Copenhagen Business School

The Role of Salience in Multi-Stakeholder Co-Creation

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Abstract

Co-creation as a process was explored mostly from customer - service provider point of view. However in the case of higher education, there are multiple customers which receive benefits of higher education. In Nordic countries, most salient stakeholders are participating in curriculum co-creation and shape curriculum content and/or structure in some way. Nordic Higher Education programme managers are interviewed in order to construct a Grounded Theory and uncover, explore and define social processes related to the role of salience in multi-stakeholder co-creation.

These institutions are Copenhagen Business School (CBS), The Royal Academy of Fine Arts and Conservation (KADK), CERN Idea Square Challenge Based Innovation Programme, Universities of The Future knowledge alliance project and Nordic Rebels Programme.

The research shows with increasing institutional constrains and additional stakeholder claims, stakeholder salience is shifting according to organisational levels in which co-creative activities occur.

1. Introduction

Recently Copenhagen Business School initiated new strategic outlook in which it wants to focus more on solving societal challenges by bringing various actors together in the spirit of Nordic cooperation. It want to focus more on learner centric environment, bring possibilities of life long learning closer to people from broad walks of life as well as excel in research which connects various stakeholders across disciplines. Words as multi-disciplinary, transdisciplinarity are these days commonly used to signalise general shift in attitudes towards learning. Classical image of universities as silos operating in so called ivory towers has been widely criticised and thus many Higher Education Institutions are seeking ways to join forces with others in the field to offer new and exciting forms of education.

Scandinavia has a considerable advantage compared to other regions due to the participatory nature of governance. Scandinavian or Nordic schools, students and industry work close together and making bridges across fields can be viewed by outsiders as easy.

However education sector is going through long term policy developments initiated by the EU. Common frameworks enhance possibilities but also bring constrains. This project is set to look into the area of co-creation of education between multiple stakeholders. From a superficial point of view, there might be not much to uncover, however as a student who was able to live in Denmark and Finland, I am motivated to bring insights from these two countries closer to outsiders who can learn and get inspired on how it is done in the region with the best education in the world as well as identify possible difficulties which would stem form applying co-creation in the Nordic way into his organisation or region.

Therefore the aim of this research is to uncover and analyse current state of university stakeholder relationships and underlying social processes affecting curriculum co-creation.

The main research question is:

What is the role of salience in multi-stakeholder co-creation processes in institutions of higher education in the Nordic Context ?

2. Methodology and Method

2.1 Methodology & Research Paradigm

When approaching a new research project, researchers often tend to choose a certain research paradigm. There is an ongoing debate in the scientific community for the "truth" and which philosophical approach best represent the world and knowledge. This debate often has a competitive rhetoric which sometimes is described as science wars. From this positivist interpretivist divide another research paradigm emerged – Pragmatism. This research was influenced by American Philosophers such as Dewey, Mead or Pierce. Its focus lies not in argumentation what is the truth, but its focusing on solving practical matters which directly touch people outside of research communities (Saunders, Lewis, Thornill). In the beginning of strategising about my research, I was more concerned with what would best suit the phenomenon in question rather than what philosophical stance to adopt. Instead of working with my methodology in an "outside-in" approach, i.e. knowing my own philosophical stance towards epistemology and ontology beforehand, I started quite inductively with data type and data collection first, or an "inside-out" approach to research design.

This way of working through the research onion fits with the phenomena I want to research and is predominantly Pragmatic in nature. Instead of adopting a particular philosophical stance, as a researcher I am concerned with choosing the right tools for the job. Pragmatism is not invoked as an excuse for inability to adopt a particular research paradigm it is used because the world and science is in the process of constant development.

Glaser and Strauss state similar beliefs in the Discovery of Grounded Theory (1967):

"*Generating a theory involves a process of research.*" (Glaser and Strauss 2009:6)

"Our strategy of comparative analysis for generating theory puts a high emphasis on theory as process; that is, theory as an ever-developing entity, not as a perfected product." (Glaser and Strauss 2009:32) 3 Corbin and Straus ((2008)) make clear that Grounded Theory as a methodology draws heavily on the work of American Pragmatists and the tradition of Chicago Interactionism. The emphasis on the philosophy of Pragmatism in Grounded Theory is because of its focus on the act, or *process*, of

knowledge creation. Since GT is not over fixated on theory verification but explores and defines processes from which theory is generated, in this research context the chosen methodology matches the research area of co-creation. The history and evolution of Grounded Theory in context of social science development can serve as a lively example.

2.2 Epistemology and Ontology

Grounded theory initially was objectivist in nature, at least that was what authors claimed. After their academic split, both researchers kept developing their own view on this method and how it is supposed to be used. Later, their work was extended and modified by their students not only from a method but also from philosophical perspectives. Later works of Strauss and Corbin propose that Grounded Theory Method is interpretive and later Charmaz (2011)added a Constructionist point of view.
that Grounded Theory is Constructivist and even suggests that the researcher asks himself, what story I want to tell with the data?
Constructivism as a philosophical approach is used in science as well as in pedagogy. In science, Constructivists argue that truth is constructed based on our environment and our actions in the environment. Most prominent figures of Constructivism were Jean Piaget and Lev Vygotsky. Piaget has said himself that he is not an objectivist nor an a priorist, but he is a constructivist. The reason is that knowledge is not contained in an object we interact with nor it is existing a priori in our minds but we construct knowledge. His claim was proved by a series of experiments resulting in stages of development. Following these stages, which gradually spiral upwards to higher levels of abstraction, similarities can be seen in final stages of higher education cycle and writing a thesis. We as students continually construct higher levels of knowledge thanks to our ongoing development.

Vygotsky`s thoughts were similar to Piaget's despite the fact that his work was originating in Russia. Once translated his works became very influential and formed what we know as social constructivism. Main idea contrary to Piaget was the role of society in the human development. Piaget's theory focused much more on the individual while Vygotksy focused on the interaction between the individual and surrounding society. From this interaction knowledge is constructed. Central element in this interaction is `More knowledgeable other`. This person, wether it is a peer or parent or a teacher, possesses more knowledge than the learner and by interacting with the more knowledgeable other, knowledge is

constructed. By directly applying this to an interaction between the student researcher and an interviewee, we can see that knowledge construction is happening in such setting.

In pedagogy Constructivism can be seen quite clearly inside Nordic education system with its emphasis on dialogue, teamwork as well as independent work focused on framing problems and seeking answers without predefined right or wrong.

2.3 Method

The next question is the choice of proper method for qualitative research. Looking again at my level of understanding and knowledge about multi-stakeholder co-creation and the role of salience, most suitable method would be inductive in nature rather than deductive. Fitting with this criteria is the Grounded Theory Method developed by Glaser and Strauss in 1967. The purpose of Grounded Theory Method is to discover and formulate a theory *grounded* in data. Grounded theorists approach their research without hypothesis, but with an open question „What is going on?" (Bryant and Charmaz 2011; Glaser and Strauss 2009) . The reason for such open inquiry is to avoid "forcing" the data to fit *a priori* theoretical lens adopted by the researcher and to enable the data to speak for itself, so that theory grounded in data can emerge (Glaser and Strauss 2009)

Constant comparison is a method developed by Glaser and Strauss which enables the researcher to immerse himself in the data and look for patterns emerging from the data instead of verifying a theory chosen before. GTM focuses on fragmenting qualitative data by analysis and constant comparison but its not strictly limited to qualitative data. Glaser's background was actually in quantitative methods. Grounded theory gathers and processes data simultaneously with ongoing data collection. This allows for flexible research design, which is necessary as the researcher does not know what is going to be found out. This flexible choice of research participants as well as variety of secondary data is called theoretical sampling. It is used to saturate emerging categories, i.e. groups of codes which are constantly emerging from data.

The first stage starts with open or line by line coding. It is a free process and *in vivo* coding is encouraged. Crucial part is to let the data speak for themselves and not impose predefined coding schemes onto the data is it will inhibit the process of emergence.

Second stage is substantive coding. In this phase codes can start to be elevated to categories and constantly compared with data to check if they fit with the data, not with the theory.

At this stage theoretical sampling is initiated to gather data which can help saturate categories and their properties.

While these coding and collecting phases are ongoing, the researcher is memoing ceaselessly. Memo is a thought process which tries to connect substantive categories together and find their underlying process. Reading literature in other fields can help the researcher to develop theoretical sensitivity which enables the last part of the process, theoretical sampling.

After initial data gathering and analysis thanks to line by line coding and constant comparison of data, categories start to emerge from the data. To proceed with these categories and their richness, more data has to be gathered. Theoretical sampling directs the researcher to select sources for empirical data collection while the process of analysis is still ongoing. This is crucial not only for continuous development of emerging theory but also for constant comparison of emerging theory against new data. Some concepts and categories will not survive such process for variety of reasons which are also important.

When data collection is completed, i.e. when data is saturated, theoretical coding can start by sorting memos and and again checking if they relate to the data. It is at this point when the researcher can start to read relevant literature to the field of research and see if it can enhance emerging theory.

This is difficult and time consuming process.

The use of grounded theory is not suggested for novice researchers and research projects under time constraints. In the literature on Grounded Theory, usually a distinction between Classical or Glasserian and Straussian Grounded Theory is made. Strauss later produced works together with Corbin where they developed sort of a "cook book" where they designed specific methods which would allow larger public to use Grounded Theory. Glasser stayed quite conservative in his approach and called this new approach not Grounded Theory but Qualitative Data Analysis. It is important to note that there is quite a strict divide in the literature and Glasserian GT is considered more difficult than Straussian.

2.4 Data type and data collection

To design a scientific inquiry about a complex social process of multi-stakeholder co-creation, qualitative data seems naturally as the best choice. Main reason for such choice is my level of knowledge about this topic and understanding of my own limits. As a student without prior empirical experience of University governance, it would be almost impossible to compose a quantitative data collection method and analysis which would take into account all the nuances of the role of salience in multi-stakeholder co-creation. Quantification and consequent verification or falsification of such phenomenon without deep understanding of social actors and social actions involved in multi-stakeholder co-creation could lead to critical flaws in research strategy and design and yield irrelevant, skewed results.

2.4.1 The use of literature review in Grounded Theory

There is a vocal critique that Glaser and Strauss were very well versed in theoretical concepts and literature before publishing Grounded Theory Method, thus omitting their own skill involvement. Even though Grounded Theorists should not extensively read literature before they start to research their particular area of interest, such statement, or advice can be seen in contrast with "Everything is data." mantra proposed by Glaser and Strauss.
It is practically impossible for a student of management science to research science and not be "contaminated" by management theories. Later practitioners of Grounded Theory Method rejected the idea of *tabula rasa* state of mind and called for making prior knowledge of a researcher explicit rather than implicit, because stating current and previous assumptions, values and attitudes before and throughout conducting research helps the researcher to achieve theoretical sensitivity. This misinterpretations was actually addressed already in Glaser and Strauss 1967 in a footnote.

Similarly, reviewing literature before commencing data collection, analysis and coding can enhance such procedures if one is aware of how such knowledge can influence his or hers research. It is also a necessity, as current research and academic environment demands prior literature research before the start of field work, or advancing into a research career such as PhD studies. Recent development by Thornberg (Thornberg 2012) calls for literature review before commencing a GT research project for a variety of reasons. Therefore literature review is included.

2.4.2 Primary data collection

The first interview conducted was with a line-coordinator of Strategic Design & Entrepreneurship programme Stine Teilmann Lock. While I haven't gathered primary data from KADK sources, I was able to access the KADK quality assurance handbook which contained more than enough information about management and organisation at KADK. Strategic Design & Entrepreneurship is a joint programme made in collaboration between Copenhagen Business School and The Royal Academy of Fine Arts.

Second interview was made with Markus Nordberg who is leading innovation hub IdeaSquare at CERN. IdeaSquare is a prototyping and a project based teaching space. CERN Idea Square is not a teaching university it develops programmes such as Challenge Based Innovation which is based on solving big challenges related to UN Sustainable Development Goals by applying CERN technologies. CERN CBI is part of a Design Factory Global Network consisting of innovation hubs and labs across the globe. These Design Factories share similar vision and mission of multi-disciplinary project based education in which students from various backgrounds work together on solving real life problems often in direct contact with industry members. In this case, CERN as an organisation plays a crucial role in shaping the form of such co-creative activities by involving CERN technology and scientists as well as open science and open innovation ethos. Variety of universities are involved in this project.

Third interview was done with Marcela Acosta who is a part of Universities of the Future, a knowledge alliance project initiated and funded by the European Commission which brings together actors from a quadruple helix of institutions of higher education, public bodies, businesses and students. The purpose and aim of Universities of the Future project is to address the existing gap in current offer in higher education, identify and co-create innovative and multidisciplinary solutions which relate to challenges of Industry 4.0. This project can be considered as truly multi-stakeholder. Main partners coming from the higher education sector is Porto Polytechnika, Aalto University and Polytechnika Warszawska as well as student organisations, accreditation agencies and industry partners.

Final interview was done with Miikka J Lehtonen who started Nordic Rebels is a course in Design which originated as a challenge at International Design and Business Management programme at Aalto University. IDBM is a multi-disciplinary programme connecting students from variety of fields, mostly Design, Architecture, Business and Engineering, but other fields are not rare to see. Part of this programme is a practical application of design learning and thinking made as a challenge. Inspired by architecture, Universal Design for Learning on which Nordic Rebels are building has the user as a core component. Nordic Rebels cooperated with Student Innovation House in Copenhagen and won Danish Design Award in future of learning category.

3. Literature review

The following section puts forth two main theories which guided the research. Co-creation theory and Stakeholder theory. It is not an extensive review of the literature in this field. Following Grounded Theory Method I avoided prior literature review of the related field before commencing empirical data collection. However fragments of the literature were encountered and studied at university lessons thus it can not be fully avoided as it influenced not only my frame of mind when approaching this research but also practical considerations such as choosing and contacting people to gather interviews, constructing questions for participants as well as follow-up probes.

3.1 Stakeholder theory

Stakeholder theory is dealing with pragmatic and broad questions about value creation, trade and how to manage a business effectively (Freeman et al. 2010)
Exact classification of the term is difficult to pinpoint, although Freeman (2010:207) states that:

> "For Stanford Research Institute (SRI) thinkers, "stakeholder" referred to groups without whose support the organization would cease to exist (e.g. Stewart, Allen, and Cavender 1963)."

The main issue with such stakeholder classification was its breadth. Another broad definition is

> *"Any identifiable group or individual on which the organization is dependent for its continued survival." (Freeman and Reed 1983:91)*

Determining who a stakeholder actually is was attempted by many authors since than with variable degree of success (Mitchell, Agle, and Wood 1997). Various and sometimes contradicting descriptions of stakeholders in academic literature led to subsequent question Who and What Really Counts in increasingly complex stakeholder relationships? If multiple stakeholders and their claims should be taken into consideration by management when making a decision or planning an action than there is a highly probable situation that a conflict of interests arises.

This question is based on natural limits of managerial attention. When dealing with multitude of stakeholders, salience describes "*the degree to which managers give priority to competing stakeholder claims.*" (Mitchell et al. 1997:869)
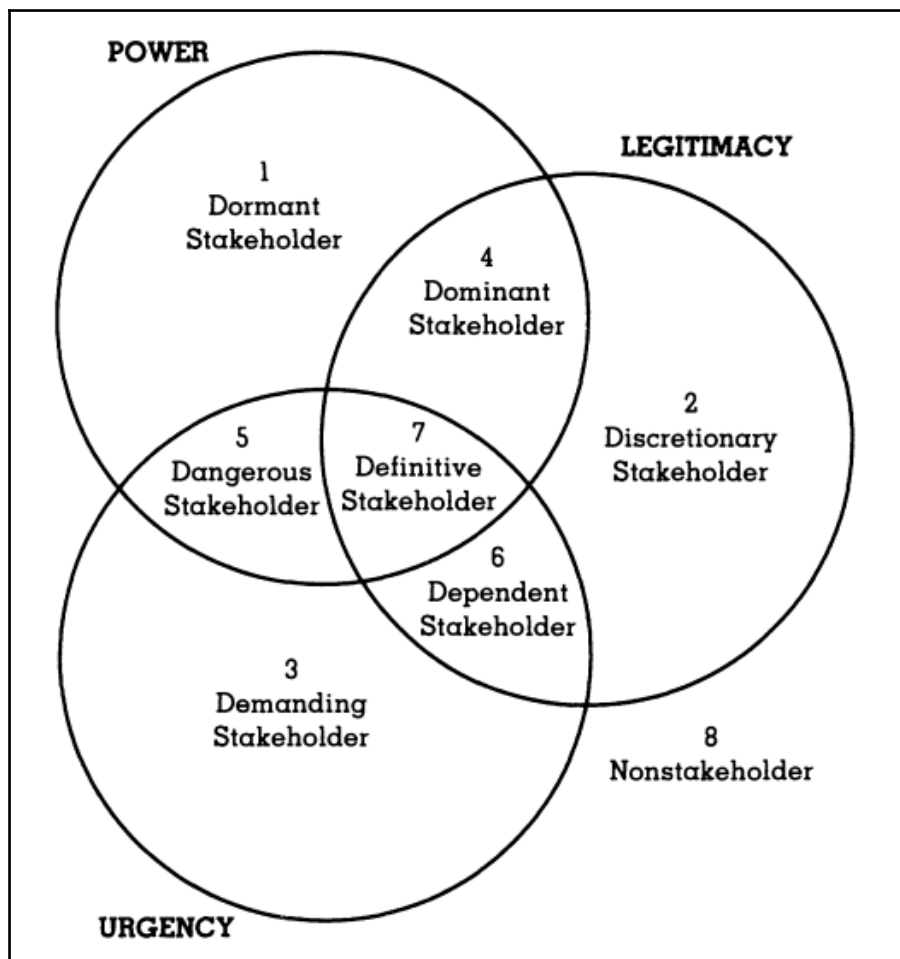
Stakeholder salience model (Mitchell et al. 1997)

Stakeholder salience is based on three main variables:

- Power meaning to which degree is a stakeholders claim able to influence other stakeholders, i.e. powerful stakeholders claim will be prioritised over stakeholders without or with less power.

- Legitimacy suggests that some interests or groups should encompasses moral considerations that extend beyond pursuing self-interest (Freeman et al. 2010) Combination of legitimacy and power can create authority, though it is not the only way how to achieve one.

- Urgency is the degree to which stakeholders claim will be perceived as demanding immediate action by management.

A stakeholder group may have legitimacy in its environment, if it doesn't poses power to influence the relationship or its claim is not perceived as urgent, it will not achieve salience for the firm's managers. These variables are interconnected and overlapping, creating several stakeholder typologies. Basic premise is that the more combined variables stakeholder possess, the higher is its salience.

The question of, to whom the firm has obligations to, might be more important in some context than in others. There are natural limits to firm's resources and abilities. Stakeholder theory does not claim that a company has duties to all stakeholders. Some will naturally be more important than others.

The distinction between stakeholder and shareholder also resonated through academic literature. Attempts for such distinction between shareholder theory and stakeholder theory argued that based on ideas of a free society, a firm's objective is to maximize profits. This is orchestrated by managers for shareholders and is often seen as egoistic behaviour. Freeman (2010) responded that the debate is misguided. The shareholders and stakeholders divide frames the discussion where business and ethics are seen as two conflicting singulars.

"Stakeholder theory is not one view of the firm, but an invitation to a conversation that forces managers and the public to examine together two questions that have both ethics and business thoroughly embedded in them: "what is the purpose of the corporation?" and "to whom are managers responsible?" (Freeman et al. 2010:206)

3.2 Policy perspectives

In 2012, Thomas, Thomas and Wilson published a research looking specifically at Business School Stakeholders. Majority of interviewees identified *Students* as the top two key stakeholder group, however the research shows the importance of this stakeholder group is dependent on the type of students. Whether these students are following an executive education or they are undergraduate or post-graduate plays a role in how are they perceived. Contrasting was the finding that *Faculty* is considered as the most influential stakeholder, leading authors to describe two separate perspectives, the supply-driven and demand-driven.

The supply-driven perspective puts the faculty into the centre of decision making when determining what is taught to students and areas of research pursued. Institutional factors, employment conditions and preferences shape these decisions. Demand-driven perspective includes earlier mentioned students and businesses as the ultimate consumer. Specifically business have an influence on what is taught as

they are demanding employable graduates possessing required skills It has to be taken into consideration that this research has been done in an American context, where Higher Education Institutions are privately funded, mostly from student fees.

The situation in Europe and in Scandinavia is quite opposite. In the EU context, government and the supra-national institutions shape the education sector with EU wide as well as national legislation. Currently the EU is trying to shift into the realm of knowledge economy and strengthen its position on the global market for higher education, mainly by two key integration efforts, the Bologna Declaration and Lisbon Strategy (Maassen and Stensaker 2011). Degree structure became standardised, allowing mobility of students between member states, and curricula now contain learning objectives with overall emphasis on competences and employability of future graduates. Such policies were targeting Higher Education Institutions, research and science already for an extended period of time, but with growth and massification of Higher Education, they increased in scope and scale. Interesting is the fact that US Higher Education served as a benchmark for European institutions drafting these supra-national policies (Pinheiro et al. 2019:3).

Efforts to transfer Europe to knowledge economy increases pressure on Higher Education Institutions to deliver skilled labour force as well research to national and regional environments. Business schools are subject to increased scrutiny for accountability of their actions, quality and performance of teaching and research, all under the umbrella of New Public Management (Pinheiro et al. 2019).Such policies brought into public organisation various systems of checks and balance mechanisms paired with metrics aimed at fulfilling key performance indicators as well as total quality management, and creation of internal markets. For a whole Higher Education Institution, poor outcomes in KPI and quality can lead to reduced funding.

Important mechanism for evaluation of quality in Higher Education are student evaluations. Two key factors are measured. Evaluation of teaching and graduate employability. While students themselves reported that one of the main reasons to enter higher education is employment (EU Barometer 2009) and the term employability is commonly used in the EU policy papers, its definition kept changing through various drafts and communiques. Ongoing massification of Higher Education creates a situation where graduates compete for job positions which were once the domain of non-graduates. Such filtering-down effects are wide spread across the EU and the US to a point where: "Obtaining a

degree has become not so much a matter of improving one's human capital, but a necessary move in a game of positional competition." (Lauder and Mayhew 2020:3)

Employability is not employment, yet the predominant way of measuring it, is scoring a job. This leads to tailoring the education to fit current economic needs of the society. Such approach tends diminish efforts of successful universities and often reflects a larger socioeconomic environment. An example can be seen in the situation of Greece which has high unemployment rates of graduates yet it is hardly the fault of the education system alone (Vuksanović et al. 2014).

Students evaluation of teaching is another important indicator of performance used by universities as well as policy makers. The issue is that it is often influenced by variety of factors such as the teachers charisma or environment (Shevlin et al. 2000). Widely used quantitative measurement of learning and teaching in form of student surveys is de-contextualised Standardised quantitative measures prove to be insufficient in reflecting students abilities and acquired knowledge. Similarly to employability, learning is difficult to be measured in a predefined way containing generic questions in a survey. These data can cause misinformation for management who are using them to support decision making if not used in conjunction with other forms (Nygaard and Belluigi 2011)

3.3 Co-Creation & Curriculum

In 2004 Vargo and Lusch published their article about Service Dominant logic which argued that Customer is Always a Co-producer of Value (Vargo and Lusch 2004), however in 2006 they refined their proposal to, Customer is Always a C*o-creator* of Value. Authors specifically addressed two important concepts of value co-creation. One, that value can only be created with and determined by the user in the process of 'consumption' and second, that co-creation of value involves participation in the core service offering itself (Lusch and Vargo 2006:284).

With multiple stakeholders involved in education sector a stakeholder perspective of co-creation was proposed by Frow and Payne who proposed co-creating value propositions with each stakeholder group. Involving all stakeholders requires extensive communication and knowledge sharing. This is achieved through trust, learning and adaptation. Service Dominant logic supports this view recognizing that knowledge sharing is an essential process (Frow and Payne 2011).

Complementary to this view is a definition of co-creation as a process of collective creativity which developed from a traditional view of a company and customer interaction to include a diverse mix of actors, e.g management, employees, customers or public sector (Ekman et al. 2017).

Often education co-creation is initiated by the institutional entrepreneur who is on the forefront of curriculum innovation. These individuals often are programme directors but not necessarily. Institutional entrepreneurs have to time their innovation, persuade and 'sell' new ideas to top management, students and other stakeholders (Bislev, Ravn, and Nilsson 2011; Tackney et al. 2017a). At the same time they have to be able to view their surrounding environment to discover possibilities.

> *"Institutional entrepreneurs are those individuals underlying the emergence of new institutional entities"* (Tackney et al. 2017b:28)

Collaboration, co-design or co-production are all mechanisms of co-creation (Saarijärvi 2012). In collaborative curriculum development what is being taught and how, is based on a complex multi-stakeholder network of relationships. Such phenomenon is not new, but scantly researched. It was framed in 1996 and 2001 by Deketelaere and Kelchtermans; Oliver and Hyun respectively. Alexander and Hjortsø (2019) expand on this stream by identifying "participatory curriculum development" as a

> *"processes that include a broader range of stakeholders that brings together teachers, subject experts, and education planners, as well as students, public and private employers, and policy-makers"* (Alexander and Hjortsø 2019:302)

Various Higher Education Institutions already test and implement modes of active co-creation of curriculum. At University of Technology Sydney, SaP or Students as Partners approach was used to co-create a trans-disciplinary undergraduate programme Creative Intelligence and Innovation (Baumber et al. 2020). In University of Tokyo, students participate in knowledge co-creation and social experiments is sustainability studies (Trencher, Terada, and Yarime 2015).

4. Data presentation

All the main stakeholders identified in the literature review chapter are involved in co-creative activities. By constantly comparing primary as well as secondary data gathered from these sources, two emerging categories were identified: **Network** and **Signal**. These two categories are complementary and it would bring confusion into the data presentation if these would be taken separately, thus they will be highlighted and their properties will be described as they emerged from the data but more elaborate description of these categorise will be presented in Chapter 5.

4.1 Public Bodies

Denmark

The work of Danish Disruption council and consequent follow up of the Danish Government sent a strong signal to all educational institutions by formally agreeing on a shift towards the university degree programmes of tomorrow (The Ministry of Employment and Danish Disruption Council 2019). All political parties were involved together with numerous representatives from the industry, public bodies as well as academia. Main focus of this agreement is to ensure flexible and excellent education system, a high academic level and strong competences for the labour market of the future. In March 2018, the Government presented the following three objectives:

1) *High academic level and significant learning outcomes that foster motivation, knowledge and critical thinking.*

2) *Close links between the higher education programmes and society's current and future competence needs.*

3) *A well-educated population with many years in the labour market.*

(The Ministry of Employment and Danish Disruption Council 2019)

Finland

Similar initiatives are happening in Finland. The Future Review on Education published by the Ministry of Education and Culture mentions that despite the Finnish system of education being excellent, there are signs indicating a lack of trust in the system. The system responds too slowly to changes in the future of work (Universities of the Future 2018). If Finland wants to keep up with the quality of public services, employment rate and productivity, it needs to have a society with high levels of education capable of harnessing creativity. One of the ways proposed by the Finnish Ministry of Education and Culture is life-wide learning, in other words learning that happens throughout life and in different contexts. Proposed initiatives are among others:

1) *Reforming funding models of adult education.*

2) *Creating more student-focused individual study paths and flexible education.*

3) *Reacting faster to changes in the environment by working together with employers and recognizing informal learning.*

(Universities of the Future 2018)

In both Finland and Denmark, Higher Education Institutions are bound by a contract between them and their respective ministry outlining performance and objectives to meet national requirements (Act on Universities 2011; Melin et al. 2015). Universities do have a limited leeway when entering this contract and there is a discussion between the ministry and university. This procedure can be viewed as a co-creative activity, even though severely limited. Finnish legislation is different, however with the high level of policy convergence observable, it can be assumed that similar structures are in place.

The Danish Act on Universities specifies rules of governance for Higher Education Institutions by establishing multi-stakeholder board at the top management level. This board is by default composed from a majority of external members.

At the operational level, Act on Universities (2011) established employer panels and study boards. Employer panel advises on labour market, skill development and in other areas of transfer to work life. Study boards are composed of equal amount of students and teaching/academic/administration staff and are responsible for development of programmes, proposals and amends to curricula and follow up upon student evaluation of teaching.

Legislation can be considered as a strong signal coming from a powerful stakeholder. In nations with systems of publicly funded education, government has also a legitimate stake as it is responsible to steer institutions of higher education towards benefiting the society as a whole.

Policy developments signalling shift in the education sector are not happening only in national but also in supra-national contexts. An example of such policy shift is the publicly funded Knowledge Alliance Project – Universities of the Future. When I had a conversation with Marcela, who represented this project, she said that objectives of the European Union were Collaboration and Internationalisation among a quadruple helix of stakeholders: public bodies, universities, students and industry (Appendix C). As is the case of national legislation requiring quality assurance from universities and other educational institutions, EU also has such requirements.

"...and there are minimum the requirements for for each result, for each thing, each output of the project. So there has to be a minimum amount of participants, there has to be and the reports they have to be evaluated by the European Commission. There are templates that need to be followed. So the official guidelines, they have to be standard and that they have to be as close as possible. So, and the marketing communications materials are basically always the same. Umm there are, yes, everything has to be um reported the hours that we are spending umm, yes, and that there's quite a lot of documentation that must be filled, for the project. "
(Marcela, Appendix C)

Administrative burdens are a common trait of quality control systems. These burdens are created mainly at the supra national and national level and as these get incorporated into the organisation, they take form of various internal rules and programme regulations.

While above mentioned stakeholders in form of government are powerful, legitimate and usually in close vicinity, these types of stakeholders are not the only ones who can send strong signals. United Nations Sustainable Development Goals are adopted across institutions of higher education. UN does not have direct power and control over national education frameworks yet is a global institution capable of acting as a stakeholder. UN Sustainable Development Goals can be considered as signals of high urgency.

The difference is that powerful and legitimate stakeholders send signals which are quite unavoidable. Legislation and funding schemes these stakeholders create will impact the organisation wether the organisation wants or not. Contrary, urgent signal can be chosen to adopt. It could be argued that environment and society can create pressure on organisations to conform with general attitudes, thus if the society deems signals such as UN Sustainable Development Goals important, organisations will tend to adopt and incorporate these. This was the case of CERN IdeaSquare as well as Nordic Rebels movement (Appendix B, D) (Lehtonen 2018)

4.2 Industry

Industry participation in co-creation of education can take many forms. Main responsibility of employer panels and advisory boards is to bring insights from the industry and the labour market closer to the university management predominantly but also to students of the particular programme. This happens mostly via annual meetings with the Institution of Higher Education and creation of reports about the state of the industry (KADK 2018). This reports is taken into the consideration when the study board is reviewing curricula. Both reports and personal meetings serve as ways for signal exchange. These signals are predominantly in qualitative format with lower frequency.

> *"...so at least one annual meeting with the advisory board and I sort of report to them about sort of how things are going and then try to get feedback from them and they talk about the labour market and things, discuss the input to us that's useful for our candidates…"*
> *"...well if corona didn't happen we would have an event where the advisory board would meet students and talk… serves as an eye opener for future work life." Stina (Appendix A)*

Another form of industry involvement is the expert panel assessment which happens every six years at The Royal Academy of Fine Arts. The purpose of this assessment is to bring new insights from a diverse mix of domestic and international educational experts from similar but also different types of education. These experts look at the curricula, key figures, graduates surveys, programme reports and a

specifically made SWOT analysis which pinpoints areas desired by KADK for these experts to look at. After the review, personal visit is planned and organised.
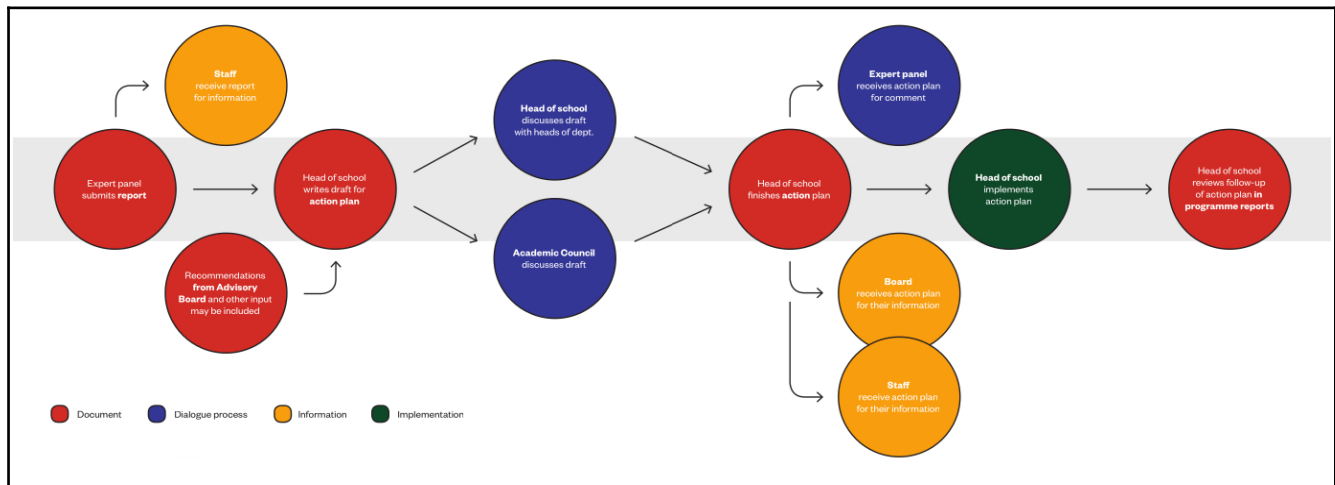
Implementation of Expert Panel Assessment (KADK 2018)

This visualisation not only demonstrates signal flow through a network, it also brings forward the necessity of signal coupling. Documents, written reports and statistics are essentially encoded signals (Shannon 1948).Without decoding the signal and its information content, there is a risk of corruption of information. Decoding is done by discussion among stakeholders as it helps to create shared understanding, uncover implicit meanings and reduce information asymmetry.

Companies are increasing involvement and co-creative activities with the institutions of higher education. Wether it's increasing company's knowledge base or raising chances of employing graduates with work experience gained at co-op projects, industry – university co-operation is seen as mutually beneficial and to an extent, boundaries between university and industry are getting more blurred. This is due to the fact that industry is orchestrating its own education in form of open access materials, open educational events and creating open learning spaces (Universities of the Future 2018).

At CERN IdeaSquare, involvement of the industry is done in two ways. An advisory board is also attached to the IdeaSquare organisation and provides advice and suggestions for further development of challenges and teaching methodology. Another form of industry involvement in co-creative activities is by direct participation in project based programmes and courses. Research groups and expert teams are connected with student teams in ongoing projects by active discussion, feedback and feed forward

interaction. CERN and co-operating universities are leveraging their resources such as knowledge base as well as network to bring industry members and students closer to the co-creative cluster which reduces node proximity and thus enhances network flow (Memo Markus, Appendix B).

Blurring boundaries between university and industry can also be seen from the course design perspective. Nordic Rebels movement designed a Service Minor for Aalto University students volunteering at SLUSH, Northern Europe's tech start-up expo. SLUSH is a student-driven non-for profit movement aimed at entrepreneurs. It grew from a small gathering to an event with global reach connecting entrepreneurs and investors. As it is student-driven event it uses volunteers extensively. A Service Minor by Nordic Rebels blurred the boundaries between university education and industry by designing a course specifically tailored for SLUSH volunteers. This minor was directly co-created with student volunteers and tailored specifically to their situation. For example, limiting factors for these volunteers were time pressure, hand out dates, practically applicable content as well as content delivery methods. All these pain points were taken into consideration (Lehtonen 2018)

4.3 Students

Students as a stakeholder group have a lot of power in Scandinavia.

> *"So from the beginning we do have students representatives coming to the kick off meeting and those student representatives are in this case members of AYY and the Board of European students of technology. So AYY is the Aalto students guild. And the interesting thing about this is that students in Finland they have a lot of, they have quite a bit of power. They have their own organizations, they have good finances and they are able to influence the university as well. So they are very well organised. And they are, they can even lobby the congress for their own interests as well." (Marcela, Appendix C)*

Their direct involvement in co-creation of education is achieved by network design, in other words students are able to send signals and participate in programme management. Organisations use different network designs. At CBS, this is done by establishing a quality board. Students representatives from a particular programme create a network cluster, i.e. a quality board which directly interacts with its respective study board. The quality board assures that voices of students are heard regarding general as

well as particular matters. Quite similar to quality board and its direct involvement in university governance in Denmark, students co-creating education at Universities of the Future Project were tasked to gather data and information from student focus groups which provided solid basis for understanding this stakeholder group.

> *"...they [student guilds] are also meant to organize some events to get the point of view of students so for example they will organize a focus group with 20 or 30 students in which they are meant to extract the experiences of the students and say, and try to communicate with us okay this is what they are seeing these are their worries, this is what they would like to see more, so we we include that in a report as it should be" (Marcela, Appendix C)*

Another way how students participate in education co-creation is via feedback mechanisms such as course evaluation, graduate surveys and other forms of quantitative signal format. After each course, students are encouraged to anonymously fill out a survey where they grade learning content, teaching method and their general satisfaction with the course. In abstract terms, a quantitative signal is heavily encoded, as feelings, attitudes and opinions are represented in numerical interval. This is important for subsequent decoding of such signals by programme management. Usual frequency of student evaluation is once per course which is at the end but mid term evaluations are not uncommon. Surveys are a prevalent method because they can harness a large amount of students and thus create a statistically significant sample. According to Stina, study boards will always take course evaluation into consideration when adjusting curricula, suggesting that it a strong signal. Student evaluation is circulated between the programme management and the study board. The processing of the course evaluation is done by a discussion within the study board and at CBS, quality board is usually present as well.

> *"We discuss it (course evaluation) among teachers and I'll sort of I will look at the evaluation, the study board will look at the evaluation and if anything make sense to be discussed than study board will go out to the teacher." Stina (Appendix A)*

A different path for processing course evaluation is done at KADK. The spatial layout and characteristic working environment where students and teachers share a common space enables a discussion of course evaluation directly between the teacher and students (KADK 2018). This might

seem as a minor adjustment, but from a network flow and signal decoding perspective it is quite significant. The reason is that when receiving encoded quantitative signals, noise can enter the signal and skew results which can in consequence distort perception of decision makers. Student-teacher discussion is than essential for decoding and eliminating noise in the signal.

Getting feedback is hard but very important as it was noted by Marcela. How the feedback is processed and what outputs are created based on student feedback can vary across institutions.

> *Usually when we gather the feedback that is implemented into our report which is produced later on but if I want to have immediate access to feedback let's say to the raw data, I can I can access it through the platform so that I know what are the issues and try to improve that in the future of course. But someone else will be doing the, the data analysis and reporting. That takes time but I don't need to see that, I need to I need to see the raw data. (Marcela, Appendix C)*

When discussing course evaluations with Miikka J. Lehtonen (Appendix D), he mentioned that people with experience are capable of understanding what is behind the numbers, i.e the numerical representation of course evaluation, but adjusting the course can not be done by numbers alone. The reason for success of Nordic Rebels movement was among others, its learner centric design. Students were the dominant stakeholder in designing the course mainly thanks to weekly feedback sessions in which they communicated what was going well and what not. Insights from these feedback sessions were immediately incorporated into the upcoming weeks and transparently communicated back to students so they could see that their feedback is valuable to the instructors. In addition, various other formats of feedback beyond surveys and discussions were implemented such as reflection sessions where at the end all the participants talked about how the course affected them as well as visual learning diary. All these information were recorded and used for the next iteration of the course (Lehtonen 2018).

At CERN IdeaSquare, main vehicle for co-creation of education is feedback mechanism as well as discussion. Student involvement in co-creation of curricula is done by direct interaction with the teacher team and the industry members. Student teams are filling out surveys and having interviews with general as well as specific questions designed to inform programme management about their

attitudes before and after successful project. The aim of these questions is to inform the teacher team about which challenges are better suited for student teams to take on, areas for innovation or skills development (Memo Markus Appendix B).
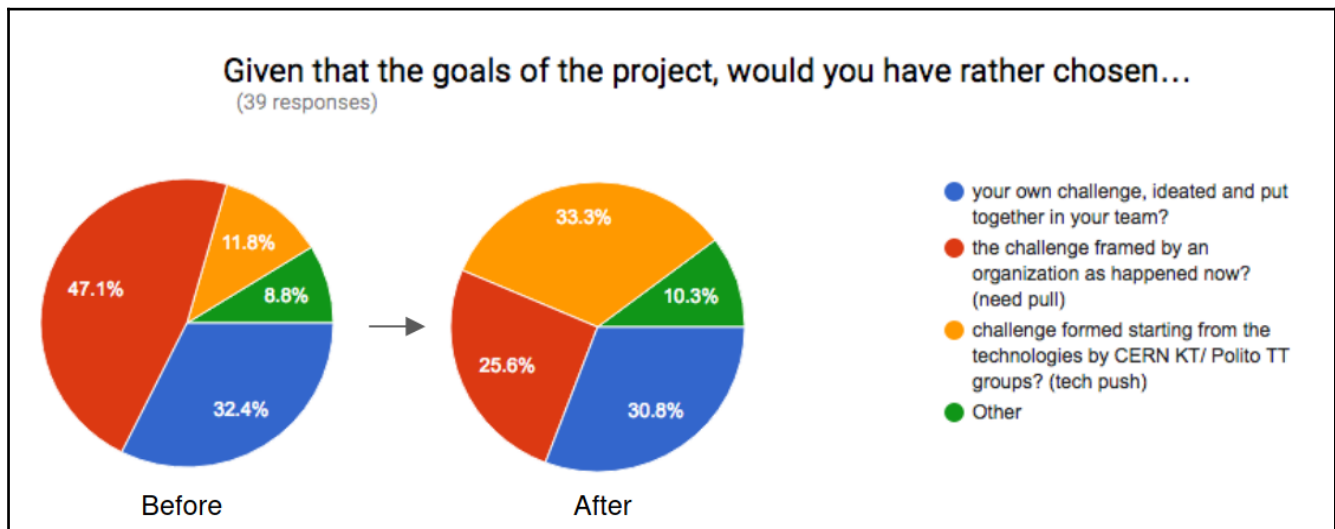
Example of question in a questionnaire used at CERN IdeaSquare

Quantitative signals alone are difficult to comprehend and qualitative elaboration is necessary. This again points out the need for signal coupling – connecting qualitative and quantitative signals together. It also implies that quantitative signals are encoded and a decoding has to be used.

4.4 Higher Education Institutions

The above section explored main influence of powerful and legitimate stakeholders on institutions of higher education. The need for involvement of students and industry in co-creation of education is widely acknowledged and legal steps for ensuring participation of these stakeholders, in the Scandinavian context, have been made.

Organisations create their own structures and develop their own and sometimes unique ways of working. How stakeholders interact and co-create curricula inside the organisation is dependent on the organisational structure. This structure creates stakeholder networks which can have a significant impact on co-creative outputs. Crucial is the flow of signals through the network, how and when it reaches the decision makers.
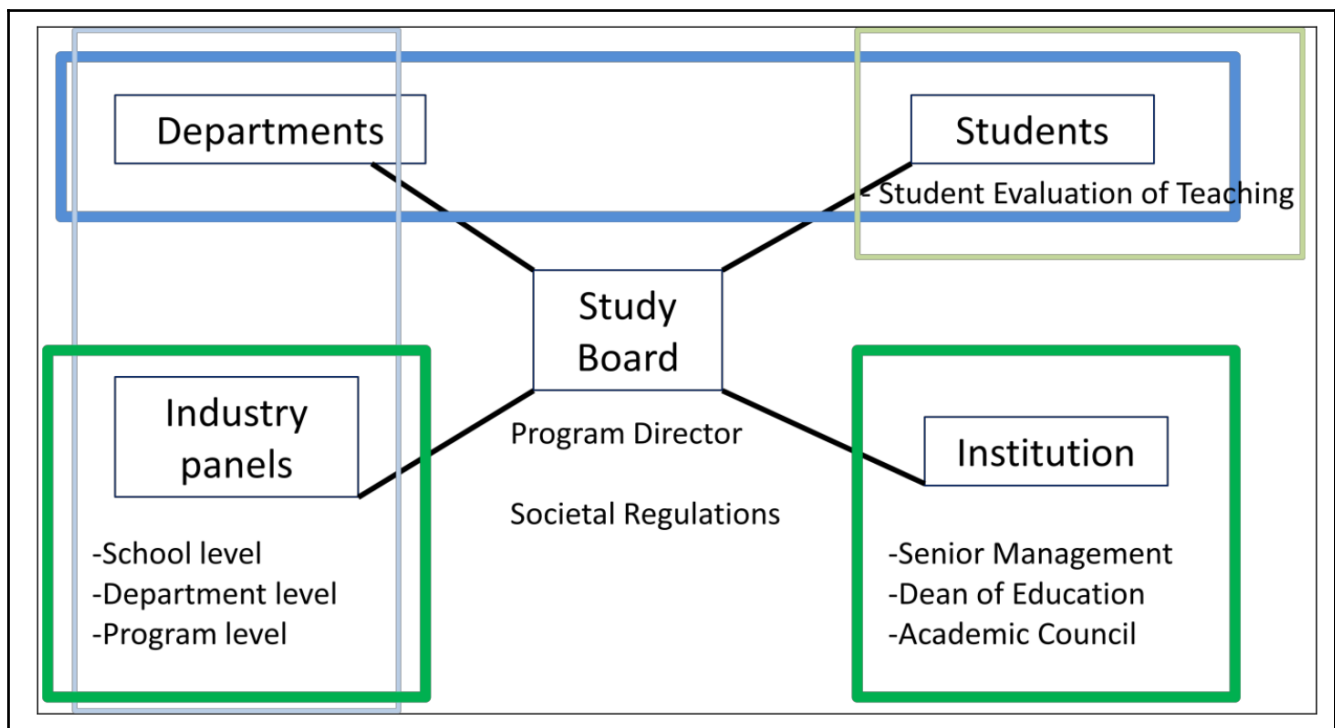
CBS Study board model (Bislev et al. 2011)

Study boards are a central part of University programme regulation in Denmark. As it was mentioned above, study boards are composed of equal number of students and teachers/administration/academics. The study board administers and regulates individual programmes. In addition there are other management roles, such as line-coordinator, programme manager, course coordinator, head of the programme and possibly others. These people can be part of a study board but not by default (Appendix A). At CBS, this creates a complex situation with circa 40 study boards comprised of approximately 150 people. According to Bislev et al. (2011) there are considerable advantages as well as drawbacks with this model of programme management.

One of the drawbacks is the issue of programme innovation. This decentralised model focuses attention of the study board more on day to day operations and challenges presented in the short run rather than long run considerations like transformation.

> *"The CBS experience is that initiatives to transform existing programs or develop new ones are often developed by individual faculty or groups of faculty with good ideas of potential market opportunities, sometimes based on surveys, sometimes inspired by new research agendas."*
> *(Bislev et al. 2011:7)*

In such case these decisions and curricula proposals are managed by the office of the Dean of education which supports and guides the innovation process.

Primary data supports this. When talking to Stina, a line-coordinator at Strategic Design & Entrepreneurship programme, she said that the curriculum was designed collaboratively between Trine Bille from CBS and Mathide Akaborg from the Design School (Appendix A).

It is important to note that the Strategic Design & Entrepreneurship programme was launched in 2018, which correlates with the work of Danish Disruption council and subsequent governmental follow-up (see above). The reader can start to visualize how strong signals emitted by powerful and legitimate stakeholders, in this case a call for increased collaboration between institutions, are received, processed and acted upon by institutional entrepreneurs.

Co-creation has to start somewhere and usually creative ideas do not come from brainstorming sessions. Creating and co-creating curricula is a complex process requiring flow of information. Early phases of Universities of the Future project involved extensive research and benchmarking on necessary skills and competencies for Industry 4.0 around which their pilot curriculum could be built (Universities of the Future 2018).

Before a curriculum is put in place it has to be approved. This usually happens higher up in the organisation. Marcela described such situation when she said that after Universities of the Future developed their curriculum, it had to be approved by the European Commission which could refuse it, or propose changes to it (Appendix C).

When reviewing curricula and composing report for the top management, multiple sources of information are reviewed. The Study Committees' of The Royal Academy of Fine Arts use quite extensive data sets to review their curricula. These data sets contain:

- *The heads of school's programme report (prepared every two years) which considers, among other things (Graduate surveys, statistics on dropout rates and completion, employment and unemployment statistics)*
- *Teaching evaluations*
- *Statistics on test results*

- *Annual report from the Advisory Board*
- *Input from teachers and students, channelled via department meetings and department councils*
- *Input from study and career guidance office*
- *Annual report from the chairmanship of the body of external examiners*
- *The head of school's annual meeting with the chairmanship of the body of external examiners*
- *Recommendations from the latest external assessment of the programme (i.e. the programme assessment every six years)*

(KADK 2018:30)

All these data sets can be considered as signals. Qualitative as well as quantitative signals enter co-creative cluster across the organisation at different frequencies through different edges, send by variety of stakeholder nodes and clusters. Following visual representation illustrates how signals gathered at lower levels of organisation flow up and consequently get more condensed.
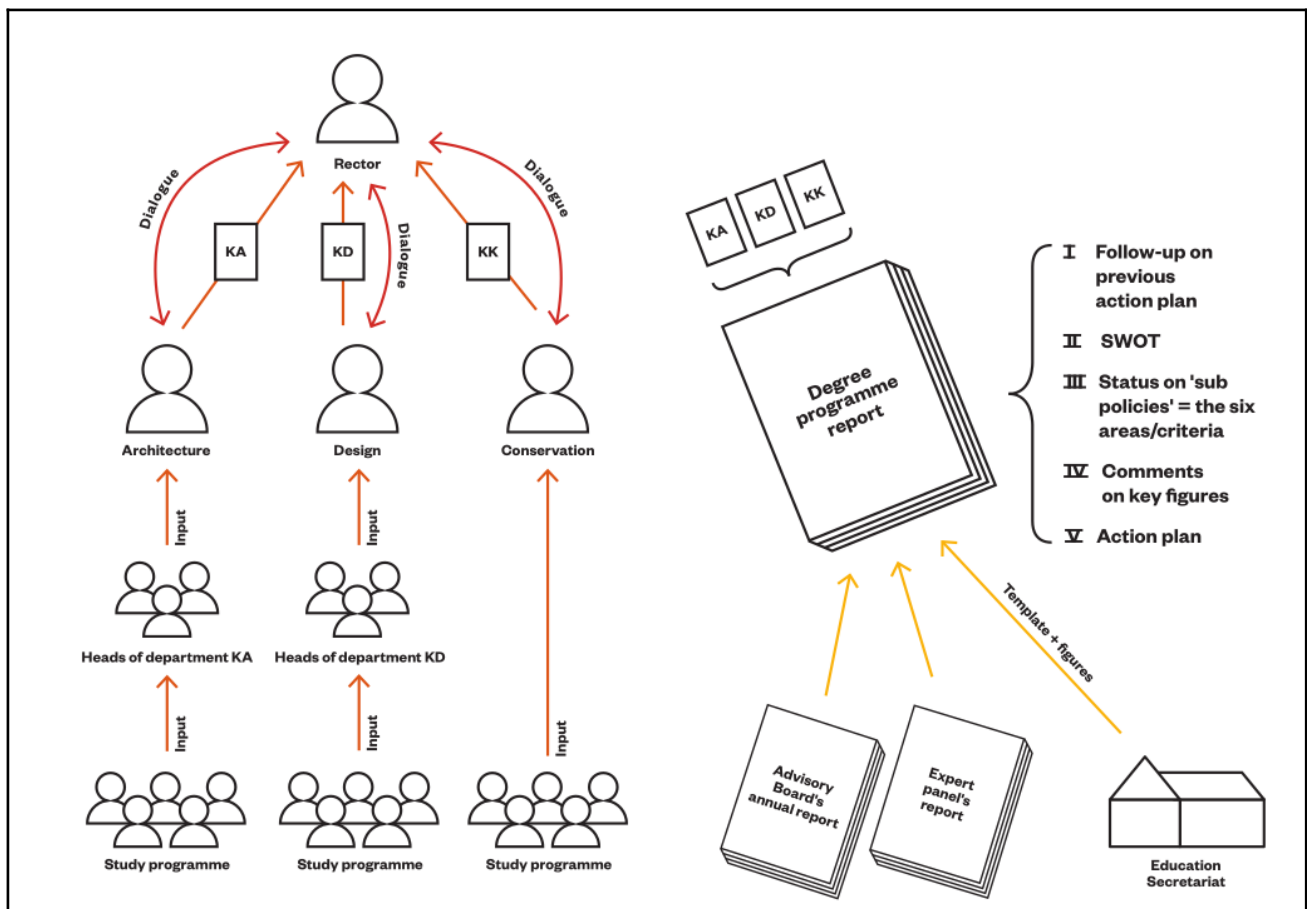
Process of creating a degree programme report at KADK (KADK 2018)

Organisations have their specific rules, practices and norms developed before they engage in curriculum co-creation. The situation is getting more complex as institutions create division among tasks and responsibilities by introducing various managing roles.

> *So the programme manager is on the administrative side and than I am on sort of the academic side. I am doing sort of the academic or the content of things … That would be for example the curricula, whatever, well anything that would do with the academic content of the course so as opposed to the administrative content. Stina (Appendix A)*

Such division can create conflict inside the organisation due to the variety of roles and responsibilities.

> *And especially because I had heard like, Well, I mean, there's like this classic tension between faculty and staff, like, you know, teaching and research side of universities and then administrative side and there's always going to be always clashing right? Miikaa (Appendix D)*

When Higher Education Institutions engage in co-creative activities together, they already have established rules and guidelines which they follow. They might be created by powerful stakeholders such as the supra-national institution and governments or these rules can be internal. Markus Nordberg who is leading IdeaSquare at CERN also mentioned in the interview organisational obstacles regarding different rule sets and frameworks. Each university has different rules and procedures, for example awarding ECTS, learning outcomes and so on (Memo Markus, Appendix B).

Such rules are hard to avoid or bypass. All participants in this research stated that working across institutions brings administrative challenges. Whether it was on a course level, i.e enrolling students from different universities as was in the case of Nordic Rebels and IdeaSquare Challenge Based Innovation. Or co-creating a whole programme as was the case in Universities of the Future and Strategic Design & Entrepreneurship programme. The quote below summarises this situation extremely well.

"For a maybe for each university it might be different, they have different guidelines to follow and so on so that has also been an interesting thing. The requirements of Portugal are different from the requirements in the Finnish University. So we try to. It's a kind of like a minimum common denominator, so if one university has a certain requirement, we all have to fulfill it cuz yeah that's how it has to be. So you have to look at what are the common requirements or the common challenges and try to standardize the curriculum so that it fits the requirements of the three universities." Marcella (Appendix C)

High demands on outputs and results from the main regulatory body are increasing co-creation complexity when different national or organisational rules and frameworks for education come into play.

5. Emerging categories

From above empirical data presentation certain categories started to emerge. The bigger picture suggests that all the salient stakeholders contribute to co-creation activities in different ways by different means. There are two categories emerging from data described above – Network and Signal. At this place it is appropriate to stop and illuminate as it is at this point where the emerging categories cross each other. The flow of signals is increasingly more complex and condensed. Variety of signals are gathered and are processed by regulatory bodies. These signals are coming from multitude of nodes and clusters in the network.

Both **Network** and **Signal** are well developed theoretical concepts used in multiple sub-fields of science such as Communication, Systems, Biology, Economics or Engineering.
And will be immensely helpful in bringing context to the underlying social process in multi-stakeholder co-creation.

5.1 Network

"Network theory refers to the mechanisms and processes that interact with network structures to yield certain outcomes for individuals or groups" (Borgatti and Halgin 2011:1168). For the purpose of this context, its social implications are important. Network theory in sociology is widely used and has its specific branch called Social Network Analysis (SNA). In order to apply Network Theory, its main concepts and terminology should be clarified first.

Network is composed of set of nodes or actors along with a set of edges or ties of specific type (such as working relationship or friendship) (Borgatti and Halgin 2011).

5.1.1 Node

Node is a fundamental unit of which networks are composed. Nodes can have many different names, such as vertices, points or actors (Mariani 2018). Nodes in the sense of multi-stakeholder co-creation are humans participating in co-creative activities. A student inside a class is a node. Member of a study board, quality board or an advisory board are all considered as nodes.

5.1.2 Cluster

Clusters are groups of nodes. If one student is a node, than the class of students can be considered a cluster. Clusters usually have a designated role, students, advisory boards, study boards or top management are all clusters of nodes with their respective roles.

5.1.3 Edge

Edge also can have different names such as *bridges or a ties.* Edge connects nodes and clusters. One node can have multiple edges connecting it with other nodes. These connections can be be weak or strong. And this depends on the network design. In some organisational or network designs connection between similar stakeholder groups will be different.

A student in a class is connected to a quality board via a stronger edge than to a study board because the student usually does not interact directly with a study board. Direct connection of nodes by edges are usually stronger than indirect connections. The strength or weakness of such connection is

dependent on node and cluster proximity. Distant nodes and clusters will have lesser options of affecting each other than close clusters and nodes.

5.1.4 Path

Paths are alternating sequences of edges and nodes designating how nodes are connected. The way how a report or results of a survey travels from node to another node and ends at is a path. Specific characteristic of a path is that a path can not travel through a node more than once. Special types of paths are walks and cycles which allow nodes to be visited multiple times or begin and end at the same node (Mariani 2018)

5.1.5 Network design

Network design, System design or Organisational design all refer to deliberate arrangement of nodes and clusters inside a network. How the information flows, between and through which nodes and clusters it travels, ss there a short path, a walk or a cycle? These considerations are all the domain of network design.

Social events with students, programme management and teachers were reported by each interview participant. These events can take a form of a kick off meeting (Appendix C) a final gala with project results presentation (Appendix B, C) or in an ad hoc manner (Appendix A).

An event with multiple stakeholders can be considered as a temporal network cluster. Temporal network clusters serve an important purpose as they bring each stakeholder closer together. Stakeholders have limited possibilities to interact between each other. On a day to day basis, stakeholder interaction is mostly limited to two stakeholder groups.

Student-Teacher, Teacher-Study Board or Study Board-Advisory Board interaction is common and thus edges or ties exist between them. A temporal network cluster enables nodes to create new edges between them which would not be possible otherwise. These connections are crucial as they can create shared understanding among stakeholders which enhances co-creation capabilities of the network. Thanks to these new connections, signals can be exchanged with increased efficiency They go outside of regular network design and exist for a limited time. It also allow for signals to travel in an

unrestricted way where encoders and decoders are not necessary and as such a cluster is almost noiseless.

5.2 Signal

Signal is a carrier of information (Shannon 1948). Wether implicit or explicit, information travels from one node to another node through network. For example student evaluations are forms of signal, but also written reports, focus groups and discussions among different stakeholders are also signals as well as legislation. All these forms of signals were reported by interview participants and secondary data. Signal can initiate co-creative activities among and between stakeholders. If student evaluations of courses are not positive this information is a signal initiating a discussion between the teacher and the co-creative cluster. Legislation sends a signal carrying information which proposes new initiatives for Higher Education Institutions and various stakeholders.
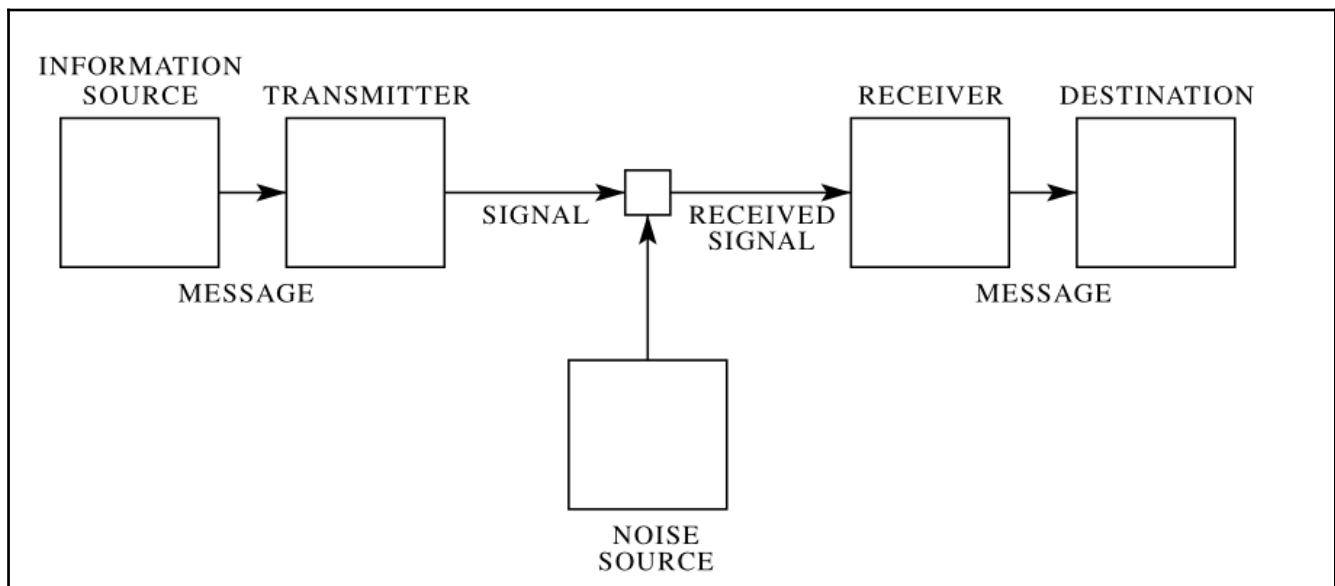
Schematic diagram of a general communication system (Shannon 1948)

5.2.1 Signal strength

Government initiatives bringing stakeholders together in order to co-create, as is the case of Universities of the Future, is a clear example of a strong signal. Establishment of the Danish Disruption council and consequent policy recommendations which were adopted by the Danish government are another example of a strong signal. It is natural that a powerful stakeholder will be able to emit strong signal. Other stakeholders are also able to send strong signals, such as the case of the expert curricula

review team visiting KADK. This report is taken into consideration when curriculum review is initiated by heads of schools together with other documents.

Contrary, weak signals usually come from stakeholders with less power. As it was mentioned above, student evaluation or advisory board reports are also signals but when compared to legislation, they can be considered weak. However, these signals are considered weak until a certain point or threshold. After reaching this threshold, weak signals can become strong. A single student complaining or praising specific element of teaching is a weak signal. Similarly, discussion with a single industry member can transmit only weak signal for initiating co-creative activities. The moment there is strength in numbers so to speak, signals grow in strength. In other words if a signal coming form a single student becomes a signal coming from half of the class, or numerous industry members sending signals for co-creation, co-creative activities are initiated.

5.2.2 Signal frequency

Every form of signal reported in the data presentation has its frequency. Student evaluations predominantly happen at the end of the course. Sometimes they are coupled with mid term evaluations. Advisory board meetings happen annually or as seen fit, reports from the advisory board members are in annual frequency, KADK initiates curricula review every 3 years.

Cases with increased signal frequency, e.g. weekly feedback sessions happening at Nordic Rebels course, or constant communication with the teacher team at CERN IdeaSquare showed that these frequent signals had high degree of strength. The signal coming from students was almost immediately incorporated into following sessions and method or forms of content delivery were adjusted.

5.2.3 Signal format

Quantitative and qualitative signal formats flow between stakeholders through networks. While quantitative signal format can harness large amount of stakeholders and build strength of the signal, qualitative signal format contains rich and nuanced information which often carry implicit meanings. Visual learning diary is one example. Numerical values describing satisfaction of students, or metrics from an industry are sometimes difficult to understand and often both these formats need to be

translated. Information theory uses the concept of encoding and decoding of the information for increasing communication capacity, reducing noise and information redundancy. (Shannon 1948)

That's why coupling is used to accompany quantitative signals with qualitative signals. Without a decoder, it is difficult to reconstruct an encoded signal. At KADK, after quantitative student evaluation survey is done, results are circulated back to students and a discussion between students and teachers is initiated. Such coupling of signal format shows that not only are these formats complementary, they are difficult to comprehend alone. At CBS, this decoding is enabled by a quality board which is composed from students directly coming from the particular programme.

5.2.4 Noise

This leads directly to a natural property of almost any transmission of signals, Noise.

Noise is simply a random signal entering the communication channel. It can be caused by many elements. In this specific case, en example of noise inside the signal would be irrelevant conditions taken into consideration in course evaluation, such as room temperature, lights, personal emotional status. These conditions which are affecting the student filling out the course evaluation are negatively or positively affecting the student and therefore can skew course evaluation results. Qualitative signal format can also carry noise. In this format, lobbying can become noise as it can distort receivers picture of the environment or state of the industry in question.

All these properties are interrelated. We can think of them as variables. If we change a specific variable inside the signal category, it will affect other variables composing a signal. This also means that tweaking and manipulating signal properties can deliver different signals.

The same applies for network properties. By changing network properties we can manipulate flow of information through the network either to enhance or to disrupt it. Adding or reducing nodes and clusters, changing paths to walks or cycles can have a significant impact on the flow of information and decision making processes.

As programmes and curricula are many in form and function, manipulating signal properties and network properties according to needs and desires of stakeholders involved can enable more effective communication and better identification of co-creative possibilities.

5.3 Control System

A regulatory body can not only initiate but also regulate and cease cease areas of co-creation. This interaction is happening at all levels of the organisation, so at tactical operational and strategic, or in different terminology, macro, mezzo and micro levels.

Whether it is a multi-national education project, or a university programme, in the beginning of any curricula it is the most powerful and legitimate stakeholders creating legal framework for education. This power is manifested by the ability to propose and delimit areas for educational co-creation, as well as approve changes to ongoing education or prototypes. In most cases this is done by the state and the supra national organisation such as the European Union.

These control and regulation measures branch out and down to reach and enter Higher Education Institutions through national legislation which subsequently creates various public bodies such as Accreditation Institution or Examination boards to serve as regulation bodies with designated functions.
Institutions than create their own internal control systems in forms of internal regulations and regulation bodies composed of groups of personal. As organisations grow larger, more regulation bodies are implemented to all levels of the organisation and decentralisation is necessary.
A chain of command is imposed connecting higher and lower levels of the organisation by gradually reducing power of the regulation body, i.e lower positioned regulation body can not over rule a body higher up in the chain of command.
In the conversation with Markus Nordberg (Appendix B), he mentioned that when he or industry participants see that student projects are not going in a good direction, he never goes to the students directly, rather he goes to the teacher team and asks them to adjust students process, which is a part of a command and control mechanism.

However such control does not have to be rigid. There are possibilities for manoeuvring at each level of the organisation. Strong signals coming from higher level regulatory bodies are then processed by

lower level regulatory bodies and co-creative activities can be initiated. Outputs of co-creation at the operational level such as curriculum proposals, are then sent for review higher up in the organisation. Curriculum proposals are than translated into competency profiles, learning objectives and learning outcomes essentially giving structure to programmes and courses.

> *"Yeah, when, for example when we developed the curriculum, the curriculum proposal was sent to the Commission and they approved it, or they can say of course, like no, or they can send it back to correct or something, but no it was approved." Marcela (Appendix C)*

This system is difficult to change from bottom up, but possible to manoeuvre. Co creative manoeuvring is than usually done by institutional entrepreneurs or by intermediaries who can navigate well in the complex system and gather signals from stakeholders to support their cause as was the case in the Universities of the Future project.

> *"And that's, that's interesting thing, take that into consideration for something to other people. Hey, so we've had different types of people and they are finding things in common. So it shouldn't be just like one person's opinion, it can bring enough people together and they are discussing and they are bringing up these topics, then, then we can present saying, well this is happening." Marcela (Appendix C)*
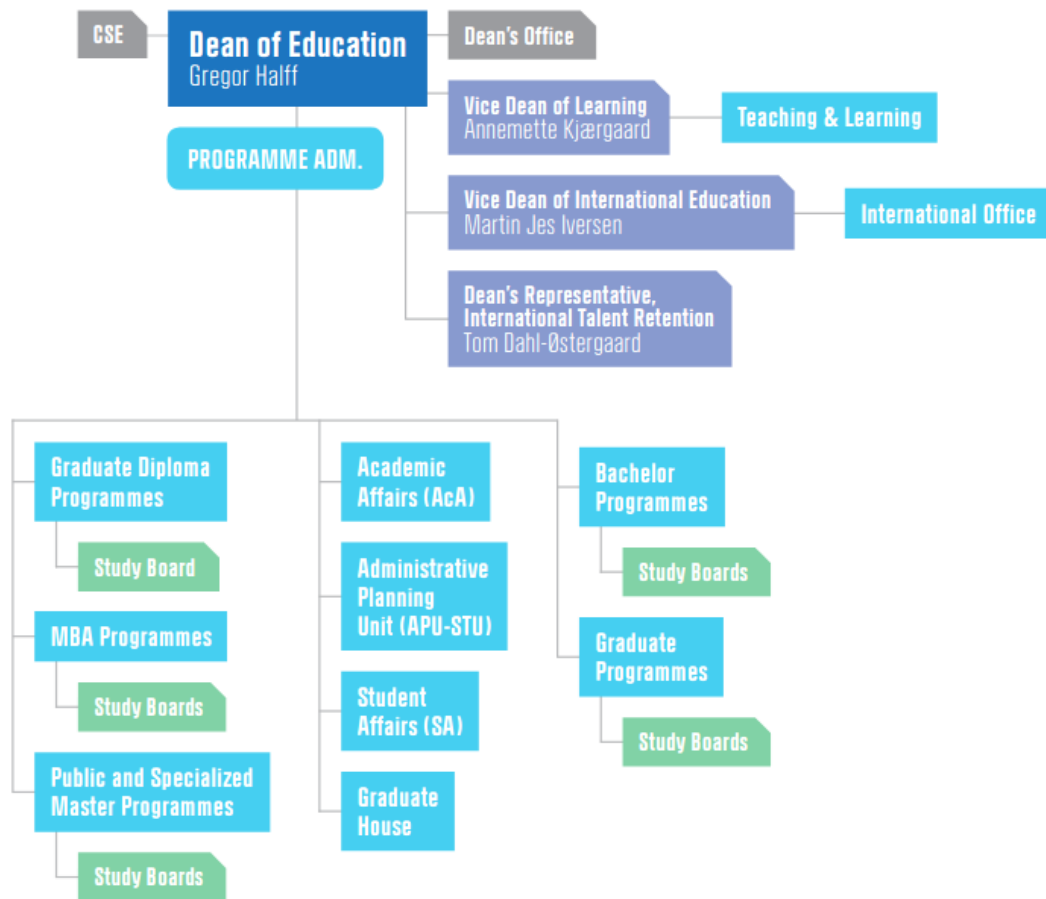
CBS Organisation structure illustrating the chain of command

6. Shifting Salience

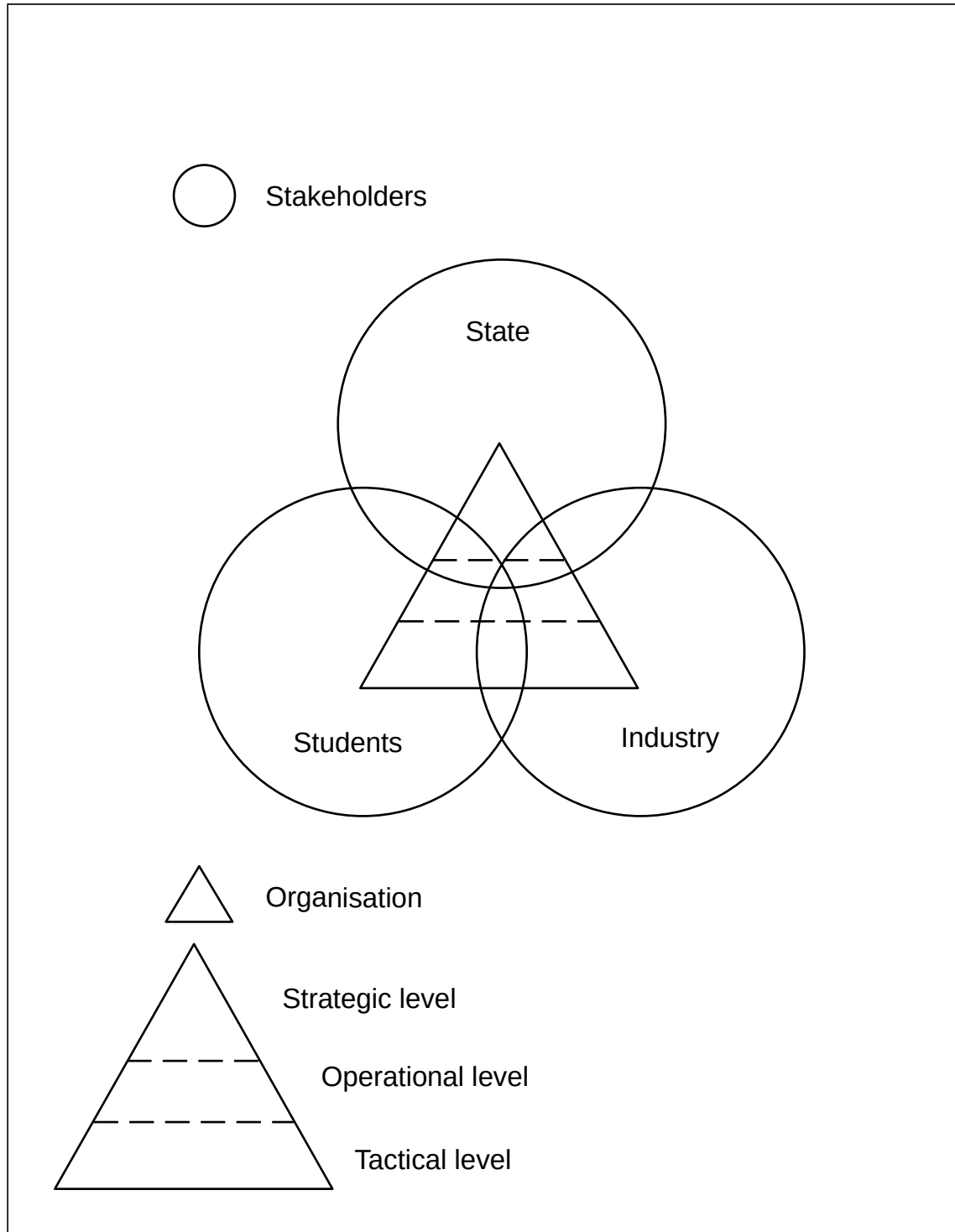## 6.1 Student-University Co-creation

Students and Universities in the Nordic context co-create at all three levels of the organisation. Most often is co-creation at the tactical level, in other words, shaping and changing course content, examination or teaching methods. At the operational level, elected student representatives are engaged in various co-creative clusters, such as the study boards of CBS or study committees at KADK where together with teachers and staff can change programme structures. Strategic level co-creation is also possible, but co-creation is limited due to increasing strength of signals emitted by the state as well as network design inside the organisation.

6.2 Industry-University Co-creation

Industry and Universities also co-create mostly on a tactical and operational level. On a tactical level, guest lectures, case competitions and course content introducing relevant skill sets for students to acquire are examples of such co-creative activities. At the operational level, advisory boards transferring signals to university staff about current state of affairs can enhance ongoing and future co-creative activities.

6.3 State-University Co-creation

In the Scandinavian context, universities enter a contract with the state which sets roles and responsibilities of each participant. Entering such contract can mean that there is a possibility of co-creative activities, however this level of interaction was not explored in depth. On the other hand, data from the Danish Disruption council suggest that public bodies and universities are engaged in mutual dialogue.

6.4 State-Students-Industry-University Co-creation

This area in the Shifting Salience diagram shows that it is the most restricted and difficult to manoeuvre for institutional entrepreneurs initiating co-creative activities. This is mostly caused by increased complexity of different stakeholder claims. Little amount of direct co-creation is happening

as direct stakeholder participation is substituted for signals which are used to enhance decision making of regulatory bodies. This also leads to higher probability of co-destruction as signals coming from non-present stakeholders might not be properly decoded due to decreased direct participation of stakeholders. In addition, the risk of failure is high which puts pressure on institutional entrepreneurs to choose between playing it safe or radically innovating.

> *"So that's one thing that you know, like if you don't have the space or if you don't have the freedom that can easily kind of challenge or like wear you out because when the thing is like, you know, when you push the envelope or when you try to kind of see how universities are, how learning would take place in universities. If you want to do it the old way, that doesn't take much energy, you can do it in a sloppy way. But when you want to do something different, you have to be super careful because if you fail, then like it's even though everyone says that, you know, like, let's fail fast and everything but you know, if you fail, then your career is on the line."Miikka (Appendix D)*

Yet this is the area where the co-creation is at the core of the organisation and can possibly lead to radical innovation, because from this point, signals emitted by the co-creative cluster have the shortest path to all stakeholder groups and are able to navigate through complex rule sets of the organisation to cross-pollinate ideas of other regulatory bodies on strategic as well as tactical level. The short path also reduces chances of noise in the signal as it is easier for various stakeholders to meet and talk, i.e couple quantitative signal formats with qualitative formats and decode.

In order for radical innovation to happen, stakeholders have to be allowed to directly participate. However direct participation is not enough. As these stakeholders are far away form their abstract core, they might lack information form their relevant stakeholder group which can again result in co-destruction rather than co-creation.

The extensive benchmarking done by the Universities of the Future project has identified universities as bridge builders which can bring closer companies, students, research and start-ups via various platforms and labs. The role of this intermediary can serve as place for finding a common ground.

"...you see a kind of common thread there, then you might think okay this suggests that, that, that there's a common topic here that maybe we should pay attention to this because it seems like the same things that are worrying the students are the same things are worrying the industry are the same thing that are worrying the public bodies. Might be that you find common things in there." Marcela (Appendix C)

When Miikka was trying to create Nordic Rebels challenge, which than won the Danish Design Award, he said following:

"...but it's more like you know, how can we make it happen in a way that we can create a precedence and that you know, when we do it, then it's easier afterwards. So we're gonna, you know, like, it's a bit of a Trojan horse. I'm, I'm fully conscious about that. But you know, once you do like the first time, then you can always refer, kind of refer back to it and say, like, you know, okay, this is how we gonna turn this into a practice, right? But then then there was also like, one thing that, you know, works especially well in the Finnish context, you know, just do and then ask for forgiveness afterwards." Miikka (Appendix D)

By establishing a co called "Trojan-horse" or a precedence, successful outcomes of radical as opposed to incremental innovation wedges the path for others to follow when struggling with similar obstacles. The crucial element is the temporal network cluster which can bring stakeholders close together, reduce node and cluster proximity and enable free flow of ideas.

7. Discussion

Based on the data gathered, it can be seen that not at every organisational level, all salient stakeholders are directly co-creating. Stakeholder salience is shifting based on where in the organisation co-creative activities happen and which stakeholders are directly connected to relative co-creative clusters. Introducing more stakeholders to co-creation activities limits the range and scope of results. As stakeholders are getting closer the core of the organisation, their salience is continually reduced.

On peripheries of the organisation, stakeholder salience is more prominent and signals are more frequent and stronger. As the number of co-creative clusters gets smaller, lower amount of different stakeholders is actually able to participate in co-creative activities. Direct participation of stakeholders is substituted for signals emitted by these stakeholder. However as these signals travelled through multiple clusters already, these signals are heavily encoded thus creating secondary noise, as recreating the original signal is impossible.

So at the tactical level, Student-University or University-Industry co-creation is common and "easy" to orchestrate as signals are strongest and closest, these signals don't have to travel through multiple-edges and there is a high probability of a walk, i.e the signal can travel back and forth between the sender and the receiver which eliminates noise.

It is natural that signal information cycles will have longer time lags or lower frequencies as the distance between senders and receivers of signals will be increased. Cycles with higher frequencies can enhance results of co-creative activities.

The power transition of co-creative clusters means that there is a more powerful co-creative cluster at the operational level than at the tactical level, these clusters need more signals to process which takes more time. However it is dependent on source (sender) frequencies.

When talking with Marcella (Appendix C) she said that the European commission had to approve the curricula, but reports made by UoF are for the commission to see. If she wanted to adjust the course, she wanted to look at the raw data. Miikka (Appendix D) confirmed this as well, he reads reports but interacts with students on a variety of qualitative signal formats and also looks at the raw data in order to initiate co-creative activities at the tactical level.

Top management and strategic level, we know that an external board is managing CBS. These board members are by default external and they have majority of vote, which is a control mechanism for ensuring market orientation, but also marketing orientation SOURCE. There are students involved but their role is not so significant as at the tactical level, with which the student interacts mostly.

Industry advisory boards are present across organisational levels however their designation is mostly advisory – this leads to the sink-source relationship (flow network) thus signals have limited possibility to flow outside and enhance industry student co-creation without university as a bridge builder.

As stakeholder participation in co-creative clusters spirals up and towards the core of the organisation it ads additional possibilities for conflicting stakeholder signals when entering the co-creative cluster.

Therefore two modes of co-creation are possible direct co-creation and indirect co-creation.

Indirect co-creation occurs where one or more stakeholders are not directly present, but signals emitted by these stakeholders enter co-creative clusters and shape co-creation activities. In the case of curriculum co-creation, there are different areas where stakeholders meet and co-create.

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Appendixes

Appendix A

Interview with Stina Teilmann Lock from CBS side of Strategic Design & Entrepreneurship programme

Dom

Thank you very much for talking to me, perhaps a bit of a refresh, I am researching curriculum co-creation and how multiple stakeholders engage in such a process.

Stina

Uhm yeah, that's what you wrote.

Dom

Can you tell me for the record, what are you doing at CBS?

Stina

Sure, I am line coordinator of a Masters programme Strategic Design and Entrepreneurship which is a collaboration between CBS and Royal Danish Academy of Art, the school of Design and Architecture. *Multi-disciplinary; node*

Dom

So this is a joint programme, two schools together...

Stina

That's right. Sure, yeah.

Dom

Can you perhaps tell a little bit more about the programme itself? I have red something on the CBS web pages but you might now much more than what is stated out there.

Stina

Sure, so people are recruited from, both, sort of both, well people, people with the background in architecture or design so people that meets in a sort of role tend, are recruited for this programme, and they have, so the teaching will be sort of class room teaching, in for example entrepreneurship, finance or IP Law and than there will be a lot of project work where students will be working with industry partners in solving or ... problems that can be sort of that can be solved with using the sort of skill set that they have from the course. *Practical application of curricula*
Stakeholder cooperation

Dom

If I am not mistaken, the course is newly open, it was launched recently, 2018, something like that.

Stina

That's right, yes that's right.

Dom

Have you been there form the start?

Stina

No I was, I am relatively new in this capacity, so I was made line coordinator in January this year
Node

Dom

Ahh okay, so umm, if I would ask for example how the initial curriculum was made, can you answer these question?

Stina

No actually I wasn't involved in that, so it was designed in a collaboration between Trine Bille and Mathide Akaborg, Trine Bille from CBS and Mathide Akaborg from the Design School.
Multi-disciplinary; Nodes

Dom

Yeah, and than afterwords this curriculum and the content of the programme were put in place and CBS started to and KADK started to recruit students, right?

Stina

Yeah that's right.

Dom

Hmm okay, So line coordinator, what does line coordinator do, because I know that there is programme manager, I know that there is a line coordinator and other kind of regulatory managing bodies involved in this.

Stina

So the programme manager is on the administrative side and than I am on sort of the academic side. I am doing sort of the academic or the content of things. *Node; Organisation/Network; Division*

Dom

Content of things, can you elaborate.

Stina

That would be for example the curricula, whatever, well anything that would do with the academic content of the course so as opposed to the administrative content; *Division*

Dom

Uhm, and are you involved in this alone as line coordinator or do you have partners, cooperators?

Stina

So there is me form the CBS and I have the counterpart at the design school, which is responsible for their end and than I suppose really is Trine Bille as the (receive?) chair of the study board, he is the sort

of the one, or I refer to her. *Node; Organisation/Network; Hierarchy/Power;Division;Edge (connection of nodes)*

Dom

Yeah. So where there for example curriculum changes proposed or perhaps better question is like, could you perhaps say a day in a life of a line coordinator, how does a regular day look like, what are your main responsibilities.

Stina

So I do things like when students seek dispensations for things I look at that, and I look at I sort of I have to ..or form of contract or Internship for example, I have to approve of that and we also do some curricula development based on feedback from students for example and the coordinators (are there as well), between ..... for example semester start meeting ...teachers of the programme... so that getting, insuring that teaching is aligned between faculty institutions and so on. *Practical application of curricula; Feedback/Signal*

Dom

Yeah, you mentioned curriculum development based on student feedback.

Stina

Uhm

Dom

How does this feedback get to you, and I suppose and your counterpart at the design schools.

Stina

So we have for example at CBS, we have a quality board with students members so they they actually refer to the study board here, but they organise meetings with the students and talk about teaching methods and whatever those practicalities, so that's one way of doing it, through the quality board. But also obviously there is course evaluation so we always, study board will always look at the course evaluation and see if anything need any action to be taken.

Nodes; Organisation/Network;

Feedback/Signal; (Signal) Processing/Cognition→{In}Action; Edge (connection of nodes);

Frequency; Mechanisms; Signal/Mechanism Strength(value,importance?)

Dom

And than once you receive such a feedback how do you process it, how do you make sense of it.

Stina

How do we make sense of feedback ?

Dom

Make sense and also work with that feedback.

Stina

We discuss it among teachers and Ill sort of I will look at the evaluation, the study board will look at the evaluation and if anything make sense to be discussed than study board will go out to the teacher.

(Signal) Processing/Cognition→Action; Hierarchy/Power;

Signal/Mechanism Strength(value,importance?)

Dom

You keep mentioning the study board. Are you not part of the study board as a line coordinator?

Stina

No, not by default and I could be, but I am not. I am a member of another study board as it happens, but not one where I am line coordinator so that's not, so yeah, not by default.

Network Design; Complexity

Dom

And as far as I know, the study board is composed people from the academic and the administrative side as well as students and perhaps a business members or people from the business part of the education.

Stina

We have something called, maybe I am, if got your question right. We have an advisory board but there are members of ..sort of representatives from industry. *Nodes; Organisation/Network*

Dom

And than the study board is entity on its own, with teachers, programme managers, people from the administration, people from the academia and students, is that correct ?

Stina

The study board ?

Dom

Yeah

Stina

Yeah that's right, so yeah. So Academic staff, administrators and students. *Network cluster; cluster of nodes as a co-creative element/body*

Dom

So how does these two boards interact, the study board and the advisory board, do you know ?

Stina

So actually I have I've been involved with the advisory board as line coordinator so I organise meetings, so, an kinda annual meeting so at least one annual meeting with the advisory board and I sort of report to them about sort of how things are going and then try to get feedback from them and they talk about the labour market and things, discuss the input to us that's useful for our candidates and than we do small ad hoc things like sort of, maybe social events, events were, we were going to, well if

corona didn't happen we would have an event where the advisory board would meet students in the programme and talk about their various ...serves as an eye opener for future work life.

Frequency;Edge (connection of nodes)

Temporal network cluster/nodes proximity (reduction); Knowledge transfer; Feedback/Signal; Employability

Dom

That sounds very good and I hope that after these times it's gonna happens because that sounds very transparent and very including and involving everybody in the whole process.

Have you experienced for example a conflict of interest.

Stina

In which sense ?

Dom

So for example the quality board was, it is a little bit difficult for me to express this because I am not so versed in the processes behind the scenes, but as, perhaps in a theoretical or academic or literature sense, there might be a conflict of interest between let's say the people from the industry have a specific let's say a vision or an idea or an agenda but for example students and the way of teaching is a little bit different. Is line coordinator like negotiating such things, or are these things actually happening or is everything very transparent and very conversation and a dialogue manner.

Stina

Uhm, I don't think based on what you said I don't think that I experienced a conflict of interest.

Dom

So when there is a proposed change for example, is there a mechanism, or there is like a voting mechanism, or is it based on as you said that you are referring to Trine, is there like a higher up echelon where decision are made?

Stina

Ummm, Short silence. Any curricula change, that would be the study board. They are the legal entity for that. *Hierarchy/Power; State/Law*

Short silence.

Dom

How often does the study board meet? Is this like their only main thing to do, the study board meet and they discuss curriculum changes or there is something more.

Stina

So the study board meets once a month. *Frequency;*

Longer silence.

Dom

About once a month.

Stina

Yes.

Dom

Is this happening in August, or it starts in September.

Stina

I think, I would expect they have a meeting in August.

Dom

Okay, if I would like to well at least listen to a study board meeting, is that possible?

Stina

Sigh, that's a good question. There will be, for sure there will be a part of it that is confidential. That involves application from students, but the rest of it, I actually don't know. I don't know what the rules are.

Dom

Could you perhaps suggest somebody who I can contact with regards to this ?

Stina

Mmm, you could probably talk to, let me see, that would be the secretary of the study board, so I think, I am not quite sure who knows, it would be someone in administration but I am not sure, let me think. You could ask Eva Gamborg Gron, if she doesn't know she might know who.

Dom

One or basically two more things I would like to ask kindly. Is that, could you give me a contact, if it's not a problem on your counter part at the design school.

Stina

umm yes, so that would, there is actual a new one right now, let me see, so there is a new one called Camilla ... she only got into the role, she is very new.

Dom

And last thing, is there something you would like to specifically address or ask me, or some closing remarks.

Stina

MMm I don' t think so.

Dom

Yeah, Perhaps a completely last question. <u>So what kind of challenges you feel in you line of work, do you thing you have any challenges.</u>

Stina

I think I am, sort of working across institutions becomes challenging and very interesting, it is definitely something, I mean it's a, there are many challenges associated with that.
working across institutions (in vivo)

Dom

Could you perhaps name one?

Stina

For example very different rules and very different practices
Network Design

Dom

From one kind of body to another kind of body, if I am getting it correctly?

Stina

Sure so, they have, the way you organise teaching at the design school is very different from the one organised at a business school.
Network Design

Dom

Great, I don't want to take more time than necessary....

Appendix B

Talking with Marcus, about how CBI creates courses and where signals to create such courses come from. And the conversation was pretty much simple in this case, because there is, of course, an external external influence. So first and foremost CBI takes United Nations Sustainable Development Goals as the main challenge. So for these sustainable goals, they try to create courses. What he told me was also that, it's pretty much based on Aalto design factory. So him in and Eetu from design factory are buddies, kinda and and they belong to the DFGN global network in thus whoever belongs to the network is basically connected with CERN CBI. I have couple of notes, which I wrote as a reflection after the conversation. So Markus was very clear that CBI is not a teaching university, that they provide space, they provide methodology, but, students have to come to courses with certain prerequisites. So, I actually see CBI is part of larger curriculum, students go their students prototype innovate, work on challenges and go back to their home universities to continue working.

When creating these courses, universities, meet up with people from CBI, like, Laura. And they create predefined learning objectives. Again working around Sustainable Development Goals. Their aim is to solve big challenges, because that's what CERN does. So we can see that there are two big influences. There is CERN and then there is the United Nations Sustainable Development Goals. Which are let's say main external influences. Then on the mezzo environment, schools from the DFGN network, or, or from some other network join with CBI and co create a programme. I wasn't able to get exact information on how this is happening. But it seems that a lot is, is dependent on the universities themselves. So, they have a lot of different rule sets a lot of different demands. It's also what Markus said, so there's plenty of these rule sets and barriers and borderlines and whatnot, what these schools have to adhere to. So, there is a clear concept of state as the most important stakeholder because if you do not adhere to basically a law or subsequent rules based on law, then you cannot really make anything happen. It has to be, it has to be according to rules, and the rules are created by higher management and state authority.

They use, he explicitly mentioned design thinking multiple times throughout the interview. So, and of course if CBI is similar to our Aalto design factory , then of course, the design thinking is main vehicle,

let's say, to create things. However, thanks to CERN. So scientists physicist, and all these great minds in Switzerland are shaping how how CBI is going to do things, they kind of have this as a key resource.

So actually the network, provide key resource, closeness of certain nodes or clusters can, can use each other resources. And the resource the key resource of Switzerland is of course the technology, the amazing and highly knowledgeable, human beings present at Switzerland. So, these challenges are also some recreations of programmes done at the design factory in Finland. So there's plenty of information about those that the good part of this was also interesting was that teams are continuously feeding back to the teaching team. So there's a teaching team and then there are groups, there are students grouped into specific teams addressing specific challenges. How are these redistributed, perhaps, it's not that relevant they're partnered with somebody from the industry usually so there is a multi stakeholder co-creation already inside the course.

Actually that is particularly interesting, because that brings me directly to the point that I wanted to address, and that was that, such at the end of a particular challenge or a general challenge course. Usually finished with a gala, where students present their innovations to people at people from Switzerland, the industry partners, the teaching team. Multiple outside stakeholders, visitors, whatnot. And there's mention of gala is pretty much, very similar to the social event mentioned by Stina. And that actually refers to the temporal network cluster. So again for some time with it seems limited frequency, all the stakeholders are brought together to one place. So they create a temporal network cluster. Where, where things can happen with between them, networking, information sharing and knowledge transfer, tonnes of tonnes of signals going around from one node to each other. So, a lot of CO creation, definitely a lot of CO creation. And also, reflection. A lot of reflection is done there. And how can I say this. Shed shedding light. So clarification, for example.

Because there are because there are effect physical artefacts prototypes. Markus said that they do really emphasise on on prototyping in creating physical prototypes they have multiple tools for creating prototypes laser cut 3d printers and mechanical tools whatnot. So, there are physical artefacts there. What are physical artefacts? Physical artefacts are pieces of culture.

So then I was asking Marcus about changing how changes are made throughout the programme. After the programme. So there's continuous feedback from students to the teacher team. There is, let's say

clear connection Markus said that he never goes to the students directly he always goes to the teaching teaching team. So, again we have the concept of hierarchy or power. And then other forms of feedback are distributed surveys, there is a discussion. So different formats of signal are present, specifically surveys were mentioned so. So we have this qualitative and quantitative format of signal. However, this continuing continuous feedback I have to talk to Laura about this. Because this continuous feedback seems to have specific element to it, or it stimulates behaviour so, so this continuous feedback means that people are will continue to see that means means increased frequency, continuously that means really high degree or higher high frequency of feedback. And with that, we can we can we can start to, we can start to kind of kind of clarify or support the emerging hypothesis that the signal has has strength and frequency, and then frequency builds up strength. So the teaching team is closest to students and Markus mentioned an interesting thing he mentioned that control and command mechanism. So, so that's, that's an interesting, that's an interesting in vivo code. I need to work with that code a little bit more. But what was specific from, from the conversation was open science, open innovation, and it seems low amount of structure. So, there is, there is a mechanism. Built in, but the structure among among the inside the organisation or inside, at least particularly CBI wasn't, it was flat, it seemed to me very flat, that sort of organisational structure.

Appendix C

Interview with Marcela Acosta Universities of the Future Knowledge Alliance Project

Dominik

I saw that there were there were a couple of kick off meetings, like there was a kickoff in Poland. There was a kickoff meeting in, I mean not this semester but there were a couple of panel discussions. One was hosted at the Alto Design Factory. And that was, there was a group of various stakeholders. So people from the industry, students, and people from the university. How were, how are students, or were students involved in the beginning of designing such a curriculum?

Marcela:

Well, the project itself has the students as one of the stakeholder groups, but the project was designed to bring in four different stakeholders together. Students, public bodies, industry and higher education institutions which are universities basically. So from the beginning we do have students representatives coming to the kick off meeting and those student representatives are in this case members of AYY and the Board of European students of technology. So AYY is the Aalto students guild. And the the interesting thing about this is that students in Finland they have a lot of, they have quite a bit of power. They have their own organizations, they have good finances and they are able to influence the university as well. So they are very well organised. And they are they can even lobby the congress for their own interests as well.

Dominik

So, excuse me, that I was just thinking that when there was negotiation for example going on, then voices were equally strong. Is that is that is my perception correct ?

Marcela

Of course we do have the project coordinator but, yes. We want them to be. We consider their voices important. So when we have a meeting, It's what I say I want it to be as equally as important as well as student representatives and as the for example Tekniska Akademia the guild of engineering in Finalnd,

which is a this public body. So yeah we do take them into consideration as important voices to influence. At the end, what they are doing, is that they are also having their own responsibilities their own work packages they are also meant to organize some events to get the point of view of students so for example they will organize a focus group with 20 or 30 students in which they are meant to extract the experiences of the students and say, and try to communicate with us okay this is what they are seeing these are their worries, this is what they would like to see more, so we we include that in a report as it should be.

Dominik
Is that same with the industry?

Marcela
Yeah. When we include them that in the report say we, we made that an event in which we had industry representatives and this is their point of view. So we of course we put the their points of view within the context of, you know, it's not fact, this is a point of view of industry, the point of view of students is this and if you see a kind of common thread there, then you might think okay this suggests that, that, that there's a common topic here that maybe we should pay attention to this because it seems like the same things that are worrying the students are the same things are worrying the industry are the same thing that are worrying the public bodies. Might be that you find common things in there.
And that's, that's interesting thing, take that into consideration for something to other people. Hey So we've had different types of people and they are finding things in common. So it shouldn't be just like one person's opinion, it can bring enough people together and they are discussing and they are bringing up these topics, then, then we can present saying, well this is happening.

Dominik
An than and than for example, the first prototype based on this is created Like, like the this is the first instance of Universities of the Future program?

Marcela
Yes. So, so based on this you can say we would uhm, we would say that we would, that perhaps what is needed is that the students are offering, that universities are offering courses in this and this and this.

But beyond this we can we could say like okay, perhaps the universities should do more collaborations with companies or or for an industry we also could say, you know, it seems like students are getting their educational needs met, not on the formal education, but also through you know videos and blogs and from something that they have been discussing in their hobbies, and suddenly they are, you know, they are able to make a portfolio in English, they are they have been doing their own projects and they say hey look, what I have done by my own initiative is so to say that this kind of things are also a valid form of, okay, the they are valid form of education or of skills and and we could try to find ways to validate it, to say yeah this is valuable as well.

Identifying areas of co-creation between stakeholders

 So what can universities learn form this, can they can they promote that students are doing this more of self learning that is going to be useful for them
Can we talk with teachers so that teachers can think How can I bring in certain real life topics into my class, so that part factors (?) are in a form of the educational offerings, but also when we talk to teachers or to industry with bring up these questions and than you know the objectives also that they get these ideas on how to, how to collaborate more just simply to that, oh maybe I should, you know get some ideas on how to do something a little bit different for my class or with the company, oh actually you know I could make an event and bring in people and have like a display of technologies that's, that is, you know, that's useful for us that's useful for them, you know what what can we do to, to bring the opportunities of technology to the forefornt, um to, you know, to promote education and to promote collaboration between the different sectors. I guess those are the two main things that we have been trying to do. And, yeah, then bring up this kind of conversation to different kinds of people and then make also this prototypes which are the courses.

Facilitation of co-creation, prototyping of curricula

Dominik
How do you measure outcomes of such courses or such initiative.

Marcela

We get feedback from the participants and we get feedback from the students, and umm they, the feedback has been good, in general. I think that there are some areas of opportunity to improve but I think that these kind of things are related to, you know, the kind of things that will happen when you do things for the first time.

Feedback/Signal streams

Dominik

Yeah. Are the main vehicles of feedback a conversation a discussion, an event? How does the feedback get to, get to right places?

Um we have to try to get feedback in any way we can. As much as possible. It's not so easy always. We have links, which go directly to Portugal. So, they can fill this in. Um but than also we sometimes just print out the papers and put them in the place where we are. And as in please fill in the feedback forms, we really, we say like we are not going to be you know taking this personally or anything like that, this is supposed to be anonymous. However way you prefer wether to the feedback form or to the paper or however just fill it in this is important. Um it's not so easy to get but it is very important that we get this feedback. What we look at, we look at um if they think that what they have been learning where that the topics which are interesting, if they they look at, if they think it is useful if they think that that there was a lot of participation or not. If, if the organization was appropriate or not. These are the things that we are looking at.

Access points, touch points, enabling, routing,

Dominik

Is that similar to vice versa? So, for example you when you're talking to businesses. You're also doing the same style.

Marcela

Yeah for all the events we have the same. Not exactly the same question but we have the same policies of getting feedback. Well I might have the form here but I don't want to take it out. But yes, it's basically what you think about the topics, were the topics presented in a good way, was there a good flow. Was it useful was it what you expected, was it different from what you expected. Yes, this this

kind of questions, and they are when we have an event we ask them to we ask from all of the participants which include the industry people, of course as well.

Dominik

On thing I haven't asked you, was. So this is a knowledge alliance project from the European Union, is that correct.

Marcela

Mm hmm yes.

Dominik

So, so were there some specific rule sets or boundaries, which you have to adhere to in order to in order to go out and co create or make these things together? Something like this is what you have to do.

Marcela

When the proposal was made for this publicly funded project. There were several topics, several things which were which the European Union deemed were good. One was a collaboration between different sectors. The other one was the internationalization. They said that those were good things to have and there are minimum the requirements for for each result, for each thing each output of the project. Predefined higher up objectives and results. So There has to be a minimum amount of participants there has to be, and the reports they have to be evaluated by the European Commission. There are templates that need to be followed so the official guidelines, they have to be standard and that they have to be as close as possible. So, and the marketing communications materials are basically always the same. Umm there are, yes, everything has to be um reported the hours that we are spending umm, yes, and that there's quite a lot of documentation that must be filled, for the project. Well, yeah. I don't know if that answered your question.
Very specific requirements, beraucracy, Oragnisation/Hierarchy

Dominik

Yeah it does. I was trying to understand because usually when students ask these questions about about curricula and school education, then mostly the conversation tends to be focused on on the school

business and students kind of triangle. But the state plays also a crucial role or the supranational organization. That's why I was asking the question.

Marcela

Yeah, when, for example when we developed the curriculum, the curriculum proposal was sent to the Commission and they approved it, or they can say of course, like no, or they can send it back to correct or something, but no it was approved.

For a maybe for each university it might be different, they have different guidelines to follow and so on so that has also been an interesting thing. The requirements of Portugal are different from the requirements in the Finnish University. So we try to. It's a kind of like a minimum common denominator, so if one university has a certain requirement, we all have to fulfill it cuz yeah that's how it has to be. So you have to look at what are the common requirements or the common challenges and try to standardize the curriculum so that it fits the requirements of the three universities.

Dominik

Yeah I get it. And that' why that's why there is so much communication before throughout and afterwards, I guess.

Marcela

Yes. Yeah, yeah, it will be quite interesting to see at the end. Once the, once this course is finished there will be a one big final event in Portugal at least in theory, Let's, let's see. And then, I think that afterwards we can we can debrief, we can talk about the results we can talk about about what we learned and see if we are if the universities decide to continue with this. This is a pilot.

Dominik

Aaah it's a pilot. Okay. Hmmm. So when you gather when you gather that feedback is that feedback, incorporated immediately? Or is it just gathered, and then you wait you process. And then if another instance, if another semester is coming up than you implement the feedback

Marcela

Usually when we gather the feedback that is implemented into our report which is produced later on but if I want to have immediate access to feedback let's say to the raw data, I can I can access it through the platform so that I know what are the issues and try to improve that in the future of course. But someone else will be doing the, the data analysis and reporting. That takes time but I don't need to see that, I need to I need to see the raw data. And I do have access to that. For internal project purposes, we can get that. And then the these reports are for the European Commission to see to see we have, you know that internal quality control and that kind of thing, so quality control it's another thing that every project has to have and we of course have it as well.

Dominik

I know that we're going way past 15-20 minutes as I was saying in email. This is such a, such a great conversation to hear from the directly form the source what's happening behind the scenes. I might have one last perhaps it's tricky question since you are mentioning this feedback and raw data analysis. So, how do you how do you translate these, these information ? So I, for example, I'm based in Denmark, from Copenhagen Business School. Initially I have the Aalto email because, I was an exchange student and I fell in love with our Aalto university honestly, I spend more time at the Aalto designer factory and such a great place. And, awesome, awesome people. So, yeah, we have also these kind of quality control like student evaluations and then there are graduate surveys and forms of feedback are circling around. And then, for example one specific school is focusing on in their quality control it's focusing on specific notion in the evaluation, saying have you been satisfied with the education. And then, and then if that's statistic goes down, than they are looking into it. Well, I'm not particularly attacking that form of question, or what not but there's an interesting, interesting system because that's translation needs to be done to understand.

Marcela

Yeah. Um I guess it's a way of saying, are you satisfied then the answer is always yes, then maybe you don't really need to look but it is a very very broad question to ask in general. Okay. What do you mean with satisfaction, what what aspect of it are you talking about. Are you talking about the theachers, you like the teachers, you like how the materials was delivered you like the material itself, you think that the matierial was relevant did you like the teaching methods. Did you like the overall Experience the the did you thing that was worthwhile. And for many people the answer is going to be like yes I

thought that it was definitely worthwhile to go to the university. But can you say like in what way was it good or in what way it can be improved. It's very tricky to gather feedback. You have in many places These machines that have like these happy faces and these sad faces which goes like press the button there. And that's an excellent and easy way to gather feedback but than when you have like the sad faces you don't know what went wrong and when you have the happy faces, you don't know what you have been doing well either. And but to get people to come you know answer all these complicated questions, that's not so easy to do you have to kinda balance that.

And than part of the thing is that, That's why also the students role has been very important because students they have been doing these kind of events in which they are able to gather a lot students together, and let them talk about this kind of things. And this are kind of things which usually would not appear in the regular questionnaire is, did you like the course how many hours to spend in the course, you know this kind of thing. So to get them to get together and talk about this kind of thing you can get a little bit better insight on the kind of things you have been doing right and the kind of things you been doing wrong. So that a good thing to have.

Dominik
But for for example, these, these. I will honestly close out I'm just like wondering around and you need to have some sort of qualitative output for organizations above you like the state or European Union, in order to like they see the quality control that you have. So you have to have this quantitative output in order to prove, is that correct?

Marcela
We have the quality control reports at the end for Yes, for getting the, the, the evaluation from the students and from the participants and also from ourselves we also have to we have to bring in we have always the open questions What do you think went wrong, what do you think went right and that in that that's also included there , because that's, that's, I think, a most valuable information is coming from, it's from these open questions. What do you think about this.

Dominik

Okay, I think, I think this is, this is, all the things I kinda was specifically interested in. and I think you said much more than he said much more than I could hope for.

Marcela

This is a very small project. In comparison, there are other projects which are a lot bigger and they have like 20 packages and are, you know, five times larger. So you know in the big scale of things this is a smaller one, but it does tend to have all the basic elements of an international project, which is. Yeah, the communications, the dissemination events and quality control and very specific outputs requested. Maybe, maybe in the future that might be something you are looking at as well, the project management.

Dominik

Thank you very much for this conversation. I hope I haven't took way more time than I promised.

Marcela

It's okay I usually I am used to having to have this kind of like a conversation between, they take usually half an hour to an hour, so it was nice it was an interesting conversation. I hope that all the questions were answered and good luck with your thesis

Dominik

Thank you very much and I hope that I will be able to travel to Finland one day. Eventually, and I get to all visit Aalto Design Factory one more time.

Marcela

Yeah for sure if you are interested in more international collaboration projects umm And I might have a few in mind, maybe. So, hopefully you find more people to interview as well
Thank you very much!
Let's talk than.
Have a great day
Same to you.
Thanks.

Appendix D

Interview with Miikka J. Lehtonen
Nordic Rebels

So do you remember our last meeting in December?
It's a long time ago.

Yeah. Yeah. Was it like, you know, I think was it Tommy who introduced, because we met we met in on the ground floor at the learning..
It was Dale, it was Dale Fodness and Joan Lofgern.

Yeah, yeah. Yeah. That's true. That's true Yeah. Yeah. Right by the screens?
Correct. Yeah. Such a long time ago. Well, thanks for reaching out.

Yeah, I reached out because you made some, you made some really cool things when it comes to involving multiple stakeholders in designing education and designing course or a curriculum.
Thank you.
So and also since you work with, with people from Copenhagen Business School, and I, I am from Copenhagen Business School. And I'm also I also reached out to Universities of the Future. Have you heard about this project?
Hm rings a bell, not not much, but do enlight if you know something else please all ears.
So that's, that's a cooperation between pretty much design factories. So So Aalto Porto and, and Poland so Portugal, Finland and Poland. They've done this knowledge Alliance project where they're co creating curriculum for the industry. 4.0
Okay. Sounds interesting.
Yeah, it seems it seems really interesting. And so I'm kind of reaching out to people who are doing who are meshing up universities together to create curriculum mean disciplinary or transdisciplinary. And that's why that's why I reached out to you to hear what have you done.
Okay. Sounds good.

Sounds like a very broad question, right?

Yeah. But I I'm counting on you having more more precise questions, but

yeah. So I saw that it all started as, as a master thesis or sorry, Master Master course. Master level course. As a challenge. Yeah, or the Nordic rebels movement, and then it kind of spiraled up.

Yeah, exactly.

So, um, would you could you tell me like about the evolution?

Yeah. So, to be precise, and like, you know, we don't talk about this on the website. Because so we started collaborating with student innovation house or what is nowadays called the station. We started collaborating in 2017. But I started teaching the course in 2016. But because I was teaching that course by myself, then we don't really it's not really part of the narrative. But basically, we started so when we got this Aalto online learning funding in was it 2017? Yeah, 2017 like early spring, and I was able to hire like two teaching assistants for that to help me out like cuz we had to create content and everything. And then a colleague of mine from CBS, he mentioned to me that, you know, he used to work as an associate professor, you know, what is, um, I think they still have it this CBS studio.

Yeah.

So he used to work there and he was managing it. And he said that, you know, they are they are hosting a conference on blended learning and, you know, this kind of technology mediated learning and he was and asking, like, you know, can, you know, would I have time to come and attend? And, or, like, he was invited, like, he was just kind of advertising it. Then I said, like, okay, this sounds really interesting. For for the TA is, so they went there. And, and this happened in June 2017. And then that's when they met student innovation house, and they started like, talking like, you know, could we collaborate? And, and I was a bit like, okay, how do we make it happen? But yeah, but initially like, you know, there was like, really nice, like we instantly clicked. So there was like really nice, positive atmosphere. And I think that really helped us overcome, like all these administrative obstacles or hurdles in terms of like, making sure that students from Copenhagen would get credits for the course as well. So yeah, so that's how we started and then when we had the second iteration in 2018, we started to realize that you know, it's not really in it's not really inclusive for the students from Copenhagen because they are taking a course that is called IDBM challenge. And because they are not taking that program, it's not very nice for them. So then that's how we came up with with Nordic Rebels and, and I think it really stuck and I still enjoy, like, I still like the name So yeah, sorry.

It's Okay.

Did that answer like, oh, did you get like, yeah, it was it. Did I make? Did I explain it in a proper way?

Yeah, you absolutely did. When you mentioned administrative hurdles. One of one of the topics I'm exploring is like navigating through these organizational rule sets.

Yeah.

And I guess, meshing up two universities across the across the Baltic Sea, even though they're Nordic, can cause some some problems. Could you could you explain what would that be?

And actually like this, there was even more than two universities because even though we collaborated with student innovation house that is like a student driven organization, they actually had students from DTU, CBS, KU at least. So, actually, we had to kind of, you know, mash up students from more than, but anyway, it's still the same dynamics. I think like one of the things was that, like, how, how do we enroll students, as, you know, students from different universities, as students, students in our home university because we have all these procedures like, right, you know, if you want to become an exchange student, then you can get the credits. But then, in this case, I was a bit I was a bit nervous, like To be honest, like, you know, how does it work? And especially because I had heard like, Well, I mean, there's like this classic tension between faculty and staff, like, you know, teaching and research side of universities and then administrative side and there's always going to be always clashing right? Uh huh.

But I never like you know, to be honest, like it was really, really, actually really painless. To get this done, like, just like two things that I kind of found that really work. Um, I'm not like, you know, being calculative here I just, you know, like, for me, it's important that you know, when whoever I collaborate with, they, they feel good, that you know, like, working with me makes makes them feel good. It's just like, you know, genuine. So I really felt that, you know, like having because I had like good relationship with these people who were dealing with these things. And I said, like, no, look, I'm trying to do something different. And I need your help. So, I mean, for me, it was never like a question of like, you know, me telling them like, Hey, you need to make this happen, but it's more like you know, how can we make it happen in a way that we can create a precedence and But you know, when we do it, then it's easier afterwards. So we're gonna, you know, like, it's a bit of a Trojan horse. I'm, I'm fully conscious about that. But you know, once you do like the first time, then you can always refer, kind of

refer back to it and say, like, you know, okay, this is how we gonna turn this into a practice, right? But then then there was also like, one thing that, you know, works especially well in the Finnish context, you know, just do and then ask for forgiveness afterwards.

Okay.

Yeah, I'm just thinking like, you know, if there were any examples of that, but they are more like on the pedagogical side, but you know, this is more like on the administrative side that just like, you know, basically so just to kind of suma summarize that, at least I this is how I kind of rationalized or made sense that having like being on good terms with people understanding how, like when, when you want to try or like when you want to push the envelope or do something new. Try to see it from the other person's perspective, if you need their help, like how can you make make it as easy as possible for them to say yes. Yeah, if that makes sense.

It kind of leads me to another question I have. I have the Nordic rebels webpage in front of me. And then there is this this really cool triangle on layers of learning. So community team individual.

Yeah

You also mentioning there team dynamics. So I'm kind of I'm kind of interested because courses are usually um they're done by the administration, or they're done by the research, like the upper echelons of the organization. That's where the courses are basically created, is at least that's what is my perception, but I'm having a perception that the Nordic Rebels movement was kind of like a grassroot, was stemming from, from the bottom up.

In Can Can you elaborate a bit like in what sense?

So I am thinking in these impulses and signals. And so, so, state for example, that's really strong, and powerful stakeholder to send signals in order to start movements down below to create new opportunities, new programs or new courses. And I'm having an impression impression that the IDBM (challenge) as it was very learner centric.

Yeah,

it was pretty much coming from the students and, and, and teachers who started to create courses with students.

Hmm, yeah. Okay. Okay. Okay, I see what you mean. Um, I think that's like, that has kind of been my pedagogical philosophy for a couple of years. So I, I like to see well, and I'm cutting corners a bit here, but like, you know, based on my own experiences, and when I hear some, you know, when I when I talk to people who design courses, they, they quite often design it as a, you know, as a kind of chunk It's like a movie that, you know, you sit down, you enjoy the ride. And then at some point it really ends. And, and I'm not saying that, you know, like, I'm not perfect or we are not perfect in Nordic Rebels either, but we try to see that's like, you know, course design is it's a skeleton. And you know, same thing like, you know, at least like, I like to make more references to video games, for example that, you know, they are more of participatory nature.

Yeah.

But you know, like, you know, games. Games are like, you know, like, games would not be games without people. So they it's like inherent in built the human participation and that's, that's how I like to see courses well, and you know, of course, then it becomes really scary from the instructors point of view, because you don't really know how the course is going to end. It might be a failure. It might be like a really amazing experience. But then you know, of course and then you have like this kind of other discussion like, you know, how do you define failure in terms of course design or like the course outcome, but that's, that's different. But I see Yeah, I mean, like I would say, most universities nowadays like the way they design courses and programs, like on a degree level as well. They are really detached.

Oh, can we actually pause for a sec, there was a doorbell. Sure, go on.

I'll be right back. Okay, sorry,

I'm back. Yeah. So, courses, programs and degrees, they are like so detached. Like, if you look at universities, kind of marketing slogans, you know, come and study, you know, come and study, like take any University's marketing material. And it's really if you scratch the surface, you start seeing that, you know, there's no substance. Not saying that the courses are empty, but the way the way they are being designed. Like it's only, especially in the business schools it's more like how do you call it, like understanding what kind of skills employers need. But that's not the reason why universities exist. It's really about finding a balance between mindset that the uni, mindset that has been is kind of based on tried and tested, like stuff that employers need. And stuff that the employers don't know that they need but they want. So yeah, so that was like kind of one of the one of the things that also are gonna, you know, kind of gave us like the inspiration to kind of start thinking about these courses and like, how to

design them and how to involve the students. And there's a fine balance. Sorry, these are like long answers. But please also say like, you know, if you just want me to kind of cut things off for, like,

totally don't want to, because, yeah, the richer, the richer things you say, the more the more content, the more kind of codes I can develop. Yeah, yeah, for sure.

But, wait, yeah, so there's a fine balance between creating content that is student centric and creating content in a way to when a brown nose the students, and we are like, you need, like, in the end, I'm not there to make friends with the students. If that happens, that's nice. It's a nice added added bonus, but I don't do like, I don't design courses in a way that you know, kind of. Yeah, that you know, gives me friends or it's more about like understanding, like what makes the students tick instead of having this kind of a bit condescending attitude, you know, I've read these papers where they say like, you know, where they discuss, how do we how do we reach or how do we get the TV generation excited? How do we get the virtual generation excited? And there's no there's almost never discussion on like, you know, what are Are we doing wrong? That you know if the students don't feel excited, Are we doing something wrong instead?Yeah.

So how do you find out what what makes the student tick?

Hmm. It's really like one thing is, you know, Yeah, that's, that's a tricky part because it can easily consume you. Like, in a way, for example, keeping your eyes and ears open when you are when you're walking in the university premises, for example, you know, interacting with them. And I know that, you know, I will say, like, I said that, you know, like, I'm not there to make friends. But you know, it's just, you know, just having these casual chats with students. And, you know, then, you know, following like reading, reading about different reports for example, you know, spending time with these generations who you are teaching like even, I don't know if you know this app called yodel like JODEL
 No, I don't.
Yeah, it's actually quite interesting because it's like, it's a location based anonymous chat. And it's based on channels and like Aalto, for example, has like really active channels. And it's, it's really interesting to kind of, you know, follow the discussions there to understand, you know, what people are saying and, you know, what kind of what is frustrating them and but, I would say that, you know, most

important thing is that so, maybe this is worth drawing. So, the first course that I that we started with With Nordic rebels was like, three week course, right?

So almost done.

So the most effective ways to design the courses based on like, okay, so so you gather feedback, yeah. After, after, after each week. So like, you know, how are you doing? Is there something that you know, how can we tweak so the course is alive and you can change the course even when it's kind of going on. And not in a sense that like, you don't change the learning outcomes you don't change the schedule or anything but it's more like, you know, how do you deliver the content? So it's, it's, it's really about like not confusing the students but making it kind of making it manageable for them because there's like, once you hit like, This kind of cognitive overload, then you stop, you just, you know, you just don't register anything anymore. So, yeah, so that's like one way of like, you know, having this kind of ongoing conversation and then then looking at the course feedback, talking with the students afterwards and utilizing that as a basis for the next iteration. So, the the course that I mentioned in 2016, because I had no idea I just came straight from Japan and I was like, Okay, so how do I, what do I need to do? I was given the course. And I was given free hands. And it turned out to be like, you know, it was an amazing experience, but pedagogically, it was really shit. Because I was like, I my skills back then were I mean, I was excited about teaching already back then. But it was not like in a systematic or like theoretically grounded I know and, and I had no idea like how the students are. So I think the first first time is always the hardest, you know, when you don't have any touch points, but once you start generating that, then it becomes easier because then you understand like, okay, these kind of things work. This is the kind of thing I can introduce. And this is the kind of things that you know, you're also going to put away.

You mentioned a couple of interesting things. First of all, there was like, how do you define course failure and, and then the then we've been talking about the feedback. And so, a lot of a lot of course evaluation is based on is based on predominantly quantitative feedback. You Get the survey with, with questions. I, you ask these questions. And then people from people from the teaching staff and from their administration, they look at it. And then they try to try to see what's going on. Of course, there are some some elements of qualitative input, but it's predominantly in this quantitative way. And yeah, yeah,

I'm interested in like, so. How have you designed, Have you designed feedbacks or feedback systems, In the courses you ran?

Okay, let's go good points. I was I was almost like, I was hoping that you wouldn't kind of pick up on the failure stuff, but let's go with that. Yeah, so failure in a sense that So, okay, what failure like in that context I, yeah, that was a wrong word, but like what I meant, okay, yeah, let's see what comes out of this. But like, basically, when I mentioned that, when you treat course, as an open system same thing as kind of video games or any kind of games. Maybe Maybe you end up beating the final boss, or maybe you won't. So you never know. So like one, like ,during this 2016 course, for example, I was thinking like halfway that what if? What if the students don't want to take the course but if they think it's like, too messy or like, you know, too, too weird or too much? And what if they say that you know, yeah, we are gonna take it once, you know, next year when you are not teaching it. But I think like it's more about failure in a sense of how much you as an instructor, like how much can you deal with ambiguity? And because you don't always know like you have to be careful with or you have to be flexible in a sense that, like, for example, there was fun one funny example that because the students they have, they always organize the final event by themselves. We, we organize the venue, but then it's really up to them, like, you know, we give them again, like the skeleton, but then it's really up to them to kinda you know do it and we support them in that direction. And in rare cases, when we feel that, you know, okay, okay, you guys are gonna do like something really messed up or like, you know, don't go there, then we'll tell them that, you know, hey, that's out of bounds.

Yeah.

But you know, for example, in the last in 2018 They, they bought one of these how do you call them these smoke machines. And do that though.

The one you have on the party.

Yeah, yeah. And, and they didn't realize that, you know, in the venue that they have smoke detectors. And I didn't realize and of course they kicked them on, Like they switch it on. And then the how do you call them the fire department had to come like the whole building had to be emptied. I was like, Okay, what the hell are we gonna do now? So then I just, you know, I went to apologize to like, some people were a bit pissed off, so I just, you know, okay, then it's like, Okay, I'm responsible. So I'll go and apologize. But like, you know, like that kind of moments because you never know what's going to happen, right? So you have to be able to deal with that. And I think especially when we teach design, you know, when we preach, you know, embrace ambiguity. I think, you know, we could be all So doing

it if we ask students to do it. So in that sense. So I think like, you know, failure in that sense would be something that you don't, like, you can't take the responsibility that belongs to you. So it's not like I don't refer to failures in that sense, like, you know, as the students not producing something that that is not goinna fancy enough or it's not courageous enough. Yeah, it's more about how well you have designed the structures. Yeah, it's more about that. And then that leads to the second point. So I don't like I don't have any kind of systematic, like, I don't do any additional surveys or, like feedback. I mean, it's more like intuition based. And I know that's a bit like risky, but are you like, I tried to kind of I trust my intuition in a sense that like, you know, when, when thinking about like, what kind of elements to take away from a course? And what to keep.

So, for example, see, this is now the 2016 course. Right?

And the three X's

 version?

No, this is the course feedback, like, okay, like, you know, on a scale in Aalto, it's like, yeah, from scale on a scale from zero to five, I think. And I think I forgot what was it something like 3.6 so it was okay. But you know, I was like, could be better. So then you kinda because like that's, that's your delta factor in a way. And so then you start thinking like, okay, Then you go through like the qualitative open ended answers. And then you start like, you know, thinking, you know, then you start going to discussing with students like understanding like, what kind of pain points they have in other courses. And then I mean, this is like an oversimplification basically. But, but then in 2017, you scrap some elements, and then you introduce new ones. And then you see where this is going, right? And then like, you know, then you change, it's always like, you know, changing and changing and then looking at them the overall course satisfaction because that's, that's something that the students like, I think that's quite reliable, in a sense, like, I know, I would call it touch point, no, not touch point, but got a vantage point. Maybe.

 It's easy to so when you when you read that, when you read that question the satisfactory or the satisfactory outcome, is it easy for you to, to understand? So like when, for example, the grade is 3.6 or even 3.4

Hmm.

Then you have to basically go back to students and ask why pretty much or, or can you just elaborate based only on that number

not alone on the numbered. Definitely not. But there's two things. So basically, teaching, at least for me is like, to a large extent a lot listening, quite many, I mean, and I know like I'm, I'm, I've been talking now, more than what I usually do, but no, okay, I get excited. But when I'm teaching I'm really careful about making sure that the students feel that they are being heard. I think most of these problems that courses have, they could easily be kind of mitigated if people actually stopped to listen, I can see it here with my colleagues in previous units. And so I don't, I hope it doesn't come off as arrogant or condescending. It's just I've been on this path now for maybe five, six years when I tried to understand what are the pain points, what are the blind spots of academic work, both in terms of research and teaching. And I think one of the problems is that, you know, people think of teaching as kind of, you know, still, pouring knowledge down on students throats, and, you know, this is my way of like, you know, Give me attention, right you know, fill, you know, fill in my gaps in my self esteem. I don't know if you look at like, you know, academia is really, one of the problems in academia is that you know, there's not much kind of self critique or self reflexivity, certain schools, certain departments, yes, but it's not like a overall tendency. You don't you'd like to criticize others but not yourself. Yeah. Okay. Now Now, I lost my train of thought.

It's okay. So, Was it easy for you to apply this way of working at a completely different environment in Dubai? I think, similar challenges when it goes to administration or talking to students back and forth?

Oh no, okay, sorry before I forget, like,
okay,
listening to students, but also like, you know, this kind of fire in their eyes factor, because like, at the end of the course, you'll really see that, you know, like, the students like they embody, like they you can see like embodied transformation that they will do like, way more, they are self confident. And, you know, that's like, way to see as well, like, you know, how well the course has been structured. And it's not because of the course but more like, you know, how the students interact and how they kinda generate it themselves. But yeah. In quite, like quite surprisingly, I was expecting things to be quite conservative here, but for example, they, you know, I've been, like I've been prancing around in the unicorn costume here and people actually enjoy it. Whereas in Aalto I was told that you know, don't do it. I was quite interesting. So I was I was surprised about that. We are a small uni, like way younger than Aalto. Technically Aalto is not young anymore, but well, you know, you know how it is

Yeah.

I think we are like, I've been given like really free hands to design the courses like in a way that I want but the kinda institutional context is, is a bit like tricky to navigate. Like for example I can't discuss like LGBT related matters or, or I can't, I can't touch female students. And I don't like that came up wrong like I'm not it's not about you know, me touching You know, like, like, you know, in a gentle way,

man, I know, because it seems that if you would install a hug point, like there is at the design factory. It would probably work really differently in Dubai than in Finland. Yeah, I understand.

Yeah. So it's Yeah, I mean, I don't know. It's just like, having or like, you know, yeah. Like, you become more mindful of like, you know, how do you how do you kinda achieve proximity with people, But I think like one thing that has been really helped. One thing that has helped is the students are like really conversational. Like, they want to engage with you. And you know, there's lots of curiosity. I think with, especially with Finnish students, it's quite tough sometimes.

You know, when you're asked like, do you have any questions and everyone is like (BLANK STARE INTO THE SCREEN), So that, you know, well, you people have different ways of engaging with institutions and teaching and learning. But yeah. By I don't know, like, you know, within courses, I think one challenge we've had here is that and I'm still trying to understand where it comes from, like, you know, the problem is that there is no planning, like, it's really kind of random, you know, things can change really fast.

Okay?

And even though you try to say like, you know, Hey, can we do a bit of planning, like, you know, we know that this thing is going to happen with that 75% probability. So could, we plan a bit ahead, and that doesn't happen. And then then we just have to kind of react really fast and that kind of put pressure on courses like for example. We were told, so the semester has started now on Sunday and two weeks before that, we were told that, you know, now, the Ministry says that, you know, we have to teach everything online. So change your courses online. And I'm like, you know, fuck, I mean, I saw this happening I wrote to the dean already on In June, the feeling that, you know, hey, here is my proposal for how can we can make sure that you know, we don't interfere with the plan with the course design and planning and nothing happened. So but I mean not, I started kind of preparing my courses to be fully online, right. So that's one thing that you know, like if you don't have the space or if you don't

have the freedom that can easily kind of challenge or like wear you out because when the thing is like, you know, when you push the envelope or when you try to kind of see how universities are how learning would take place in universities. If you want to do it the old way, that doesn't take much energy, you can do it in a sloppy way. But when you wanted to do something different, you have to be super careful because if you fail, then like it's even though everyone says that, you know, like, let's fail fast and everything but you know, if you fail, then your career is on the line. You know, it's, you know?

So how much time do you have? I don't want to take more time from you the necessary.
Ah, maybe two questions I have.

Yeah, okay. I have time like deal deal, like 15 more minutes.
Awesome. Awesome. So, the discussion was kind of centered on the on the student and university and the teacher, triangle or a cluster And what about what about the industry? You've been talking about how business schools particularly are tailoring the education towards the industry and labor market needs how were or were you working with people from from the industry to like send you some information or bring some some things, which then the labor market kind of is keen on to see in students.

Yeah, yeah. So especially like in the like, okay, like these guest speaker sessions, they always quite easy or straightforward. But with with those, you have to be you have to go to make sure that you know, they are actually engaging people and not just like someone who comes and you know, promotes their own company. Those you can weed out quite fast But then you know, then also like mentoring, you know, people from the industry, supporting the students engaging in kind of CO creating knowledge with them or, or having briefs from the industry and then like, so, like providing those to the students as a touch point that you know, hey, this is your starting point. you can criticize you can build on it, you can scrap, scrap it, but so, like, really keeping in mind that that the industry or the practitioners they also have a desire to learn. And this is like fantastic way of, you know, when you create these bridges, or like when you blend or dissolve the boundary between the uni and the outside world. Yeah,

yeah. Um so reports I'm kind of working with this idea of condensed information. So when the feedback kind of gathers up from the courses kind of gathers at the course level or the program level that it spirals up towards the higher levels of management. The further it goes from the original source, the more condensed the information is getting.

Yeah,

I'm kind of heading that idea in my mind. So, so is it easy to, Is it easy for you to understand this kind of condensed information?

I mean, I don't deal with condensed information, but I deal with people who deal with that. And I think there are like really good examples in the in the management for people who understand like, what, what, what's behind the numbers because they have, they have had the experience already. And they know basically, if it's like 3.5 or 3.7, like what could it mean. So they know how to kinda or they know which direction to take the conversation in a way if it makes sense.

Yeah.

But otherwise, like, I think it's like massive amount of bullshit when when people say, for example, like during this pandemic, Like some of these people on Twitter, like, you know, this top management from different finish universities, they were like praising how many study points or study credits they, their students had taken during the pandemic. And, and I was a bit like, you know, yeah, sure. I mean, that's, that's the only thing your students could take. But are you sure that they are like, psychologically, you know, doing well. So I'm a bit cautious with this because I mean, they are all part of this kinda I marketing scheme in a way that you know, you want to be seen as kind of productive efficient, and I don't know. There are so many things wrong with that kind of management by numbers, but I see the value but it's, it's something to kind of bypass.

Okay.

I'm looking at I'm looking at kind of these These topics I have written down. And I think a lot of a lot of things have been said so far so far. So I'm not sure I'm even sure what to ask. So please ask me something.