Culture sensitive information systems

INTRODUCING A CULTURE SENSITIVE DESIGN APPROACH

T. Hubers

IJM
TU Delft
Culture Sensitive Information Systems

Master thesis submitted to Delft University of Technology
in partial fulfilment of the requirements for the degree of

MASTER OF SCIENCE

in Complex Systems Engineering & Management

Faculty of Technology, Policy and Management

by

T. Hubers

Student number: 4078543

To be defended in public on August 16th, 2018

Graduation committee

Chairperson & First supervisor : Dr. ir. B. Enserink, Section Policy Analysis, TU Delft
Second Supervisor : Dr. Y. Huang, Section Systems Engineering, TU Delft
External Supervisor : S. Arconti, International Justice Mission
Contents

Summary ................................................................................................................................. 6
Samenvatting .......................................................................................................................... 7
Preface.................................................................................................................................... 8

1. Introduction ....................................................................................................................... 9
2. Methodology ..................................................................................................................... 11
   2.1. Methods...................................................................................................................... 11
       Interview: Grounded theory ......................................................................................... 11
       Survey: Questionnaire .................................................................................................. 12
       Literature research: usage of existing concepts ......................................................... 12
       Desk research: observation of system usage ............................................................... 12
       Modelling: creation of system diagram ....................................................................... 12
       Design: development of guidelines of the future system ............................................. 13
   2.2. Structure ..................................................................................................................... 13
       Systematic combining .................................................................................................... 13
   2.3. Research questions .................................................................................................... 14
       Iteration 1 ...................................................................................................................... 14
       Design guidelines .......................................................................................................... 14
       Iteration 2 ...................................................................................................................... 14
   2.4. Activities .................................................................................................................... 15
       1: How can culture in the IJM case be defined and how can existing frameworks be
       applied? ......................................................................................................................... 15
       2: What is the organizational and technical environment of the information system? ...
       3: What is the role of information in Justice System Transformation? .............................. 17
       4: How can the frameworks and environment be translated into an information system?
       ....................................................................................................................................... 17
       5: How can a culture sensitive information system be designed for IJM? ....................... 17
       6: Does this design properly serve IJM’s field offices? .................................................. 18
       7: How can general guidelines for culture sensitive information systems be derived? ... 18
   2.5. Conclusion .................................................................................................................. 18

3. Culture ................................................................................................................................ 19
   3.1. What is culture? .......................................................................................................... 19
   3.2. Measuring culture ....................................................................................................... 20
       Hofstede et al. ................................................................................................................ 20
Knowledge center ........................................................................................................... 51
Awareness & funding ...................................................................................................... 51
Global ownership ............................................................................................................ 52
5.3. External trends ........................................................................................................ 53
Stacks of boxes: software platforms ........................................................................ 53
Bigger platforms: distributed systems ......................................................................... 53
Investigations, analytics & reporting ........................................................................... 54
5.4. Conclusion ................................................................................................................. 54
6. Culture sensitive information systems ....................................................................... 55
6.1. Value sensitive design ............................................................................................... 55
Conceptual investigations ............................................................................................. 55
Empirical investigations ............................................................................................... 56
Technical investigations ............................................................................................... 56
6.2. Specification of values: culture ................................................................................ 56
Cultural dimensions ....................................................................................................... 56
Specification per part ................................................................................................... 57
6.3. Conclusion ................................................................................................................ 57
7. Design guidelines for IJM ............................................................................................ 58
7.1. Conceptual investigations ......................................................................................... 58
Direct stakeholders ....................................................................................................... 58
Indirect stakeholders .................................................................................................... 59
Implicated cultural values ............................................................................................ 59
Competing cultural values .......................................................................................... 60
Approach in weighing tradeoffs .................................................................................. 61
7.2. Empirical investigations ......................................................................................... 62
Culture in information systems usage ......................................................................... 62
Individual prioritization cultural values & usability .................................................... 63
Organizational prioritization ....................................................................................... 64
7.3. Prescriptive technical investigations ...................................................................... 64
Technical properties ..................................................................................................... 65
Impact on cultural values ......................................................................................... 66
Solve or tradeoff .......................................................................................................... 67
7.4. Conclusion: deriving design guidelines for IJM ..................................................... 69
8. Design guidelines validation ....................................................................................... 70
8.1. Approach ................................................................................................................ 70
8.2. Results ..................................................................................................................... 70
General remarks .............................................................................................................. 70
Increasing local benefits ............................................................................................... 71
Bridge to digital ............................................................................................................. 72
Sharing sensitive information ....................................................................................... 72
Changes over the past months ....................................................................................... 73
8.3. Design guidelines .................................................................................................... 73
8.4. Conclusion ................................................................................................................ 74
9. Generalizing IJM’s case .............................................................................................. 75
  9.1. Case study .................................................................................................................. 75
  9.2. Culture sensitive design methodology ................................................................. 75
  9.3. Generally applicable design guidelines ............................................................... 76
  9.4. Conclusion ................................................................................................................ 76
Conclusion ....................................................................................................................... 77
References ....................................................................................................................... 78
Appendix I – Questionnaire protocol ........................................................................... 81
  Personal profile ............................................................................................................. 81
  Cultural background ..................................................................................................... 81
  Information & culture .................................................................................................. 82
Appendix II – Interview protocol .................................................................................. 83
  Phase 0: Introduction .................................................................................................... 83
  Phase 1: Get to know person ....................................................................................... 83
  Local - Phase 2: Role and dealing with information .................................................. 83
  Regional - Phase 2: Role and dealing with information ............................................. 84
Appendix III – Scalable Justice System Transformation .................................................. 85
Appendix IV – Solution approaches summary .............................................................. 86
Appendix V – In-depth interview results ......................................................................... 86
Summary

A Dutch summary is available on the next page.

Zie volgende pagina voor een Nederlandse samenvatting.

Slavery is a worldwide reality. The current estimation is that around 40 million people live in slavery today (International Justice Mission, 2015, 2018b, 2018c). Slavery, together with other forms of endemic violence, are propagated by impunity. Justice systems exist to provide rule-of-law, but impunity thrives when these are non-existing, broken or dysfunctional. A justice system consists of several parts. When one of these links fails (due to corruption, poverty or historic reasons), the entire system will produce negative effects. Justice System Transformation is needed to then reinstate rule-of-law and to reduce impunity and violence (Haugen & Boutros, 2014).

International Justice Mission (IJM) uses a three-phase model to engage in Justice System Transformation (JST) in local communities. Summarized, these three phases are: 1.) collaborative casework: finding, rescuing and caring for victims and prosecuting perpetrators. This is often done in collaboration with local partners. 2.) system reform: assessing and improving justice systems by training, cooperation and capacity building. 3.) sustaining gains: while decreasing casework activity measurement and evaluation takes place, local ownership is used for sustained justice system improvement. These steps together enable (and measure) Justice System Transformation (International Justice Mission, 2016).

JST can only be performed at scale and measured successfully when supported by an effective information system. The vast number of cases, the intricacies of each individual story, and the nuances of strategies applied to address issues in the public justice system make it too complex for individuals to track manually. Reporting on achievements and data analytics performed to measure the success of transformation strategies is best performed by a system.

This information system is used by various people in field offices across the globe. Inherently, much cultural diversity is present. In order to design the system in such way that it can optimally support the work of people with various national and professional background, a culture sensitive information system should be designed. Culture is a concept with many definitions, a structured approach is therefore preferred to be able to analyze background diversity. Combining these elements led to the following main research question:

How can a systematic approach to culture be translated into design guidelines for a culture sensitive information system design?

Multiple models aiming at structuring cultural diversity are discussed in this report. Hofstede et al.’s (2010) national background dimensions and Curry & Moore’s (2003) information culture model are used to structure culture. The case study is performed using a questionnaire based on these models. In-depth interviews and an analysis of how IJM aims at improving justice systems and how the information system should facilitate this provided additional insight.

An adaptation of Value Sensitive Design (B. Friedman et al., 2009) has been developed, called the Culture Sensitive Design methodology. Cultural value conflicts that show resemblance with issues mentioned in in-depth interviews are further researched. To solve these, design guidelines have been developed and validated. These results show that a systematic approach to culture can be translated into design guidelines for a culture sensitive information system design by performing a case study and applying the Culture Sensitive Design methodology.
Samenvatting

Slavernij is een wereldwijde realiteit. Volgens huidige schattingen leven op dit moment 40 miljoen mensen in slavernij (International Justice Mission, 2015, 2018b, 2018c). Slavernij, samen met andere vormen van grootschalig geweld worden gevoed door straffeloosheid. Rechtssystemen bestaan om de rechtsstaat te beschermen. Straffeloosheid floreert als deze systemen ontbreken, beschadigd zijn of slecht functioneren. Als een van de schakels waaruit een rechtssysteem is opgebouwd breekt (door corruptie, armoede of historische redenen), zal het hele systeem negatieve effecten genereren. Transformatie van rechtssystemen is dan nodig om de rechtsstaat te herstellen en straffeloosheid en geweld te reduceren (Haugen & Boutros, 2014).


Alleen wanneer een goed informatiesysteem de transformatie ondersteund kan grootschalig effect worden bereikt, dat ook daadwerkelijk gemeten kan worden. Het grote aantal zaken, de eigenaardigheden van elk individueel verhaal en de nuances van strategieën maken het onmogelijk om handmatig overzicht te houden. Een informatiesysteem is nodig voor het rapporteren van bereikte doelen en het meten van succes van verschillende strategieën.

Het informatiesysteem wordt gebruikt door allerlei mensen, wereldwijd verspreid in veldkantoren. Daaruit volgt een grote culturele diversiteit. Om het werk van deze mensen met verschillende nationale en professionele achtergronden optimaal te ondersteunen moet een cultuursensitief informatiesysteem worden ontworpen. Cultuur kan op vele manieren gedefinieerd worden, een structurele aanpak heeft daarom de voorkeur om diversiteit in achtergrond nauwkeurig te analyseren. Dit leidt tot de onderzoeks vraag:

*Hoe kan een systematische benadering van cultuur vertaald worden naar ontwerprichtlijnen voor een cultuursensitief informatiesysteem?*


De methodologie Cultuursensitief Ontwerp is ontwikkeld naar aanleiding van Waardensensitief Ontwerp (B. Friedman et al., 2009). Botsende culturele waarden die ook aan bod komen in de diepte-interviews zijn onderzocht. Om ze op te lossen zijn ontwerprichtlijnen ontwikkeld en gevalideerd. Deze resultaten tonen dat een systematische benadering van cultuur vertaald kan worden naar ontwerprichtlijnen voor een cultuursensitief informatiesysteem, door middel van een case studie en het toepassen van de Cultuursensitief Ontwerp methodologie.
Preface

Global developments in population growth, international trade and information technology drive an acceleration of poverty reduction, welfare and innovation, but these exponential developments have their downsides too. The endemic lack of freedom for over 40 million people is harmful and unnecessary. Though this problem seems massive, the potential impact of organizations and tools existing currently is too.

International Justice Mission puts this understanding boldly in its mission to definitively end slavery, in our lifetime. The feasibility of this mission is supported by the evidence gathered over the past 20 years and will further be supported by a strong emphasis of leveraging the abilities of information systems in the future.

Personally, I can’t think of a better place to do a case study into what a culture sensitive information system would be like than in this organization, where a Christian foundation is combined with a professional and data driven approach and the courage to use it.

During this research, numerous people have provided essential help. I am grateful to have met so many inspiring people at IJM. Thank you, AMOS team colleagues and in particular Stephanie Arconti, Asia McLaughlin and Dave Shaw. Thank you, Terence Fitzgerald, for being a mentor. People spread across the globe in field offices who gave up some of your valuable time to provide a glimpse of your everyday work, thanks a lot, it was a pleasure. At Delft University of Technology, Bert Enserink and Yilin Huang provided guidance and valuable feedback throughout the whole process, from the first explorations until the end result, thank you! I am grateful for all friends and family, who (financially) supported the journey and made it possible. My special thanks, and love, go out to Arline, thank you for your provided wisdom and the courage to join in this awesome adventure.

Amersfoort, July 2018
T. Hubers

*Human progress is neither automatic nor inevitable... Every step toward the goal of justice requires sacrifice, suffering, and struggle; the tireless exertions and passionate concern of dedicated individuals.*

*Martin Luther King, Jr.*
1. **Introduction**

Meet Gabriel\(^1\), a young man of 18 years old. He lived on Lake Volta, Ghana, since he was 11. He spent his days on a fishing boat. His occupation was to fish; getting large fishes and big nets on board, and deep diving to fix stuck nets on the lakes bottom. This continuous work for 7 days per week, 12 hours per day, without rest, made him exhausted and quiet. Thousands of boys like him live on this lake, over half of them are estimated to be enslaved. Slavery does not only occur on small scale, it is a worldwide phenomenon. It is currently estimated that 40 million people live in slavery globally (International Justice Mission, 2015, 2018b, 2018c).

Slavery, together with other forms of endemic violence, are propagated by impunity. Impunity thrives when laws that are in place are not enforced to protect the vulnerable. This is a situation in which 4 billion people currently live (International Justice Mission, 2018c). Justice systems exist to provide rule-of-law, but impunity thrives when these are non-existing, broken or dysfunctional. A justice system consists of several parts: law enforcement (e.g. police), public prosecution, legal defense and judges. When one of these links fails (due to corruption, poverty or historic reasons), the entire system will produce negative effects. To then reinstate rule-of-law, reduce impunity and violence and in the end provide freedom for people like Gabriel, a transformation of the justice system is needed (Haugen & Boutros, 2014).

International Justice Mission (IJM) uses a three-phase model to engage in Justice System Transformation (JST) in local communities. IJM has a global footprint with 17 field office locations. One of these locations is in Accra, Ghana, where they work to address slavery on Lake Volta. Summarized, the three phases are: 1.) collaborative casework: finding, rescuing and caring for victims and prosecuting perpetrators. This is sometimes done in collaboration with local partners. 2.) system reform: assessing and improving justice systems by training, cooperation and capacity building. 3.) sustaining gains: while decreasing casework activity measurement and evaluation takes place, local ownership is used for sustained justice system improvement. These steps together enable and measure justice system transformation (International Justice Mission, 2016).

JST can only be performed at scale and measured successfully when supported by a good information system. The vast number of cases, the intricacies of each individual story, and the nuances of strategies applied to address issues in the public justice system make it too complex for individuals to track manually. Reporting on achievements and data analytics performed to measure the success of transformation strategies is best performed by a system. An extra layer of complexity in this is the influence of the diversity in cultural backgrounds of the global end-users of this system.

A culture sensitive information system should be designed to enable global communication which is usable for different stakeholders at different positions. This also enables better data collection and aggregation, which in turn helps International Justice Mission in achieving its ambitions for 2030.

This research will perform a case study to explore how a systematic approach to culture can be translated into design guidelines for a culture sensitive information system design. The structure of this case study, the methodological toolbox and corresponding activities are

---

\(^1\) A pseudonym is used to ensure this man’s privacy.
elaborated upon in chapter 2. Multiple systematic approaches to model culture are explored in chapter 3, which are also used to assess IJM’s diversity in national cultural values and information culture. Chapter 4 further discusses IJM’s work processes, the three-phase model and what this means for the organizational and technical context in which the information system will be deployed. This is further developed into the different information flows that can be supported by the system in chapter 5. The value sensitive design methodology is adapted to facilitate the development of design guidelines for culture sensitive technology in chapter 6. An application of this adjusted method in the current case study is performed in the 7th chapter. Chapter 8 elaborates on the perceived effect examples of implementations of these guidelines. Learnings derived from that iteration will be displayed and generalized beyond the current case study in chapter 9. Finally, the conclusion will formulate an answer on how culture sensitive information systems can be designed.
2. Methodology

The aim of this research is to both contribute to the specific case of IJM and to the broader perspectives on system transformation and culture sensitive information systems. For IJM, it is important to be able to apply insights to the daily practice and development of systems. In a broader perspective though, generalizability is more important.

A risk in constructing theory from a single case is that the outcomes are biased towards the case, and therefore are not reflecting reality adequately. The qualitative research field has developed methods to handle this risk. This also enables obtaining deeper insight than is possible when multiple situations are examined (Corbin & Strauss, 2015).

At first, the methods (e.g. grounded theory, literature research) for obtaining the knowledge needed for the goals are described. Secondly, the systematic combining structure for case study research is presented to create a process in which the methods can be applied. The balance between serving a single case and gaining broader insights is also covered in this structure. The third paragraph links the methods, structure and sub research questions. The fourth paragraph lists and describes the activities carried out to answer these questions.

2.1. Methods

All methods listed in this paragraph can be considered tools, together constituting a toolkit. The different kinds of knowledge needed to meet the goals can be obtained by using different tools. The scientific background of each method is described in this paragraph, whereas specific usage will be discussed in paragraph 2.4 Activities.

Interview: Grounded theory

The grounded theory methodology aims at understanding the chaotic and messy daily practice by either constructing or distilling theory of visible patterns (Glaser & Strauss, 1967). Interviews can help researchers to create insights in a subject. Answers and stories told by respondents however are messy, they consist of feelings, emotions and experiences with the subject. Together these are a viewpoint, rather than giving direct objective insight. By coding the concepts behind these stories specifically, a structured theory can be generated (Corbin & Strauss, 2015).

E.g. by interviewing Vietnam veterans a theory linking the concepts of anger and post-war emotional processing can be constructed (Morse et al., 2009, pp. 45–50).

After the initial grounded theory method was established a difference in approach surfaced. Glaser’s approach compares data internally, in this way theory/insights can emerge from data. The insights that were inside the data are distilled. Strauss & Corbin on the other hand work on theory construction, with a critical role for the researcher. Corbin emphasizes the interaction between the data and the researcher’s interpretation (Hallberg et al., 2010; Morse et al., 2009). This constructivist approach is preferred in this research because the interpretation of reality matters as much as the observed facts do. This is a useful guidance in creating the rounds of interviews in this research.

The research contains several rounds of interviews. The questions for these interviews aim to understand a person, his/her situation, and way of working. These conversations are structured by using literature and initial conversations. This is further discussed in paragraph 2.4 Activities.
Survey: Questionnaire

A survey can be conducted to gain understanding of a group. The main part of this survey is a questionnaire. This enables retrieving short answers to many questions, without reducing available time for the in-depth interview.

This survey is distributed amongst the same respondents as the in-depth interview. As will be discussed in paragraph 2.4 Activities, the questions asked are derived from existing culture research questionnaires.

With sufficient respondents, this type of research can be used for quantitative (e.g. statistical) research methods. The group size in this research however, is too small for statistically significant results. The results are therefore to be viewed qualitative results, additional to the in-depth interviews.

Literature research: usage of existing concepts

The multidisciplinary nature of this research implies that concepts from several fields of study are involved. Prior work will be used as building blocks. Literature research is used to incorporate prior knowledge into the process and to combine existing elements in culture sensitive information systems.

Especially three main concepts will be analyzed using existing literature: culture, justice systems and information systems. These concepts are all complex and pluriform. Naturally, the methods and structure of this research itself is also based on prior work.

The regular activities were conducted in literature research: search engine usage, back- and forward snowballing, identification of influential journals, authors and papers. Specific focus is on structuring concepts like culture. Models provide a perspective on a concept in which several parts (like cultural dimensions) of the concept are distinguished. Publications providing such models are investigated, including follow-up research in which such models were refined, tested and implemented.

Desk research: observation of system usage

The technical environment of the design is researched by examining currently used systems. In cooperation with the main developer of the system, some technical issues were investigated. At the same time the structure of the software and underlying databases become clearer. This structure relates to the processes in IJM field offices and gives additional insight into routines and daily practice.

Modelling: creation of system diagram

To obtain a broad overview and understanding of the information flows that need to be facilitated by the next information system, IJM’s understanding of how a justice system works is modelled in a system diagram. Existing theory on how justice systems work and what can be done to influence these is used for a system overview. Information flows are derived from this overview.

A system diagram in this context is a collection of factors and how these influence each other. By creating this, paths of causal relations can be derived.
Design: development of guidelines of the future system

For the specific problems identified in the previous parts of this research, solutions are designed. These designs are not build out into details but formulated as design guidelines: statements that help a designer in applying principles, without constraining implementation freedom.

Since culture correlates with values, a culture sensitive design methodology is similar to designing value sensitive. The existing Value Sensitive Design (B. Friedman et al., 2009) approach can be used for deriving design guidelines (Pitt & Diaconescu, 2016). This approach will be discussed and used for creating the Culture Sensitive Design approach in chapter 6, which is applied in chapter 7.

2.2. Structure

Balancing between improving a single case’s situation and generalizing findings, while applying existing frameworks, requires a structure that accommodates for the relation between the case, frameworks, empirical world and theory.

Systematic combining

The structure of this research is mainly derived from the abductive approach to case research by Dubois & Gadde (2002). This enables the development of generic theory inferred from the case. They introduce the framework of Systematic combining, which is presented below.

![Figure 2.1: Systematic combining (Dubois & Gadde, 2002)](image)

This framework assumes a non-linear approach with two steps: matching and (re)direction. Matching is the process of going back and forth between the case and a generic framework, researching the single case. Direction and redirection is the process of aligning the research with both the empirical world and theory, to decrease single case bias. Dubois & Gadde call this also triangulation, i.e. adding an extra orientation point for more precise estimation. These processes together enable abductive reasoning.

Two iterations of these steps will be performed. One round of matching (case, framework) and direction (theory, empirical world) will be the first iteration. After this, a prototype will be designed to improve the situation in the case. Lastly another round of matching and direction is the second iteration. The specific translation of this approach in the case of IJM and the sub research questions will be presented in the next paragraph.
2.3. Research questions

As discussed in the introduction, the main research question is: *How can a systematic approach to culture be translated into design guidelines for a culture sensitive information system design?*

Using the structure discussed in the previous paragraph to answer this question, several sub research questions emerge. This paragraph lists and briefly explains these sub questions. A further breakdown in activities will be presented in the next paragraph.

Iteration 1

1. *How can culture in the IJM case be defined and how can existing frameworks be applied?*

   This question explores existing frameworks and definitions of culture. These theoretical frameworks will also be applied to the case of IJM.

2. *What is the organizational and technical environment of the information system?*

   This provides an overview of the organizational and technical environment in which the culture sensitive information system will be deployed.

3. *What is the role of information in Justice System Transformation?*

   IJM’s main goal is protecting the poor from violence. To achieve this, justice systems in the developing world are improved. IJM calls this process Justice System Transformation (JST). This requires an information system. This sub question gathers input for the system part of the culture sensitive information system.

4. *How can the frameworks and environment be translated into an information system?*

   This sub question presents what this information system for justice system transformation would look like from a high-level perspective.

Design guidelines

5. *How can a culture sensitive information system be designed for IJM?*

   This sub question presents guidelines for designing a culture sensitive information system. These design guidelines are translated into what the features would look like in the current system to be able to validate in the next iteration.

Iteration 2

6. *Does this design properly serve IJM’s field offices?*

   After the guidelines have been used to create a prototype or mockup, a second iteration within the systematic combining framework is started. The effectiveness of the culture sensitive information system will be examined in this sub question.

7. *How can general guidelines for culture sensitive information systems be derived?*

   The last step is an abductive approach to derive general guidelines for the design of culture sensitive information system. This generalization will be based on the design guidelines that have been specific to the case of IJM so far.
2.4. Activities

This paragraph lists all sub questions previously presented and shows all steps that need to be executed to achieve the desired result. These activities are mainly implementations of the tools presented in paragraph 2.1 Methods.

1. How can culture in the IJM case be defined and how can existing frameworks be applied?

Cultural framework overview

To apply systematic approaches to culture they must first be known. Literature research and interviewing experts are two complementary methods to achieve this. Several literature research tools are available (Google Scholar, Scopus, Mendeley, university repositories).

IJM case characteristics

The case of IJM certainly contains cultural diversity, but the characteristics of this are yet unknown. To be able to apply one or multiple frameworks on the case, these characteristics need to be clear. The global IJM staff knows the organization best, interviewing them will be the preferred method for this. People from different parts of the organization will be surveyed with a questionnaire and an in-depth interview in a Grounded Theory approach.

Questionnaire setup

Additional to the in-depth interviews a questionnaire is used to obtain systematic insight in the cultural background of people; their values and their information culture. Several frameworks for assessing a (mainly national) cultural background. These models, their pros and cons and suitability for identifying cultural diversity within an organization is discussed in chapter 3.2 Measuring culture. Even with significant downsides, Hofstede (2010) is considered most suitable to analyze the impact of cultural diversity on information system’s usage. This framework is also considered the de facto standard in culture research in an information systems context (Ali et al., 2009).

The questionnaire used is derived from the Value Survey Module (Hofstede, 2013). Information culture, additionally to national culture, is assessed through the questionnaire provided by Curry & Moore (2003). Several changes are made to increase easier understanding by respondents. Some information culture questions regarding other technology platforms are removed. Question formulation has been adapted to current common language and IT standards. Both questionnaires are based on 5-point scales, but the direction of these are inconsistent. Answering scales are made consistent where a score of 1 corresponds to the lowest value and a score of 5 corresponds to the highest value. The final questionnaire is included in Appendix I.

Questionnaire processing

After adapting the answer scales back to the original format, the VSM Manual (Hofstede & Minkov, 2013) is used to process the results of the Hofstede part of the questionnaire. Two adaptations have been made; individual scores have been used instead of country means and after calculation of the weighted score, the score was normalized to enable comparison across

---

2 See also paragraph 2.1 Methods
axes. N.B. no country survey is conducted, the results are merely used to obtain a qualitative overview of IJM’s culture.

The Information culture questionnaire has been qualitatively interpreted since no predefined quantitative method was available. Also, since the group of respondents is too small for significant statistical analysis, these results will be discussed qualitatively.

**Interview setup**
The interview³ is divided over two phases, which in a conversation will not necessarily be distinguished. The first phase aims at getting to know the respondent. Introduction questions are asked, as well as some question to determine someone’s role and position, previous experience and expertise in general. The second phase is different for field office staff and regional oriented staff due to the different characteristics of work processes. For both, questions about their work, information systems usage and routines are asked. Typical stakeholder position questions about importance and worries in the respondent’s job are asked to determine what their relation to other people in the organization is.

Finally, as last part of the second phase, questions about the information culture are asked. Local field office staff get questioned about the importance of information, the cooperation with headquarters (HQ) and what HQ’s data dependency means for their daily work.

Since regional staff has more overview in relative differences between staff members, additional questions on information culture are asked. E.g. their relation to field offices and HQ, differences between field offices and differences across roles are questioned.

**Interview processing**
The in-depth interviews will be performed through a Skype for Business⁴ call. This software features the possibility to record the conversation. The recordings have been processed with automated transcribing tool Trint⁵ to convert the audio to text. Though this software can transcript text quite well, manual editing was required to obtain understandable text. All transcripts have been bundled in appendix V. Analysis results of these transcripts are discussed in chapter 3.3 Assessing IJM’s culture.

2: What is the organizational and technical environment of the information system?

**Insights in organizational environment**
Observation can explore the organizational environment. Part of the work processes are documented in vision statements, organograms and formal communication. The informal part of the organizational environment is perceived by working on-site, getting involved in daily practices and by having conversations with involved staff.

**Insights in technical environment**
Insights in the technical background of the current and next system will be provided by technology briefings by current staff involved. The current system is designed in-house and grew along with the organization. The system’s design itself is therefore an indicator of the evolution of the information needs of the organization over time.

³ See also Appendix II
⁴ https://www.skype.com/nl/business/
⁵ https://trint.com/
Legal environment (GDPR)
Recent developments in EU lawmaking require organizations to embed information flows in an administrative process to structure informed consent on data sharing and to prevent privacy right infringements. Though this new regulation has great impact on many organizations, it will be left outside consideration in this research. The first reason for this is that IJM hardly works in EU countries, secondly, the legal environment constrains (cultural) value tradeoffs, but is no driving factor in any of these. Protection of clients (and their privacy rights) is an organizational core value and will be discussed in the 7th chapter on the implementation of Culture Sensitive Design.

3: What is the role of information in Justice System Transformation?
To determine the information goals of the future information system, the role of information throughout scalable justice system transformation needs to be understood. This research part structures and analyzes this information need as input for the culture sensitive information system.

Mechanics of Justice System Transformation
IJM already has put much effort in clarifying and envisioning how a transformation of justice systems can and should take place. This research step will apply a simplified adaptation of the Systems approach (Enserink et al., 2010) to structure and visualize this philosophy.

Information in Justice System Transformation
When the mechanics behind Justice System Transformation have been structured and visualized, the role of information can be determined. Information is needed to know the current state of a justice system, and to inform people working in it. In part, this is enabling the system transformation. The other part, measurement, is gathering information with the aim of informing stakeholders (IJM, donors, project partners, governments) about the change. What information exactly is needed is to be discovered in this part of the research, but possibilities include solved case statistics, trial duration statistics, etc.

4: How can the frameworks and environment be translated into an information system?
Characteristics and specifications of the current and proposed information systems of IJM.
Determining the characteristics and specifications is an activity that is partly related to the technical environment. Attending internal technology briefings will provide input, which is supplemented by desk research in which historic information about this ongoing trajectory is processed. In this way, currently hidden requirements can be determined too.

Current state of art of information systems
Literature research will be performed to explore the current state of art of information systems. An argument for this is that scientific research often precedes commercial application, but it can be harder to translate findings to an actual system. Recent developments in commercial applications also can be considered a source of information, this might suit better to practical applications.

5: How can a culture sensitive information system be designed for IJM?
This step will be performed by synthesizing information from the previous steps and leads to a series of design guidelines.
To be able to verify and validate these findings in the next steps, a practical implementation of the guidelines is needed. Depending on the findings, wireframes, a prototype or a sketch implementing these findings will be created.

6: Does this design properly serve IJM’s field offices?
A follow up interview via email will be performed to evaluate whether they were understood during the in-depth interviews, whether issues have been identified correctly and whether the implicated cultural value tradeoffs have been made understandably. Written solution approaches will be used to communicate ideas that respondents can evaluate.

7: How can general guidelines for culture sensitive information systems be derived?
The Interaction Design Foundation (2018) defines a design guideline as a direction for design between a general principle and specific rule for implementing. By design guidelines, system designers are helped in applying principles, while they still have flexibility in the specific design. This focus, more specific than just principles, but without specific directions for implementation will be maintained in the design guidelines recommendation in this chapter. The design guidelines will be created by adjusting the design guidelines for IJM based on the validation and by generalizing them to be used outside IJM’s specific context.

2.5. Conclusion
Answering the research question will be done in several steps, which are formulated in sub research questions. This chapter provides a collection of research methodologies, which are the building blocks for the research process. The following chapters describe how the research steps are conducted and display progress and results of them. The concept of culture, measuring it and the culture at the case study organization will be discussed in the next chapter.
3. Culture

*How can culture in the IJM case be defined and how can existing frameworks be applied?*

Understanding culture, personal diversity and differences in communication is relevant for each multinational organization, but it appears to be essential when data-driven decisions are based on the inputs of diverse people and situations.

The first subsection presents the current scientific state of art in describing and understanding cultural diversity. In the second paragraph, the models and frameworks that are used in existing literature will be explained and reshaped in an in-depth interview and a questionnaire that are useful to assess cultural diversity in a single case. The resulting survey will be used to examine cultural diversity throughout IJM’s organization. This cultural diversity assessment will be presented in the third paragraph, providing the basis for designing a cultural-sensitive information system applied to the case of International Justice Mission.

3.1. What is culture?

The starting point of this research is the notion that cultural diversity impacts information processing and exchange. Though the broad interpretation of culture might indeed have influence, a narrower interpretation is useful for a systematic approach on information systems design. This paragraph will start by defining this narrower interpretation, after which several frameworks for measuring culture are discussed. This is followed by an overview of existing research to the application of models of culture in information systems. Combined with the known restrictions and limitations, this creates a basis for constructing the case study research in the next paragraph.

**Collective learning**

Hofstede et al. (2010, pp. 7–10) define culture as “everything that is learned by someone as part of a group or collectivity”. This definition distinguishes culture from human properties (like having to eat) and personal learning (acquiring a skill). This collective learning in turn is built up from several layers. Values constitute the core of the collectivity. Around this core respectively rituals, heroes and symbols are built. Practices (often one of the more visible parts of culture) stem from values but traverse rituals, heroes and symbols. A schematic overview of this is presented in the figure below.

*Figure 3.1: Manifestations of culture at different levels of depth (Hofstede et al., 2010, p. 8)*
Though this model describes how the different manifestations of culture interact and relate to each other, it does not describe how cultures are measured or demarcated in terms of space (national, regional, etc.), time and social groups. The next section discusses several ways to measure culture to compare between different collectivities.

3.2. Measuring culture

Several models for measuring culture are discussed in this section. The broad and highly dynamic character of culture makes making observations hard. Different models of culture can therefore coexist. Most models share the approach of measuring culture on one or more quantitative scales. Questionnaires can be used to score these scales. This results in a demarcated group (e.g. a nation) with scores on a set of scales. These sets of values can then be compared and discussed.

A comparative study by Ali et al. (2009) lists five of these models (Hofstede, Trompenaars, Hall & Hall, House et al., Schwartz) and compares their usage in the field of information systems research. They list Hofstede as single most used model (70%) and most studies that referred to one of the other models also built upon Hofstede. Hall & Hall is specifically used in communication-related studies and shows less overlap with Hofstede. Both models will be discussed below. While widespread, Hofstede et al.’s dimension of national culture are also controversial, a critical evaluation is performed by Jones (2007), which will be discussed. Because especially Hofstede et al.’s model receives such amounts of criticism and because this model will be used in later parts of this case study, the evaluation on this model is discussed more extensively than the other models.

Additionally to Hofstede and Hall & Hall, this paragraph discusses the models of Meyer (2014), Inglehart-Welzel (2010) and Information Culture (Curry & Moore, 2003) in order to provide a reconnaissance for the next paragraph, in which a methodology for assessing IJM’s culture is developed.

Hofstede et al.

The first exploration of measuring culture occurred accidentally when Geert Hofstede was able to conduct research in a large IBM employee dataset. This led to a structured overview of four dimensions of work related values (Hofstede, 1981). In the following decades additional axes were added. Hofstede et al.’s (2010) model of value cultures now consists of six dimensions. These dimensions are meant to be applied on national cultures.

*Power distance*

The power distance index defines the acceptance of unequally distributed power. A higher power distance implies respect for older people and people with more power, while low power distance countries value independence more.

*Uncertainty avoidance*

The way countries deal with ambiguity is captured in the uncertainty avoidance index. People in countries with a low score accept uncertainties, while high scoring countries see uncertainties as a threat. Additionally, foreign people or concepts are easier embraced by low scoring countries in contrast to high scoring countries.
Collectivism vs. Individualism
Individualistic countries contain loose social networks and individuals are supposed to take care of themselves. The collectivistic counterpart displays group mindedness and higher loyalty to social circles.

Masculinity vs. Femininity
Masculine societies have greater focus on work and material achievements. Feminine countries are focused on family and quality of life. Gender differences are considered smaller in feminine societies.

Long-term orientation
Long-term societies are focused on adapting to changing conditions and pragmatic virtues while short-term societies focus more on virtues related to the past and the present, like respecting traditions and fulfilling social obligations.

Indulgence vs. Restraint
This dimension display how a country considers leisure and joy as important aspects of life. Indulgent countries have a larger leisure economy than restraint societies, which have a larger focus on moral and social norms.

Evaluation
The widespread application and reception of Hofstede et al.’s dimensions of national culture also cause widespread discussion on the relevancy and accuracy of these dimensions. Since Hofstede et al.’s model is a main source for this study, an evaluation of the feasibility of using the model for this case study is made. Jones (2007) lists some points of critique, which will be discussed first. After this, an assessment of the impact of using this model for the current case study research is made.

An overview of reconsiderations regarding measuring culture by Jones (2007) will be discussed below.

Measuring culture is a culture sensitive activity, therefore surveys might not be the appropriate instrument for this. Especially the subjective nature of the value survey module used to assess a nation’s values is considered a complexing factor.

Culture within a nation is not necessarily homogenous. Ethnic groups and other forms of communities can influence values. A bias towards specific individuals might arise. Similarly, culture is not necessarily bound to national borders.

The first four dimensions were developed based on data gathered in the cold war. This might create a temporal bias towards uncertainty avoidance since European countries had still vivid memories of World War II. At the same time, other countries were under communist influence. Additionally, data from less developed countries was unavailable in the sample.

Though many people have been filling out the questionnaire, only 32 questions have been used for examining 40 countries. Individual questions can skew results, leaving much of the results to chance (Dorfman & Howell, 1988). On the other hand, many replications partially or wholly validated the results, with an exception to the dimension of ‘Individualism’ (Søndergaard, 1994).

Jones (2007) concludes by urging for modernization of the results, since internet technology and globalization might impact national cultural diversity across the globe. A study examining consumer behavior from a national cultural vs. global culture perspective did not provide
evidence for national behavior to be eroded by global influences (Cleveland et al., 2016). Though, with global behavior patterns still being a young development, the cultural impact of this cannot yet be determined.

Hofstede for case study research
The cultural dimensions by Hofstede et al. are not meant to examine individuals (Hofstede et al., 2010, p. 6). The national scores provide an average for a country, not a basis for individual comparison. It is therefore impossible to examine an organization and compare the results to a country or to examine a person relatively to its country.

International Justice Mission works extensively in India. This is a large country consisting of multiple states with diverse languages and peoples. The argument that culture does not necessarily follow country borders is relevant in this case. On the other hand, cultural values are no absolute measure, but a relative difference between societies, even the variety of Indian cultures can be relatively the same to the ‘more different’ European or North-American cultures.

Even though IJM works across the globe, its identity and its roots are American and its core values (Christian, professional, bridge-building) are shared throughout all offices and through recruitment. Since these values are shared through the organization, people in different office might have more in common with each other than with others in the same country. National cultural identity might be less determining in communication and collaboration than the organizational culture. But since this national cultural identity is not shared, this can still be the main factor to consider in creating culture sensitive information systems.

Hall & Hall
Another perspective on culture is offered by Hall & Hall (1990). This framework focuses at communication and distinguishes four dimensions of culture. These dimensions are observed from behavioral diversity across nations but are less quantified per nation than Hofstede’s VSM.

High-context vs. low-context communication
Isolated societies tend to develop a large common context of communication. This context contains habits, words and a sense of ‘how things normally occur’. Communication in such high-context environment becomes less direct since less language is needed for common understanding. Instead, body language, silence and other cues are used more often to transmit information. E.g. Japan, as an island society which has been isolated for centuries, developed a complex, high-context communication style, in which little language is needed. The United States on the other hand are mainly formed by immigrants with diverse backgrounds. This results in a low common context, more direct expression and a larger need for the use of language (Kim et al., 1998).

Monochronic vs. Polychronic time
A diverse perspective on time also impacts communication. Monochronic societies tend to understand time as something linear. Activities are scheduled precisely, and time management is considered a skill. Polychronic societies on the other hand are more focused on human interaction and activities can be done simultaneously. A more recent expansion of this scale explains the polychronic-monochronic tendency as a mix of preference, observed behavior, comfort, whether people like to juggle multiple activities and whether people consider conducting multiple activities as efficient time usage (Lindquist & Kaufman-Scarborough, 2007).
**Space**

Hall’s cultural dimension of space describes whether people in a society tend to be territorial. In a high-territorial society, people are more protective to ownership where in low-territorial cultures things are more easily shared.

**Speed**

A message that is quickly sent, easy to decode and to act upon is a fast message. Slow messages require more effort. Examples of fast messages include television ads, cartoons and news headlines. Poetry, books, art and culture itself are slow messages. Sending fast messages to people used to slow communication and vice versa can cause this message not to be received.

**Meyer**

A synthesis of the models above is made by Meyer (2014). This model consists of eight dimensions, some of which show resemblance to those described above. The validation of this ‘culture map’ has been mainly anecdotal rather than through a scientific approach. Still, the overview is useful for information systems design since it provides a translation of the models from the twentieth century into the current era of information technology.

**Communicating: high-context vs. low-context**

Similar to Hall & Hall’s ‘high-context vs. low-context communication’.

**Evaluating: direct negative versus indirect negative**

This dimension is an expansion to the generic high-context vs. low-context diversity. Negative feedback is not always communicated as what would be expected in a high-context or low-context culture. E.g. in the USA, general communication tends to be low-context and direct, whereas negative feedback is communicated carefully and extensively preceded by positive comments. In Asian countries, negative feedback is seldom displayed for a group, people avoid publicly *losing face*.

**Leading: egalitarian vs. hierarchical**

Similar to Hofstede’s ‘power distance’.

**Deciding: consensual vs. top-down**

This is an expansion on the previous dimension, which is similar to power distance. E.g. in the USA, an egalitarian society, the boss still makes decisions. In Japan (highly hierarchical) a special system is used to reach consensus on one level before communicating up- or downwards. Another factor in this regard is whether decisions are final or serve more like ‘working theories’. In some societies a decision can be made on available information and later revised when new information requires this, other societies rather stick to a decision after it is made.

**Trusting: task-based vs. relationship-based**

Collaboration and agreements require trust. In some societies this trust is based on trusting each other will hold their part of the agreement (“gets the job done”), whereas in others the relationship with the person needs to be trusted.

**Disagreeing: confrontational vs. avoiding confrontation**

This dimension is another expansion on the leading-axis. In confrontational cultures, people might openly discuss ideas and can disagree with a senior person. Open disagreement does not mean a person is debated, but the discussion is meant to improve ideas. In a confrontation avoiding culture, disagreement is more likely to be discussed anonymously.
**Scheduling: linear vs. flexible**
Similar to Hall & Hall’s ‘mono-/polychronic time’.

**Persuading: principles first vs. applications first**
Ideas can be communicated in diverse ways. A proposal for a different way of working can be communicated from a principles perspective: when A is changed, that changes B, which improves situations X, Y, Z. From an applications first perspective, this idea might be communicated as: X, Y, Z need to change, are influenced by B and thus A should be performed. The perspective in which people can be persuaded by new ideas differs across countries.

**Evaluation**
Meyer’s culture map is mainly supported by anecdotal evidence. Though this makes it easier for human beings to apply the theory to daily practice, replication and validation are hard. On the other hand, an online self-assessment tool gathered questionnaire data from many respondents (Meyer, 2018). E.g. human development index data can be better analytically explained by Meyer’s model compared to Hofstede’s dimensions (Duguleană, 2014). A disadvantage for applying Meyer’s culture map in a case study is the public unavailability of questionnaire questions and scoring process.

**Inglehart-Welzel**
The World Values Survey is a research organization that globally interviews people on a variety of topics regarding values; e.g. religion, habits and well-being (World Values Survey, 2018). This data is used in studies like the WVS Cultural Map of the World (Inglehart & Welzel, 2010). This map, resulting from a factor analysis on the WVS dataset is a scatterplot of all participating countries on two axes.

![Figure 3.2: The WVS Cultural Map of the World (Inglehart & Welzel, 2010)](image)

Vertically, the scale ranges from Traditional to Secular-Rational. Traditional in this regard mainly reflects the importance of religion. According to the authors, many other variables are
correlated with this dimension. Traditional societies embrace parent-child ties, authority, family values and reject divorce, abortion, euthanasia and suicide. This often combines with national pride and nationalistic view. Secular-rational societies have opposite preferences.

The horizontal axis describes a nation’s values position on a Survival vs. Self-expression scale. During the shift from an industrial society towards the post-industrial world, wealth got accumulated, resulting in decreased dependency on working for survival. This causes a shift in priorities from economic and personal security towards self-expression.

The WVS Cultural Map of the World is a high-level descriptive model. Since the values displayed are measured on a high abstraction level, implementation in a value sensitive design is hard to accomplish. The model also describes the general tendencies in values and worldview of a country that develops from one stage to another (Inglehart & Welzel, 2005). Since IJM works in some quickly developing countries (e.g. India, Kenya), abstract values could rapidly shift over the next decade. This might imply that values measured in other frameworks are also dependent on the development stage of the country in which they are observed.

Information culture
The previous models discussed capture abstract values or generic communication habits into a multivariate model. The natural wide scope of these concepts is a complexing factor in applying the derived knowledge. Additionally, it makes determining other than national boundaries a difficult task. Hofstede et al. (2010) describe culture as a ‘programming of the mind’, based on decades of accumulated inputs by surrounding people.

A specific way in which people can be ‘programmed’ is in how they treat information. Curry & Moore (2003) developed an exploratory model to assess this information culture. This assessment is also useful on organizational scale instead of only in a larger national perspective. The model contains a metric which can be determined by a practical measurement tool and it has been tested in a healthcare case study.

IJM deals with clients that often require care and the processes around cases involve various specialties and professional perspectives. This means that, from an information perspective, the work is similar to the processes in a healthcare organization. This underlines the practical applicability of measuring this particular part of culture.

Evolution of information culture
The conceptual theory along which this model is built is displayed in the figure below. It describes the internal environment being influenced by its external societal and historical context. Within this internal environment, a relation exists between the organizational cultural and the information culture.
Topics in information culture

Based on the previous conceptual context, information culture is described as a result on the following seven topics. These topics are not assessed directly, nor is a separate score for each topic calculated. However, the topics are used as the basis for a questionnaire.

Communication
The extent to which communication takes place and is valued is a precondition for an information culture to exist.

Cross-departmental partnerships
Whether partnerships exist, information is exchanged and organizational policy on this topic exists influences organization-wide information culture.

Appreciation of information value
This topic describes whether individuals appreciate information’s intrinsic value.

Information systems management
The organization’s efforts in specific management attention for information systems.

Internal environment
The fitness of the internal organizational and technical environment for information processing and exchange.

Information management
Determines whether information flows, knowledge and subsequent processes are explicitly managed.

Professionalization
Determines the organization’s goal-oriented approach in creating and managing its information culture.

In the healthcare case study, the questionnaire was supplemented with in-depth interviews to obtain more information and fill in some gaps. A similar approach will be maintained in this case study. Results of this measurement approach are displayed in chapter 3.3.
General restrictions and limitations

Besides commenting on the validity of Hofstede et al.’s research, Jones (2007, p. 3) also lists three general problems associated with performing cross-cultural research: definition problems, methodological simplicity and equivalency. These are explained in this section. Additionally, some directions on exploring beyond static national cultural modelling are presented.

Definition problems
A wide variety of definitions around the concept of culture exist. Even the interpretation of culture can be culturally defined. Research questions, questionnaires and interpretation can be biased towards either the culture of the author or respondent. In the current case study at a multinational NGO, this effect might occur even more strongly since the abstraction-level scope is wide. Not only are values discussed, but also practical habits and even the daily encountered quirks in a specific custom information system play a part. To overcome this complexity, throughout the different stages of the research the context and what is meant by culture should be explained.

Methodological simplicity
A common issue in cross-cultural research is an ethnocentric basis. By creating a cultural model from a single viewpoint, it might be biased towards the author’s background. This is also valid regarding timescales; few models are validated across multiple generations. Additionally, a bias towards single discipline can occur, which could be prevented by a multidisciplinary approach. This problem is mostly occurring in exploring for cultural models and less in applying them. The current case study is not aiming at developing a new framework.

Equivalency
The third problem with cross-cultural research is the assumption of equivalence: that things are the same across countries. According to Jones (2007, p. 3), this assumption can fail in four ways: functional, conceptual, instrument and measurement.

Functional equivalence is the assumption that concepts have the same function. E.g. a computer can be primarily an office tool in one country and primarily a social network device in another.

Conceptual equivalence assumes concepts are regarded the same. E.g. company loyalty can be seen as following the rules in one country and as not breaking the rules in another.

Instrument and measurement equivalence assume a research instrument is consistent across cultures. E.g. people from one culture might tend towards extreme scaling, where others lend more towards the middle. This should also be considered in question formulation, especially when questions are translated.

National boundaries
This issue is discussed at the section on Hofstede above, but is also relevant to other models of national culture. Cultural influences cross borders and are not homogenous within a country due to e.g. ethnicity, religion, language or social circles. To better understand someone’s cultural background, a model expanding beyond national culture might be useful.

In a call to develop such model, Myers & Tan (2002) display the weaknesses of primarily Hofstede. Newer models should be designed that address culture as something that is “contested, temporal and emergent”. Though Hofstede describes the evolution of culture in its
Dealing with cultural framework shortcomings

As has been discussed above, usage of frameworks to structure culture and cultural properties has shortcomings on several abstraction layers; models are inherently limited, the Hofstede et al. model has its downsides and usage of its methodologies in a relatively small target group in a case study provides no statistical significant results.

However, to obtain design guidelines for a culture sensitive information system, this culture needs to be systematically defined. Using cultural frameworks provides this structure which lacks when only grounded theory-based interviews are conducted. Therefore, in this research currently available structural approaches are used for assessing IJM’s current situation and developing a design approach in the following chapters. These currently available approaches are the dimensions of national cultural background by Hofstede et al. (2010) and the information culture model by Curry & Moore (2003). The design process will be developed independently from the models discussed in this chapter, to accommodate for incorporating improved future structural approaches when these will be available.

The generic downsides of structured culture research will be partially compensated by validation of the end-result and are accepted in this stage for the other part. Other, model-specific, biases are addressed by limiting the consequences of conclusions drawn from these models. Questionnaire outcomes will be treated as indications rather than definitive conclusions.

3.3. Assessing IJM’s culture

A method to assess the organization’s culture is required to create design guidelines for a culture sensitive information system in the specific case of an organization. The semi-structured interview will be conducted to understand the position, work and usage of information systems by people across field offices. The questionnaire provides additional input on the cultural background of these people. This paragraph discusses the results and outcomes of this survey.

Forests and trees: a few remarks

A forest is not just a bunch of trees (Konijnendijk et al., 2005). Forests are not only made up from trees but contain an entire ecosystem with specific properties. In the same way, cultures are not just made up from a bunch of people (Hofstede & Minkov, 2013, p. 3). Still though, cultural backgrounds can be used as a predictor of an individual’s personality type, but these relationships should be explained with caution (Hofstede & McCrae, 2004). Since this case study examines only one organization, with twelve respondents to the questionnaire, no valid quantitative results can and should be derived from the data. The number of people with a common cultural background does not suffice to obtain statistical significance. However, the answers to the questions from both the Hofstede et al. (2010) survey (Value Survey Module, Value Survey Module, 6 See also paragraph 2.4 Activities
7 See also paragraph 7.2 Empirical investigations for further interpretation and usage
VSM) and the Information Culture assessment provide a glimpse of how people differ, even in similar roles. This overview provides the basis for further conversation and serves as a starting point for an overview of IJM’s culture.

Hofstede’s dimensions

An overview of the scores per person, per dimension is presented in the table below. For each dimension, the mean and variance are calculated. This enables for comparison between dimensions.

The VSM Manual weighs the four questions that together make up a dimension in this form:

\[ A(Q_1 - Q_2) + B(Q_3 - Q_4) + C \]

A respondent’s answer (range 1-5) is put in the \( Q\{X\} \) variables. Four questions together form the score on one dimension, where in this example \( Q1 \) and \( Q3 \) increase the score and \( Q2 \) and \( Q4 \) decrease it. The \( C \) variable is left out, according to the manual, it can be used to shift values to a 0-100 scale. In this research, 0 will be considered the neutral middle of the scale, where a highly (negative) value means a stronger tendency towards a cultural value. \( A \) and \( B \) are weighing factors to determine the influence of each set of questions on the final score, in the manual these are mostly 25 or 35. Theoretically in an example where both \( A \) and \( B \) are 35, the score on a dimension could range from -240 to +240.8

<table>
<thead>
<tr>
<th>VSM function</th>
<th>PDI</th>
<th>IDV</th>
<th>MAS</th>
<th>UAI</th>
<th>LTO</th>
<th>IVR</th>
</tr>
</thead>
<tbody>
<tr>
<td>person 1</td>
<td>-50</td>
<td>-35</td>
<td>-105</td>
<td>0</td>
<td>65</td>
<td>0</td>
</tr>
<tr>
<td>person 2</td>
<td>-35</td>
<td>105</td>
<td>35</td>
<td>-15</td>
<td>-105</td>
<td>40</td>
</tr>
<tr>
<td>person 3</td>
<td>25</td>
<td>35</td>
<td>0</td>
<td>-80</td>
<td>15</td>
<td>40</td>
</tr>
<tr>
<td>person 4</td>
<td>-35</td>
<td>0</td>
<td>35</td>
<td>50</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>person 5</td>
<td>25</td>
<td>35</td>
<td>105</td>
<td>50</td>
<td>-80</td>
<td>80</td>
</tr>
<tr>
<td>person 6</td>
<td>25</td>
<td>105</td>
<td>0</td>
<td>-130</td>
<td>-65</td>
<td>150</td>
</tr>
<tr>
<td>person 7</td>
<td>45</td>
<td>70</td>
<td>0</td>
<td>-35</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>person 8</td>
<td>0</td>
<td>0</td>
<td>35</td>
<td>-50</td>
<td>-15</td>
<td>40</td>
</tr>
<tr>
<td>person 9</td>
<td>-25</td>
<td>70</td>
<td>-140</td>
<td>-65</td>
<td>-80</td>
<td>75</td>
</tr>
<tr>
<td>person 10</td>
<td>0</td>
<td>-70</td>
<td>0</td>
<td>-50</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>person 11</td>
<td>-60</td>
<td>0</td>
<td>70</td>
<td>-65</td>
<td>-25</td>
<td>75</td>
</tr>
<tr>
<td>person 12</td>
<td>0</td>
<td>105</td>
<td>70</td>
<td>0</td>
<td>-65</td>
<td>110</td>
</tr>
</tbody>
</table>

| mean          | -7  | 35  | 9   | -27 | -30 | 64  |
| variance      | 1134| 3341| 4928| 3152| 2461| 1567|

Some dimensions are built up from a weighted average totaling 60, whereas others have weights of totaling 70 or 65. This makes comparison of scores harder, since the result is skewed. In the second table each score is divided by its weighs total to obtain a normalized score, which is more suitable for comparison across dimensions. The theoretic range for these scores is -4 to +4.9

---

8 By filling in the factors the score ranges from 35(1-5)+35(1-5) through 35(5-1)+35(5-1).
9 By dividing the previous example by \( A+B: (35(1-5)+35(1-5))/70 \) through \( (35(5-1)+35(5-1))/70 \).
Table 3.2: Normalized individual scores on Hofstede’s dimensions

<table>
<thead>
<tr>
<th>normalized</th>
<th>PDI</th>
<th>IDV</th>
<th>MAS</th>
<th>UAI</th>
<th>LTO</th>
<th>IVR</th>
</tr>
</thead>
<tbody>
<tr>
<td>person 1</td>
<td>-0.8</td>
<td>-0.5</td>
<td>-1.5</td>
<td>0.0</td>
<td>1.0</td>
<td>0.0</td>
</tr>
<tr>
<td>person 2</td>
<td>-0.6</td>
<td>1.5</td>
<td>0.5</td>
<td>-0.2</td>
<td>-1.6</td>
<td>0.5</td>
</tr>
<tr>
<td>person 3</td>
<td>0.4</td>
<td>0.5</td>
<td>0.0</td>
<td>-1.2</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>person 4</td>
<td>-0.6</td>
<td>0.0</td>
<td>0.5</td>
<td>0.8</td>
<td>0.0</td>
<td>0.5</td>
</tr>
<tr>
<td>person 5</td>
<td>0.4</td>
<td>0.5</td>
<td>1.5</td>
<td>0.8</td>
<td>-1.2</td>
<td>1.1</td>
</tr>
<tr>
<td>person 6</td>
<td>0.4</td>
<td>1.5</td>
<td>0.0</td>
<td>-2.0</td>
<td>-1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>person 7</td>
<td>0.8</td>
<td>1.0</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
<td>1.1</td>
</tr>
<tr>
<td>person 8</td>
<td>0.0</td>
<td>0.0</td>
<td>0.5</td>
<td>-0.8</td>
<td>-0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>person 9</td>
<td>-0.4</td>
<td>1.0</td>
<td>-2.0</td>
<td>-1.0</td>
<td>-1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>person 10</td>
<td>0.0</td>
<td>-1.0</td>
<td>0.0</td>
<td>-0.8</td>
<td>0.0</td>
<td>0.5</td>
</tr>
<tr>
<td>person 11</td>
<td>-1.0</td>
<td>0.0</td>
<td>1.0</td>
<td>-1.0</td>
<td>-0.4</td>
<td>1.0</td>
</tr>
<tr>
<td>person 12</td>
<td>0.0</td>
<td>1.5</td>
<td>1.0</td>
<td>0.0</td>
<td>-1.0</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Mean: -0.12, 0.50, 0.13, -0.41, -0.46, 0.86
Variance: 0.31, 0.68, 1.01, 0.75, 0.58, 0.28

Figure 3.4: Cultural dimensions per respondent

As can be seen in Table 3.2, the mean power distance is quite average with a small tendency towards low power distance. This dimension shows little variance. This means that the power differences from different roles are followed (e.g. a field office follows directions from HQ), but there is no need for a strict chain of command or communication protocols.

On average the respondents show a tendency towards individualism (versus collectivism), the variance on this dimension is relatively high. In an individualistic work culture, people have more personal goals and work more independently. Working towards a group goal (e.g. in another office), is less self-evident. The relatively high variance shows there’s also collectivistic tendencies in the group. Diversity on this axis should be acknowledged in information systems design, e.g. by considering whether data collection tasks support a person’s work or are meant for another organizational objective.

On the masculinity dimension, an average neutral score is displayed. A large spread between more masculine and more feminine people is visible. In a work culture, this is expressed in how failure is treated, how gender diversity is perceived and in the work life/personal life
balance. More implications of how failure and success are treated will be discussed in chapter 7.3 Prescriptive technical investigations.

In general, the respondents are not very uncertainty avoiding. There is somewhat individual diversity, but on aggregate level people don’t require all details to be able to work. Another side of this tendency is that sometimes not all details of a topic are collected, and less documentation is created on work contents and processes.

On long-/short term orientation, a similar pattern exists. A small tendency towards short term orientation is shown, but individual scores reveal some variance along this axis. Long term benefits of data collection might weigh less than short term gains in another part of the job.

The values on the indulgence vs. restraint dimension show a high tendency towards restraint. The variance on this dimension is small, indicating less individual diversity is shown in this area.

Information culture
Results of the questionnaire adapted from Curry & Moore (2003) are displayed in the table below. All questions were answered on a 5-point scale. The mean and variance are displayed to show aggregate responses.

Table 3.3: Aggregate responses on the information culture assessment

<table>
<thead>
<tr>
<th></th>
<th>mean</th>
<th>variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Information should be the basis for informed decision-making at all levels of an organization.</td>
<td>4.42</td>
<td>0.27</td>
</tr>
<tr>
<td>2. Currently, information is the basis for informed decision-making at all levels of an organization.</td>
<td>3.25</td>
<td>0.39</td>
</tr>
<tr>
<td>3. Evidence-based operations and care are important.</td>
<td>4.42</td>
<td>0.27</td>
</tr>
<tr>
<td>4. Good quality information is critical to achieving IJM’s aims and objectives.</td>
<td>4.83</td>
<td>0.15</td>
</tr>
<tr>
<td>5. I am confident that the information on which I base my decisions is always of suitable quality for its purpose.</td>
<td>3.83</td>
<td>0.33</td>
</tr>
<tr>
<td>6. I have easy access to all the information I require to make decisions effectively.</td>
<td>3.17</td>
<td>0.88</td>
</tr>
<tr>
<td>7. I am aware of the key information in the organization.</td>
<td>3.42</td>
<td>0.45</td>
</tr>
<tr>
<td>8. I collect required information on which to base my decisions myself.</td>
<td>3.92</td>
<td>0.63</td>
</tr>
<tr>
<td>9. I approach other teams for information I require to make decisions effectively.</td>
<td>4.00</td>
<td>0.55</td>
</tr>
<tr>
<td>10. I collect information I require by accessing external parties directly.</td>
<td>3.50</td>
<td>0.45</td>
</tr>
<tr>
<td>11. As a team we work well together and support each other.</td>
<td>4.33</td>
<td>0.61</td>
</tr>
<tr>
<td>12. As a team we have positive relationships with other teams.</td>
<td>4.00</td>
<td>0.73</td>
</tr>
<tr>
<td>13. As a team we make decisions independently.</td>
<td>3.17</td>
<td>0.88</td>
</tr>
<tr>
<td>14. We are encouraged to involve all relevant parties when making a decision that influences other teams.</td>
<td>3.75</td>
<td>0.75</td>
</tr>
<tr>
<td>15. As a team we are always happy to provide other teams with relevant information held by us.</td>
<td>4.58</td>
<td>0.81</td>
</tr>
<tr>
<td>16. I am aware of the objectives of other offices of IJM.</td>
<td>3.00</td>
<td>0.36</td>
</tr>
</tbody>
</table>
Overall, scores are relatively high, the lowest scored questions (16, 18) still have a mean of 3, meaning neutral. No questions have an average negative value. The highest scoring question (4) received a highly positive response: 4.83/5. This high score on information culture means a general strong attention for the value of data in vision, management effort and daily effort.

Two clusters of positive scoring questions can be identified. The first is whether a sense of importance on data-driven decision making is needed (questions 1, 3, 4). IJM’s leadership has often communicated about the role of data in its work. The high score on these questions indicates that this message has been well received across the field offices.

The second cluster is on team supportiveness (questions 11, 15). These high scores indicate a culture of non-competitiveness between teams and eagerness to ease each other’s job when possible. Since the different teams in a field office are meant to work together in the process of cases, cooperation and information exchange is necessary. Additionally, no competition between teams exists in ratings or otherwise.

Two negative clusters exist. The first is around information availability (questions 2, 6, 7). Compared to the high scores of how information should be the basis for decisions and operations, the current state is mediocre. These questions also express somewhat higher variance, indicating some people tend to evaluate the current situation as insufficient, while others are satisfied with the role information plays in work processes. People generally indicate better information availability would help in performing their work.

Another set of related questions are centered around internal communication (16, 18). People indicate a neutral stance towards awareness of objectives at other offices and a lack of clear communication of organizational issues. Especially on the last question, the variance is quite high. This means some people report negatively on this communication, while others experience no problems. In terms of data collection, being aware of organizational issues and goals at other offices help in understanding and motivation of why certain data collection tasks are helpful towards reaching organizational goals.

Questions with lower mean scores sometimes have a relatively high standard deviation (6, 13, 18). This means that more diversity exists around these topics then around the more positive scoring questions. In part this can be explained by the fact that neutral means can be result of low and high answers. Low (neutral) scores with a small standard deviation (2, 16) indicate more agreement on this being a factor where improvement can be made. Another explanation is that more disagreement exists on information culture factors that are currently not entirely meeting all people’s expectations.

**In-depth interview results**

During the conversations with field office staff – with local and regional focus – around the globe, many topics arose. Some of these topics only caught recognition when brought up by the interviewer, like HQ/FO collaboration. Others were brought up by multiple independent respondents spontaneously, e.g. digital literacy. This section discusses three factors that potentially hinder information exchange and communication; national culture, professional backgrounds and digital literacy. Finally, the interaction between the headquarters and the field offices is discussed, which adds another dimension to the three other factors.
India
Several people from India have been interviewed, all of whom emphasized that India is not a country like some others. It should be compared rather to the European Union than to a nation-state. The reason for this is that multiple states constitute India, each with its own culture; language, habits, norms and values. Economic circumstances vary highly across the country, as do patterns of slavery. In India, much cultural diversity can be found in a field office, where people from multiple states work together with English as common language. The extent of this ‘regional’ diversity allows for interpreting someone’s state background as similar to a national background in other countries.

National culture
The diversity found in Indian field offices is less common in other areas. In a less diverse country, hiring local people also means hiring less culturally diverse people. Field offices in Cambodia and Thailand sometimes cooperate but that is an exception rather than the rule. Diversity in the other field offices often remains limited to American expats working with local colleagues. Since most diversity is experienced by American individuals who have been trained in working overseas working amidst local colleagues, this diversity is not hindering daily operations too much.

The general image is that national culture is not really a factor complicating communication and other information-related tasks. The diversity in professional background and digital literacy, discussed hereafter, are much more present. Nevertheless, two issues illustrate how national/regional background diversity might still cause problems:

In India states have high autonomy in created state-specific laws and regulation, written in the state language. Translation of legal concepts in English is sometimes difficult and people from different states might mean a different legal concept by the same English word. Additionally, people within different parts of the same justice system use the same words for different things. This complicates case management.

“For example, after the completion of an investigation, the police report a file to the court that the legislature will call a ‘final police report’. The police will call it a ‘charge sheet’. So even within English certain phrases have different meanings. Judges have different meanings: some will call what the police is doing a ‘charge’, others call what the court is doing a ‘charge’. Another example: the phrase ‘perpetrators restrained’ used in the USA does not directly connect to someone’s understanding here in India. When people come in to work with [our information system], they have to be taught what these phrases mean.”

Another example is that, compared to Western countries, in some Asian societies losing face is a much more serious concept. Accordingly, a manager will not publicly address negative feedback and publicly speaking about something that went wrong is avoided. In an information system accessible by colleagues, it is less easy to enter an operation as non-successful than it is for a Western colleague, for whom public negative feedback is not associated with strong feelings of rejection. This diversity in how failure and success are treated corresponds with the masculinity dimension in Hofstede et al.’s model.
“If negative information is publicly known about you or publicly released in front of others that’s a very, very culturally bad thing to do. And so, when you have access in CTMS to the status of things and its people who see it beyond just you, so your manager will see it. People in other teams will see it. There could be the desire for people to mark things as successful even if they weren’t fully successful or to only document and write down a sanitized version of events and not what really happened and then that decreases the usefulness of having that data because it’s not accurate.”

“In the American context, we’re a little bit more direct, we embrace conflict a little bit more. I think we’re we have a higher tolerance for failure or negativity.”

This kind of difference leads to a discrepancy in data gathering between Asian and e.g. Latin American field offices, making data between those less comparable and thereby making aggregation harder.

**Professional backgrounds**

Field offices consists of multiple teams. These are: investigations & law enforcement development, legal and aftercare. People hired for these different teams have various educational and professional backgrounds. When asking about diversity in collaboration, multiple respondents brought up professional background diversity.

E.g. a legal officer obviously has a different educational and professional background than an aftercare professional (primarily social work background). Still, e.g. regarding victims, those people should work together. When a victim testifies in court, this could be a traumatizing experience. Close collaboration is needed to firstly make this possible and secondly prevent this situation to further harm a victim. Different processes around a person need to be aligned.

Depending on the casework type (type of violence), legal processes and aftercare programs vary. This makes the collaboration and alignment of processes hard. According to respondents, the system currently being used (CTMS) handles this multidisciplinary collaboration around case management well. For example, a lawyer sees a different interface, with information relevant for the legal trajectory, while a different interface with information regarding the victim is displayed to an aftercare professional.

“And the way in which you enter information in CTMS is based on the same three points: interest, competency and background. And probably, and also maybe I’ll add one more thing to this question you asked about how people. I’ll give you an example, this is just an analogy: our office works and rescues children on Lake Volta [harmed] with trafficking and what happens is, our aftercare team is providing care to the victims and our legal team which exists of lawyers are prosecuting the perpetrators. However, the victims also need to prepare and testify in court. Now it is relevant that the aftercare team knows what’s going on within their courts. Such that when the lawyers come back and enter it into CTMS. They need to feed the aftercare team with documents. Probably, they would give access to their notes or probably e-mail those to the aftercare team.

---

10 More information on work processes in IJM’s field offices is presented in chapter 0 Protecting the poor from violence: three-phase model
Sometimes that doesn't happen. And so, I'm sure that's based on understanding the purpose of CTMS.”

“CTMS is good for entering and tracking, managing information. Reporting tools or business intelligence capabilities are not really in the system. We hope to be able to use Tableau in Bangkok as well.”

Not only language and translation of concepts is a differentiating factor across disciplines, habits and workflow are often different too. Especially legal officers work with notes of hearings, interviews and other documentation of the legal process. They used to work with pen and paper to create these notes, but pen and paper has three issues; it is not compact, it is not easily shareable, it is not easily searchable. Especially legal staff has issues with the text-processing functionality of the current systems. This issue relates to digital literacy, the third factor.

“When you can't convince people of a high value system that you want to implement then you have to push the people to interact with the system, but once they do use the system and understand it's working benefits then they pick it up. And if I can add, I'd like to say that if they don't see the benefit and do not pick it up, they respond back with why so that you're more informed when you select the next alternative solution.”

Digital literacy
The factor that is most diverse in information system usage across field offices is digital literacy. It has been brought up by most respondents as the factor most hindering information system usage. Digital literacy is a broad concept meaning a myriad observations ranging from tech-savviness to the ability to navigate through context-dependent internet content (Bawden, 2008). Respondents in interviews meant a range of topics in this direction too. In this chapter, digital literacy will be defined as ‘ability to understand and work with digital systems, interfaces and information sources.’

Globally, digital literacy correlates with age (Johnson, 2007). But this relation is stronger in one area than in the other. In e.g. Gulu (Uganda), young people were introduced to working with a computer in their first job. This is very different to Cebu (Philippines), where device usage is more common at young age.

“Some people that use the computer at work are fine after work, they don't have a computer. Not because they can't afford it but because they don't care.”

Legal staff can be discouraged to digitize their knowledge (in CTMS) in three ways: a computer is not intuitive, typing is slow and translation to English takes time. At the same time, the system does not provide much benefits for these users, especially when information gathering routines are built around existing practices of keeping notes. Because of this, not all available information is stored digitally, this makes collaboration, reporting and analysis harder.

“In CTMS, when we write notes, you cannot highlight, underline or put anything in bold. When someone new comes in, this doesn’t make sense to them. Especially for lawyers, this is a reason to use the system less. And then we don’t know what’s going on.”

“Investigators worry about confidentiality. Aftercare deals with clients. Lawyers are usually very busy, so it takes a lot of time for them to update CTMS, I often have to follow-up on that.”
“For example, in other trial preparation systems there’s this option where you can scan documents and it turns it into an editable document. And for lawyers they really need that because they use a lot of documents to draft, like memorandums because they cite those and those are all given by courts in printed hard copies. So, it’s hard for them...”

**Headquarters and field offices collaboration**

Collaboration between headquarters and the field offices is not necessarily a factor that potentially hinders communication and information exchange, but it is a source of cross-cultural communication and therefore a relevant dimension to the previously mentioned factors.

Respondents with a regional data management role often indicated that the differences in perspective between headquarters and field offices are not that significant. People with a more local role emphasized the need of local reporting, indicating the differences are quite large. This difference might be explained by the fact that the regional staff members often communicate with headquarters.

“The headquarters rather want an overall overview of the entire office, where the field staff wants more Excel data or data about how someone reacted. It’s more qualitative.”

“Coming from a headquarters perspective, there is a strong emphasis on documentation, information, data, data, data. I think perhaps that culturally – in general – there is not that same level of emphasis in countries like Thailand, Cambodia or Myanmar.”

“At headquarters, more of the reports they need are actually for either reporting to the board, reporting to leadership and more often than not those are shown in numbers, it’s more quantitative. While in the field it’s more qualitative because if you’re a social worker you’d want to know how your client is doing, right? And now the Global Advancement team, they are interested in stories as well. But not in all the cases, they are interested in cases with a strong impact or a very powerful story. So, they reach out and then ask: “can you provide information on a story based on the information of the case, so we can write a story on it?” This story identification is a very collaborative task.”

**3.4. Conclusion**

*How can culture in the IJM case be defined and how can existing frameworks be applied?*

Several frameworks for measuring culture have been discussed. These provide different measurement scales to map culture across diverse areas (Hofstede: values, Hall & Hall: communication) and application areas (Meyer: international business, Inglehart-Welzel: societal shifts). Questions from the Value Survey Module (Hofstede, 2013) and an information culture assessment (Curry & Moore, 2003) have been applied in addition to the in-depth interviews to define IJM’s culture.

The interviewed individuals differ in values, though some of Hofstede’s dimensions show more variance than others. Questions from the information culture assessment show a high awareness of importance of data collection and usage in decision making. Whether this potential is already satisfied is still open for debate since answers showed high variance, averaging neutral. Internal communication around goals and objectives shows a similar pattern, with highly diverse answers averaging neutral.
National cultural diversity is not the main barrier for effective collaboration, communication, and knowledge exchange. Instead diversity in professional background and digital literacy forms a much larger obstacle. Diversity in professional background is handled by the current used system for information exchange and case management, but digital literacy diversity is often mentioned as the biggest hurdle in efficient information systems usage.

Culture in the IJM case can be defined by using existing frameworks. These can be applied by using (adaptations) of the questionnaires related to the frameworks.
4. International Justice Mission

*What is the organizational and technical environment of the information system?*

A basic understanding of the case organization is needed to understand the environment in which an information system will be designed. This chapter explains the way in which IJM works towards its mission. First a broad perspective on the influence of violence on global development will be presented, after which the concept of justice system transformation will be presented. The goal of the information system is to facilitate this justice system transformation, which will be discussed in the next chapter.

4.1. Global poverty

Globally, more than 800 million people live from less than US$ 1.25 a day. Economic growth lifted vast numbers of people above this threshold in the past decades in mainly China and India. However, it is observed that this progress is happening uneven. Sub-Saharan and South Asian countries show very limited poverty alleviation (UNDP, 2015). According to Collier (2007) the bottom side of this divergence in development displays in 50 countries. Common causes of failure in these are: civil war, natural resources dependence and bad governance.

Detailed focus on the resource dependency showed that sudden price increases for these commodity resources (e.g. oil) show rapid economic growth on a brief time span. But these ‘resource booms’ have a devastating effect after 10-15 years. The (often young) democracy in these countries further increased damage, because elections were not on the same level as checks-and-balances, resulting in corruption and lack of governance (Collier, 2008).

The influence of failing rule of law on poverty is further recognized as the locust effect (Haugen & Boutros, 2014). A swarm of locusts can devastate crops in moments, yielding in large economic and societal disasters. Similarly, single events of violence yield in disempowerment on an individual level and aggregated large-scale development stagnation on a regional level. This violence manifests in diverse ways, e.g. bonded labor, sex trafficking, abuse of power, but with a common denominator: victims are not protected by justice systems. Some cases show that malfunctioning justice systems even contribute to violence.

Haugen & Boutros (2014) emphasize that impunity, i.e. the absence of functioning rule-of-law, allows existence of large-scale violence. They further argue that the reinforcement of rule-of-law removes the main barrier that prevents current health, food, aid and development programs from achieving large-scale results.

The figure below displays the relations between these factors. Increasing poverty negatively impacts the quality of justice systems (UN Commission on Legal Empowerment of the Poor, 2008). This decreasing quality creates more impunity (Haugen & Boutros, 2014, p. 116). Impunity results in violence, which further causes an increase in poverty. This causal loop demonstrates how poverty is sustained or even reinforced because of low-quality (broken) justice systems.
4.2. Protecting the poor from violence: three-phase model

The previous paragraph displays the relation between poverty and impunity. Impunity is addressed by ensuring existence of justice systems and making them function properly. A justice system is comprised of a multitude of institutions involved in processing cases: police, public prosecution, defense, courts, and social services.

IJM has created a three-phase model to develop independent functioning justice systems in places where endemic violence is present. When a field office in a new location is opened, IJM has identified the type of violence that will be addressed within that justice system. The figure below shows the model of engagement IJM uses with local government and NGOs to assess the problems and effect change within the system. Field offices are opened with an aim at temporary presence. After the third phase is concluded, the local justice system should be able to independently sustain its ability to protect the vulnerable poor (International Justice Mission, 2018a).

Phase 1: Collaborative casework

Though the common properties of violence and slavery are known, no two justice systems are the same. IJM uses a collaborative casework approach to understand where impunity exists, to understand what the local dynamics are that lead to violence, and to assess where the public...
justice system is broken. The national team, comprised of lawyers, investigators, social workers and advocacy and mobilization staff, works closely with their public justice system counterparts to take cases through the system. Together with local authorities IJM teams rescue victims of trafficking and slavery, bring criminals to justice by cooperating with the local police and judicial system and restore survivors by providing aftercare.

In this phase a lot is learned about the specific cases, people and processes. By tracking (and pushing) individual cases throughout the system, specific problems in the local context can be identified.

**Phase 2: System reform**

Tracking and pushing cases through a broken justice system often takes years (International Justice Mission, 2016). This will continue to be a part of the field office’s work throughout the second and third phase. Still, the insights retrieved in the first phase can already be used to start with system reform.

Training, mentoring and other forms of capacity building initiatives are used to improve the justice system. Examples include: police officers are trained to separate perpetrators and victims after a rescue operation, preventing intimidation of victims; investigators are trained on how evidence should be collected so that it will hold up in court; aftercare homes are equipped with resources to provide trauma informed care.

At the same time political will is built to address injustice, to fight corruption and to provide the basis for the third phase.

**Phase 3: Sustaining gains**

Operations in a field office are a temporary measure to improve a justice system. Therefore, it is important that the system can function independently of IJM. The third phase is focused on sustaining gains. The main activity is measurement and evaluation: statistics of casework are collected, impact assessments are performed, and external auditors perform independent evaluations. When systems are improved, the prevalence of violence decreases and society in general benefits.

Further, political will is built around these improvements to ensure sustained training, equipment and investments in the local justice system. Cooperation with local and international partners also contributes to this. Activities in collaborative casework and system reform are then ended.

4.3. **Organizational environment**

A field office consists of several departments, focused on the different areas of specialization in casework, such as rescuing victims, prosecuting perpetrators and restoring survivors. These departments closely interact and collaborate with each other, which creates information supply and demand. The field offices report on program accomplishments to the HQ teams, who provide guidance and oversight to the field offices and manage relationships with funding institutions. This further increases the information need complexity.
Investigations & Law Enforcement Development (ILED)

The ILED department conducts independent investigations and criminal analysis to follow up on cases that are referred to the field office. When details of the suspected crime are confirmed, IJM staff collaborate with local authorities to mobilize the police. Police officers are also trained and supported.

Legal

After a rescue operation, IJM lawyers provide legal support and counsel to victims. They work in close collaboration with public prosecutors to secure justice for the victim in the legal context. This entails the entire process of reporting crime, testifying and providing evidence.

Aftercare

The aftercare departments consist of people with mostly social work backgrounds, providing care to survivors. This care includes a range of activities from direct psychological aid to training for independent safe reentry into society.

HQ

The US-based headquarters support field offices with management, expertise and finances. Experiences of the distinct field offices are exchanged through HQ. Donors, partners and governmental stakeholders are informed about justice system transformation progress through HQ.

4.4. Technical environment

The three-phase model as described above is a relatively young approach. Prior to this, the focus was more on what is now the first phase: collaborative casework. Each case entails a large amount of unstructured information. To be able to document and manage multiple cases at a time, field offices use a Case Tracking and Management System (CTMS). This system largely accounts for the technical environment that currently exists to document and leverage the work of field offices, so this system will be discussed first. Besides CTMS, an information sharing intranet (SharePoint) is also being used, which will be discussed second. A variety of tools and systems is being used for office and administration tasks, but these are not directly used within the scope of justice system transformation.

CTMS

Increasing information processing needs led to the development of CTMS. This system enabled field office employees to collaborate by creating a digital database for all case related information. This system did not facilitate reporting and was succeeded by CTMSv2, which improved on this. This current version will provide the basis for the analysis below.

Information flows

The figure below describes the information flows that need to be processed to facilitate collaboration on casework and reporting.
Generally, CTMS provides a way for information to be connected. The day to day users of the system are grouped by departments. CTMS implements security and permissions based on roles which provide differing access levels; field offices are not allowed to view each other’s data and teams cannot see all data of other teams.

The users in each field office document information about external stakeholders they engage with during their work activities. How these users and stakeholders are organized is displayed in the upper half of the figure. As in many organizations, the chart does not capture all the types of interactions users have with stakeholders. Information exchanges can follow a multitude of other paths.

Cases start with a referral from either IJM investigators or external information. Each case has certain outcomes, ranging from unsuccessful rescue operations to conviction and restoration. The process from a referral to the outcomes is an intricate path with many steps, which can often take many years. Still, patterns in investigations, trials and restoration processes do exist. The type of information stored in CTMS is therefore standardized; e.g. the information captured about perpetrators and victims, reports on victims, process information in a trial.

Technical background
The technical environment of CTMS is built up in several layers. These are conceptually displayed in the figure below.
This system is installed on hardware in each field office. This means that CTMS is still usable when no internet connection is available to reach headquarters or cloud-services. CTMS is built mainly on Microsoft technology (Microsoft, 2017), with only its user-facing part (front-end) programmed in React (Facebook Inc., 2018).

Reporting

Reporting is partially done from within CTMS, but mostly externally. This processing path exists independently from the CTMS layer structure since it splits off at Layer 1.

The nightly database replication to headquarters creates a large aggregated database which is processed with a data preprocessing tool. The preprocessing part consists of extraction, transformation and loads (ETL). This is a common approach in data warehousing (Kimball & Caserta, 2011). Extraction is pulling the data from the database and retrieving other data as well (e.g. spreadsheets, documents). This data is then transformed (e.g. filtered, joined) to make it suitable for reporting. The transformed data is loaded into another database or directly into the reporting tool.

This tool generates reports, consisting of e.g. graphs, maps and analyses. These provide insight into effectiveness and efficiency of operations to the field offices, global programs division and management.
Unstructured information

Though most cases are tracked through CTMS, still valuable data is also stored in other ways. Often this entails less structured storage of information. Examples include large Excel files, in which cases are listed; intranet websites with numerous documents and pdfs about cases; recordings and written notes from interviews or trials.

These practices are mostly remains of work processes before CTMS was introduced and are not necessarily relevant in creating or updating the information systems. Still, those remains are relevant in the field office workers day-to-day operations and they are mentioned multiple times throughout the first interview round.

4.5. Conclusion

*What is the organizational and technical environment of the information system?*

IJM is an organization in rapid transition and that also defines the organizational and technical environment. The past years a new field office work process was implemented (three-phase model) to shift from individual casework to justice system transformation. At the same time the scale increased. For the organizational environment this means that most data-related roles are relatively new. The current technical environment is solely focused on tracking individual cases, but already provides some reporting functionality which allows for some low-level analysis of justice system transformation. Overall, much effort is put in letting the organization and technology keep up with the demands of growth in scale and focus of operations. Keeping up with technological developments is a broader challenge. Even when new systems are developed, transforming work processes to benefit from this requires much effort. This is illustrated by the fact that pre-CTMS systems and processes are still being used, while the first plans of replacing the current CTMSv2 system are made.
5. Information for scalable transformation

*What is the role of information in Justice System Transformation?*

To understand the current organizational and technical environment, the previous chapter described development, justice systems, IJM and its three-phase model for justice system transformation. This chapter builds on these concepts with a focus on what the future role of information in justice system transformation is. To achieve this, the factors influencing the quality of justice systems are further investigated. This provides insight in the goals of the future information system. The three phases from the three-phase model described in the previous chapter partially show overlap and are hard to exactly distinguish from an information perspective. Therefore all phases are included simultaneously in the models below.

IJM’s strategy through 2030 will be explained first in relation to justice systems. After this, the role of data and information within that vision will be discussed. The chapter concludes by describing some of the broader data and information trends that could also play a future role at IJM.

5.1. Sustaining change

The core strategy of IJM through 2030 is the philosophy that impunity is a reinforcing phenomenon (International Justice Mission, 2017). As has been shown in the previous chapter, impunity, violence, poverty and broken justice systems constitute a positive feedback causal loop which causes poverty to be sustain or even reinforced while this loop has not been changed. To illustrate how this loop of factors can be changed (the goal), two other factors are added in the figure below.¹¹

![Figure 5.1: Extended justice system causal loop](image)

---

¹¹ A complex diagram of roles and interactions will be constructed in this paragraph. A full diagram is included in Appendix III.

¹² The diagrams are an illustration of how the future strategy of IJM can contribute to decreasing poverty and are no absolute measure of the interaction of complex factors in every situation. E.g. the complexity of the relation between poverty and corruption is not displayed.
Poverty creates an environment in which corruption can thrive (Collier, 2008). Bribes and arbitrary treatments are manifestations of corruption that highly contribute to justice system brokenness (Haugen & Boutros, 2014). This relation is facilitated by the ownership a government takes, or not, over its justice system. This ownership is decreased because of acts of corruption, whereas more ownership means a justice system is less prone to being damaged by poverty and corruption (International Justice Mission, 2017; A. Jones et al., 2010).

Ownership
Local governmental ownership is needed to achieve sustained change in the violence-poverty spiral without the need to stay involved permanently. The figure below shows how IJM influences both the loop and the local governmental ownership through four mechanisms. A mechanism in this context is a category of factors that are strongly related.

![Diagram of influencing a remote justice system](image)

**Figure 5.2: Influencing a remote justice system**

Casework (also part of the three-phase model, chapter 4) primarily aims at directly improving local situations by moving cases through the public justice system. Besides having its direct effects, this also generates useful information that builds expertise about what is not working in the public justice system. This information will be used by program teams to design knowledge centers staffed by specialists who will design targeted activities aimed at improving and supporting justice systems quality. This knowledge center will also serve as an input for awareness & funding related activities. These knowledge centers not only help generate revenue to support the entire organization, they also provide insights and stories for local governments. Lastly, these knowledge centers will also stimulate global ownership of the problem of slavery. Ownership by the international community and global corporations will further pressure and stimulate local ownership and is a source of awareness and funding.

Development actors
International Justice Mission is not attempting to claim sole ownership over all these (categories of) activities. Instead it collaborates with ‘Development actors’, parties with goals aligned to those of IJM.
At the local level, these development actors consist of organizations working on elements of casework, mostly within a local or regional scope. These parties consume and contribute expertise, which is captured and disseminated by IJM. This structure enables the scale of casework to exceed the capabilities of IJM, while still benefitting from a central repository for knowledge and expertise sharing.

Roles

The variety of activities performed and supported by IJM creates a necessity for IJM to take on three separate roles (International Justice Mission, 2017). These roles and their activities are shown and discussed below.

**Player & Coach**

IJM’s involvement in field operations is part of its Player & Coach role. This role has direct interaction with casework and the knowledge center. From the perspective of a scalable transformation, the activities in this role are mainly focused on gaining the insights that are needed for other roles and mechanisms.

**Catalyst**

Public involvement is a major driving factor for governmental ownership. This involvement can be increased by mainstreaming the idea of citizen security, by building emotional urgency through storytelling and by connecting churches to the cause. This role is aimed at a large worldwide public. IJM aims at catalyzing the influence of this large group to build awareness and generate funding.

**Consultant**

Through the first two roles, IJM collects knowledge and experience about violence, slavery, how to end impunity and how to communicate about all these concepts. This knowledge and experience is the core of IJM’s role as consultant. Through consultancy, IJM can help corporate organizations see the value of and invest in human-friendly supply chains and provide support to governments in improving citizen security.
Mechanisms

The four mechanisms to influence justice systems and local government commitment that have been identified are: casework, knowledge center, awareness & funding, global commitment.

**Casework**

Poverty and impunity are directly influenced by the casework mechanism. Rescues, restorations and convictions are all influenced by the external inputs, but an increase in rescues causes an increase in both restorations and convictions.

![Figure 5.5: Casework mechanism](image)

This mechanism is driven by activities in the Player & Coach role and interacts with development actors and the knowledge center mechanism.

**Knowledge center**

The justice system quality is influenced by the knowledge center mechanism, especially by the education & training factor. This education & training uses input from two types of knowledge. ‘Data & research capabilities’ is expertise in how justice systems can be measured and diagnosed; and ‘knowledge & know-how’ in this context addresses the operational side of this: e.g. how a police or court can act to improve its results.

![Figure 5.6: Knowledge center mechanism](image)

Active participation in improving justice systems, the Player & Coach role is the driving factor for this mechanism. However, knowledge in the organization is not strictly separated between fields, so interaction with the other activities is also likely. Casework is tightly interacting with this mechanism and creating awareness is also made possible through expertise.
**Awareness & funding**

Public commitment is the main part of awareness & funding. This commitment can exist locally, e.g. when people demand action from their government and remote, e.g. when someone in the USA decides to donate for operations in India. This public commitment leads to both funding for IJM’s activities and governmental ownership.

![Figure 5.7: Awareness & funding mechanism](image)

The ‘Catalyst’ role contains most activities driving this mechanism, though consultancy also increases funding. Community leaders (i.e. influential people in groups) play a significant role in scaling this mechanism. Through these people, IJM can create awareness at larger scale.

**Global ownership**

Another way to influence local governmental ownership is through ‘global ownership’. This mechanism is like the previous, but instead of reaching communities and people, this aims at influencing governments and corporates.

![Figure 5.8: Global ownership mechanism](image)

By acting as consultant, IJM can leverage its expertise and stimulate global corporate ownership and global governmental ownership. This is influenced by respectively the corporates and governments itself and by each other. E.g. people become aware of bonded labor in the fishing industry and urges a supermarket to create a sustainable supply chain.

*Note: an overview of the combined graphs in this paragraph is shown in Appendix III.*
5.2. Role of information

In the previous paragraph the (envisioned) mechanisms behind scalable justice system transformation are discussed. This paragraph translates these mechanisms to information needs. This decade, International Justice Mission aims at becoming a decentralized movement, while still orchestrating and driving justice system transformation (International Justice Mission, 2017). This perspective will be the basis for estimating the needs of an information system.

Information flows

A process that requires information input from another process evokes an information flow. An information flow is defined as a transfer of information between two persons, a person and a system or two systems. Within this flow, operations can be performed, such as calculation and storage.

To structure information flows that need to be facilitated, the mechanisms are used as a basis. A list of information flows/exchanges is made per activity. External parties are important in establishing this decentralized movement, so special attention is paid at interaction with those. The source, destination and characteristics of each information flow is discussed. Since these interactions also transcend IJM’s internal communications, the effect of culture is increasingly present. The next chapter discusses the information flows from this cultural perspective.

Casework

*Continue field operations*¹³

This activity is most related to the past and current work done in IJM’s field offices. The case tracking management system (CTMS) is designed to facilitate the information flows around field operations. Field Workers (FW) and Field Offices (FO) are the main actors in this activity.

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW</td>
<td>FO</td>
<td>Information on cases</td>
<td>Qualitative descriptions, predefined structure</td>
<td>Internal, Classified personal</td>
</tr>
<tr>
<td>FO</td>
<td>FW</td>
<td>Information on cases (e.g. victim interview for legal work)</td>
<td>Qualitative descriptions, predefined structure</td>
<td>Internal, Classified personal</td>
</tr>
<tr>
<td>Field data engineer</td>
<td>FO director</td>
<td>Statistics on field office performance</td>
<td>Quantitative data</td>
<td>Internal</td>
</tr>
<tr>
<td>FO</td>
<td>HQ</td>
<td>Statistics and reports</td>
<td>Quantitative data</td>
<td>Internal</td>
</tr>
</tbody>
</table>

*Build a team of partnerships*

Working with partners on cases increases scalability and leverages local expertise. This activity is focused on engaging in casework with partners. This entails the sharing of case details. Knowledge sharing across these partnerships will be addressed in the ‘Knowledge center’ mechanism.

¹³ Casework & Knowledge center are both driven by the role ‘Player & Coach’. The activities in this role are distributed between both mechanisms.
### Knowledge center

#### Learn from experience
People doing work gain experience. Cultivating and sharing this experience enables scale and an increase in quality.

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aftercare partner</td>
<td>Aftercare team FO</td>
<td>Information exchange diagnoses and treatments</td>
<td>Client data</td>
<td>External, classified personal, bidirectional</td>
</tr>
<tr>
<td>Law enforcement partner</td>
<td>Law enforcement team FO</td>
<td>Information exchange on suspects, locations, clients</td>
<td>Case data</td>
<td>External, classified personal, bidirectional</td>
</tr>
<tr>
<td>Legal partner</td>
<td>Legal team FO</td>
<td>Information exchange on case details and legal process details</td>
<td>Case data</td>
<td>External, classified legal, bidirectional</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>FO</td>
<td>HQ</td>
<td>Experiences &amp; learnings casework</td>
<td>Know-how</td>
<td>Internal</td>
</tr>
<tr>
<td>FO</td>
<td>HQ</td>
<td>Experiences &amp; learnings measurement &amp; evaluation (data &amp; research)</td>
<td>Know-how</td>
<td>Internal</td>
</tr>
<tr>
<td>HQ</td>
<td>HQ</td>
<td>Experiences &amp; learnings awareness &amp; funding</td>
<td>Know-how</td>
<td>Internal</td>
</tr>
<tr>
<td>FO/HQ</td>
<td>HQ</td>
<td>Experiences &amp; learnings cooperating with partners</td>
<td>Know-how</td>
<td>Internal</td>
</tr>
<tr>
<td>FO/HQ</td>
<td>HQ</td>
<td>Experiences &amp; learnings cooperating with governments</td>
<td>Know-how</td>
<td>Internal</td>
</tr>
</tbody>
</table>

#### Support knowledge exchange
Sustainable justice system transformation needs local actors to continue with law enforcement and legal work and aftercare. Knowledge exchange gives local actors advantage in doing so.

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>FO</td>
<td>Local partner</td>
<td>Experiences &amp; learnings</td>
<td>Know-how</td>
<td>External</td>
</tr>
<tr>
<td>FO</td>
<td>Local government</td>
<td>Training in public justice system</td>
<td>Know-how/Training</td>
<td>External</td>
</tr>
<tr>
<td>HQ</td>
<td>Partners</td>
<td>Experiences &amp; learnings</td>
<td>Know-how</td>
<td>External</td>
</tr>
<tr>
<td>HQ</td>
<td>Governments</td>
<td>Experiences &amp; learnings</td>
<td>Know-how</td>
<td>External</td>
</tr>
<tr>
<td>HQ</td>
<td>Other NGOs</td>
<td>Experiences &amp; learnings</td>
<td>Know-how</td>
<td>External</td>
</tr>
</tbody>
</table>

#### Awareness & funding
This category of actions centers around spreading information on how justice systems work, how they can and should be improved and what the resulting potential impact of this is. Three types of actors (IJM calls these ‘Agents of Change’) are receptors of this information: Community leaders, Development actors, Corporate sector.

#### Mainstreaming idea of citizen security
Theory around citizen security is not yet widespread, nor is the idea that a functional justice system creates an environment which can contain sustainable development. Spreading these ideas catalyzes change, enlarges IJM’s reach and enables fundraising.
<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ</td>
<td>Broad public</td>
<td>Information on justice system workings, Ideas, Inspiration</td>
<td>Theory, Philosophy, Case examples</td>
<td>Mass communication</td>
</tr>
<tr>
<td>HQ</td>
<td>Corporate sector</td>
<td>Information on justice system workings, Ideas, Inspiration</td>
<td>Theory, Philosophy, Case examples</td>
<td>Mass communication</td>
</tr>
<tr>
<td>HQ</td>
<td>Donors</td>
<td>Information on IJM’s progress and challenges</td>
<td>News</td>
<td>Mass communication</td>
</tr>
</tbody>
</table>

**Building emotional urgency by storytelling**

Human beings process information best through stories. Stories with relatable characters are a medium of theories and inspiration. According to IJM, emotional urgency (the feeling that something needs to be done) by a wider public is built through storytelling.

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ</td>
<td>Broad public</td>
<td>Stories, Ideas, Inspiration</td>
<td>Stories</td>
<td>Mass communication</td>
</tr>
<tr>
<td>HQ</td>
<td>Development actors</td>
<td>Stories, Ideas, Inspiration</td>
<td>Stories</td>
<td>Mass communication</td>
</tr>
</tbody>
</table>

**Spiritual sourcing by connecting churches**

Churches with a willingness to increase global justice form a large part of IJM’s constituents. They are involved on several layers of the organization and receive updates accordingly.

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ</td>
<td>Community leaders</td>
<td>Information on justice system workings, Ideas, Inspiration</td>
<td>Theory, Philosophy, Case examples</td>
<td>Mass communication</td>
</tr>
<tr>
<td>HQ</td>
<td>Community leaders</td>
<td>Stories, Ideas, Inspiration</td>
<td>Stories</td>
<td>Mass communication</td>
</tr>
<tr>
<td>HQ</td>
<td>Community leaders</td>
<td>Information on IJM’s progress and challenges</td>
<td>News</td>
<td>Mass communication</td>
</tr>
</tbody>
</table>

**Global ownership**

Worldwide scalability can only be reached through global actors. IJM partners with governments and corporates to establish global ownership over respectively citizen security and supply chains.

**Governmental support regarding citizen security**

IJM aims to partner with worldwide governments and provide expertise in ending impunity in their country.

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ</td>
<td>Government</td>
<td>Information on justice system workings, Ideas, Inspiration</td>
<td>Theory, Philosophy, Case examples</td>
<td>External</td>
</tr>
</tbody>
</table>

**Professional consultancy regarding supply chains**

Supply chains of multinational corporations involve a large amount of worldwide economic transactions. When these corporates reduce violence across their supply chains, financial incentives for violence and slavery decrease.

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Description</th>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ</td>
<td>Corporates</td>
<td>Information on justice system workings, Ideas, Inspiration</td>
<td>Theory, Philosophy, Case examples</td>
<td>External</td>
</tr>
<tr>
<td>HQ</td>
<td>Corporates</td>
<td>Expertise on violence in supply chains</td>
<td>Theory, Philosophy, Case examples</td>
<td>External</td>
</tr>
</tbody>
</table>
5.3. External trends

Besides IJM’s visions and ambitions, external circumstances are also in constant development. To determine the role of external developments in information systems, this paragraph lists some of the trends in large-scale information systems and what the potential impact of these trends on IJM’s information systems is.

Stacks of boxes: software platforms

Every piece of software is an abstraction layer. This abstraction ranges from translating instructions into outcomes (processor code) to translating a button to an action (e.g. in an app). A software product can be compared to a stack of boxes, each component building upon the other, abstracting more towards the end user.

Lyft, or any other app, for example is a set of abstraction built upon each other. It links a user and a driver in an efficient way, abstracting ‘away’ the work of a taxi center (derived from T. L. Friedman, 2016, Chapter 2).

Boxes in this stack tend to get bigger as their abstraction level increases. This scale increase comes along with an increase in development costs. On the other hand, each abstraction layer enables every user to achieve more. Therefore, additional abstraction layers generate value.

Sharing development costs is possible by splitting a product into components, these components can be shared across people, projects and companies, resulting in lower development costs. This incentive leads to modularization, and is the core of modern rise of connection, modules, plugins and interfaces between applications. Modules are e.g. packages (boxes) for security, machine learning or user interfaces.

This modularization further leads to multi-sided platform economics: a platform’s value increases when a client benefits from other clients being present. A market without other customers will not attract market stalls and will therefore not be attractive to visit. In the same way, when a module is used by multiple parties, the quality/price ratio increases. This creates higher efficiency in joining a platform than in building the modules in-house.

Bigger platforms: distributed systems

In 2007 a new piece of software was released that made it possible to access multiple computers as if they were one big system. Files and computation tasks were distributed by this
piece\textsuperscript{14}, making it possible for software developers to build bigger systems with commodity hardware (White, 2013).

Combined with the platform economics tendency described above, this development resulted in cloud computing platforms existing today: large software platforms consisting of connected machines, on which scalable software can be ran for relatively low prices.

Connecting to a cloud platform means decentralized computing and data storage can be performed but is a centralizing step on the other hand. Currently IJM runs its own servers in each field office, containing software and data needed locally. A local network connection therefore suffices to connect to this server. An advantage of this is that when internet outage occurs (which is common for some field offices) the server is still accessible. The downside is that data is not accessible from e.g. mobile phones. Cloud systems are accessible from everywhere but do require an internet connection. Hybrid systems do exist, but add complexity and costs (U.S. Patent Application No. 14/414,185, 2015).

This development in increased scalability enables IJM’s vision on scalability and decentralization from an information systems perspective. Current distributed systems can facilitate scalable data collection and analysis. The distributed nature of these systems enables the decentralization and decreased dependency from headquarters.

Investigations, analytics & reporting
As has been explained above, linking computers enables development of larger software systems. One of the new possibilities is the possibility of analyzing large amounts of unstructured data. This type of data is broader than the structured data (cases, victims, properties) currently stored in CTMS. Large-scale data can help in performing criminal investigations. The same principle is valid for reporting at scale. When IJM grows according to its ambitions many partners will work on many cases. At that scale, the performance of the justice systems needs to be assessed too to ensure transformation is occurring.

5.4. Conclusion

\textit{What is the role of information in Justice System Transformation?}

Information plays a major role in Justice System Transformation. The main reason for this is that transformation needs to be measured and communicated. In 2030, IJM aims at playing a key role in global justice system transformation. Despite having partners working towards the same objectives, a lot of information will flow through IJM’s systems to support all envisioned processes. Current developments in software development and IT in general provide the means for such scalability, while enabling decentralization from the current headquarters. The future information system must facilitate numerous information flows. The common characteristics of such information flows are used in the prescriptive technical investigations presented in chapter 7.3.

\footnote{\textsuperscript{14} This piece of software is called Hadoop and was established as an open source project in reaction of Google’s release of two papers explaining the fundamental basis of their distributed systems (White, 2013).}
6. Culture sensitive information systems

How can the frameworks and environment be translated into an information system?

Creating information systems that are culture sensitive benefits users of these systems and will provide added value for organizations relying on information management. In the previous chapters, measuring culture, IJM's transition model and the role of information are discussed.

To answer the question of how cultural frameworks and the perceived cultural environment of the case study can be translated into an information system, this chapter will display a method for embedding culture sensitivity into an information system design. This will be based on prior research into the more generic Value Sensitive Design methodology (paragraph 6.1), this generic methodology will be specified by translating culture to values. Though VSD is aimed at technology design in general, the specification uses for designing information systems will not be specifically elaborated upon.

After this specialized method has been developed, an application in the case study at IJM will be presented in the next chapter.

6.1. Value sensitive design

Much of today's communication, information processing and international business is shaped by information technology. This situation, in which technology takes a huge stake in designing, thinking and even philosophy, calls for an ethics of technology (Schuurman, 2010). This subject is receiving much attention regarding autonomous systems (Bonnefom et al., 2016), but is relevant in a broader scope too. Over the last decades, scientific effort has been put into the design methodology Value Sensitive Design (VSD), which self explains as creating technology which is sensitive to the values of its users (B. Friedman et al., 2009). The methodology embeds human values systematically into a design process.

A 'value', in this context, is something a person or multiple people consider important in life and is therefore broader than an economical value an object might have. Friedman et al. (2009) further distinguish values from facts, something is not always what it should be. Embedding these values in technology design can be done by what is called ‘the tripartite methodology’. It consists of three investigations, which are applied iteratively. Each part of investigations can be conducted independently, but interactions do exist (e.g. empirical value tradeoffs can be the same as conceptual). By performing the investigations iteratively, each part can be improved by findings in the other parts. The three investigations are explained below.

Conceptual investigations

The first type of conducted investigations aims at conceptually mapping relevant values. Example questions that could be answered are: Which stakeholders are affected by the design? How are these affected? Which values are relevant? Are tradeoffs between values made? After these conceptual questions have been answered, a framework can be drawn up which shows involved stakeholders, the values that are potentially influenced and whether these need to be weighed against each other.
Empirical investigations
After the round of desk research and drawing the concepts, empirical investigations provide additional insight. Empirical investigations, as the name suggests, observe how people prioritize competing values, what they find important and if there is a difference in what people say and do. Most social sciences and psychology research methods can generate answers for these questions. This round of investigations is equivalent to the qualitative research into cultural values performed in chapter 3.

Technical investigations
As is described by Friedman et al. (2009, p. 73), “Value Sensitive Design adopts the position that technologies in general, and information and computer technologies in particular, provide value suitabilities that follow from properties of the technology”. I.e. technological properties determine which activities are more supported over others, and thus which values are supported.

Two types of technical investigations can be distinguished: descriptive and prescriptive investigations. Descriptive technical investigations consider currently existing technology and assess its properties on how it influences values, while prescriptive investigations consider the technological properties as design specifications with which values can be supported. Both methods are distinct from empirical investigations in the sense that not human beings, but technology itself is studied.

6.2. Specification of values: culture
Throughout all three phases of the VSD methodology, values play an important role. In this research, the aim is to work towards a culture sensitive information system, which is a more specific form of value sensitivity. First the general translation between values and culture will be discussed. After this, the specification of values into culture will be performed for the three types of investigations.

Cultural dimensions
In chapter 3, the concept of culture is discussed as well as the demarcation in the current case study research within the broad range of possible interpretations. In this research, culture is qualitatively measured by a questionnaire based on two interpretations of culture (Curry & Moore, 2003; Hofstede et al., 2010).

Hofstede
This model of culture is based on national values. Each dimension measures the balance between two values (e.g. Indulgence vs. Restraint; Power Distance vs. Egalitarian). In comparison with the framework supplied by Curry & Moore, these values are more abstract, but can nevertheless be supported or demoted by properties of technology.

Curry & Moore
This model and assessment on information culture aim at describing the situation objectively, it assesses the current state of the information culture in an organization. Underlying values of what a good information culture is are still visible though. The values that can be derived from this questionnaire that will be used in this research are the importance of data-driven operations, the importance of information quality and the importance of information exchanges.
Specification per part
The role of values is slightly different in each part of investigations. Example questions are formulated for each part to constitute a specific approach for usage in the case study. These questions are based on the examples by Friedman et al. (2009) as described above.

**Conceptual**
To be able to draw up a conceptual framework on cultural values impacted by the system that will be designed, at first the stakeholders need to be listed. Direct and indirect stakeholders can be distinguished, the first directly interact with the system, the latter do not but are affected by the system. This is followed by a theoretical exercise of listing all implicated cultural values (in this research of both Hofstede and Curry & Moore). Potential value tradeoffs should be identified, concluded by an approach to weigh these tradeoffs.

1. Who are the direct stakeholders of the information system?
2. Who are the indirect stakeholders of the information system?
3. What cultural values of these stakeholders are implicated?
4. Do competing cultural values exist in the design of the information system?
5. How should weighing these tradeoffs be approached?

**Empirical**
The empirical investigations determine how cultural values are weighed when conflicting. For certain values, this weigh is already culturally determined. E.g. people have a cultural tendency towards the value individualism or towards collectivism. Importance of information culture-related values can also be measured.

6. What is the influence of cultural values on information systems usage?
7. How do individual stakeholders prioritize competing values and usability?
8. How does an organization prioritize competing values of multiple people?

**Prescriptive technical**
Since this case study research focusses on creating design guidelines, only the prescriptive side of technical analysis is considered. The first step in this phase is to list technical properties that could be part of the final design. After this, cultural value implications are listed. Finally design solutions to weigh or solve conflicting values are explored. These prescriptive technical value tradeoffs are an input for formulating design guidelines.

9. What are potential technical properties of the information system?
10. How do these properties impact cultural values?
11. How can properties be designed to solve or weigh competing cultural values?

6.3. Conclusion

*How can the frameworks and environment be translated into an information system?*

The Value Sensitive Design (VSD) methodology provides a systematic approach to designing technical systems while incorporating (competing) values and multiple stakeholders. These properties make VSD a useful tool to translate cultural frameworks and environments into information systems. Since culture correlates much with values, translation between the two is feasible. The questions in the three iteration phases of the VSD method can be adapted to create a culture sensitive design methodology, which will be used in the next chapter.
7. Design guidelines for IJM

*How should the new information system for IJM be designed?*

To create design guidelines for IJM’s next case management information system, the culture sensitive design approach from chapter 6 will be applied. Each part’s investigative questions will be answered based on the cultural assessment from chapter 3. The technical properties of the information system are derived from the information flows presented in chapters 4 and 5. Finally, concrete examples of how technical properties can support cultural values are presented, which can be used for validation in the next phase of the case study research.

The broad overview of information flows in chapter 5 also includes information exchanges to partners, donors and other information that is created by the Global Advancement division. The scope of the new data solution is yet uncertain, but in terms of cost efficiency, it is unlikely that these meta-information flows are included in the system. In that case, the scope will be similar to the current CTMS system’s scope. This includes all field office operations; metadata, analysis and reporting; global measurement & evaluation. Additionally, to the current system, communication with local casework partners is included. Another difference with the current system is the scale (much larger) and deployment scope (mobile accessible).

7.1. Conceptual investigations

The conceptual investigations are conducted first. The direct and indirect stakeholders are discussed first, after which their values are listed. Potentially competing values are identified and will conceptually be weighed.

Direct stakeholders

*Who are the direct stakeholders of the information system?*

The end-users of the system are the direct stakeholders. Based on their work processes, these people can be categorized in four groups: field office staff, casework partners, regional staff, headquarters staff. Some overlap exists between the field offices and the regional data scientists that work from a field office, though their role is still slightly different.

The field office end users group consists of field office directors, aftercare team, legal teams, investigations & law enforcement teams. Local partners will also be using an interface similar to IJM’s own staff. Their interactions with the information systems will mainly be entering and retrieving information.

Regional data specialists work from field offices, but focus on an entire region (e.g. Africa, Southeast Asia), their main activities are: supporting the field offices in their focus region, identifying issues in system workings and data collection, interpreting data and reporting.

---

15 Similar to Marketing & Communication in other organizations.
16 See also paragraph 4.4 Technical environment.
the headquarters, the system is mostly used for measurement & evaluation, this means reports are created to measure justice system transformation & evaluate the outcomes.

Indirect stakeholders

Who are the indirect stakeholders of the information system?

People and organizations who are influenced by the system without using it directly are indirect stakeholders. Clients, legal parties, partners and internal indirect users are discussed in this section.

The main group of indirect stakeholders are the clients (victims) in cases that IJM (or any of its partners) work on. Personal details, facts, timelines and stories of these people are recorded in the system to provide care for the client and to provide evidence in trials. Since this stored information is highly personal and confidential, these people have interest in proper usage. During the investigation and trial phases of a case, data on alleged perpetrators might be collected to, making them indirect stakeholders as well.

Other legal parties in trials are indirect stakeholders too. In a case, a request for providing all relevant information can be made and should be followed. This information is supposed to be stored. Developments in admitting digital evidence in trials require proper information handling.

Partners, other than in direct casework collaboration, might use justice system performance information in their work, regionally or globally. External organizations should be able to audit the progress that is made.

Internal indirect users are the aforementioned Global Advancement division. As discussed, people in this division will probably not directly use the system, but still their work is influenced by the information system.

Implicated cultural values

What cultural values of these stakeholders are implicated?

To investigate the potential implicated cultural values, the models of Hofstede and Curry & Moore are used to conceptually investigate the impact of cultural diversity on information systems. In the list below, a translation to information system’s usage is made for every dimension.

Hofstede

Power distance

This dimension is relevant in several ways when using the information system. Reporting through the system might be a way for reporting to the superior, the amount of ‘power distance’ in a culture might influence how information is described. Similarly, when a field office staff member feels data needs to be entered solely for the headquarters, the power distance determines how this is done.

Masculinity/Femininity

The Asian concept of losing face is related to the masculinity score of a country (Dong & Lee, 2007). Losing face might occur when described failure is taken personally. This influences how
success and failure are described. The influence of masculinity on information system’s usage is not necessarily limited to losing face.

**Individualism/Collectivism**
Individualistic cultures value privacy more than collectivistic cultures (Cockcroft & Rekker, 2016). This might influence the system usage regarding storing and sharing personal information of clients and alleged perpetrators.

**Uncertainty avoidance**
This dimension might influence how precise data is entered and interpreted. The uncertainty avoidance score translates in how the consideration between spending time and potential uncertainty is made.

**Uncertainty avoidance**
Data collection takes time which can be spent on caring for clients or working towards a trial. In the long term, this data collection might benefit. The long- or short time orientation might influence how this consideration is made.

**Indulgence/restraint**
Being the youngest dimension in Hofstede et al.’s model, this value is rarely used in information systems research. However, a link with work ethics can be made (Zhou et al., 2015). Values related to the usage of information systems are often stronger related to uncertainty or long-/short term orientation. This dimension will be left out of consideration in the remaining conceptual and empirical investigations.

**Curry & Moore**
The information culture assessment by Curry & Moore (2003) is partially assessing how according to the respondents things should be and how they are. Questions of the first category, how things should be, have been used to derive three value considerations.

**The importance of data-driven operations**
Whether operations and other field-level decisions should be based on data and objective information is described by this value.

**The importance of information quality**
This value describes whether someone finds it important to base decisions (on low and high level) on good quality information. It influences how precise information is stored and how rigorous information is checked before usage.

**The importance of information exchanges**
This value describes the perceived importance of information exchange in collaboration between people, teams and offices. It influences how accurate and detailed data is stored that is not directly used by the person collecting it.

**Competing cultural values**
Do competing cultural values exist in the design of the information system?

Each of the dimensions stated in the previous section is a source of potentially competing values. Variations in and between dimensions, resulting values and sub-values theoretically cause numerous potential conflicts. Exhaustive investigation of these collisions can be done in cases in which less empirical data is available. In this case study, the existence of competing
cultural values in the design of the information system will be illustrated by three examples. The choice of these three examples is supported by the in-depth interviews, most issues mentioned during the interviews correlate with these examples. The examples will be used for demonstrating conceptual weighing tradeoffs in the next section.

**Working for or with clients?**
As has been discussed extensively, data collection is an important factor in having impact on justice systems. In the long term, entering data in a system therefore has more impact than the improved life of a single citizen. However, this impact is a statistical improvement, while the impact of having a conversation with a client can be directly visible. Diversity between people on Hofstede et al.’s long-/short term orientation dimension might cause competition between short term gains and long-term gains.

**Data exchange for effectivity?**
Efficient collaboration around client cases can highly benefit from early and often exchange of personal client information. This value competes with the value of privacy protection, which is more present in individualistic cultures.

**Truth or trust?**
When decisions on continuing operations or improving processes are made, doing so data-driven means involving data around success and failures. In a masculine society, especially Eastern, face can be lost when public information about (personal taken) failures is shared. The value of protecting individual face competes with the value of extensive open sharing of information.

**Approach in weighing tradeoffs**

*How should weighing these tradeoffs be approached?*

Weighing these conflicting cultural values can be approached by determining a hierarchy from core cultural values to specific derived cultural values. The core values of IJM are: being Professional, being Christian, being Bridge-builders. Each of the conceptual examples will be approached by determining a hierarchy. These considerations require much effort and have many ethical implications too. The examples below should be merely viewed as an example of the approach rather than a definitive answer on difficult tradeoffs.

In the first example, both caring for clients and precise data collection are important, but system reform has more potential impact than the single client. A focus on organizational effectivity can be derived from the value of being professional, though individual care is important too.

Legal constraints sometimes prevent exchange of personal data without informed consent by the person. Additionally, from the organizations goals, optimizing collaboration seems less important than protecting clients. Therefore, a way without sharing sensitive details should be found in the second example.

Though the organization has American roots, respect for its staff globally can be derived from the core value ‘being bridge-builders’, therefore protecting an individual from losing face is important for the organization too. A way of discussing failed operations, without someone losing face, is preferred.
7.2. Empirical investigations

The second part of culture sensitive design are the empirical investigations. As the name suggests, empirical observations are the basis for this part compared to the logical conceptual reasoning in the previous section. Each question will be discussed using the observations from chapter 3, based on interviews, a survey and observation.

Culture in information systems usage

What is the influence of cultural values on information systems usage?

Cultural values are a broad concept and therefore hard to measure. Chapter 3 discusses in more detail what culture is, how it can be measured and what the cultural environment at IJM looks like. These summarized insights are used to answer this first question of the empirical investigations. Again, first the results from the questionnaire with respectively Hofstede et al.’s dimensions and information culture results are shown after which the in-depth interviews are discussed.

Hofstede et al.’s dimensions

A medium power distance is observed with low variance. In the current system, power relations exist in two ways, decision rights and access rights. Only a field office director can open or close cases, and it is only possible to view information that is relevant to the system’s user. This design seems to fit with a medium power distance and the low variance allows for not having to fit multiple diverging cultural values.

In general, more individualism than collectivism is observed. This indicates a tendency towards working towards individual goals rather than towards the overarching organizational goals. The current system is a tool for supporting this individual’s work, but the system will be used less as soon as another option is easier. This can be nuanced by noting that none of the respondents is extremely individualistic and there is quite some diversity in this area.

On average, the observed masculinity is neutral, but high individual differences are visible. How failure and success are treated is related to this dimension. The larger role of failure in a masculine society is visible in information systems usage:

“There could be the desire for people to mark things as successful even if they weren’t fully successful or to only document and write down a sanitized version of events and not what really happened.”

Precise and detailed data collection is a part of uncertainty avoidance. The average respondent tends to display a low uncertainty avoidance score. In using the system, when it saves time, less details are collected than might be useful for data collection.

The impact of long-/short term orientation on information systems usage is similar. A tradeoff exists between short-term gains and long-term gains. When it saves time on the short term (i.e. more people can be served), long term benefits of spending time documenting are easily neglected. The respondents show a tendency towards short term orientation, but some variance exists.

Curry & Moore’s information culture

The information culture at IJM as discussed in chapter 3.3 is summarized first and will be applied at information systems usage from a culture sensitive design perspective. The information culture at IJM contains a strong and widespread understanding of the potential value of using data for operations, however a lack in current usage is observed too. Large
differences in perception of organizational communication increases the gap between the current and desired situation. People do not always understand information needs in other teams and in turn sometimes miss information that could improve their work environment.

In using information systems, the motivation of entering and exchanging information is present. People are highly motivated to work towards the organization’s goals and understand data collection and exchange is a part of that. On the other hand, they lack a sense of what information is used for what, making the link between their daily data collection and reaching organizational goals weaker. An office in which a pilot with enhanced internal reporting runs reports highly increased ability to enter the right information, because people now know for example “what it is used for, why it is important to put in details like the address or age of victims.”

**In-depth interviews**

Three topics arise from the discussion of interview results in chapter 3.3: national cultural background diversity, professional background diversity and digital literacy. Digital literacy emerged as a key differentiating factor across users of the current information system, most respondents indicated the impact of this factor being much larger than national or professional background diversity. However, these also have effects on information systems usage.

National background diversity, other than Hofstede et al.’s dimensions discussed above, manifests mainly through language differences. Local staff members are often able to work in English, but translation of conversations and reports take time. Due to available time constraints, it often happens that documentation in the current digital system is less detailed than it is in paper notes in the local language. The current system is available in English, Spanish and Thai, but lacks support for the various languages that are common in India or other countries. Additionally, some terms vary in meaning across countries. In data collection, it is important for the information to precisely define meanings of terms (e.g., does ‘restraining’ a perpetrator mean gaining a conviction, or a temporarily imprisonment?).

**Individual prioritization cultural values & usability**

*How do individual stakeholders prioritize competing values and usability?*

The previous section displayed a collection of cultural values influencing information system’s usage. Since these values are not always compatible, competing values emerge. This became visible in the in-depth interviews when respondents explained how they and their colleagues made choices. Three prioritization mechanisms emerged: pragmatism, present orientation, personal focus. These will be discussed below.

**Pragmatism**

In general, people indicated to choose for using information systems when it is the way that works best for achieving their (team) goals. When the system provides a stable information flow towards the user, it is used more often than when it consumes more time than alternatives (e.g. pen and paper note keeping). This is partially linked with the trust people put into the system, when they don’t trust the system will store their notes, they keep a parallel paper archive for pragmatic reasons. Cultural values are likely to be weighed in a similar way, if a long-term orientation and a short-term orientation compete, the one that works best in achieving organizational (and derived team/personal) goals will be used.
**Present orientation**

Currently a short-term orientation is visible amongst respondents. Even when a cultural background is more long-term oriented, people tend to try and achieve short-term gains. Though project planning is done with a ‘system reform approach’ in mind (thus inherently long-term), execution in projects is much more oriented at the present. It is hard to spend time collecting data for potential future value when current operations demand time. Uncertainty in circumstances seems to be a potential cause for this approach:

“Sometimes the internet here takes weeks sometimes it takes days. You’re lucky if it takes an hour or two hours. But that’s more of the rare occasion than the norm. So, it really is a big deal. And I think among all of the countryside and offices I’ve visited and discussed with regarding CTMS, that’s a common concern.”

**Personal focus**

Additional to a pragmatic and short-term oriented preference interviewed staff generally showed a tendency to work with people rather than with computers. Field office staff do their work to give individuals freedom and improve justice systems. For a legal officer, this determination expresses in court, for an aftercare staff member, it expresses in working with victims. Working with data, in a system that sometimes helps and sometimes frustrates, does not provide this satisfaction.

“We’re aiming at ending impunity for forced labor in the Thai fishing industry. We want boat captains and boat owners, brokers and any implicit government officials held accountable. And put in jail because that has not happened very much yet.”

A regional data manager: “Investigators worry about confidentiality. Aftercare deals with clients. Lawyers are usually very busy, so it takes a lot of time for them to update CTMS, I often have to follow-up on that.”

**Organizational prioritization**

*How does an organization prioritize competing values of multiple people?*

Within an organization, where people collaborate to achieve organizational goals, competing values can emerge as a result of role diversity, competition between teams, or diversity in values. In the scope of conflicting (cultural) values regarding information systems usage at IJM, most of these potential causes of organizational conflicts are not applicable in this case. The explicit goal of the information system is to support the increasing dependency on large scale data collection, throughout the entire organization (International Justice Mission, 2017).

This lack of competing values enables the possibility of a technological design that satisfies all use cases, supporting all information flows for each internal and external stakeholder. However, the scope of such system will be much larger than it is currently. Development and maintenance of such infrastructure requires therefore more funding. The main driver for weighing competing values are therefore cost constraints.

**7.3. Prescriptive technical investigations**

The third step in the culture sensitive design investigations are the technical investigations. The next version of the information system will be examined, so only prescriptive investigations can be conducted. Three questions make up this step. The technical properties
of the system to be designed will be listed first. The second question results in an overview of impacted cultural values by these properties. Potential competing values will be solved or traded off in the last question. This paragraph will do so from a technical point-of-view, while the previous reasoned from a user’s perspective.

**Technical properties**

*What are potential technical properties of the information system?*

As has been described in chapter 5, the new information system should facilitate multiple information flows that are used in the processes of collaborative casework, system reform and sustaining gains. Various information inputs and outputs are needed to do so, and the work requires not only direct interaction with justice systems, but also interaction with donors, governments, project partners and community leaders is important to mobilize others, increase understanding and raise funds.

**Properties**

The system will have properties for facilitating these information flows, which can be distinguished in three categories: connection, interface, logic. Each of these categories contains design choices for each information flow. This section will not supply a specific design per flow, but these properties can be used in the next section to determine involved cultural values.

For example: a legal officer attends a court hearing. She is connected to the system through her smartphone, she enters the details in an interface. The system processes these details as a court hearing note and ensures the information is stored.

<table>
<thead>
<tr>
<th>Connection properties</th>
<th>Interface properties</th>
<th>Logic properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accessibility</strong></td>
<td><strong>Layout design</strong></td>
<td><strong>Storage</strong></td>
</tr>
<tr>
<td>Who can connect and access the information flow? What parts are visible for who? How is sensitive information treated? Are external systems used?</td>
<td>What does the interface look like? Is it consistent with other systems or external tools? What actions can be performed? How are these reached? What is the information density?</td>
<td>How is the information stored? In which structure? Is it linked to other data?</td>
</tr>
<tr>
<td><strong>Modality</strong></td>
<td><strong>Information structure</strong></td>
<td></td>
</tr>
<tr>
<td>What device types can connect? Is the connection only available locally, or through internet too?</td>
<td>How is information structured? In what order is information shown?</td>
<td></td>
</tr>
<tr>
<td><strong>Durability</strong></td>
<td><strong>Required digital literacy</strong></td>
<td></td>
</tr>
<tr>
<td>Is connecting offline possible when no internet is available? Is local caching used?</td>
<td>What level of digital literacy is required to be able to work well with the system? Is the system aimed at advanced users or is it simple?</td>
<td></td>
</tr>
</tbody>
</table>
**Display**
How are logical elements of the information displayed? E.g. internal structure, connections.

**Other connections**
Is the information flow connected to other flows? How?

**Automation**
Is (a part of) the information flow automated? How?

**Impact on cultural values**
How do these properties impact cultural values?

For each of the properties described above, potentially impacted national cultural values or information culture topics are discussed in the non-exhaustive list below.

**Connection properties**

**Accessibility**
Individualism/Collectivism
Privacy and collective collaboration have to be weighed in the information flow’s accessibility design.

**Individualism/Collectivism**
Another way in which the individualism vs. collectivism dimension is displayed is whether reports are available on higher levels only or are generated for supporting individual tasks too.

**Power distance**
Whether information is available through management layers will influence how the system responds to users’ power distance values.

**Modality**
Information culture: communication, professionalization
The ability to use the system on multiple form factors (e.g. desktop computers, smartphones) influences how often communication is possible and how professional this communication will be.

**Durability**
Uncertainty avoidance
Interruptions in connectivity are always possible. Whether the system accommodates for this responds to the uncertainty avoidance value people might have.

**Interface properties**

**Layout design**
Information culture: information management
Effort put in the (graphical) design of an interface expresses the organizations information culture.

**Information structure**
Uncertainty avoidance
The extent to which the display of details and structure has a role in the design reflects the uncertainty avoidance value.

**Masculinity**
The previously mentioned example of publicly showing whether actions were successful impacts masculinity.\(^\text{17}\)

**Required digital literacy**

*Information culture: internal environment*

Multiple cultural values can be related to required digital literacy, but the internal environment part of information culture is impacted most. Especially in an organization that puts data at the core of its long-term strategy.

**Logic properties**

**Storage**

*Short-/long-term orientation*

The design of information storage impacts the short- vs. long-term orientation value when tradeoffs have to be made between costs and long-term storage.

*Uncertainty Avoidance*

Increasing storage of details and information reduces the risk of losing needed data. This comes at a cost of maintaining systems and masking relevant information.

**Display**

*Uncertainty Avoidance*

When all details are always shown, uncertainty is avoided best. However, displaying a clutter of information can make the task of retrieving relevant information harder.

**Other connections**

*Information Culture: Cross-departmental partnerships*

Connecting flows of information enables teams to use each other’s valuable information. This topic in information culture is impacted by the design of the information system.

**Automation**

*Short-/long-term orientation*

Building an automated process costs effort on short term and creates long term potential benefits.

**Solve or tradeoff**

*How can properties be designed to solve or weigh competing cultural values?*

The general properties of information flows, facilitated by an information system, have been described. An exploration of potentially impacted cultural values has been conducted. The remaining question is whether and how these values compete and what can be done to solve this. This section presents three issues of competing values. Again, this overview is non-exhaustive, but it represents the common issues mentioned during the in-depth interviews. Design guidelines will be extracted in the next paragraph, after these issues and solution approaches have been discussed.

---

\(^{17}\) See also the section on national culture at page 32.
Increasing local benefits

A returning tradeoff from the in-depth interviews, through the culture sensitive design parts is the balance between designing the system for local field office use versus designing for high-level information overview. This tradeoff is rooted in a perspective difference between headquarters and field offices. But several competing cultural values are involved as well: in an individualistic work culture it is easier to spend time on personal tasks (e.g. performing an operation) instead of working towards organizational goals (e.g. collecting detailed data on justice systems). Information culture is involved when the current state of internal communication and cross-departmental partnerships is not in line with the proposed role of data throughout the entire organization.

During the in-depth interviews, reporting software Tableau was being used by a small number of field offices to offer detailed reports based on the locally generated data. This approach solves the competition between spending time on local benefits versus spending time for higher level goals since data collection increases local insights too.

The benefits of entering a lot of data can become more visible when the reports used by headquarters are also shown to the relevant field offices. Increasing field office reporting options increases the benefits for the local office itself.

Bridge to digital

An information culture in which the role of data is valued high is harder to achieve when a part of the organization is unable to use information systems well. Since data-driven decision-making is at the core of the organization’s values, this information culture cannot be outweighed. Therefore, either the staff has to be trained to be more digital literate, or the systems should become easier to use.

Since the less digital literate people in the organization are very busy, training them in using advanced systems seems less feasible than designing systems that are easier to use. Most less digital literate staff members heavily rely on a pen-and-paper notes administration because of reliability and usability.

The reliability of paper notes over a digital system is mostly related to the reliability of internet connections in the field office’s work area. A system that is only accessible through internet is not useful when no connection is available. The new information system should therefore also work when no internet connection is available. Local caching of both the application and (entered) data is necessary to guarantee availability when needed. Synchronization is possible when the internet connection is reestablished. The second facet of reliability is storage as backup, some people prefer paper archive backups over digital data. In the new system, a solid data backup should be used, and this should be communicated to all end-users.

Paper also has advantages over digital systems in terms of usability. E.g. highlighting and underlining in notes is currently unavailable. This gap can be bridged by designed a paper-like interface for the digital system.

CTMS is good for entering and tracking, managing information. Reporting tools or business intelligence capabilities are not really in the system. We hope to be able to use Tableau in Bangkok as well.”

In CTMS, when we write notes, you cannot highlight, underline or put anything in bold. When someone new comes in, this doesn’t make sense to them. Especially for lawyers, this is a reason to use the system less.
Additional features for bridging the gap are: easy linear forms instead of data structures, usable print views for when information needs to be printed and a text recognition (OCR) feature for scanning documents. The latter is especially useful for lawyers who receive paper documents from courts. After these have been scanned with OCR, the text becomes searchable.

“For example, in other trial preparation systems there’s this option where you can scan documents and it turns it into an editable document. And for lawyers they really need that because they use a lot of documents to draft, like memorandums because they cite those and those are all given by courts in printed hard copies. So, it’s hard for them..., So if they have to like use CTMS they’ll have to type it one by one, word for word and that would take time, whereas if they can just scan that document, converting it to words, then they can just copy/paste it. It will be faster.”

**Sharing sensitive information**

Cooperation with local partners involves sharing sensitive information on operations and clients. At this point, the future system will include functionality that is not currently available. The emerging competing values (client & alleged perpetrators privacy vs. open information exchange) are therefore not yet visible in the current system. However, what is currently visible is that the current way of showing information to others might withhold office staff and partners from open and unbiased entering of information.

By adjusting the information structure to differentiate between sensitive details and high-level information, seeing sensitive information is contained to only necessary people. This might help people in entering less biased information on operation’s success or failure and in treating sensitive client data.

“The investigators, they worry about the confidentiality of the information, for example if they’re building up a case, this information should be confidential, so other staff will not know about it.”

7.4. **Conclusion: deriving design guidelines for IJM**

**How should the new information system for IJM be designed?**

In this chapter, the culture sensitive design approach has been used to derive design guidelines for IJM for designing a culture sensitive information system. Conceptual, empirical and technical investigations have been conducted, leading to three competing value tradeoff solution approaches. The Interaction Design Foundation (2018) defines design guidelines as advice in between a design principle (“the system should work”) and a design rule (“the system should be blue”). These type of design guidelines can be derived from the three examples in the previous paragraph. The next chapter provides a validation of these guidelines.

The preliminary design guidelines for the next information system for IJM’s field offices are:

1. Local benefits of system usage should be similar to higher-level benefits.
2. The design should provide a bridge between paper and the digital system to enable usage by less digital literate staff members.
3. Distinctions between sensitive and non-sensitive information are needed for stimulating internal unbiased data collection and privacy sensitive handling of victim and alleged perpetrator data.
8. Design guidelines validation

Does this design properly serve the field offices?

The previous chapter offered design guidelines that have been created using the culture sensitive design approach that has been presented in chapter 6. Most input for these solution approaches has been gathered in a case study in which several people across different field offices have been interviewed. The design guidelines will be validated in this chapter for three reasons: to assess whether the respondents and organization have been understood correctly during the survey, to assess whether temporal influences might have biased interviews and lastly to assess whether the case study can be used for generalization in the next chapter.

8.1. Approach

A second round of interviews is conducted to answer these questions. The following structure is used in an email to all interviewed respondents:

List of quotes derived from previous interview

1. Can I use the statements above as illustrations of our conversation in my report?

Summary of solution approaches

2. Do you agree the issues mentioned (partially) make your office’s work harder?

3. Do the potential solutions, in your opinion, target these issues indeed?

4. Would you embrace these solutions in your (office’s) daily work routines?

5. Has anything related to system’s usage happened in the past three months?

6. Is there anything else you would like to mention?

This second round was conducted three months after the in-depth interviews. This decreases the chance of temporal influences to bias important topics in field office work. The next paragraph discusses the answers and results of this email interviews.

8.2. Results

The responses to each of the listed questions will be discussed in this paragraph. Some remarks and clarifications on the verified quotes were received, the quotes are updated to reflect these clarifications. Question 2, 3 and 4 target the proposed design guidelines, these will be discussed per guideline.

General remarks

Most respondents answered with some general remarks on question 6. The general gist is that people agree on most of the identified issues and proposed solution approaches. Not all issues

18 Included in Appendix IV
are recognized by all field offices, but all are recognized by some. Some quotes from the responses, are presented below.

Some respondents ask for the final recommendations. One remark is that it is appreciated that questions (tickets) regarding CTMS always receive response. Teams will be glad to make changes to their work processes if it makes their work easier.

Lastly, as an overarching issue, it is mentioned that collecting data tends to be forgotten when staff members get busy:

“In our field offices, I think the staff knows the importance of updating CTMS. Our program managers have been very supportive in explaining this importance to them. However, the problem is, as the staff in general gets too busy, they tend to forget to update CTMS. They don’t see updating CTMS as a priority, so they need constant follow ups or reminder to enter lacking information or to enter CTMS events for meetings, hearings, trainings.”

Increasing local benefits

The issue of perspective differences between the headquarters and field offices regarding reporting and data usage is widely recognized. Some respondents stretch the importance of not only showing the reports to the field offices, but to also enable them to create their own custom reports. Some illustrative quotes are included below:

“For example, in 2016, the legal team made an automated checklist that would analyze on the basis of information we have whether it is an offence of bonded labor trafficking or not, and whether to do the case or build the case further. One of the analysis points in deciding whether to do the case or build more on it, is the percentage of documented victims. So, in deciding the ideal and safe percentages of documented victims, being able to generate a chart of percentage of documented victims v. ideal cases (identification, prosecution and rehabilitation). Instead we had to refer to the members of our teams and ask them to recall and consider the question.”

“In addition to making available the reports generated by HQ to field offices, what may be an additional way of making data more relevant is to give access to the field office to generate customized reports themselves to better address their context.”

“I Agree to this. However, I’d add that headquarters reporting is often or nearly always tied to headquarters purposes. So, the issue is not just sharing HQ-generated reports to the relevant field offices more. The benefits of our data systems should be able to be used directly by our field teams, not via HQ. You will get buy-in and actual practical value when field teams are able to use and analyze their own data and derive value from it. This is why we built into the Bangkok FO a ‘Crime Researcher and Analyst’ position, to pull data from CTMS and other sources and also gain capabilities in Tableau with an eye to the future of our program.”

“I agree on this. It is really important that people will be able to see the importance of entering information on CTMS, so they can appreciate it and prioritize it despite their busy schedule.”

“Yes, it would really help the field to know why and how the HQ teams use the data.”
Bridge to digital

One of the issues identified in the current information system is the inability of some less digital literate people in to gain benefits from using the system. The proposed design guideline of providing a bridge between paper and the digital system is presented to the respondents.

The general response was that some features like text formatting will provide immediate benefits. One remark is that the current system is not only competing with paper notes, but also with Excel and other tools. Another note is that the system should be able to be used offline to completely remove the need of using other media or tools.

“I don’t have experience with CTMS to really agree or disagree. I do feel that the gap is not between pen & paper and CTMS but Excel & other tools and CTMS.”

“I agree regarding text formatting. The inability to format text at all within a note is a pretty basic requirement that should be there. I actually think CTMS is fairly user-friendly, but I likely have a higher digital literacy than most. Regarding printing, that would be helpful, but neither text formatting nor printing will solve the issue of paper notes vs. digital notes. You can’t bring CTMS with you into a meeting, which is where you will be taking notes. So, you’d have to simply type your notes and then copy/paste them into CTMS later, or enable offline note-taking access feature to CTMS. Also, the current ability of CTMS to display the navigation tab names and title fields in Thai is already immensely helpful I think.”

“I agree. As I mentioned to you in our conversation, I believe that age is also a great factor on this. Staff, especially the older ones are less tech-savvy, so they tend to forget processes and how things are done so they need constant coaching and follow up.”

“I think whatever system we enter our data in to needs to be more friendly for the team and for potential partners. I also don’t see the need of detailed descriptions on our system about the survivor. I feel like the basic details on the system is enough for people who are running reports and if field works are unable to get a report out of the system, it might be better to have their handwritten notes are detailed and filed well and may be at the end of the 2-year program, we can just scan that file and upload in to client details.”

Sharing sensitive information

The future information system must provide means for partner communication. The sensitive nature of much of the information shared requires the of the new system to have privacy considerations built in from the start. This issue is not recognized by all field offices. A respondent from Odisha (India) explicitly stated to not recognize this issue. Other respondents indicate current policies are already in place to facilitate careful information exchange.

Along with above suggestion, what may help is giving access to partners of even the sensitive information that they themselves are providing or entering. That would give them ownership and incentive. It’s also the ethical thing to do. The solutions for the other two issues could also be applied here to partners. But yes, restriction on accessing sensitive information solely of IJM or another partner is prudent.

I’d like to clarify that we do not often share sensitive information on operations with partners, and the information we share regarding clients is strictly controlled per our standards. CTMS currently already has ways to restrict or lock sensitive information,
for example, role-locking it by department (i.e. only Aftercare staff can access/see Aftercare-related info, or ILED or Legal).

Not so much of a problem in our field office. We have tools like Tableau to filter the kind of information that we want to show to our partners, so we are free to enter information on CTMS not having to worry about sharing sensitive information about our clients, operations and cases to our partners.

Changes over the past months
Several months have gone by since the first survey round. One of the follow up questions aims at retrieving additional knowledge gathered by the field offices over the past months. One reaction lists the new ways of facilitating communication that have been used, others indicate no significant changes happened.

Plenty actually, once shown the pros and cons, our teams have been very receptive to new systems and technology. And to list a few, 1. We’ve begun to collaborate via OneDrive which has decreased confusion and duplication of work significantly. We’ve begun to use OneDrive also to store our files and work which has significantly increased mobility and digital safety. 2. We’ve begun to experiment with ONA for data entry. 3. We’ve been trying if we can get access to Microsoft Teams and Planner.

No, nothing significant to system usage has happened. Currently, only Bangkok’s legal team is using it, as we have no Aftercare clients yet.

[An internet outage] happened once, that was in June where the system couldn’t allow notes or changes to saved.

8.3. Design guidelines
A general remark at the first guideline is that high-level information should not only be made available to the field offices, but that field offices should be able to customize reports for their local situation too. This notion of functionality has been added to the first design guideline.

1. Avoid asymmetry in functionality:
   Local benefits and functionality of the information system should be similar to higher-level benefits and functionality.

The remark that the system should be (offline) available at all times to fully replace paper note keeping is added to the second guideline.

2. Bridge paper and digital:
   The design should provide a bridge between paper and the digital system to enable usage at all times by less digital literate staff members.

Comments on the third guidelines emphasized the current system and procedures are not violating privacy rights. This should be maintained when more information exchange with partners will take place. Another reason for this design guideline is to prevent biased input. The design guideline will not be adjusted.

3. Explicitly annotate sensitive information:
Distinctions between sensitive and non-sensitive information are needed for stimulating internal unbiased data collection and privacy sensitive handling of victim and alleged perpetrator data.

8.4. Conclusion

Does this design properly serve the field offices?

The respondents from the field offices indicated the proposed solution approaches generally fit with the problems they experience. However, a design guideline cannot be tested directly, but has to be applied in a specific design for an information system. Since the solution approaches are directly based on the results of the interviews, it is not surprising that their perception of the solutions is positive. Over the past months, no significant changes in the issues experienced are reported. This indicates that the problems are indeed a result of the current information system’s design within the current goals of the organization.

In a follow-up IJM specific study, for each of the information flows, a decision should be made on the properties as defined in chapter 7.3 Prescriptive technical investigations. These decisions should also be validated across the various field offices.

Another remark is that the targeted respondents are generally (with some exceptions) working in a data-related role. When talking about digital literacy, their perceived solution might be different from an actual solution for a less digital literate staff member. At the other hand, it is these respondents daily job to translate headquarters data objectives to the less digital literate staff members, so they might have a better understanding of mismatches than these people have themselves.

With these remarks taken into consideration, it is safe to state that the current proposed solution approaches do properly serve the field offices in facilitating their information processing needs.
9. Generalizing IJM’s case

How can general guidelines for culture sensitive information systems be derived?

This research into how a culture sensitive information system can be designed is setup as a case study, centered around the case of International Justice Mission (IJM). This chapter investigates whether the findings of this study can be beneficial in a broader context than for IJM alone. In this chapter the entire process from literature research through the in-depth interviews to a validation of proposed design guidelines is discussed to answer the question of how general design guidelines for culture sensitive information systems can be derived. For each part an investigation of what is generic applicable and what is IJM specific will be performed. An effort is made to generalize IJM specific parts for future usage in other environments.

9.1. Case study

Various methods have been used to survey the national cultural background diversity, information culture and the future technical and organization context in which a newly designed information system must function. All outcomes of these phase are case specific, though the methodology of combing in-depth interviews, a questionnaire and observation can be translated to different environments. In this case, the approach was tailored for this organization, in terms of which questions were asked, which people were approached and how the interviews were conducted. This approach created some trust among respondents, which improved the quality of feedback that was given.

Especially when the case study is performed at a larger organization than IJM, the questionnaires for estimating Hofstede et al.’s (2010) dimensions and to assess the information culture using Curry & Moore (2003) can be beneficial. In this case no statistical significant analyses could be performed, when sufficiently large groups with a single national background can be compared, this creates additional opportunity.

Chapters 4 and 5 on how International Justice Mission works and on the role of information in this work are structured specifically to explain the operations and processes within this case. Though understanding the purpose of the system that needs to be designed is valuable, only the notion of ‘information flows’ is not case specific and can be used in different cases.

9.2. Culture sensitive design methodology

Chapter 6 presents a derivation of the Value Sensitive Design methodology. This adaptation towards cultural values, culture sensitive design, is applied to all information gathered in chapter 3, 4 and 5 to establish an overview of the main competing values, what issues arise from these value competitions and finally how a design could solve or avoid these issues. Though created with the IJM case in mind, the methodology of Culture Sensitive Design is generally applicable on any (technical) design challenge where cultural values are involved.

Chapter 7 provides an example of how this methodology can be applied, but the conceptual, empirical and technical investigations can all be translated to any other organization.
9.3. Generally applicable design guidelines

The guidelines that have been adjusted according to the validation in chapter 8 are formulated as is described below:

1. Avoid asymmetry in functionality:
   Local benefits and functionality of the information system should be similar to higher-level benefits and functionality.

2. Bridge paper and digital:
   The design should provide a bridge between paper and the digital system to enable usage at all times by less digital literate staff members.

3. Explicitly annotate sensitive information:
   Distinctions between sensitive and non-sensitive information are needed for stimulating internal unbiased data collection and privacy sensitive handling of victim and alleged perpetrator data.

An organization might be different from IJM in terms of how offices are structured and organized. Also, the diversity in digital literacy and less sensitive data might be processed. This influences the extent to which the design guidelines are applicable and solve issues. However, collaboration, digital literacy and sensitivity of inputting and processing data are topics that are relevant for other organizations too.

9.4. Conclusion

*How can general guidelines for culture sensitive information systems be derived?*

General guidelines for a culture sensitive information system can be derived but do still require validation. The design guidelines as presented in this research are based on the cultural background and other organizational aspects discovered in this case study. Other organizations can still benefit from these design guidelines because the topics are relevant in a broader context.

The culture sensitive design methodology however, can easily be performed in any other organization where a design challenge with impacted cultural values is present. The methodological tools used for the case study can be used in other organization too, especially larger organizations with large offices potentially benefit from this approach.
Conclusion

For reaching the operational scale that International Justice Mission aims to achieve by 2030, a lot of information exchanges need to be facilitated. This can be done by a redesigned information system, that provides functionality for supporting all information flows that exist as a result of daily operations and high-level analysis, measurement and evaluation.

This information system is used by a diversity of people in field offices across the globe. Inherently, much cultural diversity is present. In order to design the system in such way that it can optimally support the work of people with various national and professional background, a culture sensitive information system should be designed. Culture is a concept with many definitions, a structured approach is therefore preferred to be able to analyze background diversity. Combining these elements led to the following main research question:

*How can a systematic approach to culture be translated into design guidelines for a culture sensitive information system design?*

Multiple models aiming at structuring cultural diversity have been discussed. Hofstede et al.’s (2010) national background dimensions and Curry & Moore’s (2003) information culture model are used to structure culture. The case study is performed using a questionnaire based on these models. In-depth interviews and an analysis of how IJM aims at improving justice systems and how the information system should facilitate this provided additional insight.

An adaptation of Value Sensitive Design (B. Friedman et al., 2009) has been developed, called the Culture Sensitive Design methodology. By using this methodology, three types of investigations are distinguished: conceptual investigations map how cultural values can be impacted by the design and how competing values can theoretically be weighed. Empirical investigations aim at performing research into the actual cultural values of people and how these interact. In this case study, most of the information gathered before has been applied in this empirical part. Prescriptive technical investigations reasoned from a technology perspective which cultural values are influenced and reveal design tradeoffs that need to be made.

Cultural value conflicts that show resemblance with issues mentioned in in-depth interviews are further researched. For each of these issues, solution approaches have been formulated in a design guideline. These are: avoid asymmetry in functionality, bridge paper and digital, explicitly annotate sensitive information. These approaches are validated in another round of interviews. Respondents agree with the proposed solutions and provided some nuance and additional insights.

These results show that a systematic approach to culture can be translated into design guidelines for a culture sensitive information system design by performing a case study and applying the Culture Sensitive Design methodology.

In a follow-up research, additional effort might be put into integration of the questionnaire and qualitative research methods into the Culture Sensitive Design methods to create a research path that is more straightforward than this current study is. However, a risk of bundling the culture measurements into the Culture Sensitive Design methodology lies in neglecting case specific details. Recommended follow-up actions for IJM include further specification of scope and information flows that need to be facilitated. Multiple platforms exist to create such systems, each with specific (cultural) value tradeoffs. A proposed next step is to identify which platform matches in these tradeoffs and suits the design guidelines best.
References


Appendix I – Questionnaire protocol

This is an online survey aimed at collecting some basic information about the interviewed person. This saves time during the actual interview and makes comparison between conversations more feasible. This phase addresses also someone’s attitude to information with regards to his/her work processes.

Personal profile
1. What is your name?
2. What is your age?
3. What were the countries in which you grew up?
4. What were your previous roles at IJM?
5. What is your background (study and work) before joining IJM?

Cultural background
The Value Survey Module 2013 (Hofstede, 2013) and its manual (Hofstede & Minkov, 2013) are being used to assess cultural background. The formulation of the questions is slightly adapted to reflect IJM’s work environment. All questions are answered on a 5-point scale ranging from not important (1) to most important (5).

How important would it be to you to...?

Cultural perspective - work
1. have sufficient time for your personal or home life
2. have a boss (direct superior) you can respect
3. get recognition for good performance
4. have security of employment
5. have pleasant people to work with
6. do work that is interesting
7. be consulted by your boss in decisions involving your work
8. live in a desirable area
9. have a job respected by your family and friends
10. have chances for promotion

Cultural perspective - private
11. keeping time free for fun
12. moderation: having few desires
13. doing a service to a friend
14. thrift (not spending more than needed)

On a 5-point scale: never, seldom, sometimes, usually, always
15. How often do you feel nervous or tense?
16. Are you a happy person?
17. Do other people or circumstances ever prevent you from doing what you really want to?

On a 5-point scale: very poor, poor, fair, good, very good
18. All in all, how would you describe your state of health these days?

On a 5-point scale: not proud at all, not very proud, somewhat proud, fairly proud, very proud
19. How proud are you to be a citizen of your country?
On a 5-point scale: never, seldom, sometimes, usually, always

20. How often, in your experience, are subordinates afraid to contradict their boss (or students their teacher?)

On a 5-point scale, ranging from strongly disagree (1) to strongly agree (5)

21. One can be a good manager without having a precise answer to every question that a subordinate may raise about his or her work

22. Persistent efforts are the surest way to results

23. An organization structure in which certain subordinates have two bosses should be avoided at all cost

24. A company’s or organization’s rules should not be broken - not even when the employee thinks breaking the rule would be in the organization’s best interest

Information & culture

A selection of the information, relationships and communication parts of the Information Culture Assessment questionnaire (Curry & Moore, 2003, pp. 106–108) is being used. All questions are answered on a 5-point scale, ranging from strongly disagree (1) to strongly agree (5).

Information

1. Information should be the basis for informed decision-making at all levels of an organization.

2. Currently, information is the basis for informed decision-making at all levels of an organization.

3. Evidence-based operations and care are important.

4. Good quality information is critical to achieving IJM’s aims and objectives.

5. I am confident that the information on which I base my decisions is always of suitable quality for its purpose.

6. I have easy access to all the information I require to make decisions effectively.

7. I am aware of the key information in the organization.

8. I collect required information on which to base my decisions myself.

9. I approach other teams for information I require to make decisions effectively.

10. I collect information I require by accessing external parties directly.

Relationships

11. As a team we work well together and support each other.

12. As a team we have positive relationships with other teams.

13. As a team we make decisions independently.

14. We are encouraged to involve all relevant parties when making a decision that influences other teams.

15. As a team we are always happy to provide other teams with relevant information held by us.

Communications

16. I am aware of the objectives of other offices of IJM.

17. Internal communications within my office are good.

18. My immediate manager ensures that I am aware of all relevant issues.

19. Organizational issues are communicated clearly.
Appendix II – Interview protocol

Phase 0: Introduction
Explain goal of interview. Handle technical details and agree on confidentiality etc.

- Introducing myself shortly
- Goal of research
- Role of interview in research
- Is it okay if this interview is recorded?
- You might not be anonymous to IJM staff, is that a problem?
- Can I cite you?

Phase 1: Get to know person
Getting to know a person tells more about values, beliefs, things that are important. This is important for constructing Grounded Theory because theories are always a result of who a person is (Morse et al., 2009, Chapter 3). These details also enrich other answers in later phases.

- Can you introduce yourself?
- How long have you been working at IJM?
- Can you tell a bit about your background before joining IJM?
- Have you had previous roles at IJM? Which?
- Can you explain a bit about your current role?
  - Day to day tasks/challenges?
  - Type of work? (Investigation, legal, aftercare, etc.)

Local - Phase 2: Role and dealing with information
Good design guideline recommendations require understanding of the user’s way of working with the information system. The questions in this phase help obtaining insight in what a user does, technically, what his/her interests are and what the potential relation is between the user’s cultural background and his/her viewpoint on information.

- Work
  - With what information do you deal?
  - Which systems do you use?
  - What are common routines?

- Stakeholder
  - What is important in your job?
  - What are your worries?
  - When is your job/project a success?

- Information Culture
  - If filled in: Questions about users’ answers in online survey.
  - What is the importance of information in your work?
  - What is your relation to HQ?
  - What do you think of HQ’s information usage?
  - If possible: do you experience differences with previous locations?
Regional - Phase 2: Role and dealing with information

This setup is similar for local field office people, but the questions are adjusted to reflect a regional data managers perspective: leading multiple locations while having a high data literacy.

- **Work**
  - With what information do you deal?
  - Which systems do you use?
  - What are common routines?

- **Stakeholder**
  - What is important in your job?
  - What are your worries?
  - When is your job/project a success?

- **Information Culture**
  - *If filled in: Questions about users’ answers in online survey.*
  - What is the importance of information in your work?
  - What is your relation to field offices?
  - Do you experience differences in information usage between field offices?
  - Do you experience differences in information usage between various roles in field offices?
  - What is your relation to HQ?
  - What do you think of HQ’s information usage?
  - *If possible: do you experience differences with previous locations?*
Appendix III – Scalable Justice System Transformation

The figure below describes how IJM aims at achieving sustained justice system transformation at scale, as described in paragraph 5.1 Sustaining change at page 45.

Figure III.1: Complete overview of factors in sustaining change.
Appendix IV – Solution approaches summary
As included in the emails for validation, discussed in chapter 8.

From the conversation with you and some others, these are the derived core issues regarding the usage of information systems (CTMS, Tableau, Excel, etc.) across multiple offices. Summarized, these issues and solution approaches are:

**Headquarters/Field office perspective**
*HQ’s data & reporting usage is not always visible for field offices; so, the benefits of entering data in the system are not always seen.*
The benefits of entering much data can become more visible when the reports used by headquarters are also shown to the relevant field offices. Increasing field office reporting options increases the benefits for the local office itself.

**Digital literacy**
*CTMS is not always user-friendly for less digital literate people, using the system takes much time for them*
The gap between pen & paper notes and CTMS can be bridged by 1.) increase CTMS’s capabilities for text formatting and a better user interface and 2.) by expanding the system’s printing functionality to reduce the need for manual note-taking.

**Sharing sensitive information**
*Cooperation with local partners involves sharing sensitive information on operations and clients, the current way of showing information to others might withhold office staff and partners from open and unbiased entering information.*
By adjusting the information structure to differentiate between sensitive details and high-level information, seeing sensitive information is contained to only necessary people. This might help people in entering less biased information on operation’s success or failure and in treating sensitive client data.

Appendix V – In-depth interview results
Due to the sensitive nature of the in-depth interviews, the results are omitted in the public file. The results can be obtained by sending an email to the author.