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# Culture Specific Improved Factory Acceptance Testing Model

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Writing this thesis after years of mainly preparing PowerPoint slides turned out to be a new and refreshing experience. Returning to a more elaborate style to describe to your audience topics that you cannot verbally clarify makes you humble. The overall experience of getting this degree done has been considerably harder than expected and therefore also more gratifying. Special thanks to my manager Otso Ikonen for prompting me to expand my understanding in this area to the extent required for creating this thesis. Also thanks to all colleagues at work for participating and making the creation of this thesis possible in the form of interviews, suggestions and attending excellent workshops. Also I am grateful for guidance especially to my instructors PhD James Collins, DSc Satu Teerikangas, and M.A. Sonja Holappa among other numerous great instructors during this process. And last but not least thank you to all my great fellow students for those strength boosting peer support sessions in Eerikin Kulma after the lessons.

Networking with new professionals has been a pleasant experience and the contents of those different industrial management courses illuminating. In hind sight it seems that the more I read about culture and managerial issues related to cultural values the more I realized there is much to learn and focus on in the future.

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<p>This thesis focuses on the improvement of the customer witnessed factory acceptance testing model in the case company. The customers of the case company are from a number of different countries world-wide. The business challenge of this study is that although the currently used model has generated positive feedback from the wide spectrum of international customers, there has been some negative feedback also. In some cases, cultural expectations have not been met with the current universally harmonized customer witnessed factory acceptance testing model. To address this challenge, the objective of this thesis is to create an improved culture specific customer witnessed factory testing acceptance model and implementation plan for the case company.</p> <p>This study is carried out by examining and evaluating the current state of the used model as well as the background processes in the case company. The challenges identified in the current process are compared against the existing knowledge found from relevant literature. Combining the results of the Current State Analysis and literature research is then used to create an initial proposal, which is fine tuned and modified for a finalized proposal. Based on the validation of the finalized proposal an implementation plan is suggested.</p> <p>The thesis uses qualitative methods for gathering information from various sources. The main sources are case company internal databases and stakeholder interviews.</p> <p>The outcome of the Thesis is a practical number of culture specific improved guidelines for customer interaction in the factory. The guidelines are integrated to the current factory acceptance testing model.</p> <p>This will improve the culturally distanced customer experience of the case company's performance. Improved mindfulness of cultural expectations will reduce unexpected factory acceptance testing delays through proactive action. Eventually, the improvements will manifest as an increased NSP score.</p>	
Keywords	customer, culture, expectations

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# Acronyms

ABB	Asea Brown Bower Company
FAT	Factory Acceptance Tests
CCRP	Customer Complaint Resolution Process
PM	Project Management
LSU	Local Sales Unit
CSA	Current State Analysis
HC	High Context
LC	Low Context
IBM	International Business Machine
GLOBE	Global Leadership and Organizational Behaviour Effectiveness study
CF	Conceptual Framework

## 1 Introduction

The industrial revolution has accelerated among other aspects of life also the interaction of cultures. Quicker distributing for products of mass production, improvements in information sharing and transportation methods have diminished the size of the world so that everything is more easily available than before. Thus, a better understanding of invisible cultural differences is becoming more and more important for companies servicing customers when aiming to differentiate themselves as a partner with whom making business is easy. Finding common understanding from the start and minimizing cultural clashes in connection with sometimes very different cultural expectations can create a more efficient process flow and a feeling for the people involved that we are in this together. Business has become more international than ever and is still evolving towards being more global with the stock market centralization. People are travelling more to foreign countries and the collision of cultures is unavoidable. The impact of the collision can be somewhat controlled with cultural intelligence though. When doing business it has become clear that customer expectations are not fulfilled only by offering the best product but also by fulfilling customer expectations in terms of interaction and when it comes to the invisible rules of encounter.

Frei (2008) describes in his article dealing with the success of service businesses the importance of having “an employment management system which includes: recruiting and selection processes, training, job design, performance management, and other components.” The case company has found that also cultural intelligence should be included in employing a management system. Therefore, it makes sense for the case company to put more emphasis on its employee management system since the employees are interacting with the customer and in particular with the expectations of the customer.

“Out of the three principle resources of capital, natural and human resources, human resources, i.e. the employees, are the only asset that the competitors cannot copy: employees distinguish successful organizations from less successful organizations” (Ahmed 2009:153). Clashes between customer expectations and the supplying company internal assumptions of the needs of the customer are in proportion to the cultural intelligence of the employees and the cultural distance of the interacting cultures involved. Companies that are trying to differentiate with better customer service can avoid cardinal

mistakes during interaction by investing in the training of employees focusing on interaction with different cultures.

Also expectations for supply deliveries are experiencing a change. In recent years, schedules of investment projects have been shortening and the expected lead time has also been shortening along with the project schedules. This means the tightening of the delivery process takt time leaves less time for sorting out misunderstandings and catching up delays of poor interaction resulting in rework.

## 1.1 Case Company

The case company in this study is the business unit of ABB Large Motors and Generators located in Helsinki. Manufactured products are exported to customers world-wide. The case company is the local manufacturing unit of ABB, a multinational large size company in power and automation technologies. ABB was founded in 1988 through a merger between ASEA of Sweden and Brown, Boveri & Cie of Switzerland. Large Motors and Generators Helsinki factory predecessor Strömberg co. was founded 1889 and was acquired by ASEA in 1987. The company has been divided to four divisions since a reorganisation in January 2016. The divisions are divided to several logical business units. The business units are, in turn, divided to local business units which in practice are manufacturing factories. ABB is the world's largest builder of electricity grids and its core business is in power and automation technologies. The company headquarters are located in Zurich, Switzerland. The largest customers are industrial manufacturing companies and industry in general. In December 2015, the case company employed approximately 136,000 people and operated in around 100 countries. Its global revenue was over \$ 35.5 billion. The company strategy is to remain a technological leader in its core business areas. The corporation annual dedication to research and development activities in terms of funding was over \$1.5 billion in 2015.

The case business unit and organization of this study is part of the Discrete Automation and Motion division. The case organization is a manufacturing factory where the products, large electrical machines are manufactured. The products are typically sold around the world by the local sales units (LSU) of the case company, which transfer the orders from customers to the factories. LSUs are in the front line in customer interaction and the handover is done when the factory acceptance test date is agreed.

To differentiate from the competition, the company strategy is to be a company that customers will find easy to do business with and a company that underlines the importance of customer experience. The selected strategy is implemented partly by prioritizing efforts towards creating superior customer factory visiting experiences instead of just being technologically superior. The company is committed to finding solutions for all customers, and its R&D functions have strong resources in the factory. Due to the portfolio being customized, the products' typical batch of deliveries is from one to four units. The average batch size in 2015 was 1.5 similar units. The products are tailor-made from scratch and are typically a customer critical process component. This is why the customer often wants to witness the Factory Acceptance Tests (FAT) of the products. Witnessing of FATs are a reality for nearly every second unit produced.

## 1.2 Business Challenge of the Thesis

The case company of this thesis is exploring ways of improving its current process to manage the customer visits in the factory premises. The case company is striving to differentiate itself from competitors with superior customer service among other qualities. The case company reckons that the customer visit to the factory is the best marketing opportunity of their excellence and the visit should be a perfect experience for the customer.

Customers are currently treated in the same way by following a process created for ensuring a good visiting experience in the factory during witnessed final testing of the ordered product. All nationalities are treated with harmonized proper respect and friendliness but the company has still received some negative feedback from some of the customers. It can be summed up from some customer feedback that if tacit expectations are not met, this may result in decreased customer satisfaction and reduced tolerance for dealing with all other difficulties and understanding the need for change of plans.

It is suggested by management that improving the current process with guidelines for culture specific practices would support and improve the customer experience when visiting the factory. The results can subsequently be measured by increased Net Promoter Score (NPS) results.

The first step is to identify the parameters to use as a grouping basis and create a practical amount of culture specific interaction guidelines. The second step is to create rules of thumb and guidelines according to known similar cultural expectations for managing the whole witnessed factory acceptance testing period. The implementation of these guidelines would help minimize misunderstandings, unintentional offensive interaction and improve the customer experience as a whole.

In order to avoid the most common misunderstandings an implementation plan of the improved culture specific customer experience model is needed for the case organization. Improving current procedures according to the predesigned steps should help the case organization increase its customer satisfaction. The outcome in practice is planned to be divided to two parts. The first is to find out from the literature and from workshops with the key stakeholders what kind of guidelines / instructions are needed to make sure that the improvements for interaction can be implemented. The second is to map enabling back office processes for supporting the usage of guidelines.

### 1.3 Objective of the Thesis

The objective of this thesis is to create a proposition for the case company for improved customer interaction guidelines to support the FAT hosting model in such a way that employees can fulfil tacit cultural expectations. The current model of creating customer experience during factory visits and especially during factory acceptance tests is uniform for all customers and does not take into account any specific expectations.

Improving the existing model so that it acknowledges the visitors' cultural background and expectations is seen as next level of service. The focus is primarily on improving customer experience. By achieving improved customer experience, front and back office costs are also expected to be slightly reduced as a result of less rework required due to misunderstandings or wrong expectations between the parties.

The research method used in this thesis is qualitative due to information available. There are no numerical meters available for measuring performance or how efficient interaction is experienced by the customers. The research focuses on *how* and *why* questions and later, in combination with the Current State Analysis, conclusions are drawn for how to support the strengths and improve on the weaknesses.

This Thesis is written in 7 sections. The introduction discusses what is researched and why. Section 2 explains the research design and procedures planned for getting a holistic view of the issue under study. The third section overviews the Current State Analysis used for directing the focus of the Thesis on the improvement areas. In section 4, literature is explored and explained what scholars have found out in their studies in the same topic. Section 5 concentrates on the initial proposal creation based on the findings of the CSA and literature. In section 6, the proposal is discussed and feedback from validation is used for fine tuning the proposal to create a final proposal for the case company. Lastly, section 7, concludes the Thesis with a discussion of overall findings and future possibilities as well as conclusions of the whole thesis.

The next section describes the research method and material used for this research.

## 2 Research Method and Material

This section describes the research approach, research design, data collection method, data collection sources, and analysis method. Also the validity and reliability of this thesis is discussed. The data discussed in this thesis were collected from a globally operating large company manufacturing electrical machines located in Helsinki Finland.

### 2.1 Research Approach

Firstly, the research approach is decided according to a preliminary review of what data is available. The witnessed factory acceptance testing model (FAT) is a combination of used practices and existing habits for the employees involved in the process. After a preliminary interview with the key stakeholders it became evident that large samples of numerical data is not available. The lack of objective, measurable, numerical data indicates that the research approach should be a qualitative case study. In support for the interviews, recorded history for the last 2 years of customer feedback of Factory Acceptance Testing (FAT) is used as an additional information source.

A qualitative case study is a research approach that uses a variety of data sources for the exploration of the phenomenon under study. In this Thesis, the target is to answer “how” and “why” questions in order to find out the current status and prepare a framework for future improvements according to the findings. According to Yin case study designs need to “maximize four conditions related to design quality: (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability.” (Yin 2003)

In this Thesis, the research is carried out firstly by exploring what instructions exist in the internal databases. The internal databases include instructions and guidelines relating to the case studied. Secondly, the research is conducted by interviewing the key stakeholders and discussing with the project team. The project team is gathered from stakeholders from various company functions who have interaction related to the thesis topic. This Thesis answers firstly *how* the case company is currently performing in terms of the topic at hand. Later it describes *how its performance could be improved*. The scope of this thesis is to improve customer – employee interaction proceedings for visits during FAT. In other words, the scope is exclusively in the case company delivery process in the FAT point of the project.

This case study includes a hypothesis of specific interaction in order to improve the likelihood to be able to set boundaries for the scope of the Thesis and thus aims to increase the probability of completing the project. The Thesis is meant to contain specific proposals and to stay within practical limits. The proposals may come from the related literature, previous personal or professional experience, theories, and/or generalizations based on suggested data in empirical research conducted earlier. Potential data sources can include documentation, archives, interviews, direct observations, and participant-observation.

Furthermore the outcome of this Thesis, i.e. the proposal, is linked to the analysis of current process data and the Conceptual Framework which focuses on improving the process in use. The Thesis is concluded by validating the proposal for the new improved culture specific witnessed factory acceptance testing experience model and further developing it according to feedback received before the final proposition. The reliability and validity of the proposal is discussed in a later subsection.

## 2.2 Research Design of the Thesis

The research design of this Thesis depicts the entire research process. The research design is illustrated in Figure 1 below with data collection points.

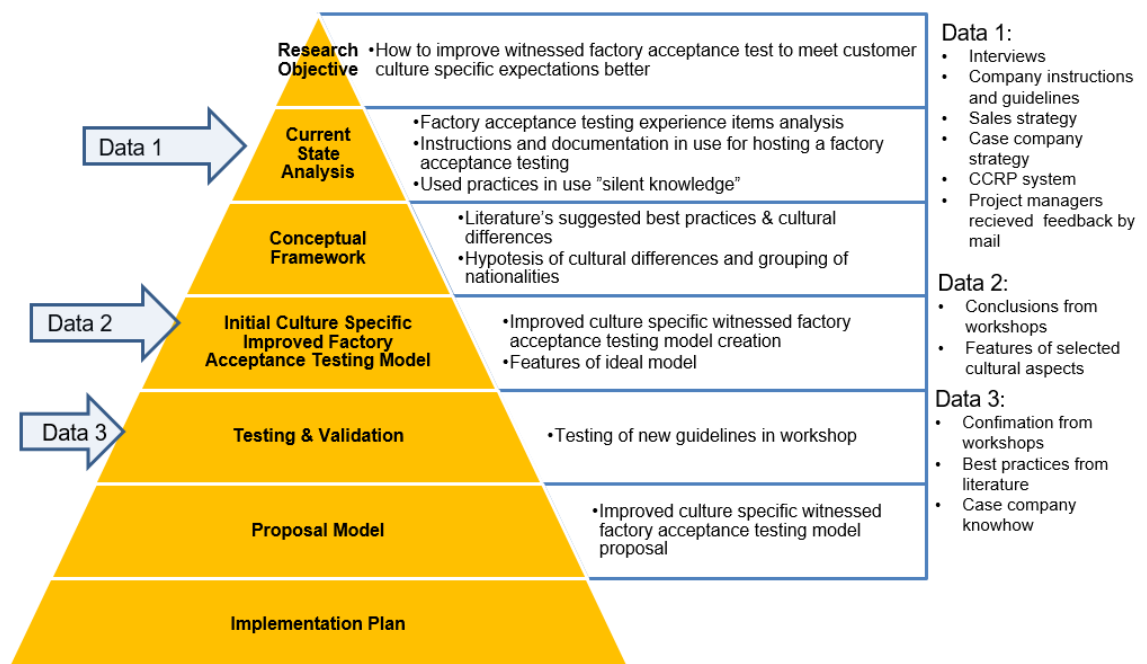


Figure 1. The research design



As seen in Figure 1, data is collected in several points during the research. The research itself is carried out in predesigned steps. Firstly the Current State Analysis is performed to identify how the customers' cultural expectations are currently fulfilled in connection with a witnessed factory acceptance testing event. This is done by firstly collecting data from internal databases where instructions and guidelines are stored. Secondly, it is carried out by collecting data from recorded customer feedback during last few years. Thirdly, it is done by interviewing key stakeholders and recording tacit knowledge related to the subject. These inputs are collected as Data 1 round of the thesis.

Existing knowledge and literature is researched before the initial proposal is built. The target is to find best practices on cultural expectations with a special emphasis on customer visits to supplier premises. Also discussions with the project team about best practices and desired state of FAT experience determines a starting point for designing an improved process and guidelines for the stakeholders.

The fifth section of this Thesis presents the proposal for an improved culture specific witnessed FAT experience to the case organization. The initial improved model is tested and based on the test feedback the final proposal is fine tuned.

In the last section of the Thesis, the finalized improved model is presented and the plan to implement it and furthermore how to follow-up its success.

### 2.3 Analysis Methods and Data Collection Used in the Thesis

The data collected for this Thesis is from different data sources obtained in three phases. The first phase data is used to determine the current status. The second phase data is used for creating a sound improved model. The third phase data is feedback from the piloted improved model.

The primary sources of the first data are the current process documents and interviews conducted with the stakeholders. Data 1 is used for analysing the current status of the existing model. Table 1 below shows the data sources.

Data	Data source	Data type	Analysis
Data 1	Company document library	Related instructions and guidelines	Section 3
	Customer feedbacks received by e-mail by project management	Customer feedback	Section 3
	Company CCRP system	Customer feedback	Section 3
	Interview 1: Project manager	Stakeholder feedback	Section 3
	Interview 2: Warranty manager	Stakeholder feedback	Section 3
	Interview 3: Senior testing engineer	Stakeholder feedback	Section 3
	Interview 4: Senior testing engineer	Stakeholder feedback	Section 3
	Interview 5: Test field manager	Stakeholder feedback	Section 3
	Interview 6: Technical support manager	Stakeholder feedback	Section 3
Data 2	Project team workshops	Features of "desired state" and ideal process	Section 5
Data 3	Project team workshops	Feedback of the initial improved model test	Section 6

*Table 1 Data Collection*

Table 1 shows the points where data is collected and in which steps data is planned to be collected according to the research design. The qualitative data is collected from databases and is in the form of free text including suggestions or customer feedback from the previous projects.

#### 2.4 Validity and Reliability of the Research

The results of any study depend on the quality of data obtained and level of interference included in the data. In a case study, interference should be minimized at all points and internal validity of research design is to be taken into account. An objective interview should not lead the interviewee to any particular direction and questions asked should

be by nature as open ended. Reliability should be such that if a later investigator followed the same procedures as described by an earlier investigator and conducted the same case study all over again, the later investigator should arrive at the same conclusions Yin (2003).

Naturally research is conducted by people and errors are possible. Research should be designed to be performed in such a way that mistakes and human errors are minimized.

In qualitative research the quality of data is more important than a vast amount of data. The obtained data is triangulated with other available sources in order to validate the quality of the information for interpretation at later stages.

Validity in research is ensuring that the research is actually measuring what it intended to be measuring. It means that the data used for research is accurate, answers the research question and is correctly interpreted.

In this study, reliability is confirmed by using several sources of data for the same research question. In addition to interviews the same point of interest is searched from other sources such as customer feedback. The approach for data collection was to obtain as much objective data as possible from different sources without researcher bias according to certain function related to FAT.

The validity and reliability of this thesis will be explored in section 3 at a later stage of this report.

In the next section, the company data available is used for the Current State Analysis in order to identify the strengths and weaknesses of the currently used process.

### 3 Current State Analysis

This section discusses the current state of interaction and guidelines used by employees with the customers during witnessed factory acceptance tests (FAT). The target is to build a holistic view of availability, extent and how up to date the documentation and instructions in use are for witnessed FATs. It is a well-known fact that in any practical process there is also silent knowhow and possible agreed undocumented practices which are explored too.

In the first part the different stakeholders and parties involved are presented. Also the first part reviews what documentation is distributed to customer during the whole witnessed FAT procedure and which stakeholder is responsible for the distribution. The second part presents the current procedures and steps that are in use with the customer witnessed FATs. The third part explains which agreed misalignments of used procedures are in use and with what parameters. In the fourth part, the findings are summed up, and strengths and weaknesses are evaluated. Finally conclusions from the Current State Analysis are stated.

#### 3.1 Background and involved Parties in witnessed FAT

For the reader, it may not be clear why customers want to invest their own time, money, and resources for witnessing one device factory acceptance testing. Generally in many projects where the case company is manufacturing devices, which are electrical machines, the delivered machines are going to be installed in a critical part of a customer process. Many customers require that their representative is witnessing in which conditions tests are conducted and how the machine performs in different operating conditions and also that auxiliary components and such are correctly installed. Typically the target is to minimize problems in the commissioning and ramping up stage of the customer process. Another major reason is also that insurance companies have different pricing for systems with classification society inspected devices compared to uninspected. The classification societies serve as third party quality assurance especially in marine business and in practice FATs for devices installed in vessels or rigs are witnessed by classification societies.

The purposes and details of interest of witnessing FATs vary between customer segment, country and company. During the sales phase the testing items and used standards are agreed with the customer by the manufacturing factory directly or more commonly via Local Sales Unit (LSU) acting as intermediate in between. Whenever a witnessed FAT is arranged customer needs are in focus and optimizing schedules of internal manufacturing process is secondary. In other words manufacturing scheduling is arranged according to customer needs and timetables.

Presently customer visits to observe machine FAT is agreed 3 – 8 weeks beforehand. The big variation in the agreed dates is caused partly by early manufacturing forecast inaccuracy and partly by the possible visa approval delay time of the customer country of origin, which needs to be taken into account.

Before the production personnel are involved in arranging a FAT, a confirmation of approval for proposed testing procedures are requested from the customer by the project manager. After receiving an approval of scope for testing from the customer and production timing from the factory, information is communicated to the test field resource management. Testing items and duration needed for the tests are planned by the manufacturing factory testing personnel according to information available from the internal IT systems. In the IT systems among other machine details customer requirements are stated. The dates for testing are iterated according to the customer schedule for machine need and production resources available in the manufacturing factory. An invitation for witnessing the FAT is mailed by the factory project manager to the LSU or directly to the customer in some cases. The LSU communicates with customer and manufacturing factory and project is transferred to factory project management (PM).

Table 2 below shows the witnessed FAT related milestones in chronological order by: involved party, communication operation, title of possible document delivered, guideline or instruction in use for named communication and document or guideline last revised date.

INVOLVED PARTY	CUMMUNICATION / INTERACTION OPERATION	DOCUMENT TITLE(S)	INSTRUCTION / GUIDELINE FOR COMMUNICATION	DOCUMENT FORMAT LAST REVISED DATE
LSU / PM / Testing Engineer	Test program proposal	TP_xxxxXXxxx X_XX.pdf	N / A	18.1.2016
LSU / PM / Testing Engineer	Test program	TP_xxxxXXxxx X_XX.pdf	N / A	18.1.2016
LSU / PM	Beforehand letters & schedule	xxxxXXxxx_invitation letter for witnessed testing.doc xxxxXXxxx_welcome to ABB Finland.doc	PG large AC motors + generators superior FAT experience.ppt	5.2.2015
PM	Beforehand guides	xxxxXXxxx_welcome to ABB Finland.doc	PG large AC motors + generators superior FAT experience.ppt	5.2.2015
PM / Testing Personnel / Executive Officer	Factory acceptance testing	Test folder: collection of documents varying between projects	N / A	N / A
PM	Test day wrap up	Punch List document	PG large AC motors + gen-	5.2.2015

			erators superior FAT experience.ppt	
PM	Follow up packet	confirmed punch list completed document NPS questionnaire	N / A	N / A
PM / Testing Engineer	Test Report for the machine under testing	TR_xxxxXXxxx X_XX.pdf	N / A	18.1.2016

*Table 2 involved parties and documents provided for witnessed factory acceptance tests*

In the next section the procedures and scheduling of the day and current process are explained in more detail.

### 3.2 Current Procedures during the Witnessed FAT Day

The case company has a procedure in use for hosting a witnessed factory acceptance testing and it is in use for all factory project management and for test field personnel. The target for the current procedure is to ensure that all customers receive a harmonized world class experience when participating a witnessed FAT.

The testing experience is considered to start before the actual physical visit is under away. Starting from the first documents where the possibility to witness a FAT is proposed, the target is to create an idea of professional and high quality experience for the customer. The following milestones are described in the guidelines and are expected to be used in a similar way by the project managers and testing personnel.

#### *Before witnessed FAT*

- 1) At the beginning of project interaction customer requirement for tests are asked by the LSU. Customer requirements are inputted to company IT systems and informed to manufacturing factory.
- 2) Customer requirements combined with the construction of the machine, and capabilities of manufacturing factory test field, the test program is suggested by project manager to customer or some cases via LSU. The test program can be

modified before the order is placed until customer requirements and test field capabilities meet without delivery time changes.

- 3) When the test program is agreed a confirmation of order for the machine is placed to factory production systems. The production design and manufacturing planning takes place and production planning function estimates the week the machine will be finished, which is then informed to the customer by email.
- 4) When exact date for a completing machine from the manufacture can be determined an invitation for factory acceptance testing is sent to the customer. It was noticeable from the CSA that some components for the machine may still be unconfirmed by the time an invitation is sent in the current production planning process. Thus a small risk of unexpected delay for manufacture is present, but inventory values can be reduced with such production planning.

*During witnessed FAT*

- 5) The customer is welcomed inside factory reception by the project management. A safety video is viewed and personal protective material shared. Everyone is obligated to wear safety gear when entering the factory premises.
- 6) The host guides the customers in the test field through the manufacturing area. In the test field a testing safety video is viewed. The test days are conducted according to an agreed structure with project management hosting the day personally.
- 7) When the test day is finished the customer is escorted through the factory by PM and accompanied until a taxi picks up the customer.

*After witnessed FAT*

- 8) Punch list items are cleared within a working week and an NPS questionnaire is sent a few weeks after the test days.

The quality and completeness of information on customer requirements affect a great deal how much the manufacturing factory needs to use office hours for getting the order cleared for the production line and how well customer expectations can be met on FAT days. One of interviewees explained that

*“Sometimes the file in the ordering system is so light that it requires hours of detective work to find out what is LSU promising to customer and what are the customer requirements. On the other hand there are some LSUs*



*that are in good level of professionalism and input of customer requirements are in such a good detail that checking can be done in minutes.”*

The sales tools used are forcing LSUs to input some data for obligatory fields, but the quality of inputs is not guided by, for example, selection bars. Also LSUs have the freedom to create free text fields that can include anything. According to the interviews, currently problems with unclear requirements during FAT days have mostly somewhat disappeared.

### 3.2.1 Chronological order of witnessed FAT days

The project manager asks the customer to arrange an arrival day before factory acceptance testing. In the invitation letter the customer is asked whether they require assistance with reservation for accommodation or with transportation from the airport to the hotel. The case company is offering to arrange transportation from the hotel to the factory also in the same letter. When the customer is using arranged transportation to the factory information is obtained in advance from the transporting company and the PM has enough time to arrive in the reception area and is waiting and welcoming the customer in factory reception.

The day starts with safety instructions delivery, factory's common safety video viewing and safety gear distribution. The test field is located in the middle of the factory floor and after common factory safety issues are informed to the visitors a walk to the test field meeting room through the factory floor takes place.

Inside the test field meeting room, the witnessed FAT day starts by viewing a test field safety video. After test field specific safety information is shared, test folder introduction and testing procedure overview follow. After delivering documents for following the FAT with more detailed information, a kick off meeting about the planned day proceedings with the test engineer takes place. During the short kick off meeting, the test program is outlined with an overall explanation of the test methods in more detail if needed.

After the kick off meeting, testing continues at normal speed. The testing technicians in the same test room coordinate the progress of the tests with the project manager and testing follow up as the tests proceed are communicated constantly. Usually witnessed tests are more extensive including hours lasting final operation conditions simulating heat

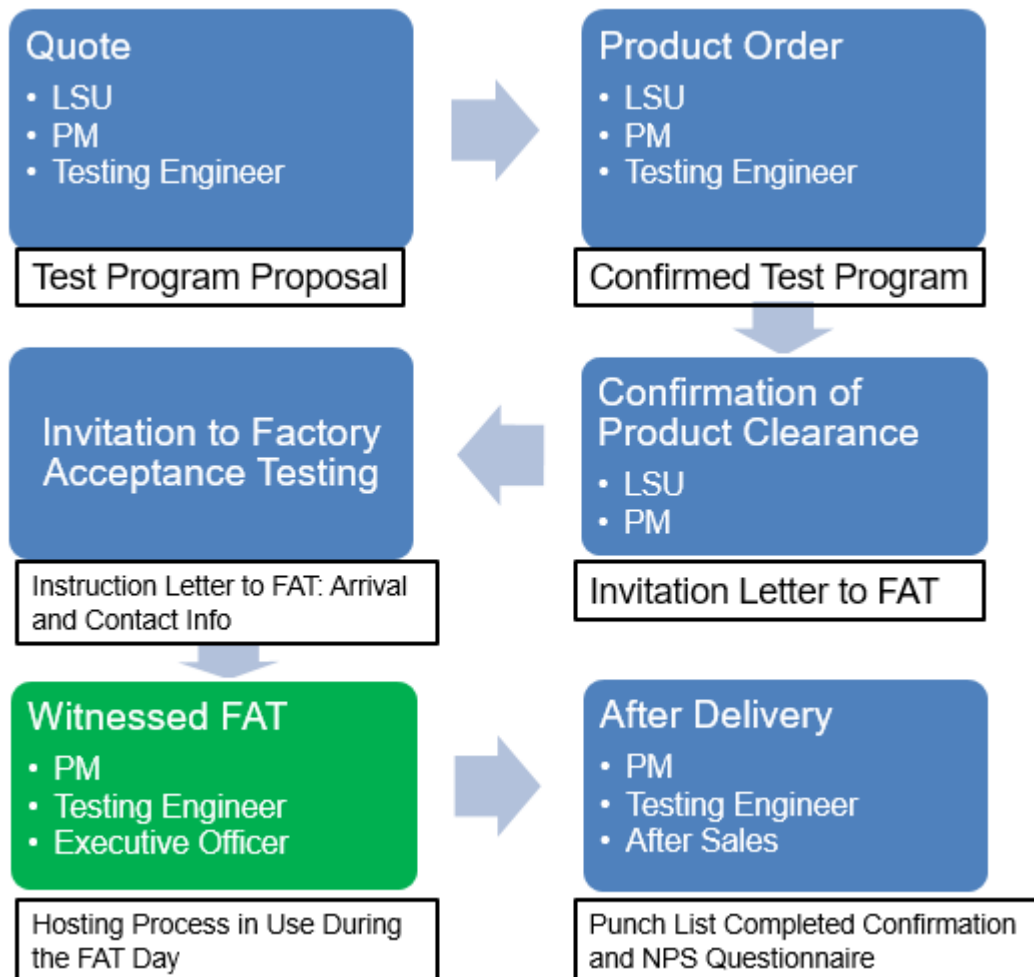
run test and when the machine temperature rise is stabilized, the measurement of actual temperature rise is measured. Testing engineer needs typically oversee several simultaneously proceeding test in different areas and if technical testing related issues are in need for clarification another meeting is arranged with the testing engineer. Timing of additional meeting is targeted to be at the same time when the final temperature rise is measured. After this test, which lasts by far the longest of all the tests, other tests proceed.

Lunch is considered to be a part of the customer experience of witnessing FAT. Lunch is arranged at the factory cafeteria within a special area reserved for customers and if the witnessed FAT is proceeding including end customers, the executive officer participates the lunch. Executive officers have rotation for attending end customer lunches and one of officers is participating the lunch.

After the tests are conducted and test field is de-energized, the customers may take close-up pictures and physical dimension measurements of the machine under project manager supervision. Lastly before FAT is considered to be finished, a punch list verification and questions are recorded with the project manager. The questions are checked by the project manager from the back office experts if the questions can be answered immediately and those items that require modifications or more extensive analysis are agreed to be confirmed later.

When the tasks in the test field are finished the project manager leads the customers back to the factory reception. The project manager stays with the customers until the taxi arrives and escorts the customers to the taxi. With new or key customers an evening dinner with the project manager is proposed.

Chart 1 illustrates the visit procedure for a witnessed FAT, the parties involved and documents provided for the customer according to the different phases of the FAT process. The actual FAT day is emphasized in green in the following Chart 1 below.



*Chart 1 Witnessed FAT experience process*

### 3.2.2 Visitors or Visitor Groups Which are not Treated by the Model

Sometimes in certain business segments classification societies are involved in the FAT without the customer present. Also some customers have outsourced witnessing of manufacturing to various local consultant companies which can be relatively regular visitors to the factory. It is agreed with the project management, test field and safety organization that when an individual classification society or consultant visits the factory 3 times in a period of 6 months a light version of witnessing FAT model can be used. The light version is otherwise the same but with the following differences: Firstly, the safety video and instruction leaflet is not presented, when arriving at the reception, after the third visit. The test field meeting room kick off is shorter and the test program is presented but not thoroughly explained unless some particular item requires a more detailed explanation. Secondly, the person is granted an entry permission and “supplier” card for moving around

inside the factory independently. A valid non-disclosure agreement is required and a picture to be taken to company entry permission database. These regular visitors are invited to the factory at the right time by the testing engineer or project manager and after having been escorted to the correct testing area are left alone with the testing technicians when day targets are cleared with the visitor. Also holders of the supplier card are allowed to find their way outside the factory without guide.

### 3.2.3 Available Guidelines for Cultural Interaction During FAT

There are no explicit instructions or guidelines on how to behave with people from different cultural backgrounds. Any emphasis related to different cultural expectations or concept of schedule for project through put time cannot be found either. New project manager training material is currently under construction and training is mainly done by master-apprentice method. There is a harmonized guideline created for witnessing FAT for all customers and a PowerPoint guideline that is shown to all project managers when they start hosting FATs.

### 3.3 Comparison of the Results

Since the case company has not taken cultural expectations into account in any way for witnessed FATs, the strengths and weaknesses of current agreed practices should be compared against key stakeholders subjectively seen benefits. The interviews reveal similarities and differences of the used practices between the parties involved. It can be concluded that the way cultural aspects are taken into account varies between individuals more than the function that individual represents.

The interview results to the questions are briefly compared between the functions interviewed and are illustrated in Tables 3-13 below.

<b>Background information available: customer persons, targets, concepts etc.</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
Usually little at the start. Increasing during the iteration process.	Main requirements known. Details confirmed during the PO confirmation	Usually quite well. Pictures and details what support needs are known.

*Table 3: Available background information*

From the interviews can be concluded that background information is accumulating during the process. In the current process, the content of information available is generally the minimum required until the project is in the material procurement phase. After the delivery in the after sales phase the customer requirements are relatively well known.

<b>Are there culture specific guidelines on how to interact customers of certain countries</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
No	No	No

*Table 4. Quality of currently used cultural project guidelines*

Irrespective of function interviewed it is obvious that the cultural aspect has not been not taken into account in the current guidelines or processes.

<b>What are the strengths currently when facing cultural expectations</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
LSU is local and knows customer expectations well.	Openness, integrity and calm national culture behaviour	LSU is local and knows customer expectations well.

*Table 5: Case company subjective strengths of cultural interactions for projects*

According to the interviews, the case company's (LSU) s are considered to be an asset when dealing with local cultures. The LSU's ability to buffer local cultural differences compared to manufacturing factory expectations was universally appreciated.

<b>What could be done better related to customer cultural expectations</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
Cultural training could be part of planned skills training.	Cultural training could be part of planned skills training. Overview documentation of testing concept improvement	Listening more to customer needs and targets of details.

*Table 6: Defects of current process from cultural point of view*

According to most interviewees, cultural training for at least the main business critical cultures is seen as a possible improvement point. According to the interviews, cultural intelligence training is not currently included in the skills profile of employees who are interacting with the visitor.

<b>Do some major issues rise up during witnessed FAT often with some countries</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
Level of expectation for details offered during testing process varies	More related to position of customer than country of origin	Schedules mainly. Expectations of project completed varies

*Table 7: Possible common cultural collisions with customer interaction*

Although there is negative feedback from some projects, the interviewees do not consider that customer disappointments due not fulfilling expectations are correlating for certain nations. Making definite conclusions would require more detailed studies from different angles for projects.

<b>Is something done differently when hosting customers from different countries compared to 5-10 years back</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
More information is required from the LSU and requirements are usually found out. Target is in current process to avoid misunderstandings beforehand.	More background information is searched before customer arrives to factory. For example customer requirements of testing are nowadays known well on test days.	Customer service is more emphasized. Response times back to customer are considered to be more important.

Table 8: Changes in FAT process during last decade

According to the interviewees, the case company has become more customer centric and is putting more effort to knowing customer needs before manufacturing begins.

<b>Best practices “do’s” of meeting cultural expectations</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
Current witnessed FAT model is a great improvement.	Integrity and open information of possible problems.	Listening to the customer. Trying to fulfil customer needs instead of company short term targets.

Table 9: Known good practices

Improvements for witnessed FATs are considered to be beneficial for the case company. Interviewees suggest that a more customer centric approach could be taken into consideration.

<b>Lessons learned “ don’ts”</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
Keep in mind some cultures’ attitude to food and beverages	Being cocky or arrogant	Not listening to customer.

Table 10: Known avoidable practices

The interviewees agree that an arrogant attitude is not to be used when hosting customers. Customer expectations should be taken into account, professional attitude should

be maintained, and it should be considered how to focus on details that are important to the customer.

<b>If cultural expectations could be fulfilled would customer satisfaction improve?</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
Most likely	It might help:..yes.	For sure.

*Table 11: Subjective view of implications for meeting cultural expectations during witnessed FAT*

All interviewees agree that cultural expectations could be better taken into consideration for planning and preparation of witnessed FAT day.

<b>Is there something the company should do to succeed better with projects like these with foreign cultures?</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
Find out more about background and targets of customer	Make sure that machine is ready and pretested before customer arrives	No answer at this point.

*Table 12: Known improvement focuses about witnessed FATs*

The interviewees showed some variation regarding improvement points for getting things running more smoothly. There was no singled out points that could be the focus for improvement efforts.

<b>What is the desired status for servicing customer from different cultures in your opinion?</b>		
<b>Project Management</b>	<b>Testing Engineer</b>	<b>After Sales</b>
Current used model is a good practice. It would be even better if for example praying times could be arranged in a nicer environment.	Perhaps infra could be upgraded some. This is a factory after all	Again listening to the customer is the key. We should learn to listen to the customer better from the start and provide cooperation more deeply.

*Table 13: Desired status for future witnessed FAT model by the interviewees*

The interviewees had again multiple points for improvement ranging from fulfilling cultural habits to upgrading facilities and back to customer centricity over internal processes.



As seen in the tables showing the responses of interviewees from different functions, the employees have a good attitude towards doing their best in meeting the cultural expectations of customers. The harmonized FAT day procedure is considered to be helpful, but different cultures require specific cultural intelligence from individual employees. Some employees are naturally more culturally aware than others and practices vary between employees. Improved guidelines and training would make their job easier and could improve the customer satisfaction of witnessed FATs.

For the project managers training on intercultural competence is arranged irregularly on a need to have basis every now and then. Also there is no structure of what the intercultural training includes and the training consultant company is free to invent the content of the training. However, one positive feature is that at least the training events are held always by a person that has lived years in the country or region of target training and has a business background.

For the testing engineers intercultural training is not arranged unless some major issue of negative customer feedback arises. Silent knowledge is transferred between testing engineers by the master-apprentice method and is greatly dependent on personalities of persons doing the information transfer.

### 3.4 Strengths and Weaknesses of Current State

The interviews and research of available written instructions reveal certain strengths in the current state. The findings are categorized into three blocks.

#### *Strengths of current state*

Firstly, *before* a witnessed FAT it can be pointed out that information to customer about upcoming FAT proceedings is communicated well. Local knowledge of customer expectations is very well known to some LSUs and the buffering takes place locally before the manufacturing factory is required to invest back office resources for checking information deficit or unrealistic requirements. At all times the customer is aware when the order is going to be ready in the factory and has time to make traveling arrangements accordingly. And in cases that the schedule is not acceptable there is plenty of time to reschedule with the factory. Information packages for preparing and arriving to witnessing FAT

are good quality with contact person information and in addition to that there is assistance available to arrangements if desired by the customer. One strength is also that the project management receives the requirements of the customer well before the start of the project and the factory has enough information for checking the process for manufacturing. Also the testing engineer knows what should be tested and can relate information to resource planning well ahead of test reservations. Furthermore, the test procedure is agreed before travel arrangements are made, the test procedure is known to all parties, and last time schedule changes are minimal.

Secondly, *during* FAT the project management attitude is service oriented factory wide and customer wishes are listened to as the day proceeds. The host dedicates his or her day completely to spending time with the customer and concentrating on the customer's project. Support is strong from the back office and project management have all resources available to solve or start procedures for solving immediately possible problems of, for example, machine construction found out during the FAT day. The testing personnel are seen as polite and excellent professionals based on feedback from the customers. The language skills for all testing personnel are adequate in spoken and written English.

Thirdly, *after* FAT, punch list items are completed in quick schedule and following up on the project is seen sufficient by the customers. The quality of the test reports is seen to be at a good level.

A common, subjective opinion in the interviews was that the attitude and will throughout the factory is towards good customer service and striving to be culturally intelligent in the interaction. It was notable that universally in all stakeholder positions the attitude has changed greatly in the past ten years from arrogant, technically superior product supplier oriented behaviour towards customer respecting service oriented behaviour.

#### *Weaknesses of Current State*

Variation of practices are causing some of the weaknesses along with other issues as explored in this section.

*Before* witnessed FAT it depends greatly on LSU professional expertise how complete customer requirements or machine specification information is available. One interviewee pointed out that:

“For some LSU it takes tremendous amount of time to find out what the customer is requiring or what kind of machine will suffice for the application. And with another LSU it can be only read through and input to system because all relevant info is inputted to sales tool with realistic testing requirements. It varies a lot.”

It seems that during the past years LSUs are integrated to sales with varying training for using the sales tools. Also some LSU staff is from a different technical discipline and information between the manufacturing factory and to customer about order progress are not communicated well enough. With these LSUs the factory project management has to invest an unnecessary amount of office hours in clearing order requirements and still there is the risk that during the witnessed FAT the agreed scope of testing is not fulfilling customer requirements, which causes schedule changes.

*During* witnessed FAT the project management have harmonized guidelines on how to proceed during the day, but some hosts follow guidelines only partly and miss some of known best practices. Guidelines as a whole cover basic best practices but for some cultures the expectations differ from procedures. One interviewee pointed out that:

“Arab and Islamic countries have been forgotten from the guidelines. Fortunately the project management usually has enough cultural awareness to arrange a praying area for those customers beforehand.”

Another project manager noted:

“It is different to host a party from western countries than from Latino areas. Latinos expect that things move with relaxed atmosphere and slowly. They arrive unprepared and expect that on witnessed FAT things are started from the beginning and explained with a lot of small talk.”

It can be noted from the interviews that most of the project managers have to follow their individual instinct to adjust the day's procedures according to the visiting customer's background when the customer is from a culturally distant country.

One weakness is that when rarely something stops the testing procedures there is no agreed procedure to inform the customer what the effect on their test is. The testing technicians politely inform the customer that the tests are on hold until the problem is fixed but the schedule is unknown until the problem is fixed. Sometimes the technicians remain just waiting in the testing control room in big crowds without any apparent purpose, which can be interpreted as an odd system to solve a problem.

One weakness identified is that it may appear to the customer that all expertise is project manager or testing engineer based. The back office experts are not seen in the FAT and when summoned they are not always available. This may give an impression that the machines are relying on the project manager in the manufacturing factory where in fact there are multiple departments manned with experts to check the technical solutions for custom made machines.

*After FAT.* When the test day is finished punch list is made with possible changed items written down and agreed with the customer. Some cases requirements can change after a relatively long time even though punch list is agreed. This may mean months in some cases. After the punch list agreement the issues surfacing should be treated as after sales services and costs should be covered by the customer at least in cases involving the installation of additional components.

#### *Other not discussed aspects*

All interviewees were asked for development ideas and what can be improved in the current model along with opinions on what culture expectation related issues were not asked. Most of the interviewees suggested that current facilities could be improved further, although facilities have improved compared to the surroundings a few years back. Also the content of documentation detailing the performing of tests has been created over a decade ago and could be upgraded with more visual information along with the background information about the purposes of tests. One informant suggested also that

videos shown to customers could be available in several spoken languages. Others suggested that the test field overview video could be created to show customers how it is operating and what can be done.

### 3.5 Key Findings from the Current State Analysis (Data Collection 1)

The current process of the witnessed FAT model has a few weak points that could be improved. These weaknesses are related to insufficiently documented instructions, definite responsibilities of personnel, and pre-agreed procedures to handle unexpected changes. Positive findings are related to employee attitude, strong specific technical knowhow, and atmosphere that is customer service oriented and honest in all levels of interaction.

Firstly there is only one single overall document on how to conduct witnessed FATs. The employees in contact with the customers are presumably selected in the recruitment phase for their characteristics. The cultural aspect of meeting different expectations is available on tailor made cultural training events only and very seldom.

Secondly there is no notion about possible cultural aspects of how to take into account customer expectations in some cultures that are sensitive to for example the food served. Cultural intelligence relies solely on the personal awareness and experience of the project manager. Variation regarding how different customers are treated is still quite big.

Thirdly there is no systematic follow-up of best practices of cultural intelligence of key customers. Generalization of culture expectations for big areas can result wrong assumptions, but at least key customers often come from the same area of certain countries. Known best practices are discussed informally on coffee breaks between employees but information is not shared in any open system.

Fourthly outsiders can see that technical knowhow is polarized. The project manager and testing engineer can easily be seen as the only experts in the factory and the actual strength of the organization is not seen by the customers. The specialist of a narrow discipline is unlikely to get involved even for short period of time for the witnessed FAT. Proof of a strong extensive organization behind the manufactured machine is missing. Just calling to somebody and getting the correct answer is not the same as a specialist coming to the meeting room and explaining things in detail if needed. Table 14 shows the strengths and weaknesses as per stakeholders involved.

Strengths	Weaknesses	Party involved
Before communication	LSU process management variation	Project manager Testing engineer Sales
Awareness of production status	<b>Culture specific guidelines for FAT</b>	Project manager Testing personnel Sales
LSU local cultural intelligence	Problem solving protocol variation	Project manager Sales
Technical knowhow	Time usage available for multiple simultaneous projects	Testing personnel
Order clearing process	Back office visibility	Project manager Sales
Attitude for service	After punch list clearing change processing	Project manager Testing personnel
Language skills of employees	Time usage available for multiple simultaneous projects	Project manager Testing personnel
Back office commitment		Project manager Design
Punch list clearing time		Project manager Design

Table 14: Strengths and weaknesses as per stakeholder function

In Table 14, the point of interaction that this thesis concentrate on is emphasized in red. The witnessed FAT is a joint venture where several functions of case company are involved. The stakeholders interacting with the customers during the witnessed FAT are with certainty at least project management, testing engineer, and testing technicians. All of these three different stakeholders have different deficiencies in the current process.

CSA indicates that cultural aspect is not taken into account in current FAT process. In addition to low cultural intelligence few other improvement items was revealed for the future.

Next section explores available literature of culture and grouping possibilities of similar culture clusters for the case company relevant cultural dimensions.

## 4 Theory for Cultural Grouping

This section discusses culture as a concept, what kind of similarities have been studied and found between nations, and how nations relevant to the case company business could be grouped. Also cultural similarities are mapped for the purposes of creating a proposal for an initial culture specific factory acceptance testing model. Furthermore, the section discusses how to group the most common customer countries according to a reasonable amount of relevant similarities on relevant cultural dimensions. Moreover, best practices when hosting people from different cultures are discussed. This Thesis concentrates on the case company relevant customer cultures and customers in positions such as middle management, engineers, and generally people that visit the case company facility during a witnessed FAT.

### 4.1 Introduction to Culture

It is suggested that culture is not a definite physical phenomenon that can be measured accurately with any numerical value. Different academics and people define culture in different ways, but basic similarities can be found between studied nations from a vast amount of academic papers published during the last few decades. As a frame of reference, some definitions of culture found in the literature are presented below to give a holistic idea of what this Thesis is drawing its foundation from.

#### 4.1.1 Definition of culture

UNESCO defines culture as” the set of distinctive spiritual, material, intellectual and emotional features of society or a social group, that encompasses, not only art and literature, but lifestyles, ways of living together, value systems, traditions and beliefs” (UNESCO, 2009)

“People of different cultures share basic concepts but view them from different angles and perspectives, leading them to behave in a manner which we may consider irrational or even in direct contradiction of what we hold sacred.”(Richard D. Lewis 2005: 16)

Culture can be described also as: “the collective programming of the mind that distinguishes the members of one group or category of people from another” (Hofstede, Geert H. 2000: 9)

“Culture is a combination of interdependent, gradually changing elements – including assumptions, beliefs, practices, and institutions – that is distinctive to a particular society” and “Cultures are loosely bounded by a society. A *society* consist of a set people who interact more with one another than they do with others, and who share some sort of identity.” (Henry W. Lane et al, 2004: 27)

As can be seen from the above definitions culture has multiple aspects and views on what is relevant varies between scholars. The following chapters of this section firstly discusses the basics of culture from the social science point of view. Secondly the findings of classical studies are discussed. Lastly the following section opens up aspects relevant to the case study as studied by modern scholars of social science of culture. The section starts with communication styles, followed by dimensions of culture and finally it explores the similarities of widely studied nations and cultures.

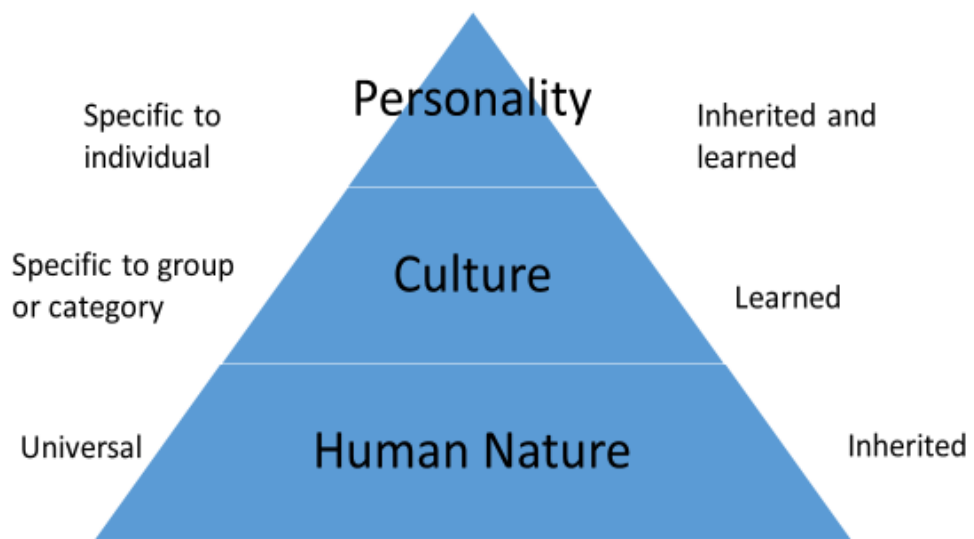
Cultures are formed by people, but as any organism humans need to fill some basic needs to survive and function before energy is left to higher functions such as interaction or creating cultures with other humans. The next chapter discusses classic findings about the issue.

#### 4.1.2 Layers of cultures

As discussed above, the definition of culture is somewhat multidimensional and layered. Also people’s needs are firstly to be satisfied before it is possible to spend energy to cultural aspects of behaviour. Culture concept itself varies between individuals, area where individuals are from, people they are interacting with, and context of time and place of definition.

According to classical studies such as Hofstede (1994) culture can be described as software of the mind. Meaning that culture concept is mental programming constructed from learned experiences and inherited psychological traits. Three main levels of human mental programming can be defined according to how deep individual mental programming is explored. In Figure 2, these layers are illustrated as described by Hofstede (1994: p6)





*Figure 2: Three levels of uniqueness in human mental programming. Reconstructed pyramid from Hofstede (1994)*

At the bottom are inherited traits of genes from the individual's parents. The personality of an individual is a unique mix of suppressed and active genes affecting behaviour somewhat.

In the middle of cultural context is culture boundaries and expectations learned from the groups or categories the individual has been involved with in the experienced history.

And at the surface is the individual's specific behavioural patterns which are controlled according to the individual's own bias.

Trompenaars et al (1997) focus in their study on cultural diversity in business and the culture layer in the above pyramid. They describe the culture layer divided in additional three layers named as:

**The outer layer: explicit products**

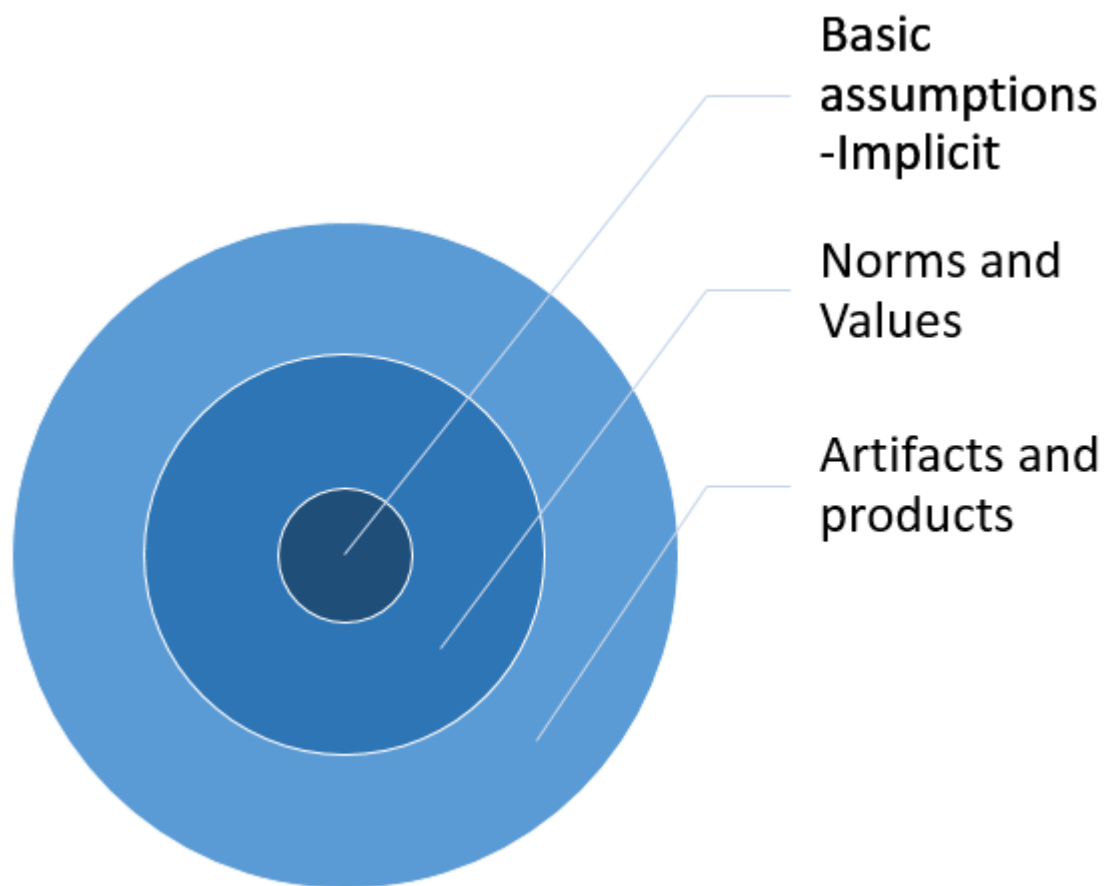
The outer layer can be translated as firstly "observable reality of the language, food, buildings, houses, monuments, agriculture, shrines, markets, fashions, and art." (Trompenaars et al 1997: 21).

### **The middle layer: norms and values**

Which is defined to opening up norms as “mutual sense a group has of what is “right” and “wrong”” either in written laws or informal such as social control. Values are defined to determine definition of “good” and “bad”, and are therefore closely related to ideals shared by the group” (Trompenaars et al 1997: 22).

### **The core: assumptions about existence**

Are discussed as the “ways to deal most effectively with their environments, given their available resources. Such continuous problems are eventually solved automatically. “Culture” comes from the same root as the verb “to cultivate”, meaning to till the soil: the way people act upon nature. The problems in daily life are solved in such obvious ways that the solutions disappear from our consciousness.” (Trompenaars et al 1997: 23).



*Figure 3: Trompenaars et al layers of culture*

The following chapters discuss a bit more Hofstede’s suggested different layers of uniqueness in mental programming

#### 4.1.3 Personality or cultural behaviour of individual

Every person is a unique construct of learned behaviour, thoughts and inherited genes. Thus variation between individuals are difficult to understand before person individual traits are explored. Typically one needs to know enough of a person before he or she is understood. Starting from the fact that in every culture there are people who are extrovert whereas other are introvert, one cannot make assumptions with certainty how a person from particular nation is. This thesis is not exploring individual person uniqueness and is concentrating on behaviour of average collective for simplifying finding common traits.

#### 4.1.4 Group Culture

Group of individuals create own culture. Culture varies with agreed boundaries of culture. At its smallest two people form a culture between themselves but depending on the definition culture can be with close friends, family, work place colleagues or some other limited number of people one is interacting with on a daily basis. The size of group varies in different areas and also with different individuals. Individual inner culture is adjusted to fit to group rules and expectations accordingly. "Groups of people organize themselves in such a way that they increase the effectiveness of their problem-solving processes." (Trompenaars et al 1997: 23).

#### 4.2 Communication between Individuals from Different Cultures

One aspect of culture reflects on how information is verbally shared. The spectrum of information sharing or communication content is discussed in this section.

In some cultures silence has its own meaning whereas in other cultures people get uneasy with extended silence in the same room with other people. Classical studies found out that communication between different nationalities is full of misunderstandings related to the context of communication.

Early classical studies suggest that cultures can be categorized in two groups depending on culture verbal communication content. Hall suggests that cultures can be roughly divided into low and high context cultures accordingly.(Hall 1976) Below is the decades-old notion of the fact that describes the importance of knowing the context somewhat.

“In the fifties, the United States Government spent millions of dollars developing systems for machine translation of Russian and other languages. After years of effort on the part of some of the most talented linguists in the country, it was finally concluded that the only reliable, and ultimately the fastest, translator is a human being deeply conversant not only with the language but with the subject as well. The computers could spew out yards of print-out but they meant very little. The words and some of the grammar were all there, but the sense was distorted.” (Hall 1976: 86).

#### 4.2.1 Overview for High Context and Low Context Cultures

Hall (1976) suggested the categorization of cultures into two sections, namely high context and low context cultures in order to understand their basic differences in communication style, content of shared information and cultural issues. How an individual from a certain culture communicates is based on learned ways to express oneself and underlying expectations what is typical of that nation. For example small talk is not generally part of Finnish communication whereas it is a very common part of communication in Anglo and Latino cultures.

#### 4.2.2 Communication Style in a High versus Low Context Culture

“In High Context (HC) cultures, communication style is influenced by the closeness of human relationships, well-structured social hierarchy, and strong behavioural norms” (Kim et al. 1998: 512). Distinct in HC culture is that meaning is not completely in the exact words, but is embedded deep in the information. The listener or reader is expected to read “between the lines”, to understand, due to person’s background knowledge. Hall (1976) pointed out that “a high-context communication or message is one in which most of the information is either in the physical context or internalized in the person, while very little is in the coded, explicit, or transmitted part of the message.” Hall (1976: 113) In an HC culture it is typical that people speak linearly one after another and the speaker is seldom interrupted.

According to Morgan (2015) high-context cultures base their communication systems more on background information, tradition or rituals. For instance the word “yes” can mean in Japan “Yes, I hear you” or in some cases the meaning can be “Yes, I agree”. “You have to be acutely attuned to the culture in order to detect these differences; greater

confidence is placed in the nonverbal aspects of communication than the verbal aspects” (Hall 1976: 79).

It is quite the opposite in a low context (LC) culture, where meanings are explicitly stated through language. If something is unclear or some detail is left unexplained people communicate usually and ask clarifications. Furthermore it is expected the other discussion partner will ask until the meaning is clear. As Hall (1976) explains, “most information is expected to be in the transmitted message in order to make up for what is missing in the context (both internal and external). Characteristic for LC culture is direct and linear communication that is precise, dramatic, open, and based on feelings or true intentions.”(Hall 1976: 101).

In an HC culture, group harmony is valued, tend to rely on their status, history, relationships, and an abundance of other information, including religion references, to assign meaning to an event. According to Kim et al “people from HC cultures tend to be extremely cautious and even reluctant to begin something, particularly in fields of relationships that are not well known.”(Kim et al., 1998: 512)

Individualism is typically valued in LC cultures over collectivism and group harmony. Individual needs and goals are prioritized over the needs of the group. “Another salient feature that is often seen to differentiate these two contextual cultures, is the notion of politeness. In an LC culture, it is thought to be polite to ask questions that in an HC culture often seem too personal and even offensive.” (Tella 2005: 785)

#### 4.2.3 Conflict Triggers in High Context and Low Context Cultures

In either type of culture, conflicts develop for different reasons. There is less specification of appropriate ways to behave in low-context cultures, where individual independence is valued. Unwanted conflict often develops because one party violates the other's expectations of behaviour.

The high-context culture has more specific rules of behaviour and conflict usually develops when a person violates tacit cultural expectations.

From the case company perspective a relevant point by Tella suggests that “Japan is at the top of the list of high context cultures.”(Tella 2005: 790) Japan, is a relevant country for the case company and is treated separately in this thesis.

#### 4.2.4 Cultural Categories of Communication

Another classification that can be found to be relevant to this study is Lewis’s (2005) division of cultures according to cultural categories of communication. Lewis divides countries to linear-active, reactive and multi-active cultures (Figure 4). According to Lewis “linear-active cultures people tend to be calm, factual and decisive planners. They are task-oriented, highly organized and prefer linear approach or doing one thing at a time. They value facts and values and other information that they have obtained from reliable sources. They prefer straightforward, direct discussion, and they talk and listen in equal proportions when engaged in conversations.” (Lewis 2005: 70)

Reactive cultures are “courteous, outwardly amiable, accommodating, compromising and good listeners. Their cultures can be called ‘listening cultures’. Reactive cultures prefer to establish both their own and the other’s position by listening first. They often seem to take their time to react after a presentation or speech, and when they speak up, it is without clear signs of confrontation.” (Lewis, 2005: 70–71.)

Multi-active cultures’ dominant features are “impulsive, warm, and emotional. They like to do many things at a time. It is typical of them to speak in animated way and listen at the same time, leading to repeated interruptions. They are uncomfortable with silence, try to fill silence with small talk and seldom experience it between other multi-actives.” (Lewis 2005: 89)

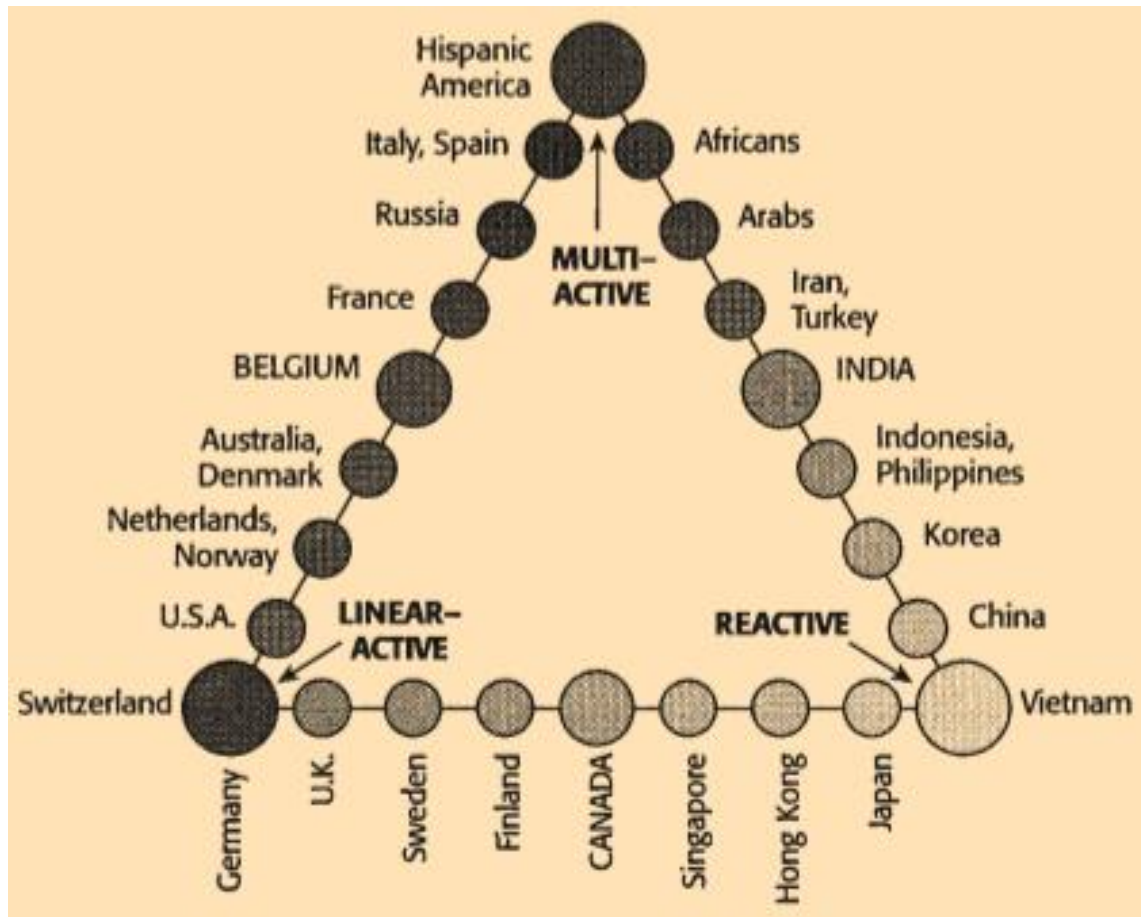


Figure 4 Cultural categories of communication (Lewis, 2005, 89)

Figure 4 above illustrates Lewis (2005) categorization of studied nations according to nation generic type of communication.

#### 4.3 Classical Dimensions of Culture

Hofstede's studies in the seventies with IBM opened new views for defining and analysing cultures. Hofstede found out during his studies that all cultures have certain dimensions that are emphasized with a different weight.

In Hofstede studies culture is "always a collective phenomenon, because it is at least partly shared with people who live or lived within the same social environment, which is where it was learned." Hofstede (1994: 5).

Hofstede managed originally to distinguish a total of four linear dimensions describing what the core features of named culture are. Later and after some debate with other

scholars a fifth dimension of time concept was added to following published editions of Hofstede's studies. The classic dimensions are listed below with explanations.

### ***Power distance***

Firstly this dimension can be used to describe how people relate to inequality, i.e. how accepted it is that some individuals have more resources and status. Also how this so called *power distance* is supported or limited in each specific society.

### ***Uncertainty avoidance***

Secondly reaction and stress level for unexpected events and unknown future is described by *uncertainty avoidance*.

### ***Individualism versus collectivism***

Thirdly an aspect of differentiation between cultures can be called *individualism* versus *collectivism*, which describes how high individual performance is valued against family and collective welfare.

### ***Masculinity versus femininity***

Fourthly cultures attitude can be described on a line of *masculinity* versus *femininity*, of how different genders are expected to act on different situations and how status is perceived in society.

### ***Long-term versus short-term orientation***

The fifth and final dimension is the perception of time. Hofstede named the time concept as *long-term* versus *short-term orientation*. Last axis describes how to prepare for the unknown future versus known present time.

Based on Hofstede's study of nationalities cultural groups can be formed according to the parameters that are considered to be relevant for the grouping. He suggested several different models for grouping the cultures by country, typically with two dimensions evaluated together. An example relevant to the case company is illustrated in Figure 5 showing the dimensions of power distance and uncertainty avoidance. Hofstede suggests this index indicates how organizational problems are solved in that country. Hofstede (1994)



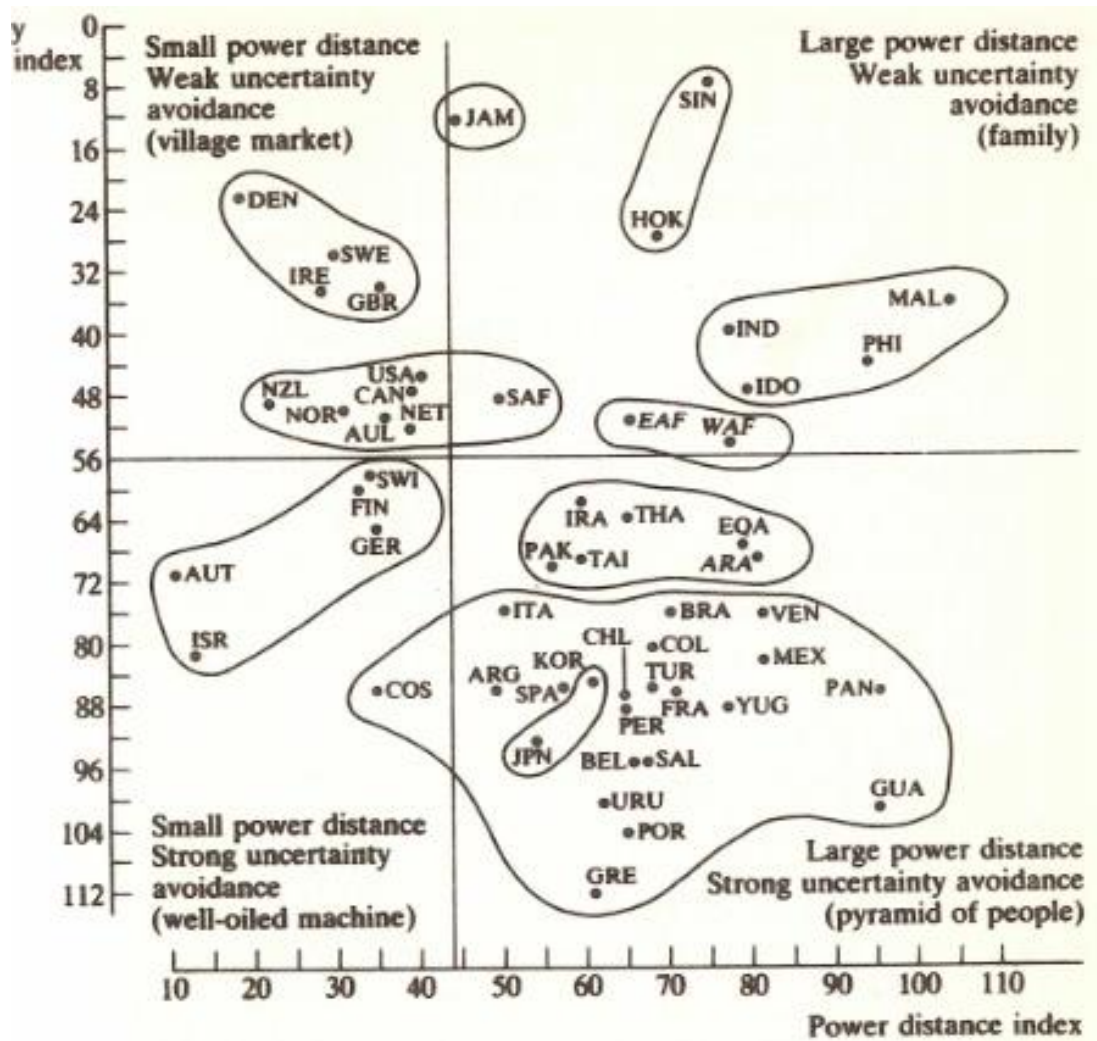


Figure 5 power distance and uncertainty avoidance indexes

Wider social and business correlation for classical cultural dimensions is suggested by Hofstede in Figure 6. Hofstede suggests that “right-hand corner, which combines masculinity with strong uncertainty avoidance, contains the Axis powers from World War II: Germany, Italy, and Japan. This combination of cultural values was instrumental in their aggressive role, but also in their remarkable recovery afterward”. Hofstede (1994: 333)

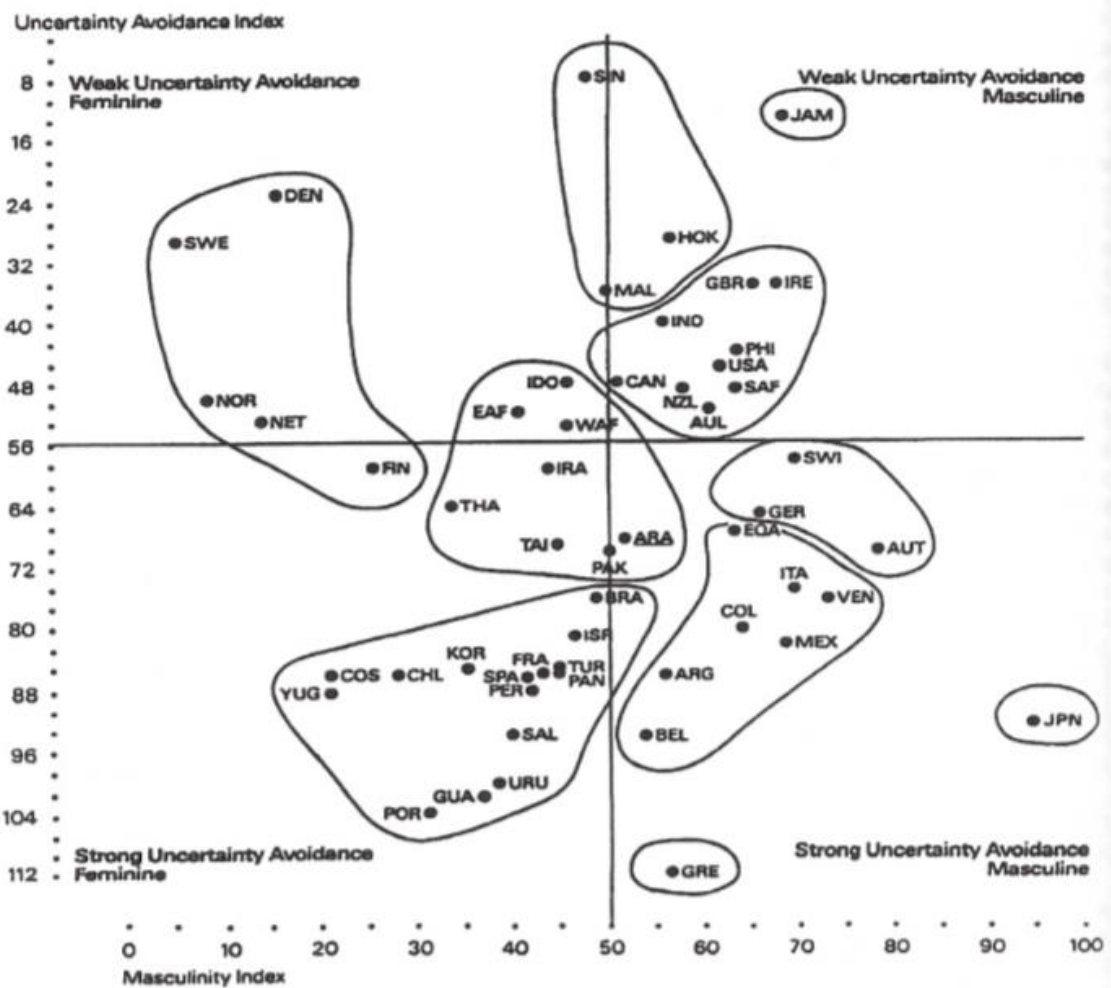


Figure 6: Uncertainty avoidance and masculinity versus femininity indexes

There are a few major problems with the Hofstede study with IBM in the seventies. For instance the studies at the time did not include Russia or China, although Russia and China combine as 17% of landmass of the world and 22 % of the world population during the study.

The same is noted also by M. Javidan (2006) who argues that bias for study was weighted followingly: "The survey questionnaire was designed very much based on IBM's needs and interests, which can hardly be labelled as non-US centred in the 1960s. Thus, the information collected was centred on IBM needs". (M. Javidan 2006: 898)

Interestingly Hofstede's original study did include only four dimensions in the interest of the ordering company IBM and later with pressure from other scholars the time concept

known as long versus short-term orientation was included. M. Javian et al. (2006) are pondering whether other dimensions are also missing.

#### 4.4 Modern Dimensions of Culture in Project GLOBE

After groundwork by Hofstede, Trompenaars, Lewis and others, academic circles noted that an update for cultural studies is needed. Over 170 scholars joined their effort in order to create a new improved version of cultural dimensioning and grouping. The improved version was named as project GLOBE (Global Leadership and Organizational Behaviour Effectiveness) and years of studies were invested for testing the new hypothesis. Scholars interviewed and received responses for questionnaires over 18,000 middle managers who worked in 951 organizations and from a total of 62 societies.

The approach of project GLOBE was that “culture is a product of collective’s attempt to address two set of group issues: a) external adaptation and b) internal integration. In other words evolving of culture happens by adapting ongoing challenges or threats and opportunities and managing relations among its members. Scholars did not ask interviewees about their own personal desire of optimum, but what is in their opinion desirable to their society.” GLOBE (2004) Interviewees for project GLOBE were selected to be middle management position in order to get a reasonably good grasp of information from customer and supplier perspective.

In project GLOBE the research methodology goal was to differentiate *between* organizational and societal cultures. The goal was not specifically designed “to measure differences *within* cultures or between individuals. Thus In project GLOBE research scales are most immediately useful for cross-cultural rather than intracultural researchers.” GLOBE (2004: 146) Scholars found out that all cultures have in common quite a few basic functionalities as follows below. Scholars concluded that Hofstede’s five cultural dimensions are not sufficient and added four additional to describe the differences of societies better. Below are cultural dimensions found from project GLOBE output. GLOBE (2004):

##### ***Power distance***

###### *Culture construct definition:*

Power distance is defined as the degree to which members of a society expect power to be unequally shared. It represents the extent to which a

community maintains inequality among its members by stratification of individuals and groups with respect to power, authority, prestige, status, wealth, and material possessions. It also reflects the establishment and maintenance of dominance and control of the less powerful by the more powerful.

*Example questionnaire item:*

Followers are (should be) expected to obey their leaders without question

### ***Uncertainty avoidance***

*Culture construct definition:*

This dimension is defined as the society's reliance on social norms and procedures to alleviate the unpredictability of future events. It refers to the extent to which its members seek orderliness, consistency, structure, formalized procedures and laws to cover situations in their daily lives.

*Example questionnaire item:*

Most people lead (should lead) highly structured lives with few unexpected events

### ***Humane orientation***

*Culture construct definition:*

This dimension is defined as the degree to which a society encourages and rewards individuals for being fair, altruistic, generous, caring, and kind to others

*Example questionnaire item:*

People are generally (should be generally) very tolerant of mistakes

### ***Institutional collectivism***

*Culture construct definition:*

This dimension reflects the degree to which individuals are encouraged by societal institutions to be integrated into groups within organizations and the society. Institutional emphasis on collectivism consists of allocation resources and making opportunities available for members of the society to participate in societal legislative, economic, social, and political processes.

This is accomplished through the use of economic incentives such as lenient criteria for organizations to gain non-profit status and therefore be exempt from taxes, and provision of public organizations such as athletic clubs, senior citizen social organizations, and provision of child-care institutions for working mothers. In such societies group membership and cohesion are highly valued. Group goals and interests are more important than individual goals and interests. Important decisions are made by groups rather than individuals, and organizations take responsibility for employee welfare.

*Example questionnaire item:*

Leaders encourage (should encourage) group loyalty even if individual goals suffer

### ***In-group collectivism***

*Culture construct definition:*

This dimension is different institutional collectivism. While institutional collectivism reflects the extent to which a society's institutions favour autonomy versus collectivism, this dimension refers to the extent to which members of a society take pride in membership in small groups such as their family and circle of close friends, and the organizations in which they are employed

*Example questionnaire item:*

Employees feel (should feel) great loyalty toward this organization

### ***Assertiveness***

*Culture construct definition:*

Is the extent to which a society encourages people to be tough, confrontational, assertive and competitive versus modest and tender.

*Example questionnaire item:*

People are (should be) generally dominant in their relationship with each other

**Gender egalitarianism***Culture construct definition:*

Is the extent to which a society maximizes gender role differences

*Example questionnaire item:*

Boys are encouraged (should be encouraged) more than girls to attain higher education.

**Future orientation***Culture construct definition:*

This dimension refers to the extent to which a society encourages and rewards future-oriented behaviours such as planning, investing in the future, and delaying gratification

*Example questionnaire item:*

More people live (should live) for the present rather than for the future

**Performance orientation***Culture construct definition:*

This dimension refers to the degree to which a society encourages and rewards group members for performance improvement and excellence

*Example questionnaire item:*

Employees are encouraged (should be encouraged) to strive for continuously improved performance

In parallel of project GLOBE, naturally other studies were conducted to reach a better understanding of what differentiates cultures. One approach for determining culture from the managerial point of view was explored by Henry W. Lane et al (2004). Actual dimensions of culture are not explored in that book, but culture workings are approached from the leadership point of view. Henry W. Lane et al (2004) suggests that cultures can be

understood better when common cultural parameters are taken into account. Cultural parameters are segregated as follows:

***Assumptions***

Are aspects of culture that are taken for granted. Assumptions do not base on definite proven action - reaction causes, but more to learned should-be's.

***Beliefs***

Are understandings about cause and effect relationships also learned from previous tales or interactions

***Values***

Are preferences for certain states of affairs either in one's own life, in one's society, or in the world in general

***Practices***

Are patterns of behaviour typical of a society. How to greet people etc.

***Institutions***

Include both emergent and explicitly created social structures.

According to Lane et al. (2004) " *Culture is a combination of interdependent gradually changing elements – including assumptions, beliefs, values, practices and institutions – that is distinctive to a particular society*" (Lane et al 2004: 27)

Global managers may benefit by identifying the above combination of parameters when predicting and managing people from different cultures. The next chapter discusses predicting of people's behaviour from the point of view of modern cultural studies.

#### 4.5 Grouping Nationalities with Studied Similarities

Grouping all of world nationalities accurately for definite groups is not realistic as “Many countries have large subcultures” Project GLOBE (2004: 22). For example Finland is known to have different types of subcultures in the East, West, South and North. The similar variety of internal subcultures in a country are common in most geographically or population extensive countries. This thesis concentrates on the relevant cultural dimensions from the perspective of the case company’s business and aims at creating groups of cultures accordingly.

The groundwork in classical studies enables a rough formation of opposite nationalities, but unfortunately most nationalities can be grouped together only with great inaccuracy depending on the cultural dimensions used for grouping. The later studies fine tune, increase dimensions and create more ready groupings that can be used for grouping nations into “a few” groups only as targeted by this Thesis. The target is to find the correct cultural dimensions to group for key market areas and find similar countries for those groups. In project GLOBE the cultural groups were formed as below in Figure 7:



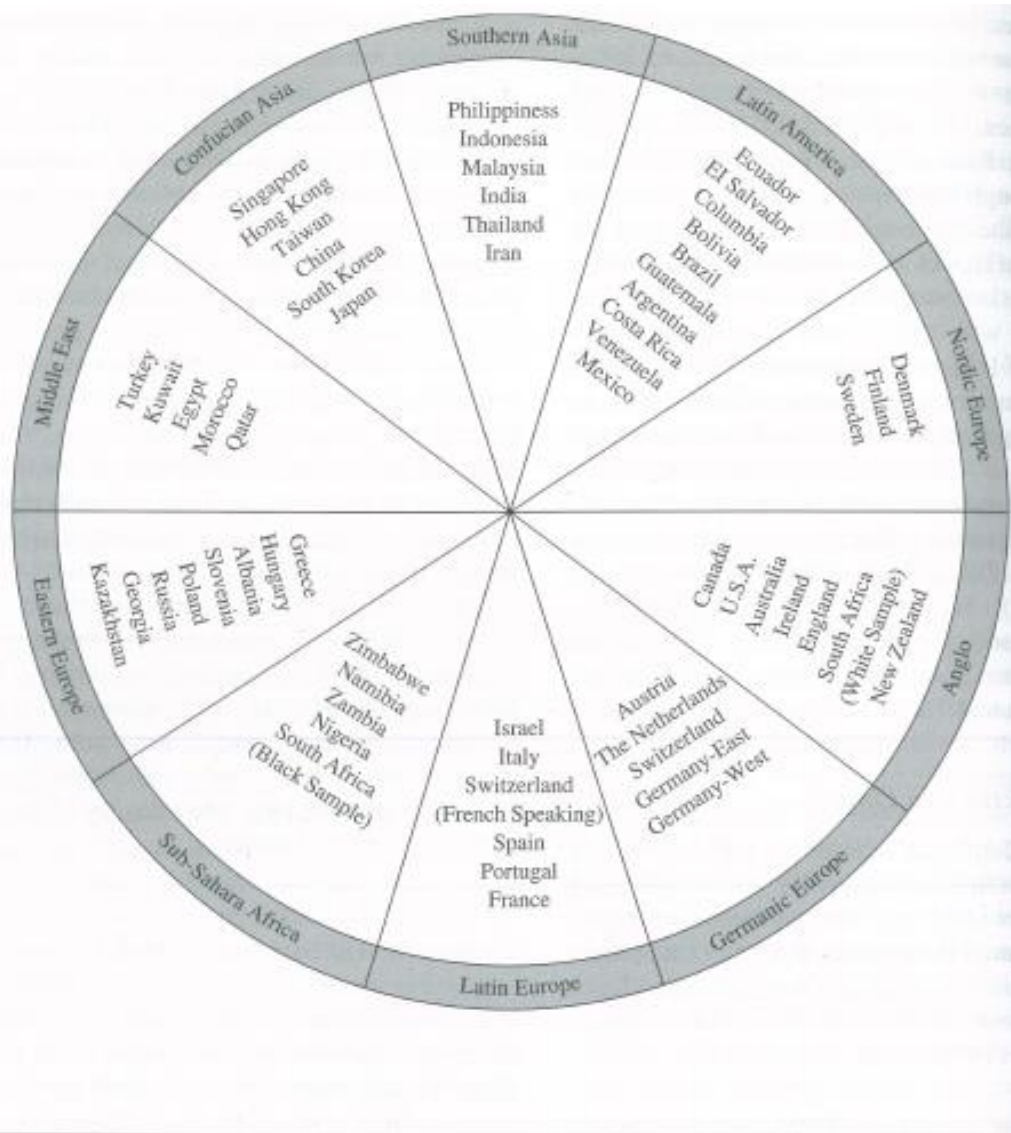


Figure 10.1 Country Clusters According to GLOBE

Figure 7: Caption of country clusters according to project Globe.

In Figure 7 Project GLOBE created cultural clusters for similar countries according to ten cultural dimensions.

For the Thesis, ten nationality clusters is too many and combining of groups is required to be limited to only a few for practical reasons. The aim is not to get every cultural aspect in line but to get business interaction during testing days running smoothly.

#### 4.5.1 Relevance of Cultural Grouping for Case Company

The target setting for the thesis came from management after negative feedback from a single customer group from different culture cluster than the case company after witnessed FAT. The basis and relevance for cultural grouping is crystallized in practice in the following captions from project GLOBE:

“Cultural values and practices help identify socially acceptable and unacceptable behaviour. Two specific arenas for the impact of these values are organizational culture and effective leadership attributes. Organizations are a micro version of the society they operate.” “Organizations are reported to reflect the culture (practices and values) in the society in which they are embedded.”(GLOBE, 2004: 276)

It is suggested that long term business positive impact can be created by improving case company witnessed FAT procedures with customer cultural expectations fulfilling approach.

#### 4.5.2 Relevant Cultural Dimensions for the Case Company Industry

Starting from the classical studies of Hofstede in the sixties and continuing later to scholars such as Trompenaars in the nineties a long debate has centered on the relevant dimensions of cultural foundations. Hofstede’s cultural grouping was relevant in the IBM business context, but the same assumption cannot be transferred to the case company business directly.

It is suggested that not all cultural dimensions are relevant to all industrial sectors and even in industry sectors there is variation in terms of which cultural dimensions are more relevant than others. In the case company industrial products and producing of physical items is relevant and thus the focus is on linear time order fulfilment process. The lifetime of production of customer application versus competition in the market are the main focus and some hypothesis are presented. The hypothesises are supported by literature, experiences of interviewees, and internal documentation.

In this Thesis, the relevant selected dimensions are uncertainty avoidance, future orientation, power distance, and performance orientation. Firstly uncertainty avoidance is dictating how detailed available information is expected to be delivered from the supplier to the customer during interaction.

Secondly schedules or future orientation must be aligned to factory processes in order to get production flowing and customer expectations of used time in harmony.

Thirdly power distance is determining how and with who information is shared and how the decision process is fulfilled according to customer expectations.

Finally performance orientation is seen as relevant from the technical excellence point of view. Quality and problem solving performance that is required can be related to performance orientation and is more important to certain cultures than others. Below are relevant aspects of cultural dimensions from the perspective of the case company with GLOBE (2004) definitions accordingly.

***Uncertainty avoidance = required details in interaction***

*Culture construct definition:*

The extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events

*Example questionnaire item:*

Most people lead (should lead) highly structured lives with few unexpected events

***Future orientation = schedule importance and lead times***

*Culture construct definition:*

The extent to which individuals engage in future-oriented behaviours such as delaying gratification, planning, and investing in the future

*Example questionnaire item:*

More people live (should live) for the present rather than for the future

***Power distance = decision making process***

*Culture construct definition:*

The degree to which members of a collective expect power to be distributed equally

*Example questionnaire item:*

Followers are (should be) expected to obey their leaders without question

***Performance orientation = technical and economical aspect***

*Culture construct definition:*

The degree to which a collective encourages and rewards group members for performance improvement and excellence

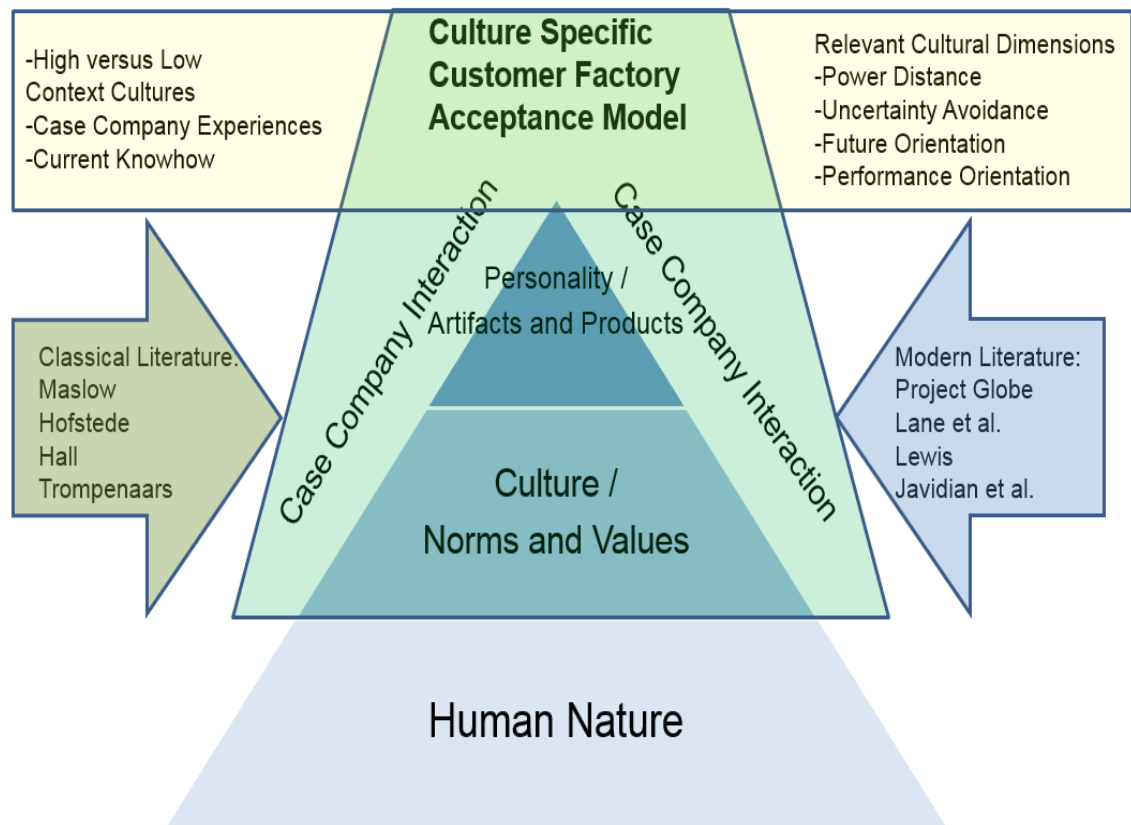
*Example questionnaire item:*

Employees are encouraged (should be encouraged) to strive for continuously improved performance

Later on initial proposal building stage of this thesis above dimension are used for reference to one culture group creation baseline.

#### 4.6 Conceptual Framework of This Thesis

The previous sections discussed the foundations and implications of cultural differences and layers of cultures found in any society. This section presents the summary and holistic frame for the creation of an improved FAT experience model. Figure 8 presents the Conceptual Framework of this Thesis.



*Figure 8 Conceptual Framework*

It is obvious that employees create customer experience in any visit. Therefore the new proposal must concentrate on improving all three time dimensions: firstly preparations of coming visit, secondly actual performance during the phase by building better skills for employees and give advice for overcoming unplanned difficulties in such a way that customer tacit expectations are met in a natural way. Also the environment where the visitors are in gives input for all the five senses. Lastly after-visit interaction, such as promptness of completing punch list and improvement points, creates a final experience.

Finally the studies presented above are used for creating an upper level concept framework for directions. Key findings and target countries are correlated and reviewed in order to create preferably simple guidelines to get a good start for any interaction between employees and customers.

Based on the findings of the CSA the process improvement areas are revised to achieve a better end result.

## **5 Building Cultural Specific FAT model Proposal for the Case Company**

This section combines the results firstly of the Current State Analysis and secondly the Conceptual Framework towards the building of the initial proposal for an improved culture specific customer factory acceptance model.

Data for the proposal creation was collected from three main sources. Firstly from the Current State Analysis in section 3 where the weaknesses of the current procedure are summarized. Secondly literature was explored for related studies of the topic and relevance to the case company objective. Thirdly co-creation with stakeholders in the case company internal workshops offered practical frames for the improvement items. The following chapters discuss the procedure of creating an initial proposition for the case company.

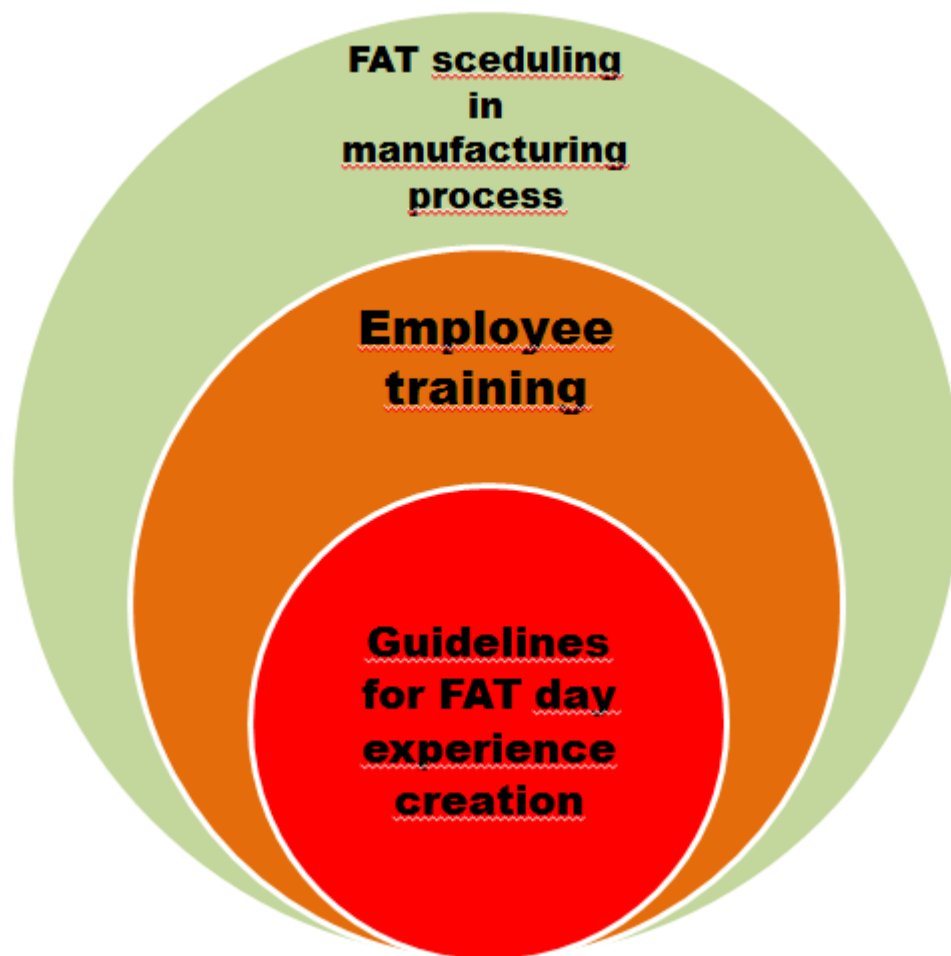
### **5.1 Grouping Cultural Clusters to Case Company Business Relevant Groups**

The need to keep the number of cultural groups small enough to be practical, but still numerous enough that the cultural differences are heeded emerged from the workshops. Modern literature such as project GLOBE suggesting ten cultural clusters was considered to be too numerous for any practical use to case company.

Classical and modern literature points out different aspects of culture to be considered when building the proposal. Firstly cultures are different regarding spoken and written information and that should be taken into account. Secondly cultures' practice of unspoken communication could be beneficial to comprehend in order to not interpret gestures in the wrong way. Thirdly during cultural dimension studies it became clear that certain practices and values are more important to the case company than others.

CSA and literature findings were presented as a basis for workshops with the stakeholders in order to create the initial proposal. From the input of workshops consensus crystallized for reducing the cultural clusters of GLOBE to a total of four wider groups and in addition to that Japan was agreed to be left as a separate culture. Japan is somewhat exclusive from the expected level of different aspects of procedures according to the previous experiences of the case company.

The first realization from the workshops was that when the improved culture specific guidelines are implemented, they will affect the other parts of the order-delivery process also. When cultural expectations are guiding the FAT day it requires manufacturing process schedules to be altered accordingly. Therefore three out of five newly created different culture groups will require an additional time for a FAT slot. Secondly the output of the workshops pointed out the need to ensure that employees in interaction with the customer will receive sufficient cultural intelligence by some kind of training. Below in Figure 9 is illustrated spheres influencing FAT areas.

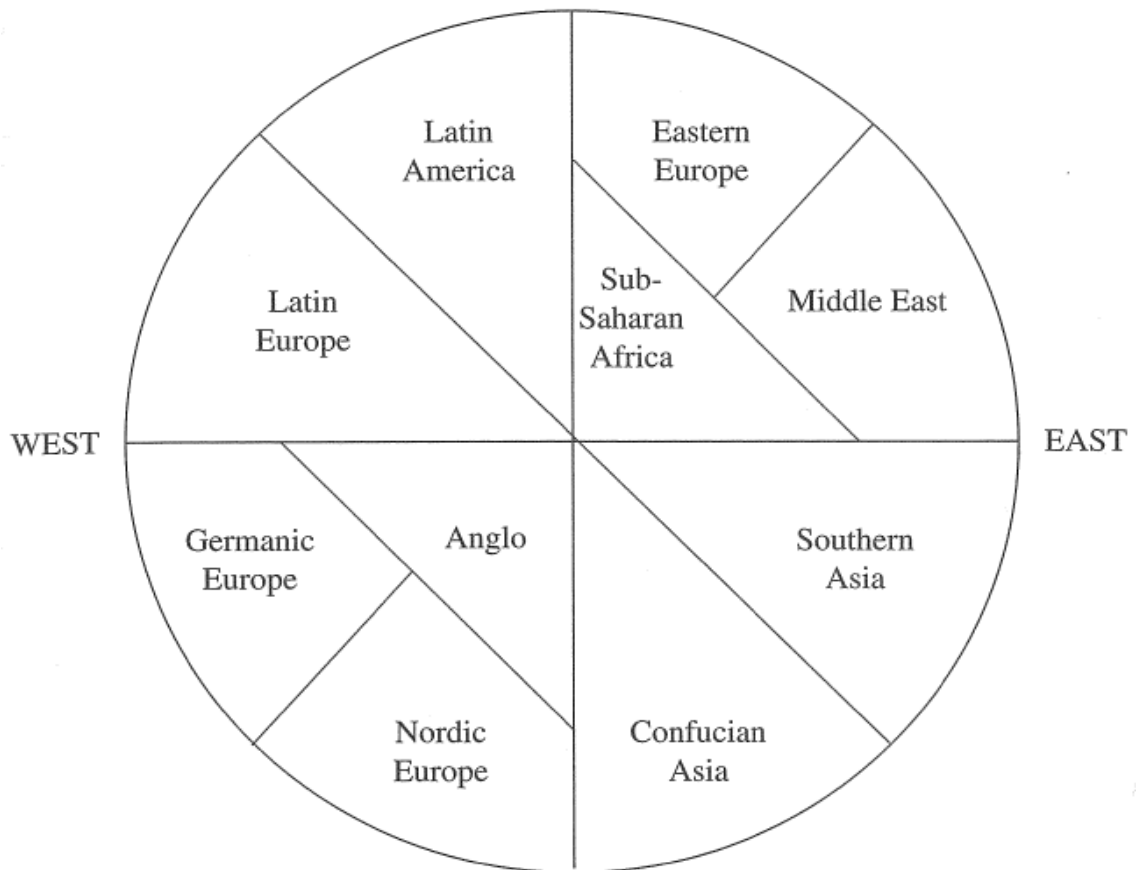


*Figure 9: Output of the initial proposal*

In the core is the FAT day experience of the customer. Middle is involved personnel participating FAT procedure which can be interacted during the day. In the outer rim is the manufacturing process schedules enabling a successful delivery, including sufficient time for FAT needed according to culture specific expectations of schedule.

Firstly for all culture clusters a common weakness currently is that the cultural aspect is not taken into account for case company witnessed FAT procedures. Secondly for some culture clusters important open problem solving process varies currently between projects. The CSA indicates that it is not agreed how to free back office resources to instant problem solving processes. Thirdly it is suggested that expectations between cultural clusters of how informing about problems should be done varies and informing should be done according to culture group expectations.

Classical and especially modern literature gives frames for cultural grouping and cultural cluster creation. The case company business is mainly focused on industrialized countries and the focus of the proposal can be directed to those regional areas. Project GLOBE suggests a metaconfiguration of societal cultures, hinting how the original ten cultural cluster areas can be grouped together.



## 1 Metaconfiguration of GLOBE Societal Cultures

Figure 10: Metaconfiguration of GLOBE Societal Cultures



As seen above in Figure 10, research from GLOBE suggests firstly that Latin America and Latin Europe could be grouped together. Secondly that Southern and Confucian Asia can be grouped together. Thirdly Anglo, Nordic and Germanic Europe could be one cluster. And fourthly Eastern Europe, Middle East, And Sub-Saharan Africa can be combined as one cluster.

From the workshops and case company experiences is summed up that the evidence is not sufficiently aligned with the above GLOBE metaconfiguration and a more business related grouping is agreed to be used for the initial proposal. The chapter below discusses the groupings created in the workshop and later the subchapters discuss the case company business related basis for grouping.

## 5.2 Grouping for Culture Clusters According to CSA and CF

The initial proposal creation is started by cross referencing classical and modern dimensions of culture, level of communication context and cultural attributes found in modern literature.

For the proposal country clusters are combined partly as suggested in the GLOBE metaconfiguration with four greater groups and Japan. Also a few countries that the case company has had interaction with in the past or is expecting to have interaction in the future is added to the groups in Table 15. The case company cultural groups are as follows:

The first group is Latin-Europe, which consist of Latin Europe, Latin America, and Eastern Europa clusters, excluding Israel.

Secondly, the Oriental group is formed consisting of Southern Asia and Confucian Asia, but without Japan, Indonesia, Malaysia, and Iran.

Thirdly, the Western group is formed consisting of Anglo, Nordic Europe, and Germanic Europe. In addition to GLOBE countries Israel, Estonia and Belgium is included in the Western group.

The fourth group is Muslim consisting of Middle East cluster, nations included in the League of Arab states, Indonesia, Pakistan, Bangladesh, Uzbekistan, Malaysia, and Iran.

Outside the grouping, Japan is treated as a single country unit. Basis of the decision is discussed later in 5.2.5 in this section.

The basis for moving some countries to different cultural groups is founded in calculated Muslim-majority in the country PewResearchCenter (2016), previous experiences of conducting business according to interviewees, or workshop discussions with the key stakeholders.

Table 15 lists the case company grouping of GLOBE clusters, additions are marked with an asterisk (\*), and deviations from GLOBE research are listed in the Table as exclusions which are transferred for case company business relevant group as agreed in the workshops with the key stakeholders.

Latin-Europe	Oriental	Western	Muslim	Japan
South Europe	Southern Asia	Anglo	Middle East	Japan
South America	Confucian Asia	Germanic Europe	League of Arab States*	
Caribbean*		Nordic Europe	Indonesia	
Switzerland (French and Italy speaking)		Belgium*	Pakistan*	
Eastern Europe		Israel *	Bangladesh*	
South Africa (Black Sample)		Estonia*	Uzbekistan*	
Sub-Sahara Africa			Malaysia *	
			Iran	
<i>Excluding</i>	<i>Excluding</i>	<i>Excluding</i>	<i>Excluding</i>	<i>Excluding</i>
Israel	Indonesia	-	-	-
	Malaysia			
	Iran			
	Japan			

Table 15: Case company business relevant cultural groups

The following chapters discuss the grouping foundations from the literature and findings from the CSA as agreed in the workshops. With case company cultural group highlighted cultural aspects for guidelines are discussed accordingly.

### 5.2.1 Western Group

The CSA indicates that Western cultures value processes that run technically effortlessly and have the capability of instant problem solving in the supplier company. The strength of back office is appreciated and should be highlighted in the procedures.

Firstly is suggested that the Western cluster encompasses North America, North Europe, Germanic Europe, and Israel, Estonia and Belgium. The dash line representing cultural values is similarly emphasized. Practices are varying some percentages but still the dimensions relevant to the case company are close to each other. Figure 11 illustrates a collection of graphs from project GLOBE

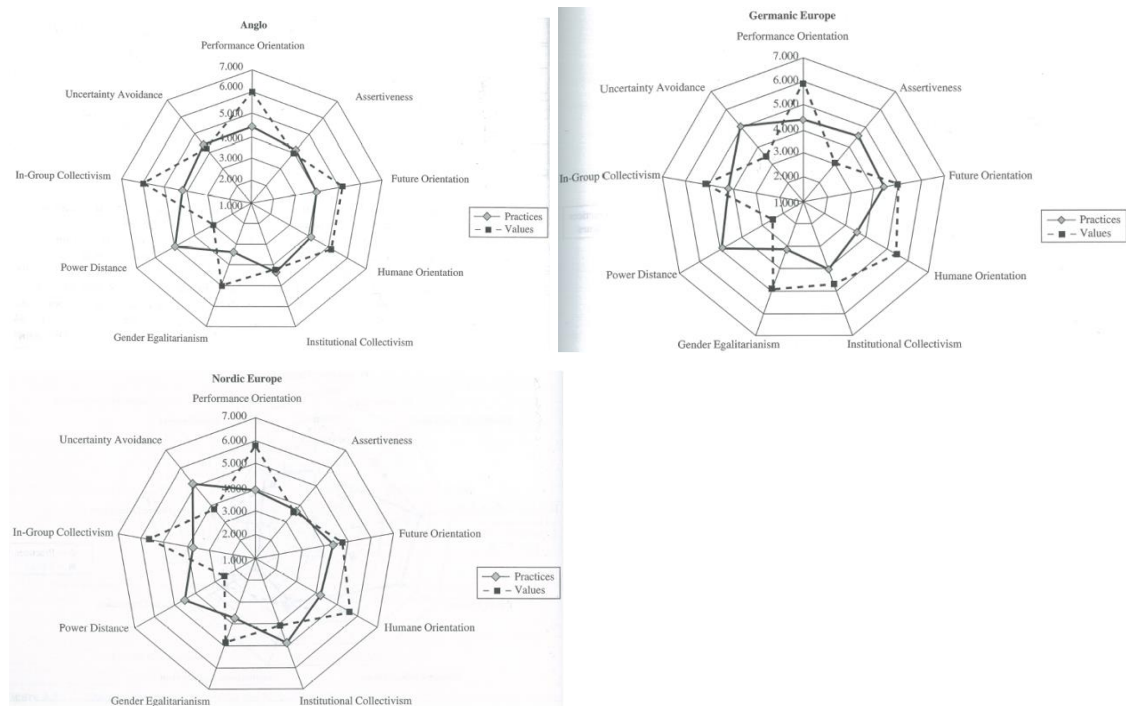


Figure 11: Western group cultural clusters from GLOBE

### 5.2.2 Latin-Europe Group

The CSA suggests that Latinos and Eastern-Europe cultures value flexible problem solving, relationships between individuals doing business, and are easy going with the schedules.

Secondly according to the CSA and workshops together, a group can be formed from GLOBE Latino clusters, Eastern Europe, and Caribbean, French and Italian speaking Switzerland, Sub-Saharan African, and South African (Black Sample). As follows the distinctive dimensions are tolerance for uncertainty avoidance and future orientation unimportance. Outside the business relevant dimensions is distinctive high score on in-group collectivism which is taken into account in the guidelines.

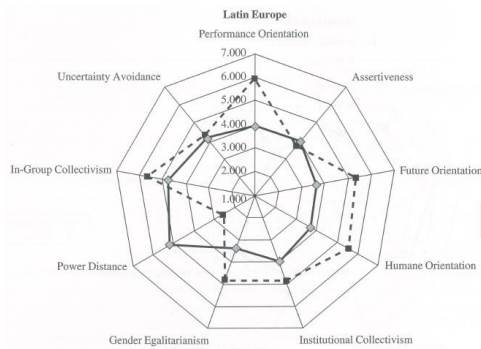


Figure 3.8 Cultural Dimension Scores for the Latin Europe Societal Cluster

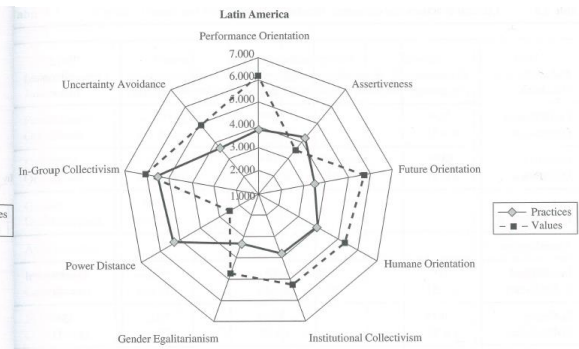


Figure 3.10 Cultural Dimension Scores for the Latin America Societal Cluster

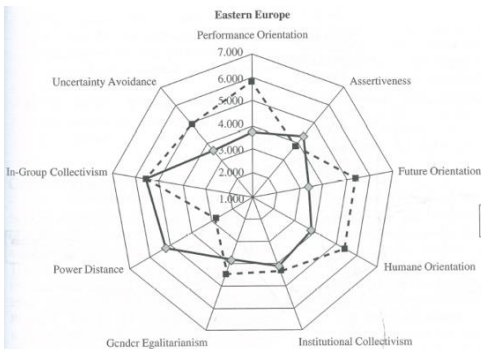


Figure 12: Latino-Eastern Europe culture clusters from GLOBE

### 5.2.3 Oriental Group

From the CSA it can be seen that Oriental nations value pricing of products and have commonly a bit bigger groups of officials participating. The importance of long term planning is also notable for some nations of this group.

Thirdly the Oriental group can be grouped from South Asia and Confucian Asia. In Asia is few Muslim-religious majority countries that are excluded from project GLOBE Asian clusters based on feedback from the workshops. Indonesia, Malaysia, Iran are exported to Muslim group due to case company interactions in history and singled out excluded is also Japan. Basis of Japan excluding is discussed in 5.2.5.

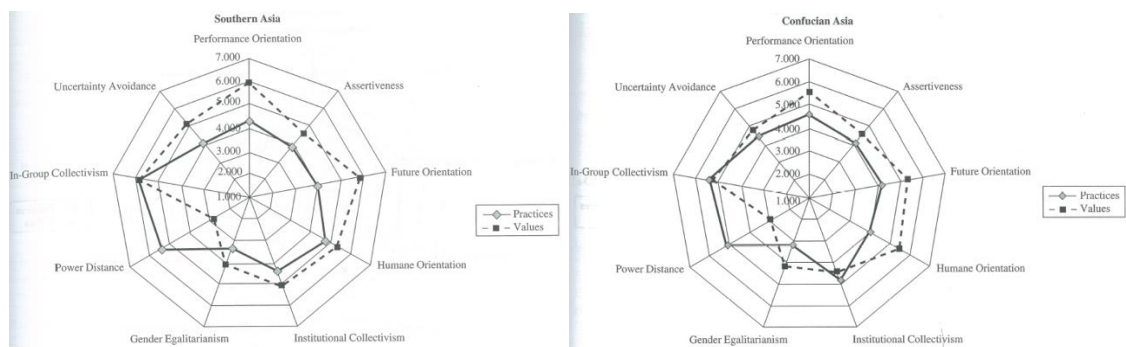


Figure 13: Oriental group formed from GLOBE clusters

#### 5.2.4 Muslim Group

The CSA suggests that Muslims share common traits such as distrust towards Western cultures including case company Finnish people. They consider schedules to be flexible, and value flexible schedule enabling praying moments and other strictly business conduct disturbing issues whenever seen necessary.

Fourthly Muslim cultures are grouped together along with a few nations where the majority of the country's population is Muslim: Pakistan, Indonesia, Malaysia, Iran, rest of the League of Arab states, and Uzbekistan. Notable for the Muslim group is that taking religion into account is emphasized in interaction although the GLOBE dimensions are somewhat close to Oriental group.

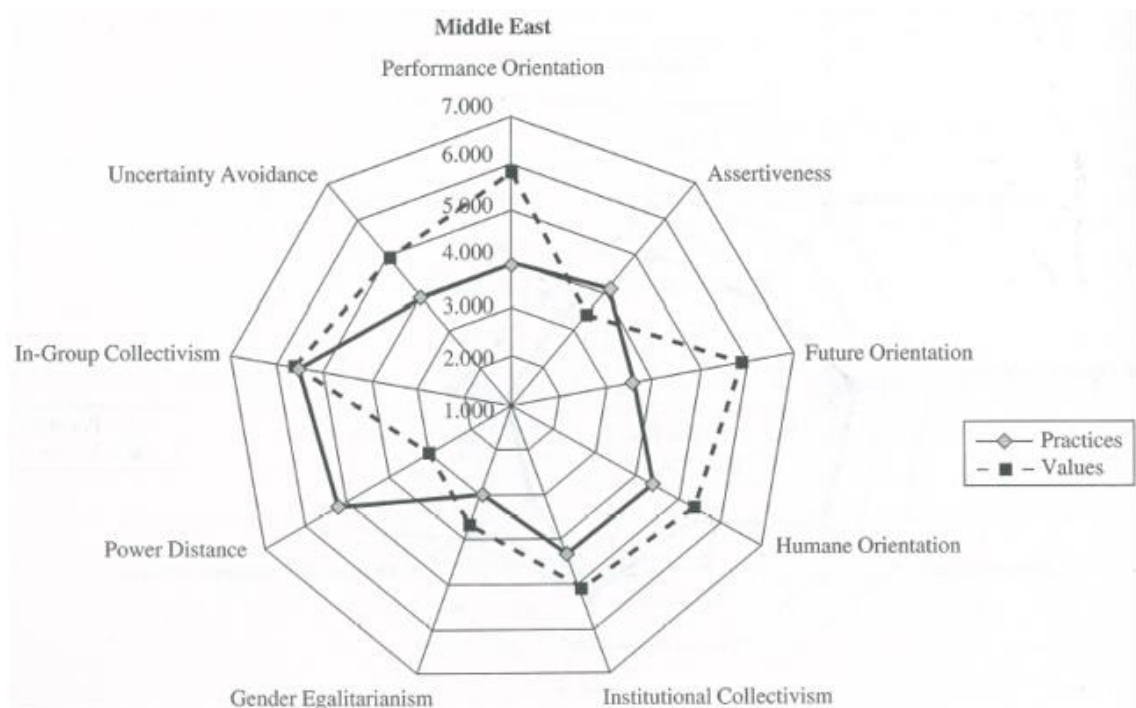


Figure 14: Muslim group formed from GLOBE cluster

### 5.2.5 Japan (Group)

From CSA it is pointed out that Japanese people are unique to some extent in their cultural differences and also with their business conducting practices. Therefore it was decided in the workshops to create Japan specific guidelines for the case company.

The Japanese culture has unique business related features and the case company has conducted business with Japanese companies for several decades. Cultural distances are not individually presented in figures inside GLOBE, but a comparison of Japanese values and practices with Finnish ones from the GLOBE studies is evaluated below in Table 16:

<b>Cultural Dimension</b>	<b>Uncertainty avoidance</b>	<b>Future orientation</b>	<b>Power Distance</b>	<b>Performance orientation</b>
Finland practices	5.02	4.24	4.89	3.81
Finland Values	3.85	5.07	2.19	6.11
Japan practices	4.07	4.29	5.11	4.22
Japan Values	4.33	5.25	2.86	5.17

*Table 16: Globe case company relevant cultural dimensions comparison*

From the GLOBE research it can be concluded that the biggest cultural differences are in business relevant dimensions of uncertainty avoidance and performance orientation.

Firstly in uncertainty avoidance Japanese value more than Finnish staying within the norms and procedures for avoiding unpredictable future events. And in practice the difference of this cultural dimension is even greater. Secondly misunderstandings can arise from a difference of view about what is the expected extent of details provided during performing agreed businesses.

Future orientation and view of schedules is relatively close to both Finnish and Japanese cultures. Patience and calmness is highly appreciated in the Japanese culture. Finnish people are also universally described as calm.

According to the CSA it has become evident to the case company from previous experiences that Japanese customers expect very detailed information of what is under way and that every detail is preferably precisely as we expected. This is suggesting that having all the information correlates to power and can be interpreted that power over the

situation is in Japanese hands. In addition to getting every detail cleared, Japanese customers expect that if some detail is not as expected that detail deviation is resolved internally and resolution is presented to them afterwards, whereas the case company is accustomed to solving problems openly and with sufficient experts involved visibly.

In performance orientation cultural dimension, a notable difference in expectation is according to the CSA the expectation of people commitment to customer service. As an example for a witnessed FAT in Finland the work shift is generally agreed to be the duration of work day, but in Japanese the expectation is that without question the work shift will continue for as long as the customer requires. This level of loyalty to the company is suggested also by Engel et al. (1996)

### 5.3 Synthesis of CSA, CF, and Workshops (Data 2)

The object of this thesis was to improve the currently implemented witnessed FAT procedures to take into account cultural expectations better. The Current State Analysis resulted in generating generic and cultural specific improvements for employees involved in the witnessed FAT process (see 3.9). Most urgently in need of improvement was managing cultural differences when employees interact with visitors outside the case company cultural context or values. As a method to improve the cultural intelligence of employees, internal workshops were arranged where CSA findings and culture specific expectations suggested by literature were evaluated.

During the workshops, a synthesis of case company existing knowhow of foreign cultures in business relevant context was combined with the findings of the literature review. In the first workshop data gathered from the CSA as well from the CF relevant findings were correlated towards key issues in order to build the initial proposal. Also features of an ideal fulfilment level of cultural expectations was determined.

In order to create a solid initial proposal the prepared cultural guidelines were processed in the next workshop within the participants. The objectives were agreed to be simplistic, easy to use, and to target on high level guidelines for employees interacting with the customers during witnessed FAT. The guidelines were mirrored against the currently implemented witnessed FAT procedure and improvements were agreed to apply to interaction inside the factory premises only.



The result of the initial workshops directed the initial proposal towards creating suggestions firstly to production planning to reserve a sufficient amount of time for some culture group FAT sessions. Secondly it was seen important to determine the positions of employees who should have sufficient cultural intelligence validated by training. And finally it was noted that is vital to create culture specific guidelines to different culture groups for employees in direct contact with the visiting customers. The resulting focus areas are presented below in Figure 15.

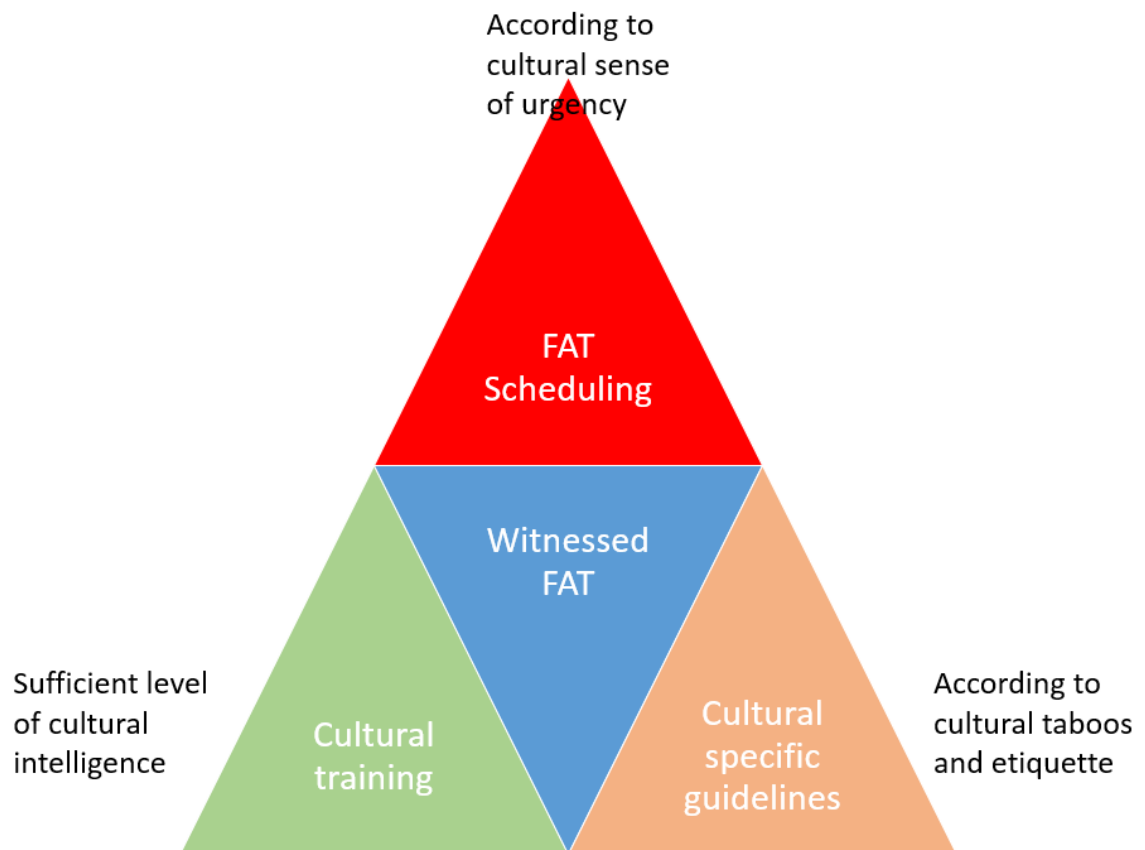


Figure 15 : Cultural specific witnessed FAT process improvement focus areas

In Figure 15 can be seen the focus of procedures being actual witnessed FAT instance. Supportive background features encompasses cultural training, cultural specific guidelines, and cultural specific FAT scheduling to production processes.

### *Cultural training*

Different aspects of implications to processes were evaluated during the workshops and a few, especially the training of employees, was found to be possible problem. The extent of training, resourcing for the training, and especially relevance to case company business will require quite a specific field of expertise. One stakeholder suggested a resolution to problem that should be explored:

“Every now and then local sales unit guy is coming with the customer. It would be great if our LSU guy could stay in the factory for day or two extra and give target country cultural business relevant training to our employees. He would be insider to that culture and be in our business directly”

#### *FAT scheduling*

Implications to order – delivery process was seen as necessary prolonging of testing capacity reservation for some culture groups. One stakeholder noted that this additional time need should be planned months before:

“It seems to be good idea to reserve as standard two days for some culture group tests. At least for the Japanese, Latin-Europeans and Muslim. We learned from the last Japanese project that our schedule rushing turned against us and we actually spent more time for the FAT than would have if we did not rush them”

#### *Cultural specific guidelines*

The starting point for cultural specific guidelines was discussed in the first workshop and it was concluded that in case company business cultural clusters could be narrowed down to four groups, plus Japan as its own. The following logical steps were to create a proposal for these total of five different cultural expectation variations and proceed from there.

Form the workshops the following data was obtained for the purposes of creating the proposal draft. Workshop 1 focused mainly on the order - delivery process implications and narrowing down generic versus cultural specific guidelines. In Table 17, data 2 is categorized.

<b>Workshop no:</b>	<b>area of improvement</b>	<b>Culture group target</b>	<b>Culture specific suggested expectation</b>	<b>pros</b>	<b>cons</b>
1	scheduling	Muslim	Flexible schedule with time for lengthy talks. Convincing of honesty. Praying times if required	Avoidance of feel for rushing. experience improvement	Lead time addition + 1 day. Requirement for additional planning
1	scheduling	Japan	Flexible schedule with time for lengthy talks. Technical details explaining	Avoidance of feel for rushing. experience improvement	Lead time addition + 1 day. Requirement for additional planning
1	scheduling	Latin-Europe	Flexible schedule with time for lengthy talks. Discussions of non-business related topics.	Avoidance of feel for rushing. experience improvement	Lead time addition + 1 day. Requirement for additional planning
1	Cultural guidelines	Muslim	Taboos mindful guides.	cultural collision avoidance	preparation time requirement
1	Cultural guidelines	Japan	Guides specific business expectations	cultural collision avoidance	preparation time requirement

1	Cultural guidelines	Latin-Europe	Guidelines for flexibility	cultural collision avoidance	preparation time requirement
1	Cultural guidelines	Western	Guidelines for valued business features	cultural collision avoidance	preparation time requirement
1	Cultural guidelines	Oriental	Guidelines for valued business features	cultural collision avoidance	preparation time requirement
2	Cultural guidelines	Muslim	Refined main points in guidelines	cultural collision avoidance	preparation time requirement
2	Cultural guidelines	Japan	Refined main points in guidelines	cultural collision avoidance	preparation time requirement
2	Cultural guidelines	Latin-Europe	Refined main points in guidelines	cultural collision avoidance	preparation time requirement
2	Cultural guidelines	Western	Refined main points in guidelines	cultural collision avoidance	
2	Cultural guidelines	Oriental	Refined main points in guidelines	cultural collision avoidance	
2	Training content	Project managers	Cultural collision avoidance. Scheduling variation	Improved customer experience	Lead time addition
2	Training content	Testing personnel	Cultural collision avoidance. Scheduling variation	Improved customer experience	Lead time addition

Table 17: Data 2

As seen in Table 17, three out of five cultural groups are recognized to have different scheduling expectations than current procedures use. Also the cultural expectations of

all created groups can be met better with the use of culturally intelligent guidelines for employees.

#### 5.4 Proposal Draft for Cultural Specific Guidelines

During workshop 2, it was evaluated how well the guidelines fit the case company cumulated experiences from the last decades. The findings of the Conceptual Framework gave a wider context for fragmented experiences and it could be concluded that stakeholder experiences fit the literature findings.

The guideline's objective is to provide compressed, easy to use memory rules for the actual FAT day according to the culture groups. It is basically a list of issues employees should do and list of issues that should be avoided. To support the guideline usage, employees' cultural intelligence should be improved with training and FAT scheduling should be done according to cultural group expectations regarding the progress of FAT days. The guideline for the Latino-Europe group is shown in Appendix 1. The guideline for the Oriental group is shown in Appendix 2. The guideline Western for the group is shown in Appendix 3. The guideline for Muslim group is shown in Appendix 4. The guideline for Japan is shown in Appendix 5.

The proposal for implementing the improved witnessed FAT model is planned to be evaluated in workshops. From the feedback the guidelines and implementation plan are fine-tuned accordingly and the final proposal is created.

Due to the production flow it is difficult to have FAT procedures stopped. Therefore the implementation for the improved model is planned to be completed with a series of publication sessions with the project management and testing personnel. That enables dividing stakeholders to groups of suitable size for sessions without major production disturbances. The commitment of project management and testing personnel management is required for the implementation in terms of freeing time of involved employees for the sessions.

## 6 Validation of the Proposal

This section discusses the validation of the culture specific improved witnessed FAT procedures. The section analyses the results of data 3. The final proposal is built and final action plan suggested for how to implement the improvements.

### 6.1 Overview

The Case Company has implemented a process model for hosting visitors during FAT and feedback from the process is mostly positive from the customers. However some negative feedback has been received related to FAT procedures and previously made analysis indicates that a major factor is some cultures' expectations compared to the hosting process routines used.

The CSA revealed that the cultural aspect is not taken into account in the currently used process and the improvement focus should be on making the process mindful of those tacit issues.

Some practical upgrades are suggested to hosting the currently used FAT process and processes connected to FAT resourcing in the following chapters.

### 6.2 Findings of the Initial Proposal

The proposal for the improved culture specific customer factory acceptance testing model described earlier in section 5 was tested in a workshop with the project key stakeholders from the case company. The workshop included stakeholders from the project management and factory testing functions.

During the workshop the pros and cons of the initial proposal were explored in detail and different scenarios of the process was discussed. The participants' previous experiences were tested against the initial proposal and whenever a deviation was founded, an addition to the proposal was noted. The findings were discussed with the workshop participants and the results are categorized and summarized in Table 18.

Table 18: Findings of Initial Proposal Testing -Data 3

Guideline item	Justification
Generic. Issues of politics and religion discussion into don'ts	Play it safe. No way to know for sure opinions
Generic. Reminder to confirm that FAT day used documents are with the same revision than delivered to customer	Avoidance of FAT day clarifications of documentation differences
Cultural specific. Flexible schedule for some culture groups. Buffer times added	Muslim, Japanese and Latino-Europe FAT procedures are prone to disruptions of proceedings with different reasons
Culture specific. Ingredients of food taken into account for some culture groups	For Muslims Pork is unacceptable.
Culture specific. "Personal mark" preparation for Muslim visitors	Nearly every Muslim FAT an additional test item must be included for the day. Proactive approach with easy limited additional items.
Generic. For too time or resource consuming additional request preparation of clause of impact on lead time	FAT resources and schedules flexibility limits are narrow on FAT day. Multiple projects ongoing with the same resource pool used.
Generic. Symbolic gift processes and guidelines	Some cultures value symbolic gift and rituals for gift giving and receiving included to guidelines
Generic. Town info available to reception	Majority of customers are interested to see town after FAT sessions

Several issues were found during the workshops and guidelines were upgraded accordingly. Also for the generic instruction and guideline documentation some improvements were found for continuous improvement tasks for the future.

### 6.3 Final Proposal for Improved Culture Specific FAT model

The final proposal of culture specific customer factory acceptance testing model is presented as improved generic instruction documentation for project management and testing personnel. In addition to the generic part also the guidelines for culture specific additions are presented in Appendices 1-5. The final proposal has its foundations in Data 3 results of the thesis and are presented in the previously presented Table 18.

This thesis suggests that the country of origin of the visiting customer defines with sufficient accuracy cultural expectations regarding how the customer expects to be treated. Also the same cultural expectations are to be taken into account when making a schedule for FAT. In previous sections it is suggested that a total of five different culture specific guideline sets are needed. Four out of five are a wider group of relevant cultural dimensions similar to the nations grouped together. And outside of the groups is Japan, a significant nation business wise to the case company, with cultural guidelines of its own as Japan did not fit into any groups according to the data obtained in the CSA and workshops. The following cultural groups and improvements are suggested for the currently used model:

#### Group 1: *Latin–Europe*

Production impact:

Adding an extra day for FAT schedule.

Justification for impact:

Cultural time concept is expecting calm proceedings with extensive discussions

#### Group 2: *Oriental*

Production impact:

Internal documentation verification prior to FAT day.

Justification for impact:

Internal documentation revision to ensure similarity with the documents delivered to customer enables efficient FAT



Group 3: *Western*

Production impact:

Internal documentation verification prior to FAT day.

Justification for impact:

Internal documentation revision to ensure similarity with the documents delivered to customer enables efficient FAT

Group 4: *Muslim*

Production impact:

Adding an extra day for FAT schedule.

Justification for impact:

Cultural time concept is expecting calm proceedings with extensive discussions and creating atmosphere of trust with the customer.

Group 5: *Japan*

Production impact:

Adding additional 2 extra days for FAT schedule.

Justification for impact:

Cultural time concept is expecting calm proceedings with extensive discussions and training for procedures before FAT and after or during the FAT.

The guidelines were created and the currently used generic guideline is improved with multiple items surfaced in Data 3. Generic guidelines are the foundation for all witnessed FAT procedures and on top of the generic part the culture group specific guidelines are suggested to be implemented when applicable.

In addition to culture specific guidelines a proposal for training for the employees should be created in the future. Training content and extent of practical training requires a thorough evaluation and therefore within the time frame of this thesis a definite proposal is not presented for the case company.

The current process factory acceptance testing takes a predetermined amount of effective time and is based solely on technical limitations for time usage. As a part of the improved witnessed FAT model, customer expectations of speed for proceedings is sug-

gested to be taken into account in the case company FAT process planning and production scheduling. In the cultural groups of Muslim, Japan, and Latin-Europe this recognition of expectation of timing for showing the test items means that the productivity of a FAT day is reduced compared to Western or Oriental groups.

In practice new process points are not needed to be created, but the production planning should receive information of the customer cultural group from the LSU or from the project management. With the information planning of test time included in the manufacturing process schedules, testing resource reservation and processes can anticipate the needed time addition to around FAT dates. Figure 16 illustrates the processes where culture specific improvements are suggested to be taken into account.



Figure 16 : Proposed Cultural Specific Improved FAT process

As seen in the process flow, only the reservation stage is heavily influenced compared to the current process. A slight effect is also in FAT dates, where back office expertise availability is suggested to be proactively ensured from the convenient department.

#### 6.4 Implementation Plan for the Cultural Specific Witnessed FAT Model

This section suggests a course of actions for the implementation of the improved cultural specific witnessed FAT model. The action plan can be followed in chronological order in the case company.

##### *The Scheduling of FAT for Different Cultural Groups*

In order to get the best out of the new improved guidelines a sufficient amount of time for FAT should be arranged. Thus when customer participation for FAT is confirmed from Latin-Europe, Muslim, or Japan groups the typically reserved time for completing FAT should be extended by roughly an additional half an hour between every testing item. This will create a need to rethink the production schedule for these projects and add an extra day in the beginning of the normal manufacturing process if the delivery date is kept the same.

A workshop for evaluating the process changes should be arranged to project management and testing personnel before the culture specific guidelines are implemented.

##### *Cultural Intelligence Training for Employees*

Employees that are in direct contact with the customer should have good enough knowhow of at least culture specific issues that may be offensive. This thesis is not giving suggestions on what the content and extent of cultural training should be. But it is logical to evaluate the pros and cons for at least limited training of personnel involved in customer visits.

##### *Cultural Specific Guidelines for FAT*

The culture specific guidelines are ready to use and releasing the guidelines into use is suggested to be implemented as soon as the witnessed FAT slot reservation workshop results are part of the process used.

Training and meetings to present the new guidelines should be arranged when the proposal is agreed to be taken into use. In practice the associated employees are involved

in production critical operations and several meetings are needed to get the full coverage of associated employees without production difficulties.

## 7 Discussion and Conclusions

This section discusses the thesis outcome and overall results. Also research evaluation is discussed in addition to recommendations for future actions in the case company.

### 7.1 Summary

The customers of the case company are from a number of different countries world-wide. In some cases customers want to observe first-hand the factory acceptance testing (FAT) of the product purchased for their own reasons. Also insurance companies have a major price difference with certain applications for devices inspected and witnessed FAT by classification societies. During the last years, this FAT session is better understood to be actually an excellent marketing opportunity for the supplying manufacturing company. The rationale for the statement is that when one sees where and how the product is done experience of the visit will influence how the visitor regards the supplier in the future. The case company has created a process for the customer FAT model a few years back, where the aim is to host the entire visiting time in the best professional way possible. This customer FAT model is generally fulfilling its purpose, but with some customers the experience has been unsatisfactory. The case company has recognized that the currently used generic customer FAT model for hosting all different visitors with similar procedures needs to be improved to meet the tacit expectations of the cultures in question.

The objective of this thesis was to improve the currently used witnessed factory acceptance testing model by adding to it the aspect of cultural expectations relevant to the case company business. Frequently received customer feedback suggested that tacit expectations of visiting customer were not always met, although a generic witnessed FAT model is in use. The case company was determined to have the current FAT model improved in such a way that the culture specific visitor expectations of procedures will be met.

The foundation of this thesis was laid upon action research in section 2 where data collection was carried out in different stages. The stages that required a wide range of information were conducted as internal databases research and interviews with the key stakeholders. The findings of the later stages were opened up in workshops in order to

get a deeper cause - effect correlations cleared. The Current State Analysis was performed in order to identify the strengths and weaknesses of the process and model used.

The CSA suggested that the cultural aspect for the generic FAT process is missing a final touch concerning the cultural background of the visitor. Best practices for meeting different cultures' expectations were explored from the literature sources extensively during the creation of the Conceptual Framework of this thesis. Culture and its manifestations are controversial concepts, and the focus was kept on the relevant parts for the case company business.

It can be concluded that certain types of communication context, classification of communication, and some cultural dimensions are more relevant to the case company business than other cultural aspects explored. Combining the case company internal knowhow of frequently visiting cultures with literature findings a set of different culture group specific guidelines were created. The guidelines were purposefully limited to be simplistic and easy to use for employees interacting with the customers due to an assessment at the beginning of objective setting that the risk with extremely detailed guidelines is that they would be left unused.

A total of five different guidelines were considered to be sufficient to fulfil the case company requirements for ensuring that the main cultural expectations of customers could be met. On background of cultural specific guidelines a generic guideline for witnessed FAT was improved on known best practices. The culture specific guidelines were created based on knowledge collected from classical and modern literature and the cultural groups were formed as follows: Western, Oriental, Muslim, Japan, and Latin-Europe. Every cultural group has their own features that can be similar or in extreme cases the opposite to a different cultural group. These culture specific expectations, traditions, habits, and values were explored prior to generating any guidelines.

In addition to the guidelines, supportive process spots of the case company order-delivery process were identified and suggestions concerning production planning are provided as part of this thesis.

The outcome of the study can be considered to be a practical approach to the currently used model with improvements that do not cause massive needs for changing the existing one.

The following chapters discuss the practical implications and overall evaluation of this thesis.

## 7.2 Practical / Managerial Implications

The objective of this thesis was to improve the currently used witnessed factory acceptance testing model for hosting customers from different cultural backgrounds during the testing days. The currently used hosting model already encompasses interaction with the customers starting from the arrival to the local airport, and the proposed improvement is intended to increase cultural intelligence during the interaction.

The managerial implications are proposed to be limited for ensuring that the improved model is taken in use during the FAT and also in the supporting processes. In this Thesis the context for the supporting processes is limited to the production planning phase of the order-delivery process. In the order-delivery process the testing slot is currently scheduled aiming at maximum efficiency in order to support the minimizing of the whole manufacturing lead time. For some culture groups it has been found out from previous customer visits that the FAT slot tends to stretch at the end of the booked slot, generating delays for other projects.

Recognizing the different cultural expectations of cultural groups implies that with Muslim, Latin-Europe, and Japan groups the current time usage in an optimized process should be modified in FAT scheduling. It can be summed up that generating a delay for other projects can be avoided by flexing the FAT schedule a bit proactively with these naturally time consuming customer groups.

Flexing of the FAT slot in current production planning will most likely mean that the start of the delivery process must be modified some and buffer times reserved for early stage processes need to be re-evaluated.

Another implication is the predesigned extended time usage for FAT from the project management and testing personnel. It is suggested that in practice the same amount of extended time is currently used, but it is not predesigned and is creating a need to do overtime for everybody involved.

### 7.3 Evaluation of the Thesis

The improvement items proposed by this thesis was approved by the case company key stakeholders. Thus it can be summarized that these new improvement items fulfilled the business challenge objectives. The research process is discussed in the next chapter in more detail.

#### 7.3.1 Outcome vs Objective

The objective of this thesis was improve used FAT hosting model in such a way that employees can fulfil tacit cultural expectations. In practice to create a proposition for the case company for improved cultural intelligent customer interaction guidelines. The case company of this thesis is exploring ways of improving its current process to better manage the customer visits in the factory premises. The case company is striving to differentiate itself from competitors with superior customer service among other qualities. From the company's perspective, the customer visit to the factory is the best opportunity to market their excellence and the visit should be a perfect experience of witnessing professional world class performance for the customer.

The improved proposal for the culture specific FAT model was built in three stages: firstly the Current State Analysis was performed to analyze existing instructions and guidelines in use for employees interacting with the customer during witnessed FAT. All customers are currently treated with the same model by following a process created for ensuring a good visiting experience in the factory during witnessed final testing of the ordered product. All nationalities are currently assumed to be content with the same procedures and are treated with what is considered to be harmonized proper respect and friendliness, but the company has still received some negative feedback from some of the customers. It can be summed up from some customer feedback that if tacit expectations are not met, this may result in decreased customer satisfaction and reduced tolerance for dealing with all other difficulties, and furthermore of understanding the need for change of plans.

The second stage in improving the currently used model was to find out about culture specific best practices that have been the focus of studies in the last decades in literature and build an initial improvement proposal for the company. It was suggested by management that a similar group specific experience model based on nationality would support and improve the customer experience when visiting the factory. Furthermore the



same suggestion implies that the results of subjective experiences can subsequently be measured by increased Net Promoter Score (NPS) results.

The third and final stage was to collect feedback from the key stakeholders and validate the improvement and its features to fit the case company processes and business environment. After all three prerequisite evaluations, the idea was to create the first proposition for improved guidelines for interaction with the newly grouped nationalities for employees involved in witnessed factory acceptance testing.

The objective for creating culture specific improvements was thus fulfilled. A limited, but practical number of different cultural groups has been formed based on cultural dimensions relevant to the case company and correlation to previous knowhow of the customer expectations were confirmed during the validation phase.

The thesis suggests the implementation plan of the improved culture specific customer experience model in the case organization is done in three controlled steps. This should help the case organization employees to implement new practices in use with consistency.

### 7.3.2 Reliability and Validity

In order to ensure that research was conducted in a rigorous and relevant way the following main topics were built into the research design. Firstly to ensure relevance to the case company a recently acquired customer complaint issue was selected to be used as a reference case for one culture group. Secondly to ensure reliable research a qualitative action study research approach was selected as the methodology for the research. Thirdly data validity and reliability was confirmed by data triangulation from different available sources. Firstly available documentation was explored. Secondly customer feedback from internal IT systems were filtered. Thirdly multiple informants were involved from different functions of the departments interacting with visiting customers. And fourthly the findings were processed in workshops in co-operation with the key stakeholders. The target of this was to ensure the validity and relevance of the proposed improvement items. Finally, the outcome of this thesis improves the known business challenge and therefore meets the objective set.

During the course of this research, extensive data was collected and refined in workshops towards practical improvement. During the workshops discussions alternative approaches and methods for the business challenge objective target were evaluated. Eventually it was unanimously concluded that the proposed improvement scope of items are feasible.

The validity perspective was evaluated from the availability of data in the starting point. The documentation for the process in the case company databases revealed the current level of available instructions. Concerns for limited currently available ready to use instructions was confirmed by the interviews. The variation in interaction and individual case by case solutions was finally confirmed by the previous feedback from the customers.

To conclude, the researcher points out that the guidelines were created, but in order to get the maximum benefit from the guidelines also production scheduling should enable their use. Currently FATs are performed in minimum waiting and idle time in production, whereas in some culture groups it is expected that procedures take more time for one reason or another. The time limit for finishing this thesis was not enough to evaluate and generate the proposal for employee training, and that part is left for future discussions.

#### 7.4 Closing Words

Although the concept of culture can be defined in a myriad of ways understanding basic background expectations of strangers can help avoid cardinal cultural collisions. The context for expectations varies according to the reference setting scene and it is suggested that single, explicit, all-encompassing instructions for how to meet strangers cannot be formed. Still, being aware of different cultural values and practices related to the case company business in order to improve the case company employees' cultural intelligence can be one important competitive edge. The last few decades in commerce have been dedicated to companies transforming from product dominant to service dominant resource use and the case company business is following the same lead. Differentiating itself with customer valued service and cultural value aspects can be the key for continuous success for case company and companies in general. With the cultural group specific guidelines and FAT process improvements case company may have competitive edge in fiercely competed market.

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