Debiasing Operational Planning in Business Enabling Functions

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Behavioral Insights and
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Laurea University of Applied Sciences **Abstract**

Behavioral Insights and Choice Architecture

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This master's thesis is a qualitative case study for Netlight, a network organization of 2000 professionals providing a full range of consultancy services from technology and design to data and management. The thesis aims to develop the decision-making of Netlight's business enabling functions in the realm of operational planning.

Operational planning aims to convert strategic goals into practical plans that provide direction for the organization's daily activities. A business enabling function is a department that provides internal assistance, services, and expertise to help the organization operate efficiently and according to the strategy. Decision-making is the process of selecting one option from multiple alternatives. In traditional economics, decision-making was believed to follow a rational model, but later behavioral economics research has shown that the way people decide deviates from this model in predictable ways. Decisions are guided by different mental rules of thumb, heuristics, which, despite their usefulness, often lead to different types of biases.

The thesis was carried out as research-oriented development process including three phases. The first phase focused on understanding the development context by building a theoretical foundation for the study. In the second phase, decision-making challenges in Netlight's business enabling function's operational planning were identified through a focus group study including three focus group interviews. Insights from this phase, along with the theoretical foundation, helped identify potential biases. The third phase aimed to map solutions to reduce biases and offer recommendations for improving future planning efforts.

The challenges that arose in the focus group interviews were categorized into four themes: reactive decision-makers solving problems of today, ambiguity of decision-making, lack of alignment, and lack of confidence. The findings of the study show that Netlight is a noisy decision-making environment and operational planning may be affected by many kinds of decision-making biases, not all of which can be identified with full certainty through this study. Among the biases identified are the status-quo bias and salience bias, contributing to a pattern of reactive, short-term decision-making. Additionally, social biases, like groupthink and silo-thinking, can hinder alignment and open disagreement. Moreover, miscalibrated self-confidence may pose challenges, as it's essential to remain open to different opinions but be decisive at the end of the decision-making process.

Based on the findings, it is recommended that Netlight clearly define what good decision-making in operational planning entails, focusing on the decision-making processes. It is also recommended to start reducing biases in decision-making by improving decision hygiene and building psychological safety to fully harness diversity of thought. Training to increase awareness is also recommended, although it alone is not enough. The functions also need support from the rest of the organization because preventing biases is challenging without examining the organization's structures and beliefs more broadly.

Keywords: Decision-making, biases, operational planning

Laurea Ammattikorkeakoulu **Tiivistelmä**

Päätöksenteon ilmiöt ja valintamuotoilu

Tradenomi (YAMK)

Mirka Rantanen

Vinoumien vähentäminen liiketoimintaa mahdollistavien toimintojen operatiivisessa suunnittelussa

Vuosi 2023 Sivumäärä 57

Tämä opinnäytetyö on laadullinen tapaustutkimus Netlightille, 2000 ammattilaisen verkosto-organisaatiolle, joka tarjoaa täyden valikoiman konsultointipalveluita teknologiasta ja suunnittelusta dataan ja johtamiseen. Opinnäytetyön tavoitteena on kehittää Netlightin liiketoimintaa mahdollistavien toimintojen päätöksentekoa operatiivisessa suunnittelussa.

Operatiivinen suunnittelu pyrkii muuttamaan strategiset tavoitteet käytännön suunnitelmiksi, jotka ohjaavat organisaation päivittäistä toimintaa. Liiketoimintaa mahdollistava toiminto on osasto, joka tarjoaa sisäistä tukea, palveluita ja asiantuntemusta auttaakseen organisaatiota toimimaan tehokkaasti ja strategian mukaisesti. Päätöksenteko on prosessi, jossa valitaan yksi vaihtoehto useista vaihtoehdoista. Perinteisessä taloustieteessä päätöksenteon uskottiin noudattavan rationaalista mallia, mutta myöhemmät käyttäytymistaloustieteelliset tutkimukset ovat osoittaneet, että ihmisten tapa tehdä päätöksiä poikkeaa tästä mallista ennustettavalla tavalla. Päätöksiä ohjaavat erilaiset mielen peukalosäännöt, heuristiikat, jotka hyödyllisyydestään huolimatta johtavat usein erilaisiin ajattelun vinoumiin.

Opinnäytetyö toteutettiin tutkimuksellisena kehittämistyönä sisältäen kolme vaihetta. Ensimmäinen vaihe keskittyi kehittämisen kontekstin ymmärtämiseen ja teoreettisen pohjan rakentamiseen. Toisessa vaiheessa Netlightin liiketoimintaa mahdollistavien toimintojen operatiivisessa suunnittelussa olevia päätöksentekohaasteita tunnistettiin fokusryhmätutkimuksella sisältäen kolme fokusryhmähaastattelua. Tämän vaiheen löydökset, yhdessä teoreettisen pohjan kanssa, auttoivat tunnistamaan potentiaalisia vinoumia. Kolmas vaihe pyrki kartoittamaan ratkaisuja vinoumien vähentämiseksi ja tarjoamaan suosituksia tulevaisuuden suunnittelun parantamiseksi.

Fokusryhmähaastatteluissa esiin tulleet haasteet jaettiin neljään teemaan: reaktiiviset päättäjät ratkaisemassa tämän päivän ongelmia, päätöksenteon epäselvyys, yhteisymmärryksen puute ja itseluottamuksen puute. Tutkimuksen tulokset osoittavat, että Netlight on meluisa päätöksentekoympäristö ja operatiiviseen suunnitteluun voivat vaikuttaa monenlaiset päätöksenteon vinoumat, joista kaikkia ei voida tällä tutkimuksella täysin varmuudella tunnistaa. Tunnistettujen vinoumien joukossa ovat status quo -harha ja tuttuuden harha, jotka myötävaikuttavat reaktiiviseen, lyhyen aikavälin päätöksentekoon. Lisäksi sosiaaliset vinoumat, kuten ryhmä- ja siilo-ajattelu, voivat haitata yhteisen ymmärryksen saavuttamista ja erimielisyyksien avointa ilmaisua. Lisäksi väärin kalibroitunut itseluottamus haastaa päätöksentekijöitä, sillä päätöksenteossa on tärkeää pysyä alussa avoimena eri mielipiteille, mutta olla kuitenkin lopussa päättäväinen.

Tutkimustulosten perusteella on suositeltavaa, että Netlight määrittelee selkeästi, mitä hyvä päätöksenteko operatiivisessa suunnittelussa sisältää keskittyen päätöksentekoprosesseihin. On myös suositeltavaa aloittaa päätöksenteon vinoumien vähentäminen parantamalla päätöshygieniaa ja rakentamalla psykologista turvallisuutta ajattelun monimuotoisuuden hyödyntämiseksi. Myös koulutusta tietoisuuden lisäämiseksi suositellaan, vaikka se ei yksin riitä. Toiminnot tarvitsevat tukea myös muulta organisaatiolta, koska vinoumien ehkäiseminen on haastavaa tutkimatta organisaation rakenteita ja uskomuksia laajemmin.

Avainsanat: Päätöksenteko, vinoumat, operatiivinen suunnittelu

1 Introduction

Each day we make decisions – some of them are trivial and some more significant, having a larger impact on people's lives. Unavoidably, we make mistakes in these decisions and the disheartening truth is that even highly intelligent and conscientious individuals, armed with the best available information and intentions, sometimes make bad decisions.

This master's thesis aims to develop the decision-making of Netlight's business enabling functions in the realm of operational planning. The objective is to find answers to the following question: *How can Netlight improve the operational planning of business enabling functions by utilizing behavioral insights?* This main question divides into the following sub questions:

> Q1: What kind of biases are Netlight's business enabling functions' operational planning decisions prone to?
>
> Q2: How can Netlight reduce bias in Netlight's business enabling functions' operational planning decision-making?

That is, the development task of this thesis is to identify potential biases in the operational planning of Netlight's business enabling functions and to recommend strategies to reduce biases using insights from behavioral economics research. The theoretical framework outlines business-relevant biases and debiasing strategies, while the study identifies decision-making challenges specific to Netlight. Potential biases and appropriate strategies are finally identified by aligning study findings with theory.

In organizations, planning happens at many levels. At the highest level, a strategic plan sets out the big goals and long-term vision for the organization typically over the next three to five years. Operational planning aims to convert these strategic goals into practical plans that provide direction for the organization's daily activities. A business enabling function, such as IT, HR and Finance, provides internal services and expertise to help the company operate efficiently and according to the strategy. Operational plan of a business enabling function complements the strategy by outlining the specific areas of focus for function in the short term, typically covering the upcoming year. A carefully thought-out operational plan promotes smooth teamwork, clarifies responsibilities, and supports decision-making. (Planful 2023.) Gartner's (2023) recommendations for effective planning in functions include clearly defining expectations and business context, setting measurable goals, developing a flexible action plan, and maintaining adaptability by monitoring progress and adjusting plans as needed.

The need to align with the company's strategy is not always well understood in the business enabling functions. Often these functions simply exist to serve the business units in any way they demand. Without explicit strategies, these functions tend to either blindly follow every request from the business units or only prioritize their own needs, neglecting the company strategy. (Martin & Riel 2019, 6.) Moreover, large companies are undergoing significant shifts in their functions. They are increasingly prioritizing capabilities and expecting function leaders to assume a more strategic role. In today's dynamic and fiercely competitive markets, there's a growing need for agility, flexibility, and focus on delivering results. As a result, many functions are under pressure to enhance operational efficiency while cutting costs. (Caglar, Kapoor & Ripsam 2012.)

The rational model suggests that people make decisions by carefully defining the problem, considering all relevant criteria, assigning weights to the criteria based on personal preferences, evaluating each alternative based on each criterion, and finally choosing the alternative with the highest perceived value. However, it is widely recognized among scholars that people rarely behave this way. When making decisions, people tend to rely on heuristics, mental shortcuts, which can be very useful, but also lead to harmful biases. (Bazerman & Moore 2017, 1-3.)

In today's business world, making sound decisions is crucial but also quite daunting. One way to illustrate this challenge is through Cascio's (2020) BANI model, which describes the characteristics of the modern business landscape. The BANI world is marked by brittleness, anxiety, nonlinearity, and incomprehensibility. In brittle world, systems can look strong but suddenly shatter catastrophically due to brittleness, often caused by excessive focus on efficiency. Anxiety involves constant fear of making wrong choices in an unpredictable environment, leading to passivity and despair. Nonlinearity means small actions can have huge, unpredictable consequences, as seen in climate change and pandemics. Incomprehensibility refers to events and decisions that are difficult to understand, even with more information, especially in the context of complex AI systems. As Sampler (2014, 14) compares, operating in a highly challenging business environment can be as driving through thick fog on a winding English country road. While instincts would advise caution and slowing down, fierce competition in the business often maintains the high speed.

Furthermore, in developed nations, people have access to an overwhelming volume of information, far more than anyone could reasonably digest in a lifetime, leading to information overload (Hanna, 2014, 62-63). In a rapidly changing world with an ever-expanding pool of knowledge, individuals should be more open to rethinking their beliefs and

opinions, but many paradoxically tend to cling to their existing views, as noted by Grant (2021, 18-19).

All in all, reducing biases in decisions is good for business. Every business decision is accompanied by risk, and while the risks of day-to-day decisions are often small, decisions at the corporate level can lead to serious consequences. (Buchanan & O'Connell 2006, 34.) According to Baer, Heiligtag and Samandari (2017, 3-8), the financial impact can be seen especially in high-frequency decisions and while the effects on low-frequency decisions are more difficult to measure, executives should also be aware of the value of debiasing when making decisions about, for example, large investments or mergers and acquisitions. In the end, the effectiveness of debiasing shows itself as leaders' greater self-confidence when dealing with decisions. In a world where success requires agile decision-making under uncertainty, self-confidence cannot be overvalued.

The theoretical part of this report covers chapters 2-3. The second chapter provides a behavioral perspective on decision-making while the third chapter focuses on business-relevant biases affecting decision-making. Moving on to chapters 4-6, the focus turns to the study and the development of solutions. Chapter 4 presents an overview of the development process and the selected study methods. The findings of the study are presented and discussed in chapter 5, with the developed solutions outlined in chapter 6. The report concludes with an overall evaluation of the development process in chapter 7.

2 Behavioral insights on decision-making

Daniel Bernoulli's expected utility model has long been the prevailing way to understand people's economic behavior. Bernoulli's intent was to equip individuals with mathematical tools to evaluate their prospects in any risky venture, considering their specific financial situation. The theory suggests that individuals make rational choices by assessing the expected values of different options, with the goal of maximizing utility on an absolute, rather than relative, basis. (Buchanan & O'Connell 2006, 2; Kahneman 2011, 272-273.)

Over time, we have been gradually acknowledging the limitations of our ability to make perfect choices. These limitations include both contextual and psychological factors. Complex situations, time constraints, and limited mental computational abilities lead decision-makers to a state of "bounded rationality", as proposed by a Nobel laureate Herbert Simon. (Buchanan & O'Connell 2006, 33.) Simon argued that gaining a deeper understanding of decision-making involves describing and explaining real-life decisions, rather than only emphasizing rational decision analysis. Simon views individuals as intending but failing to make rational decisions due to their limitations and therefore settling for satisfactory "good enough solutions" instead of optimal solutions. (Bazerman & Moore 2017, 5-6.)

Another Nobel laureate Daniel Kahneman received his prize in Economics for having connected psychological research and economic science, particularly in understanding how people make judgments and decisions when faced with uncertainty. Kahneman and Amos Tversky built on Simon's work and their research resulted in the formulation of the *prospect theory* that demonstrates that when people make risky choices, they often show effects that don't align with the expected utility theory. There are three principles at the heart of prospect theory. First, people evaluate potential gains and losses relative to a personal reference point, not in absolute terms. Secondly, the evaluation is affected by diminishing sensitivity, meaning that people are less sensitive to the changes in wealth as the amounts rise. For example, the subjective difference between $900 and $1000 is smaller than $100 and $200. Finally, people tend to feel losses greater than that of an equivalent gain, referred to as *loss aversion*. (Kahneman & Tversky 1979.)

The prevailing belief among psychologists is that people's thinking is divided into two separate cognitive processes: System 1 and System 2 (Kahneman 2003, 450-451). System 1 functions effortlessly, swiftly, associatively, without a sense of voluntary control, while system 2 functions slower, directs attention towards demanding cognitive tasks that require effort and is relatively flexible and potentially rule-governed (Kahneman 2012, 20). While System 1 resembles perceptual processes the operations of system 1 deal with both percepts and concepts (Kahneman 2003). Both processes, system 1 and system 2, have their own strengths and weaknesses. System 1 can effortlessly reach correct conclusions by utilizing rules of thumbs but is prone to errors. System 2 helps correct these errors but can be underutilized. Overreliance on System 1 often leads to poor follow-through on plans, as it focuses on immediate wins and ignores long-term consequences. While System 1's intuitive reactions are crucial inputs, a balance with System 2 is necessary for thorough decision-making. (Beshears & Gino 2015, 2-3.)

2.1 Heuristics and biases

The most important decisions are based on beliefs about the probabilities of events. These beliefs are influenced by heuristics that people unconsciously rely on to simplify decision making (Tversky & Kahneman 1975, 1). Heuristics help managers with time pressure to deal with complexity. However, as people are usually unaware that they rely on heuristics, they can cause problems as well. (Bazerman & Moore 2017, 6-7.) There are four general heuristics: The anchoring and adjustment heuristic, the representativeness heuristic, the confirmation heuristic, and the affect heuristic.

The anchoring and adjustment heuristic is in use when people tend to rely too heavily on an initial value, an anchor, when making judgments or estimates in an uncertain situation. This

initial value may be proposed by the problem's formulation or derived from a partial calculation. Regardless of the origin of the initial value, the subsequent adjustments made are often insufficient, leading to biased judgments or estimates that are skewed towards the initial value. (Tversky & Kahneman 1974, 20.) For example, sellers often try to influence the buyer's perception of the right price level by anchoring (Honkanen 2016, 51).

The representativeness heuristic is about forming an assessment of an individual (or object or event) by looking for characteristics that align with existing stereotypes (Bazerman & Moore 2017, 8). The representativeness heuristic is therefore likely to be used when an individual is classified into a certain group based on how much they resemble the stereotype of a group member (Honkanen 2016, 50).

Confirmation heuristic is the tendency to overlook evidence that contradicts an existing belief. When we find information that aligns with our beliefs, we tend to embrace it without skepticism unless there's an undeniable reason to question it. However, when we encounter facts that challenge our beliefs, we ponder whether we must accept the evidence or whether we can ignore it. (Bazerman & Moore 2017, 47.)

The affect heuristic heavily influences our judgments, relying on emotional evaluations before engaging in higher-level reasoning. Although these emotional evaluations are often unconscious, there are evidence that people still base their decisions on them rather than conducting a thorough analysis. It is more likely to occur when individuals have time pressure. For instance, when evaluating potential employees, managers' affect can be influenced by various factors unrelated to the applicant's actual qualifications. These factors might include the manager's mood or how much the applicant reminds them of someone from their past, like a former spouse. (Bazerman & Moore 2017, 10.) The affect heuristic affects us all. When we like something, we downplay its risks and costs while magnifying its benefits. Conversely, when we dislike something, we tend to do the opposite. Executives often encounter this in decisions involving strong emotions, such as those related to employees, brands, and locations. (Kahneman, Lovallo & Sibony 2011, 54.)

Heuristics are used in intuitive, system 1 thinking. They are straightforward, practical problem-solving methods that become almost second nature to us. However, they can also lead to psychological biases, that can be damaging in constantly changing environments. (Baer et al. 2017, 3; Kahneman, Sibony & Sunstein 2021,161.) Biases are systematic and predictable errors in judgment resulting from an inappropriate application of heuristics (Bazerman & Moore 2017, 31). Bias can either be a statistical bias, meaning that it occurs widely in people, or people's decisions can also be biased in different ways and intensities, causing noise (Kahneman et al. 2021,161-162). Though the presence of biases is something people readily accept, it's common for individuals to believe they themselves are immune to them. Interestingly, this is a bias in itself, referred to as overconfidence (Baer et al. 2017, 3).

Heuristics and biases are a fundamental part of decision-making under uncertainty, and they do not only affect people who have no knowledge of the subject under decision, but also experts when they rely on intuition. For example, while statistically knowledgeable individuals can avoid certain common errors, evidence suggests that experts' intuitive judgments are susceptible to similar errors when confronted with complex and unfamiliar questions. (Tversky & Kahneman 1975, 27-28.)

2.2 Noise

To understand bad decisions, we must understand both bias and noise. In many organizations, professionals must make decisions on different cases and organizations expect consistency in these decisions, meaning that similar cases should be treated the same way. The problem is that people are unreliable decision-makers and irrelevant factors like a person's mood, or the weather can make them decide differently at different times. The existence of noise has been shown in various studies. For example, in one study, software developers were asked to predict how long a task would take on two different days, and their estimates varied by an average of 71%. This randomness in decisions is called "noise," and it can cost companies a lot of money, even though they often don't realize it. (Kahneman, Rosenfield, Gandhi and Blaser 2016, 4-5.)

Kahneman et al. (2016, 4-5) illustrate the difference between biases and noise with a simple bathroom scale example. A scale is biased if it generally shows your weight as too high or too low. If it seems like your weight changes just by how you stand on it, then it's noisy. For instance, a scale that always shows your weight as four pounds less than it really is has a strong bias but no noise. On the other hand, a scale that gives different readings each time you step on it is noisy. Many errors happen because of both bias and noise working together.

There are jobs that are noise-free but these jobs usually have rigid rules limiting subjective judgment and therefore ensure that similar cases are treated similarly. At the same time many professionals are also expected to make “judgment calls” and their decisions are guided by informal experience and general principles instead of rules. They are not even expected to reach the same answer than others would, commonly referred to as “a matter of judgment”. The problem is, however, that the level of noise if usually a lot higher than expected or even imagined. (Kahneman et al. 2016, 4-5.)

High-frequency business decisions are often guided by standardized processes and the decisions can be heavily automated using statistical algorithms such as regression analysis, decision trees, and machine-learning algorithms. (Baer et al. 2017, 4-5.) Basic statistical algorithms are known to make more accurate predictions and decisions than experts, even

when the experts have more information at their disposal. One of the advantages of algorithms is that they are noise-free. They consistently return the same output for a given input. (Kahneman et al. 2016, 5.) While artificial intelligence can help to identify and reduce biases, it can also make them worse by baking them in as evidenced by the case of the criminal justice algorithm in Broward County, Florida: the algorithm mislabeled African-American defendants as "high risk" at nearly double the rate compared to white defendants. (Manyika, Silberg & Presten 2019, 2.)

2.3 Debiasing decisions

Throughout history, people have always searched for new ways to improve decision-making. It is evident that having managers with good judgment conducting thorough analysis does not guarantee good decisions. Another critical factor in the equation is the decision-making process itself. (Buchanan & O*Connell 2006, 32; Lovallo & Sibony 2010.) As Bazerman and Moore (2017, 55-56) conclude, individuals should be assessed based on the process and reasoning behind their decisions, rather than solely on the outcomes, as external factors beyond the individual’s direct control can influence the outcome.

According to Grant (2021, 217-218), a strong decision-making process involves critical thinking through process accountability and psychological safety. Psychological safety, without process accountability, fosters a comfort zone, while process accountability without psychological safety leads to anxiety. The ideal learning zone is the overlap of the two. Grant introduces a "Rethinking Scorecard" (Figure 1). Success is not guaranteed by a positive outcome, and a deep decision process can lead to improvement, even with a negative result. Failure only occurs with a shallow process; otherwise, it's a valuable experiment.

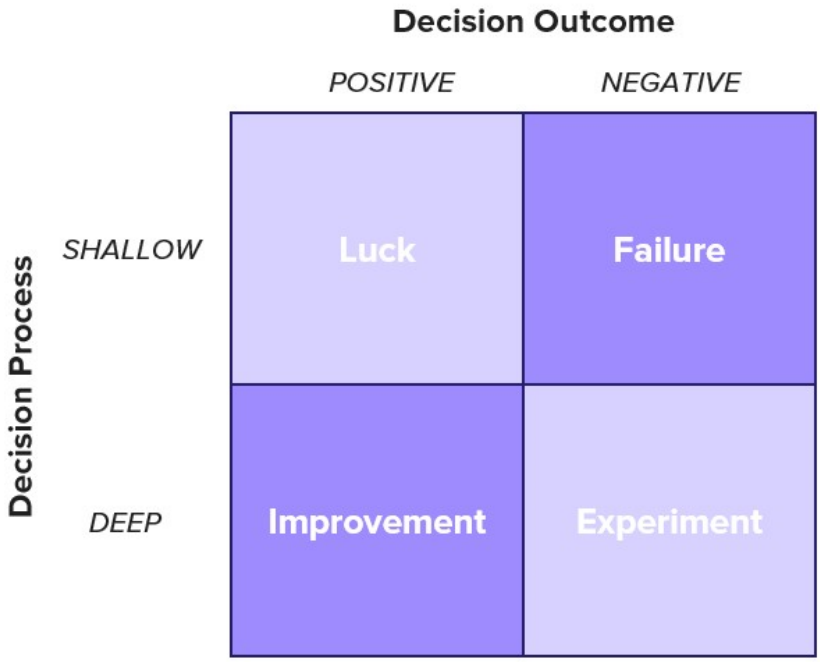

Figure 1: The Rethinking Scorecard (Adapted from Grant 2021, 218)

Can decisions be debiased? According to Bazerman and Moore (2017, 208), organizations can significantly improve their decision-making by correcting deficiencies in their processes caused by systematic biases. Kahneman et al. (2021, 7) emphasize that to improve decision-making, both bias and noise need to be addressed. Debiasing measurements typically work either ex post, by correcting decisions after they have been made, or ex ante, by intervening before a decision. Ex post, or corrective, debiasing is often carried out intuitively – for example supervisor buffering team member's estimation of the duration of the project by adding an extra month. Ex ante debiasing falls into either educating and boosting people to overcome their biases or shaping the environment in which the decisions take place by for example helping to overcome inertia, procrastination, and overoptimism, or making the right decision easier to make by reducing burdens or making relevant information more salient. (Kahneman et al. 2021, 236-237.)

Shaping the decision-making environment to influence decisions is called choice architecture. Environmental factors have a great influence on decisions and with the help of choice architecture it is possible to nudge the decision maker in the right direction without limiting the freedom of choice. (Thaler, Sunstein & Balz 2010, 1.) A nudge is any element in the choice architecture that can predictably influence people's behavior, without restricting their options or causing significant changes to their economic incentives. Nudges should be

effortless and cheap to avoid. Placing fruit at a visible height is considered a nudge, while taxation does not fall into that category. (Thaler & Sunstein 2009, 8.)

Choice architects use tools such as defaults, anticipating errors, comprehending mappings, providing feedback, structuring complex choices, and creating incentives (Thaler et al. 2010).

Defaults are pre-set options that individuals tend to stick with if they don't actively make a choice. Automatic renewals for magazine subscriptions is a simple example of a default. If the renewal process is automatic (a default), many people will continue subscribing without actively choosing to do so, even if they no longer read the magazines. (Thaler et al. 2010.) In another example, Motorola has a default rule that states that employees who have previously worked in a product team may not join a team that is developing a similar product. This ensures that the opinions of members of the new team are not influenced. (Beshears and Gino 2015, 17.)

By anticipating errors decision-makers are prone to, it’s possible to design choice environments that help people make more rational choices. For instance, providing clear and concise information can help individuals avoid the cognitive overload that leads to decision paralysis. A simple example of anticipating errors is to assume that people easily forget to add an attachment to an email message. Google has solved this by programming Gmail to ask "did you forget the attachment" before sending the message if the message contains the word "attachment" but the attachment is missing. (Thaler et al. 2010.)

Choice architects ensure that the relationship between available choices and their outcomes is clear and understandable to decision-makers (Comprehending mappings). This transparency helps individuals comprehend the potential consequences of their choices accurately. Simplifying complex information and displaying it in a user-friendly manner is an effective way to achieve this. (Thaler et al. 2010.)

Providing timely and relevant feedback on decisions can influence future choices positively. For example, showing individuals how their past choices contributed to specific outcomes can help them make better-informed decisions in the future. (Thaler et al. 2010.)

Choice architects can structure complex choices by breaking them down into simpler, more manageable components. This process called "chunking" makes it easier for individuals to navigate complex decision-making scenarios, reducing cognitive load and enhancing the decision-making process. (Thaler et al. 2010.)

Choice architects create incentives to motivate certain behaviors or decisions. Positive incentives, such as rewards or discounts, can encourage individuals to choose certain options while negative incentives, like taxes or fines, can deter undesirable choices. (Thaler et al. 2010.)

Nudge management is a management approach that utilizes insights from behavioral science to shape the organizational environment in a way that aligns employees' fast and unconscious decision-making with the organization's objectives. Using Google as an example, although the company maintains a rigorous management control system, it does not follow a traditional "controlling" approach. Instead, Google's management system focuses on shaping the choice architecture for its employees. By implementing subtle nudges and default rules, Google enhances productivity, decision-making, and perceived freedom of its knowledge workers. Notably, this holistic approach takes into account various aspects that might be considered irrelevant in a more conventional approach. (Ebert & Freibichler 2017, 2.)

3 Business-relevant decision-making biases

This chapter presents a collection of biases significant in the research literature and relevant in the context of operational planning in business. The biases are classified into action-oriented, stability, pattern-recognition, interest, and social biases according to a typology created for McKinsey consulting company by Dan Lovallo and Olivier Sibony. I chose this typology because it describes the biases in a business-oriented, and easy-to-understand way. I've applied this typology as a categorization framework but made some changes based on my judgment. I included additional biases not found in the original typology and left out some that were originally included to align with the goals of the thesis.

3.1 Action-oriented biases

Action-oriented biases lead us to act less thoughtfully than we should (Lovallo & Sibony 2010). These biases encompass being overly optimistic about positive outcomes and underestimating the chances of negative consequences. They also involve having too much confidence in our own abilities or the abilities of our group to influence the future, as well as neglecting or underestimating the reactions of our competitors. (Baer et al. 2017, 3.)

According to Bazerman and Moore (2017, 14-15), overconfidence may be the mother of all biases due to its far-reaching effects and facilitation of many other biases. If our self-confidence was at an appropriate level, we could more effectively correct our flaws in decision-making. Overconfidence has been offered as an explanation for many unfortunate events, from failed mergers and acquisitions and bankruptcies to wars and the nuclear accident at Chernobyl. It is the bias Nobel laurate Daniel Kahneman says he would most like to eliminate if he had a magic wand but it "*is built so deeply into the structure of the mind that you couldn't change it without changing many other things*" (Guardian 2015).

At the same time, leadership literature emphasizes the importance of confidence for successful leadership. Although this statement holds some truth, aiming for increased confidence can lead to overconfidence putting individuals, teams, and organizations at risk. (Moore 2021.) Many people tend to be overly confident at work, which is not surprising as in complex organizations with diverse individuals you often need to speak up and showcase your abilities to get noticed (Healy 2016). The problem is that many professionals are so called respect-experts, meaning that their credibility depends on the respect of other people, for example their peers and clients. When we don't know how to determine who is right or wrong, we often end up trusting respect-experts. This phenomenon is due to shared norms - for example, certain educational backgrounds and the amount of experience increase credibility. In addition, self-confidence has an effect. We trust people who believe in themselves more than those who show doubt openly. In a group, confident people influence decisions more, sometimes for the wrong reasons. (Kahneman et al. 2021, 226-228.)

Companies can also have trouble realizing that their decisions are noisy because of overconfidence. Experienced professionals usually believe strongly in their own judgments and think highly of their colleagues' intelligence as well. This combination makes them think they all agree more than they actually do. (Kahneman et al. 2016, 4-5.)

Overconfidence can come in many forms: Overprecision, overestimation and overplacement. Overprecision is about being too confident regarding accuracy of knowledge. Studies indicate that overprecision leads people to be hesitant about taking advice from others, skeptical of people with contrasting perspectives, overly eager in acting on their own viewpoints, and hesitant to correct their beliefs. To plan efficiently, organizations need to make forecasts of uncertain events. However, research conducted by Ben-David, Graham, and Harvey reveals that organizations tend to struggle with making accurate forecasts. Their findings indicate that executives are consistently overprecise and provide forecasts that are either too high or too low. (Bazerman & Moore 2017, 18-21.)

Roughly 64% of empirical studies on overconfidence examined overestimation (Moore & Healy 2008, 502). Overestimation is a tendency to think you are better than you really are and to be unrealistically optimistic about the future. People tend to view themselves overly positively, bias called self-enhancement. People also tend to overestimate the amount of control they have over circumstances, a phenomenon called illusion of control. The idea that quantifying something enables us to measure and understand it, ultimately giving us control, has misled numerous financial experts over the years. However, as the 2008 market crash demonstrated, confidence can, at times, prove to be nothing more than an illusion. (Bazerman & Moore 2017, 22-24; Harvard Business School 2023.)

In the context of planning, overestimation can manifest as unrealistic plans and projects that extend beyond the deadline due to the planning fallacy bias. People have a common tendency to underestimate the time they need for projects and tasks and the bigger and more complex the project is, the more prone it is to the planning fallacy. The planning fallacy arises when

we engage in "inside view" thinking, which fixates on the specific situation at hand and disregards the past experiences of similar projects. This is like trying to predict a company's future by solely considering its current plans and perceived challenges. On the other hand, the "outside view" takes a statistical approach, drawing on generalizable patterns from a wide range of problems to make predictions. (Kahneman et al. 2011, 58; Harvard Business School.) Studies indicate that using implementation intentions can increase the likelihood of achieving and change behaviour connected to future planning. Publicly committing to one's plans and goals and following up on them on a quarterly basis with peers can help to mitigate overconfidence and excessive optimism at the workplace. (Ebert & Freibichler 2017, 2.)

Overplacement is about believing you are better than *others* – even though you may not be. Research has identified the so-called the "better-than-average" phenomenon. One well-known finding is that 90% of the automobile drivers in Sweden consider themselves "above average" (Svenson 1981). It's a common psychological trait seen in how most of us believe we are smarter than the average person, better drivers than the average person, and so on (which is not logically possible for most people in a normally distributed population). This is known as illusory superiority, and it leads to wishful thinking and unrealistic optimism. (BIT 2017.)

People tend to have miscalibrated beliefs about themselves. The Dunning-Kruger effect happens when people with limited skills in a specific area overestimate their competence, while those who excel in that area tend to underestimate their abilities and assume tasks are easy for others as well. The initial study (Kruger & Dunning 1999) examined the performance and self-assessment of students in the areas of humor, logical reasoning, and grammar. The study shows that those who lack knowledge in a specific area face a twofold challenge: They make wrong decisions and errors, but their incompetence prevents them from realizing it. It can be difficult for people to understand the concept because they have a hard time relating to it. People do not recognize phenomena in themselves, but they do recognize it in everyday situations in others around them.

Organizational psychologist Adam Grant advocates confident humility to prevent overconfidence. The sweet spot of confidence lies in being sure of your ability to reach the goal in the future while staying humble enough to question the tools you use. This state is known as "confident humility" (Figure 2), where you have faith in your capability but also recognize the possibility of not having the right solutions or even solving the right problem. This gives enough doubt to review old knowledge and enough confidence to keep looking for new knowledge. Teaching confident humility has proven effective. In one experiment, students who read an article about the benefits of accepting what they don't know were more likely to seek extra help in areas of weakness and explore opposing views to learn from

others. Similarly, adults who accept what they don't know focus more on strong prove and actively explores contradictory information. Moreover, in studies of leadership effectiveness in United States and China, leaders of the most productive and innovative teams exhibit both confidence and humility, striking a balance between the two traits. (Grant 2021, 46-49.)

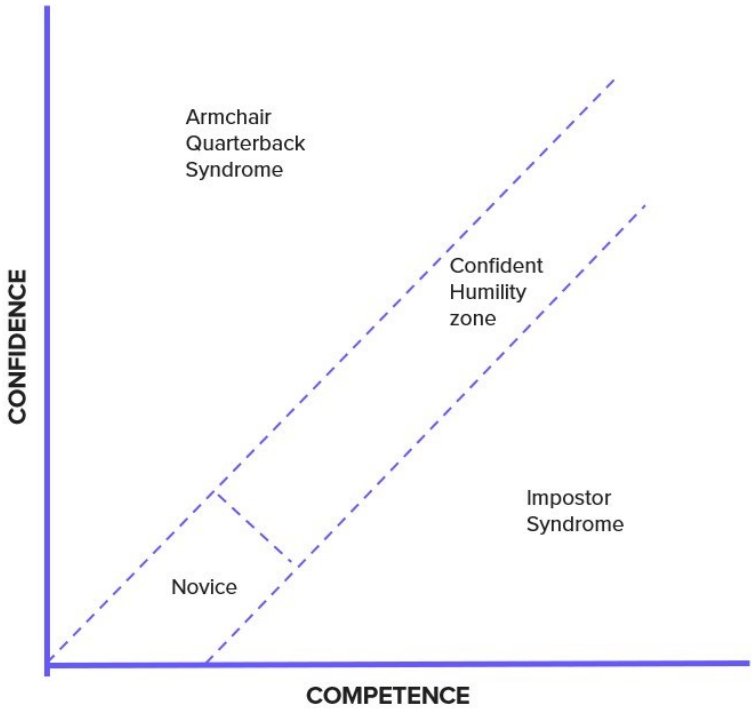

Figure 2: Confident Humility Zone (Adapted from Grant 2021, 49)

Confident humility can be viewed from the perspective of self-confidence and competence. While overconfidence in relation to competence is blind arrogance, the insecurity of a competent person suggests impostor syndrome. Grant argues that impostor syndrome can also help us make better decisions as it pushes us to rethink and improve: "*Impostors may be the last to jump in, but they may also be the last to bail out"*. Total beginners are also immune to the Dunning-Kruger effect. Experiencing impostor syndrome puts us in a beginner's frame of mind, which encourages us to critically examine assumptions that others might unquestionably accept. (Grant 2021, 52.)

3.2 Stability biases

Stability biases cause inertia during uncertainty (Lovallo & Sibony 2020). Stability biases can be costly, and one example of this is in the realm of capital allocation. According to McKinsey research, companies that regularly adjust their capital allocation based on performance tend to deliver returns to shareholders that are 1.5% to 3.9% higher than those with static and routine budgeting practices. This demonstrates a strong business case for debiasing. (Baer et al. 2017, 1-3.)

The anchoring and adjustment heuristic produces an anchoring bias. When faced with an uncertain or ambiguous situation, people tend to rely too heavily on an initial value, an anchor, when making judgments or estimates. This initial value may be proposed by the problem's formulation or derived from a partial calculation. Regardless of the origin of the initial value, the subsequent adjustments made are often insufficient, leading to biased judgments or estimates that are skewed towards the initial value. (Tversky & Kahneman 1974, 20.) Anchoring arises from two distinct mechanisms, with one operating within System 1 and the other within System 2. In System 1, anchoring manifests automatically through a process known as priming. In System 2, anchoring involves a conscious activity of adjustment. However, anchoring typically lacks a corresponding subjective experience, leading many individuals to find it unbelievable. (Kahneman 2011.) From the point of view of operational planning, a good example of anchoring bias is budgeting where previous year's numbers act as a powerful anchor (Lovallo & Sibony 2010). This bias persists even in group settings, highlighting its resilience (Wilde, Velden & De Dreu 2018).

Givi’s and Galak's (2019) study on forecasting reveals a new "future is now" (FIN) bias stemming from anchoring and insufficient adjustment process. It’s a tendency believe that the future will resemble the present, even when there's no evidence to support it. This happens because initial beliefs about the future are heavily influenced by present circumstances, and people fail to adjust their beliefs adequately once they learn the real probabilities. Across nine studies with over 3800 participants, the research demonstrates the FIN bias in various forecasting situations. This bias persists even in settings with incentives for accurate forecasting.

Status-quo bias is a tendency of keeping things as they are until immediate pressure to change (Baer et al. 2017, 3). This bias is partly explained by the difficulty of justifying a change in direction compared to maintaining the status quo. The status-quo bias also stems from the fact that change requires more effort. Moreover, alternative options are often not brought to our attention. Once we have decided a particular action, often disregarding other possibilities, we rarely reevaluate the choice. Moreover, deviation from the status quo is often perceived as a loss, which we tend to avoid because we have a natural inclination towards loss aversion. Loss aversion refers to the tendency to feel the impact of a loss more strongly than an equivalent gain, leading us to be more eager to avoid losses than to pursue gains. Consequently, loss aversion can hold decision-makers back from making changes, even when such changes would be beneficial. (BIT 2017.)

Status quo bias and loss aversion are also connected to the sunk cost fallacy. The sunk cost fallacy lets the unrecoverable investments of the past impact decisions on the future (Baer et

al. 2017, 3). According to traditional microeconomic theory, rational decision-making should only consider future costs. Including sunk costs may be irrational because it doesn't evaluate a decision purely on its own merits. Empirical evidence demonstrates that most people let sunk costs to influence their future-oriented decisions. In the business, continuing a project can allow managers to evade losses, at least short term. (BIT 2017.)

3.3 Pattern-recognition biases

Pattern recognition is a complex process that allows us to make quick assumptions based on our past experiences and decisions. As a result, a chess master, for example, can rapidly evaluate a chess game and select a high-quality move. However, it can also mislead us. (Campbell, Whitehead & Finkelsten 2009.) Pattern-recognition biases makes us see patterns that don’t exist (Baer et al. 2017, 3). Intelligence doesn’t help to avoid this either as studies indicate that individuals who achieve higher scores on IQ tests are more prone to embracing stereotypes because of their ability to quickly recognize patterns. Furthermore, intelligent individuals might find it more difficult to update their views. (Grant 2021, 24.)

Common pattern-recognition biases include the confirmation bias and saliency biases. Confirmation bias is the tendency to overlook evidence that contradicts an existing belief. When we find information that aligns with our beliefs, we tend to embrace it without skepticism unless there's an undeniable reason to question it. However, when we encounter facts that challenge our beliefs, we ponder whether we must accept the evidence or whether we can ignore it – in the first situation we ask ourselves "may I believe it" and in the latter "must I believe it"? (Bazerman & Moore 2017, 47.) As Grant (2021, 18-19) puts it, people easily recognize when other people need to rethink, but often favor feeling right over being right when it comes to their own knowledge and opinions.

People are more likely to overlook gradual changes, a phenomenon known as change blindness. Studies demonstrate that individuals tend to be more tolerant of unethical behaviors when they happen through a series of small steps rather than in a single significant violation. One small step away from high ethical standards can lead to more serious unethical actions, often referred to as the "slippery slope.”. Ethical degradation resembles the folk wisdom concerning boiling frogs: if you throw a frog in boiling water, it will immediately jump out, but if you put it in warm water and gradually raise the temperature, the frog won't notice the change until it's too late. While this may not hold true for frogs, it appears to be the case for people. Confirmation heuristic can help to overcome change blindness if we start by acknowledging possibility of ethical lapses and actively search them. (Bazerman & Moore 2017, 67.)

Salience bias leads us to overweight recent or highly memorable events and tendency to overly depend on personal experiences when making decisions (Lovallo & Sibony 2010; Baer et al. 2017, 3). For example, managers in companies tend to overlook the expenses and time required for supplementary business processes, such as compliance or administrative tasks,

because they are less salient than the organization's core business. Consequently, this often leads to expensive planning mistakes. (Hirshleifer 2007, 5.) Salience bias can also explain procrastination. Procrastination arises when present costs become overly salient in comparison with future costs, causing individuals to repeatedly postpone tasks that need to be done. (Akerlof 1991.)

Although Lovallo's and Sibony's typology does not encompass the representativeness heuristic, it can be classified as a bias related to pattern recognition. When evaluating an individual, object, or event, people often seek out characteristics that align with pre-existing stereotypes. For instance, venture capitalists assess the potential success of a new business, they tend to draw parallels between it and previous successful or unsuccessful ventures. Entrepreneurs who look like Jeff Bezos, the founder of Amazon.com, may be more successful in pitching their ideas than entrepreneurs who resemble less successful entrepreneurs. (Bazerman & Moore 2017, 8.)

3.4 Interest biases

Interest biases emerge when misaligned incentives, including non-financial and purely emotional ones, come into play (Lovallo & Sibony 2010). Conflicts can arise from things like individuals or groups having different motivations, strong emotional ties to certain aspects of the business, or varying, often unspoken, perceptions on the importance of different goals of the organization (Baer et al. 2017, 3). Kahneman et al. (2011, 54) suggest that every recommendation in an organization is influenced by a preference for a specific outcome. Therefore, decision-makers should not assess the possibility of motivated errors but their significance. Proposals coming from individuals who have more to gain from the outcome, either financially or in terms of organizational power, reputation, or career options, require extra quality control.

“Silo thinking” is one apparent indication of this bias manifesting as different organizational units prioritizing and protecting their own interests rather than working towards common goals. When people have intense discussions and see things from completely different angles, it often means there are hidden interest biases. (Lovallo & Sibony 2010, 11.)

The "curse of knowledge" refers to a phenomenon in which an individual finds it challenging to disregard the knowledge they possess but others lack when evaluating the knowledge of others. This is why, for example, product designers often think that everyone can easily use high-tech devices. In organizations, a lot of disappointment comes from unclear communication. This happens partly because we mistakenly assume that others understand our ambiguous messages. To avoid the curse of knowledge, one approach is to pay attention

to how people are different from each other instead of how they are similar. Having a diverse workplace can also help reduce this bias. (Bazerman & Moore 2017, 56-57.)

Effective decision-making processes consider diverging interests explicitly and having participants with conflicting interests can safeguard against biases. To prevent manipulation and other negative effects, it is good to set clear frames and criteria for decision-making. (Lovallo & Sibony 2010.)

3.5 Social biases

In business, group dynamics can lead to strong biases. Managers often avoid disagreements to preserve relationships and even ignore the flaws in the ideas of their allies (Baer et al. 2017, 2). Decision-making is frequently influenced by social factors - even when decisions are made individually, decision-makers often seek input and advice from others (Tindale & Winget 2019). The mere presence of other people can influence a person's behavior decisions (Honkanen 2016, 135).

Social biases refer to our preference for harmony over conflict or constructive challenging (Baer et al. 2017, 3). It is a common belief that groups make better decisions than individuals, and while this is possible, research shows that groups are not immune to bias (Lovallo & Sibony 2010). According to Bazerman & Moore (2017), at least three different outcomes can arise due to the influence of group dynamics: groupthink, group polarization and diverging viewpoints.

Irving Janis introduced "groupthink" in 1972 as "*a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action.*" (Buchanan & O'Connell 2006, 36). Groupthink happens when individuals in a group are swayed by the thoughts and actions of others. This can make their thinking and judgment worse and make them less able to tell what's real. Typically, groupthink refers to the middle ground that arises in a group which is caused by the reluctance of group members to challenge each other and create conflict. The primary focus of group members becomes attaining a unanimous agreement rather than arriving at the most optimal conclusion. Due to the absence of critical inquiry, groupthink can also foster unwarranted confidence in the group's decision-making process. (BIT 2017.)

Group dynamics can also impact decision making through a phenomenon called group polarization. It occurs when people in a group develop opinions that are more extreme than what they would hold individually. This happens because, within the comfort of similar-minded individuals, moderate views are reinforced and amplified, while more extreme views are accepted. As a result, the group consensus tends to lean towards a more extreme position than if the individual opinions were simply averaged. The group may also split into multiple factions with diverging viewpoints with each faction becoming more extreme in their views as

a means of distinguishing themselves from other factions, aiming to change the group's position. (BIT 2017.)

However, there can also be a lot of power in a group. This is because individuals usually have too limited perspectives and information to reach a balanced decision. However, this outcome relies on the group functioning effectively, having access to diverse and relevant information, and ensuring that all perspectives are considered and heard. The concept of the "wisdom of crowds" highlights how the collective estimation of many individuals often surpasses the accuracy of any single person's estimate. In practice, however, when groups make decisions, some opinions may be suppressed, and some may be emphasized or even exaggerated. Harnessing the wisdom of the crowd is only possible when the crowd members are providing independent estimates rather than influencing one another. (BIT 2017).

Kahneman et al. (2011, 55) highlight that the lack of dissenting opinion in team solving a complex issue should raise a red flag. Leaders should aim to create an environment where disagreements are not seen as conflicts but as a critical part of the decision-making process. If the environment does not yet support this, the leader can discreetly seek dissenting views from team members, possibly through private meetings.

4 Development setting

This thesis is carried out as a research-oriented development process. Research-oriented development can stem from various starting points, such as the developmental needs of an organization. The purpose is to solve problems, generate new ideas, and develop solutions. Instead of theoretical goals, research-oriented development is driven by established development goals. Both existing theory and methods play a role in facilitating the achievement of these goals. Research orientation is crucial as it allows for a more comprehensive and systematic study of influential factors, leading to more grounded results. Organizations have often deeply ingrained preconceptions and beliefs that shape their actions, based on their perception of the operational environment. In practice, these beliefs are often proven to be wrong. Relying solely on one's uncritical views instead of adopting a research-oriented mindset may result in decisions influenced by preconceived beliefs, and issues may go unnoticed until it is too late. (Ojasalo, Moilanen, Ritalahti, 2022.)

I chose a qualitative case study as my approach because the main purpose was to achieve a rich understanding of the decision-making challenges of Netlight's business enabling functions. I did not, for instance, aim for generalizability, which is central to a quantitative approach. Qualitative research aims, among other things, to describe, comprehend or provide

a theoretically meaningful interpretation of a phenomenon. (Tuomi & Sarajärvi 2002, 87-88). In development work, case studies are particularly suitable when the goal is to gain a thorough understanding of an organization's situation and address a problem identified by the organization or propose developmental suggestions by doing research. The intention is not to push the change forward, but rather to create ideas or propose solutions to the identified problem. (Ojasalo et al. 2022.)

The aim is to develop the decision-making of Netlight's business enabling functions in the realm of operational planning. The objective is to find answers to the following question: *How can Netlight improve the operational planning of business enabling functions by utilizing behavioral insights?* This main question divides into the following sub questions:

> Q1: What kind of biases are Netlight's business enabling functions' operational planning decisions prone to?
>
> Q2: How can Netlight reduce bias in Netlight's business enabling functions' operational planning decision-making?

That is, the development task of the thesis is to identify potential biases in the operational planning of Netlight's business enabling functions and to recommend strategies to reduce biases using insights from behavioral economics research.

The progression of the development process is illustrated below (Figure 3). In the first phase, the focus was on increasing the understanding of the development context by building a relevant theoretical foundation, which also served as a starting point for designing the study. In the second phase the focus shifted to identifying decision-making challenges in the context of operational planning of business enabling functions at Netlight by utilizing focus group methodology. The insights from this study were used together with the theory compiled in the first phase to identify potential biases influencing decision-making. Finally, in the third phase, the goal was to map and develop solutions to reduce biases and provide

recommendations for improving future operational planning endeavors.

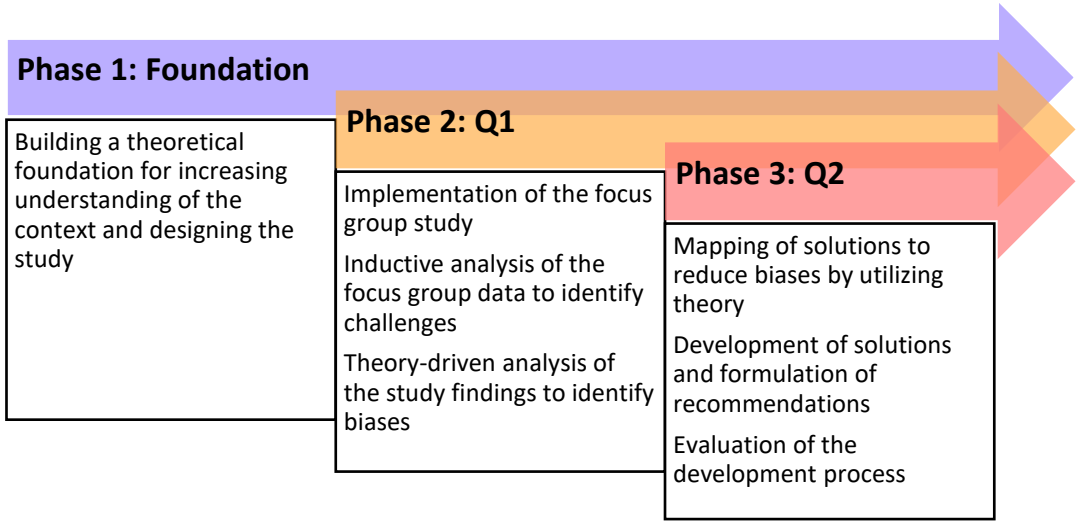

Figure 3: Overview of the development process

As agreed with Netlight, I took charge of the development process, working independently but in close interaction with Netlight. The process was supported by regular guidance and coaching from a Netlight representative. In addition, I considered the views of the development target group both in the initial planning of the study and in evaluating the validity of the inductive analysis of the focus group data.

Netlight is a network organization of 2000 professionals providing a full range of consultancy services from technology and design to data and management. Today, the company operates throughout Europe with offices in Stockholm, Oslo, Helsinki, Copenhagen, Munich, Hamburg, Berlin, Frankfurt, Zurich, Cologne, and Amsterdam. Instead of fixed chains of command and unnecessary hierarchies, Netlight is built on self-leadership, growing, and succeeding with the personal development of each Netlight employee.

The study is limited to Netlight's business enabling functions including globally 112 employees in 6 different functions: Tech, Human Resources, Finance, First Impression (office & event management), Legal and Brand. The functions work across Europe at Netlight's 11 offices. Internally these functions all together are called Operations.

4.1 Focus group methodology and setting

I chose focus group interviews as my study method because I believed it was the best way to achieve a rich understanding. The main purpose of interviewing is to learn about the

thoughts, feelings, perceptions, and experiences of the interviewee (Hirsjärvi & Hurme 2008, 34–41). Broadly speaking, focus group interviews are like "collective conversations". The main objective of a focus group is to describe and comprehend the meanings and interpretations of a particular group of people. The purpose is not to achieve a consensus on the topics being discussed. Instead, focus groups seek to foster a variety of perspectives that contribute to a better understanding of the topic. (Liamputtong 2011.)

The conversation in a focus group goes beyond a simple question-and-answer session between the interviewer and interviewee because the group members can interact by asking each other questions and even debating interpretations. Group conversations are valuable because they encourage participants to talk about often overlooked or taken-for-granted topics, leading to the creation of interesting data. (Alasuutari 2018, 151-153.) Participants can also help each other to remember relevant topics and prompt each other to explain opinions more thoroughly (Ojasalo et al. 2022).

I conducted three focus group interviews. The number of interviews was not predefined, but I aimed for saturation, to a situation where the material begins to repeat itself and the informants no longer produce any new information in terms of the research question (Tuomi & Sarajärvi 2002, 89). In qualitative research it is in principle important that the people from whom the information is collected preferably know as much as possible about the phenomenon under study or that they have experience in the matter. In this sense, the choice of informants should not be random but deliberate and suitable for the purpose. (Tuomi & Sarajärvi 2002, 87-88.) I selectively invited Netlight employees who have been actively engaged in recent operational planning decisions in business enabling functions and therefore can offer valuable insights into what challenged have been faced. The groups are presented below (Table 1).

Group 1	Group 2	Group 3
• A1: Finance • A2: First Impression • A3: Legal • A4: Tech	• B1: Finance • B2: Human Resources • B3: Tech • B4: Tech • B5: Tech	• C1: Finance • C2: Brand • C3: Human Resources • C4: First Impression

Table 1: Focus group distribution

I deliberately mixed employees from different functions to keep the conversation on track and to avoid the conversation from drifting to day-to-day decisions within functions, enable a safe space for discussing each function's decision-making challenges and encourage everyone to ask questions and talk about cross-functional decision-making and alignment as well.

I conducted the focus group interviews in August 2023 during weeks 33, 34 and 35. The interviews were conducted virtually using Microsoft Teams, and the discussion itself was one hour long. The interviews were recorded and real-time transcribed with the consent of the participants. This allowed me to focus on actively listening and asking questions during the interviews. The interviews included five theory-driven key topics as shown below table (Table 2). I also prepared prompts for each topic, which I used only when necessary to guide the discussion. I shared the key topics with the participants in advance (Appendix 1.)

Theoretical foundation	**Key Topic and Specific questions**	**Prompts (used flexibly)**
Pattern-recognition biases	What kind of data and perspectives do you base your decisions on? What kind of challenges have you faced in decision-making from this point of view?	Can you think of any scenario where your function's decision-making process was influenced too much by certain past experiences or analogies? Are there specific strategies or frameworks that help your function guard against relying only on historical data or past successes and encourage your function to consider new approaches or solutions?
Action-oriented biases	How do you know you are ready to decide? What kind of challenges have you faced in decision-making from this point of view?	Can you think of any scenario where decisions were rushed or made too impulsively? Can you think of any scenario where decisions were made with a high level of confidence, but the actual outcomes didn't align with expectations? Are there specific strategies or frameworks that help your function strike a balance between the need to make timely decisions and conducting a thorough analysis?

Stability biases	How do you adapt and make changes? What kind of challenges have you faced in decision-making from this point of view?	Can you think of any scenario when decisions unnecessarily perpetuated existing practices, limiting innovation and improvement? Can you think of any scenario where past investments of time and/or money influenced your function's commitment to a particular course of action, despite new information suggesting otherwise? Are there specific strategies or frameworks that help your function actively consider alternatives and avoid getting locked into the status quo?
Interest biases	How do different personal/function interests influence decisions? What kind of challenges have you faced in decision-making from this point of view?	Can you think of any scenario where conflicting interests, individual or function, led to difficulties in making decisions? Are there specific strategies or frameworks that help your function ensure that decisions are made with Netlight's best interests in mind, rather than favoring individual or function interests?
Social biases	How do you make decisions together as a group? What kind of challenges have you faced in decision-making from this point of view?	Can you think of any scenario where the group seemed to agree too quickly or avoided considering alternative perspectives? Can you think of any scenario where the group's initial views became more extreme or polarized after discussing the options together? Can you think of any scenario where the presence of clear factions with diverging viewpoints affected the decision-making process? Are there specific strategies or frameworks that help your function harness the power of

		diverse perspectives in the group decision-making?

Table 2: Key topics, specific questions, and prompts

The format of the focus group interview was inspired by the hourglass design, commencing with introduction, and opening questions, progressing to key topics and more specific questions, and finally concluding with broader closing questions. The goal during the conversation was to allow the participants to talk as freely as possible and to avoid unnecessary interference. Each focus group interview started with a short intro, aiming to inform the participants about essential aspects of the study and to create a relaxed atmosphere (introduction) The intro was followed by a 10-minute quiet reflection, where everyone had a chance to reflect on the challenges related to the key topics and form their own point of view independently. I asked everyone to choose 1-3 challenges they would like to include in the conversation (opening questions) After this, the conversation itself began with open sharing of experiences. As the conversation progressed, I used specific questions and prompts when necessary to dive deeper into the challenges or to steer the conversation back to the key topics (key topics and specific questions). Finally, the conversation ended with broader key takeaways (closing questions). Each part of this "hourglass" structure served a distinct purpose. (Hennink & Leavy 2014, 5.)

4.2 Analysis method

I used Microsoft Teams' transcription tool for real-time word-for-word transcription, aiming to save time and mental energy for analysis. However, to ensure the transcription's accuracy, I compared the transcription with the original recording and corrected and clarified the text as far as was necessary. The recordings and raw transcripts were stored in Netlight's cloud service in accordance with Netlight's data protection standards and only accessible to interview participants. The corrected transcripts are saved in the Laurea's cloud service, from which they will be deleted after the evaluation and publication of the thesis.

According to Alasuutari (2018, 43-44) qualitative analysis process includes two stages: *observation reduction* and *puzzle-solving* – and they are always intertwined. First, the researcher reduces the material into observations that describe the phenomenon and share common features and similar rules. Next, the puzzle-solving stage involves interpreting the results, explaining the findings, and making them understandable. The observations are then connected to the existing theoretical framework and explanatory models from prior studies.

I analyzed the material using thematic analysis. Thematic analysis is one of the methods used in qualitative research and can be considered a form of content analysis (Tuomi & Sarajärvi 2018). Thematic analysis involves identifying the relevant topics or themes that are essential for addressing the research problem. (Eskola & Suoranta 2008, 174–180). Through thematic analysis, I identified significant themes relevant to the study objective.

The analysis was theory-guided, which means that the previous knowledge influenced the process, but the analysis units were selected directly from the data. The intent of incorporating prior knowledge was not to test a specific theory but to explore and open new avenues of thought. (Tuomi & Sarajärvi 2002, 98-99.) Theory-guided approach can also be called abductive. According to Thompson (2022), there are three main research designs: deductive, inductive, and abductive. Deductive research is commonly linked to theory-driven and positivist methods, seeking to objectively test phenomena. Inductive research is exploratory in nature, diverging from a priori assumptions to build theoretical insights through the application of interpretive methods. Abduction, however, strives to find a middle ground between inductive and deductive methods. Therefore, I used theory in planning the research, but I did the analysis inductively purely based on the data. In the end, I tied the study findings back to theory. I believe that by enabling this interplay between theory and study data, I supported the development task of the thesis in the best possible way. The analysis involved the following steps:

1. Transcription: The video recordings of the focus group interviews were transcribed, capturing all spoken words.
2. Data coding: I analyzed the transcripts by assigning codes to significant words and phrases to identify recurring patterns that emerge across the focus group.
3. Development of themes: I examined the connections between different codes and organized the coded data into themes based on how well they collectively explain the story behind the data. These themes were further refined as more data was collected and analyzed. Writing the findings was an integral part of the analysis.
4. Interpretation: Next, I analyzed the data to draw conclusions. This process included explaining the identified themes, guided by the theoretical framework.
5. Reporting: As a final step I finalized the reporting of the findings and conclusions in a clear and concise manner.

4.3 Validity and reliability

Assessing qualitative research using traditional quality assessment criteria can be problematic because of the interpretive approach, iterative process, and subjectivity of qualitative research. As a result, many scholars speak for a distinct criterion to evaluate qualitative studies. However, despite many efforts, there is still no consensus on suitable ways to assess qualitative research. Therefore, validity and reliability remain important for qualitative research, but they require a different approach to be effectively used. (Hennink & Leavy 2014, 173-174.)

In qualitative research, reliability and validity is largely achieved through the rigorous application of qualitative research procedures that are documented transparently (Hennink & Leavy 2014, 187). I carried out the study as carefully as possible, enabled the necessary changes with an iterative approach and transparently documented the different stages and results of the study.

Validity in qualitative research focuses on evaluating the credibility and accuracy of the research. While credibility is strongly related to following and documenting the research process, accuracy is related to the data itself and its interpretation. As Hennink and Leavy (2014, 1979) state, qualitative research allows participants to freely express their views, avoiding the constraints of predefined categories, and enabling greater depth and authenticity in their responses. The open-ended nature of interview questions and inductive probing allow researchers to obtain more precise and nuanced responses from participants. The interactive and inductive nature of qualitative interviewing contributes to the overall validity of the study. For these reasons, I felt that a qualitative approach and focus group interviews were the best way to collect data.

The validity of the data interpretation can be assessed through respondent validation as well which involves presenting study findings to selected participants, who confirm or clarify the results. This strategy provides some external validation that study results and their interpretation are valid and recognizable by members of the study community themselves. (Hennink & Leavy 2014, 180.) After the analysis, I presented the study findings to four of the focus group participants with representatives from each focus group to gain external validation.

Another approach is using negative and deviant case analyses. Negative case analysis involves looking for data that contradict the identified themes or explanations, while deviant case analysis looks for outliers that don't fit the emerging interpretation. By addressing contradictory data, researchers show that their interpretations are based on a comprehensive analysis of all data rather than just selecting information that supports their perspective. These strategies provide an important safeguard against interpretation bias. (Hennink & Leavy 2014, 182.) An inductive approach in data analysis before linking the results to the theory helped me to consider any contradictory data.

Reliability refers to the ability of a study to be replicated successfully whereby if the study were conducted again using the same methods and approach, it would yield identical results (Hennink & Leavy 2014, 185-187). Reliability is a measure of consistency that ensures study findings are not influenced by accidental circumstances, remaining free from subjectivity or bias. Qualitative studies aim to understand complex social phenomena, explore contextual

influences on social behavior, and encompass diverse participants' experiences and characteristics. The iterative process allows researchers to be responsive and dynamic, following leads as the research progresses. As this approach is unlikely to be repeated exactly, the goal of achieving objective replication may be considered naive and unattainable in qualitative research. Since the study was very iterative, it is hardly possible to implement it identically, but a clear description of the study steps should help to implement a similar study with the same main principles. On the other hand, I did not plan the study mainly to be copied elsewhere, but to best serve the target organization.

Quotations can improve reliability, as they verify themes directly from participants' words and avoid sole reliance on researchers' interpretations, leading to improved reliability (Hennink & Leavy 2014, 191). I used direct quotations from the interviews to support my conclusions.

4.4 Ethical considerations

The researcher must seek an ethical evaluation if their study involves situations like departure from informed consent, physical interference, involving minors without proper consent, presenting strong stimuli, risking psychological harm, or posing safety threats to the participants or the researcher. This study did not require prior ethical evaluation.

For the sake of ethics, the design of the focus group interviews was strongly guided by theory, and I used proven models. As Liamputtong (2011) states, in focus group research, like any qualitative research, it's important to have a guiding theory. Researchers need to create convincing stories based on a strong rationale, using a theoretical framework to support their methods. Understanding the theoretical position is crucial for interpreting data sensibly and avoiding preconceptions or biases that might lead to wrong interpretations.

Confidentiality in focus groups can be challenging since more than one participant is involved, making it difficult to ensure complete anonymity. While researchers may provide guidelines, they cannot guarantee that everything shared will remain confidential. This is especially problematic in institutional settings like workplaces. Online research poses even more risks, as data might be accessed by others despite promises of confidentiality. Furthermore, in small communities, confidentiality may be compromised as people know each other, making participants uncomfortable discussing certain matters in a group setting. To manage potential issues, the moderator should observe participants' stress levels and be ready to intervene if needed. Running smaller groups might be better than large ones. After the focus group, a debriefing session allows participants to express their reactions. (Liamputtong 2011.) I clearly explained to the participants the matters related to the confidentiality of the research and their own responsibilities in relation to them.

5 Study findings

The results of qualitative research are presented very differently compared to quantitative research. This is explained by the nature of the data and because in qualitative research the writing up the results is an integral part of the analysis process (Hennink 2014, 127). This chapter presents the key findings of the focus group study, including both the challenges identified through the inductive analysis and the biases identified through the subsequent theory-driven analysis.

5.1 The findings of the inductive analysis

The goal of the inductive analysis was to identify the key challenges in decision-making related to the operational planning of Netlight's business enabling functions (BEF). The findings are categorized into the following four themes which were present in all focus group interviews: Reactive decision-makers solving problems of today, Ambiguity of decision-making, Lack of confidence and Lack of alignment (Figure 4).

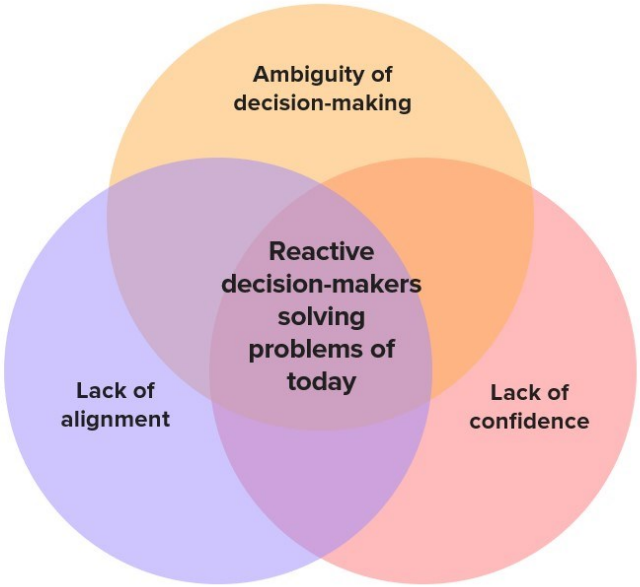

Figure 4: The result of the inductive analysis

As the focus group interviews specifically focused on the challenges of decision-making in the context of operational planning, the findings do not reflect decision-making in BEF as a whole, but only take a stand on the perceived challenges. Additionally, the themes describe

challenges that repeatedly came up in different forms in all three groups, but not all participants have necessarily personally experienced all the mentioned challenges.

Moreover, the purpose of direct quotations is to bring examples of interview material to support the results. Their intention is not to cover equally all groups or perspectives. I have respected the anonymity of the participants in the presentation of the results. To enable anonymity in the quoted material, I reference the source as the respective focus groups, rather than individual participants. I have also made edits to quotations without changing the original meaning to clarify or fix minor grammar errors. I aimed to preserve the speaker's voice and meaning as closely as possible.

When reading the quotes, in terms of terminology, it is needed to understand that by *Operations* the participants refer to the business enabling functions and by *Business Planning* they mean the operational planning of these functions. By *Partners*, participants refer to organization's top management.

Reactive decision-makers solving problems of today

In all focus groups, it became apparent that decisions are often made too reactively, and participants advocated for a shift toward a more proactive mindset. The discussions revealed that decision-making in BEF regarding, for example, recruitment, investments, and general priorities, can be seen both as quick reactions to changing situations and sometimes also as passive and slow, but in both cases the actual decisions tend to be short-sighted.

The participants considered the ability to react swiftly to emerging issues to be a strength of BEF, but they also emphasized the importance of considering the future implications of decisions. It was mentioned that reactivity sometimes manifests as quick responses to strong opinions without considering long-term perspective. It was expressed that in the context of operational planning reactivity has proved to be challenging because it takes BEF further away from being a strategic business partner for the organization. Participants expressed that they want to shift towards being more proactive to avoid time pressure in operational planning and foster a unified mindset within BEF.

> ...we have a penchant or a preferred operating mode, of responding maybe. (Group 1)

> I'm of the opinion that there has been a lot of, you know, uh strong opinions coming in and maybe a bit of a knee jerk reaction to those, not lifting the eye gaze to a bigger picture, but rather "here and now" kind of incentive. (Group 2)

Recruitment was highlighted as a concrete example of reactivity in all groups. It was noted that recruitment often happens too late, leading to challenges. One of the participants described that the current way of making recruitment decisions feels like "always chasing the

optimal team composition without ever achieving it". Finally, one of the groups discussed the importance of proactive planning for various contingencies, such as employee leaves, resignations, and market changes, as opposed to dealing with these issues reactively, which was deemed stressful.

> Yeah, my feeling where decisions might have gone wrong or where we are not good at taking decisions is like in general recruiting… and what I think is the problem is here that we are very reactive. (Group 2)

> …how can we plan for? I don't know - parental leaves, resignations, bad market, etcetera…instead of just reactivate when it occurs because then we are in a state where it's just, like, stressful… (Group 3)

Discussions also revealed that the decision-making tends to be delayed and go around in circles due to hesitation, and despite that, decisions made are often short-sighted reactions to immediate problems. In one of the groups, participants recognized BEF's ability to identify issues but struggle to turn these insights into decisions and actions. This challenge was likened to a "boiling frog" metaphor, where problems gradually intensify and only receive attention when they become urgent. Decisions tend to be made only when the situation becomes urgent, leading to a cycle of reactive decision-making.

> It's a boiling frog problem, the temperature is increasing slowly. We are not noticing it until we reach that. Oh, it's a boiling point. Now in that situation, OK, we decide. We're gonna jump out of this pot - into the next one. (Group 1)

In short, discussions highlighted that BEF is good at identifying problems and solving them quickly and gaining short-term benefits, but the lack of a future-oriented perspective has led to challenges in operational planning.

Ambiguity of decision-making

The discussions in all groups revolved around ambiguity in decision-making paths and roles within the organization and some participants noted that this often resulted in hesitation and passivity, as individuals were uncertain about who had the authority to make decisions.

> And sometimes I think not taking decisions comes from an uncertainty if you are able to take the decision, that's at least my experience, I sometimes don't know can I just do that. (Group 2)

Some of the groups also discussed the importance of ownership. It was suggested that there should be designated decision-makers who are held accountable for the outcomes. Moreover, it was brought up in one of the groups that sometimes people fall into a victim mode in response to external circumstances rather than taking ownership and finding solutions. The size of decision-making groups was also a point of concern. Many participants believed that involving too many people in decision-making could lead to delays and difficulties in reaching agreements.

> And I think everything gets down to who is responsible for what and what is the actual outcome and how to move forward. (Group 3)

> ...it's extremely hard to be a group of like 10 people in a meeting and everybody agrees on something. (Group 3)

Additionally, the discussions delved into how social influence works in the organization, including how personal influence can be complicated, how some people try to make others happy instead of addressing problems, and how it can be challenging to openly disagree. It was also pointed out that it can be difficult to assess one's own influence. Moreover, discussion in one of the groups also touched the issue of some individuals wielding personal influence in decision-making, often interfering in decision-making inappropriately due to a lack of clear decision-making paths.

> …some people swing their personal influence - perhaps too often, and they interfere in areas where they shouldn't interfere as well due to lack of clear decision-making paths perhaps. (Group 1)

> …you maybe do not dare to do action because you think you're stepping on someone else's toes. (Group 3)

Overall, the discussions underscored the need for clear decision-making paths, designated decision-makers, addressing the issue of too big decision-making groups, and openly discussing personal influence within the organization.

Lack of confidence

Participants in all groups emphasized the importance of confidence, particularly in the context of driving decisions. Participants highlighted the need to overcome fears and speak up, underlining that radiating confidence is essential for one's voice to be heard in Netlight's network organization.

> But I mean, that's how Netlight works. In the end, it's a network organization. It's about stating your opinion. If you don't have any energy, no one will listen. (Group 1)

> We need to be confident and that we kind of know what we're doing. (Group 2)

In all groups, there was a hope that people would dare to share their opinions and make decisions considering the long-term perspective as well as challenge current practices and the decisions of others. Some participants also shared personal experiences of situations where they hesitated to voice concerns. One group also talked about the tendency to underestimate in connection with recruitment and resource planning, but the general perception was that lack of self-confidence is a clear challenge.

> I should have raised my voice and my concerns. I learned from that. (Group 1)

> And we know that there are a lot of great minds at Netlight who have thought about a lot of things a lot and think also of a lot of improvements, but they don't come forward. (Group 2)

> For a long time, I have used or adopted the same recruitment strategy and we have not been able to fill all those positions that I believe that we require in a company this size and I think we are held back also by some sort of unwillingness to actually explore that area. (Group 1)

In short, the participants highlighted the importance of confidence in decision-making and encouraged daring to speaking up, disagree and challenge the status quo.

Lack of alignment

All groups recognized a need for increased alignment within various groups when it comes to operational planning and advocated for a shift from functional silos toward cross-functional collaboration, both between BEF' functions and also with functions outside of BEF. The significance of cross-functional collaboration for effective value creation and strategic planning was addressed, emphasizing proactive collaboration among individuals from different functions, guided by knowledge sharing. Lack of connection with Netlight's strategy was also discussed. Overall, participants felt that despite being "one Operations", functions still tend to operate as individual functions.

> …I think here we need to discuss even more and align even more and come up with the plan and I think this cannot be done within one function, but this has to be like one Netlight one Operations thing… (Group 1)

> … I think effective value creation and strategic planning needs this cross-functional collaboration…we can only create value when there are people from

> different functions working proactively together and people who have the knowledge... (Group 2)
>
> What does it make Operations if we don't work as like one Operations and not connect to the rest of Netlight? I think that makes us passive. (Group 3)

Inclusion of Operations in operational planning decision-making was also addressed in all groups from different perspectives. Concerns were expressed that Netlight's strategic agenda did not mention or include BEF, making it harder to feel relevant and lean into decision-making. It was also noted that when BEF was included in the organizational-wide operational planning process, it often happened at a later stage, under time constraints, which added pressure and made it challenging to meet deadlines, leading difficulties to effectively participate. The absence of BEF representatives in the organization's top management was brought up also, highlighting a gap in representation of BEF in strategic decision-making.

> …the fact that Operations is not mentioned within the strategic agenda…that's honestly a real challenge... it's also kind of excluding and there is more of an effort to actually to feel relevant or lean in. (Group 1)
>
> "The inclusion of Operations, I think definitely it has been a little bit better last round when I was involved, but I remembered a year before when I was first involved and then also the lack of inclusion felt like a real time pressure because then it was like oh, but now we need to get this done in a really short amount of time. (Group 1)

In short, the discussions stressed the importance of better alignment within BEF and concerns about BEF not being included enough in overall decision-making and planning of the organization.

5.2 Theory-driven analysis of the study findings

The inductive analysis was followed by a theory-driven analysis, wherein the identified challenges were linked to potential biases using the same bias typology employed in the study's design.

All in all, it's fair to conclude that unconscious use of heuristics and biases occur in the operational planning decision-making of Netlight's business enabling functions (BEF). Concerns were raised in the study about the overall reactive nature of decision-making. When decisions are made reactively, it is natural and more likely to rely on heuristics and eventually fall into biases. Heuristics are indeed useful in a complex environment, but their unconscious use can lead to bad decisions. As Kahneman and Tversky (1975, 27-28) put it, heuristics and biases are a fundamental part of decision-making under uncertainty, and as Bazerman and Moore (2017, 6-7) pointed out, while heuristics help busy managers to deal with a complex world, managers are often unaware of them, which leads to problems.

It’s also safe to say that the current decision-making environment is noisy, meaning that there is randomness in decision-making and various biases at work, sometimes even having opposite effect, impacting decision-makers differently. Since the level of complexity in a network organization such as Netlight is rather high, having noise is perhaps inevitable. The ambiguity of decision-making revealed in the study also points to this. As Kahneman et al. (2016, 4-5) explain, noise is common in complex situations.

Various challenges in decision-making were brought up in the study, and possible biases can be identified based on them. However, it is impossible to accurately identify the most dominant among the emerging biases and determine whether other biases, possibly driving in the opposite direction, exist in decision-making. Below I highlight biases that are likely based on the challenges discussed in the focus groups. Identified biases with their interpretations are divided into the typology used in the knowledge base including stability, pattern-recognition, interest, social and action-oriented biases.

Stability biases

Clues about the presence of a status-quo bias and loss aversion surfaced. The status-quo bias is the tendency of keeping things as they are until immediate pressure to change. Deviation from the status quo can also feel like a loss, which we tend to avoid due to our natural loss aversion. (BIT 2017.) The study revealed that the BEF may sometimes be unnecessarily attached to existing processes and plans without challenging them.

Pattern-recognition biases

Salience bias can be behind why decision-makers in Netlight’s BEF tend to focus more on short-term decision making instead of taking the big picture and long term into account. After all, problems and wins of today are more salient. Salience bias leads people to overweight recent or highly memorable events and it can also explain procrastination that arises when present costs become overly salient in comparison with future costs (Lovallo & Sibony 2010; Akerlof 1991).

Salience bias can also be a contributor to connection and inclusivity challenges discussed in the study. According to Hirshleifer (2007, 5), it’s common for managers in companies to overlook resources required for supplementary business processes because they are less salient than the organization's core business. The study revealed that BEF is not explicitly mentioned in the organization's strategic agenda nor sufficiently included in strategic and business planning of the organization, making the operational planning in BEF harder. Since the work of BEF is not as salient as the work of rest of the organization, BEF can be

unconsciously left in the background of planning and even in strategic documents. In this way, not mentioning BEF in the strategic agenda or not including BEF to planning as much as other parts of the organization can contribute to BEF deprioritizing long-term decision-making, because BEF's role in the big picture has not been made salient.

Change blindness may also appear in BEF, referring to a tendency to overlook gradual changes (Bazerman & Moore 2017, 67). The study revealed a challenge likened to a "boiling frog" metaphor, where problems gradually intensify and only receive attention when they become urgent. Decisions tend to be made only when the situation becomes urgent, leading to a cycle of reactive decision-making. People do notice things, they are not completely blind to the signs of the environment, but the need for action is not recognized until the last moment.

Interest biases

The existence of silo thinking is very likely. Based on the study, it seems that the decisions are largely made within individual functions, and even though the need for alignment between functions is recognized and experiments have been carried out, the challenge remains. All focus groups stressed the need for increased alignment within various groups, advocating for cross-functional collaboration in the operational planning. Silo thinking is an apparent indication of interest bias, and it can manifest as organizational units prioritizing and protecting their own interests rather than working towards common goals. (Baer et al. 2017, 3.)

Challenges related to alignment as well as inclusion can also connect to the “curse of knowledge”: inability to ignore the knowledge they have that others do not have when assessing other’s knowledge (Bazerman & Moore 2017, 56-57). First of all, functions may unconsciously assume that other functions know each other's interests, even though this is not the case and thus the need to align and cooperate is not prioritized. Moreover, the rest of the organization may assume that BEF knows what they know, reflecting in strategic communication and documentation. BEF is not mentioned in the strategic agenda because its role is taken for granted or as “common knowledge”. However, as Heath and Heath (2006) put it, concrete language and stories can help to defeat the curse of knowledge and make strategy statements more impactful enabling a common understanding of the strategy and providing a language for discussing them.

The study revealed that people sometimes might find it challenging to voice disagreements openly. As Kahneman, Lovallo & Sibony (2011, 55; 2010) stated, effective decision-making processes consider diverging interests explicitly and including decision-makers with conflicting interests can safeguard against biases. The absence of dissent in a team dealing with a complex problem should sound an alarm.

Social biases

Many of the challenges discussed in the focus groups are strongly connected to social biases. When decision-makers are uncertain about decision-making structures and their own decision-making power, social biases take on a greater role. Social biases emerge from our inclination towards harmony rather than conflict (Baer et al. 2017, 3).

The study revealed that it can be easy to blend in with the crowd and difficult to disagree and challenge each other, which indicates the likelihood of groupthink. Groupthink happens when individuals in a group are influenced by the thoughts and behaviors of each other, often leading to a suboptimal decision because people are afraid to disagree. (BIT 2017.) It was also pointed out in the study that the absence of clear decision paths can allow individuals to inappropriately exert personal influence on decisions. This could be connected to **sunflower bias** - the tendency for group members to blindly agree with their leader (Baer et al. 2017, 3.), in this case the more senior colleagues.

Action-oriented biases

As Bazerman and Moore (2017, 14-15) put it, overconfidence may be the mother of all biases, as if our self-confidence was well calibrated, we could correct our flaws in decision-making better. Interestingly, the study strongly highlighted a lack of self-confidence in decision-making about the future. The participants felt that decisions should be made more confidently, differing views should be more actively brought up and others' decisions should be challenged more courageously. Lack of self-confidence can be caused by a lack of skills and experience as suggested also in the study, but impostor syndrome can also play a role -a phenomenon where individuals doubt their abilities and fear being exposed as a fraud, despite their competence.

On the other hand, the challenges described in one group related to also underestimation pointing to overconfidence, and more specifically the planning fallacy, which occurs when we are stuck with the “inside view” and focus only on the situation at hand and ignore past experiences, as if we were trying to predict a company's future only based on its current plans and perceived challenges. (Kahneman et al. 2011, 58.)

Although the lack of self-confidence was emphasized more in the challenges discussed in the study, the possibility of overconfidence cannot be ruled out, because overconfidence is a very persistent bias and it is almost impossible to recognize it in oneself, and even if it is recognized in others, it can be difficult to raise it in a group discussion.

Confidence vs. decision-quality

Due to the high emphasis on the importance of self-confidence, the unconscious use of the representativeness heuristic and the resulting problems are possible. The representativeness heuristic is used when a person unconsciously draws conclusion about another person, looking for characteristics related to existing stereotypes (Bazerman & Moore 2017, 8). In the context of operational planning of BEF, representativeness heuristics can lead to problems if the final decision is influenced by the self-confidence of the proposer more than the actual quality of the proposal. This may lead to many good proposals not being considered. As explained by Kahneman et al. (2021, 234-235; 226-228), we trust people who show confidence more than those who show doubt but it's important to be aware that while those people might be right, they might also just be respect-experts. In the end, great decision-makers may not always fit the stereotype of a strong and decisive leader. Evidence shows that to reduce mistakes in decisions, it's better to remain humble and open to different opinions – one should be decisive at the end of the decision-process, not at the start.

To sum it up, the decision-making environment at Netlight appears to be noisy and operational planning may be affected by many kinds of decision-making biases, not all of which can be identified with full certainty and exhaustively based on this study. Among the biases identified are the status-quo bias and salience bias, contributing to a pattern of reactive, short-term decision-making. Social biases, like groupthink and silo-thinking, can hinder alignment and open disagreement. Moreover, miscalibrated self-confidence may pose challenges, as it's essential to remain open to different opinions but be decisive at the end of the decision-making process.

6 Development of solutions

Based on the identified decision-making challenges and the underlying biases, solutions were developed by mapping out suitable strategies to prevent biases using behavioral economics research, literature, and articles. Four main recommendations, shortly presented in below table (Table 3) and further explained in this chapter, include defining good decision-making, improving decision-hygiene, unleashing the power of diversity and building awareness through training.

Regarding the solutions, it should be noted that while debiasing operational planning requires commitment and persistence from business enabling functions (BEF) themselves, they cannot do it alone. The entire organization can help BEF by removing possible system-level obstacles in decision-making with communication, inclusion, and empowerment.

What	Why	How
Define good decision-making	• Clearer expectations • Easier to develop as decision-makers	• Define what makes a good decision, considering both how decisions are made and the qualities of the decision-maker
Improve decision hygiene	• Biases could not be identified and prioritized with full accuracy and certainty through this study • Decision hygiene can prevent several unspecified biases at the same time	• Align on decision-making responsibilities, authority and boundaries • Enable individuals to form an independent opinion by providing a common neutral factual base • Ensure that operational planning forums support good decision-making and cross-functional transparency
Unleash the power of diversity	• Diversity can safeguard against biases • Opportunity to unleash "Wisdom of crowd"	• Ensure a balanced decision-making process from the perspectives of accountability and psychological safety, focusing especially on improving the latter • Invite outside perspectives and incorporate official decision observer roles and premortem exercises into operational planning
Build awareness through training	• Debiasing can only work if there is awareness and acceptance of possibility of biases and noise	• Organize training focusing on e.g business-relevant biases, confident humility, decision-hygiene and best practices

Table 3: Recommended solutions

Everything starts by outlining what good decision-making looks like - this way the expectations are clearer, and it is also easier for individuals in BEF to further develop as decision-makers. As touched in the theoretical framework, some people are less biased and noisy than their equally qualified and experienced peers and what separates them often is their eagerness to keep searching for new contradicting information, integrating that to their perspective and readiness to change their minds. (Kahneman et al. 2021, 234-235.) In addition, when perspectives are gathered to support decision-making, bias is best avoided when the perspectives of those who have relevant competence and experience in the matter weigh the most and not those who have a strong personal interest in the matter.

Since the decision-making environment at Netlight is noisy and therefore operational planning of Netlight's BEF may be affected by a wide variety of possibly overlapping or competing decision-making biases which cannot all be identified and prioritized based on this study, I recommend Netlight to start by improving decision hygiene.

Debiasing works best when the specific biases and their direction is known. Especially in complex situations, however, it is common that the direction of the biases is unknown, and decisions are influenced by several biases simultaneously, either reinforcing or opposing each other, affecting the decision makers in varying and unpredictable ways. In these noisy situations, we need to try to mitigate more than one bias at a time. The goal is to prevent

unspecified range of potential errors before they occur – this is called decision hygiene. (Kahneman et al. 2021, 240-243.) Kahneman et al. (2021, 243-244) compare decision-hygiene to hand-hygiene. When you wash your hands, you don't know which germs you are preventing but you know that handwashing is an effective way to prevent many of them. Similarly, decision hygiene is an effective way to mitigate biases that you can't pinpoint due to the noise. Decision hygiene may not give you a tangible sense of achievement, but it works statistically. There are two widely used noise-reduction strategies to improve decisions: selecting right decision-makers and aggregating multiple independent estimates.

It is important to choose the decision-makers carefully, especially in fields where there are many respect experts. Some individuals are less bias and noisy compared to their equally qualified peers and factors like intelligence and cognitive style play a role. It's also wise to choose individuals who actively seek out conflicting information, incorporate it thoughtfully, and are open to changing their viewpoints as a result. Moreover, the personality of people with excellent judgment may not fit the stereotype of a decisive leader. People tend to trust and favor leaders who are exude confidence and seem to know what is right. However, evidence suggests that to minimize errors, leaders should remain open to opposing viewpoints and be ready to admit when they are wrong. If they end up being decisive, it is at the end of a process, not at the start. (Kahneman et al. 2021, 234-235.)

At Netlight, this could mean in practice that BEF, possibly together with rest of the organization, align on decision-making responsibilities and authority, as well as possible boundaries regarding decisions related to the operational planning of the functions, for example the priorities, recruitments, and investments. This ensures that the right people make the right decisions and that everyone involved in operational planning in BEF is empowered to make decisions.

The easiest way to reduce noise through aggregation is averaging judgments. For instance, if you average the opinions of one hundred people, you can reduce noise by 90%. This is the idea behind the "wisdom of crowd" approach. However, it works best when the opinions are not influenced by each other, meaning they are independent. The approach is often connected to gathering judgments from a large group but it's also possible to gather the judgments of a smaller group of the best decision-makers, like five experts, based on their past success. Another effective method is the mini-Delphi approach, which can be used in meetings. In this method, participants first provide their own estimates independently, after which they explain and justify their estimates to the group. Afterward, they make a new estimate, considering the insights and explanations shared by others. Finally, the average of these new estimates is calculated. (Kahneman et al. 2021, 260-262.) Kahneman et al. (2021, 272) highlight that aggregating independent and diverse judgments is often the easiest and cheapest decision-hygiene strategy – and if organizations want to fully leverage the power of diversity, they must embrace disagreements that follow when people reach their judgments independently.

At Netlight, when decisions are finally made, it is vital that all decision makers first think independently, after which aggregation should take place both within functions and between functions. All those involved in decision-making should have access to a common, neutral factual base, on the basis of which everyone can independently form their own point of view. This minimizes the effect of social biases. Also, I would recommend Netlight to review BEF's decision-making forums in operational planning to ensure they support decision-making in a best possible way and contribute to transparency across functions and across BEF's borders. In this way, silo-thinking can be best prevented.

Lovallo and Sibony (2010) share best practices to reduce biases in decision-making meetings. Forming a cohesive yet diverse group is the initial crucial step, ensuring participants with varied backgrounds, roles, and perspectives. Encouraging internal critics and inviting experts ensures richness and relevance of perspectives. Assigning pre-meeting homework enables predecision due diligence based on accurate facts and creative thinking. During the meeting, open peer-like atmosphere encourages constructive disagreement. At the same time, the debate must be managed effectively by reminding the participants of the purpose of the meeting as well as the decision-making criteria while encouraging contrarian thinking. After making a decision, commitment is key, and addressing dissenting concerns is essential. Continuous monitoring and analysis of decisions contribute to learning and improvement, while periodic reviews with an outside observer help identify and address potential biases in meeting dynamics and preparation.

Ebert and Freibichler (2017, 3) also suggest making meetings more efficient by changing their default length. A highly effective approach involves adjusting the default meeting duration. Changing the default to 30 minutes and establishing this as the new "standard" meeting time can be a straightforward yet powerful strategy for increasing efficiency. This nudge creates a new social norm where a 45-minute meeting is soon perceived as lengthy. In larger corporations, changing this default could lead to a significant 5 percent reduction in the time employees spend in meetings, accumulating to a substantial increase in productivity over the year.

At Netlight, developing the structure of decision-making meetings using the principles of behavioral economics can make decision-making more effective and faster without compromising quality and thus free up time for implementing decisions and other value-generating activities.

Including people with different interests in decision-making can safeguard against biases but this should be accompanied by clear frames for decision-making. As Adam Grant advocates, strong decision-making involves critical thinking through process accountability and

psychological safety. Psychological safety, without process accountability, fosters a comfort zone, while process accountability without psychological safety leads to anxiety. Netlight should strive to keep both at a good level and given that the study revealed that individuals lack confidence in decision-making and find it hard to challenge others, I would recommend Netlight to focus particularly on psychological safety.

I believe that Netlight has great opportunities to harness “wisdom-of-crowd”, because decisions are already made actively in groups including many perspectives. The missing piece is enabling independent thinking and the sharing of divergent views. Low hanging fruits could be seeking outside perspectives and incorporating official decision observer roles and premortem exercises into the operational planning process.

Taking the "outside view" means considering other people handling similar situation, making it a useful antidote to the planning fallacy (Moore 2020, 186). When the insider view is biased and considers every situation individually, the outsider view is better at generalizing across situations and identifying similarities (Bazerman & Moore 2017, 222). As Kahneman and Lovallo (2003) put it, outside view provides “a reality check” to a more intuitive view and thereby lessens the likelihood of the company making rushed decisions and wasting time and money. Outside view can also be obtained concretely by asking someone for an external input on the decision. For example, members of the group making the decision can talk to people they trust outside the group and share what they learn. Outside experts can also be invited to challenge the assumptions of the group and bring in new perspectives. (BIT 2017.)

Since people recognize the biases of others much easier than their own, *decision observers* can be trained to catch biases as they happen. The observer could be a supervisor, a team member, or an outside facilitator and using bias checklists can also be helpful in this process. The role can also be taken on by a group of people, the so-called red team. *Red teaming*, a technique frequently utilized in the military and intelligence sectors, is employed to review existing assumptions, explore alternative options, identify vulnerabilities, assess limitations, and find the risks associated with a decision. However, these practices only work if the decision-makers are committed to reducing biases. (BIT 2017; Kahneman et al. 2021, 240.)

The group can also be assembled just before the final decision to perform a *premortem*. Premortem means a procedure where a group of people knowledgeable about the decision are brought together and asked to imagine a future in which the decision has led to complete catastrophe. Premortem gives everyone permission to doubt and encourages even those in favor of the decision to look for possible threats. (Kahneman 2011, 264.)

A survey by McKinsey, involving around 800 board members and chairpersons, found that their top priority was to reduce biases in decision-making to improve organizational performance. This has led to more companies offering training on unconscious biases and how they affect actions taken by managers. Training is a valuable tool for creating awareness about the need

for debiasing but needs to be accompanied by other means, because the biases are typically too strong to be overcome by training only. (Baer et al. 2017, 1.)

At Netlight, training can't solve the challenges alone, but I believe it can be a powerful means of raising awareness of bias, noise, and the importance of debiasing in operational planning of BEF. As Bazerman and Moore (2017, 217-218) sum up, in order to improve individual decision-making in organizations, individuals must want change, and in order to want change, they must believe that there is room for improvement in their decision-making. However, this is not easy, as individuals tend to trust and hold tightly to their very intuitive decision-making styles, with which they have often successfully progressed in their careers. Erroneous beliefs must therefore be "unfrozen" so that the mind becomes open to new alternatives. The training could include, among other things, the following topics:

- Business-relevant biases
- Confident humility
- Decision hygiene
- Best practices, such as decision observers and premortem

7 Evaluation of the development process

The purpose of this chapter is to evaluate the development process, address the quality of the focus group study as well as assess the value and transferability of the results and reflect on my personal learning throughout the process.

This thesis aimed to develop the decision-making of Netlight's business enabling functions in the realm of operational planning by identifying potential biases and recommending strategies to reduce biases using insights from behavioral economics research. The theoretical framework outlined business-relevant biases and debiasing strategies, while the study identified decision-making challenges specific to Netlight. Potential biases and appropriate strategies were finally identified by aligning study findings with theory.

The development process was catalyzed by the genuine need identified with Netlight to develop business enabling functions' decision-making in operational planning. The development process was built on a theoretical foundation and well-proven methods, which I familiarized myself with during the process. The entire process spanned seven months from May 2023 until November 2023, encompassing building the theoretical foundation, collecting data through focus group interviews, analyzing the data, and developing solutions as well as formulating final recommendations. The results of the thesis were presented in November

2023 to the target group at Netlight, which included employees involved in operational planning of business enabling functions.

I collected the material I needed for the development through focus group interviews, with the help of which I found indications of several different biases. However, it cannot be stated with complete certainty that all relevant biases were found, and no opinion can be taken on their significance and priority. In retrospect, I recognize that I was overconfident in setting the goal of the development process. Solutions to reduce biases were developed using existing studies, literature, and articles. In hindsight, valuable opportunities to co-develop solutions with people at Netlight were missed during this phase. On the other hand, this was partly also a conscious decision due to time and resource limitations of both me and Netlight.

Focus group research may be assessed using a process approach to identify how validity and reliability were addressed at different stages of the research process. (Hennink & Leavy 2014, 198.) The reliability of the study is based on a structured and careful process and its documentation throughout the study. I collected the data personally and carefully and reported all the results thoroughly before making my own conclusions. I analyzed the data inductively identifying key themes. I searched for connections between the data and the theoretical framework. To further improve the reliability of the study, I included direct quotations in the results. However, since I didn’t plan the study to be implemented directly in other organizations and the study was very iterative, direct copying of the study may be difficult.

Validity of the study is supported by the fact that I managed to get people with relevant experience to participate in the focus group interviews. The challenge of focus group interviews is to get together a group of suitable size. In working life, people's calendars are often very full, and priorities can change unexpectedly. However, through careful planning and communication, I managed to minimize these risks and, in the end, only one participant had to cancel their participation. Furthermore, I analyzed the results iteratively, often going back to the raw material, listening to the recordings again and again and challenging my own interpretations. I believe this improved the quality of the analysis. I utilized the feedback and questions provided by my thesis supervisor at Netlight and I also presented the initial study findings to four of the focus group participants with representatives from each focus group to get their feedback on my interpretations.

I wanted to carry out the study with high ethical standards, which is why I utilized theoretical models in carrying out the study and made interpretations very thoughtfully, understanding my own limitations. I personally took care of confidentiality throughout the process, but I was also open to the participants about possible challenges related to confidentiality in studies conducted in work communities, considering that the target group of the study was quite limited. I also ensured that the participants knew their roles to ensure confidentiality.

Since I was also employed at Netlight and worked in one of the business enabling functions during the development process, I studied my own work environment. Therefore, my position and relationships in the organization may have both weakened and strengthened the overall quality of the study. The design of the study was supported by my previous knowledge of Netlight as an organization, and being part of Netlight also increased my commitment. However, I cannot rule out that my position would have influenced the openness of the study participants.

As for possible further research, Netlight has many possibilities. This development work was limited to Netlight's business enabling functions, but it is also possible to carry out similar studies in other parts of Netlight, such as sales and recruitment functions. Also, since this study could not determine and prioritize the existing biases with full accuracy, there's potential value in conducting more in-depth investigations into the decision-making processes in the future, aiming to identify and address the most predominant biases with tailored strategies.

In their final feedback, Netlight emphasized that the thesis offered them many lessons learned. Overall, the thesis serves as a good starting point to create awareness around the decision-making biases that can affect both Netlight’s operational planning, but also in other contexts where decisions are made, providing with a clear categorization of the current challenges faced within operational planning and giving good recommendations on ways forward, where improving decision hygiene is closest at hand to be tried out.

On a larger scale, this thesis brings interesting perspectives to the decision-making of organizations in complex environments and difficult market situations. Challenging times put pressure on business enabling functions to improve their planning and decision-making in order to support the organization in tough competition, but on the other hand, it also offers opportunities for functions to develop and renew themselves as business partners. This thesis can provide ideas for harnessing this potential both for organizations and others interested in the subject. Although the decision-making environment of each organization is unique and thus the results of this thesis are not directly transferable, other organizations can use the results as inspiration for a critical examination of their own decision-making structures and for catalyzing possible research and development projects. Many of the developed solutions are also universal and work in different environments, such as decision hygiene.

Overall, I am content with the thesis process, both in terms of my personal learning and the insights it brings to Netlight. In hindsight, some of my choices were better than others, but I believe I practiced good decision hygiene along the way. I am very thankful for the opportunity to write my thesis for Netlight, the organization I’m truly proud of. I would like

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Figures

Tables

Appendices

Appendix 1: Focus group frame