



TAMPEREEN AMMATTIKORKEAKOULU
UNIVERSITY OF APPLIED SCIENCES
BUSINESS SCHOOL

FINAL THESIS REPORT

Does Citec have enough resources to implement software localization service?



Sonja Schubert

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Supervisor: Mari Stenvall

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ABSTRACT

This thesis is investigating if the commissioner has enough resource to establish a new service to their already good repertoire. The purpose of this thesis is to find out as much as possible about software localization since the commissioner of this thesis does not have any expertise in this service area yet and also to illuminate whether there is the chance for a successful implementation or not.

The commissioner of this thesis is thinking about implementing a software localization service in order to enlarger their range of expertise. Since there is no previous knowledge on the software localization process the information were gathered from literature, internet and previous knowledge and experience the writer gathered while working as a localization specialist.

This document points out the complexity of the topic software localization. It turned out that localization includes many different steps starting from the actual hardware built and ending with software that is working correctly in the target markets language with all its specialities like date formatting or right to left writing. It also finds out if the commissioner has enough resources to offer that service and if the threats are bigger then the opportunities and if therefore a relevant chance for enlarging their product range exists.

keywords: Cultural diversity software localization software internationalization
globalization translation

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1. Introduction

1.1 Thesis Objectifs

This thesis will point out background information on software localization. Since there is no existing knowledge about this topic in Citec Information Oy Ab the thesis will aim on finding as much information as possible and provide Citec with conclusive recommendation on if they could establish this service successfully. The commissioner for this thesis is already operating within the translation business and wants to enlarge the amount of services in this field. Since for now Citec is handling technical documentation translations there will be a change to some processes. Software localization does not only mean to translate technical data but also to apply it in the coding of the software. When localizing software also cultural and ethical as well as country specific translations or modifications are applied to the original source data.

Due to the growing market in technology the demand for localization and documentation rises constantly. The reason for this demand is the constant changes within the technology business. The competition in this market is so big that companies keep developing new products almost on a monthly basis to satisfy customer wants and needs.

To be successful within the growing software market it is very important to provide the customer with high quality products that have an excellent end-user standard. Therefore it is necessary to find a good partner for localizing software. The demand for quick delivery and high quality keeps rising. Nowadays it is not possible to be successful with technology of any kind if it is not available in as many languages as possible.

The thesis will concentrate on the question if it is possible for Citec Information Oy to implement this service or not. As previously mentioned in this business area it is very important to deliver high quality work in the shortest possible time. The actual process of software localization involves technical and verbal tasks that can be very complex and will be discussed in more detail within this document. It is essential to do high

quality work in short time and not to exceed the budget. Further the thesis will carry out what should be included in a software localization service since it is not enough to simply translate terms but also to take care of different country specifics such as numbering, special characters and other specialities that might occur within the process. In addition attention will be paid also on the question if this new service goes along with Citec's vision and customer understanding which is stated below:

“Our customer is the star – we do the stunts”

After the research on the above mentioned factors is completed it should be possible for Citec to see whether this business idea will be possible to implement or not. Since there is no existing knowledge about software localisation yet, it should also give an overview on this topic in general and show the complexity. It should be carried out why software localization is so important and how to decrease costs while increasing quality. Further it should show why cultural considerations are important and what can go wrong while localizing software.

This document will cut into topics like human resource management and financial information but will not go in details. Furthermore it will not speak about competition in detail because this is a secret process with very few information available. It will only provide some ideas how to be competitive.

In addition a SWOT analysis will be carried out that is based on information provided by the commissioner. It will show all of Citec's aspects taken into consideration. The SWOT analysis is supposed to show to company with a quick look what the situation is.

1.2 Research problems

There are two main problems that will be investigated detailed. One is to find out if it is possible and profitable for the commissioner to implement that new service and the other problem is based on investigating backgrounds and necessity of software

localization for gaining knowledge about this whole process. Those problems are supported by a few questions such as:

- Why is the localization of software so important?
- What is needed to offer that service?
- Does Citec have resources to implement that service?

1.2.1 How the research will be conducted

Since the information sources on this topic are quite limited due to the mostly confidential processes it is important to find as much information as possible on why localization needs to be done and what it exactly is. This will offer an overall overview and make it easier to understand the next steps in the process. Further some companies will be investigated to gain a better understanding. I will also gather background information on localizing by trying and comparing the same software in different languages. The thesis will mostly concentrate on computing and mobile phone software since Citec's expertise has its core there. The research will be conducted by trying out software in different languages and comparing, as well as with some interviews with people from different cultural and linguistic background. Further the writers high experience that was gained while working as a localization specialist is a crucial source of data.

1.3 Terminology

This chapter will explain the terms that are used within the thesis and that are dealing with software localization. In information technology business there are a lot of terms that need to be defined so that they are understandable also for people that are not working in that business.

- Country specifics:** This is the general term that is used for the differences that can occur from country to country such as changing WCDMA, UMTS and GSM networks in different countries. It is also defining whether copy right sentences are translated or not.
- End-user-usability:** That means that a product or a service is designed for the end-user. Especially in software business it is important to keep the end-usability simple since not all the potential customers have technical background. People from translations will try and report on it.
- GSM:** GSM is the data transfer of the second generation (2G) that is nowadays mostly used. It has a slower data transfer then the 3G network (220 Kbit/s).
- Left to right language:** When speaking about left to right languages that means all the languages that start in the top left corner and end in the right bottom. These include languages that use Latin letters as well as those which does not, like Greece for an example.
- Logical ID:** A logical ID in computing business is defined as the technical name for words or phrases that occur within software. Translators get the logical IDs in strings for translation. Every thing with the same ID will be translated entirely same. Engineer after that only put the IDs to the software and the end-user will see only the outcome – a word or phrase.

- Quality Assurance:** Quality assurance means that when something is newly developed, a group of people will pre use the product and inform about errors or faulty behaviour of the product. When speaking about software localization this group does not only assure the technical functionality but also the verbal functionality. They will check if all applications work properly and if the used language is correct or mistaken.
- Right to left language:** Right to left languages are all languages that start from the right bottom and end in the left top corner. These languages usually do not use any Latin letters and look very similar to each other.
- Software localization:** In IT business localization (and internationalization) means adapting and translating any kind of software to different languages and also for different regions whereas internationalization means to develop software that can be applied in many languages and regions without that engineering changes need to be made. Localization describes the process that is followed to apply software in a specific language and to add locale-specific components and text.
- Technical documentation:** The term technical documentation is used to describe any document such as a User Guide or User Manual that describes how a software or device is working.

Translation unit:	<p>Is defined as a service team that is working in translations. Those work for example as translation coordinator what means that they have daily interaction with translation agencies and customer and assure the qualities of the translation as well as to deliver the end-user focused product to the customer.</p>
UMTS:	<p>UMTS means Universal Mobile Telecommunications System. It stands for the 3. generation (3G) of data transfer (7.2 Mbit/s) that as a high data transfer then the 2. generation of data transfer (2G).</p>
User-Interface	<p>The user interface is what the end-user sees. When software is translated it shows logical IDs in order to speed up the translation process and make it more simple. While the actual software is still in translation the translator takes care that the outcome is the same in all languages and that no major changes are made to the layout.</p>
WCDMA:	<p>WCDMA means Wideband Code Division Multiple Access. This is used in order to assure that the operating is not disturbed easily and therefore makes the communication easier.</p>
End user:	<p>An end user is the actual consumer that buys a product or service. In example if a customer goes to store and buys a computer then he is the end user. When speaking about end user many times the product is modified to a more simple way of use.</p>

2.0 Background information

2.1 Company Information

Company profile: Citec Information AB Oy

The commissioner of the final thesis is Citec Information Oy. Citec Information emphasizes on end-user-focused technical communication such as User Guides and Manuals for technical devices and their use.

Citec Oy was founded in 1984 by the two engineers Rune Westergard and Rolf Berg and holds today more than 1100 employees. The turnover for the year 2008 was about EUR 60 million. The headquarters are located in Vaasa, Finland. Citec is operating globally and has offices in Sweden, the United Kingdom, France, Russia and India. With those global resources Citec is able to provide excellent service in many technology fields and can serve a broad band of customers around the globe. Today Citec consists of two companies – Citec Engineering Oy Ab and Citec Information Oy Ab.

The specialization on technical communication began in the year 2000 when Nokia Networks started to outsource their technical information department to Citec. After this crucial event Citec split into two companies and Citec Information was born. The growth continued rapidly especially in 2003 when Wärtsilä started to move in total 50 employees to Citec.

The spectrum is spread largely from internal to user documentation. Below is an example for service areas that are covered by Citec Information:

- Technical communication
- Marketing communication
- Learning solutions
- Translations and localisation
- Visualisation and Multimedia
- Consulting
- Documentation Technology Solutions

The quality management system for this service has reached the ISO 9001:2000 certifications.

2.2 Why is the research problem essential for the company?

Software localization service is a growing market with great future opportunities. In times of globalization and internationalization high technology companies have a constant need for the localizing their products in order to stay competitive. Due to this rapidly changing environment the fast response for customer needs and wants is essential. This can only be reached by a trustworthy and high quality providing subcontractor who is able to quickly adapt changes in the high technology market and provides an adequate service.

Citec's mission "*Our customer is the star – we do the stunts*" already indicates the opportunity to gain a competitive advantage in the localization sector. As a specialist for international information documentation Citec already provides a fair knowledge of international processes and teamwork. Further the expertise gained in internationalization is also an advantage.

The aim is to improve and develop Citecs expertise and to gain a bigger market share. Further this service can not only generate another income source but make Citec on of the leading subcontractors in the international market guaranteeing for quality and innovation what is both essential to be a global player.

The idea is to offer a software localization service with high standards and still focus on their general translation services. Since the company is already running some profitable services there are no major changes needed. It is meant to add another service and therefore also value to the already existing offers. The aim is not only to generate a profitable new service but also to gain knowhow, expertise and cost advantage. With this concept Citec would be very comfortable to choose, since the potential customer would not have to hire two different companies. That saves both, time and cost for the customer and makes Citec the one to be chosen since it is a lot easier if one subcontractor does the localization and documentation.

3.0 Research methods

3.1 What kind of research methods will be used?

Since there is no existing deeper knowledge on the software localization service process exploratory research is used to gather the most possible amount of information. In addition the companies that already offer that service will be investigated carefully to gain understanding of the process. The research will cover the definition and processes of software localization as well as it will show the importance of this service as for example it turned out during the interviews and when comparing localized data in more than two different languages that there are easily misunderstandings possible that could result in customer dissatisfaction.

Also secondary data will be used based on experiences that were gathered while working in a software localization process combined with interview findings and literature on that topic.

A SWOT analysis will be carried out partly as a conclusion to support the written findings with a graphic to give a quick overview about all positive and negative aspects for Citec based on internal information in combination with the findings the SWOT analysis will be based on all the analysed data and experience I, and some of my previous colleagues.

3.2 What source of information will be used?

The main information source is the internet, because of the ongoing changes and the lack of literature that offers insider information. Another information source is secondary data gathered by the author and based on experience made while working in some localization processes. This is due to the fact that not all of the operations within localization are public. Since the localization is mostly done for prototypes that are not

yet released to the market the processes are kept secret. That also applies for changes that are made to software that is available on the market already.

The information on internal resources around the globe is provided by Citec in order to give recommendation whether this service should be implemented or not.

3.2.1 Limitations of the research

The company investigation will not be documented in detail. A summary will show the key points of the investigation. Furthermore there will be no documentation on the translation processes since they are highly confidential and no information was given to me. Further a swot analysis will give an overview as a visual support on the conclusion that was drawn by me and some key people within Citec Oy.

The SWOT analysis will give only a very rough idea about if we think that Citec could handle a software localization service or not.

In addition the thesis is concentrating mostly on the difficulties that might occur when offering that service. Since there is no previous knowledge about this topic yet at Citec the main purpose is to find out all aspects of software localization and then make a recommendation on whether this service is interesting for Citec or not and if there is the possibility for Citec to establish this service.

I will not research any cultural aspects in detail. The range of cultural diversity as well as country specific additions or similar is too broad to have a closer look. I will not in any case speak about financial issues that occur when offering that service such as profit or costs for Citec.

Furthermore the thesis will not carry out if the service would be profitable to Citec or not. This is due to confidentially issues of the operating budget.

4.0 Software localization

4.1 What is software localization?

It does not only consist of translating words and sentences - or when speaking in terms of computing - the translation of commands and output. It is more a very complex chain of processes that are all linked together very closely. It is a large amount of work and needs a lot of time for the development team. The processes include linguistic issues, as well cultural and of course technical issues that might be the most crucial factors. Further the localization of software is essential in order to stay competitive. It is nowadays not possible to succeed in the high technology market without being international. Before going in detail it can be said that the localization of software means that the software is translated in different languages that are included in the target market. After the pure translation is done the process continues by adapting the different cultural aspects like date formatting, time zones or other cultural diverse factors. Once the software is modified so far the country specifics are added. That means for example that the technical requirements can differ from country to country. This can happen in terms of electricity or compatibility and similar.

4.1.1 What is included in the localization process?

The processes that are included in the actual software localization are very complex. Starting from the planning, the engineers have to know about the target markets in order to assure that their development is compatible and usable in the target countries. So it can be said that the planning of the project is already a crucial issue.

After the planning has been done they have to develop the software in a way that assures the translations in different languages. Therefore a standard coding language has to be used. Also different country specifics and cultural diverse things like date formatting or letters have to be added, since some countries of the target market do not use Latin letters or numbers.

After all the planning and implementation has been done the actual process can start. Now the translations can be implemented. After successful translation the software will go back to the developer who now will assure in a very basic way that the software is also working fine if it is in another language than the source. It needs to be said that the source language usually is English. If you change the language some processes could get stuck in several applications because the coding does not recognized if the coding languages and therefore the title in the logical ID is changed. In that case application stop working. After the engineer has done a basic check up to assure that the software does not shut down straight away the process of localization continues by sending the software to a quality assuring company.

Those companies test the new software on if it is working properly in detail. Further they also do linguistic check ups because it might occur that the same logical ID is used in English for two things but in another country it could be that two different logical IDs need to be used. This process goes back and forth for a rather long time and will be explained more in detail in section 4.3. After the company has approved the quality the software can finally go to the market.

4.1.2 Software Localization and internationalization

Software localization and internationalization are sometimes falsely assumed to have the same meaning but again these are two very different processes with different meanings.

Software internationalization means that software is designed in a way that makes it compatible for different country specific requirements and other diversities that occur like the different languages that need to be adapted later on. In terms of internationalization the development team thing before about all the requirements that come up for the software without that it needs further engineering changes after it is designed. This requires of course that the development team and the engineering team are aware of the target countries. That makes it possible for them to know what to add to which software.

A good example is seen in the mobile phone software. While designing the engineers should know already to which countries the phones are supposed to be delivered in order to add the country specific requirements such as ability to operate in GSM 850 and 900 networks. This is so important because some countries like Slovakia do not provide the GSM 850 networks even though it is available almost everywhere else in the world. The phones operating software needs to be designed the way that the phone can operate in more than one network and that it is able to shut down the operation whenever a network gets lost without that the whole software is disabled.

The example above shows how crucial the internationalization of software is before the actual process of software localization is done. So it is essential to have a good project management. It has to be foreseen in which market the product will enter and careful research on requirement and regulations of each country needs to be done in order to assure a proper working process.

4.1.3 Globalization

After all the necessary changes for the internationalization the localization with its processes of linguistic, cultural, ethical and country specific changes is implemented. In general it is said nowadays that the combination of internationalization and localization results in product globalization. The meaning of globalization is very simple. It only means that nowadays it is essential to be international and think globally in order to stay competitive. Especially in the high technology business. It is almost impossible to develop software that is only used in one language if you want to sell it in the international market. Globalization combines technical and linguistic requirements. The term globalization is used for combining the internationalization and localization process of software and similar products. Nowadays the product globalization happens more and more due to the ongoing processes of globalization in human resources and other sections.

4.2 Importance of software localization

Nowadays it is not only important to localize software in order to be competitive in the international business world, but also a crucial key factor. When operating globally it is essential to provide a proper localization. This is very clear to see when analyzing customer satisfaction and buying behaviour. The higher the customer satisfaction is the more likely it is that more or the same customer will buy the software again. Especially for people who do not have good language skills a proper software localization is a core value. Also technically very interested people will criticize localization that is not done properly. Further the brand awareness plays an important role as well. If a company is largely and successfully operating in the international market and has built up some kind of brand awareness people expect a high standard of their software.

An example therefore is Windows vista. Of course the usual Microsoft quality remained, but somehow customers felt inconvenient with the incompatibility between Windows vista and other Windows software. Further somewhat different terminology was used and customers were not to happy about it. The quick reaction to that was to develop Windows 7.

This example shows that software localization does not only include the process of translating software into different languages but also constant terminology and compatibility in different countries, cultures and previous software. Again this shows how complex the topic is and in how many areas it is spread. Of course compatibility is not a core process in localization but still it needs to be taken into consideration in terms terminology. Consistency in used terms is one of the most important things in successful software localization. A software with inconsistency in terminology will not be adapted to well by the customer. Usually they buy software again because they already know how it works and what terms are used and of course their meaning.

4.2.1 What factors make software localization important?

As mentioned previously already the most important factors are quite easy to define. Since more and more software is used in the daily life this issue of localizing software becomes more and more important. When speaking about software it has to be defined that software is not only included in mobile phones and computers but also in many daily used things. Buses, trains and planes have also a very high usage of software. And of course all that software is supposed to work properly in every country. Besides that also some factors that are usually not seen on the first sight play an important role there.

Competitiveness:

- This is probably the most important factor in software localization. If a high technology company is operating on the international market it is necessary to offer localized products.

Comfortability:

- Even though quite many people nowadays are able to use software in different languages then their mother tongue it is seen still as very convenient.

Customer Satisfaction:

- Also in terms of customer satisfaction it needs to be said that the more precise the localization of software is done the more convenient it is for the customer and customers satisfaction increases.

Brand awareness:

- To reach a good brand awareness and good reputation of course it is essential that the quality is good. This generates a good reputation and the brand awareness of the customer is rising.

4.3 Why is software localization essential?

There are a lot of reasons why the localization of software is essential nowadays. Aside all the economical factors such as competitiveness and market share there are also other situations when the localization is needed. For example in hospitals it is very important that the software localization is done very properly since this is a life concerning matter. Furthermore there are a lot of legal matters. Without proper localization the software producer might get problems there in terms of copyrights and third party regulations.

In addition the awareness of customer sensitivity is rising and major mistakes that might result in boycotts can be avoided. People might not recognize this as an essential problem but it can easily become one. Looking at another example of Microsoft again it turned out that they had used Mandarin characters in the revolutionary China. The authorities got very offended and it cost millions of dollars for Microsoft to implement new characters and to gain the good reputation in there biggest potential market back. That kind of mistakes can not be done in nowadays localization processes anymore because nations can get not offended and it might not only result in a loss of money but far worse scenarios.

Further it is essential because many countries fear to be overwhelmed with Anglicism and that their culture will be not supported. This is a really big problem and can occur whenever the localization was not done well. If the localizing company is not aware of cultural diversity and each countries regulations the actual localization will have a rather bad quality what can result – as seen in the Microsoft example – in extremely high costs and totally boycott in worst case.

4.3.1 When is software localization needed?

Software localization is always needed then, when a company is planning to release software in more then one country. Further also when the release will be in different cultural backgrounds or even regions. Especially in terms of globalization the market

for the different goods gets more and more formed and shaped to an international level. Therefore it is important to provide all the necessary information and products in a wide variety of languages. In addition most software developers are working on a global level because it is not profitable enough to only target on one single market.

Of course there are many questions about when is localization needed and when not. For example if a country is spread in two or more region that have different languages. An example could be Switzerland. It is not clearly defined if there will be the regular French, German and Italian or will it need different characters. Those questions need to be into consideration as well when thinking about if a product needs localizing or not.

When speaking about different regions the question of localizing gets more and more complex. Is it needed to have a software localized in different regions of a country is a question that comes up for example in Spain. In the north of Spain Catalan is still spoken and used in daily life. Therefore it needs careful investigation if a localizing into Catalan is necessary or not. Nowadays it is handled the way that some software products are localized for Catalan and some are not. So a careful target market investigation is essential in order to provide the right thing.

Another discussion is based on the different languages spoken by two or more countries. A good example therefore is Portuguese. It is spoken in Portugal and Brazil. When starting to think about localizing it needs again a careful investigation on the target market and its values and beliefs.

4.4 What kind of software will need localization in the future?

It is rather hard to specify a certain software that will need localization in the future. The actual market for software localization is so big already that exact numbers are hard to find. In nowadays fast growing global markets every kind of technology that is supposed to succeed in the global market needs localization. The range of different technologies reaches from computer and phone software, up to electrical relays.

There are also some negative aspects about the localization of software. Since the world is undergoing a process of globalization that will surely get stronger in the future the need for localizing software decreases somewhat. Nevertheless it is still important to localize software in as many languages as possible.

To name the most important sectors that will always need localization up to a certain degree is any kind of information technology. Following are a few very important things that need localization:

Computer software:

Computer software needs always localization since nowadays almost everywhere a computer is used. Therefore it is very important to localize as much as possible in order to make the programs easy to use and comfortable for the end user. This reaches from games to invoicing programs or online sources.

Mobile phone software:

Mobile phone software is a very big market for software localization. The constant changes make a constant improvement necessary. Further mobile phones are usually designed for the broad mass so the localization is very essential whereas normal software sometimes is directed only to one country or company.

4.4.1. When is software localization done?

Software localization is always done when a products target market is more then one country with a different language from the country of origin. Usually it is the newly developed software that needs localization, but updates of already existing software need localization as well. It needs to be said that the updates that require new localization is usually a lot more complicated then to localize entirely new software. This is due to the need for constant terminology within one product or product line. The

localization team needs to pay a lot attention to the already existing and used terms in the previous version of that product.

In software updates the importance of constant translation is so essential because also small changes in the terminology can result in application problems. It might occur that the application stops working or is working faulty. Furthermore also the user interface changes what creates a feeling of inconvenience to the customer. A good example for this is Nokia. Nokia is known for its consistency in mobile phone software. If a customer has used once a Nokia phone it is usually not a problem to use another one since the software and its localization is usually the same or very similar. Also the brand image would decrease if there is too much inconsistency in the software because it might raise the doubt about the software's quality if the producer does not spend money on a proper localization.

For new software the same applies. Producer and localization team should agree beforehand on a certain terminology. Even though the products might differ a lot there should be shown a certain guideline in order to gain better brand image. For example that there are producer determined terms or if there are two words with basically same meaning that always the same one is used in order to increase customer satisfaction.

Quite many researches on that topic equalled that the end user friendliness is rated higher if there is a consistency in the terminology. Further also the brand awareness increased as well as the customer satisfaction.

4.5 What needs to be taken into consideration when localizing software?

The localization process is a very complex task to do and there are a lot of things that need to be taken into consideration. To provide a proper localization with high quality standards it is important that all things are specified in the beginning. Those important factors are country specifics, consistent terminology, end-user friendliness, proper user interface and cultural aspects. Different countries provide different challenges, to both the engineer and the localization team. Therefore a close working together of the two

teams is crucial to succeed in the project. As mentioned previously already the localization is not only about translation but also about layout and usability.

4.5.1 Country specifics

Country specifics are defined as specific regulations in each country which of course vary a lot from country to county. Counted as country specifics are for example charger compatibility or network compatibility as well as safety regulations and copyrights. When localizing of course the team should make sure that the charger type is correct for each country since there are different electricity regulations in some countries. Especially from Europe to Asia that differs a lot. Also the shape is different so this also needs investigation. Of course that mostly applies for the internationalization but is also important when localizing the software. The same applies for the network compatibility. The internationalization team makes sure the phone can operate in the target markets network but still the localization team will add these specifics in each language separately. These two factors are especially important when speaking about technical documentation localization. Furthermore the safety regulations have to be added to each software that gets localization. In some countries of course they differ so it is again very important that the localization team has clear instructions from the producer what country requires what safety text or what country has additional safety information that other countries do not require. This happens particularly often in France because of the strict safety regulations given by the state so additional information is needed. Nevertheless the biggest issue is certainly the copyrights. Different countries require different handling of copyrights. This applies especially for third party regulations. Usually the third party copyright is written in the language of the country of origin but still some countries like France and Poland require having the copyrights in their own language.

4.5.2 Terminology

The terminology is another sensitive topic when localizing software. It should have a consistency as mentioned previously already in order to assure the convenience for the customer and an easier adaption of the new software. Further it is essential to not use a certain terminology that is only understood by a minority. For example the vocabulary should not include technical data that is mostly understood by engineers but not by the actual end user. Furthermore of course the localization team needs to assure the quality of the translation by checking the spelling carefully before applying language to the software. This can sometimes be very tricky because the localization team can not see the actual software but only the logical ID or strings. If they are the same the translation will be the same even though it might require a different translation. Also the different languages vary quite a lot in length of words so sometimes the localizing team needs to apply abbreviations and make sure they are done in the right way. It is important that the application function is not disturbed but also the end user has a proper translation with high standards and quality.

In addition it should be taken care of that there are no religious or other discriminating terms appearing in the translations. Therefore an extensive knowledge about each country and culture is very important. For example in Germany it is very important that the localizing does not contain anything related to war whereas it is no problem to add Anglicism. On the other hand in France it is rather problematic to add Anglicism since France wants to keep all French terms to assure that there is no loss of French language within generations.

4.5.3 End-user friendliness and user interface

The definition of end user is determined as the actual customer that buys the software or shows any other kind of interest for the product. If something is supposed to be user friendly that means that the customer can use the software or product without having previous knowledge or limited knowledge. The user interface is defined as all what the

user can see and use within the software. That includes colours and general layouts as well as language.

To succeed with a product – especially with a high technology product – it is important to make it as user friendly as possible. The more comfortable the end user feels the better will be the brand awareness and reputation of the company. Since the market is changing rapidly all the time it is necessary that a product or company gets known because of the quality they offer. In these terms it is definitely necessary that the language is used proper and easy. The customer should feel very comfortable with the product what is also affected by the right localization.

The commands for applications should be held in a very easy way to understand in order to assure that the product is suitable for as many people as possible. Furthermore the localization team has to take care of localizing also non text files, like pictures or videos. In general the easier the user interface the more satisfied the customer will be. If everything is localized the end user in the target market will be satisfied what results in better sales.

Another important thing when localizing is to keep error messages as precise as possible. It is very crucial that the end user understands every thing easily. Especially in error messages it is often unclear what the problem consists of. A simple language can make even complicated messages and applications understandable for the broad mass and that again is increasing the customer satisfaction.

An important role in this procedure is the quality assurance team who is supposed to take care of the layout and formatting and also of the convenience of software since the actual localizing team can not see the outcome of their translations.

4.5.4 General aspects

Before starting the actual project it should be determined where the software will be released. After that is done the localization team needs to be informed about the countries that they can take care of all necessary information for each country as

mentioned above. The team has to take care of linguistic, cultural and ethical aspects as well as of proper user interface and user friendliness. They have to make sure to keep the translations simple but still with a high quality. Further there should be no errors in the translations such as missing translations for pictures or numbers.

Also the cultural aspects should be taken into consideration when localizing software. That reaches from any kind of religious or discriminative content to symbols that are differently understood in different countries. Therefore a clear definition of the target market and all necessary information have to be provided to the localization team in case they have not had previous knowledge about it.

4.6 How is software localization done?

When starting a localization project there are a few important steps to start with. Since the software is delivered to different countries it should be considered how much the different cultures vary because the convention of the target market might require a change to the source code. Further it is important to not calculate the time to tight since there might always occur something unexpected and different countries also require different language dimensions. Especially the financial planning of a project has to be done extremely careful because the cost underestimation risk. It has to be taken into consideration that highly skilled professionals work mostly manual what is rather expensive. Also the choice of the translation agency is challenging since the success of a product somewhat depends on the translation quality as well. Therefore experienced native translators should be used. Also all cultural, linguistic or ethical diversities should be determined well. To give a general overview each project can be divided into different step consisting of the planning stage of the project, translation, edit, quality assurance and release.

The following section will explain the different steps in more detail.

4.6.1 Planning stage

In the planning stage the very basics of each project are done. It starts with the internationalization of the software. After defining the target market the developing team will start to modify the software according to the regulations and diversities in each country. Once that has been done there will be analysis about the terminology that is used and the project schedule is defined based on estimation or experience from previous projects. The translation memory will be checked to in order to estimate the time properly and to avoid waiting times. This is the step that bears the highest risks because it happens very often that people underestimate the time different steps take and the cost of each step.

4.6.2 Translation

After the planning was successfully implemented the software is send to translation agency. This step includes not only the highest costs but also the longest time and important decision making. There should be decent agreement with the translation agency on their costs. Words or entire strings or logical IDs that exist already are to be charged lower prices then for entirely new translations. Further the customer and translation agency have to agree on terms used and consistency in the translation. Further the competence of the translation agency should be very good since the sales for one product might decrease due to poor translations and extreme costs are created when fixing the poor translations. Also the confidentiality should be clearly defined and have strict regulations that will be kept from the translation agency. Furthermore an agreement should be also made on abbreviations since the language of origin is mostly English and while translation the strings might become a lot longer then the original string so to save costs it is better to agree on abbreviations of terms beforehand in order to prevent changes that otherwise would have to be made in layout of the software what is rather expensive.

4.6.3 Edit the software

Editing the software is also an important step in the localization process. For example if the text in one language exceeds for example a textbox the engineers can fix that already before the software will be sent to the regular quality assurance. Also the reorganising of music files that contain text might have to be implemented. But the most essential part of the software editing is of course the adaption of the strings and logical IDs. This needs to be done very carefully since the whole software translation is based on them. After doing that it is rather easy to determine what needs to be changed or resized. Furthermore there will be a control of the basic functions if engineering changes are needed due to non-compatibility in some languages. After that the software will be sent to quality assurance in order to do the fine tuning of the software and eliminated as many errors as possible to assure the highest possible quality is offered to the customer.

When editing the software there are usually professionals for the visual editing and for the editing of the translation memory. There are of course automatic checks for the most common translation mistakes. Therefore exist special software localization tools.

4.6.4 Quality assurance

After the software got all the necessary engineering changes it will be sent to a quality assurance team. In the quality assurance team are native speakers of every language that is applied. After receiving the software the team will start to examine the whole software. That is done step by step and takes a large amount of time. All the applications will be opened and the used language is checked. Aside the linguistic checkups the team proofs the usability for end-users, the user interface, and if all applications function well and work the way they are supposed to work. Usually it takes many turns until the software is finalized. If the language changes then it might happen that strings and logical IDs change as well and therefore some applications might be working faulty or not at all.

In addition the team is looking for missing translations, text that is left in the language of origin, wrong spelling or consistency in terminology. Also the general behaviour of the software will be checked. It is very important that this is done extremely carefully since many small things can end in very bad results. If for example a textbox with a safety notification is not shown, or is faulty somehow some serious injuries can be caused according to the software.

4.6.5 Release

After the extensive quality assurance is done the software is ready to go to market. The whole process from creating a software to releasing it can take up to years according to what kind of software it is and if there have been previous version so that the software was more like an update. In nowadays rapidly changing high technology market it is very essential to provide the best possible quality and easy use. It of course always depends on the target market and its expectations.

Nevertheless a proper localization of software is crucial today for operating on a global level. Further the release should not be post boned or at least not more then once in order to keep up customer satisfaction. That makes the crucial planning in the beginning of the project so important. With underestimation of costs and time the software can already fail before the actual release.

4.7 What is needed to implement software localization?

The most important thing when implementing a software localization service is the careful gathering of background information as it was done previously in this thesis. After illuminating the different aspects of cultural, linguistic, ethical and technical requirements there is the need to find out what else is needed for a company that would like to implement software localization service.

There are many things that need to be taken into consideration when planning on implementing software localization service. This thesis will concentrate on Citec only. All estimations are based on internal information, received by a superior.

4.8 Does Citec have enough resources to implement a software localization service?

What are resources?

Resources are people, assets, material or capital which are use to reach a goal. Every company that wants to achieve something has to identify the resources that are needed for achieving the goal. When speaking about resources it has to be pointed out what kind of resources will be needed. There are roughly three main resources which are needed to run a business. Depending on the company the resources may vary.

Human resources:

Within a company human resources are all the employees that contribute workforce of every kind to the company. This term is often used in labor economics.

Financial resources:

Financial resources are the financial statements of a company. When starting a project no matter if it is for a product or service there needs to be financial planning. Therefore the financial resources are defined in order to have an overview on the funding of a project. Starting a project is always connect to costs. Before starting a project it has to be identified how much budget will be available.

Natural resources:

Natural resources are defined as raw materials that are needed to offer a product or service. They are either limited or unlimited and used to create wealth.

Since Citec Oy will offer a service that does not need any kind of natural resources the main focus will be set to financial and human resources. The human resources will be the biggest challenge since it would be an advantage to have experienced workers in order to handle the projects quick and well from the very beginning. Another focus will be set on the financial resources because there is only a limited budget available for the implementation of a new service. Therefore it is very important that Citec Oy uses the already existing contacts to translation agencies.

4.8.1 What is resource planning?

After a successful planning of required time the actual process of resource planning will be conducted. When speaking about resource planning the different resources that will be needed should be defined. Since the commissioner is planning to implement a service and not a product there is no need for natural resources for example. Moreover the needed resources are such as human resources and knowledge as well as financial resources. The planning of those resources means that it has to be decided how many employees will be needed to handle this service successfully. Of course it is an advantage to have experienced employees since there is no other knowledge existing in Citec yet. After identifying the needed resources the company has to start to plan the resources carefully starting with the most important resource.

Personal planning:

Since Citec has specialized in document translation already there are enough resources for the very beginning. The actual personal consists of experienced workers that have handled translation for a longer period already and within different translation sectors. Due to the overall bad economic situation there are enough internal resources for the

new service with no need to hire other personal, what results in large savings of recruiting and finding skilled employees. Based on the knowledge transfer earlier in this document the planning stage is eased up significantly. Depending on the size of the project the number of skilled employees will vary from two up to an unknown number. One experienced worker will be the translation coordinator who is responsible for receiving the files and forwarding them to translation agency and taking care of the information flow between those two parties, as well as cost calculation. The second employee will be needed for administrating a secure network and other IT related issues. Once again it is to emphasize that the commissioner will be dealing with mostly unreleased data so a special focus is to be set for assuring that the data is handled totally confidential.

It is challenging for the commissioner to evaluate the need of skilled and experienced workers since it is a new project, but the resources are nevertheless available internally what is very cost efficient for Citec Oy.

After the personal planning has been conducted the commissioner can start to plan other resources. In this case it will be the need for IT-systems and work stations.

Material Planning:

As mentioned above already the only material need will be IT-systems and work stations. Since the commissioner is working mostly virtually already, the work stations do already exist and are up to date with latest software and system requirements. Furthermore special software and secure connections are provided from the customer to match all criteria. In this case the costs for that service in the material section are again extremely low.

Later in this thesis there will be a more detailed description about the personal and other resource planning.

4.8.2 Differences and challenges between software localization and traditional document translation

When speaking about software localization it is often assumed that it is the same like traditional document translation. This is a common misapprehension. It should be said that when translating software the whole process is entirely different from the normal translation process because it is adapting the software itself as well as all linked documentation and it is usually web based as well. This makes it a very complicated and complex process.

When translation traditional documents the source is usually ready and approved. Further the structure is mainly the same and same words can be replaced by the corresponding translation. Also once the document has been finalized no major changes will be implemented anymore.

When localizing software the entire process is totally different because the source usually is not finalized and keeps changing. That is because usually the processes of development and translating are running at the same time. This is commonly used to assure that all languages will be ready by the same date. It occurs quite often that the strings and logical IDs are already going to translation while the software itself is still in the prototype phase and not finalized yet.

The challenge is that the translation and development are running at the same time. This happens extremely often in the high technology market caused by the constant changes and improvements done for the software. Also the data that needs translation is not a document but consisting of logical IDs. That means that translation agencies get a number of logical strings and add the correspondent language. The source is usually in English so special attention needs to be paid to the meaning. Sometimes when the same logical ID applies in English it has totally different meaning in another language. Therefore translation agencies need to have a certain understanding of technical documentation and have to guarantee that they use a list of approved terms when they start the translation process. It happens rather often that the logical IDs are changing

many times before the final one is applied. This makes it a very time consuming work that needs patience.

Another key difference between traditional document translation and software localization is that for software localization the process requires more than a simple translation of strings. The whole process after translation, like engineering and testing usually only applies for software or anything that is comparable.

In the above describes process it is showing that there are crucial differences between traditional document translation and software localization. The advantage for Citec is that the ways those projects are handled resemble a lot to each other what means that Citec has a wider range of highly qualified and experienced employees. There is basically no need to hire someone new in the beginning, only after the projects start to grow and enlarge.

4.8.3 What are the processes of software localization Citec has to consider?

Software localization consists of many different processes. The main process of course is to adapt the offered software for use in a foreign market. The software needs to have a high translation standard and it has to be assured that the functionality remains the same. Furthermore the process of software localization is very expensive and unfortunately still underestimated in its necessity. Since there are highly professional people working manually the budget might extend what was planned so a careful project management and calculating should be done in advance.

For describing the process very basically it can be said that the entire project starts with the planning and development of the new software. After that the localizability for that new software is verified. Once this is done it will be sent to a translation agency that specialized in software localization. This is very important because it has to be assured that the terms that are used are always the same. Therefore the working with a verified term list is essential especially if the localization is done for a software update on already existing software. The translators will run basic check ups and act also as a

visual editor since the developer mostly do not see the entire outcome of their development. After that a quality assurance team will check the software for errors. After that is done the software needs to get implemented in hardware and another check up on the functionality is gone.

This process sounds rather simple but it has to be taken into consideration that those processes consist of many important steps. Especially when the actual localization work is done close attention should be paid on linguistic, cultural, ethical and technical aspects as well as on the country specifics that each target market might require.

In the next step the above mentioned criteria will be investigated more in detail in order to provide a broader sense and an easier understanding since most people are no familiar with those aspects. People usually falsely assume that the process is only about translating words or sentence even though there are other crucial aspect on this work.

4.8.4 Linguistic aspects of software localization

The linguistic aspects on a localization process bears many challenges. It is not enough to simply translate word by word. In this section the translator is obliged to keep very tight regulations. For each language there are different regulations like collating sequence or hyphenation rules which need to be applied differently in every language. Since the source language mostly is English this can turn out to be a problem. German language for example uses rather long expressions compared to English language. Therefore the translator needs to make sure that the hyphenation is correctly implied and that the user interface allows that change.

Another problem can surely be found when investigating the way translators usually work. If the software still gets upgrades and changes the translator will not see the software that is to be translated. Since the translator only gets the strings and is connecting them with the logical IDs in order to search for an already existing term it is a real challenge to figure out which expression is to be used in case there are two expressions with the same meaning. An example for that could be the terms “exit” and

“close”. When localizing to German it is very hard for a translator to decide which word is to be used since the term “beenden” and “schliessen” have almost the same meaning.

Aside the problem on using right strings and logical IDs another major linguistic problem is the different characters in different languages. Regarding the French language it is important that the localization is not missing the accents. Further problems here can arise in terms of formatting. Since localization goes hand in hand with internationalization it has to be certain that the date formatting or numbering can be changed accordingly. Also when adding postal codes or Cities the language of each country should be used. It would be improper localization work to for example to put in a software that is for the German market the city name “Munich” instead of “München”

Furthermore the abbreviation rules differ a lot from country to country and as previously mentioned usually English terms are rather short. The problem here is that it needs to be abbreviated in other languages which might result in changes for the User Interface. So localization teams also need to take care of abbreviate words in a way that the User Interface does not need any changes. Of course the correct spelling of words is a criteria that is very crucial.

Problems also arise when localizing to languages that do not use the latin alphabet. This is very difficult in order to provide also the reading possibility from right to left. Also the numbering needs to be changed. Other then for languages like Greek, that uses different alphabet only but the same direction of reading. Furthermore regarding the so called right to left languages very often there are small mistakes in the language that is chosen. This happens especially often in the numbering. Since the numbers in languages like Farsi and Arabic / Urdu are very similar to each other.

The same rule also applies for difference within regions. The languages in China for example are spread in traditional Chinese, Chinese for Hong Kong and Chinese for Taiwan. Especially in this area localization team should pay attention that there are no wrong characters used. If this is not done it can happen that this is a very costly mistake that might also result in a bad reputation and a loss in sales. The second problem within different regions in one country are that there are sometimes more then one language spoken. Then the question comes up whether localization should be done differently for

each region or should the main language be used. A very good example is the above mentioned problem in Spain about using Spanish or Catalan in the very northern part of Spain. That means that clear instruction and investigation of target markets is the most critical part. One more problem is also that there are several countries that speak the same language, still the terminology might be different. Therefore it must be clear structure and no mixture of for example English for the USA and British English.

Of course also the different applications, such as example pictures or similar need to show a clear line of localization. So the localization team does not only take care of word translations but also of that graphics and similar are translated. This is often overseen because those pictures are not operating with logical IDs or strings. So the illustration need to have their extra localization.

Again this section shows very clear Citec's advantage. Since Citec was handling the publishing relations of their customers there is a huge knowledge about all the linguistic challenges that can appear also in software localization. It is very advantageous to have experienced worker that can quickly see mistakes while proof reading the documents. Further the translation agencies that are used by Citec have a wide range of experience in linguistic challenges due to the many localization project they took part in already.

4.8.5 Cultural aspects of software localization

The cultural aspect of software localization can be defined as being as difficult to do as the technical localization. A software product should not represent in anyway any cultural aspects of one country. The difficult part for the localization team here occurs in the ability to manage to localize the software in the way that a member of a different culture or country is not able to distinguish it from a software that was produced in the culture or country the person is from.

Furthermore the awareness of different cultures is very critical for the software localization. For example sample pictures or sample music should be chosen in a way that is accepted for all cultures. The biggest problem is mostly the cultural diversity between the western and eastern world. Some things that are seen as totally ok in the western world – like pictures with women in bikini or underwear – are usually a

problem for some eastern cultures. In addition of course no religious or similar symbols should show in the software since this is seen as discrimination for other cultures.

Also the addition of English terms is regarded as a cultural problem. Many countries and cultures see it as a problem that within software always some English terms are used. The fear of Anglicism is spread in many cultures since there are a lot of those terms in use already. Therefore it should be taken care of a proper translation for as many terms as possible.

A proper software localization should be easy to adapt in the target country and not bear any discriminative content as well as it should not represent any kind of opinion, ethical values or cultural values of the country of origin.

4.8.6 The product / service planning

The service offered needs constant improvement. Since Citec will focus on the high technology market, Citec has to offer quick adaption and implementation of new software. The globalization and internationalization itself is an all the time on-going process with a constant improvement of usability. This approves the need for the planned services. Especially because the market is growing and changing immensely rapid corporate customer cannot risk loosing any time in the localization process. To stay competitive it is crucial to release software at exactly the same time in as many countries as possible. As soon as a competitor has done a release earlier for an equal product in some countries the interest for the product drops down and another brand with less quality might be preferred due to availability.

4.8.7 Organisational and personal planning

Since the organisation already exists there is no need for major changes. Citec will continue as Citec Information Oy Ab. Also the core management does not need any changes.

For the software localisation service it is to be considered that it is generating less costs to outsource this work since Citec already has good deals with some translation agencies. In terms of brand new software it is necessary to hire contract-workers since Citec has to assure that none of the not released data is revealed. Further the costs for new software, personal and machinery can be outsourced to a subcontractor. It is not profitable to directly hire employees since the costs of approved translators are too high. With the already existing subcontractors there can be made more profitable deals for Citec since they are buying another huge service.

The focus when choosing the translation agency is set to find the most experienced translation agency that has dealt already with software localization. To enter the market successfully highest possible quality is the most critical part. Since the pure translations will be outsourced to external translation agency the personal needed consists of:

Translation coordinators:

A translation coordinator takes care of handling data and all kind of interaction with customer and provider. The responsibility is to get the data that needs translation from the customer and to forward it to translation agency. After that they have to take care to get the data back in time and forward it to the proof reader and IT-experts.

IT- experts:

IT-experts will take care of the internationalization of the software and its compatibility in the target country doing all necessary technical changes and also establishing the software in different languages.

Proof reader:

To assure the quality Citec needs to hire also personal that will assure that the quality provided by the translation agency corresponds to the common standards. If errors are found they will report it to the IT experts or translation agencies to fix them before the software will be send to quality assurance.

Since the workload depends on the customers wants and needs it is essential to hire temporary workforce until a steady contract starts with the customer.

4.8.9 Analysing the market and competition

Careful market investigation should be made when thinking of implementing a software localization service what is unfortunately the main problem since most operations are secret due to prototypes that did not get release yet.

The market for quality assurance and software localisation is steadily growing so it is hardly possible to give estimation for it. Clear is that nowadays the market for this business sector is bigger then ever before. It will need a close investigation of the software producer / developer. Since those companies are working secretly it is not possible to gather the exact data which would be needed to make a proper market analysis. It is nevertheless to be assumed that the development is an on-going process which does not allow any pauses in this area and is constantly rising. The target market should be corporate customers only. To give an example for that could be named NOKIA. They had lately 40 new software releases and have announced to be working on 8 entirely new software. Projects like this generate easily a working volume that exceeds one year by far.

To enter the market the most efficient tool will be the pricing. Citec has to undercut the competitor. To make that possible Citec has to cut own costs by only offering minimum wage to employees. The salaries will be raised as soon as Citec has a plus in income. The calculation in the finance section will show an example of undercutting the competitor while still remaining the same level of quality by just cutting internal costs.

Marketing and advertising

The used marketing media would be direct marketing. If Citec offers this new service it would be best if they would directly contact the potential customers. Best method for this would be to send a notification or directly an offer to the potential clients. Further it would be good to remain the already used marketing channel to advertise the new service. If the budget allows it of course an extra advertisement would be a benefit. Most important is still to directly inform the potential corporate customers and try to already offer the service to them by penetration. The logistics will be quite easy to

handle. Best option would be to place the required personal in customer premises. This would save equipment costs, as well as delivery costs for the customer. This would speed up the entire process because no good delivery would be needed and neither secure connections would be needed. That is an advantage for both, the customer as well as it is for Citec regarding efficiency and cost and time savings. Since this is an information service there will be no further logistical planning necessary. Nevertheless it is to decide with the customer whether the customer wants to have the service done in his own premises or Citecs. If the location is Citec office, there will be value added to the cost calculation.

The advertisement is an important driver for getting customers. Since Citec will offer a service aimed for corporate customers the advertisement should only be focused on the customer and the service. It is not necessary to use public advertisement in form of placates or poster. Below is a list of possible advertisement channels. It will show that the most efficient marketing way is the direct marketing, since the customer will mostly be a specific corporate customer and not the broad mass.

Direct marketing:

The direct marketing is determined as the direct contact with the potential client. It is done via email, calling or meetings. There is no other intervening media used.

If the budget allows it there will be started also indirect marketing to reach a broader mass also including smaller companies.

Indirect marketing:

Indirect marketing is determined as the indirect contact to the potential customer. For example by advertising in radio or newspaper. Usually it is used to reach a broad mass whereas the direct marketing is aiming on a specific target group.

4.8.10 Equipment

The necessary equipment depends strongly on the customer. If customer requires the work in customer premises there is no need for own equipment since that is usually provided by the customer.

If the employees are working within Citec premises the equipment consists of software and hardware, secure connections to the customer and translation agency in order to assure the confidentiality. Further there would be needed a separate room where the translation coordinators, IT-experts and proof reader are situated. That room requires a security system that allows only the entrance to entitled persons. Further Citec has to assure that no information is leaving that room, so either a room without windows or closed window blinds and curtains. This is due to that some software that needs localization is not yet released and therefore needs an entirely secret operational environment to assure the confidentiality.

4.9 SWOT ANALYSIS

The SWOT analysis is carried out in order to give a general and quick overview for the management to see with one look if the software localization service would be another market opportunity to Citec or not. It shows the strength, weakness, opportunity and thread that Citec is facing when thinking about implementing software localization service. This analysis is based on my personal findings and investigations within Citec and the service of software localization. It does not include financial factors, since they are confidentially.

<p>S</p> <ul style="list-style-type: none"> - good knowledge about translation business - experienced employees in translation business - existing deals with translation agencies - existing deals with corporate customers and excellent reputation 	<p>W</p> <ul style="list-style-type: none"> - dependant on translation agencies - not enough personal to handle the huge amount of work - no experts for the new service
<p>O</p> <ul style="list-style-type: none"> - outsourcing translations to India - being more convenient to choose for customers, since Citec would handle documentation and software localization - gain more market share - grow bigger 	<p>T</p> <ul style="list-style-type: none"> - failing - low translation quality and therefore rising costs and loss in reputation - loosing customers

The above SWOT analysis shows that the idea of offering this new service has rather good chances to be implemented successfully. As stated the already existing knowledge about the translation sector as well as the experienced employees are an advantage.

Furthermore the marketing of this service would not create any problems since Citec is already taking big part of technical documentation translations from corporate customers who might be willing to outsource more work to Citec for convenience and quality. Furthermore the already existing deals with translation agencies are an advantage too, because it makes Citec a corporate customer and therefore allows more benefits and reducing in prices.

As the opportunities show the convenience to choose Citec will increase sufficiently because it is easier to have one subcontractor than two different in order to meet deadlines, save time and get a good quality work and results. Further opportunity for Citec is to outsource the translations to the Indian subsidiary. This would save money to Citec and enable them to offer better conditions and prices for their customers. Therefore they will gain a competitive advantage. Of course it is also very good that Citec gets the opportunity to grow bigger and get more established in the translation business. It will be possible to get a bigger market share and better reputation because the knowledge about Citecs excellent quality work will grow when Citec is growing bigger.

Nevertheless there are also some weakness found for Citec. When offering that service Citec will also have to take the blame for decreasing quality. Since Citec does not have own translators they are dependant on the quality delivered from the translation agencies. Therefore Citec has to hire a few proof reader that check the quality before the work is delivered to the customer. That bears the problem of not having enough personal so the solution would be to hire more employees. Of course that will take a part of the budget away, so the investment in the beginning will be quite high. Furthermore Citec has expertise in the documentation translation, but not in software translations so employees need special training before starting the process.

The threads for Citec are rather small for establishing that service compared to other company risks. Of course there is always the risk of failing. In this case the failing can happen due to a lack of knowledge. This can be prevented by training the employees for professionals. When outsourcing the translation to India the quality has to be assured before delivering the work to the actual customer. Further problems can occur because some of Citecs customers require translations from European translation agencies. That

is a very critical factor that needs definite and immediate reaction from the management if any problems occur. Further it needs to be taken care of that the customers are satisfied and that their requirements, for example European translation agencies, are met. The biggest threat for Citec comes up in terms of reputation. Should the service fail because of bad quality Citec might lose the excellent reputation they have established over years what then might result in losing corporate customers. So in the beginning Citec should focus on new clients rather than the already existing ones. That is also due to that some corporate customers do not want that all subcontracts are made with only one subcontractor since this gives too much negotiation power for the subcontractor. After establishing the service well and having good expertise and reputation, already existing customers can be taken into consideration without any problems.

5.0 Conclusion

After investigating the overall situation on software localization including background information as well as Citec's human resources and the importance of software localization in the future I see a great opportunity for Citec to enlarge their operations in the translation sector by adding the software localization service.

It is not possible to establish this service without having any background information. The process has to become clear and all important information on the speciality that is needed in this business is essential. It is crucial to understand the overall process before thinking of the detailed process. Many people think that software localization is a pure translation process but this document shows that it is a lot more and is including many things like different cultural behaviour and values as well as beliefs and linguistic problems.

This reaches from internationalization to localization. Of course the customer has created the software that is able to operate globally so the internationalization does not seem to be part of the actual localization process but it still is. What the customer does not know is the behaviour of the software as soon as it is established in another language than the source language. For example how is the software working when implementing Right-to-Left languages. The whole concept might change so the quality assurance is essential. There is no need to deliver the translated software when the very basics are not working. Of course more careful investigation will be done through a team of quality assurance, but nevertheless the software localization team should be able to see the very basics like abbreviations or faulty software behaviour.

The software localization is very demanding but also growing market. Very small issues can result in a total failure of the product in the planned target market. Reaching from religious content over images that are not accepted in all countries in the same way to small things like Anglicism in software. It seems to be an essential problem for some countries to have English words in their localized products so special attention needs to be paid on that since those little things that are not relevant for engineers or global people but are a big problem for the broad mass and might result even in boycotting a product or in decreasing sales and reputation.

It is especially important to keep the leading factors in mind like the cultural and linguistic aspects. The target market needs careful investigation on all values and beliefs that occur there. An intensive research is therefore indispensable in order to avoid major problems in a later stage. This can be small issues like abbreviations or not localized pictures.

Furthermore it turned out that the quality of localization plays the most important role in this business. The quality has to be incredibly high in order to satisfy customer wants and needs. Especially in the high technology business since this environment is constantly improving and changing. Especially crucial makes it the fact that bad quality results in bad reputation and therefore in decreasing sales or even entire boycotting of the product in heavy cases. Also the need of quality assurance arises here easily. Some approvers should make sure that the quality is maintained and that the software localization can be forwarded to the customer. This is very important since high quality is a core value. Furthermore this idea goes along very well with Citecs vision:

“Our customer is the star – we do the stunts”

In order to keep that vision it is absolutely necessary to pay close attention to customers and subcontractors at the same time. It is important to not only receive the best possible quality from the subcontractor but also to deliver the best possible quality to the customer.

As previously mentioned Citec has very good contacts already and the number of potential customers is constantly rising. Software localization became more and more important over the years and as figured out already, it is absolutely essential to localize software when operating globally. Especially the corporate customers that Citec is already serving will have a high interest since it will make Citec the most convenient partner to choose.

6.0 Suggestions to the commissioner

After investigation all the necessary steps that are needed for localizing software I can highly recommend for Citec to implement this service. When finding out that the pure translation will be done by a subcontractor the chances of failure are decreasing a lot. Since the processes would be quite similar to the ongoing processes in technical documentation where Citec has years of experience I think it would be a very good opportunity to enlarge their service offer.

The main procedure would not require major changes and there is already experienced personal that can train the new personal. Furthermore I suggest that first Citec should try to offer this service to their already existing customers. Since some of them are corporate customers operating in the software business the need for software localization constantly exists. Further Citec has excellent reputation to their customers and would be very comfortable to choose since they already are doing the documentation localization. That would assure the same quality and no problems in terminology. Technical documentation would be 100% correspond to the software localization. That makes it also easier for the end-user and the overall customer satisfaction might even rise. In addition the deals with Citec would get more profitable to their customers as well what is certainly highly appreciated in the nowadays economical situation. Also Citec would profit from the new deals with their subcontractors.

I suggest to Citec that they would use their already existing contacts to different translation agencies. They should find one that has excellent reputation and delivers high quality work on deadlines. Furthermore it should be assured that this translation agency has experience with software localization already since this is a very complex topic. Since the source files can change couple of times during the localization process it is very challenging for the translators to still keep deadlines and apply all the necessary changes. Therefore experienced workers are absolutely necessary. Translation agencies that have only handled traditional document translations are not a good idea to choose. Since Citec might have to provide information about their subcontractor especially in the beginning Indian companies should not be used even though the trend is clearly going in this direction in order to decrease cost. Still corporate customers

appreciate it more if European translation agencies have been used. Some customer even said that they will not accept any translations that were done in India. Of course the pricing plays an important role when choosing a subcontractor. An example for that is that a European translation agency charges approximately 40 euro per hour whereas an Indian translation agency only charges 12 euro per hour. The information for the pricing was stated from a European translator. The above mentioned prices are the lowest regarding Europe and the highest charged price regarding India. Unfortunately experience has shown that the quality of Indian translation agencies has been rather poor compared to the European agencies. With Citecs existing contacts it should nevertheless be possible to negotiate reasonable prices with European translation agencies. Once this is done Citec is more likely to be the chosen partner, since the pricing tool is nowadays a very important factor for businesses.

Another reason why I strongly recommend to implementing this service is the personal planning. Since there is no need to hire professionals straight the personal costs are decreasing sufficiently. The most important factor is still that there are already translation coordinators successfully handling technical documentation translation processes so it would be no problem to find translation coordinators for software localization process since the process is almost the same. The only personal that needs to be hire will be some proofreaders that text the quality before delivering the product to the customer. Also this is not a risky business, since they can first be hired on a temporary basis or as freelancers. That is minimizing the risk a lot. Also the cost decrease by hiring only translation coordinators and proofreaders instead of professional translators. I think that the costs would be too high if Citec would not outsource the translation work.

Furthermore the place would not be a problem. Since the work is done virtually it does not matter to which of Citec locations the employees would be hired. Mostly it is to assume that the employees will be working in customer premises. This is another reason that makes it absolutely recommendable to Citec to implement that service since the cost for equipment will be very low or even zero. If the employees are based in Citec premises the only arising cost will be arising for the machinery and secure connections. Usually the customer is taking care of the connections since the Citec employees have

to access customer's database often. Should the employees be based in the customer premises then there will be no additional costs to Citec.

I think that this is an excellent chance for Citec to grow and gain international market experience. Being once established in the global market can have good results for reputation and awareness of Citec. Even though Citec is operating globally already the knowledge about Citec is very limited. While researching this topic one of the most questions has been: "What is Citec? What are they doing?". I think by offering more services also the potential market is increasing. Furthermore the awareness of Citec would also grow.

In addition one of my main suggestions for Citec is that they should invest more in advertising. It is not enough to only operate within a network of existing and potential customers. I think there should be also some more advertising for the broader mass that people get more aware of Citec. The more people know about Citec the higher are the chances that also potential customers start to be aware of Citec. Especially since the competition in this business is quite large it is important to spread the word about Citec and its values. This is a major problem since one of Citec's major competitors, namely – Lionbridge – is known throughout the world.

To finalize my work I strongly recommend for Citec to think about this business opportunity carefully and hopefully start to implement it since I personally do not see any reason why this project should not succeed when looking at Citec's long success story in successful technical documentation of any kind.

As there are many pros for Citec in establishing that service it should also be taken into consideration what the cons could be quite crucial too. One of the biggest threats for Citec is surely the dependency on the translation agencies. If translation agency does not have any expertise in this field the high quality standards can not be kept. Further they have to work with very tight deadlines. In this business it is very essential to be able to stick to deadlines, since the product usually has to be ready just in time for launching it. Should the launch be delayed due to bad or incomplete translation then it is most likely that there will be financial claims and a loss of new projects. It is very difficult to find a

translation agency that is not too expensive, in order to stay competitive by pricing channel. Still it is very hard to constantly provide highest possible quality.

Another threat is that Citec has established a very good reputation in the documentation translation. A failure in the new service might result in a loss of reputation and a loss of customers. Another contra is that Citec has experts in that field, but since they are very busy with their regular translation coordination there will be the need for new personal at some point. The work regulations do not allow more than three temporary contracts for employees. At the moment that someone will be hired on a permanent basis it will be a risk. This is due to the first less successful years it takes to establish a service well and profitable. It will be first visible after a few years to see if that new service will be profitable. In case of failure there will be high costs especially in the personal sector since the work resources will create no problems since they can either be sold or kept as substitute workstations.

Another very crucial thing is that Citec might lose regular customers since they might fear a loss in quality since they might see Citec as an all rounder with no concrete focus. An example for a better understanding is NOKIA. They still offer today more than only mobile phones. Usually they don't succeed in the other business sectors because people have the opinion that if one specialises in phones there is no way that a good quality can be maintained and offered also in other sectors.

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