/Project director	Contractor	36
4	A	Project manager warranty stage	Contractor	27
5	A	Project engineer	Contractor	46
6	B	Project manager	Client	73
7	B	Project director	Client	65
8	B	Procurement officer	Client	53
9	B	Project director	Contractor	55
10	B	Site manager (concrete)	Contractor	62
11	C	Project manager	Client	139
12	C	Project director	Client	70
13	C	Procurement officer	Client	41
14	D	Project manager	Client	113
15	D	Project director	Client	73
16	D	Procurement officer	Client	40
17	D	Project director	Contractor	64
18	D	Project manager	Contractor	40
19	E	Project manager	Client	120
20	E	Project director	Client	58
21	E	Procurement officer	Client	74
22	E	Project manager	Contractor	90

3.3. Data analysis

The analysis follows the steps for qualitative research proposed by Miles & Huberman (1994); data reduction, data display, and conclusion drawing and verification. Data reduction was done by first transcribing interviews and transferring relevant data (challenges and solutions) into a document as a first step in organizing the data. This was followed by a thematic analysis where the empirical data on perceived challenges was coded into categories, based on the theoretical framework (entry barriers, cultural differences, and language and communication challenges),

to structure the data and make it more manageable and meaningful. Data on identified solutions was coded and categorized in a chronological order, from preparations before the tendering stage to activities during execution. During the data analysis, iterations between emerging results, theory, and empirical data for the study were performed, in terms of discussions between the researchers, to strengthen the developing conclusions. The empirical findings are presented below, divided into perceived challenges (in Section 4) and identified solutions (in Section 5).

4. Empirical findings – Perceived challenges

This section on perceived challenges is separated into different sub-sections related to the theoretical framework that was presented in the theory section. First, the perceived entry barriers are presented, followed by the cultural differences, and the section then ends with the perceived challenges that are connected to language and communication.

4.1. Entry barriers

Economies of scale

When international contractors establish themselves for the first time at a new geographical market, they have no existing project portfolio and therefore no economies of scale. Costs for preparation and establishment therefore need to be covered by the first project or by a series of subsequent project, which may be challenging. The project size with regards to economics of scale is described in an explicit way by a project director at an international contractor: *“If we change our geographical market, then we need a project that is large enough and has /.../ a life span so we can go to Göteborg or go to Stockholm or go to wherever it should be. We must have project we can focus on and grow from so at least it needs to be two years and it needs to be +150 million. But then there is a maximum for that, if we go over 5-6-800 million, then it's too big of a risk at a market that we don't know”*. This highlights that there may be a span of a suitable size; the project need to be sufficiently large to make economies of scale possible, but not too large, because that will entail too much risk at a new and unknown market. When the project size become too large diseconomies of scale may arise due to perceived risks that the new contractor isn't able to handle.

If the projects are too small, one of the project directors at Trafikverket highlighted that it might be that large international contractors instead acquire smaller Swedish contractors or creates a subsidiary with only Swedish personnel. *“There must be some size for attracting tenders. So turnover and size are important for our international contractors. Otherwise, they might act under a foreign name, but you may create a Swedish subsidiary and then they have Swedish staff. One example is Veidekke. It is a Norwegian company but they are a Swedish AB with only Swedish people and everything. So, sometimes it is a borderline case to call our contractors as foreigners.”* This strategy does not mean that Trafikverket gets the increased labour capacity needed to cope with all current projects, nor new influences and knowledge to develop the industry.

A specific but potentially severe aspect of economies of scale is that international contractors that are small players at the Swedish market may not be able to reallocate resources among projects. Their project portfolios are simply too small to make it possible to obtain the flexibility to move around resources to projects where they are needed the most. Many respondents

highlighted that some international contractors have small organizations with limited resources. In such cases they have difficulties to ramp up production even if it is needed to keep the time schedule and achieve milestones and deadlines. In opposite situations, they also have problems to reallocate excessive resources to other projects. A project director at Trafikverket explained how the latter aspect may render large costs for the client if and when disturbances occur: *“If there is a disturbance, which depends on us as a client, the cost impact can be very large in contracts [with international contractors] because they have no alternative work engagements. If they get a disturbance and the production stops, then big expenses continue ticking although we don’t have any production. Those who come in and take a single contract, they have no local market. But a contractor who has a local market can then allocate resources differently for some time.”* Whereas the large Swedish contractors have very large project portfolios and can reallocate resources to other projects if disturbances occur, international contractors are often unable to do this.

Capital requirements for the contractor

Arguably, international contractors need to invest time and money in terms of preparations and learning about the Swedish market before they are able to put together a competitive and strong tender. One project manager at an international contractor argued that it costs a lot of time and money to prepare for entering a new market and that an appropriate preparation is needed to perform satisfactorily. It is more feasible for larger companies with larger financial resources to adopt such a strategic and long-term perspective on a new market entry. The project manager stated that: *“I think that the big problem in attracting new companies from abroad is that there are not so many companies who want to go to a new country. It’s not so easy to enter a new country, because you have a lot of new regulations. All those things you have to know before you start cost money. You need a bigger company that is willing to cover those costs. When we started to think about Sweden, we had 1,5 years until the first project. And the preparations costed around 80 000 euros. We spent this money on traveling, consultants, etc.”*

Brand identity

The problem that a new contractor could face while entering the Swedish market is that they don’t have a company name that is familiar for sub-contractors or potential employees. A lot of work is executed by sub-contractors in infrastructure projects and a project director at an international contractor stated that they need *“...good prices from all our sub-contractors and suppliers. /.../ And it’s hard to get good prices when you are new to the market”*. There is therefore both a problem with signing up sub-contractors and also with negotiating competitive prices to match the tender price that the contractor has submitted. This is because international contractors are new and unknown to the supply market and sub-contractors may therefore consider them as riskier to work for.

This problem also involves the possibilities for international contractors to attract and employ Swedish personnel. Because an international contractor may be unknown at the labour market, they have difficulties in employing Swedish people. A procurement officer at Trafikverket discussed the risks involved from the employee point of view due to the *“uncertainties around them [international contractors]. How serious are they in their attempt to enter the Swedish market? Will they succeed? Will it be temporary? Will the person they hire have to travel all around Sweden for the next project?”* A project manager at an international contractor verified this problem and argued that: *“It is very hard for foreign companies to employ Swedish persons.*

First of all, there is a big lack of engineers here. And in the competition for engineers, the foreign companies do not have the best cards. We would be happy to have more Swedish employees, but it is problematic.” The same project manager suggested that international contractors should start by employing people for management levels, then it becomes easier to also attract engineers and other staff at lower levels: *“I think that the way to employ more Swedish people is to go through the management level; you have to find Swedish persons for the management positions and from then you can find the staff downwards”*.

The characteristics of the project are pinpointed as an important aspect when international contractors decide to submit a tender. International contractors seem to be more eager to enter new markets when the project is unique and draws attention to it. This attention and strong project brand can to some extent make up for the weak brand identity of the international contractor, because actors on the Swedish market get to learn the contractor through the famous project. A project manager at an international contractor stated that: *“The attraction of our project is that it is a one of a kind project that is rarely constructed in the world. This kind of project will always attract certain kind of people and contractors”*.

Access to necessary inputs

Sweden is rather small and so is the construction industry here, especially the infrastructure sector. Many respondents, from both Trafikverket and contractors, emphasize that having the right connections and contacts are vital for the ability to find suitable subcontractors and material suppliers for the main contractor. This is especially important in infrastructure projects, due to the large extent of input material and services that is required. A project director for an international contractor reflected on this need for external input: *“When we tender for a project like this, there is a large amount of external work. We have guys laying the asphalt, we have guys delivering the pipes we put into the ground and /.../there is the gravel and stuff like that. We are buying all of that and that's often 60-70% of the project.”* Accordingly, challenges related to access to input material and services become extremely evident when international contractors try to establish themselves in Sweden, since they often lack the vital local contacts. This challenge is further highlighted by another project director for an international contractor: *“... you do not know who to call and ask or what companies that do different jobs here in Sweden.”*

However, it is important to distinguish between different types of input, where some inputs need to be locally supplied, whereas others can be sourced from other countries. The latter type of input may actually be benefitted from international contractors, which have other networks and contacts than our Swedish contractors. Arguably, such differences can be beneficial for Trafikverket. A project manager at Trafikverket exemplified these types of inputs through which an international contractor may be able to provide more efficiency and innovation to the Swedish market: *“They have a good network of contacts outside Europe with suppliers that we do not know in Trafikverket. They have iron workers, they have elevator suppliers, they have concreters, etc., which they have worked with in these big companies. Bring them here”*.

Proprietary learning curves

There are many benefits of entering a new market as part of a long term strategy, instead of merely taking on an isolated and single project here. Not least, there are obvious learning benefits from establishing a more sustainable presence at this new market. Many of the

challenges discussed in this study become less difficult to manage over time, when an international contractor learns about the client and the Swedish infrastructure sector and its requirements. A project manager for an international contractor discussed this learning aspect: *“If you are here for a longer time it gets easier. When we started in 2012, we did not know so much about this [the Swedish market and Trafikverket], but we learned it by the first project. Now it is easier because we know it already [laughs]”*. From a learning perspective it may therefore be beneficial to attract international contractors that are willing to stay in Sweden and seek long-term engagement in the Swedish market.

The learning curve of new contractors is also affected by the client’s attitudes and behaviours in the project, especially in terms of support and guidance provided to the international contractor. One project manager at Trafikverket highlighted this: *“being a ‘pure’ client /.../ is the last thing you can think about, then we wouldn’t have accomplished anything (in this project)”*.

Switching costs for the client

Working with international contractors entail some switching costs, in terms of learning and stronger need for support. Some respondents state that working with international contractors requires a bit more resources in the client’s project organization. Because international contractors may be unaware of Swedish norms and regulations and how Trafikverket usually goes about certain procedures, they cannot be expected to take care of certain things on their own without support. Hence, Trafikverket must be prepared to invest some time and money to provide support to international contractors that are new to the Swedish market. A project director at Trafikverket pinpointed that: *“I think we should be very positive about the fact that we have an interest for our projects in Europe and then we should be prepared to be supportive too. They need more help than Swedish contractors and because they work for us, they must get all the help they need. It is not an opponent we have invited but it is a contractor who work for us”*. Several respondents, from both Trafikverket and contractors, discussed how this support is crucial and that the client’s project organization also need to inform and educate new contractors that work in Sweden for the first time. A procurement officer at Trafikverket highlighted that: *“If we get an international contractor, we need to educate the contractor in our culture at the same time as the project is running”*. In general, client organizations that manage projects with international contractors must therefore be prepared to put extra efforts in terms of support and education.

Furthermore, the lack of knowledge about Swedish norms and practices may result in inferior production methods and technical solutions that have to be controlled and corrected many times during project execution. An important client function in design-build contracts is the BPU, a monitoring role that closely follow up the on-going execution of the project on site. The BPU function may have to increase their control efforts significantly when the contractor is new to the Swedish market. A project manager at Trafikverket explicitly explained the need for more BPU resources: *“[BPU] has also become costlier than what we had budgeted for. When BPU needs to make nine controls instead of one, then it will be considerably more work to follow up that the requirements have been met and that they [the international contractor] have corrected the comments we have had before. When we get a new international contractor, the risk may therefore be that more work will be needed for BPU and project management”*.

Proprietary product differences

Many respondents discussed the importance of giving international contractors the opportunities and incentives to bring their new technical solutions and production methods to Sweden. Hence, it is critical for Trafikverket to be open for new and alternative solutions, both in the tendering stage and during the design stage. If the tendering documents are too rigid and require technical solutions that Trafikverket is accustomed to, it is impossible for international contractors to compete with their own solutions and bring new knowledge and technology to the Swedish market. One specific example of relevant product and production differences is that international contractors from central Europe often have extensive experience from and thereby strong competences related to building infrastructure in areas with intensive traffic. Hence they are perceived to be especially well-suited for projects where temporary traffic solutions and considerations to on-going traffic are required. This is emphasized by a project director at Trafikverket: *“They are really good at just what was the big challenge in this project, to build with a lot of traffic. In central Europe, there is a lot more traffic on their roads than we have on our roads, so I really feel that they can contribute to our projects”*.

Proprietary low cost design

Many respondents (at both the client and contractor side) highlighted that some international contractors have larger design and technology functions with higher capacity than the Swedish contractors. This international design competence is important, both for keeping design costs down (by avoiding technology consultants) and for innovation (by bringing new technical solutions to Sweden). A project director for an international contractor stated that: *“It is positive that we bring the engineer competence from Germany. We cannot get rid of the technology skills, this competent environment we have benefited from in all the years in Germany. If we skip the technology part and remove the engineer and design competency in Germany, we are just a small ordinary Swedish construction company”*. This internal competence is especially central when combining the need for innovation and low costs. It is easier and cheaper to develop and test many alternative solutions when the design work is performed internally. Paying external consultants for developing many solutions of which only one may be suitable and utilized is often considered too costly. A project manager at Trafikverket described the benefits of having an international contractor with its own design function: *“thanks to this design manager that they had we got some ideas. About steel carcass in the framework, on how to make these. A construction at about 30-40 ton that is to hang /.../ They found a supplier in Europe that could do this to a good price, great quality and all was put together with a bolt. Not one welding, in the ceiling at a framework that is almost 200 meters long.”* This market entry aspect is, however, related to the proprietary product differences, because it may be challenging for international design departments to implement their technologies and solutions in the Swedish context.

Government policy

Variations in the client role and client involvement

The degree of client involvement in contractors' work processes and how Trafikverket behaves varies across projects although these are based on similar ABT 06 contracts. International contractors that are not used to work with Trafikverket find this variability confusing and leading to uncertainty and misunderstandings. A project manager for an international contractor pinpointed that: *“...the role of Trafikverket is unclear. We are main contractor (design-build*

contract) in a project where we should have the full responsibility from the design, over the execution, to the handing over [of the finished product]. The influence and the role of the client during the execution is not clearly defined, which leads to misunderstandings. I know from colleagues in other international companies that this always create problems. Not knowing exactly what Trafikverket wants. Because sometimes it is; we stop here and the rest you are free to do. And in another projects this point of responsibility has a different status. It is depending on people. I would recommend that there should be a general regulation that should be valid for all the Trafikverket's project managing units. That would make life easier, especially for those contractor companies that are coming for the first time in this country". This quotation indicates that international contractors don't understand that Trafikverket utilizes different procurement strategies for different projects in order to tailor procurement to the project at hand. In line with this reasoning, Trafikverket's behaviours should differ in TRV E1 and TRV E4 (two different procurement strategies for design-build projects) projects although they are based on the same ABT 06 contract.

Another perceived ambiguity regards the different levels of influence resulting from the norms and regulations that Trafikverket adheres to. Due to the different contents in for example the norms for bridges and roads, Trafikverket must control and influence contractors' work in different ways. International contractors may not be aware of these differences in norms and therefore perceive Trafikverket's behaviours to be ambiguous and unpredictable in different parts of the project. A project manager for an international contractor pinpointed this ambiguity: *"I can make the construction documents (bygghandling) with my designers for the road. Why am I not allowed to do the same for the bridge? Why is it different? And where is that written?"*

In general, international contractors perceive that Trafikverket is getting unnecessarily involved and focuses too much on control in the design-build projects. A project director at an international contractor described a frustrating discussion about a speedbump: *"we have had major discussions about where to put the iron bars in the concrete underneath and it's so irrelevant... I can't explain how irrelevant it is and there isn't any regulation, there isn't any guidance on where to put it but it's a matter of opinions where to put it. And we placed it somewhere in the concrete according to the guidelines, according to the regulation, but Trafikverket's feeling was that it should be at another place, and that was quite a long discussion whether or not to dig it up, move the reinforcement and cast the speedbump once again".* This perception about too much control is also verified by some people at Trafikverket. A project director at Trafikverket described it like: *"The international contractor perceive that we have procured them because they are the most suitable to construct this piece of infrastructure. Hence, Trafikverket should leave it up to them, we don't need to control and monitor, we don't need to look at their construction plans and documents".* However, this involvement is not just a matter of control and regulations, it is about commitment and knowledge too. A project manager at Trafikverket explained: *When we started here, they were not used to having such a committed and knowledgeable client. We had put together an organization able to discuss all these questions. But in Europe at that time, clients were not organized like this.* All in all, these discussions indicate that international contractors are not aware of the extensive responsibilities that Swedish norms and regulations put on Trafikverket.

The client role in a design-build contracts is also causing some confusion for the contractor. A project director for an international contractor mentioned that *"everything should go by Trafikverket, be approved by Trafikverket and afterwards (they) say we don't want any*

responsibility in this solution, and for us that's a problem. If we come with a solution they don't approve and then a solution that they approve, and the solution they approve isn't working, what do we do then when they don't want to take the responsibility of the solution". This highlights the importance of the client role in different projects and the fine line between the client's involvement and approving solutions and how important it is that all involved understands their role.

Extensive norms, standards and regulations

The extensive and context specific regulations, norms, and standards in Sweden are difficult to grasp and understand for international contractors. The problem is twofold because firstly the sheer volume of these documents that Trafikverket refers to in the tendering documents is massive, and secondly they are also country specific and different from similar standards and codes in Europe. Many respondents in Trafikverket mentioned misunderstandings and misinterpretations based on international contractors' lack of knowledge about Swedish norms, regulations and practice. A project manager for an international contractor clarified their challenges resulting from the extensive referring documents: *"Trafikverket's construction market is regulated by codes and standards in a way I have never seen in any other country. For foreigners it's very complicated that the referring documents are so huge; you will never be able to know everything about AMA-codes and the Swedish standards. That is a big problem. You're thinking you're in Europe, but you're not in Europe, you are in Sweden. Many traditional Swedish standards are now painted in the colour of Euro-norms, but they are still Swedish. Everything is a bit different here, and that is something that we have to adjust to"*.

Further, since Sweden do not always adapt their standards to EU, the challenge may not only arise during construction, but also during the design process. In fact, it might even be a bigger challenge to have an international designer than to have an international contractor since the designers have to adapt their design to Swedish norms and standards that they do not normally work with. A project director from an international contractor pinpointed that: *"Technical consultants from abroad perform design as they normally do in their home countries but their standards do not really work in Sweden. It does not work, the drawings may look a little different than usual and the translation will not always be correct, often because they take English words and translate directly, leading to meaningless words that you do not use in Swedish."*

In other circumstances the international contractors have referred to AMA in their own work documents (arbetshandlingar) but in reality they don't apply the prescribed practices, which formally may be regarded as a breach of contract. Such behaviour leads to much frustration in both organizations, as Trafikverket gets frustrated that the contractor doesn't follow prescribed practices and the contractor gets frustrated that Trafikverket monitors so closely and put so much emphasis on formality and bureaucracy. A project manager at Trafikverket discussed this frustration: *"You need to be extra awake when you have a contractor who may not be used to the [Swedish] practice and regulations. Even though standards say that the work should be done in a certain way, it seems that they do not really understand it anyway. It is a very big difference from other contractors I worked with."*

The client's project manager in one of the projects states that there is a challenge to control all international personnel, especially the subcontractors, in terms of having all the necessary permit documents. Every worker has to submit a permit to the Swedish work environment

authority before they start working in Sweden and the client try to check these continuously. However, there are no strict rules about how to check them and when there are so many international subcontractors, it becomes a challenge, both from a resource and organizational point of view. This challenge of checking all workers is highlighted by a procurement officer at Trafikverket: *“We are well aware that there are no rules. There is a European standard [for social insurance], called A1, a document that every worker must fill in. The document contains information about where they live and a certificate from the tax office in their home country; a work environment document. We have followed up these and checked that they have it. At some point the media was interested in the international (Polish) workers who were here and poured concrete and then we had picked up these certificates in advance. I do not really know how this is done in other countries but it is now included in our procurement that we want to see this (A1) for all foreign workers.”*

Expected retaliation

One of the aspects when a new supplier enters a market is the reactions from the existing competing companies. According to this line of reasoning, the Swedish contractors may want to make it more difficult for new competitors to enter the market and this may be achieved through access to necessary inputs. Although this aspect was not in focus in this study, a couple of examples related to this entry barrier were found. One way to keep out new entrance is for the established firms to either own or tie up needed resources so that the access to specific supply markets is difficult to achieve. One example of this is the handling of masses where the Swedish contractors own much of the plants and equipment. A project director from Trafikverket stated that *“we were worried that the international contractors wouldn’t be able to compete /.../ (and) during the tendering phase get a grip of the market for Swedish rock crushing plants and get at price”*.

Another aspect of this may be difficulties to employ competent personnel. A procurement officer at Trafikverket pinpointed the problems that a new contractor faces when hiring staff: *“they have a problem with hiring the right persons because it is a small market and... the existing companies are very keen on keeping their best resources /.../. So it won’t be the best or brightest they succeed in hiring when they are new”*. This means that the needed competence for the project is hard to come by and perhaps even harder to keep through the entire project. A new entrance therefore need to attract employees from already established firms if they want to hire domestic personal but also see to that their employees stays with them.

4.2. Cultural differences

Individualism vs collectivism

Many respondents emphasized that international contractors are not used to the Swedish way of collaborating between the client and contractor. Sweden seems to have a unique focus on collaboration compared to most other European countries, for which reason international contractors are inexperienced with this way of working. One project director at an international contractor discussed this topic especially extensively and pinpointed it as the most central challenge for new international contractors: *“The Swedish culture based on openness, which forms the basis for cooperation, it must be quite unique in Europe and perhaps in the world. So it takes time to sell it and it takes time to get those in leadership positions to understand how to behave in collaborative projects. International owners and experts in the companies I have*

worked with do not understand the principles of cooperation. How can one explain to a German that in Sweden they have cooperation, what does cooperation mean? I think Spaniards, Italians and Frenchmen feel the same, cooperation is so far from their world that they work in, they do not understand it and they think it's fuzzy”.

International contractors' inexperience of collaboration may also make them a bit hesitant to submit tenders for projects with outspoken high collaborative ambitions. Because collaboration is something new to them, they relate collaboration to higher risks. Hence, board of directors in international countries may hesitate to approve tenders for highly collaborative projects. A project manager at an international contractor company highlighted the challenge of convincing his board: *“When we go to Germany [to board of directors], we say that we will submit a tender of 3 billion [for a collaborative project]. They respond, what is this? Should we really dare to take on such a big contract with this open structure? What risks do this bring for us? It is hard for an international company with international owners to understand that there is a structure of how we work, there is a regulatory framework, there is a contract form, we have to play with open cards and there the collaboration comes in”.*

Due to international contractors' inexperience with collaboration they may have difficulties of obtaining a suitable balance between formality and informality. Swedish contractors have a feeling for this balance but international contractors may get in trouble if they get carried away and focus too much on the informal collaboration and forget the necessity of formal procedures and documentation. A project director at an international contractor discussed this delicate balance of formality and informality in collaboration: *“Even in collaborative projects, it is important to not forget about the basic principle that you have to take care of your formalities and documentation, otherwise the contractor can get into trouble. What went wrong for us in this project was that we thought that the informal collaboration meant that we did not have to produce and collect a large amount of formal documentation”.*

Even though the contractors seem to be positive to the high engagement from the client, they are not used to it and that have caused some challenges in the collaborative approach that the client have applied in some of the studied projects. International contractors are more used to arm-length relationship with their client. This was expressed by a project manager from Trafikverket: *“...[foreign contractors] are used to working in their domestic market where there is more warfare between contractors and clients”* and a project director at an international contractor: *“...our personnel are surprised of how it works in Sweden. That you have such a good relationship with the client, they are not used to that”.* Further, this cultural difference is also connected to the approach towards failure. Problems always occur in construction projects and in Sweden we are open with this and try to jointly find solutions. This is however not the way international contractors handle it since problems are perceived as failures, which are not acceptable in other countries. This was expressed by one project director at an international contractor: *“And they [international contractors] are having a hard time when doing something wrong, you do not want to show it, it is not good to make mistakes in foreign cultures. While we [in Sweden] think that if things go wrong, we can tell the client, and then we can fix it together and the problem is solved.”*

Degree of power distance

Many respondents (both clients and contractors) discussed cultural differences related to power distance, where Trafikverket in general was perceived to have lower degree of power distance

compared to the international contractors. Higher power distance is also related to a larger degree of specialization and locus of authority. Hence, it becomes critical to know which person is responsible for a certain question. A project manager at Trafikverket clarified this aspect: *“They have a hierarchy that we are not used to and which we must learn about. Certain questions are discussed with one person and other questions should be discussed with someone else. We don’t speak with the supervisor and downwards, because they are not allowed to talk with us”*.

International contractors may perceive that the locus of authority and the chain of command is a bit unclear in Trafikverket, because many people can influence and be involved in decisions and core processes. The project manager of an international contractor discussed this uncertain locus of decision power: *“It makes processes hard to understand or hard to follow because there are different points of view and different opinions are coming from every side of the project. So it is not easy to follow that, you have to get to learn to deal with that”*. This and similar discussions indicate that international contractors may be unaware of the different roles that various functions at Trafikverket have and that specialists in Borlänge may have authority to influence the project.

Furthermore, the cultural differences in terms of power distance and clear roles and responsibilities may have consequences for how the international contractors collaborate internally. In general, international contractors have a clearer and more focused locus of authority. However, clearly distributed roles and responsibilities coupled with less internal collaboration within the contractor’s project organization may produce problems of knowledge vacuum when key persons leave the project. A project manager at Trafikverket highlighted this problem of vulnerability for staff turnover in his project: *“I think they have another, slightly more hierarchical culture, where you only take care of your own area of expertise. They seem to have sealed bulkheads between their responsibilities, so when they lose a person, nobody else is aware of what that person has done. That is why they have been extra sensitive now that key personnel have left the project”*.

In general, managers in international contractors are more used to manage the project by themselves without much staff involvement. One client project manager stressed that managers at the international contractor direct and instruct internal personnel instead of letting them be involved in decisions that affect their daily work: *“There is another management approach when it comes to international contractors. It is more hierarchical and very important with titles and pointing with the whole hand. There is not much joint decision-making within their organization.”* The difference in management approach is mentioned as one of the reasons for high staff turnover in management positions at the contractor in one of the projects. All people that have left are Swedish and the client’s project manager speculates that one reason might be the hierarchical and authoritative management approach. This turnover has led to an unstable project organization and increased the communication challenge. The power distance is not only visible within the contractor organizations but within their relationships with sub-contractors. This was pinpointed by a project director for an international contractor: *“The business climate outside Scandinavia is different. It is a lot tougher, meaning tougher pressure from the managers, which results in more pressure on material suppliers and subcontractors.”*

The power distance between different hierarchical levels at the international contractor companies was evident and sometimes a bit problematic from a collaborative perspective,

because it affected how people acted. A project director at Trafikverket explained: *“When we mentioned something that was not good, they received criticism from the client. And then I realized that it was not uncommon that the person responsible for that problem got called to the boss's giant room and was yelled at and disciplined. And that means you get a rather anxious and scared organization and the openness and transparency that you want and which is the basis for collaboration, it was not self-evident.”*

Degree of uncertainty avoidance

One cultural aspect that is identified in several projects is different degrees of uncertainty avoidance, in terms of different approaches towards risk and quality. One example is that German people is highly uncertainty avoidant and sometimes less risk prone than Swedes. They are foremost engineers and always think about risk minimization. The contractor in one of the projects has appointed highly qualified personnel for difficult tasks, which might be an indication of their safety thinking. The project director at Trafikverket emphasized this by stating that: *“We have seen examples in the project where there are both braces and straps on some activities that a Swedish contractor might have taken a little more with a pinch of salt.”*

However, in some of the other projects there have been the opposite situation where contractors do believe more in their practical skills than formal principles. A project manager at Trafikverket stated that *“I think that they are used to setting goals and they talk and write, but there is no compliance”*. Accordingly, managing risk and quality could be more of a paper product in other countries. In turn, this may put more pressure on Trafikverket to control these aspects and follow up that the contractual requirements are fulfilled. This clearly shows a cultural difference that is important to understand and be aware of when working with international contractors. However, if the client is very open with their view on these factors, it could deter some international contractors to submit tenders, as stated by a project manager at Trafikverket: *“If they knew how zealous we are, how many demands we have, they wouldn't be interested”*.

Masculinity vs femininity

Differences in work-life balance

One cultural difference between Sweden and many other countries is the focus on work-life balance. The attitudes towards work and regular working hours may make it a bit more challenging to plan and perform projects in Sweden compared to other countries. A project manager for an international contractor reflected on these differences: *“This is actually a cultural question. The work-life balance is absolutely different between Sweden and middle Europe. I have worked in many countries, which are not so different, but Sweden is different compared to them. Middle Europeans are used to work ten to twelve hours per day, without any problems. You can never find a Swedish person that you can put on a six-to-six-workday as we are working on site. It's impossible. It is similar with the sub-contractors; we cannot get gravel before seven here, although we start at six. It's like that, this is Sweden”*. International contractors that are unaware of these differences may run into unexpected problems when they discover that working hours are limited and less flexible. For example, speeding up key processes may not be possible by simply letting the existing staff put in more hours in their daily work for a longer period of time.

Care for neighbours and external stakeholders

Another aspect of this cultural dimension is the care for the surrounding society and people living close to the construction site. From Trafikverket's perspective, it is very important to be perceived as a caring and respectful client that do not disturb neighbours needlessly much. A project director at Trafikverket discussed this concern and how it may be a challenge for an international contractor: *"We had certain time intervals when we could make noise; disturbing work between seven and nineteen. Then the machines cannot start a quarter to seven, it does not work, because then many people will call [and complain]. And this, they [international contractors] have more difficulties to understand."*

Concern for the personnel and their work environment

Some respondents also argued that some international contractors may have a bit less strong concern for the work environment than what Trafikverket has. This cultural aspect is especially evident in countries with low wages and thereby in international contractor companies that mainly compete on the basis of lower prices. A project manager at Trafikverket reflected on this matter and how the client organization may need to intervene to improve work conditions: *"One can have opinions about their ways of handling foreign labour, such as how they live, how they are transported, and their working hours. Here they had to go up and down the tunnels, no cars, until we provided them with a bus"*.

4.3. Language and communication challenges

Many respondents discussed communication and language but argue that the language barriers are not very severe. Most Swedish people in Trafikverket and in other organizations are willing and able to speak English. Hence, language is perhaps less of a problem in Sweden than in many other countries. The importance of being open for speaking English is emphasized by the project manager at an international contractor: *"It is a very nice situation; if a foreign company is coming [to Sweden], they have the chance to survive here, because the client is open for international companies, and therefore is also open to speak English, because most foreigners are not speaking Swedish when they arrive. In our experience, this is very, very positive"*.

Some respondents from both client and contractors pinpointed that the language challenges are most visible in the interaction between people in their daily work. Even though the contractual language is Swedish and the appointed management might be sufficiently decent at handling conversations in English, this might not be the case for all involved workers that interact daily with each other. This was expressed by a project manager at Trafikverket: *"... then we have the everyday work which should be handled practically, where much of the communication takes place in English. Everyone is not as good at language, hence there is always a lack of communication. Communication is a major aspect of a project with an international contractor, it is a challenge to be able to communicate properly."* The challenge seems to be that there is such a large spread of the skill of English between different people, which was further highlighted by a project director at an international contractor: *"Overall, it [communication] all works well. We have quite a few Germans and they are talking German with each other, but almost all meetings are entirely in English, and there are no worries. Then we have other nationalities where only someone speak English, then you often have to have an interpreter."* The everyday communication becomes a challenge because you do not really know how well other people in the project knows English and in what level you need to express yourself because the others may be less skilled.

Furthermore, communication is not only about the content, it is also about *how* you present it. It is easy to lose the fine nuances when you do not use your native language and that might lead to confusion and misunderstandings. A project manager at Trafikverket stated that: *“It is true that when you do not speak your mother tongue, you lose the nuances and it is hard to read between the lines.”* This is further pinpointed as an issue at the construction site, where different nationalities work closely together with activities that often need a lot of coordination.

Another challenge that is pinpointed in terms of language is the fact that all documents and drawings are in Swedish and sometimes these needs to be interpreted before execution. These of course can be done in different ways as one of the site managers for an international contractor highlighted: *“...we have colleagues who are here only a year or two and they don't [understand the language]. So we really have one or two, three people in the organization who we always have to go to and discuss with. For example, ok we start in this phase, can you please check what is required at execution.”*

There could be a difference between the contract language and the everyday communication between the parties depending on how the contract is formulated. A project director for an international contractor pointed out the problem with having in the contract that all communication must be in Swedish: *“when I'm writing an email or argument /.../ and the answer has been that the contract language is Swedish. So instead of having debate about the actual disagreement, I must get someone to translate it to Swedish first and then we can try again”*. As the quote stated, even an email must be in Swedish, which results in that the contractor must translate the text in the email before the respondent at the client's will even read it. This could cause irritation and start a debate regarding communication language instead of, as the respondent points out, debating the actual issue. It is also highlighting how far the client could use the language clause, which is imposed on the contractor, during the on-going project.

5. Empirical findings – Identified Solutions

This section presents the identified solutions to the perceived challenges. Due to the fact that some of the solutions concerns several challenges, this section is divided into a chronological order, instead of the three main aspects of the theoretical framework. The solutions are divided into three sub-sections; first the identified solutions concerning attracting international contractors to submit tenders in Sweden, the second sub-section concerns the tendering (and start-up) phase, and the third sub-section presents solutions that concerns the actual project execution phase. The final part of this section presents some activities that the international contractor should consider that will ease both the submission of tenders, the establishment and the execution phase of the project.

5.1. Attracting international contractors to submit tenders

Some respondents emphasized that if Trafikverket wants to attract international contractors to establish themselves in Sweden, the project not only have to be unique and exciting, but also of a certain size and duration. Because there are certain costs associated with entering a new geographical market, the international contractors need to cover those costs, either in a larger individual project, or in a series of project in a larger project portfolio. This aspect may also be valid at the individual level, where international workers need to find it worth establishing

themselves, and probably also their families in Sweden, and that require projects of a certain size.

Trafikverket is already perceived to be rather successful in attracting international contractors and some respondents commented on both benefits and drawbacks with these efforts. A project manager at an international contractor argued that: *“When you see how Trafikverket is trying to attract international bidders, I have no other comparable country or institution who would do this, in the intensity that Trafikverket does”*. An early market dialogue and promotion of the project seems to be important if you want large, international contractors to submit tenders. One of the projects was for example presented by the client at an international industry conference in Brazil as an exciting and challenging up-coming tunnel project in Sweden. A project director at Trafikverket, for another project, explained how they tried to “sell” their project: *“We invited the European market and tried to sell; there will be a lot of work here. We tried to get their interest. First, we had meetings in Stockholm and then we were down in Europe and met potential contractors. And we also kept in touch with those [international contractors] already in the country”*.

However, early market dialogue is not only a solution for attracting international contractors but also a forum for the client to describe how they work and manage their projects. For example, having an early dialogue with the (international) contractors about how the client act as an engaged client and their emphasis on collaboration between project actors. This is something that is highlighted by one of the procurement officers at Trafikverket: *“I think you should have a dialogue about such a big object and try to tell and report some things about how you [the client] think. International contractors usually have no idea about, for example, cooperation, how we work at Trafikverket together with our contractors. This can be seen as a Swedish model. We need to tell how we and our market work, the dialogue is very important for this purpose.”*

It is however important to reflect on the amount of international companies working in Sweden and discuss how many are suitable. A project director for an international contractor argued that there is a danger to invite too many foreign companies: *“These sales efforts in Europe or out in the world that declare; come to Sweden because here we have a lot of projects, it's a bit tough. Because it is linked to a potential budget that is very ambitious. Sometimes I think; damn, they go around selling [their projects] abroad and they invite [international contractors], but is the market really so big? From my perspective, we have enough contractors in Sweden today”*. If Trafikverket continues selling their projects abroad to attract additional international contractors, it is important to have a sufficiently large project portfolio, so that contractors are not tricked into entering Sweden without possibilities to establish a long-term presence here.

5.2. Tendering and contract phase

There are several activities that might act as solutions for increasing the feeling of competing on the same terms. According to the public procurement act there should not be any formal differences for international contractors, but of course there are some aspects that makes the submission of tender more difficult for international contractors and these needs to be addressed to simplify their work.

First of all, you as a client might need to predict which projects that might attract international contractors. One way of predicting which contractors that might be interested to submit tenders

to a specific project is to conduct a market analysis. This is therefore a way to prepare for potential international contractors and think about what pro-active activities that should be performed to make it easier for foreigners. This is something that was highlighted by a procurement officer at Trafikverket: *“If you conduct your market analysis properly, you realize that this project will attract many international contractors and then you should include this as a parameter. One may consider whether to translate documents and perhaps implement other measures that can facilitate their entering.”*

Having the chance to affect the way the infrastructure is to be built is important in order to make it possible for international contractors to bring new solutions and methods to the Swedish market. Different countries have different traditions when it comes to construction techniques and methods. Several respondents therefore emphasized that it is important to develop tendering documents that are open for different traditions in order to attract high-profiled international contractors with strong design competences. This was highlighted by one of the project directors at Trafikverket: *“Thus, countries have their traditions about how to build on the basis of experience. And that was what we opened up for when we suggested many different ways to handle this project, we did not suggest any specific solution.”* This is also something that the contractor for this specific project emphasized as positive since they had the chance to use different solutions based on their previous knowledge in the design. The project director at the international contractor stated that: *“...you get what you've always had. There has been a discussion here, we have German, or actually Austrian Strabag, who makes the design for the installations. And it will be interesting to see what they've come across because they may have other solutions than the Swedish Transport Administration is used with. So we do not know yet, the design is still in progress.”* This open up for new influences from international designers that have new solutions that could be introduced into the Swedish context. Consequently, this activity concerns several challenges indicating the importance of it.

To deal with international contractors' lack of knowledge and access to input material and services, it is important to at least provide information of where they can go and what relevant actors exist. A project director at Trafikverket put a lot of effort to provide contractors with this type of information in the tendering documents: *“There [in the tendering documents], we informed bidders about how the market looked, what crushing plants exist, how the actors look, etc. We tried to help them [the bidders] with as much information as possible. We were worried that the international contractors could not compete on the same terms”.*

The tendering time is of course an issue for international contractors since they have to translate and understand the documents. The early stage of the tendering process for any international contractor is therefore not that easy. One of the procurement officers at Trafikverket highlighted the importance of prolonging the process to increase the feeling of competing on same terms as the domestic competitors. *“If you send out a large specification in Swedish it might take a month before international contractors have translated this and maybe one and a half months before getting the managers to understand that this is an exciting project in Sweden for which we shall submit a tender.”* A longer time for tendering may also be required to make it possible for international contractors to contact Swedish sub-contractors and material suppliers in order to get access to input material and services.

The choice of reward system may affect the international contractors' perception of the project and its risks. On the one hand, some respondents argue that it is important to not transfer all

risks to the contractor. In cases, such as uncertain ground conditions, where the contractor cannot manage the risks it is important that the client takes the responsibility for the risk or that the risks are shared, for example through cost reimbursement coupled with economic incentives connected to a target cost. On the other hand, it may also be argued that having a fixed price leads to less confusion and less discussion about how to handle risks during the tendering process. This was something that was highlighted by one of the international contractors and also one of the project directors at Trafikverket that stated: “... *they didn't have to think about a percentage fee or if there are other incentives. You [contractor] did not have to think about how they should deal with and share risks with other parties. So it was very clean so to speak; set a price to construct this; a fixed price!*” These different perspectives highlight the importance of tailoring procurement strategies and reward systems to project characteristics, in order to allocate risks to the actor that can best manage them.

Many respondents emphasized the importance of having some parts of the tendering documents (summary/scope of works) in English to easily get a broad picture of the project and if it is something that is suitable for their company to compete for. Such summaries are arguably especially important to make it easier for the board of directors of international contractor companies to quickly get a valid overview of the project. This was pinpointed by a project director at Trafikverket who had used this strategy: “*It [the translation] makes it easier for them and it's faster [for them to make decisions], but it also shows that we welcome them*”. Furthermore, many respondents argued that it is important to state in the tendering documents that it is possible to have English as work language and that the Swedish personnel at Trafikverket is prepared for that. Then the international contractors don't have to speculate if they will be allowed to speak English or not in the project.

In Norway, Bane Nor (former Jernbaneverket) has positive experiences of having also the contractual language, including tendering and contract documents, in English to attract and simplify for international contractors. However, it is important to point out that many people in the Norwegian infrastructure sector come from the “Oil & Gas industry”, in which international projects are the norm. Hence, they are used to using English both in oral and written communication and in contracts. In addition, the Norwegian legal apparatus (e.g., the court system) is used to deal with contracts written in English. In Sweden, we don't have these experiences. Hence, contracts and tendering documents in English would not only cost a lot of money to prepare, but they may also cost a lot of money to manage, both for Trafikverket and the legal system. Simply translating all documents to English and switching the contractual language to English is therefore not an easy and uncomplicated solution. A procurement officer at Trafikverket highlighted these problems: “*Even if we translate, it's always stated in the documents that the Swedish language applies in case of a dispute, and it's no wonder because the Swedish courts do not have trials in the English language*”.

The dialog with contractors during the tender stage is a very important mechanism, which can be used to reduce the uncertainties in the tendering documents and increase the bidders' awareness of the project and its difficulties. Arguably, such dialog and a procedure for asking and answering questions is especially important when international contractors participate in competitive tendering. A project director at Trafikverket perceived this type of dialog especially important for new contractors, to get to know the client and the requirements: “*It is probably especially important for new contractors that are unfamiliar with us as a client*”. However, this type of dialog is commonly used and Trafikverket seems to be rather knowledgeable about how

to perform such procedures, which are appreciated by international contractors. A project director for an international contractor stated that: *“The procedure of questions and answers is quite good here [in Sweden]. It's better than in a lot of other countries. The explanations here are more widely answered, not only in terms of yes and no and Trafikverket tries to answer as good as possible so that everyone can understand the question and the answer. That is made really, really good here”*.

5.3. Project execution phase

There are several activities that might serve as solutions to ease the execution of multi-national construction projects. One important solution is to facilitate good communication in English. Several respondents suggested that Trafikverket should provide English courses on a voluntary basis for those in Trafikverket's staff that perceive a need for improving their language skills. In one project, the client pointed out that they have rigged the organization based on the fact that they were going to work with an international contractor. To some extent they picked people that master English and to further create good pre-conditions the client's project organization underwent a course in technical English. One project director at Trafikverket highlighted that they also tried to train English at the office, especially technical terms that are important for expressing yourself in a good way during dialogues with the international contractor. *“We saw it as soon as the prequalification was made, we will get an international contractor. So it was just preparing, proactivity and advocacy by training our English skills.”*

Several respondents from both client and contractors pinpointed that it is important to decide in what situations to speak English and in what situations to speak Swedish. One of the project directors at Trafikverket emphasized that the project organization need to jointly decide when to speak Swedish and when to speak English, e.g. which forums and meetings that should be in English. This is important since the regulations, safety legislation and the contract are written in Swedish, but the boundary in daily work is not that easy to draw. This is emphasized by the project director at Trafikverket in one project: *“We have tried to define this. There are Swedish legislations and regulations on health and safety and the contract is written in Swedish, so there is no doubt that contractual issues are taken in Swedish”*.

One aspect of the communication challenge that was pinpointed by a project manager at Trafikverket is to have matching project organizations at both sides of the contract. They have together with the contractor established a communication scheme to formally clarify who speaks to who on different hierarchical levels. The project manager stated that: *“We have matched our organizations to each other and have drawn up a communication schedule. Who is talking to who and when, at different hierarchical levels. Our progress is really impelled through meetings, because we have a set meeting plan, with an inherent hierarchical structure. For example, in our organization there are production managers who handle the progress of the contract and they communicate with the contractor's production manager.”*

Cultural differences can become an issue in multi-national projects, where there are numerous actors with different nationalities involved, each with different backgrounds that affect how we act and think. Having multi-cultural competence that increases peoples understanding of each other's behaviours might help in the interaction. This was highlighted by one site manager for an international contractor: *“I think it's a good idea, to organize education for intercultural competence so you can understand better why and how the others are operating. Because surprisingly or not, the mentality between Swedes and Germans or Turkish are so different.*

Even Swedes and Danes are different.” Multi-cultural knowledge might not only increase understanding about others’ behaviours, but also increase the possibility to communicate with each other in a better and more constructive way.

Many respondents have discussed various challenges experienced when collaborating with international contractors, while others have discussed cultural differences related to power distance. When combining these different types of challenges, it seems important to initiate collaboration not only at the operational level between site staff, but also at the strategic level between executives. Accordingly, a project director at Trafikverket emphasized that it is central to establish a collaboration model that includes a forum for collaborative discussions and project governance among the project directors.

5.4. International contractors’ solutions for accessing Swedish competences

Many of the challenges discussed in this report are related to international contractors’ lack of knowledge about the client Trafikverket, the Swedish market, the norms and regulations, and the price levels in Sweden. Many respondents (both clients and contractors) therefore suggested that international contractors should employ Swedish staff to get access to such knowledge. Having Swedish people, or foreign managers that are used to the Swedish system, in management positions at the international contractor company is something that is pinpointed by several respondents from both the client and contractors. This might be a solution to help reducing cultural difference related to power distance.

Another alternative is to partner with Swedish companies, for example by forming a joint venture or consortium with a Swedish contractor. When coming to Sweden the first time, this can be an easier alternative than employing Swedish people. Forming and working in international consortia are also challenging, not least because of cultural differences among the partners. However, the inherent varieties and differences in joint ventures also provides benefits, not least in terms of more solid and well prepared tenders, due to the increased control and risk reduction from different perspectives. A project manager for an international contractor discussed the benefits from consortia: *“You work through it [the tender]. It is not just about calculation and design but also a legal evaluation of what we are dealing with, so the whole process was good to provide the tender. We had a consortium with cultures from Madrid, Norway and Switzerland. So there were three boards of directors that we had to convince that we were on the right track and that we were prepared for such a project”.*

6. Concluding discussion

6.1. Summary and overview of identified challenges and suggested solutions

In this study, it has become clear that there exist numerous challenges connected to all three types of aspects (entry barriers, cultural differences, language/communication challenges) that are identified in our theoretical framework. Furthermore, there are connections and interdependencies among some of the different barriers and challenges that strengthen them and make it even more important to address and manage them. Our findings and analysis of the findings have also identified potential solutions, that is, strategies and activities that can be implemented to overcome many of the perceived challenges of working in multi-national projects with international contractors. Figure 1 provides an overview of the identified challenges and suggested solutions that can be implemented to overcome them.

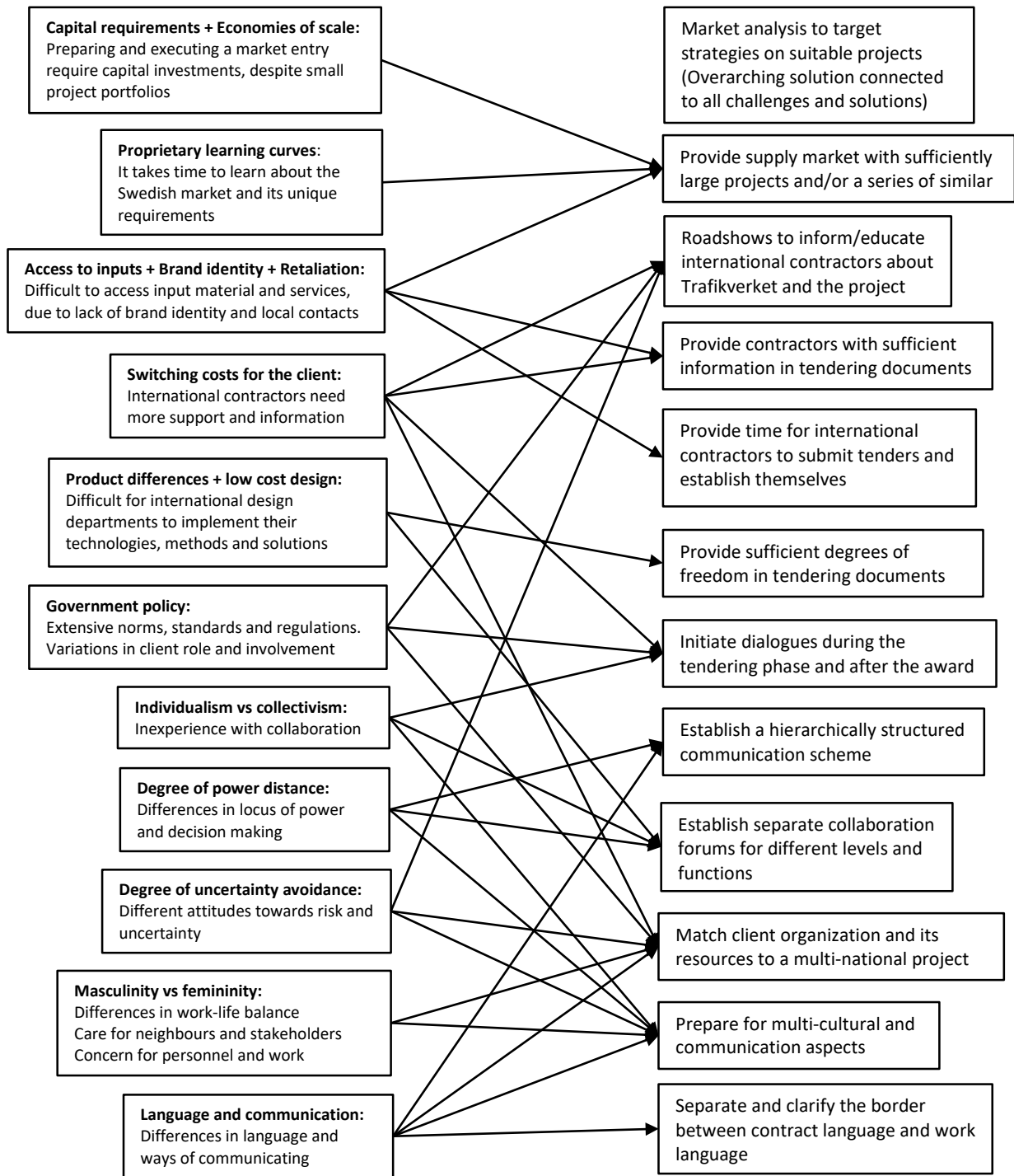


Figure 1 Overview of identified challenges and suggested solutions

6.2. Discussion of the most important challenges

The most important entry barrier for international contractors when entering the Swedish market seem to be the differences in *governmental policies*, such as norms and standards, and the variation in involvement across projects managed by Trafikverket. In general, Trafikverket is involved more than the international contractors are used to in design-build contracts. In other European countries the client is less involved and the contractors have more freedom to execute projects without client interference. Furthermore, Trafikverket's involvement and the degree of control vary across projects, which contractors perceive frustrating. They don't seem to understand the reasons for these variations. The sheer volume of standards and norms that contractors need to adhere to is also unusually large, and different from standards in other European countries. Furthermore, these standards differ across different parts of the project (e.g., between road and bridge), which some international contractors perceive confusing. Lack of knowledge about these unique circumstances at the Swedish market create problems and misunderstandings. To improve contractors' knowledge about Trafikverket and the Swedish market, the client organization may have to increase their support and information efforts, compared to projects with Swedish contractors. This aspect is therefore related to the *switching cost* barrier, because there are initial costs of collaborating with a new contractor.

Two other major entry barriers, which are heavily related, are *proprietary product differences and low cost design*. These aspects regard the possibilities for international contractors to utilize their strong in-house design and development functions and their existing products and technologies in Sweden. If this is possible, the international design functions can bring innovation and new solutions to the Swedish market. A challenge for Trafikverket is therefore to make it as easy as possible for contractors to utilize new solutions. This barrier is also closely connected to the abovementioned policy barriers. Due to Trafikverket's strict norms and standards, there are many restrictions on the contractors' technical solutions. Prior research on public procurement indicate that over-specified tender documents are common and that many clients have a low appreciation of new ideas and solutions (Uyarra et al., 2014). Hence, this challenge is very central from an innovation perspective. Prior research also shows that it is a challenge to establish collaboration among the client and the foreign technology department during the design stage of construction projects (Eriksson et al., 2017). It may not be sufficient for foreign designers to work abroad in isolation from the project; a dialog with the client is often necessary.

Another entry barrier is related to *economies of scale*. Due to international contractors' limited project portfolios, the size of the current project and the possibilities to win future contracts are important factors. This is because the *capital requirements* and costs for preparing a new market entry need to be earned back in the first few projects. This barrier is also connected to the barrier related to policies. For international contractors to find it worth the effort to go abroad and learn about the specific circumstances on the new market, the project may need to be of a certain size. Contractors might need capital investments to prepare for the new entry and perhaps bring their families to a new country, which might be an upbringing. To motivate these efforts, there must be sufficient economies of scale, in terms of a large project and/or a high chance of winning future contracts.

One additional entry barrier that several respondents pinpoint, and which also Jobber (2001) emphasizes, is the challenge for new contractors of getting *access to necessary input*, because they don't have the right connections and networks within the new market. There is always a

challenge to find suitable subcontractors and other suppliers in a new market and this becomes even more difficult in Sweden, where mainly a few large contractors with strong reputations and large networks operate. These large contractors often already have strategic partners to cooperate with, and for loyalty reasons these subcontractors may be hesitant to switch to new contractors. This challenge could be further strengthened by potential *retaliation* strategies by the existing contractors that may want to protect their competitive position, but this was not explicitly studied here. However, this barrier is also strengthened in combination with poor *brand identity*. Because international contractors are relatively unknown in Sweden, they may have difficulties in attracting partners and personnel. Taken together, these barriers constitute critical challenges that need to be addressed by the international contractors. Trafikverket can support them by providing sufficient time and information to facilitate their establishment of project organizations and supply networks. These barriers, and most of the abovementioned barriers, are also connected to the barrier *proprietary learning curve*. If new contractors adopt a long-term strategic perspective on their market entry, they will be able to learn about all these peculiarities of the Swedish market over time and between projects so that the challenges will be reduced in subsequent projects.

Challenges related to Hofstede's (1984) four dimensions of cultural differences are also clearly evident in all the studied projects. The strongest perceived cultural challenge regards differences in *individualism vs collectivism*, which is related to the collaborative approach that Trafikverket applies in their projects. Trafikverket's focus on collaboration is in contrast with findings from prior research on public procurement, which have found the common lack of buyer-supplier interaction is very problematic (Uyarra et al., 2014). The collaborative approach is however challenging to implement, because international contractors are more individualistic and used to arm length relationships between contractor and client. Trafikverket's collaborative and supportive approach is generally something that is perceived as positive, but unusual for the international contractors in the studied projects. However, their inexperience of collaboration may sometimes make them a bit hesitant to submit tenders for large projects with outspoken high collaborative ambitions. Furthermore, the international contractors may also find it difficult to find the balance between formality and informality. Sometimes they misunderstand the requirements for formality due to strong focus on informal communication and collaboration. In such cases they may be tempted to skip formal documentation, which may be needed in later stages.

Collaboration is also connected to *power distance*. Especially, international contractors may have problems with openness and joint decision making, which are crucial for collaboration. Unclear locus of authority and uncertain borders of responsibilities are all challenges that need to be dealt with to facilitate collaboration. The higher power distance in other countries makes the collaborative approach difficult for international contractors since they do not know who to speak to in different situations or on what levels different decisions are to be taken.

Another cultural difference regards the levels of *masculinity vs femininity* (Hofstede, 1984), where many international contractors come from more masculine cultures. Hence they may have difficulties to adopt and adhere to Trafikverket's more feminine concerns and requirements for work environment and third parties, such as neighbours and external stakeholders. There are also differences in work-life balance (e.g., regarding working hours) that the contractors need to be aware of, as they affect their project planning and execution.

Finally, there are evident challenges related to *language differences and communication*. Although these challenges may be less severe in Sweden, where most people are rather knowledgeable in speaking English, they are nevertheless affecting all projects with international contractors and personnel. Communication challenges are not all about people possessing different language skills, which have been emphasized as a challenge during interaction between people in the daily work, but how we communicate is also of importance. It is easy to lose the fine nuances when you do not use your native language. Combining that with the fact that you communicate with people outside your cultural group, and you clearly increase the risk of confusion and misunderstandings. This challenge is highlighted in previous literature on multi-national projects (Tone et al., 2001). The cultural and communicational challenges require preparation (e.g., in terms of multi-cultural and communication courses) and a client organization that is matched to manage a multi-national project.

6.3. Suggested solutions and recommendations

Based upon the perceived challenges and suggested solutions we would like to put forward the following recommendations to be considered in order to attract and collaborate with international contractors in multi-national projects. The recommendations are separated into considerations for Swedish clients (foremost Trafikverket) and international contractors respectively.

Recommendations for Swedish clients:

- Conduct a market analysis to reflect on which projects may be most attractive for international contractors. Many of the below suggested recommendations should target those projects that are identified as most suitable for international contractors.
- Provide supply market with sufficiently large projects and/or a series of similar projects. Due to high preparation and learning costs, international contractors need larger projects and/or project portfolios to perform well.
- Facilitate involvement of international contractors foremost in large and complex projects. It is in large and complex projects that competent and high-esteemed international construction companies have the most to contribute. Attracting international companies competing mostly on the basis of low labour wages is not suitable from a strategic and long-term perspective. Focus on “high-competence competition” may develop the Swedish supply market, whereas focus on “low-cost competition” may deprive existing market capabilities.
- Promote the client organization (i.e., Trafikverket) and the project through “roadshows” and information meetings. It is, however, important to not merely try to sell the project abroad, but also take the opportunity to inform international contractors about the client organization and the Swedish market to make them more prepared to adhere to existing norms, requirements and circumstances.
- Provide contractors with sufficient information in the tendering documents. Translate important parts, such as an executive summary/scope of works to make it easier for a foreign board of directors to understand the project. In addition, use the tendering documents to inform potential contractors about the Swedish market and its requirements. This will make it easier for international contractors to select appropriate technical solutions and calculate tender prices, as well as preparing them for the project execution.
- Provide sufficient degrees of freedom in tendering documents. It is important that international contractors are able to make use of their competent in-house development and design functions. Hence, to enhance innovation and use of new technology it is important

that the client organization doesn't put too many unnecessary restrictions on technical solutions in tendering documents.

- Initiate a dialog with contractors during the tender stage. Also this procedure is a mechanism for improving international contractors' knowledge about the project, the client organization, and the requirements before preparing the tender. It will improve competition on equal terms, which is key in public procurement.
- Provide contractors with sufficient time to prepare tenders as well as establish the project organization after winning the contract. During tendering, time is important for internal decision making and preparations. It is also important to have enough time from the award decision until the project starts, so that there is time to find sub-contractors, material suppliers and domestic staff.
- Initiate an informative dialogue after the award decision. It is important to clarify the client's role and requirements, as well as how the Swedish market works. The client organization may explain how they have tailored procurement strategies and project management practices to project characteristics, affecting the contractor's expectations.
- Separate contract language and work language. The formal contract language should probably be Swedish, but the everyday communication could be held in English. It is also important to clarify the border between contractual language and working language. The client shouldn't make it unnecessarily difficult to communicate.
- Establish a communication scheme. It is critical to establish a hierarchically structured communication scheme that clarifies who is talking to who and at what levels decisions are taken. This will decrease uncertainty, misunderstandings and conflicts.
- Establish separate forums for collaboration for different hierarchical levels and functions. It is important that collaboration is not limited to site staff (e.g., project managers, project engineers and supervisors), but also includes executive levels (e.g., project directors) as well as design staff abroad.
- Match the organization and its resources to the multi-national project context. It is important to match the roles at both sides of the contract to increase the clarity for the contractor who is used to clearer locus of authority and chain of command. Furthermore, the client organization may require increased human resources to be able to support and educate the international contractor during project execution.
- Prepare for multi-cultural and communication aspects. It is vital to provide voluntary courses targeting cultural aspects as well as technical English to increase the understanding of cultural differences as well as ease communication.

Recommendations for international contractors:

- Adopt a long-term perspective on the market entry and invest in preparations to improve the knowledge about the client organization and the Swedish market, before submitting the first tender. It is important to be prepared but even more important to learn over time and across projects so that performance is improved in subsequent projects.
- Employ Swedish staff and/or partner with Swedish companies. To improve the knowledge about Trafikverket and the Swedish market, as well as the ability to communicate, international contractors are encouraged to employ Swedish staff and form consortia with Swedish partners.
- Prepare for multi-cultural and communication aspects. Provide courses on Swedish business culture and technical English to increase the understanding of cultural differences as well as ease communication.
- Prepare for collaboration. Provide courses or train personnel in partnering and collaboration to be prepared for increased interaction with the client.

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Appendix – Interview guide for the client respondents

Respondent (name)

Organization

Roll in project

Respondent background

General project description

1. Describe the project and its characteristics (in terms of complexity, uncertainties, degrees of freedom, duration and contract sum, work site conditions, external influences (municipality, political, citizens)?
2. What were the major challenges in the project and how did you work with these?
3. Have any major changes occurred that affected the project's initial goals / time / cost?
 - a. If so, how has this affected the project?

Procurement strategies

4. How and by whom was the procurement conducted? (What roles participated and in what way?)
5. What procurement strategies have been used and why?
 - a. Type of contract
 - i. In what phase was the contractor procured?
 - ii. How was responsible for the design and how was it conducted?
 - b. Reward system (fixed, target, incentives, bonus, penalty)
 - c. Bid invitation (open, prequalification)
 - d. Bid evaluation (price, soft parameters e.g. competence, organization, social demands, environmental demands)
 - i. How were soft parameters monitored during the execution?
 - e. Collaboration model
 - i. What collaboration activities/tools were carried out (e.g. joint project office, joint goal formulation and follow up, partnering manager, conflict resolution model)
6. Why did you choose these procurement strategies?
7. How did you experience the different procurement strategies?
8. What are the advantages and disadvantages of the choices made above?
9. Would you have taken a different approach with your current knowledge, why and how?
10. What components of the procurement strategy are most important to create opportunities and drivers for international contractors to submit tender in our contracts?
11. What components of the procurement strategy are most important to create opportunities and drivers for the international contractors to work efficiently and be innovative in our projects?

Work methods and organization

12. Does work methods differ in projects with international contractors compared with Swedish contractors?
 - a. If so, how does it differ?
13. How has the cooperation (in general how they have worked together) worked with international contractors?
 - a. Is it any different compared to Swedish contractors?
 - b. Can you describe the communication (e.g. how was it conducted, between which people)?
14. What are the major challenges when working with international contractors?
15. Have cultural differences been a challenge?
 - a. If so, how have these differences been handled in the project?
16. How have the international contractors handled our demands regarding work environment/safety and social requirements?
 - a. Do we need to improvement our work/methods in these areas linked to our international contractors?
17. How did your project organization look like in this project?
 - a. Is this in any way different from projects with Swedish contractors?
 - b. Do you see any key roles for these projects to work successfully?

Innovation

18. How did you work with innovation and development in the project?
 - a. What kind of improvement work did you focus on (process, product, organization)?
 - b. Did you focus on developing completely new solutions or enhancing existing ones?
 - c. What drivers and opportunities does the contractor have to develop innovations in the project?
 - d. Were there any specific barriers for implementation of innovation and improvement work?
19. Describe a couple of specific important innovations that were developed and implemented within the project
 - a. What was the reason for the development? (driver, opportunity, problem solving)
 - b. Who was the initiator?
 - c. Who were involved?
 - d. How was the development work performed?
 - e. Is this solution only for this project or could it be used in future projects as well?

Final questions

20. Was this a successful project? Why/why not (time, cost, quality)
21. What were the top three most important factors (decisions/work methods) that positively affected the project?
22. What were the top three most important factors (decisions/work methods) that negatively affected the project?
23. What would you have done differently if you were to redo the project?