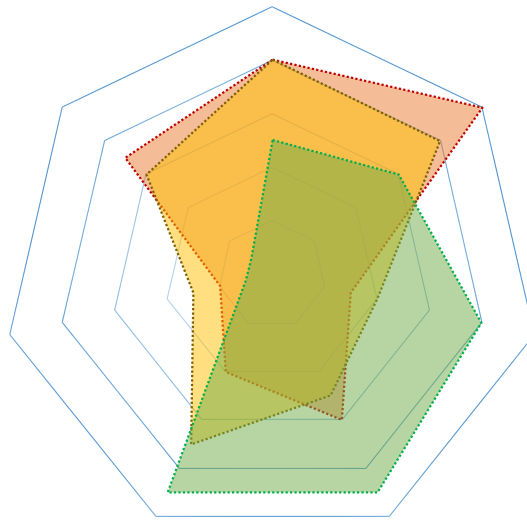




CHALMERS
UNIVERSITY OF TECHNOLOGY



Probing Organizational Consciousness:

How do personal and organizational perspectives of sustainability align?

Master's thesis in Industrial Ecology

LINDSAY BERG

Department of ENERGY AND ENVIRONMENT
Physical Resource Theory
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2016
Report No. 2016:10

MASTER'S THESIS NO. 2016:10

Probing Organizational Consciousness:

How do personal and organizational perspectives of
sustainability align?

Challenge Lab 2016: Sustainability Transitions

LINDSAY BERG

Supervisor:

CHRISTINE RÄISÄNEN

Department of ENERGY AND ENVIRONMENT

Physical Resource Theory

CHALMERS UNIVERSITY OF TECHNOLOGY

Gothenburg, Sweden 2016

Probing Organizational Consciousness:
How do personal and organizational perspectives of sustainability align?
Challenge Lab 2016: Sustainability Transitions

LINDSAY BERG

Supervisor: Christine Räisänen
Examiner: John Holmberg

© LINDSAY BERG, 2016.

Master's Thesis No. 2016:10

Department of Energy and Environment
Physical Resource Theory
Chalmers University of Technology
SE-41296 Gothenburg
Sweden
Telephone + 46 (0)31-772 1000

Cover:
[Adopted, Barrett Values Centre]

Probing Organizational Consciousness:

How do personal and organizational perspectives of sustainability align?

Challenge Lab 2016: Sustainability Transitions

Abstract

Organizations have the potential to increase their output by increasing the engagement of their employees. However, in order to do so there must be alignment between personal values, current organizational values and desired values for where the organization intends to go. Unfortunately, this lack of alignment is commonly overlooked, and, in the context of sustainability there have been no systemic attempts to explore this alignment within an organization. Therefore, this study addresses: (i) how personal and organizational perspectives on sustainability align within an organization; and, (ii) what may a management group do to increase employee engagement and performance in the implementation of sustainability goals. To address these questions interviews were conducted with a management team of a local organization, consisting of 30-35 employees, followed by a focus group with interview participants. A multi-method approach was adopted to allow for data triangulation, flexibility and reflexivity. Data was analyzed using the Barrett Values Centre model for Organizational Consciousness. The results illustrated a limited perception of sustainability, different perspectives of sustainability between the participants' personal lives and organizational lives, and, that little time if any has been spent envisioning a desirable state of sustainability for the organization. To overcome these barriers, it is recommended the organization takes time for individual and communal reflection, incorporates an active approach towards leadership training for all staff, and, applies a Backcasting through principles approach in order to nurture a shared mental framework. It may prove worthy to apply these research methodologies to other organizations to enhance their performance in the implementation of sustainability goals. This thesis has been conducted in an innovative educational setting, that of the Challenge Lab, at Chalmers University of Technology, whereby students are equipped with self-leadership training, dialogue and facilitation tools, systems thinking and design thinking methods to overcome societal barriers in the transition to a sustainable future.

Key Words: organizational behavior, organizational learning, social collaboration, sustainability transitions, leadership for sustainability, mental models

Acknowledgements

This thesis has been an immense personal journey, let alone academic endeavour. It is with my most sincere and utmost gratitude that I give thanks to the following people who have been genuine supporters, motivators and inspiration for me. First and foremost, the facilitators of the Challenge Lab: John Holmberg, David Anderson, Örjan Söderberg, Johan Larsson, Danielle Mendoza; to my supervisor, Christine Räisänen, for your patience and constant encouragement to stay focused; Dialogues facilitator and mentor, Martin Sande; to some of the first people that showed me what it was to really be listened to: Karen Osk Magnusdotter, Matej Kadunc, Glen Bryan, Yvonne Werkmann, Susi Hatelly; to my spiritual guide, Ruby Bedi, who didn't really give me any choice but to return to school (and thank goodness for that!); to the incredible unwavering power of my female Challenge Lab sisters, Caroline, Elisabeth, Maria, Amanda; to the Challenge Lab men who kept me balanced, Spyros, Fernando, Ivo, Malte, Otto-Max, David, Magnus, Philipp, Aako. These people have afforded me a safe, compassionate, neutral and non-judgmental space, enabling me to discover that my thoughts and ideas are both legitimate *and* relevant. The creation of such a space gave me room for intellectual freedom and creativity, and also a space to be challenged. I am forever grateful for such a rich, rewarding, fulfilling and transformational experience.

Special thanks to my parents, and my grandparents, for their constant encouragement for quality education, perseverance and for constantly instilling in me a sense of optimism and the motivation to carry on. Thank you for always believing in me, and showing me what unconditional love is all about. Thank you to my mentor, Donna Kennedy-Glans, for your inspiration and motivation, and for reminding me to never forget where home is. A very special thank you for their constant encouragement and belief in me despite our geographical separation, Colleen Nugent and Christy Goodwin. Finally, I would like to extend my gratitude to my stakeholders and the participants I had the pleasure of interviewing; without them this thesis would not have been possible.

Table of Contents

Part 1: The Challenge Lab

Chapter 1: Introduction to the Challenge Lab	2
1.1 Preparatory Course: Leadership for Sustainability Transitions	4
1.2 Phase 1 Description	5
1.3 Theoretical Framing	9

Part 2: Master's Thesis

Chapter 2: Introduction and Purpose	13
2.1 Alignment = Engagement	13
2.2 Psychological Safety + Motivation & Accountability = High Performance	14
2.3 Mental models of sustainability are unexplored territory	15
2.4 Research Questions	15
Chapter 3: Theoretical Framing	16
3.1 Organizational Consciousness	16
3.2 Personal and organizational alignment	19
3.3 Motivation, discretionary energy	19
3.4 Limiting values and behaviours	21
3.5 Determining alignment	21
3.6 Consequences of alignment and misalignment	21
3.7 Where do the energy barriers come from?	22
3.8 What can be done to reduce the barriers?	23
3.9 Application to this thesis	23
Chapter 4: Description of Case Study and Research Method	23
4.1 Case Study Background	23
4.2 Research Process	24
4.3 The Interviews	25
4.4 Designing the Focus Group	26
4.5 The Focus Group	28
4.6 Data Analysis	30
Chapter 5: Results	32
5.1 Level 7 – Service to Humanity and the Planet	34
5.2 Level 6 – Making a Difference, Strategic Alliances & Partnerships	35
5.3 Level 5 – Internal Cohesion, Building Internal Community	37
5.4 Level 4 – Transformation, Continuous Renewal & Learning	39
5.5 Level 3 – Self-esteem, High Performance	41
5.6 Level 2 – Relationship, Harmonious Relationships	42
5.7 Level 1 – Survival, Financial Stability	45
5.8 Sociometry	46

5.9	<i>Focus Group</i>	48
5.10	<i>Summary of Results</i>	51
Chapter 6: Discussion		55
6.1	<i>Model Justification</i>	55
6.2	<i>Opportunity for increasing performance</i>	55
6.3	<i>Move into the Learning Zone</i>	55
6.4	<i>How does this report contribute to the research being done in the field?</i>	57
6.5	<i>The Multi-Method Research Process</i>	58
6.6	<i>The Challenge Lab Process</i>	58
6.7	<i>Uncertainties and Limitations</i>	59
Chapter 7: Conclusions and Recommendations		60
7.1	<i>Recommendations</i>	60
7.2	<i>Possibilities for further research</i>	61
Chapter 8: Epilogue		63
8.1	<i>Researcher reflections</i>	63
References		64
Appendices		67
A.	<i>Interview Guide</i>	67
B.	<i>Focus Group Outcome, description of “The Heart” aspects</i>	69
C.	<i>Focus Group Outcome, description of “The Brain” aspects</i>	71
D.	<i>BVC Model Justification</i>	72
E.	<i>2016 Cohort Challenge Lab Theses</i>	73

List of Tables

<i>Table 3-1: The Seven Levels of Organizational Consciousness</i>	<i>18</i>
<i>Table 4-1: Participant Reference and Organizational Titles</i>	<i>25</i>
<i>Table 5-1: Results of the values exercise and interpretations of sustainability perspectives</i>	<i>33</i>

List of Figures

Figure 1-1: The Challenge Lab Process	2
Figure 1-2: The resource-demand funnel (Robert et al., 1997)	3
Figure 1-3: Challenge Lab students in the centre of the Triple Helix & Knowledge Triangle (adapted from Holmberg, 2014)	4
Figure 1-4: Phases and iterations in Design Thinking Methodology (Söderberg, 2014).....	8
Figure 1-5: Concept screening, scoring, testing (Söderberg, 2014).....	9
Figure 1-6: The Challenge Lab representation of the four dimensions of sustainability (adapted from Herman Daly's triangle of means and ends, in Atkisson, 2010)	9
Figure 1-7: Trust, Collaboration Cycle (Sandow and Allen, 2005).....	10
Figure 1-8: Disruption Cycle (Sandow and Allen, 2005).....	11
Figure 2-1: Dimensions of psychological safety (adopted from Edmondson, 2014).....	14
Figure 3-1: The Seven Levels of Organizational Consciousness (adopted from Barrett, n.d.)	16
Figure 3-2: Low potential energy organization, "high entropy"	19
Figure 3-3: High potential energy organization, "low entropy"	19
Figure 3-4: High entropy organizations, lacking alignment	20
Figure 3-5: Low entropy, high personal motivation, high performance	20
Figure 3-6: Energy alignment vs. Engagement (Barrett, 2010)	22
Figure 4-1: Brainstorming (a)	27
Figure 4-2: Brainstorming (b)	28
Figure 4-3: Seven Levels of Organizational Consciousness (BVCc, n.d.)	30
Figure 4-4: Examples of sociometric diagrams.....	31
Figure 5-1: Level 7 Sustainability Perspectives	35
Figure 5-2: Level 6 Sustainability Perspectives	37
Figure 5-3: Level 5 Sustainability Perspectives	39
Figure 5-4: Level 4 Sustainability Perspectives	40
Figure 5-5: Level 3 Sustainability Perspectives	42
Figure 5-6: Level 2 Sustainability Perspectives	44
Figure 5-7: Level 1 Sustainability Perspectives	46
Figure 5-8: Sociometric Diagrams (a-d).....	47
Figure 5-9: Focus Group Whiteboard Outcome	48
Figure 5-10: Focus Group Outcome	50

How to read this thesis

This report follows an unconventional structure for a master's thesis, namely because the research method and process have been conducted in an unconventional context, that of The Challenge Lab (C-Lab). The Challenge Lab is a unique setting for how students may conduct their masters thesis. The process of the Challenge Lab first begins with a non-mandatory but highly recommended, preparatory course, *Leadership for Sustainability Transitions*, held in study period two¹ (November – January), at Chalmers University of Technology. The Challenge Lab thesis programme then covers study periods¹ three and four.

The thesis programme is divided into two phases. Phase 1 is held over the first four weeks and is designed in such a way that at the conclusion of the four weeks, students are able to generate their own research question through the application of self-leadership tools, stakeholder dialogues and design-thinking methodologies. The research question developed at the end of Phase 1, then marks the beginning of the second phase. In this second phase, the traditional thesis process begins.

Due to this unique arrangement of the Challenge Lab thesis programme, this paper follows a unique format. It begins with an introduction and overview of the Challenge Lab process in Part I, including theories from Phase 1 that have provided the framing for the generated research questions explored in Phase 2.

In Part II, the reader is given an introduction to the research undertaken in Phase 2, with supportive arguments describing the purpose and importance for this field of inquiry. Details the research methods, as well as the theoretical model employed for analysis then follows. Results are then presented as well as a discussion. Conclusions and recommendations are then described at the end of Part II. The *Epilogue*, Part III, annotates this thesis with personal reflections of the researcher.

¹ Refer to Chalmers University of Technology academic schedule.

Part 1: The Challenge Lab

Chapter 1: Introduction to the Challenge Lab

The Challenge Lab at Chalmers University of Technology is a unique opportunity for masters students to conduct their final 30-credit thesis project. The Challenge Lab (C-Lab) provides students with the physical, temporal and mental space to become “powerful change agents” (Holmberg, 2014) in the quest for solving society’s complex sustainability challenges.

The Challenge Lab is premised on the understanding that the challenges society faces today are complex, and cannot be solved by any one individual or organization; that solutions require cross-disciplinary collaboration (Holmberg, 2014).

The Lab differentiates itself from the traditional thesis approach by facilitating the students through the Backcasting Methodology so that students generate their own projects and solutions that are both transformative and integrative.

The entirety of the Challenge Lab programme begins with an optional, but recommended, 7.5 credit preparatory course, *Leadership for Sustainability Transitions*, in study period two of the Chalmers academic schedule. Phase 1 of the Challenge Lab thesis programme then officially begins in study period three. This phase lasts four weeks and culminates with the development of self-generated research questions by each student. Phase 2 then commences with students following a more conventional thesis process, albeit, condensed as the completion of phase 2 aligns with the end of the second semester. An overview of the complete Challenge Lab process is illustrated in Figure 1-1. A description of the preparatory course and Phase 1 ensues; Phase 2 is covered in Chapter IV.

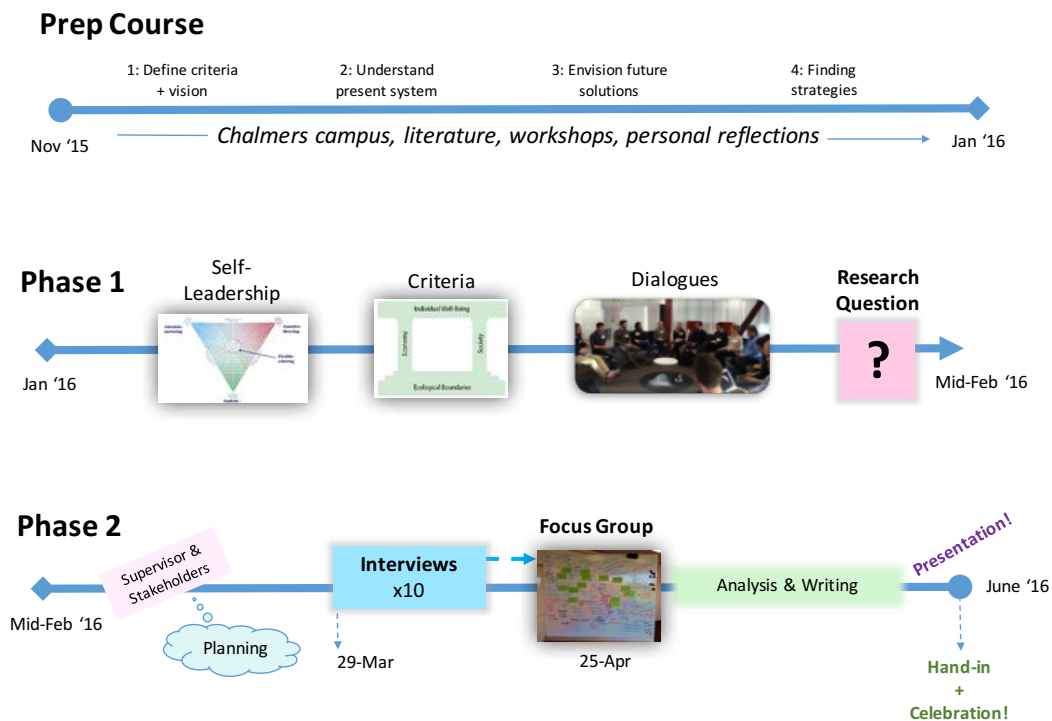


Figure 1-1: The Challenge Lab Process

According to Vergragt and Quist (2011), sustainability is a, “systemic multidimensional concept that encompasses the environment, human well-being, equity, human development, and the economy, and it

is a concept that is largely conceptualized as a long-term societal goal or objective.” These authors also argue that, “a systemic societal transformation is necessary in order to achieve sustainability.”

The challenges facing society can be visualized by the following resource funnel, Figure 1-2. It represents the systemically decreasing resource potential due to over-harvesting, mismanagement of resources, and increasing concentration of emitted substances (Robert et al., 1997). The resource funnel also shows that demand of natural resources will continue to grow with increased population, demands driven from our current economic system, and an increased resource intensity per service provided (Robert et al., 1997). As the walls of the funnel continue to close in, society must shift its economic reliance away from practices that degrade the relationship between the global society and the ecological sphere, as well as society itself (Holmberg, 1998). This statement couldn’t be anymore true than it is today given the current unsustainable and unstable global society that exists (Vergragt & Quist, 2011). It can be said that the recent financial, economic, ecological, and social crises that encompass the global society, “are only manifestations of deeper structural and cultural unsustainabilities” (Vergragt & Quist, 2011).

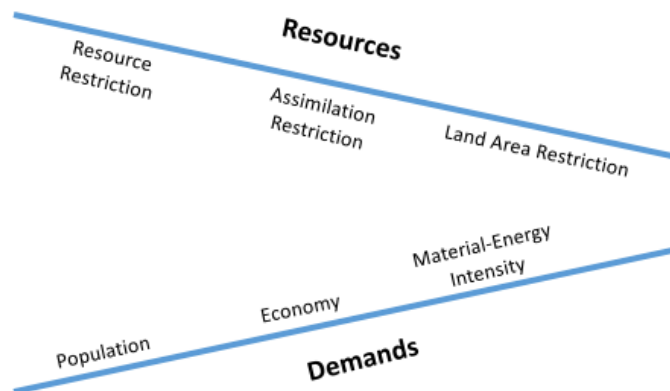


Figure 1-2: The resource-demand funnel (Robert et al., 1997)

Learning appropriate and practical tools and frameworks that can be applied to help shift these complex challenges is what led to the creation of the Challenge Lab. The premise of the Challenge Lab is to empower students with the toolset and experience to become, “powerful change agents” in the transition to a sustainable future (Holmberg, 2014). The power of the students lies in their characteristic of neutrality. Meaning, that students do not enter the Lab representing a particular organization (eg. public or private). That isn’t to say each student doesn’t have their own personal bias, yet, comparatively to someone who is employed by a particular organization, students offer an open-mind and non-threatening perspective.

One of the defining features that sets Challenge Lab masters thesis students apart from other thesis students, is that the research topics developed in the Challenge Lab have been self-generated, meaning they are not attached to bias from a professor or company. Additionally, Challenge Lab students are seeking the exploratory space afforded in the Challenge Lab to challenge societal norms and to discover how they can make a meaningful contribution to a more sustainable society.

Such curiosity enables the students to approach a diverse cross-section of societal actors and stakeholders without any labels or pre-conceived agendas. The same could be said for the ability of other masters students. However, the differentiator in the Challenge Lab is that students are equipped with a particular set of methods, tools and frameworks to navigate and facilitate societal transformations, which other students are not equipped with. Additionally, and perhaps more importantly, these qualities and developed skillsets enable the establishment of a safe, non-threatening environment whereby societal

actors and stakeholders are both willing and open to come together and collaborate, through student-led facilitation, for the advancement of a transition to a sustainable future.

In more specific terms, Holmberg (2014) describes how Challenge Lab students have the possibility to centre themselves within the regional “triple helix” knowledge cluster: 1) academy (research), 2) society (public sector), and 3) business (private sector). Within the triple helix lies a Knowledge Triangle that aligns academy (research) with education and innovation, see Figure 1-3.

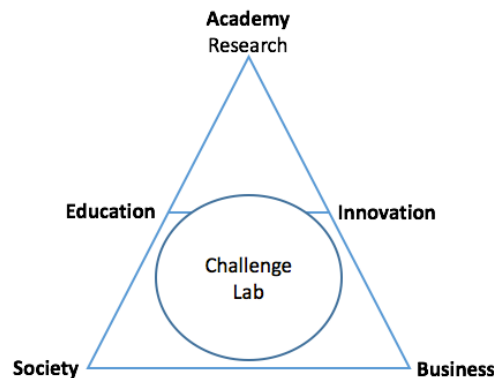


Figure 1-3: Challenge Lab students in the centre of the Triple Helix & Knowledge Triangle (adapted from Holmberg, 2014)

The development of the Challenge Lab is connected with the formation of the Areas of Advance (AoA) at Chalmers. The purpose of the Areas of Advance is to increase the integration and collaboration of both external and internal actors in pursuit of Chalmers’ vision, ‘for a sustainable future’ through the formation of a virtual matrix organization (Holmberg, 2014). Within Chalmers, the Areas of Advance strive to increase the balance across the three dimensions of the *Knowledge Triangle*. External to Chalmers, the Areas of Advance strive to promote greater collaboration of the university with both public and private sectors, to strengthen the connections of the university with the other two corners in the *Triple Helix*.

There are eight Areas of Advance at Chalmers University of Technology: Built Environment, Energy, Information and Communication Technology, Life Science Engineering, Materials Science, Nanoscience and Nanotechnology, Production, and, Transport (Holmberg, 2014). Within Chalmers, each of these eight areas strive for the following (Holmberg, 2014):

- Strength and balance across each corner of the *Knowledge Triangle*;
- Increased collaboration of education, research and innovation with public and private sectors.

What’s important with the Areas of Advance is that the roles of both education and innovation are given greater attention as means for societal collaboration, as traditionally, this has mainly been done through research (Holmberg, 2014). Shifting the means of collaboration to also include education and innovation, is critical to strengthen society’s transformational capacity towards a sustainable future (Holmberg, 2014).

1.1 Preparatory Course: Leadership for Sustainability Transitions

Students who are interested in taking their masters thesis in the Challenge Lab, are highly encouraged to take the preparatory course, *Leadership for Sustainability Transitions*, held over two months in the fall semester at Chalmers. The course is open to all masters students, but is limited to approximately 35 students. This was the second year the course has been running.

The teaching methods used in the course are diverse and intended to increase student engagement through hands-on application of theories and tools being taught. The different teaching methods include: group project work, assigned literature studies, guest lecturers, workshops, and personal reflection papers.

The prep course introduces students to the Backcasting Methodology, and uses the Chalmers campus as its test-bed. Each week is focused on one of the four steps within the Backcasting approach. The course is designed in such a way that students get to apply course material with hands-on experience.

In addition to the backcasting methodology, the course applies the following two perspectives to provide a holistic approach to complex sustainability challenges (Holmberg et al., n.d.):

1. **Outside-in** perspective: system dynamics, multi-level perspective, design-thinking methodologies.
2. **Inside-out** perspective: self-leadership methods and tools to understand and reflect on personal values, strengths and visions; and, dialogue tools to lead interaction with different stakeholders.

Upon completion of the course, it is expected that the students will be able to (Holmberg et al., n.d.):

1. Describe critical sustainability challenges and how the connections amongst different industrial and societal actors perpetuate our current “lock-ins” across different societal levels;
2. Reflect upon shifts in mindsets that are needed for sustainability transformations;
3. Apply systems perspectives and relevant frameworks to solve sustainability challenges;
4. Describe, reflect and apply, theories and tools for transformative leadership;
5. Apply facilitation and dialogue tools to enable collaboration with multiple stakeholders.

1.2 Phase 1 Description

2016 is the third year that the Challenge Lab is in operation. This year, there are 14 students writing their thesis in the Lab. As the Lab is open to students from all academic backgrounds, there is a diverse academic and cultural mix. Students are also allowed to apply from universities other than Chalmers. This year, there are two students participating in the Challenge Lab from outside Chalmers. Students in the 2016 Challenge Lab represent nine different countries: Canada (x1), Mexico (x1), Costa Rica (x1), Brazil (x1), Sweden (x3), Germany (x4), Estonia (x1), Greece (x1), Iran (x1). The Challenge Lab students are guided by a team of facilitators and supervisors, referred to in this report as The Challenge Lab Team.

Below is a list of the students’ master programmes participating in the 2016 Challenge Lab:

- Industrial Ecology
- Design and Construction Project Management
- Sustainability, Economics and Management
- Environmental Science
- Sustainable Energy Systems
- Maritime Management
- Communication Engineering
- Industrial Design Engineering
- Infrastructure and Environmental Engineering

Note: throughout the remainder of this report, ‘students’ will be used interchangeably with the term participants, C-Lab, Challenge Lab, 2016 C-Lab etc.

Some of the distinguishing features of the Challenge Lab, are that:

1. students gain a holistic perspective on society’s sustainability challenges,

2. they learn how to apply the backcasting methodology to understand possible intervention points,
3. they develop self-leadership skills in the context of sustainability transitions, and,
4. their research questions are developed in a generative, bottom-up approach.

In order to understand and characterize the system, Geels' (2002) multi-level perspective framework is used. In 2016, the 'system' under study is the City of Gothenburg. This selection was made on Holmberg's (2015) premise for Sustainability Leadership, "Think big, start small, act now." In other words, if you want to affect global change, one must have the ability to first do so from where one currently stands.

Backcasting from guiding principles is the method utilized in Phase 1 of the Challenge Lab thesis process due to its ability to create a shared mental framework by use of both inside-out and outside-in tools. The final product of Phase 1 was the research questions each student would investigate for Phase 2. A description of the process and methods employed throughout Phase 1 ensues.

1.2.1 Developing criteria for a sustainable future

The first step of backcasting from principles is to develop criteria for a sustainable future. In order to do so, inside-out activities are conducted to build a greater sense of self-awareness amongst each individual student. To begin, each student develops a Coat of Arms to visualize to themselves, and to the C-Lab group, why they have chosen to do their thesis in the Challenge Lab, what they care about, and what concerns them. This is the first introductory assessment to begin the process of getting to know each other.

Self-Leadership tools are then used to conduct an individual values assessment and an individual strengths assessment. Active listening techniques are used to build understanding and trust amongst the Challenge Lab group, see Figure 1-7 (Sandow & Allen, 2005). To further build team collaboration, interactive sessions are led by the workshop leader to map out the groups' values and strengths. This further assisted in the understanding and trust cycle to support later collaboration.

Another critical activity that is introduced to the students is the process of the "Check-in" and "Check-out" to practice active listening and to build team cohesion by enabling, "the field of energy, space and focus for conversation" (Sande, 2015). The check-in allows participants to enter the field (of conversation) by understanding what each participant is bringing, what they feel and what they need for the upcoming conversation. The check-out serves as a way to leave the field and for participants to share what they have learnt. During the first week, this procedure is used to start and close each day. In subsequent weeks, this procedure moves to a check-in at the beginning of each week, and a check-out to close each week. This is a dialogue procedure inline with Theory U, Senge's five disciplines and Isaacs (1999).

In parallel with the leadership activities, the Challenge Lab students develop sustainability criteria for each of the four pillars: ecological, wellbeing, social, economy. The students are divided into four groups, one for each pillar. Within each group, one person is designated as the host; this person stays at their pillar, the others rotate through all the groups and repeat their first group pillar at the end as a review of what others have said and discussed. This marks the initial formation of the C-Lab's sustainability criteria.

The next steps consist of a review of literature, pertinent to each pillar. When this is complete, the draft criteria are revisited by the entire group. The criteria developed by the Challenge Lab Group in the previous year was used as a resource to build on. Later, the Challenge Lab Facilitation Team joins to provide their constructive feedback, and to test the developed criteria against requirements for first-order principles (Holmberg & Robert, 2000). The criteria are then "frozen" in order to progress the backcasting procedure onto step 2, in the allotted time. The criteria developed for Challenge Lab 2016 is as follows.

Nature Criteria

Human activities affecting nature's function and diversity are done in such a way that they:

- do not increase the concentration of substances from the lithosphere in the ecosphere;
- do not increase concentration of human made substances in the ecosphere;
- do not systematically deteriorate the resource base; such as fresh water, fertile land, and biodiversity through manipulation, mismanagement, or over-exploitation.

Adopted and inspired by Holmberg (1998) and Holmberg & Robèrt (2000), Post-15 Goals, Criteria by C-Lab (2015).

Well-being Criteria

First we present the basics for survival and continue with components supporting self-fulfillment and self-realization. The goal of the society and economy, lying on the nature as its fundament, is to serve the human wellbeing, where:

- Everyone has the right to human basic needs; health, security, future security, food, water, sanitation, recreation, shelter, energy;
- Human life includes: subsistence, protection, affection, understanding, participation, idleness, creation, identity, freedom;
- Everyone should have access to the same opportunity and the freedom to build a meaningful life;
- Everyone should have access to the same opportunity and freedom to explore and express your "inner self" and to be your values without limiting others' freedoms or harming others;
- social and economic inequalities are not justified unless they are to the greatest benefit to the least-advantaged members of society.

Adopted and inspired by Rawls (1971), International Wellbeing Group (2013), Cruz et al (2009), Post-15 Goals, Criteria by C-Lab (2015).

Economic Criteria

The economic system is an instrument that enables individuals to meet the other criteria (society, wellbeing, nature) efficiently and effectively, as such:

- The function of the economic system is driven by the other criteria and not the other way around;
- It enables further use of resources and avoids dissipative use of materials;
- It assures an equitable distribution of resources;
- It has an inherent mechanism of maintaining and serving societal infrastructure and institutions that permits human wellbeing to be met over time;
- It has the ability to change and to adapt when facing shocks and disturbances.

Adopted and inspired by Sen (1999), Anand and Sen (2000), Simmie and Martin (2010), Post-15 Goals, Criteria by C-Lab (2015).

Societal Criteria

The societal system is an instrument for individuals to live together within the other criteria with respect to the following conditions:

1. It enables the well-being, empowerment and productiveness of every individual while adhering to the ecological principles by:
 - a. equitable accessibility to education and healthcare;
 - b. gender and social equity;
 - c. equal human rights;
- Its governing mechanisms (and societal institutions) are built on transparency, accountability, mutual trust, adaptability and recognition of diversity.

Adopted and inspired by Raworth (2012), Pisano (2012), Post-15 Goals, Criteria by C-Lab (2015).

1.2.2 Understanding today's situation

Step 2 of backcasting consists of building an understanding of the current situation of the system in order to identify gaps between the current situation and previously developed sustainability criteria (see step 1). Gothenburg was selected as the system for the Challenge Lab due to its locality and accessibility for stakeholder access. Furthermore, the thinking applied is that if you can't affect change in your own local context, it will be of greater difficulty to affect change elsewhere. In order to do so, stakeholder dialogues are held with actors from all corners of the Triple Helix according to different themes eg. transport, urban development, and facilitated by the Challenge Lab students. Research on the stakeholders and their organizations are conducted in preparation for the dialogues. This year there were a total of six stakeholder dialogue sessions covering the following themes: Areas of Advance (AoA) General, Mobility and Urban Development, Sustainability Driven Innovation for Urban Development, Areas of Advance (AoA) Energy, Integration and Social Innovation 1.0 and 2.0.

1.2.3 Applied design thinking

Following the stakeholder dialogue sessions, various Design Thinking methods are applied in order to make sense of all that was discussed and all the different ideas and barriers that were found. Furthermore, this step is to help the students envision future solutions based on the gaps identified previously. This is an important step as it is a precursor for the Challenge Lab students to develop their own research question that will lead into Phase 2 of the traditional thesis process. The Design Thinking method is an iterative process and the workshops are facilitated by the Challenge Lab Team; the overall design process applied is represented in Figure 1-4 below. The red arrows represent the questions the Challenge Lab Team asks the students to reflect on during the process, and the yellow arrows represent what questions the students reflect on by himself/herself. Throughout the iterations, concepts are continually screened, scored and tested until they can be narrowed down to the optimal solution, see Figure 1-5.

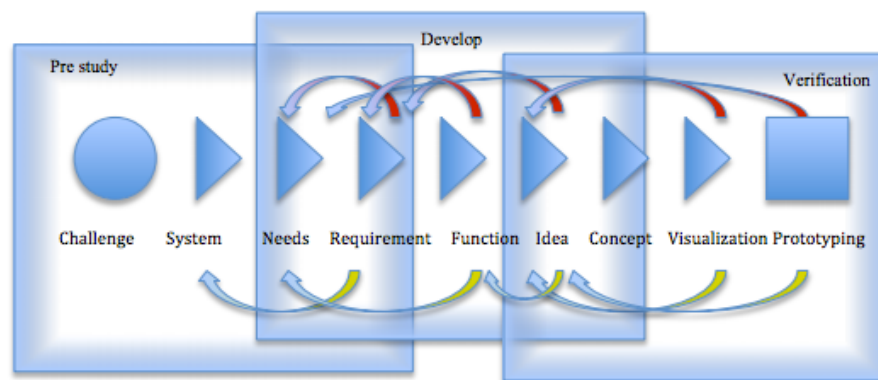


Figure 1-4: Phases and iterations in Design Thinking Methodology (Söderberg, 2014)

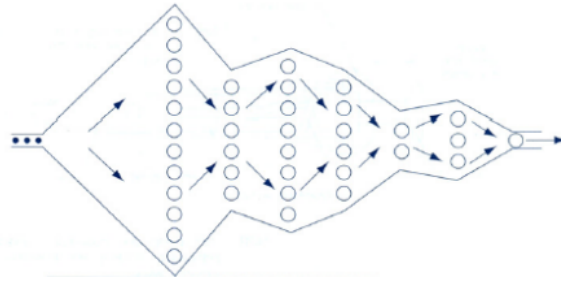


Figure 1-5: Concept screening, scoring, testing (Söderberg, 2014)

1.3 Theoretical Framing

This section introduces relevant theories from the preparatory course and Phase 1 that were used to frame the research conducted in Phase 2.

1.3.1 Sustainability Framework

In the context of this report, sustainability is viewed as a framework consisting of four pillars in accordance with Atkisson (2010) and the sustainability criteria developed in Phase 1 of the Challenge Lab. The first pillar is the ecological pillar representing our natural resource constraints. The second pillar, is that of individual personal wellbeing, implying that this is the ultimate goal for humanity. The third pillar, the societal pillar can be thought of in the manner that because we have ecological constraints, and because there are many of us on this same planet all striving for personal wellbeing, we need to have social systems and structures in place to allow all of us to live in harmony with one another. Pillar four, the economy, is a way to achieve equitable distribution of resources across humanity, given our ecological constraints and necessity for appropriate social systems. Figure 1-6 adapted from Atkisson (2010) illustrates this concept. The importance of using this framework is that it illustrates that sustainability is much broader than just the environmental, or ecological pillar. The sustainability criteria that was developed in Phase 1 is reflective of this framework for sustainability (see section 1.2.1 Developing criteria for a sustainable future).

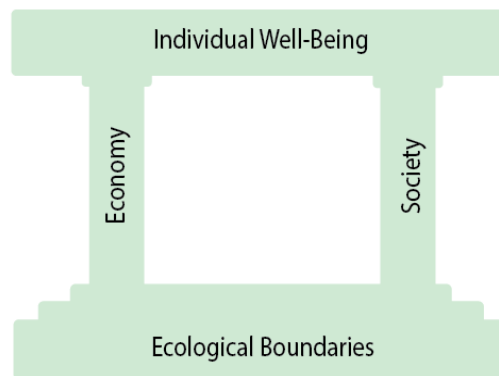


Figure 1-6: The Challenge Lab representation of the four dimensions of sustainability (adapted from Herman Daly's triangle of means and ends, in Atkisson, 2010)

1.3.2 Organizational Learning

Organizational learning is defined as a, “process of detecting and correcting error. Error [meaning] any feature of knowledge or knowing that inhibits learning” (Argyris, 1977, pg. 116). This means that the organization doesn't just do things right, but that it strives to do the right things; it means that the

organization doesn't just look for improving efficiency, but that it asks whether there is a more effective way to reach its goals. Put another way, it means that the organization is not going about its work blindly, and that it is seeking for other perspectives, looking outside itself, and open for reflection. Double loop learning also means that the organization is able to apply some fluidity in how it conducts its work, for instance, sometimes it will be in a more action-orientated state, and other times, in a more reflective state.

In Peter Senge's 1990 book, "The Fifth Discipline: The Art and Practice of The Learning Organization" he discusses core capabilities for nurturing and implementing organizational learning. Senge (1990) discusses that the following five disciplines are necessary to enable a learning organization: personal mastery, mental models, shared vision, team learning, and systems thinking. Personal mastery means that an individual is continually seeking to clarify and deepen their own personal vision, and that they are able to extend and manifest that in their organization (Senge, 1990). It means persevering en route to vision fulfillment. Having the open space and trust to challenge mental models and perspectives is critical for a learning organization so that individuals and teams are not afraid to test assumptions to better understand the world. Individuals in an organization must partake in co-creation of the organization's vision to develop a sense of shared purpose and empowerment. Team learning then complements this as it defines the need for discussion and dialogue by creating the space for inquiry and reflection. Finally, systems thinking is necessary as it can give individuals appreciation for their experiences and for the complexity of the world (Senge, 1990).

1.3.3 Social Collaboration

Nurturing "social collaboration" (Sandow & Allen, 2005) is an organizational ability that goes hand-in-hand with the inside out perspectives of organizational learning. As described in the article by Sandow & Allen (2005), social collaboration is a necessity in today's "Knowledge Age." As described in their article, social collaboration involves deep listening, sharing information, a focus on value creation, capacity for reflection, recognition of the importance of language, and, legitimizing networks of collaboration. These attributes support those described by Senge (1990), Argyris (1977), and Sande (2015). Sandow and Allen (2005) describe the importance of deep listening for building understanding, trust and collaboration in an organization. This cycle is illustrated in Figure 1-7 below. The authors also illustrate what can happen when listening and understanding are not achieved, see Figure 1-8.

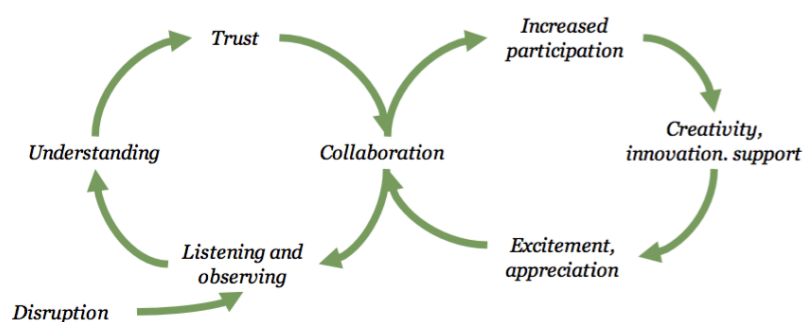


Figure 1-7. Trust, Collaboration Cycle (Sandow and Allen, 2005).

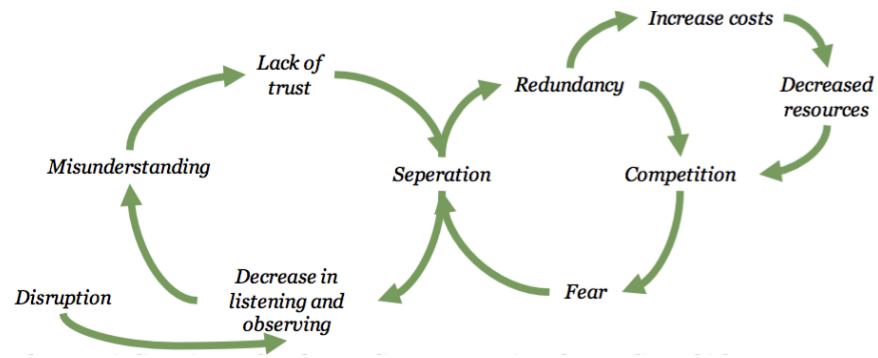


Figure 1-8. Disruption Cycle (Sandow and Allen, 2005).

Part 2: Master's Thesis

Chapter 2: Introduction and Purpose

Sustainability, synonymous in this report as the term, sustainable development, is defined by the Brundtland Commission (1987), as “development which meets the needs of current generations without compromising the ability of future generations to meet their own needs.” Although there is general global recognition of this definition, the ambiguity of what this really means in practicable terms for how we, the general populace, are to conduct ourselves in our personal lives and work lives is enormous.

This being said, the new global sustainability agenda agreed upon in Paris at the 21st Conference of the Parties in December 2015 showed remarkable efforts to delineate sustainability into overarching goals and targets. More importantly, the agreement of this agenda confirmed that collectively, as a global community, we need to do more; sustainability needs to be a priority, and our efforts to advance this agenda must improve.

Another way of putting it, is that we must improve our level of performance in the sustainability field. In order to do so, a transformation in how we live, and how we work is needed. I borrow concepts from literature on leadership, engagement, and organizational consciousness to describe a few key fundamentals that I have found relevant to understand how performance could be improved in the translation of sustainability goals to actual implementation.

2.1 Alignment = Engagement

According to Richard Barrett (2010), founder of the Barrett Values Centre with headquarters in the UK, a highly engaged employee² has the potential to double their output, as compared to someone who is not. In order to attain a high level of engagement, Barrett (2010) states that there must be alignment across the following three components:

- Personal values,
- Current organizational³ values, and,
- Desired values for where the organization³ intends to go.

However, according to authors Christopher Rice, Fraser Marlow and Mary Ann Masarech, lack of alignment is something easily overlooked in today’s organizations. In their 2012 book, *The Engagement Equation: Leadership Strategies for an Inspired Workforce*, Rice et al. describe this lack of alignment as the ‘silent killer’ of engagement. The authors (2012) claim that misalignment is so easily overlooked in the engagement equation because of two factors (p.140):

1. Definitions of engagement focus on job satisfaction, rather than addressing contribution and performance.
2. Leaders assume it already exists.

² The term “employee” is used loosely to refer to any individual situated in the context of supporting an organization.

³ Note, that in the context of this report, the term “organization” is used to describe, “...any human group structure”; for instance, for-profit corporations, governments, municipalities, educational institutions, not-for-profits (NFP), and non-governmental organizations (NGOs) (Barrett, n.d.).

2.2 Psychological Safety + Motivation & Accountability = High Performance

Connecting personal matters with those of performance was a project initiated by Google in 2012, called Project Aristotle, a 3-year long study, whereby a group of social scientists were tasked with uncovering what it was that made one team's performance superior to another's (Duhigg, 2016). After interviews and surveys with hundreds of Google's teams, the researchers found that what fosters high performance, is the ability of the team to establish and nurture a feeling of psychological safety (Duhigg, 2016). This finding contrasts to the conventional wisdom that what makes a successful team is the combination of the best people. It took Google nearly a decade and "untold millions of dollars" evaluating almost every aspect of its employees' lives to discover that there is no "right" combination of people to form the most well performing team (Duhigg, 2016). Rather, it is the team's collective ability to establish and maintain a feeling of psychological safety (Duhigg, 2016).

Amy Edmondson (1999, pg.354) describes this safety as a, "shared belief held by members of a team that the team is safe for interpersonal risk-taking...it describes a team climate characterized by interpersonal trust and mutual respect in which people are comfortable being themselves." Perhaps what's more important is that Edmondson describes psychological safety as a shared tacit belief, meaning, it has a tendency to be taken for granted, and not necessarily given direct attention. In other words, this draws parallels with the claims from Rice, Marlow and Masarech's 2012 book that assumptions undermine high performance.

Furthermore, in her 2014 TedX video, Edmondson enriches her 1999 study by stating that building psychological safety in a team, or in a workplace, does not imply a decrease in motivation and accountability. Rather, psychological safety is two-dimensional, with aspects of motivation and accountability. Figure 2-1 illustrates these dimensions, and highlights the need for motivation and accountability to accompany higher levels of psychological safety in order to move out of the 'comfort zone' and into the 'learning zone', where high performance teams reside (Edmondson, 2014). Furthermore, having high motivation and accountability, with low psychological safety will leave teams in the 'anxiety zone', where performance is restricted. Edmondson (2014) emphasizes that psychological safety is only necessary when both uncertainty and interdependence exist. Fortunately, both these factors are ubiquitous in the field of sustainability, making Edmondson's (2014) claims highly relevant and applicable when it comes to improving performance in the context of sustainability.

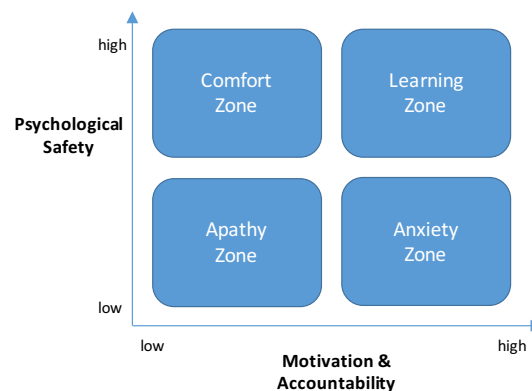


Figure 2-1: Dimensions of psychological safety (adopted from Edmondson, 2014)

2.3 Mental models of sustainability are unexplored territory

According to a 2014 article by German authors, Stefan Hielscher and Matthias Georg, in *Systems Research and Behavioural Science*, there have been, “no systematic attempts in systemic sustainability research to make (shared) mental models of corporate sustainability accessible for empirical scrutiny” (p.711). This is particularly interesting given the findings from both Edmondson (1999) and Google’s Project Aristotle, on the criticality of understanding shared mental models for a high performance team. This need for psychological safety, complements the necessity for personal and organizational alignment described by Barrett (2010) and Rice et al. (2012).

However, the reason why tacit assumptions of sustainability have not yet been explored and revealed through empirical research in the literature remains elusive. Nevertheless, the criticality of the task is paramount if genuine commitment and engagement in sustainability is to be achieved. In their publication, Hielscher and Georg (2014) make a first attempt at revealing the potential of qualitative research for “unearthing and analyzing” mental images organizations have of sustainability. However, their method is limited to using textual data from a corporation’s sustainability report. They recognize this limitation, and advise for further research to be done using other qualitative methods, eg. interviews, to reveal mental models of sustainability and potential conflicts.

Therefore, this thesis aims to build on Hielscher and Georg’s (2014) identified gap through the use of a qualitative research approach. However, this study diverges from Hielscher and Georg (2014) by attempting to uncover sustainability perspectives held within an organization, rather than perspectives amongst an organization and its external stakeholders. Consequently, this thesis attempts to illustrate the need to unveil tacit interpretations of sustainability in order to gauge capacity for high performance in the translation of sustainability goals to action.

More specifically, the research questions to be addressed are as follows.

2.4 Research Questions

- How do personal and organizational perspectives on sustainability align in an organization?
- How may a management group use the potential of their human resources to overcome obstacles towards implementation of sustainability goals?

I anchor my study in theories of organizational learning, social collaboration, and leadership for sustainability transitions. I centre my analysis on Richard Barrett’s model for Organizational Consciousness. Details of my methodology ensue, following a description of Barrett’s Organizational Consciousness model.

Chapter 3: Theoretical Framing

The following theories build upon those framed previously in Chapter 1 and Chapter 2 and are applied directly for the analysis of Phase 2 of this master's thesis.

3.1 Organizational Consciousness

The Barrett Values Centre builds on Maslow's hierarchy of needs and theory of human motivation with a model developed by Richard Barrett, the Organizational Consciousness model. Barrett (n.d.) claims, that if an organization desires to be of service to society at large, i.e. to humanity and to the planet, the organization must have:

- Alignment between personal values, current organizational values, and desired organizational values.
- Needs must be fulfilled within each of the seven levels.

According to Barrett, organizations that are able to satisfy needs across all seven levels are said to have, "full spectrum consciousness." Figure 3-1 illustrates the Organizational Consciousness model. A description of each level follows.



Figure 3-1: The Seven Levels of Organizational Consciousness (adopted from Barrett, n.d.)

The model should be read from bottom to top, starting with the first three levels of (i) Survival, (ii) Relationship, (iii) Self-Esteem. These are levels that address the fundamental basic needs of an organization – that of financial stability, employee and customer loyalty, efficiency and effectiveness of systems and processes. These lower levels focus on the self-interests of the organization and its shareholders. Similar to Maslow's theory of motivation, if basic needs at these lower levels are not met, individuals in an organization will feel a sense of anxiety. These first three levels are called "deficiency" needs.

The higher levels, (v) Internal Cohesion, (vi) Making a Difference, and (vii) Service, are referred to as the organization's "growth" needs focusing on, "cultural cohesion and alignment, building mutually beneficial alliances and partnerships, and, long-term sustainability and social responsibility". Barrett states that when these needs are met, they are forever engendered, perpetuating deeper levels of commitment and motivation.

The fourth level, Transformation, is a bridge between the three low levels, and the three higher levels, representing a shift in mode-of-operandi. It's a shift from a culture rooted in fulfilling basic survival needs, to one of empowerment and "responsible freedom".

At the time of publishing, Barrett (n.d.) stated that only a few organizations operate with full spectrum consciousness, perhaps this has changed since then. Nevertheless, Barrett describes that the fundamental factor in achieving full spectrum consciousness is rooted in the experience of the employees, and the ability of the organization's leaders to release their employee's full energetic potential.

Organizations that only focus on the fulfillment of the lower three levels are characterized by an inability to adapt to changing market conditions, little to no innovation or creativity, and lack of employee enthusiasm. Typically, the organization is governed from a place of fear, and employees are frustrated and/or stressed out. Conversely, organizations that are solely fixated on fulfilling the higher three levels, lack basic business capabilities necessary for effective and efficient operation.

Barrett describes each of the seven levels by the following different attributes, summarized in Table 3-1. He also states that at each level, there is a focus to fulfill the needs of certain groups of stakeholders. Note that the first three levels (i, ii, iii) are prone to several limiting factors, that if not reduced, will limit further consciousness development and growth, and ultimately, the ability to serve humanity and the planet.

Table 3-1: The Seven Levels of Organizational Consciousness

Level 7: Service

- Long-term perspective, humility, ethics, social responsibility, compassion, future generations.

Level 6: Making a Difference

- Environmental awareness, community involvement, employee fulfillment, coaching/mentoring, making a difference in the world, attention on leadership development.
- Deep internal connectedness, with expanding external connectedness.

Level 5: Internal Cohesion

- Commitment, shared vision and values, trust, integrity, creativity, transparency, passion, openness, capacity for collective action, unique cultural identity by promoting from within.
- Alignment of employees' personal sense of mission with organization's vision.

Level 4: Transformation

- Teamwork, accountability, adaptability, goals orientation, personal growth, empowerment, big picture thinking, innovation, decisiveness, education, diversity.
- Ability to make decisions while actively seeking employees' ideas, opinions, participation.

Level 3: Self-Esteem

- Processes, quality, pride in performance, best practices, systems, desire to lead, continuous improvement, encouragement.
- **Limiting factors:** Complacency, bureaucracy, long-hours/demanding environment, silo mentality, hierarchy, confusion, fire-fighting, rigidity.

Level 2: Relationships

- Customer satisfaction, sense of loyalty and belonging among employees, open communication, friendship, employee recognition, responsiveness, listening.
- Harmonious interpersonal relationships, good internal communication.
- **Limiting factors:** Blame, manipulation, internal competition, empire building, rivalry, intimidation.

Level 1: Survival

- Financial stability, shareholder value, employee health and safety, organizational growth.
- **Limiting factors:** Short-term focus, control, caution, micro-management, job-insecurity, risk-aversion, territorialism, corruption, greed. Perspective of exploitation for personal/organizational gain, attitude to meet regulations with minimum compliance.

(adopted from Barrett, n.d.)

3.2 Personal and organizational alignment

According to the BVC, that an organization fulfills needs at all 7 Levels of the Consciousness Model is not enough if it wants to grow, develop and be a leader in its sector. Thus, Barrett (2010) claims that in order for an organization to improve its performance, it is necessary to reduce the personal entropy⁴ of the organization's leaders.

Personal entropy⁴, according to Barrett (2010), is the amount of human energy available for doing useful work. In order to unleash the full energy potential of each individual, employees need to feel their personal values are aligned with the current values of the organization, and the values that the organization desires to embody.

When individuals' values are aligned with those of the current and desired organization, the organization is said to have low "Cultural Entropy" and has the ability to produce meaningful, value-added work, i.e., products, services, societal contributions (Barrett, 2010). Similarly, if there is misalignment between personal and organizational values, the organization will have lost opportunities to produce value-added work.

In order to better understand this concept, Barrett (2010) uses the analogy of a mechanical system; whereby, the better the alignment of the system components, the greater the efficiency of the system to produce work. In the context of this report, the system is the organization, and the system components are the employees. Two simple graphics below illustrate this concept.

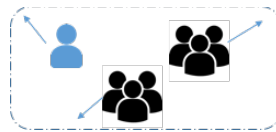


Figure 3-2: Low potential energy organization, "high entropy"

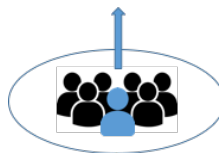


Figure 3-3: High potential energy organization, "low entropy"

3.3 Motivation, discretionary energy

When Cultural Entropy is low, meaning high values alignment, there is opportunity to ignite another source of energy, termed "discretionary energy" (Barrett, 2010, pp.2). This energy is released when employees' needs are fulfilled at all seven levels of the *Organizational Consciousness Model* **and** when the individual feels they are contributing to the implementation of an inspiring vision (Barrett, 2010). When

⁴ Entropy is a thermodynamic concept used to describe a characteristic of energy. In simple terms, entropy can be thought of as the extent of disordered energy within a system. Entropy does not consider the relation between a system and its surroundings. The way in which entropy is applied in this context is debatable (S. Karlsson, personal communication, 31 May 2016). Energy potential may be a more scientifically correct term to characterize efficiency of the system and its components, in this case, employees. Nonetheless, applying concepts from thermodynamics to human organizations could prove to be useful. However, further development is needed to explore this.

this happens, employees are highly motivated by their work and have the potential to double the amount of output as compared to someone who is not motivated (Barrett, 2010).

This is so, because of the following two reasons:

“The inspiring vision focuses the energy of all employees in the same direction, and, it gives employees an opportunity to make a difference and be of service in a way that brings meaning to their lives.”

(Barrett, 2010, pp.3)

Additionally, Barrett (2010, pp.3) states that a highly motivated person is, “committed, enthusiastic and passionate, and taps into his or her deepest levels of creativity.”

“To even stand a chance of unleashing people’s discretionary energies, employees need to feel at home in the organization so they can be authentic – bring their whole selves to work (values alignment), and they must also feel that the organization is on the right track – the current and desired culture values are aligned and they resonate with the organization’s purpose (mission alignment).”

(Barrett, 2010, pp.4)

Building on Figure 3-2 and Figure 3-3, I have drawn the following two figures to illustrate the addition of the later concept – the importance of an inspiring vision, to increase employee’s motivation. Figure 3-4 illustrates a lack of alignment and connection amongst personal values, organizational values, and the vision. On the other hand, Figure 3-5 illustrates alignment between personal values, organizational values, and an inspiring vision that the individual is able to connect with, increasing their motivation.

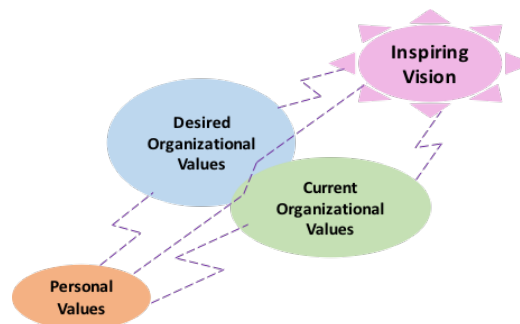


Figure 3-4: High entropy organizations, lacking alignment

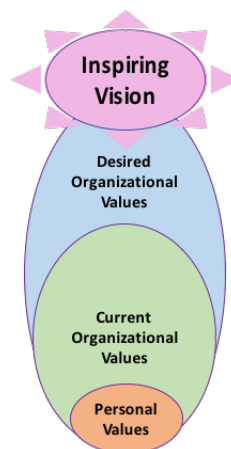


Figure 3-5: Low entropy, high personal motivation, high performance

3.4 Limiting values and behaviours

Barrett (2010) describes the different factors within an organization that can inhibit employees' ability to access their discretionary energy. These qualities are found within the bottom three levels of the *Organizational Consciousness* model, levels 1 through 3. They include factors that prevent employees from working effectively (Level 1), factors that cause friction between employees (Level 2), and factors that slow down the organization and its decision making ability (Level 3). Refer to Table 3-1 for further descriptors of the limiting factors for each level.

The consequence of having these limiting values present in an organization is that it inhibits the ability of individuals to direct their energy towards fulfillment of the qualities at each of the higher levels, 4 through 7, of the *Organizational Consciousness Model*. Their motivation is low, causing employees to channel any discretionary energy they may have into their private lives, or elsewhere (Barrett, 2010).

Ultimately, this means that *Service to Humanity and the Planet* are inhibited. Or in the very least, efforts to fulfill such ambitions may be met, but there will be a huge amount of wasted energy along the way trying to overcome the limiting values and behaviours (Barrett, 2010). In other words, the efficiency of the system (organization) will be very low; employees will expend a greater share of their energy dealing with the limiting factors, rather than advancing their development, and ultimately, that of society.

3.5 Determining alignment

In order to assess personal and organizational alignment, along with the presence of limiting factors (described above) the Barrett Values Centre (BVC) conducts a series of surveys with employees, in various assessment processes, e.g. *Cultural Values Assessment (CVA)*, or, *Leaders Values Assessment (LVA)*, depending on the objectives of the study. Nonetheless, the essence of each assessment follows a similar method whereby employees are asked to select values/behaviours that best reflect (BVCb, n.d.):

- employees' personal values of who they are, rather than who they desire to become;
- employees' views of how the organization currently operates; and,
- employees' perception of what the organization desires to achieve and embody.

3.6 Consequences of alignment and misalignment

In 2008, the Barrett Values Centre took part in a Best Employer Survey in Australia and New Zealand (BEANZ), run by Hewitt Associates. The study surveyed 163 organizations in Australia and found a strong correlation between Cultural Entropy within an organization and the level of staff engagement (Barrett, 2010); the lower the entropy, or the greater the energy potential, the greater the staff engagement. Figure 3-6 illustrates this.

In this BEANZ study, BVC found the following connections with revenue (Barrett, 2010):

- Organizations with employee engagement above 65% and *Cultural Entropy* below 10%, had growth in revenues above 35% in just a 3-year period.
- Organizations with employee engagement between 40-65% and entropy larger than 22%, had a growth in revenue of only 7% in a 3-year period.

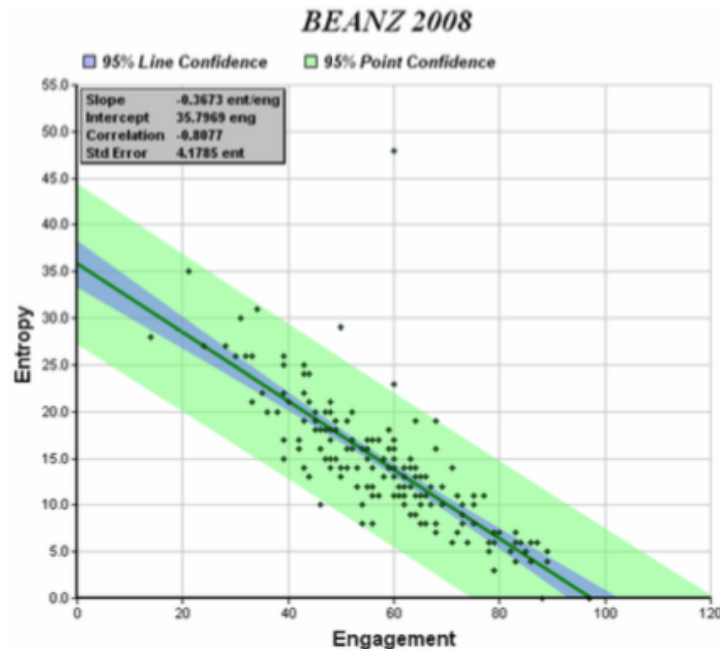


Figure 3-6: Energy alignment vs. Engagement (Barrett, 2010)

Further, the BVC has measured over 2,000 organizations, and has found that when limiting values start to account for approximately forty-percent of responses in comparison to how the organization currently operates, bankruptcy, dissolution or aggressive takeovers frequently ensue (Barrett, 2010). Barrett (2010) gives the following examples from previous BVC studies to illustrate the seriousness and realities of the presence of limiting values, measured through *Cultural Entropy*:

- The *Cultural Entropy* in Iceland was measured in August 2008, comparing peoples' personal values, how they perceived their national culture, and their desires for their country. *Cultural Entropy* was high at 54%. Later, in September of that same year, Iceland's economy collapsed.
- A similar study was conducted in Latvia in August 2007. Again, *Cultural Entropy* for the nation was elevated at 54%. In October 2007, the Government was disbanded following public unrest.
- The *Cultural Entropy* of a small population of business men in Argentina was measured in February 2001, and was found to be at a level of 60%. Eight months later, the country declared bankruptcy.

3.7 Where do the energy barriers come from?

Barrett (2010) states that, *Cultural Entropy* is a function of the following two elements:

1. Personal entropy of the current leaders of the organization, and,
2. Legacy of previous leaders' personal entropy.

Such personal entropy is engrained in the organization through bureaucracy, silos, and hierarchical decision-making (Barrett, 2010). Furthermore, this entropy will show itself in the organization's culture, exhibiting qualities of excessive control and caution, blame, internal competition, confusion, and long hours (Barrett, 2010).

Emphasized by Barrett (2010), is that personal entropy stems from the presence of limiting values and behaviours within the individual. This results in, "subconscious fear-based decision-making" and will be expressed in a leader's day to day interactions (Barrett, 2010).

3.8 What can be done to reduce the barriers?

In order to reduce the limiting values and behaviours of current organizational leaders, Barrett (2010) states that “personal mastery” is the solution; that leaders must learn how to create their own personal alignment. This can be accomplished through the learning, growth, and development of self-leadership skills (Barrett, 2010).

Depending how great is the level of personal entropy for a leader, Barrett (2010) recommends that the leader evaluate how his/her behaviours and actions:

1. affect those around them, how they make decisions, and their degree of work/life balance;
2. may jeopardize their relationships with colleagues and subordinates, negatively affecting their goals; and,
3. may be compromising their personal integrity and impacting their ability to inspire and lead.

In order to reduce *Cultural Entropy* caused by the legacy of previous organizational leaders, Barrett (2010) recommends structural adjustments for the organization to reduce hierarchy, silos and bureaucracy.

3.9 Application to this thesis

In summary, Barrett’s theory on Organizational Consciousness will be used to explore alignment behaviour amongst a management team applied in the context of sustainability.

Chapter 4: Description of Case Study and Research Method

I took a qualitative approach using a case study to address my research questions. Given the emphasis Barrett places on the leaders of an organization, I sought stakeholders of whom I would be able to access on the management level. In selecting the organization to work with, I had two additional criteria. First, the organization should be local to the Gothenburg Region. Second, the organization must have ambitions to make sustainability a business priority. The reason for these criteria were to enable an easier access point into a “live” test subject. And, as the sage advice of professor John Holmberg goes, “Think big. Start small. Act now.”

Inspired by Räisänen and Gunnarson (2004), I utilized a two-phase multi-mode method to ensure, “triangulation, flexibility and reflexivity” (p.8). This multi-mode method was useful to capture the, “complex interactions and conflicting discourses” (Räisänen & Gunnarson, 2004, p.3) present within the organization. This was suitable given the complexity, ambiguity and abstract nature of my topic.

The first phase of my method involved a total of ten semi-structured interviews. This phase may be referred to as the “exploratory phase” according to Räisänen & Gunnarson (2004). Following a preliminary data analysis, I moved into the second phase of my research, whereby I conducted a focus group with members of the management team I had interviewed in phase one. For the purposes of confidentiality and anonymity, this company shall be referred to as “M-Lab”, standing for *Meeting-Place Lab*.

A brief description of the M-Lab is given, followed by a detailed account of my methodology employed for each phase. Thereafter, I explain how I conducted my data analysis.

4.1 Case Study Background

The M-Lab is university organization that provides real estate and property management services a university. The M-Lab is a small company with approximately 32 employees. According to their

organizational strategy documents, M-Lab aims to, “operate and develop the campus and venues in a manner that enables the university’s vision for a sustainable future.”

As of March 1st, 2016, the M-Lab began the transition from a more traditional hierarchical organizational structure to a new process-oriented organization. According to organizational documents, the purpose of the new structure is to:

- Have greater clarity about roles and responsibilities;
- Have a greater customer focus;
- Facilitate greater participation and cooperation with the local community and campus; and,
- Be flexible and adaptable to changes in the business environment;

Furthermore, the M-Lab has a number of ongoing sustainability initiatives that make them an interesting case to study:

1. In 2015, they started a new management position, a combined role of Business and Sustainability Manager.
2. They are working with external consultants who have conducted ~25 interviews with external stakeholders to better understand what their sustainability expectations of M-Lab are.
3. An internal online survey was conducted for all employees to get an understanding of current sustainability perspectives.
4. Based on feedback and information collected from items (2) and (3), M-Lab is finalizing four sustainability goals for the company to facilitate greater internal cohesion about this topic.
5. Twice a year, the M-Lab will be holding full-day workshops on sustainability for all employees. The first one was held in April.

In the past there have been sustainability initiatives taken by employees, however, very sporadically, and often without support from the management. Therefore, these initiatives are important for M-Lab as they have recognized the absence, and necessity of a cohesive sustainability culture throughout the organization.

At the time of data collection (April 2016), M-Lab had drafted the following four sustainability goals:

- Promote well-being through the campus spaces that they offer.
- Reduce carbon foot-print.
- Optimize use of resources.
- Be the first-mover, be the leader in solutions for a sustainable campus.

4.2 Research Process

The empirical research process consisted of eight semi-structured interviews of the organization’s management team, followed by a focus group. There were two additional interviews from personnel outside the core management team to balance perspectives. All of the ten interviews, as well as the focus group, were conducted in English due to the researcher’s lack of fluency and proficiency in the Swedish language. Table 4-1 lists interview participants and corresponding organizational titles with English and translation. The participants selected for interviews were by way of recommendation from my point of contact in the M-Lab when I asked for those individuals that held responsibility for management decisions. It was also through the discretion of this individual to provide me with an additional two supporting interviewees, who are not involved in managerial decisions at M-Lab.

Table 4-1: Participant Reference and Organizational Titles

Organizational Title
Business and Sustainability Leader – process owner “Nurture customer”
President / CEO and the management process owner
Communications Manager & Executive Assistant
Process Leader – technical planning
Process Leader – operation, maintenance and service delivery
Financial Officer / CFO and support process owners
Development Manager – Process Owner “Nurture and develop values”
Energy Strategist
Project Leader (PL)
Operating and Maintenance Technician (DA)

Each interview was conducted in a private meeting room or personal office at the head office of M-Lab and was scheduled for 60 minutes. Interviews were conducted over a three-week period, with a maximum of two interviews per day. Mgr A was the first interview and was given a 90-minute time slot as it was intended to allow for a deeper understanding of how the particular manager interpreted M-Lab’s organizational structure. All interviews were audio recorded on the researcher’s smartphone and later transcribed.

Throughout the three weeks of interviews, and in the final week leading up to the focus group, the interviews were transcribed and a preliminary data analysis was done. The section below, *Designing the Focus Group*, describes the method that was used to determine the structure and format of the focus group and the themes to be addressed.

The focus group was held at an off-site location, a week after completing the final interview. Invitations were sent out approximately 4 weeks before. The session was scheduled for 2 hours. All of the eight interviewees from the management team were invited to the focus group (Manager A – H), however, only four were able to attend. The focus group was audio and video recorded on the researcher’s smartphone and digital camera. Verbal agreement was obtained from all participants for audio recording done during the interviews and both audio and video recording done during the focus group.

4.3 The Interviews

Before beginning each interview, a brief explanation was provided to participants about the purpose of this thesis project. Verbal assurance was given that confidentiality would be maintained, and verbal permission was granted to audio record the interview. Each participant was invited to attend the final presentation of this thesis to stimulate encouragement and a sense of meaning for the time they afforded.

The interview guide that was used in all interviews is provided in Appendix A. The researcher was careful to ensure that all questions on the guide were asked in each interview. The interview was broken down into seven themes, covering the following topics:

- i. Introduction / Background
- ii. Sustainability – what does that mean from a personal level
- iii. Sustainability – what does that mean from an organizational level
- iv. Motivation
- v. Communication Mapping
- vi. Leadership
- vii. Current Organizational Culture Values

Item (v) required the participant to place themselves in the centre of a page, on a blank sheet of A4 paper, and to draw a map / web of who they communicate with for their role within M-Lab, how often they communicate with said person (or group), and how do they communicate (e.g. phone, email, in-person). This technique is inspired by sociometry, which allows the researcher “to obtain a robust representation of the structure and cohesion of organizational groups and their impacts on individual actors” (Räisänen & Gunnarson, 2004, p.8).

Item (vii) asked participants to select ten items values / behaviours from a list of 44 items that they felt best reflected how M-Lab currently operates. The list of items (values / behaviours) was adopted from the Barrett Values Centre, *Seven Levels of Organizational Consciousness* model (BVCC, n.d.). Items included both an English and Swedish translation, and were ordered alphabetically, by their English term. See the Interview Guide in Appendix A for the complete worksheet. The addition of this activity is a point of departure from the mixed methods described by Räisänen and Gunnarson (2004). This activity constitutes a quantitative method and was used for data triangulation. To encourage motivation, it was emphasized that follow-up from this activity would be provided during the focus group exercise.

4.4 Designing the Focus Group

The themes selected for exploration in the focus group were determined by way of a preliminary data analysis utilizing a combination of methods. These methods were inspired by grounded theory procedures (Taylor et al., 2015), Design Thinking, Deep Democracy dialogue tools (Sande, 2015), and my yoga therapy training from Functional Synergy. Both Design Thinking and Deep Democracy dialogue tools were introduced and practiced during the Challenge Lab preparatory course, and also, Phase 1 of the Challenge Lab thesis programme. Figure 4-1 and Figure 4-2 document my brainstorming and planning process, pulling on the aforementioned methods. The following section describes how I then decided to conduct my focus group.

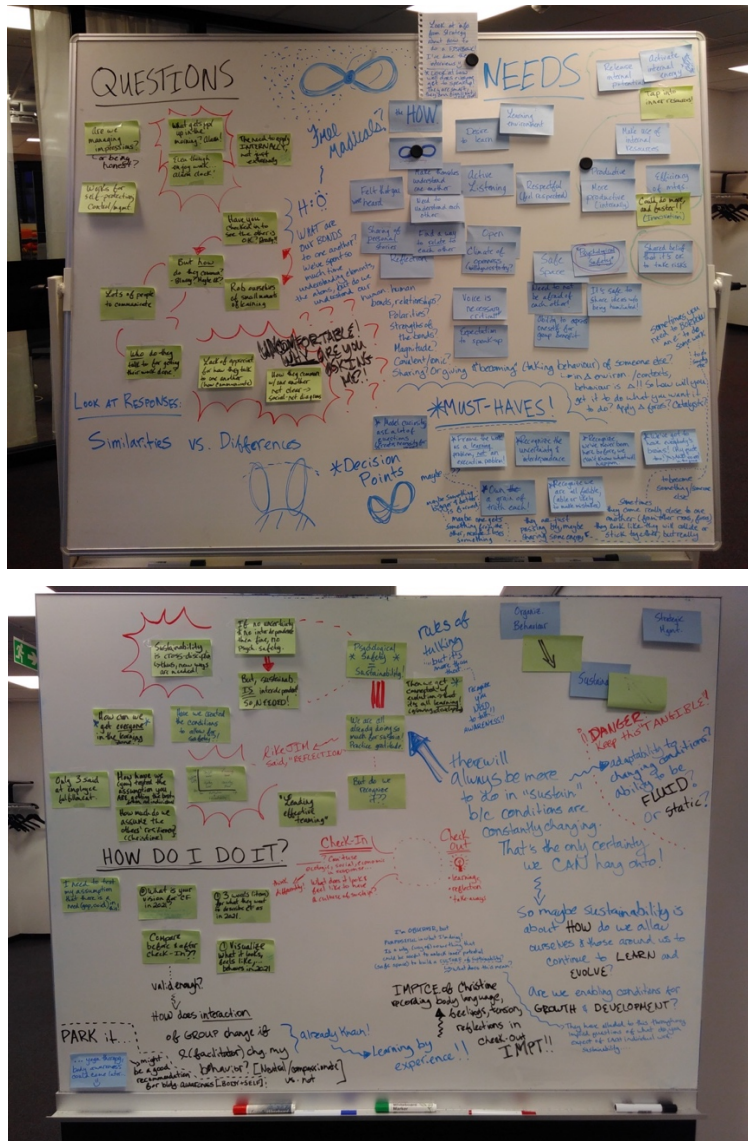


Figure 4-1: Brainstorming (a)

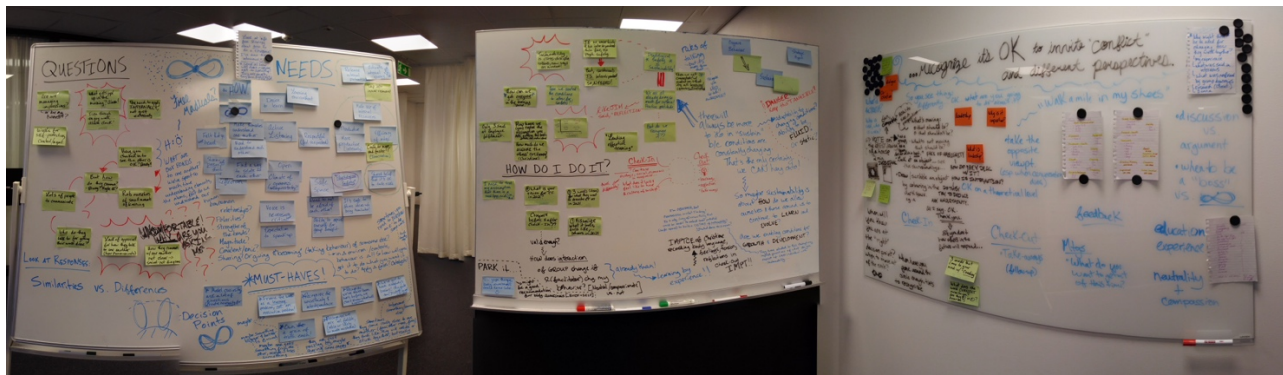
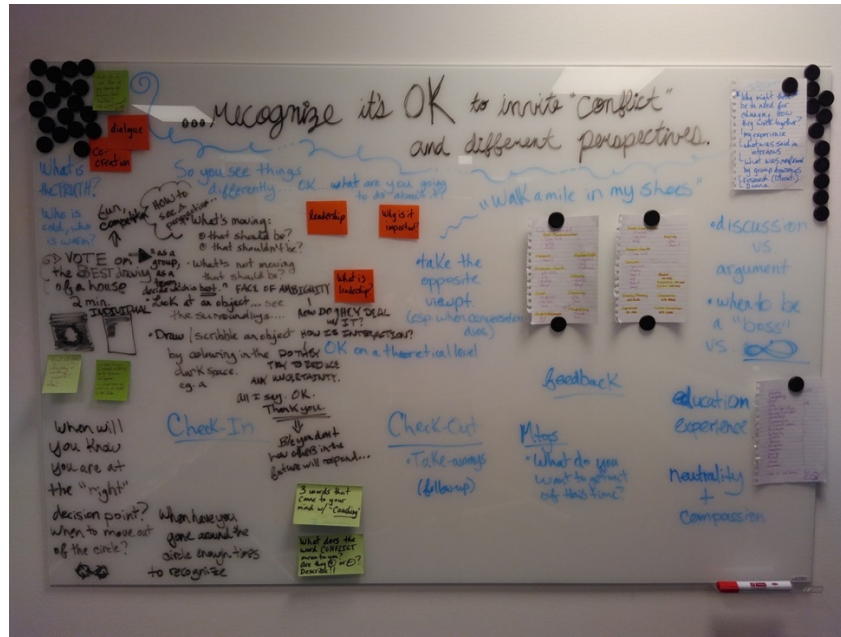


Figure 4-2: Brainstorming (b)

4.5 The Focus Group

The focus group began with all participants seated in a circle. I acted as the facilitator, while my thesis supervisor sat outside the circle and acted as an observer, taking notes. I began the focus group by first thanking all participants for attending and then giving them an introduction as to why they were there. The reasons were stated as follows:

1. To understand their perspectives on what it takes to be a leader within an organization with high sustainability ambitions;
2. Furthermore, that both participants and facilitator could enjoy themselves and hopefully learn something new together.

I emphasized my neutrality and the importance of there being no “wrong” answers during this session. I also stated that this focus group was an opportunity for me to practice some of the dialogue facilitation skills I have been learning in the Challenge Lab.

Following the introduction, the focus group session consisted of the following phases:

- i. Check-in
- ii. In-depth exploration on selected theme

- iii. Inquiry into secondary theme
- iv. Check-out

Inspired by Sande (2015), and Räisänen & Gunnarson (2004), the check-in consisted of three questions: 1) Statement of name and job title; 2) What three words describe leadership? 3) Do you want to be here? I answered the questions first so as to serve as an example, setting the tone, pace and level of depth expected. The participants could then answer as they felt ready to in a “pop corn” manner, i.e. no order necessary in who responded when, so as to reduce personal stress or anxiety of having an answer ready just because of a predetermined order. I recorded the words participants used to describe leadership on large post-it notes in a dark, thick felt marker.

Because all participants, including myself, were familiar with one another, the first question was necessary so that voices could be matched and understood when reviewing the audio recording; asking for a statement of title was also used for data (verification) on how they described themselves in comparison to interviews. Additionally, this information was helpful to my supervisor who was observing, and who was meeting these people for the first time. The second question was to serve as the starting point for phase (ii), the in-depth exploration phase. Asking the last question, “do you want to be here?” served the purpose of lowering “the water line”, or rather, tensions and awkwardness amongst the participants (Sande, 2015).

After the check-in was completed, I took all the post-its with words the participants used to describe leadership and placed them on an adjacent whiteboard. The post-its were grouped according to similar words / themes. I then began asking the participants if they could elaborate as to why they choose the words they did. As facilitator, I asked the following open-ended, leading questions for each of the words on the whiteboard to assist in the exploration. The format of these question were inspired by my Functional Synergy training, and the works of Räisänen and Gunnarson (2004).

- i. What needs to be in place for such qualities to be expressed, and put in action?
- ii. What are some of the positive things that are already happening in M-Lab that support that quality?
- iii. Are there things that are happening (within M-Lab) that you don’t think should be happening in order to support such leadership qualities?
- iv. What are some things that are not happening now, within M-Lab that you feel should be happening in order to support these leadership qualities?

As discussions were happening, I captured the key statements on the whiteboard. Statements were colour coded, as best as possible, to maintain some level of clarity in the thought process amongst the multitude of statements: black corresponding to (i) above, blue corresponding to (ii) and (iv), and red for (iii).

After a thorough elaboration on each theme, I asked the participants for three words that come to their minds with the secondary theme of inquiry (iii), that of employee fulfillment. Similar questions were posed as above for the theme of leadership, however, this remained as a verbal discussion due to time constraints.

Following this, I led the group in the check-out. For the check-out, I asked each participant to answer the following two questions, again in a pop-corn style: how are you feeling now? What is your take-away, or rather, “pearl of the oyster” from this session? As similar to the check-in, I, the facilitator, led the check-out to set the tone, pace, and level of depth expected.

4.6 Data Analysis

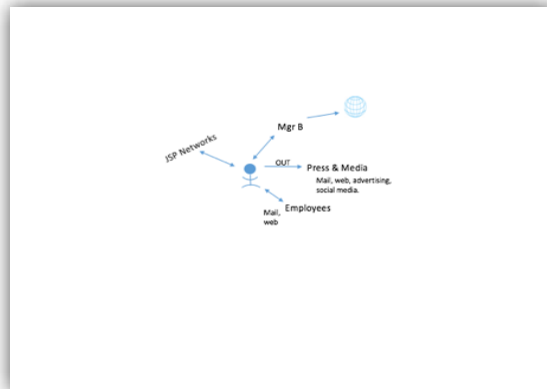
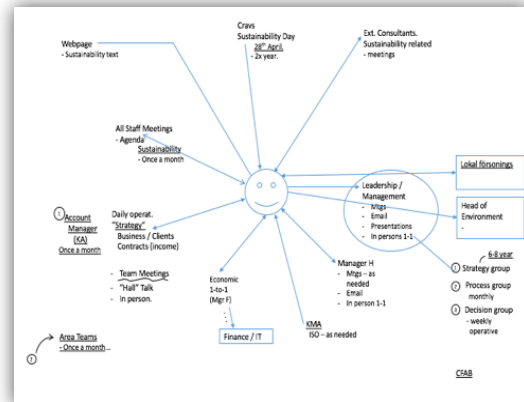
The sustainability goals and ambitions of M-Lab imply that they are seeking to be of service to their community at large, and also to the planet. Therefore, it is reasonable to utilize Richard Barrett's *7 Levels of Organizational Consciousness Model* for the analysis. Furthermore, the Consciousness Model provides a comprehensive inclusion of the sustainability criteria that was developed by the 2016 Challenge Lab Students; refer to 6.1 Model Justification for a justification of the model.

Statements from interview transcriptions were coded and classified as appropriate to align with the forty-four specific terms identified for each level of the seven levels on Barrett's Organizational Consciousness Model, see Figure 4-3. In some cases, additional terms were added to each level in order to appropriately capture interviewee statements; I followed descriptions summarized in Table 3-1 to guide my classification. The statements were organized to make reference to which interviewee made the statement, and which question the statement was made in response to. The number of statements made were totaled for each category, and for each interviewee. Radar graphs were then developed to provide a visual illustration. Data from the values exercise, and the focus group were used to corroborate data from the interviews.



Figure 4-3: Seven Levels of Organizational Consciousness (BVCC, n.d.)

Original communication diagrams were drawn on the computer, using Microsoft Powerpoint. Best efforts were made to keep computer drawings to original scale, and orientation. Specific employee names were translated to their pseudo titles for confidentiality. This translation to computer renderings was done so as to create a neutral frame of reference for viewing and analyzing. Figure 4-4 provides illustrations of two hand drawn sociometric diagrams adjacent to their computer drawn diagrams.



Chapter 5: Results

This empirical study with the M-Lab illustrated the following findings amongst the participants:

1. A limited understanding of sustainability;
2. Personal and organizational perspectives of sustainability lack alignment;
3. The ability of the management group to use the potential of their human resources to overcome obstacles towards implementation of sustainability goals exists, however, it appears to exhibit qualities of latency⁵ and vacancy⁶.

In other words, the M-Lab demonstrated a low level of organizational consciousness, in the context of sustainability, due to a high level of cultural entropy, an inability to activate employee's discretionary energy, and an implied high level of personal entropy. Furthermore, the results indicate that the M-Lab is currently lacking activation of employee's discretionary energy due to unfulfilled needs and lack of an inspiring, uniting vision.

Table 5-1 presents the results from the values exercise conducted during the interviews in combination with the tally of sustainability perspectives described by the participants in accordance with each level of the Organizational Consciousness model. The results indicate a lack of coherence amongst values currently present in the organization and perspectives held by the participants across the categories of personal sustainability, current organizational sustainability and desired organizational sustainability. The highlighted cells in Table 5-1 are those with an association made by half or more of the interview participants.

Following Table 5-1 the results are presented in accordance with each level of the Organizational Consciousness model. I complement the descriptions with graphical illustrations so that the reader can more easily comprehend these seemingly abstract concepts. Each level is accompanied with a graphical portrayal to provide a clear illustration of the absence of depth and alignment in the understanding of sustainability across the following three categories:

- 1) Personal views,
- 2) Views held by each individual of the current organization, and,
- 3) Desires of each interview participant for what they would like the organization to achieve with regards to sustainability, and what they expect of each individual in the organization with respect to sustainability.

The numbers on the radial axes represent the number of participants that made a statement reflexive of that particular level on the Organizational Consciousness model. In other words, for M-Lab to embody a state of "full spectrum consciousness" (Barrett, 2010) all ten participants should (ideally) be able to freely associate sustainability with characteristics and values pertaining to all seven levels. The additional terms are represented on each figure with an asterisk (*) for easier identification. Thereafter, results from the socio-metric diagrams are presented, followed by those from the focus group. This chapter ends with a summary of the main findings.

⁵ Latency is defined as, "present and capable of emerging or developing, but not now visible, obvious, or active" (Merriam-Webster, 2015a).

⁶ Vacancy is defined as, "devoid of thought, reflection, or expression" and as the, "absence of appropriate contents or occupants" (Merriam-Webster, 2015b).

Table 5-1: Results of the values exercise and interpretations of sustainability perspectives

	Values Exercise	Personal	Current	Desired
7: Service to Humanity & the Planet	Long-Term Perspective	5	2	2
	Humility	2	1	0
	Ethics	2	2	3
	Social Responsibility	1	4	6
	Compassion	0	0	0
	Future Generations	0	2	0
6: Making a Difference, Strategic Alliances & Partnerships	Environmental Awareness	8	9	6
	Community Involvement	4	3	2
	Employee Fulfilment	3	4	0
	Coaching/Mentoring	0	0	1
5: Internal Cohesion, Building Internal Community	Commitment	8	1	3
	Shared Vision and Values	3	2	2
	Trust	3	0	1
	Integrity	2	0	0
	Creativity	2	1	0
	Transparency	1	0	0
	Passion	1	0	0
	Openness	1	0	0
4: Transformation, Continuous Renewal & Learning	Teamwork	6	0	0
	Accountability	6	3	0
	Adaptability	2	0	0
	Goals Orientation	2	1	3
	Personal Growth	1	0	0
	Empowerment	0	1	1
3: Self-esteem, High Performance	Processes	7	3	2
	Quality	2	1	3
	Pride in Performance	2	1	2
	Best Practices	1	1	1
	Complacency	1	0	2
	Bureaucracy	1	0	0
	Systems	0	1	2
2: Relationship, Harmonious Relationships	Customer Satisfaction	5	0	1
	Loyalty	3	1	1
	Open Communication	3	0	0
	Friendship	2	0	0
	Blame	1	0	0
	Manipulation	0	0	0
1: Survival, Financial Stability	Employee Health	4	7	4
	Safety	2	2	3
	Shareholder Value	2	0	0
	Organizational Growth	1	1	0
	Corruption	0	0	0
	Control	0	0	0
	Greed	0	0	0

5.1 Level 7 – Service to Humanity and the Planet

Social Responsibility is one attribute that more than half of the interview participants associated sustainability with from a current organizational perspective. Yet, there was only one participant that identified this attribute as being present currently in the organization during the values exercise. Less than half of the participants verbalized the association of *social responsibility* and sustainability from a personal and desirable state.

Having a *long-term perspective* was a value identified by half of the participants as currently present in the organization during the values exercise. However, only one participant described their organizational role in reference to a *longer-term perspective*, and just one other participant described his/her typical day in relation to this quality. Nevertheless, four participants identified M-Lab's longer-term business perspective as one of their motivating factors for choosing to work there. Only two participants connected *long-term perspective* with sustainability in each of the three categories: personal, current organization and desired.

In comparison to *long-term perspective* being identified by five of the ten participants in the values exercise, no participant identified the similar, yet perhaps more tangible value of *future generations*. In terms of sustainability, *future generations* was discussed by only two participants from a personal perspective of sustainability. This low level of association with *future generations* was also felt elsewhere throughout the interviews. For instance, just one participant identified *future generations* as a reason for working at M-Lab due to the ability to work alongside the "younger generation, being a mentor, conducting students and young people into the working environment."

Compassion was the one quality from this level in which no participant connected with sustainability across any of the three perspectives. Additionally, none of the ten participants identified *compassion* as a value present in the organization during the values exercise. When participants were asked to describe three of their personal values, only one participant stated *compassion*.

The radar graph of Figure 5-1 illustrates the association participants made with sustainability across the three perspectives for this particular level of the Organizational Consciousness model: personal, current organizational and desired organizational. The two qualities of *justice* and *ask for help, use help* were additional attributes described by participants relevant to this level, yet not explicitly stated in the Organizational Consciousness model, see Figure 4-3; these are marked with an asterisk (*). In the ideal scenario, the radar graph should be filled out to the outermost circle, signalling that all ten participants could associate each quality across the three sustainability perspectives.

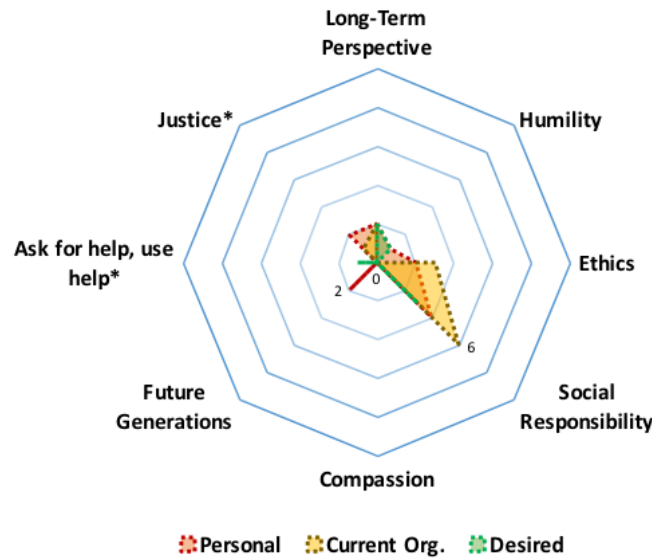


Figure 5-1: Level 7 Sustainability Perspectives

5.2 Level 6 – Making a Difference, Strategic Alliances & Partnerships

Environmental awareness is the quality identified by the greatest number of participants as nine of out ten interviewees made this connection with their personal perspective of sustainability. That being said, only six made statements reflecting that within the current organization, and only four participants associated that with something they would like the organization to achieve with regards to sustainability. In comparison, eight of the ten participants identified *environmental awareness* as present in the organization during the values exercise. Interestingly, only two participants described their organizational role as something pertaining to *environmental awareness*, while, one participant described his/her association with professional environmental networks. During the socio-metry exercise, just three participants indicated they communicate with the employee responsible for M-Lab's ISO 14001 Environmental Management System.

Although there were four interviewees that identified *employee fulfillment* with sustainability from a personal perspective, no participant made reference to such trait when asked to describe what sustainability means currently for M-Lab. Also, no participant described a desirable state of the organization, in terms of sustainability, with *employee fulfillment*. Nevertheless, three participants identified *employee fulfillment* in the values exercise as something that characterizes M-Lab today. Furthermore, a different set of three participants described their current role in a manner that identifies with *employee fulfillment*, while two others associated the characteristic as a motivating factor for coming to work at M-Lab as they felt a sense of alignment of their personal values, with those of the organization. This low level of association and recognition of the value of the *employee fulfillment* is important to note due to its' correlation with what supports a highly motivated person, according to Barrett (2010).

No statements were found to connect the value of *coaching / mentoring* with sustainability from a personal perspective, and also for what is desirable for M-Lab to achieve with regards to sustainability. However, there was one participant who did associate *coaching / mentoring* with sustainability from a current organizational perspective stating how he/she tries to coach those he/she is responsible for, with regards to balancing across the three pillars of sustainability. But, this participant admits such coaching is seldom done.

In regards to current circumstances, no participants identified *coaching / mentoring* as something present in the organization today during the values exercise; only one person felt that he/she sometimes viewed a typical work day as being a *coach* to others in the organization. Three others described their roles involving some sort of *coaching*, although, there was recognition this isn't done very often.

Attention on leadership development is also pertinent to this level according to Table 3-1. When the participants were asked about what kind of leadership training was given to staff, there was complete agreement that none was given at M-Lab, nor even proactively considered on personal development plans. A couple respondents did make it evident that if an employee was interested in any sort of training, they would just have to present it to their manager, and it would likely be approved. Others responded in a manner that clearly associated the term leadership with being a manager, for instance, "*considering I'm not a leader in anyway, I haven't received any leadership training.*" Also, throughout some of the interviews, the terms of leadership and management were used interchangeably and not discussed in a manner resembling acknowledgement of any difference between the two.

Given that the entire management team was interviewed, in addition to the M-Lab's desire to be a leader in sustainable campus solutions, it seems surprising that there was not a perspective on the need for an active approach to leadership development within the organization, and beyond the management team. Given that Barrett (2010) states that self-mastery and personal leadership are the keys to reducing entropy, activating discretionary energy and raising organizational consciousness, it is cause for concern that attention is not being placed on personal leadership development.

Further points to note, although perhaps not surprising given the above, is the low level of association participants have of *leadership* and sustainability. Less than half of the participants (four) made a statement desiring M-Lab to be a *leader* in the field of sustainability. Just three participants described *leadership* in relation to current sustainability practices at the organization, while no one associated *leadership* with sustainability from a personal level.

Figure 5-2 illustrates the radar chart for this particular level of the Organizational Consciousness model in regards to the participants' perspectives of sustainability across the three categories of personal, current organization and desired. Note that there were a number of qualities added to this level from that of Figure 4-3. These are indicated with an asterisk (*): *to be a leader, balance, role model, influence, and, integrated*. Similar to Figure 5-1, in the ideal scenario, all rings on Figure 5-2 should be filled out with all three sustainability perspectives indicating that all ten participants could association sustainability with the indicated qualities.

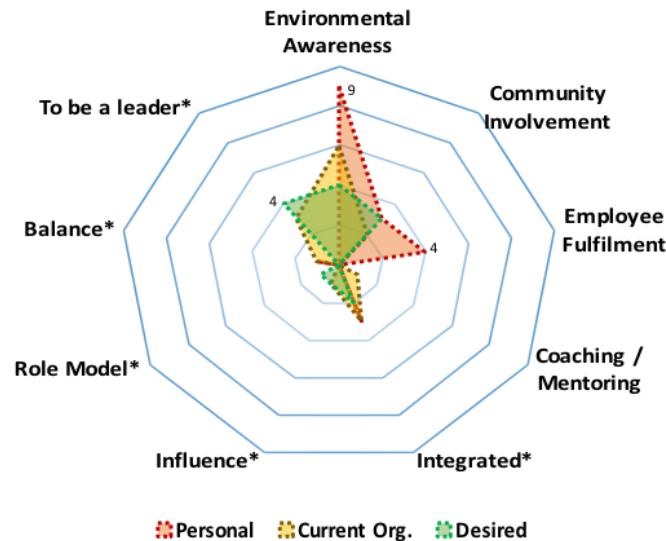


Figure 5-2: Level 6 Sustainability Perspectives

5.3 Level 5 – Internal Cohesion, Building Internal Community

During the values exercise, *commitment* was identified by eight out of the ten participants as something that is present in the organization today. This theme carried through in other areas explored in the interviews. For instance, participants' *commitment* to their chosen career path is exemplified in that 9 out of 10 employees are part of formal and informal networks connected with their careers, in support of the work they do at M-Lab. From a personal standpoint, the participants' also showed their *commitment* to their work when asked, "What gets you up in the morning?", and eight participants responded with statements such as, "I like my work" or, "I love my job." Additionally, participants appeared to have a fairly focused educational background and prior work experience in the real estate sector, further supporting their *commitment* to their line of work.

However, the story is a bit different when it comes to perspectives on sustainability. Only one participant referenced *commitment* in relation to sustainability from a personal perspective, while three referenced *commitment* from a current organizational perspective by describing M-Lab's purpose of supporting Chalmer's vision for a sustainable future. That being said, there was more attention when participants were asked what they desire of each employee at M-Lab, in regards to sustainability, as six interviewees identified how they would like their colleagues to be interested in sustainability and always thinking about "how we could do it better."

The statements made by the eight participants who responded with, "I like my work" or, "I love my job" as descriptions of their morning wake-up motivation, could also be interpreted to indicate a level not only of *commitment*, but also of *passion*. However, during the values exercise, only one participant identified this trait being present in the organization today, and, only two participants described their organizational role in a manner exemplifying *passion*. In the context of sustainability, none of the participants made any association with the need for *passion* across any of the three sustainability perspectives.

A desirable trait when it comes to sustainability is having *Shared Vision and Values*; this was expressed by half of the participants. However, only two participants made reference to this in response to what is currently happening in the M-Lab today with regards to sustainability, with only another two participants referencing this from a personal perspective of sustainability. During the values exercise, only three participants identified this as being present in the organization today. This low association is perhaps not

surprising given that there was no interview participant that described their motivation for waking up in the morning as being the opportunity to contribute to the implementation of an inspiring vision at work. A lack of feeling amongst employees that they are contributing to an inspiring vision restricts activation of their discretionary energy.

Trust was identified by only three participants in the values exercise as a trait currently present in the organization. Furthermore, *trust* lacked correlation with sustainability as there was only one participant who referred to *trust* during that section of the interview. The vacancy of this quality is noteworthy as Sandow and Allen (2005) identify that *trust* is a precursor to building collaboration, excitement and participant, see Figure 1-7. Furthermore, Edmondson (1999) describes the need for *trust* amongst team members to nurture psychological safety.

Also relating to psychological safety, is the trait of *openness* as it implies a level of comfort to be oneself. Unfortunately, only one interviewee identified *openness* as present in the current organization during the values exercise. Further still, there was only one participant who referenced *openness* in the context of sustainability. This person described the need to be open, including the ability to “be open to criticism” as a desirable trait in the context of sustainability.

An additional quality associated with this level from Table 3-1 is that of the *capacity for collective action*. This was illustrated through the theme of “us” vs “them” that was brought up multiple times throughout the interview in various questions I posed; the “us” referring to the management team, and “them” referring to all other employees. In other words, there was a void of statements referring to the organization as a collective “whole.” This theme was later confirmed in the Focus Group. Furthermore, the sociometric exercise gave some examples reflecting subtleties of a lack of a collective whole between those in management and those not in management. For instance, in one diagram, a participant distinguished four different groups of whom he/she communicates with in his/her role: two representing external networks / groups, and two representing the internal organization. The latter two were distinguished with labels specifying 1) a particular manager, and, 2) “employees.” There was no further distinction or elaboration made. Furthermore, there were two participants whom indicated different groups of internal M-Lab colleagues (in addition to external groups) they communicate with for their roles. However, these two participants made no explicit reference to anyone on the M-Lab management team.

Figure 5-3 displays the results of the three sustainability categories amongst all traits pertinent to this level according to the Organizational Consciousness model in Figure 4-3. There are six additional traits, marked with an asterisk (*) that were described by participants and are relevant to this level. Ideally, the radar graph would be filled out to the outermost circle with all ten participants being able to verbalize all qualities across all three sustainability perspectives.



Figure 5-3: Level 5 Sustainability Perspectives

5.4 Level 4 – Transformation, Continuous Renewal & Learning

Teamwork was identified by a majority of the participants as an attribute currently present in the M-Lab organization. However, only three participants described their role in relation to working as a *team*. Furthermore, the participants' renderings, from the sociometry exercise, of how and who they communicate with in their organizational roles lacked a sense or recognition of *teamwork*; only two participants used the word "team" somewhere on their socio-metric diagram. Additionally, none of the ten participants associated the concept of *teamwork* across any three of the sustainability perspectives.

Accountability was a fairly strong attribute identified by the participants. First, it was identified by a majority of the interview participants during the values exercise as an attribute present in the organization currently. Second, six out of ten participants connected *accountability* with the description of their organizational role at M-Lab. That being said, when it comes to sustainability perspectives, there was little association; the only reference was made by three participants from a personal sustainability perspective e.g., "[on a personal level, sustainability means] taking responsibility, being aware of actions".

A highly desirable attribute for sustainability identified by six participants was that of being *goal orientated*. However, it was only referenced by one participant from a personal perspective of sustainability stating, "how can we [each] impact UN SDGs?" Only three participants referred to M-Lab's current orientation towards supporting Chalmers' sustainability goals. Perhaps this is not surprising given that just two participants identified *goals orientation* as a quality currently present in the organization during the values exercise. Furthermore, there was only one interviewee who described their role in relation to *goals*, while just one other participant described his/her typical day as, "working with Chalmers on sustainability goals."

Barrett (2010) describes how personal mastery, accomplished through continuous learning, self-development and self-leadership skills, is crucial to reduce both personal entropy and ultimately cultural entropy. In particular reference to this are the qualities on the Organizational Consciousness model of *personal growth, empowerment and education*⁷. Unfortunately, only one interviewee identified *personal*

⁷ As referenced in Table 3-1.

growth as being present in the current M-Lab organization. Furthermore, none of the ten interviewees identified *empowerment* as being present in the current organization during the values exercise. The absence of these two qualities was also felt when discussing sustainability: none of the participants associated *personal growth* across any of the sustainability perspectives, and, only one participant acknowledged *empowerment* from a personal and current organizational perspective.

Although *education* was not on the values exercise, it was found to be a highly desirable trait for sustainability as seven of the ten participants described the need for *education* and integration of knowledge for achievement of the organization's sustainability ambitions. There were a range of statements made pertaining to this, some include: *"I need to learn, and I hope people can answer better than me"*, *"if we learn something new, we need to take it into our routines"*, *"we need to increase our knowledge"*, and, *"we need to use Chalmers knowledge so we can be a leader."* That being said, there was no association between *education* and what sustainability means on a personal level. One participant connected *education* with the current level of sustainability at M-Lab recognizing that there is a *"lack of knowledge."*

Reflexivity and seeking out others opinions are described in Table 3-1 as pertinent to this level of the Organizational Consciousness model. When asked about how each respondent questions if they are doing the "right" activity at work, it appeared there is a lack of reflexivity built into the organization to formally address this in a common platform. Two respondents replied with a complacent tone: *"Good question"*, and, *"You are doing the right thing because otherwise someone would have told you."* Three other participants responded saying that this was something they ask themselves on their own every day. General comments were made about inquiring with colleagues, although only specifically with others in the management team.

Figure 5-4 identifies the attributes pertinent to this level of the Organizational Consciousness model in the context of the three sustainability perspectives. Note that there are six additional attributes discussed by participants as relevant to the three sustainability perspectives, marked with an asterisk (*). The figure shows the lack of recognition by participants of the qualities associated with sustainability as all ten circles are not filled out.

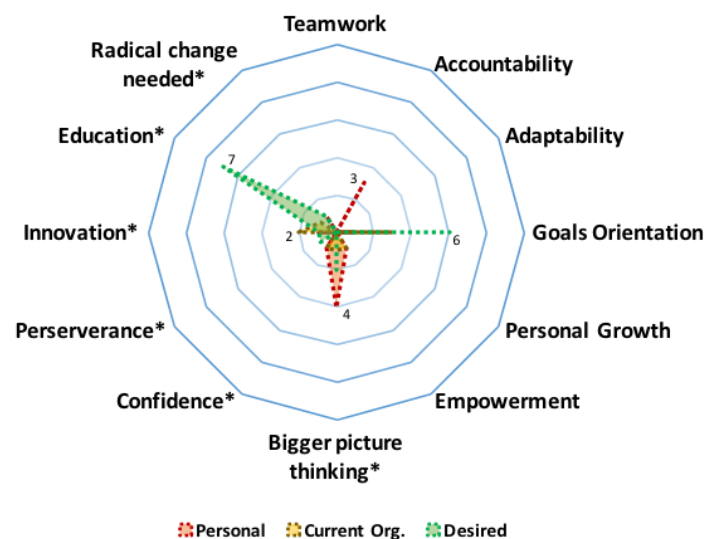


Figure 5-4: Level 4 Sustainability Perspectives

5.5 Level 3 – Self-esteem, High Performance

Overall, for this particular level of the Organizational Consciousness model, it was illustrated that the participants have a low level of association with these attributes from both a current organizational values level, and also, from a sustainability perspective. The only attribute in this level that was identified by more than half the participants was that of *processes*. This was identified by seven participants during the values exercise. There were just a couple participants that identified *processes* as necessary across the three sustainability perspectives. One participant referenced M-Lab's ISO 14001 Management System, while another stated "*[processes for sustainability] are not in so much focus, that's why we are bringing in a tool to assist in decision making.*" Three participants expressed their desire for *processes* to assist in M-Lab's sustainability ambitions.

In a similar category, *systems* were described by one participant as necessary for personal sustainability, e.g. "*democracy*" and "*making sure [there are systems so] that everything runs efficiently.*" Two people referenced *systems* when asked about current sustainability efforts at the M-Lab, and four participants stated their desire for *systems* to enable achievement of the organization's sustainability goals. No participant identified *systems* during the values exercise. Comparatively, the lack of acknowledgement of *systems* is also illustrated in that only one participant referenced M-Lab's ISO 14001 Environmental Management System. Furthermore, and as discussed previously in Level 6, only three participants indicated they communicate with the employee responsible for M-Lab's ISO 14001 Environmental Management System during the sociometry exercise.

Quality was associated by one interviewee as part of their perspective of sustainability from a personal level, stating that "*[part of] wellbeing is to have nice work environments*". Although two participants described aspects of *quality* in M-Lab's current sustainability work, one participant countered that stating that sustainability at M-Lab is currently, "*mostly words*". Nonetheless, two participants expressed desire for *quality* in what and how M-Lab builds, while another two participants identified *quality* as a trait currently present in the organization during the values exercise.

In this level of the Organizational Consciousness model, there was also identification of the following limiting factors: *complacency*, *bureaucracy*, *long-hours / demanding work environment*, and, *confusion*. *Complacency* was expressed when asked about current sustainability efforts at M-Lab and two participants responded with, "*the re-organization has caused sustainability to fall behind*" and "*[sustainability is] mostly words*". Furthermore, one participant identified *complacency* during the values exercise, as well as *bureaucracy*. Additionally, four interview participants described their typical work day as consisting of "*meetings, meeting, and more meetings*", implying *bureaucratic* processes.

In terms of *long-hours / demanding work environment*, one participant made a statement that certain individuals are not given adequate time and space to deliver and work with their sustainability messages. More importantly, yet outside of the direct sustainability context, seven out of ten participants described the *demanding work environment* as a characteristic making it difficult to come to work. Examples include, "*so many people to inform*", "*the requirements to consider so many peoples' wishes and thought when making decisions*", "*how to keep up with the constant inflow of information?*" and "*the feeling that you don't do enough.*" Additionally, six participants stated their reliance on the alarm clock to get them out of bed in the morning. Lastly, when asked to describe a typical work day, one participant recognized his/her "*massive calendar and challenge to produce free time, to be to spend with employees.*"

Statements from four participants were classified under *confusion* from a current organizational perspective because they lacked the ability to provide articulate and concrete examples of what sustainability meant to M-Lab today. One participant made the statement that sustainability is "*mostly*

words” in the organization today, and another recognized that although M-Lab is here to support Chalmers vision for a sustainable future, “everyone probably has their own interpretation.”

Confusion was also revealed in what the participants desire for M-Lab to achieve with regards to sustainability. The impression portrayed through four different participants was that there has been a lack of time spent in the visioning process for what they would like their organization to achieve with respect to sustainability. This is substantiated with the following responses from different participants what asked what they desire for M-Lab to achieve with respect to sustainability, “that’s a kind of a hard question”, “that people can answer better than me”, and “it’s not so clear how my group is supposed to [contribute].” In addition, three participants were unable to describe a typical work day as they felt that each day is so different. Two other participants expressed *confusion* amongst those they work with as reasons making it difficult for them to come to work stating, “it takes a lot of effort to explain and make people understand” and “mental strain from poor communication and the tendency to complicate things.”

The identification of limiting factors is important as it exemplifies the cultural entropy within the organization and the restriction of the organization’s ability to access discretionary human energy. Figure 5-5 illustrates the attributes of this level in the context of the three sustainability perspectives. As in the diagrams for the previous levels, the radar graph should be full of all three perspectives to indicate that each participant is able to associate sustainability with each of the positive attributes from this level. *Confusion* and *long-hours / demanding work environment* are additional qualities added from Figure 4-3 and indicated with an asterisk (*).

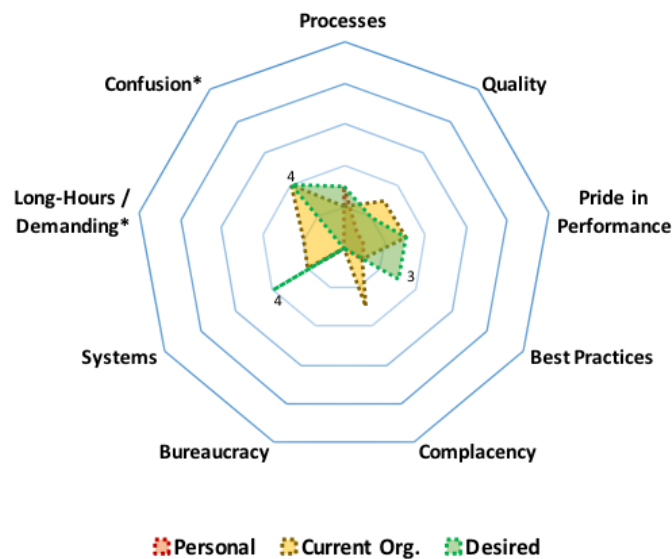


Figure 5-5: Level 3 Sustainability Perspectives

5.6 Level 2 – Relationship, Harmonious Relationships

Out of the seven levels of the Organizational Consciousness model, this level showed the greatest vacancy in acknowledgement of qualities necessary for sustainability; Figure 5-6 below visualizes this. As per similar figures for the previous five levels, this figure should, in the ideal case, be filled out to the outermost ring, signifying that all ten participants acknowledge the positive attributes. Unfortunately, none of the qualities had recognition by more than one participant. Further still, there was presence of two limiting factors: *blame* and *intimidation*. *Blame* was identified by one participant during the values

exercise, and also by another participant when describing what makes it difficult for him/her to come to work, stating *“old things in the walls that don’t go out, like old routines”*. There was presence of *intimidation* in the context of sustainability. However, this was made by just one participant, and from a personal perspective of sustainability. This classification was made by the participant’s expression of what constituted a “challenging work environment” in his/her mind.

One aspect of a participant’s perspective on sustainability was coded to the attribute of *intimidation* due to a combination of statements made by this particular participant when asked for their interpretation of sustainability. First, it began with the participant quickly merging personal and organizational sustainability perspectives, despite my efforts to make it clear when I was asking for personal perspectives, and then current organizational perspectives. The statement I draw attention to, is one part of this participant’s response to the question of what comes to your mind with regards to sustainability, *“Nice working environments, challenging environments, maintaining innovations as we are doing.”* I would like to emphasize the use of the phrase, *“challenging environments.”*

When I later asked this participant what he/she desires of each employee at M-Lab with regards to sustainability, I received a narrative explaining this person’s desire for each employee to have sustainability focused in their mind, and to constantly be thinking about how their decisions affect their surroundings, their world, and that each employee questions if they are really doing the right thing. This participant then elaborated stating, *“So my challenge is to widen them, to kind of create a stress in them. Because I’m tearing them apart. Tension is important when you come here (laughs).”* Thus, given that this participant connects ‘challenge’ with stress and tension, I choose to classify one aspect of their personal sustainability perspective with *intimidation*.

From a positive side, half of the interview participants identified the presence of *customer satisfaction* during the values exercise. However, just two participants described their role in a manner reflecting *customer satisfaction*. In terms of sustainability, one participant associated M-Lab’s current sustainability work with *customer satisfaction*, and another associated this attribute with what is desirable for M-Lab’s sustainability work. The lack of full recognition of the value of *customer satisfaction* is interesting given that the M-Lab’s current restructuring is to allow for more *customer* emphasis.

Reference to *open communication* was only made in what is desirable for how M-Lab is to work with sustainability, and what the participants expect of each employee in the context of sustainability. This reference was only made by one participant. There were only three participants who identified *open communication* as being present in the organization, according to the values exercise.

A lack of importance on fostering strong internal communication and cohesive relationships across organizational boundaries and levels within the M-Lab was illustrated during the sociometry exercise. This is purported by the following examples. Out of the ten socio-metric diagrams constructed by each participant, only one made explicit reference to M-Lab’s communication officer.

In another diagram by one participant, there were eight groups identified for whom he/she communicated with, although one of those was an empty circle. Of the remaining seven groups, only one of those made reference to the internal organization, and that was the M-Lab management team; there was no explicit indication made to any other M-Lab employees. That being said, this participant acknowledged that being tied up in meetings all day with external people makes it challenging for him/her to be *“visible for the organization.”* He/she said it is a *“shame [to be so] invisible for the whole organization.”*

Furthermore, there appeared to be confusion amongst the participants in reference to “how” they communicate with each other in the organization. This apparent lack of appreciation was evidenced in the difficulty participants had in addressing the questions of, 1) Who do you communicate with for your

role? 2) How do you communicate with them? 3) How often do you communicate with them? Participants were generally flustered when asked to do this exercise and puzzled as to how to begin. For instance, one participant stated, *“Uh, that’s difficult, there are so many [pause] I am communicating with so many people, so many levels [pause].”* In order to complete this exercise, the participants had to put a fair bit of thought into it; some appeared to ease into the process once they began, while others, appeared to remain uncomfortable, preferring to have it done and over with as soon as possible. For these ones, I had to do significant more probing in order to have the participants provide all requested information. Only two participants were able to fulfill responses to the three questions in written form.

Perhaps this sense of uneasiness is not surprising given the lack of specificity in describing their form of communication. The following terms are an exhaustive list of written words used by the participants: *“meetings”, “in person”, “one-to-one”, “email”, “hall talk”, “webpage text”, “advertising”, “social media”, “phone”, “error reports”*. No other descriptors were used to describe their communication.

Complementing this lack of structure is that only three participants could provide a written description of how often they communicate with each identified person and/or group. One reason could be that the M-Lab had only began the rollout of a new organizational structure just over a month before I conducted these interviews. That being said, eight out of the ten interviewees were members of the management team; thus, it is assumed that these members would have the best knowledge of anyone in the company of how the new organizational structure is to work.

The value of *listening* was identified by one participant as a personal value. However, the only association of it with sustainability was in the recognition by one participant that M-Lab’s current sustainability efforts involve *“lots of meetings to know what’s going on and what each other is doing.”* The absent appreciation for the value of *listening* is important as it is fundamental for building understanding, trust and collaboration as described by Sandow and Allen (2005) in Figure 1-7.

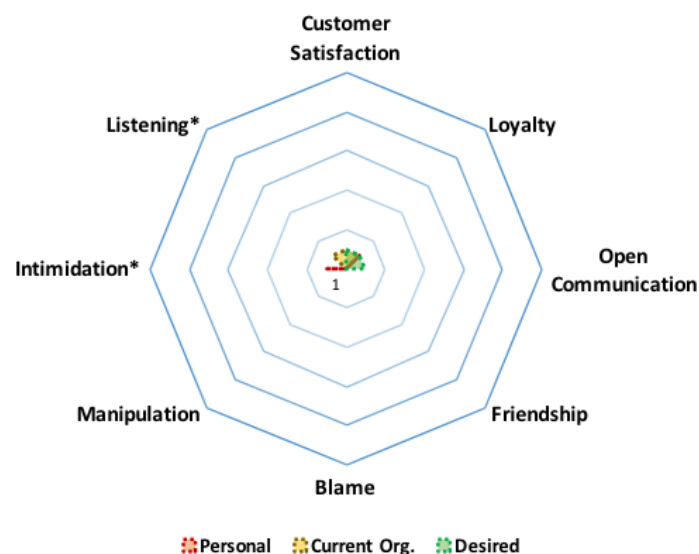


Figure 5-6: Level 2 Sustainability Perspectives

5.7 Level 1 – Survival, Financial Stability

Seven out of the ten interviewees described the importance of *employee health* for personal sustainability with particular reference to the necessity of, “*being well*” and “*well being*.” Although four participants felt such wellness is meaningful for sustainability in M-Lab today, these statements were not attributed to health of employees internal to the company, but rather the health and wellness of the people who occupy their buildings. No reference was made to well-being or *employee health* from a perspective of what is desirable for the organization to achieve with respect to sustainability. During the values exercise, less than half identified *employee health* as a trait currently present in the organization.

The need for *organizational growth* was referenced by just one participant in relation to personal sustainability. However, the participant who made this reference blended the question of personal sustainability to organizational sustainability as he/she described monthly educational workshops on the 17 UN SDGs. The only other reference to *organizational growth* made during the interviews was as follows: one participant selected this quality during the values exercise, another described his/her current role in a way that is promoting *organizational growth*, and, another expressed their motivation for working at M-Lab because of the project continuity and ability to get feedback. Nevertheless, the association with this attribute is low.

Similarly, *shareholder value* was not discussed by any participant in the context of sustainability, from any of the three perspectives. The only reference to *shareholder value* throughout the interviews was from the values exercise whereby two participants identified this trait.

That being said, half of the respondents indicated that at a personal level it is important to be “*economically efficient*” for sustainability. Four participants referenced *economic* aspects when asked what sustainability means presently to the organization. However, there was some confusion associated with this by two participants, as exemplified by the following statements, “*[the economic pillar] is not so much in focus, that’s why we’re bringing in a tool to assist in decision making*” and “*I’m pretty unsure of what [M-Lab’s] standing is on this*”. There was one participant who referenced the *economic* pillar of sustainability as being integral for M-Lab’s future sustainability work.

Figure 5-7 illustrates the participants’ sustainability perspectives with the attributes associated with this level. Note, the absence of the limiting factors: *greed, control, corruption* from a sustainability perspective.

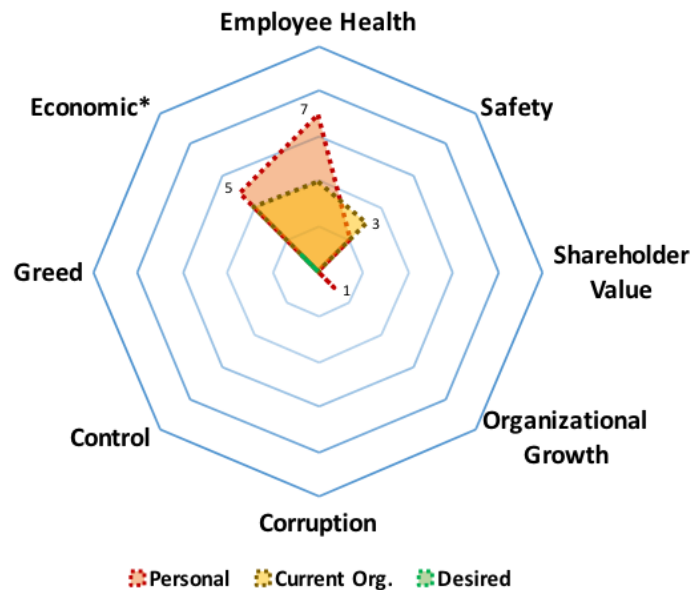


Figure 5-7: Level 1 Sustainability Perspectives

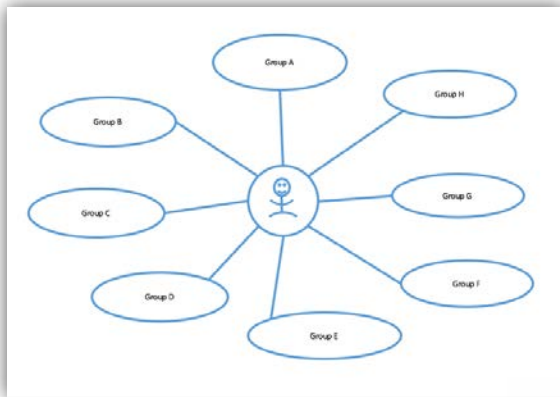
5.8 Sociometry

The exercise of having the participants draw their own socio-metric diagrams corroborated the finding of participants having little appreciation or acknowledgement of the needs associated with *Level 2 – Relationships*, of the Organizational Consciousness model. It was felt that there is little effort to foster strong internal relationships through effective channels of communication, and utilization of resources within the organization, particularly in the context of the sustainability. I emphasize these observations with the reminder that M-Lab is a relatively small organization of only 30-35 employees.

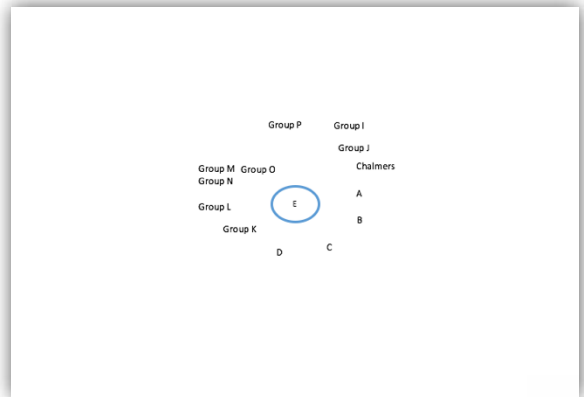
The sociometry exercise revealed vastly different perspectives on how each participant communicates, in the context of their organizational role. For instance, the majority of participants drew connecting lines amongst themselves and those they claim to communicate with. However, two participants did not draw any connecting lines, but rather had the identified personnel / groups “floating” around them. Figure 5-8 (a,b) illustrate these differences. Some participants ensured they used double headed arrows on their connecting lines to ensure it was clear that they were signalling two- way communication. Others drew lines with no arrows at either end.

There was only one participant that drew interconnecting lines amongst different groups he/she communicates with to represent how others communicated, in relation to his/her role; refer to Figure 5-8 (c). Another unique socio-metric diagram was from one individual who rotated their page in 360 degrees as he/she drew their diagram, see **Error! Reference source not found.** (d).

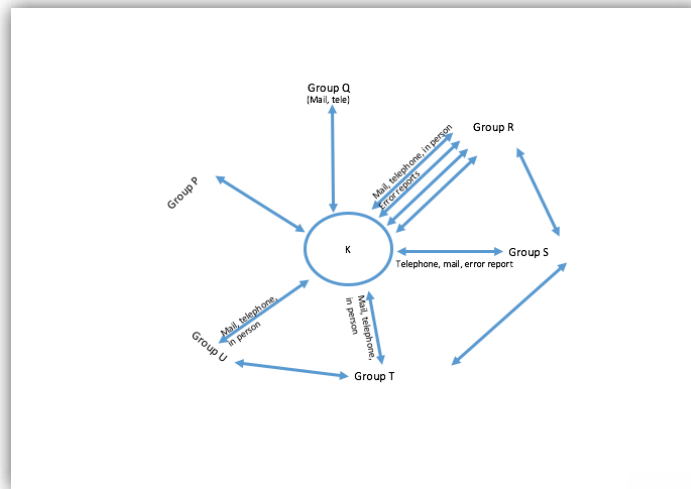
The participants also chose to represent themselves in different forms; some wrote their name in the middle of the page, some wrote, “me”; others used a smiley face or stick figure. Some participants occupied the full page for their diagram, while others occupied less than 20% (approximately); Figure 5-8 (a,b) serve as an example.



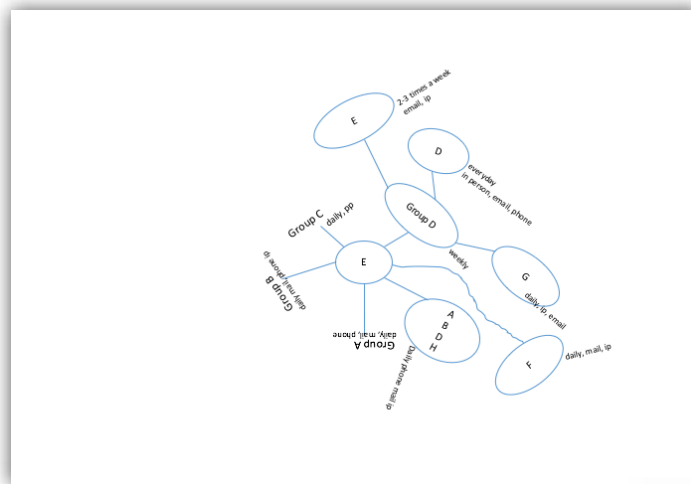
(a)



(b)



(c)



(d)

Figure 5-8: Sociometric Diagrams (a-d)

5.9 Focus Group

The seemingly high level of cultural entropy, coupled with a low rate of activation of individual discretionary energy, exemplifies the necessity for self-leadership in order to increase organizational consciousness and improve organizational performance. Therefore, it was worthy to centre the focus group around the theme of *Leadership*.

All eight interviewees from the management team at M-Lab were invited to attend the focus group, however, only four were in attendance. I, the researcher, maintained a neutral role in how I probed the participants throughout the focus group, careful to ensure I was not putting words in their mouths, as it was a critical piece in this reflexive exercise that the responses come from the participants, not through the facilitator. Based on the method described in Chapter III, the participants expressed the following terms to describe leadership: *humbleness, inspiration, compassion, honesty, openness, coaching, interest in others, culture, organization, structure, clear direction, translation, and, knowledge*. I then asked participants to elaborate on what the words mean to them, what they felt was working now in M-Lab to support this quality, and what are their current challenges to enact this quality.

The main finding from this focus group was that the participants co-constructed (amongst themselves) a story of what *leadership* signifies to them. That is, the participants saw for themselves, that leadership involves two main components, on one hand, leadership is about the soft values (i.e., humbleness, inspiration, compassion, honesty, openness, coaching, interest in others), and on the other hand, leadership is about the more structured components of organization, and providing a clear direction. A photo of the whiteboard from the end of the focus group is shown below in Figure 5-9. A summarized version of this photo has been re-drawn on the computer and is represented in Figure 5-10. A description of the attributes that were given more attention during the focus group ensues.

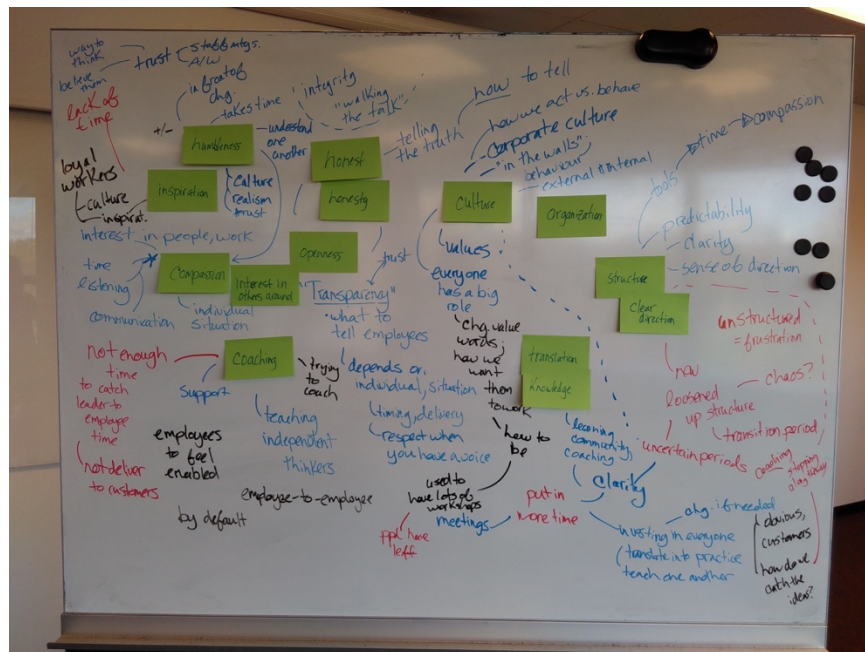


Figure 5-9: Focus Group Whiteboard Outcome

From the perspective of the participants, *humbleness* was described in the following manner: “takes time”, “understand each other”, “culture”, “realism”, “trust”, and “both positive and negative”. Phrases used to describe *compassion* included, “having an interest in people and work”, “having time”, “listening”, “communication”, and “being attentive to the individual’s situation.” *Coaching* was described in a way

that *“makes employees feel enabled”*, and *“should be by default.”* The participants felt that they are currently trying to coach, yet they lack time to spend on this. This lack of time was also felt as a challenge to nurture *inspiration* in the current organization. *Culture* was described as *“how we act vs. behave”*, *“corporate culture”*, *“in the walls”*, *“values”* and *“everyone has a big role in this.”* When asked to describe what was happening currently in regards to *culture* in the organization, the responses were *“we need to change value words and how we want them to work”*, *“how to be”* and also, *“we used to have lots of workshops.”* Regarding what was a challenge of current organizational *culture*, the participants responded with, *“people have left the company”*, implying that the current culture was not working out so well at the M-Lab. *Openness* was another attribute described by the participants. To the participants, *openness* signifies, *“trust”*, *“a way to think”*, *“transparency”*, *“what to tell employees”*, *“depends on individual situation”*, *“timing, delivery”*, and *“respect when you have a voice.”* A summary table of these attributes can be found in Appendix B. In the words of the participants, the attributes described above were those termed as relating to, *“the Heart”* and are indicated on the left side of Figure 5-10.

The other half of the attributes discussed by the participants were later termed by the group as those relating to the *“brain”*, i.e. those found on the right side of Figure 5-10. The attributes described by the focus group participants are as follows: *structure* was defined as *“tools, giving more time, allowing for compassion”*, *“predictability”*, *“clarity”* and *“sense of direction.”* A challenge to provide *clarity* in the current organization was that the current time was a transition period with a *“loosened up structure”*, and *“uncertain periods”*. Participants also described that the lack of structure has provided much frustration in the organization, and that employees end up putting in more time at work. The participants interpreted *translation of knowledge* as *“being part of a learning community”*, *“coaching”*, *investing in everyone”*, *“translate into practice, “to teach one another”* and *“clarity”*. In regards to what is working in this realm of *translation of knowledge* currently at the M-Lab, participants felt that this was *“obvious”*. However, the participants also felt that challenges associated with this mirrored similar challenges from being able to provide a clear direction, and that the organization *“stops along the way.”* A summary table of these attributes can be found in Appendix O.

At the end of the focus group, during the checkout, the participants felt a sense of relief, and a sense of *“opening”* by being able to see the connections between the *“soft side, the Heart”*, and the more structured side of *“the Brain.”* This conclusion was best expressed by one participant at the check-out:

“I think culture is at the centre of it. And it’s the bridge between the heart and the organization, which is the brain...But that side, is in need right now (the heart), to help us through, to get there.”

“This is how we’re going to fix the other things, is through this [the heart]. And we are very often very focused on that [the brains]. We will get there if we have those things with us, I think.”

Nevertheless, the reflections of the participants at the check-out are noteworthy, with just one participant describing feelings contrary to the others:

“I see a pattern, which gives me a sense of relief.”

“I also feel relieved....it’s a kind of opening.”

“I take with me and I see that we have to, we have to listen and take with us all of this.”

“I feel good....I am frustrated because maybe I am too eager to get to our goal quicker, I feel that...Maybe we should really sit down and think about how long this will take. And maybe be a bit more realistic....Or, on the other hand, sometimes I think we don’t work smart. And I’m actually not sure which of it, is it. And that troubles me...a lot...”

In summary, the participants recognized that there are many aspects that have not been attended to in the organization. They also recognized the complexity and the plurality of leadership. The outcome of the focus group showed the high-level ambiguous language the management team uses, as the descriptions and statements given lacked a sense of 'concreteness' and tangibility. Furthermore, the focus group corroborated the findings from the interviews and highlighted the absence of unfulfilled needs discovered during the interviews. Additionally, the focus group illustrated how dialogue and reflexivity can offer a constructive space for acknowledging critical organizational attributes that are needed in order to elicit a higher state of consciousness and performance.

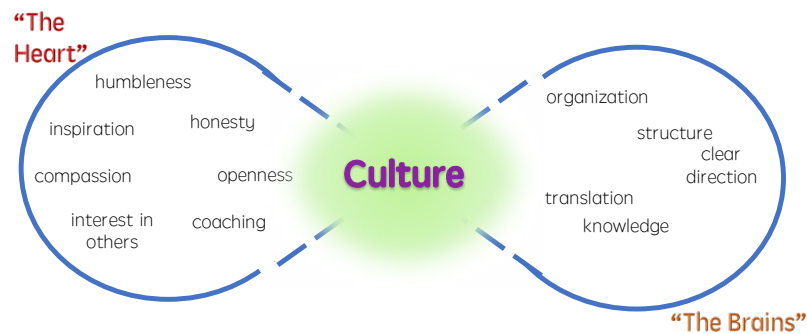


Figure 5-10: Focus Group Outcome

5.10 Summary of Results

In the ideal scenario, for the M-Lab to maximize their organizational performance in the translation of sustainability goals into action, then according to the Barrett Values Centre, the following conditions need to be fulfilled:

- Alignment of personal values, current organizational values, and, desired organizational values.
- Fulfillment of needs at all seven levels of the Organizational Consciousness model.
- A feeling among employees that they are contributing to the implementation of an inspiring vision.
- Absence of limiting factors associated with levels 1 – 3 in the Organizational Consciousness model.
- Low personal entropy amongst current organizational leaders.

According to Barrett (2010), having these conditions met would enable an organization to exhibit “full spectrum consciousness”, or rather, a high performance organization, marked by high employee engagement. In the context of this report, that would mean that ideally, all ten interview participants would be able to identify sustainability with qualities across all seven levels of the Organizational Consciousness model. More so, that all ten participants would view sustainability in a coherent, aligned fashion such that the values they associate with sustainability on a personal level are also translated into current values of the M-Lab, and also values of what they desire the organization to achieve in this regard. Ideally, there would also be a feeling of fulfilled needs at all seven levels of the model, with a lack of presence of any limiting factors found on levels 1 -3 of the Organizational Consciousness model. Lastly, point number five implies that self-leadership skills are developed actively, rather than passively, and are given importance for personal and organizational development.

However, the results of the empirical study showed that the M-Lab has significant room for improvement to fulfill all stated requirements above, in order to have a high level of organizational consciousness, and subsequently to be recognized as a leader in the performance of sustainability. The organization appears to exhibit qualities of high cultural entropy, with a low activation of discretionary energy. Furthermore, the results indicate the following:

- 1) a limited perception of sustainability;
- 2) different perspectives of sustainability when it comes to their personal life and organizational life;
- 3) little time, if any, has been spent envisioning what sustainability means to the organization.

5.10.1 Limited perception of sustainability

There was no single attribute that half or more of the participants could associate sustainability with across the three perspectives of what sustainability means on a personal level, from a current organizational level, and what they desire the M-Lab to achieve with regards to sustainability. However, *environmental awareness, social responsibility, commitment, shared vision and values, goals orientation, and employee health* were among the attributes that participants could more easily associate with.

That being said, there was association made by at least one interviewee in all positive attributes, i.e. non-limiting factor, of two of the seven levels: *Level 6 – Making a Difference, Strategic Alliances and Partnerships*, and; *Level 3 – Self-Esteem, High Performance. Level 2 – Relationships*, had the lowest number of participants making a connection between those attributes and sustainability.

In addition to the original list of 44, there were a total of 24 attributes I added in an effort to retain the essence of participants' statements. *Level 6 – Making a Difference* and *Level 4 – Transformation*, had the greatest number of attributes added as the number was doubled in each.

Personal Perspective

When asked from a personal context, participants were able to explain sustainability in relation to 21 of the 44 needs listed in the Organizational Consciousness model. Of those 21, there were only three qualities that half or more of the interviewee participants verbally spoke to: *Social Responsibility (Level 7)*, *Environmental Awareness (Level 6)* and *Employee Health (Level 1)*.

Current Organizational Perspective

Similarly, when I asked each interviewee what they felt sustainability meant to the M-Lab organization presently, I was able to interpret participants' statements with only 23 of the 44 qualities/needs. However, overall affiliation was low as only two of those qualities garnered attribution by half or more of the participants: *Social Responsibility (Level 7)*, and, *Environmental Awareness (Level 6)*.

Desired Perspective

Comparably, in terms of what the participants desired the organization to achieve with respect to sustainability, I matched statements to 25 qualities / needs on the *Organizational Consciousness Model*. Nevertheless, there were just four items associated by half or more of the participants: *Commitment (Level 5)*, *Shared Vision and Values (Level 5)*, *Goals Orientation (Level 4)*, and *Education (Level 4)*. This last attribute, *Education*, was an item I added into the original list of 44 needs as per the description of the *Organizational Consciousness Model* (BVCc, n.d.).

Unidentified Qualities

Of the original list of 44 qualities / needs from the *Organizational Consciousness Model* (BVCc, n.d.), fourteen items were not identified by any participant across all three categories of sustainability perspectives (personal, current organizational, desired organizational): *compassion, transparency, passion, teamwork, adaptability, personal growth, bureaucracy, friendship, blame, manipulation, shareholder value, corruption, control, and, greed*. That being said, it should be positive to note that none of the participants mentioned the limiting factors of *bureaucracy, blame, manipulation, corruption, control or greed*. However, statements were made reflecting three other limiting factors: *long-hours / demanding work environment, confusion, and, intimidation*.

5.10.2 Unfulfilled needs

The values exercise identified a lack of fulfilled needs in the present organization, as per the Organizational Consciousness model. In particular, none of the ten participants identified *compassion, future generations, coaching/mentoring, empowerment or systems* as being present in the current organization. However, in the focus group, the acknowledgement and awareness of these qualities were brought to the participants' attention. Furthermore, half or more of the participants did identify *long-term perspective, environmental awareness, commitment, teamwork, accountability, processes* and *customer satisfaction* as present, currently in M-Lab. Given the new organizational structure of the M-Lab, to be more process and customer orientated, together with their draft sustainability goals, it should

not be surprising to have majority agreement on these qualities. However, out of these particular seven qualities, only *environmental awareness* and *commitment* were connected with sustainability by half or more participants. This disconnect suggests an isolated and narrow perspective of sustainability. Furthermore, combined with the lack of apparent time spent in the visioning process, this signals a low level of ignition of discretionary energy from each employee. Such a low level inhibits the organization from utilizing the full potential of their human resources.

The socio-metric diagrams indicated a lack of internal cohesion and appreciation for internal relationships. This finding is consistent with the lack of acknowledgement participants had for any of the needs associated with Level 5- *Internal Cohesion, Building Internal Community* and also, Level 2 – *Relationships* of the Organizational Consciousness model. There was also very low recognition of the qualities from these two levels during the values exercise: one out of eight needs from Level 5 was identified by more than half of the participants, and one out of four needs from Level 2 was identified by more than half of the participants, with one participant identifying the limiting factor of *blame*. Once again, the lack of fulfilled needs inhibits activation of employees' discretionary energy.

A lack of appreciation for internal relationships is further supported from the reflections made by the participants during the focus group. The participants recognized the plurality and complexity of *leadership*, recognizing that attention is needed on such qualities of: *humbleness, honesty, openness, compassion, inspiration, coaching* and *listening*, in order to affect any sort of culture change within the organization. This recognition provided the participants with a sense of relief, and a space for them to recognize what needs are necessary to fulfill in order to improve organizational consciousness and subsequently, organizational performance. A focus on fulfilling these previously absent needs will assist in the improvement of the organization's performance through the activation of employee's discretionary energy.

5.10.3 Lack of an inspiring vision

In regards to the third point (3) above, when I asked the participants about their motivation for coming to work at the M-Lab, the participants discussed amiable qualities such as their *long-term perspective*, the ability to work with the younger generation, to be involved in the community, and to integrate previous education and work experience into their current role. A few participants also discussed how they valued the ability to integrate project feedback at an earlier stage, and, how they thought the campus environment offered interesting projects to work on. However, despite these positive qualities that attracted the participants, there was no participant that mentioned a motivation being the opportunity to contribute to the implementation of an inspiring vision. A lack of feeling amongst employees that they are contributing to an inspiring vision restricts activation of their discretionary energy.

Complementary to this finding, is that of the apparent lack of time spent by the participants envisioning what they desire the M-Lab to achieve with regards to sustainability, and also what they expect of each employee. Out of the 37 positive qualities in the Organizational Consciousness model, only 3 qualities: *commitment, shared vision and values*, and *goals orientation*, were described by half or more of the participants. There were 18 positive qualities that were not referenced by any interviewee in terms of what they desire. The other remaining 16 qualities were referenced by less than half of the participants.

5.10.4 Presence of limiting factors

Limiting factors, albeit few, were present in the organization: *complacency, bureaucracy, long-hours / demanding work environment, confusion*, and, *intimidation*. These characteristics revealed themselves throughout the interviews, the values exercise, and also in the focus group. Seven out of ten participants

described how the *demanding work environment* can make it difficult for them to come to work sometimes. Some participants recognized that their full calendar makes it challenging to produce enough free time to spend face to face with employees. *Confusion* showed itself when four participants were unable to articulate specific examples of what sustainability meant to M-Lab currently. Additionally, there were some other participants that seemed surprised at the questions of, “what do you expect M-Lab to achieve with regards to sustainability, and, what do you expect of each M-Lab employee in regards to sustainability?” Such examples highlighted the factor of *confusion*. *Intimidation* was revealed by the purposeful intention to create stress and tension in the work environment at M-Lab. These limiting factors raise the level of cultural entropy in the organization, inhibiting growth of organizational consciousness and ability to tap into employees’ discretionary energy.

5.10.5 Lack of self-leadership training

A lack of purposeful intention and recognition of the value for self-leadership training at the M-Lab was made evident during the interviews when I posed the question, “*what sort of leadership training is given to staff?*” and the resounding answer across all ten participants was none. The perception of leadership at the M-Lab appeared to be one closely associated with management, for instance, “*Considering I’m not a leader in anyway, I haven’t received any leadership training.*” Also, throughout interviews with some participants, the terms of leadership and management were used interchangeably and not discussed in a manner resembling acknowledgement of any difference between the two. Given that the entire management team was interviewed, in addition to the M-Lab’s desire to be a leader in sustainable campus solutions, it seems surprising that there was not a perspective on the need for an active approach to leadership development within the organization, and beyond the management team. Given that Barrett (2010) states that self-mastery and personal leadership are the keys to reducing entropy, activating discretionary energy and raising organizational consciousness, it is cause for concern that attention is not being placed on personal leadership development.

Chapter 6: Discussion

6.1 Model Justification

The Organizational Consciousness model is a relevant and legitimate model to use in the context of sustainability as it correlates well with the principles and framework developed in Phase 1 of this Challenge Lab process. A comparison between the BVC Consciousness model and the sustainability criteria developed by the 2016 Challenge Lab is illustrated in Appendix D – BVC Model Justification. The table illustrates that the criteria developed by the Challenge Lab students is addressed within all seven levels of the Consciousness Model. However, it also shows that there are additional components in the BVC Model that are not explicitly addressed in the criteria developed by the Challenge Lab. These items include: *humility, compassion, integrity, openness, teamwork, goals orientation, pride in performance, and open communication*. Limiting factors of: *complacency, bureaucracy, blame and manipulation* are also not explicitly identified in the Challenge Lab sustainability criteria, although they are implicitly implied. Nonetheless, these gaps represent possible areas for development for future Challenge Lab students to address.

6.2 Opportunity for increasing performance

Given the high level of cultural entropy and low level of organizational consciousness that the participants have exhibited, it is quite likely that the opportunity exists for the M-Lab organization to move into an arena of higher organizational consciousness, i.e. higher performance and higher engagement in pursuit of their sustainability ambitions. In other words, the potential use of their human resources is not fully activated, and has shown significant room for improvement. That being said, this finding is not surprising, given the research done by Hielscher and Georg (2014, p.711), whereby they were unable to find, “[any] systematic attempts in systemic sustainability research to make (shared) mental models of corporate sustainability accessible for empirical scrutiny.” This statement, combined with the work of Rice et al. (2012), suggests that there is likely a low probability that the connection has been made to the importance of building shared mental models of sustainability in order to improve engagement and performance on the subject. According to Rice et al. (2012), this lack of alignment could be in part due to the fact that shared mental models is the silent killer of sustainability engagement and performance.

Applied to the context of the M-Lab, this would not be surprising given the social collaboration cycle (Sandow and Allen, 2005) whereby, through a shared understanding, trust is built, lending itself to collaboration and increased participation. Thus, it is suggested the M-Lab focus on building a shared understanding, throughout the organization, of what sustainability is and how it is perceived amongst individuals. Nurturing this shared understanding will build trust, collaboration and increased participation. Additionally, having shared mental models contributes to the development of a learning organization (Senge, 1990). Furthermore, the focus group showed a positive result in the need for dialogue for participants to be able to articulate and verbalize their thoughts in order to reach a common vision through co-creation and collaboration.

6.3 Move into the Learning Zone

Research from Edmondson (1999) and Google’s Aristotle project complement these arguments, by explaining that in order to foster high performance, the team must have the ability to establish and nurture a feeling of psychological safety (Duhigg, 2016). This means that the team climate is characterized by “interpersonal trust and mutual respect in which people are comfortable being themselves” (Edmondson, 1999, pg. 354). That being said, Edmondson (2014) emphasizes that merely having a high level of psychological safety is not sufficient to move a team or an organization out of the “comfort zone”

and into the “learning zone”, or rather, the high performance zone; high levels of motivation and accountability are also required. Finally, it is imperative to stress that psychological safety in an organization may not always be necessary for high performance, however, when factors of uncertainty and interdependence exist, qualities which are ubiquitous to sustainability, psychological safety is most certainly a necessity (Edmondson, 2014). Thus, these dimensions will be briefly discussed in the context of M-Lab and this empirical study.

From the data collected during the interviews, there was significant evidence from the participants that they have high levels of motivation and accountability: eight participants identified *commitment* on the values exercise, and six participants identified *accountability* as present in the current organization. These results are even more significant given that there were only seven, out of forty-four, qualities identified during the values exercise from half (five) or more participants. Motivation and commitment were also exhibited when the participants were asked about what gets them up in the morning; eight participants used statements such as, “I like my work”, and “I love my job.” Additionally, nine interviewees described various informal and formal networks they participate in that support their careers and are aligned with their organizational roles. *Accountability* and responsibility was exemplified through six of the ten participants when asked to describe their position at M-Lab. Furthermore, the participants fairly focused educational background in the real estate sector support their *commitment* to this line of business.

Having high levels of motivation and accountability situates the M-Lab in either the “anxiety zone” or the “learning zone” of Edmondson’s (2014) model, Dimensions of psychological safety, see Figure 2-1. The data collected from this empirical study indicates that the M-Lab is very likely situated in the “anxiety zone”, rather than in the high performance “learning zone”. This is so due to the following results presented in the previous chapter. First of all, there were signs of *intimidation*, “my challenge is to widen them, to kind of create a stress in them. Because I’m tearing them apart. Tension is important when you come here (laughs).” Second, *long-hours / demanding* work environments were exemplified from seven participants when asked what makes it difficult to come to work, eg. “dealing with big decisions...that’s heavy and it takes time” and “the feeling that you don’t do enough”; six participants stated, “the alarm clock” is what gets them up in the morning.

The third piece of evidence that the M-Lab is very likely operating in the “anxiety zone”, is that three or fewer participants identified the presence of the following traits, which connect closely with characteristics associated with a group in the “learning zone”, as being present in the current organization during the values exercise: *compassion, trust, openness, personal growth, empowerment, open communication, friendship, employee health, safety, and organizational growth*. Note that very few of these qualities were identified by any participants when discussing sustainability from the three different perspectives. This could suggest that these qualities are either assumed to be ever-present, or, that these qualities are just not given much acknowledgement. Likely, it is that they are just not given much acknowledgement or recognition because during the focus group, some of these qualities and closely connected qualities, did emerge from the participants when they were asked to describe what leadership meant to them: *humbleness, inspiration, compassion, interest in others, coaching, openness, and, honesty*. Further, support to the lack of acknowledgement on these qualities is that during the check-out of the focus group, the participants described their take-away and what they saw when looking at the whiteboard, as “relief”; relief in the sense that, in order to accomplish and achieve their goals, they must slow down and come back to the “soft skills”.

The value in the recognition of these qualities is that potential does exist to activate these softer needs, and to move them out of a latent and vacant space, into an active and operable space. The benefit of this would be an increased fulfillment of needs on the BVC Organizational Consciousness model, ultimately supporting the development of a higher performance organization, and increased capability to be of

service to humanity and the planet. Or, in the very least, the M-Lab should be in a better position to accomplish their sustainability goals through support for the activation of employees' discretionary energy.

Additional backing to orientate M-Lab to a learning organization is supported by Argyris (1977) and the work of Peter Senge in his 1990 book, the *Fifth Discipline*. Argyris (1977) describes the necessity for double loop learning and a space for reflection to ensure an organization is asking itself whether it is doing the right thing and doing so in the most effective manner possible. Creating such a culture complements one of Senge's five disciplines, that of team learning. The need for such a reflective space is evident in the M-Lab as through the interviews it was apparent that there is a lack of structure and culture around such a reflective space; the focus group allowed for such reflection and could be something the management team at the M-Lab may wish to implement. Furthermore, the response to the question of a typical day being, "meeting, meetings and meetings" implies a lack of reflective space within the organization.

The other four disciplines described by Senge (1990) are those of: personal mastery, building shared mental models, having a shared vision and systems thinking. These disciplines endorse recommendations from the Barrett Values Centre on building an organization with higher consciousness, and subsequent improved performance. Development and growth of personal mastery aligns with the BVC recommendations for lowering personal and cultural entropy within an organization, as well as overcoming limiting factors. As there was a lack of focus on personal mastery, i.e. self-leadership, within the M-Lab, the need for attention in this realm is recommended.

Supporting the development of shared mental models connects with the alignment recommended by the BVC to lower cultural entropy in an organization. Creation of a shared vision accompanies the need for employees to feel they are contributing to an inspiring vision (Barrett, 2010) in order to help activate their discretionary energy; a need identified as currently absent in the M-Lab. The Backcasting process may prove useful in this aspect as development of a shared vision is part of step 1 in the methodology.

Finally, systems thinking is necessary as it can give individuals appreciation for their experiences and for the complexity of the world (Senge, 1990). The Challenge Lab process of developing a sustainability framework and subsequent sustainability principles could prove to be useful endeavor to satisfy this requirement as it provides a holistic, systems perspective; refer to section 1.2.1.

6.4 How does this report contribute to the research being done in the field?

This report contributes to research in the fields of organizational consciousness, leadership for sustainability transitions and translation of sustainability goals into action. The multi-method approach contributes to the Barrett Values Centre's work on organizational consciousness by providing an option for triangulation, flexibility and reflexivity to the efforts of supporting increased organizational performance in the context of sustainability goal implementation. Utilizing the BVC Organizational Consciousness Model in this study introduces aspects of organizational behaviour into the field of sustainability transitions and sustainability goal translations. This is particularly useful as it seeks to address a higher level of Meadows' (1997) intervention levels for system change. More specifically, that of a mindset or paradigm shift as the aspect of reflexivity added a learning loop for the participants to alter how they lead and interact with others in their organization.

Furthermore, this report is noteworthy as it introduces behavioural aspects into the Challenge Lab theses collection. What makes this meaningful to the collection is that having a method or approach to address behavioural aspects was a common theme during Phase 1 Brainstorming session for system intervention and leverage points. Should the trend and questioning of how to address behavioural aspects in system

change continue during subsequent Challenge Lab cohorts, this report may offer some insight for how to tackle such change. Additionally, this report contributes to the translation of sustainability goals into action as it merges the fields of leadership, sustainability and organizational change. Finally, this empirical study contributes to the field of exploring mental models of sustainability through the creation of visual interpretations, and the criticality of doing so to build higher levels of engagement and performance around the topic of sustainability.

6.5 The Multi-Method Research Process

The multi-method approach used in this empirical study was appropriate for the research questions as it allowed different perspectives on the topic of sustainability to be revealed. Also, investigating the participants' perspectives of sustainability through open-ended questioning highlighted the level of intrinsic understanding of sustainability amongst the group.

Incorporating the different methods of interviews, the values exercise, sociometry and the focus-group, allowed for data triangulation, flexibility and reflexivity, lending itself to a more practical and action orientation (Creswell, 2003). Interpretations of statements made during the interviews were not validated one-on-one with participants, however, the focus group served as a means of triangulation and validation. The socio-metric diagrams, together with the values exercise also corroborated the interpretations.

The process of coding statements from the interview transcriptions proved to be a time intensive process. However, the codification against the Organizational Consciousness model proved to be useful because through that process, it enabled participants' understanding of such a complex topic to be visualized through use of the radar graphs.

My point of departure from how the Organizational Consciousness model seems to be used with the values exercises employed by the Barrett Values Centre, is that I took a qualitative approach to determine fulfillment of needs across all seven levels of the model. Then based on those findings, I incorporated reflexivity for quick feedback and learning to participants (Räsänen and Gunnarson, 2004). This was particularly useful in that the participants were able to recognize the importance of the "soft skills" such as *compassion*, *transparency*, *humility* in the focus group exercise. These qualities were not identified as currently present in the organization during the values exercise, nor given attention during the inquiry for sustainability. However, by inquiring with an appropriate question, the participants were able to identify the necessity of these qualities to the improved performance of the organization.

6.6 The Challenge Lab Process

The Challenge Lab process proved to be a useful approach to supporting sustainability transitions, and student generated research. The incorporation of Phase 1 into the traditional time period allocated for conventional theses is demanding, however, the benefits to student learning and achievement, expansive learning and societal value are unmatched (Larsson & Holmberg, 2016). Using the overarching methodology of backcasting through guiding principles, in combination with self-leadership and values clarification set a strong foundation for building understanding, trust and collaboration amongst the Challenge Lab students, as well as excitement and satisfaction for the student research in Phase 2 (Larsson & Holmberg, 2016). In the words of Amy Edmondson (1999, pg. 354), a team climate of psychological safety was created in the Challenge Lab whereby students had "interpersonal trust and mutual respect" and were "comfortable being themselves." Having to work through the development process of the sustainability principles was challenging, however, the reflexivity built into the process supported a deeper understanding and comprehension of the "wicked" nature of sustainability.

The training in dialogue tools enabled a development of a set of soft-skills for us, students. Further, the applied design thinking methodology, in combination with the guidance and facilitation by the Challenge Lab Team culminated in a rich and meaningful experience for the students as it enabled the students to clarify their personal values, interests and strengths and apply it to real-world sustainability challenges (Larsson & Holmberg, 2016). Refer to Appendix E for a list of 2016 Challenge Lab Cohort thesis projects. Overall, the Challenge Lab process, particularly Phase 1, provided a framework for the students to navigate in society, providing a compass for their future professional lives.

6.7 Uncertainties and Limitations

It is recognized that the number of participants in this empirical study is a small sample group. Therefore, it should not be taken to extrapolate for a larger population of management teams, nor made into a general statement that this is the mindset of anyone in a management role. However, this study does provide an interesting avenue to explore mental models and organizational performance in the context of sustainability, and could prove useful in other organizations, or even a larger context. Nevertheless, the context of the M-Lab should also be recognized in terms of extrapolating to a larger context. For instance, M-Lab is a relatively small organization with approximately 32 employees, and is in a unique setting of being a campus real-estate company.

The qualitative process I used in this model proved to be appropriate for the questions I sought to answer as it encouraged a participatory and action-orientated solution. However, it needs to be explicit that this is the first study of this kind that I have completed within the social sciences field. Although, I have a lack of 'formal' experience in the social science realm, the use of my multi-method approach validated the data interpretations I did throughout the research process. That being said, it is worthy to note that the specifics of how I coded each statement to different qualities on the Organizational Consciousness model were not verified. However, the graphical representations developed appear to be in line with findings from the values exercise, socio-metric diagrams and focus group.

Another notable point to acknowledge during the data collection process is the assumption that the participants fully expressed the completeness of their perspectives on sustainability during the interviews. I relied on my ability to "pull" as much information as I could from the participants to gather as complete a picture as possible; a more skilled and more experienced interviewer may have been able to garner more information from the participants. Corresponding to this is to remember that the interviews and focus group were all conducted in English, not the subjects' native language of Swedish. This may have prevented complete disclosure of the participants' perspectives. The values exercise contained both English and Swedish translations.

In this empirical study, I have had the mindset that the M-Lab's overall driver is sustainability. This may be a stretch to assume so, however, it can be deemed as relevant and legitimate given that their main purpose is to support Chalmers' vision, "for a sustainable future". An additional point to mention is that perspectives and viewpoints of sustainability may be limited and scattered as they were because during this study, the M-Lab was in the process of developing and solidifying their new strategic sustainability plan.

Chapter 7: Conclusions and Recommendations

This empirical case study of the M-Lab sought to address the following two research questions: (i) How do personal and organizational perspectives of sustainability align in an organization? (ii) How can a management group use the potential of their human resources to overcome obstacles towards implementation of sustainability goals? The findings from this study's participants were that they have (i) a narrow understanding of sustainability; (ii) misalignment of their perspectives on sustainability from a personal and organizational standpoint; (iii) ability to use their human resources to overcome obstacles towards implementation of sustainability goals, however, such ability currently exhibits qualities of latency and vacancy. In other words, the M-Lab exhibits qualities of an organization with high cultural entropy and a low activation of discretionary energy. Reducing this entropy and activating employees' discretionary energy may be done through an active approach to self-leadership and a motivation to the move the organization from a state of anxiety to one of learning.

The Organizational Consciousness Model from the Barrett Values Centre was used to analyze the interview data pertinent to the first research question. It proved to be a relevant model to use as it aligned with the sustainability principles developed during Phase 1 of the Challenge Lab. As stated above, the use of the model illustrated the overall lack of awareness of the needs necessary to support an organization that aims to ultimately be of service to humanity and the planet. However, the multi-method approach used in this study afforded the participants a space for reflection and learning. Through the style of facilitation employed in the focus group, the participants unveiled to themselves what aspects and needs are required in order to create the conditions for their organization to move from one operating in the 'Anxiety Zone' to one of high performance in the 'Learning Zone' through the support of a higher level of psychological safety.

Nonetheless, in order for the M-Lab to build a common understanding, or shared mental models of sustainability for a greater sense of trust, collaboration, innovation, participation, and most of all, increased performance the following recommendations are suggested.

7.1 Recommendations

To begin, the M-Lab will need to slow down to take time for individual and communal reflection, in order to reduce the limiting factors that were revealed in the study, particularly those of *confusion*, the *long hours* and the *demanding work environment*. Incorporating an active, rather than passive, stance towards leadership training for all staff will be essential to reducing the limiting factors; development of personal mastery through self-leadership is the solution according to Barrett (2010), founder of the Barrett Values Centre. Exploring the perception that leadership is synonymous to management may also be of value to the organization. The self-leadership training conducted during Phase 1 of the Challenge Lab may be a useful place to start. Such training could help to further prompt and nurture relationships amongst employees across organizational levels and roles. Specifically, such training could give first-hand experience and appreciation to the importance of *listening*, supporting the development of M-Lab's need for *customer satisfaction*, *open communication* and *friendship*.

To further support the M-Lab's deficient needs on the Organizational Consciousness model, applying the Backcasting through principles approach could prove to be a useful endeavour to building a shared mental framework of what constitutes sustainability. The exercise of actually having to develop the principles, as was done during the first week of Phase 1 of the Challenge Lab, could be one of the critical components in this approach to develop awareness, appreciation and recognition of the multiple facets and needs required for sustainability. The process of developing the principles allows individuals the mental space to free themselves from the constraints of today's lock-ins and forecasts of different

scenarios through the freedom of co-creating what should happen rather than what will happen (Vergragt & Quist, 2011).

Additionally, this approach incorporates the process of reflexivity allowing participants to continuously iterate and discuss as to whether they are not just seeking improved efficiency, but whether they are actually doing the “right” activities (Vergragt & Quist, 2011). Having the space and the culture of double loop learning was found to be absent in the M-Lab, yet is necessary to stimulate organizational learning according to Argyris (1977).

Additionally, this approach incorporates development of an inspiring vision. This would serve the M-Lab greatly as one of the findings from this study was that the participants had spent very little time, if any, envisioning what it is they would like the M-Lab to accomplish with regards to sustainability. Furthermore, in addition to personal and organizational alignment, “[employees must also] resonate with the organization’s purpose” (Barrett, 2010, pp.4) if an organization aims to develop highly motivated and engaged employees.

Finally, what could be useful for the M-Lab through use of the Phase 1 Backcasting approach is the component of dialogue, specifically, the training and awareness of what the critical aspects are to build effective dialogue: active listening, neutrality, compassion, non-judgement (Sande, 2015; Isaacs, 1999). As Isaacs (1999, pg.2) states, people in dialogue, “use the energy of their differences to enhance their collective wisdom” and through dialogue, leaders are able to unleash the creative potential in any situation; potential that is vital for sustainability transformations.

Such qualities for effective dialogue were attempted during the focus group by myself, the facilitator, to build a psychologically safe arena for the participants, and to access greater “collective wisdom” (Isaacs, 1999, pg.2) from the participants. Although I make no claim for the complete expression of these qualities, I believe the effort I employed proved useful for a reprieve and mindset shift in the participants’ perspective for leading the translation of their organization’s sustainability goals into action. Furthermore, the use of the whiteboard and visual elements appeared to assist the participant’s understanding and learning as evidenced by their responses of a feeling of “relief” during the focus group check-out.

Through the use of my process, I hope to have made the case for the necessity of establishing a safe, compassionate, non-judgement and neutral space for dialogue when attempting to overcome barriers that are complex and interdependent, ie. those relating to translation of sustainability goals into action. An inability to nurture and build a shared understanding, and a shared mental model of sustainability could lead to a lack of trust, separation, redundancy, increased costs, decreased resources, competition and fear (see Figure 1-8 – Disruption Cycle, Sandow and Allen, 2005). Furthermore, as Rice, Marlow and Masarech (2012) have described how assumptions can be the ‘silent killer’ of engagement. Thus, the impetus for exploring different perspectives, and revealing mental models through neutral, non-judgemental, compassionate dialogue is imperative if we, as a global community, aim to truly create a peaceful and just society for all humanity.

7.2 Possibilities for further research

Based on the findings of this study, it is suggested that further research be done using such qualitative and mixed-methods to explore mental models of sustainability and unveil potential conflicts in other organizations, namely those that are already interested in progressing their ambitions in the sustainability field. In other words, it would be most worthwhile to begin this work with organizations that are genuine in their ambitions to be of service to humanity and the planet. It is recommended this exploration continue within an organization so as to build a shared understanding that may lead to increased employee engagement, and ultimately performance. Establishing this within an organization first and

foremost should lend itself to improved partnerships and collaboration due to needs fulfilled throughout the Organizational Consciousness model. Examples of organizations that may serve as a starting point could include other organizations committed to supporting Chalmers' vision, "for a sustainable future" and those committed to supporting the fulfillment of the Global 2030 Agenda for Sustainable Development, including the 17 new Sustainable Development Goals.

It would also be interesting to conduct a longitudinal study of M-Lab's development and progression through fulfillment of the Organizational Consciousness model should they work to address their deficiencies found in this study, and continue to progress their initiatives for sustainability already being planned for execution. Doing so could build further support for the methodologies, findings and recommendations from this report, as well as their own initiatives, thereby providing a plausible path forward in the translation of sustainability goals into action for a more sustainable future that others may wish to learn from and apply.

Chapter 8: Epilogue

8.1 Researcher reflections

This thesis process has filled my life with countless reflections and learnings. I will highlight those most relevant. *The Challenge Lab has given me the opportunity to make sense of life, and society, and my place in it.* The Challenge Lab has shown me that nothing can be done in isolation, that life is collection of our experiences. This thesis process, and the nurturing, supportive, yet challenging environment afforded here has given me the opportunity to *make sense and meaning of life*. That is my life, the lives of my friends, my family; how society functions, what fundamental principles politicians are really debating about. It has provided me with a framework for navigating in the uncertainty and complexity of today's societal challenges. The Lab has equipped me with skills for navigating difficult conversations and bringing together diverse stakeholders.

My necessity for creative space, visualizations and interaction. But also, boundaries. I am a visual person. Despite being trained as an engineer, I am anything but your stereotypical engineer, glued behind computer simulations, with a pocket calculator on hand at all times, ready to load in any and all situations. I like to socialize, I like to engage with others. I need to make things visual. I need to find a way to involve some sort of physical interaction with my data, literature I have read, and my thoughts.

Culture is a product of the natural environment, the local climate and peoples' need for social connection. All of which are unexplainable and intangible, and yet require expression. Culture allows us to connect with one another; it allows us to connect our head and our heart.

Breathe. Deeply. It keeps your head and your heart moving.

References

- Anand, S. & Sen, A. (2000). Human Development and Economic Sustainability. *World Development*, Volume 28 (No.12), pp. 2029-49. Retrieved from: www2.econ.iastate.edu/classes/tsc220/hallam/readings/anandsenhumandevlopment/economicsustainability.pdf
- Argyris, C. (1977). Double loop learning in organizations. *Harvard Business Review*, September-October, pp. 115-125.
- Atkisson, A. (2010). *The Sustainability Transformation: How to make positive change in challenging times*. London & Washington, DC: Routledge/Earthscan.
- Barrett, R. (2010). *High Performance: It's all about entropy*, Barrett Values Centre, viewed 23 May 2016, <https://www.valuescentre.com/sites/default/files/uploads/2011-12-14/High%20Performance%20-%20It's%20all%20about%20entropy.pdf>
- Barrett, R. n.d., *The Seven Levels of Organizational Consciousness*, Barrett Values Centre, viewed 21 May 2016, <https://www.valuescentre.com/sites/default/files/uploads/2010-07-06/The%207%20Levels%20of%20Organisational%20Consciousness.pdf>
- Barrett Values Centre (BVCa), n.d. *The Barrett Model*, Barrett Values Centre, viewed 21 May 2016, <https://www.valuescentre.com/mapping-values/barrett-model>
- Barrett Values Centre (BVCb), n.d. *Barrett Seven Levels and Cultural Transformation Tools (CTT) Intro*. [video] Available at <http://www.valuescentre.com/our-products> [Accessed 1 March 2016].
- Barrett Values Centre (BVCc), n.d. *Levels of Organizational Consciousness*, viewed 25 February 2016, <https://www.valuescentre.com/mapping-values/barrett-model/organisational-consciousness>
- Broman, G., Holmberg, J., and K-H. Robert. (1998). Simplicity without Reduction – Thinking Upstream Towards the Sustainable Society, *International Journal of the Institute of Management Sciences and the Operations Research Society of America* (in press).
- Carstedt, G. (2015). *ENM145 Leadership for Sustainability Transitions, lecture 3: Transformative Change and Leadership for Sustainable Development*, lecture PowerPoint slides, viewed 5 January 2016, <https://pingpong.chalmers.se/courseId/6004/node.do?id=2670344&ts=1447244933136&u=1577468511>
- Creswell, J.W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.
- Creswell, J.W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Merrill/Pearson.
- Creswell, J.W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 2nd Edition, Thousand Oaks, CA: Sage.
- Cruz, I., Stahel, A., Max-Neef, M. (2009). Towards a systemic development approach: Building on the Human-Scale Development paradigm, *Ecological Economics*, vol. 68, pp. 2021-2030.
- Dincer, I., Cengel, Y.A. (2001). Energy, Entropy and Exergy Concepts and Their Roles in Thermal Engineering, *Entropy*, vol.3, pp. 116-149.
- Duhigg, C. (2016). *What Google Learned from Its Quest to Build the Perfect Team: New research reveals surprising truths about why some work groups thrive and others falter*. The New York Times Magazine,

viewed 11 June 2016, http://www.nytimes.com/2016/02/28/magazine/what-google-learned-from-its-quest-to-build-the-perfect-team.html?_r=1.

Edmondson, A. (1999). *Psychological Safety and Learning Behavior in Work Teams*. Administrative Science Quarterly, vol. 44, no.2, pp. 350-383.

Edmondson, A. (2014). *Building a psychologically safe workplace: Amy Edmondson at TEDxHGSE*, online video, 4 May, viewed 20 March 2016, <https://www.youtube.com/watch?v=LhoLuui9gX8>.

Hielscher, S., & Will, M.G. (2014). Mental Models of Sustainability: Unearthing and Analyzing the Mental Images of Corporate Sustainability with Qualitative Empirical Research, *Systems Research and Behavioral Science*, John Wiley & Sons Ltd., vol. 31, pp. 708-719.

Holmberg, J. (1998). Backcasting: A Natural Step in Operationalising Sustainable Development, pp. 30-51. Greener Management International. DOI:10.1080/00393277408587587

Holmberg, J., & Robert, K.H. (2000). Backcasting from non-overlapping sustainability principles – a framework for strategic planning. *International Journal of Sustainable Development and World Ecology*, nr.7, pp. 291-308.

Holmberg, J., Andersson, D., & Larsson, J. (n.d.). *Leadership for sustainability transitions – Challenge Lab preparatory course, Course-PM ENM145 - 7.5 HEC*, Chalmers, viewed 01 June 2016. <https://pingpong.chalmers.se/courseid/6004/node.do?id=2629170&ts=1446374961059&u=1577468511>

International Wellbeing Group (2013). *Personal Wellbeing Index: 5th Edition*. Melbourne: Australian Centre on Quality of Life, Deakin University (<http://www.deakin.edu.au/research/acqol/instruments/wellbeing-index/index.php>)

Isaacs, W. (1999). Dialogic Leadership. *The Systems Thinker*, vol. 10, nr.1, pp.1-5.

Larsson, J., & Holmberg, J. (2016). *Learning while creating value for sustainability transitions - the case of Challenge Lab at Chalmers University of Technology*. Journal article: submitted/in review

Merriam-Webster (2015a). *Latent*, Merriam-Webster Incorporated, viewed 29 June 2016: <http://www.merriam-webster.com/dictionary/latent>

Merriam-Webster (2015b). *Vacant*, Merriam-Webster Incorporated, viewed 29 June 2016: <http://www.merriam-webster.com/dictionary/vacant>

Mittelman, W. (1991). "Maslow's study of self-actualization: A reinterpretation". *Journal of Humanistic Psychology* **31** (1): 114–135. doi:10.1177/0022167891311010.

Pisano, U. (2012). *Theory of resilience, systems thinking and adaptive governance*. European Sustainable Development Network [ESDN] Quarterly Report N°26. Retrieved from http://www.sd-network.eu/quarterly%20reports/report%20files/pdf/2012-September-Resilience_and_Sustainable_Development.pdf

Räisänen, C., & Gunnarson, S. (2004). Multi-Project Organizations from a Methodological Perspective: Challenges and Rewards, *IRNOP VI Project research Proceedings*, Turku, Turku Academic Press, pp. 252-265.

- Rawls, J. (1971). *A Theory of Justice*. Cambridge: Harvard University Press.
- Raworth, K. (2012). *A safe and just place for humanity: can we live within the doughnut?* Oxfam: Oxford. Retrieved from www.oxfam.org/sites/www.oxfam.org/files/dp-a-safe-and-just-space-for-humanity-130212-en.pdf
- Rice, C., Marlow, F., Masarech, M.A. (2012). *The Engagement Equation: Leadership Strategies for an Inspired Workforce*. Hoboken, New Jersey. John Wiley & Sons, Inc.
- Rockström et al. (2009). A safe operating space for humanity. *Nature* 461, pp. 472-475. DOI:10.1038/461472a
- Ryan, R., & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and wellbeing, *American Psychologist*, vol. 55, nr. 1, pp. 68-78.
- Sande, M. (2015). *ENM145 Leadership for Sustainability Transitions, lecture 5: Seeing from within, Learning in between*, lecture PowerPoint slides, viewed 5 January 2016, <https://pingpong.chalmers.se/courseId/6004/node.do?id=2699243&ts=1448359419771&u=1577468511>
- Sandow, D., & Allen, A.M. (2005). The Nature of Social Collaboration: How Work Really Gets Done. *Reflections*, vol.6, nr.2, pp.1.
- SelfLeaders (2009). *Meta model for integration of personal and organizational development*, lecture, PowerPoint slides, Self-Leadership 877 Stockholm School of Economics.
- SelfLeaders (2016). *Values-based Self-Leadership, Chalmers Challenge Lab – Spring 2016*, lecture PowerPoint slides, viewed 15 February 2016, Dominic von Martens.
- Sen, A. (1999). *Development as freedom* (1st ed.). New York: Oxford University Press.
- Senge, P. (1990). *Fifth Discipline: The Art and Practice of the Learning Organization*, Century, London.
- Simmie, J. and Martin, R. (2010). The economic resilience of regions: towards an evolutionary approach. *Cambridge Journal of Regions, Economy and Society*, Vol. 3 (No. 1), pp. 27-43. DOI:10.1093/cjres/rsp029
- Söderberg, O. (2014). Challenge-Lab Compendium, viewed 20 March 2016: <https://pingpong.chalmers.se/courseId/6004/node.do?id=2708901&ts=1448638474281&u=1577468511>
- Steffen, W., et al. (2004). *Global Change and the Earth System: A Planet Under Pressure*. Springer Verlag.
- Taylor, S.J., Bogdan, R., DeVault, M. (2015). *Introduction to Qualitative Research Methods*. John Wiley & Sons Inc., Hoboken, New Jersey.
- ValuesOnline (2015). ValuesOnline, viewed 12 June 2016, www.valuesonline.net
- Vergragt, P.J., and Quist, J. (2011). Backcasting for sustainability: Introduction to the special issue. *Technological Forecasting & Social Change*, vol. 78, pp. 747-755

Appendices

A. Interview Guide

1. Introduction / Background
 - Could you tell me a bit about yourself: background, education, previous jobs?
 - What do you do in your free time?
 - What are your hobbies? What do you do outside of work?
 - Do you belong to any networks outside or inside work?
 - Could you please give me a description of your role here at CF?
 - How long have you been working here for?
 - Why did you choose to work here at CF? What role do you have?
 - Could you please describe a typical day at CF for me?
2. Sustainability – Personal Level
 - In your own words, could you please describe what sustainability means to you?
 - What 3 words come to your mind with sustainability? Could you please describe what each entails?
3. Sustainability – Organizational Level
 - Could you describe what sustainability means for CF today? How does CF work with sustainability today? Ask for specific / concrete examples!
 - As an organization, what do you desire for CF to achieve with regards to sustainability?
 - In regards to sustainability, what do you expect of each individual here at CF?
4. Motivation
 - What gets you up every morning?
 - What makes it difficult for you to come to work?
5. Communication
 - [ASK TO DRAW as a MAP/WEB, START WITH 'ME' IN CENTRE: who, how, when!]
 - Who do you communicate with in CF?
 - How do you communicate with them? I.e. Talk, email...
 - How often do you communicate with them?
6. Leadership
 - What sort of leadership training is given to staff?
 - What have you taken away from these trainings and applied at work? How have you applied any learnings you received?
 - How do you question if you are doing the 'right' activity at work?
 - i. How do you voice this?
 - ii. If you have doubts, how do you express this?
 - Could you name 3 of your guiding values?
7. Organizational Culture Values
 - Please select 10 of the following values/behaviours that most reflect how CF currently operates. I will follow-up with this and give feedback when we have our focus group exercise.

Organizational Values – Circle 10 values that represent M-Lab⁸ *today!*

Ansvar (Accountability)	Miljömedvetenhet (Environmental Awareness)	Processer (Processes)
Anpassningsförmåga (Adaptability)	Etik (Ethics)	Kvalitet (Quality)
Framgångsrikt arbetssätt (Best Practices)	Vänskap (Friendship)	Säkerhet (Safety)
Skylla på (Blame)	Framtida generationer (Future Generations)	Gemensam vision och värderingar (Shared Vision and Values)
Byråkrati (Bureaucracy)	Målenriktad (Goals Orientation)	Aktieägarvärde (Shareholder Value)
Mentorskap (Coaching)	Girighet (Greed)	Socialt ansvar (Social Responsibility)
Engagemang (Commitment)	Ödmjukhet (Humility)	System (Systems)
Samhällsengagemang (Community Involvement)	Integritet (Integrity)	Lagarbete (Teamwork)
Medlidande (Compassion)	Långsiktigt perspektiv (Long-term Perspective)	Genomsynlighet (Transparency)
Självbelåtenhet (Complacency)	Loyalitet (Loyalty)	Förtroende (Trust)
Kontrollera (Control)	Manipulation (Manipulation)	
Korruption (Corruption)	Öppen kommunikation (Open Communication)	
Kreativitet (Creativity)	Öppenhet (Openness)	
Kundnöjdhet (Customer Satisfaction)	Företags tillväxt / Organisatorisk tillväxt (Organizational Growth)	
Medarbetarnöjdhet / Arbetstillfredsställelse (Employee Fulfilment)	Passion (Passion)	
Anställdas hälsa (Employee Health)	Personlig utveckling (Personal Growth)	
Bemyndiga (Empowerment)	Prestationsstolthet (Pride in Performance)	

⁸ Actual name of organization was replaced for confidentiality.

B. Focus Group Outcome, description of “The Heart” aspects

	What does this mean?	What’s working now?	Current challenges?
Humbleness	<ul style="list-style-type: none"> • Takes time • Understand each other • Culture • Realism • Trust • In front of change • + / - 		
Inspiration		<ul style="list-style-type: none"> • Loyal workers • Culture 	<ul style="list-style-type: none"> • Lack of time
Compassion	<ol style="list-style-type: none"> 1. Interest in people, work 2. Time 3. Listening 4. Communication 5. Individual situation 		
Interest in others	<ol style="list-style-type: none"> 6. Closely connected with those attributes of compassion 		
Coaching	<ul style="list-style-type: none"> • Employees to feel enabled • Should be by default • Employee-to-employee 	<ul style="list-style-type: none"> • Trying to coach 	<ul style="list-style-type: none"> • Not enough time to catch leader to employee time • Not delivering to customers
Openness	<ul style="list-style-type: none"> • Trust • Way to think, believe them • Transparency • What to tell employees • Depends on individual, situation • Timing, delivery • Respect when you have a voice 	<ul style="list-style-type: none"> • Staff mtgs, afterwork 	
Honesty	<ol style="list-style-type: none"> 1) Telling the truth 2) Integrity, “walking the talk” 		

Culture	<ol style="list-style-type: none"> 1. How we act vs. behave 2. Corporate culture 3. "In the wall"; behavior 4. External and internal 5. Values 6. Everyone has a big role 	<ol style="list-style-type: none"> 7. Change value words; how we want them to work 8. How to be 9. Used to have lots of workshops 	<ol style="list-style-type: none"> 10. People have left the company
---------	---	--	--

C. Focus Group Outcome, description of “The Brain” aspects

	What does this mean?	What’s working now?	Current Challenges?
Structure	<ol style="list-style-type: none"> 1) Tools, gives more time, allows for compassion 2) Predictability 3) Clarity 4) Sense of direction 		
Clear Direction	Clarity	Meetings	<ol style="list-style-type: none"> 1) New 2) Loosened up structure, transition period 3) Uncertain periods 4) Stopping along the way 5) Unstructured = frustration 6) Put in more time
Translation / Knowledge	<ol style="list-style-type: none"> 1. Learning community 2. Coaching 3. Investing in everyone; change if needed 4. Translate into practice 5. Teach one another 6. Clarity 	<ol style="list-style-type: none"> 7. Obvious 8. Customers 9. How do we catch the ideas? 	<ol style="list-style-type: none"> 10. Stopping along the way 11. Coaching 12. Connects with challenges from clear direction

D. BVC Model Justification

Level	Term	Ecological	Well-being	Economic	Societal
7: Service to Humanity & the Planet	Long-Term Perspective	(i)		(III)	
	Humility				
	Ethics				(IV)
	Social Responsibility	(i)	(II)	(III)	(IV)
	Compassion				
	Future Generations	(i)		(III)	
6: Making a Difference, Strategic Alliances & Partnerships	Environmental Awareness	(i)		(III)	
	Community Involvement		(II)		
	Employee Fulfilment		(II)		
	Coaching/Mentoring				(IV)
5: Internal Cohesion, Building Internal Community	Commitment	(i)			(IV)
	Shared Vision and Values	(i)			
	Trust		(II)		(IV)
	Integrity				
	Creativity		(II)		
	Transparency				(IV)
	Passion		(II)		
	Openness				
4: Transformation, Continuous Renewal & Learning	Teamwork				
	Accountability	(i)			(IV)
	Adaptability			(III)	(IV)
	Goals Orientation				
	Personal Growth		(II)		(IV)
	Empowerment				(IV)
3: Self-esteem, High Performance	Processes	(i)		(III)	(IV)
	Quality	(i)		(III)	(IV)
	Pride in Performance				
	Best Practices	(i)	(II)	(III)	
	Complacency				
	Bureaucracy				
	Systems	(i)		(III)	(IV)
2: Relationship, Harmonious Relationships	Customer Satisfaction			(III)	(IV)
	Loyalty	(i)			
	Open Communication				
	Friendship		(II)		
	Blame				
	Manipulation				
1: Survival, Financial Stability	Employee Health	(i)	(II)		(IV)
	Safety		(II)		(IV)
	Shareholder Value		(II)	(III)	
	Organizational Growth			(III)	
	Corruption				(IV)
	Control				(IV)
	Greed		(II)		

E. 2016 Cohort Challenge Lab Theses

How do different factors shape the design of combined goods and waste transportation in urban waterway supply chains?

What are the implications of Sustainability criteria for urban freight systems in an urban district? A case study of Frihamnen

What sustainability criteria enable guidance in the assessment of the planning proposals for Jubileumsparken in Gothenburg?

How can a mobility service look like in a future DenCity area to act as an alternative to the car?

How to develop a city strategy for scaling up electro-mobility in Gothenburg?

How can a sustainable renovation of multi-dwellings be ensured from the inventory (pre-design) phase on? A case study in Gamlestaden

What are the drivers and barriers for implementing innovative sustainable materials into construction projects?

Why is dialogue important to translate sustainability goals into action?