

**FROM
MOVEMENT
TO MEDALS:
A STRATEGIC
GUIDE TO
PARALYMPIC
SUCCESS**

Thesis report

From Movement to Medals: A Strategic Guide to Paralympic Success

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Preface

In front of you lies the thesis "From Movement to Medals: A Strategic Guide to Paralympic Success ". This thesis is for completing the Master of Strategic Product Design at Technical University Delft. The research took place from March to October 2023.

At the beginning of my studies (2016), I first came into contact with para-sports through a friend. At this time, para-sports was still something unknown to me, and I certainly had no idea how to combine it with my design studies, and it wandered a bit into a background thought. Five years later, during the coronavirus pandemic, I had little to do during the summer. After two weeks of enjoying the Olympics, I was warmed up to enjoy the Paralympics. To my disappointment, finding updates and watching live broadcasts was challenging, without considering the time difference. From that moment, it was clear that I wanted to do something for this, and it fits perfectly with my studies, where we analyse complex problems and try to solve them.

What a complex problem it was. Fortunately, I did not have to do this individual assignment alone.

Firstly, I would like to thank my supervisors, who were able to curb some of my chaos and enthusiasm at times and guide me in the right direction. I would like to thank Sylvia and Sander, especially for guiding the project on design and documenting levels. Thank you for the interesting discussions and for challenging me to get everything out of the project. I want to thank Esther and Eelke for trusting me to do this project together. You guided me nicely with a vague but enthusiastic start and a new process.

I would also like to thank my study friends for growing together as designers, doing research together and especially for all the unofficial brainstorming during coffee breaks when I could not get my mind right and you all listened to me rattle.

Finally, I want to thank my family, boyfriend, and housemates, who knew how to deal with me during the highs and lows. I give a very special thanks to my mother, a crucial factor here, who always manages to help me write everything in my head during the deepest valleys on paper.

Enjoy reading, and see me if you find it interesting because I can tell you a lot more about it.



Executive Summary

Ten per cent of the Netherlands has a mild to severe disability (WHO, nd.). Despite this, there is little attention to Paralympic sports played in the Netherlands. This research focuses on:

“How can wheelchair team sports in the Netherlands be effectively supported in their journey towards professionalisation in preparation for the Paralympics 2032 in Brisbane?”

For this research, the new product development effectuation approach was applied (Duening, 2012). Methods used include phenomenological research in wheelchair tennis, ice sledge hockey, para-badminton and the euro para games, qualitative interviews and research on the tennis sport as an exemplar.

The results from the studies were that federations have the most impact and potential to accomplish professionalisation. The NOC*NSF should guide and keep the overview of what all the different federations are doing. The federations are the implementers, reporting what is and is not working to the federations. The athletes also have an essential feedback role but are the potential new role models of the sport.

To professionalise paralympic wheelchair team sports, federations should improve four components in their sport. The competition must be at a standard high level, there must be an organisation for para-sport within the federation, the sport must become financially stable, and the elite athletes must start getting paid to become full-time athletes. A para-sport does not have to figure it out independently but can achieve cross-pollination through various collaborations.

These four components can lead to professionalisation in four steps mapped out in a roadmap. In the first horizon of six months, all wheelchair team sports federations will look at their organisation and make a plan on how they want to grow.

In the second horizon of one year, they will explore with whom they can achieve their goals and create a plan together.

In the third horizon of three years, they will implement the new structures, and the fourth horizon is about maintaining and improving the new structures.

Based on this design, wheelchair team sports can be professionalised in the Netherlands. For a successful strategy implementation, a follow-up study could look from the federations' point of view at how this roadmap can be applied to other sports.

Glossary

This project is about high-level performance sports for people with a disability.

A sport that a person plays with a disability is a **para-sport**. A para-sport included in the Paralympic Games is a **Paralympic sport**. The **Paralympics** is the most prestigious international sports event, once every four years.

A person with a disability who plays sports is a **para-athlete**. In this report, the athlete is also referred to as a para-athlete. A para-athlete participating in the Paralympics is a **Paralympian**.

Athletes playing sports without a disability are **athletes without a disability**. When referring to sports played by people without a disability, this will be called **non-disabled sports**, in line with the Paralympic Sports terminology guidelines.

The **NOC*NSF** stands for Nederlands Olympisch Comité * Nederlandse Sport Federatie and is the Dutch National Olympic and Paralympic Committee. The NOC*NSF works together with all the national sporting federations.

Federations are responsible for a specific sport. For example, the Dutch Football Association (KNVB) is responsible for all types of football in the Netherlands. This includes the organisation of tournaments and leagues and structure associations of all types in this sport (football).

The sporting federations maintain their sports and direct the sports association.

An **association** is a sports body that an athlete can join to play the sport in question. An association is a place where the athlete can train in the sport and compete in competitions.

A **competition** is a contest towards the championship, usually spread over an entire (sports) season.

A **tournament** is a series of matches on one or more consecutive days with a knock-out system.

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road to

Phase 0: **Idea Generation**

Phase 0 contains a brief explanation of paralympic sports and explains the reason for this thesis. Why should paralympic sports be professionalised, and why is it time to act upon it? After the introduction, the approach used in this thesis is explained: Effectuation.

1 INTRODUCTION

In the vision of an ideal world where equality rules, the sporting community should be genuinely balanced, offering equal opportunities to all, regardless of background or ability. This equality is my assumption on which I have based the research for this thesis.

There are several different angles to why equality does not currently rule in the sporting community. Gender issues are very prominent now in sports. There is a strong difference between professional and recreational sports. Also, significant discrepancies worldwide due to cultural values or lack of money can result in underdeveloped sporting facilities, preventing them from growing. These are just a few reasons, yet there are more reasons why equality does not rule in the sporting industry.

During the course Initiate to Graduate, I found that athletes with a disability want to be proud of their accomplishments and share this feeling with others for recognition. Nevertheless, they cannot achieve this because their sport is not treated equally compared to their able-bodied sports variant.

When focusing on people with disabilities, several severe obstacles exist to participating in sports. It starts with the simple questions: which para-sports exist, can I join, and where can I play?

Subsequently, there is hardly any visibility on various online and regular media platforms (TV or internet) for people (with a disability) to watch para-sports.

Paralympic sports are not well known or shown, so there are hardly any 'heroes' or role models for people with disabilities. As a result, there is little to no awareness of para-sports, even among sports enthusiasts and athletes.

This graduation project will focus on (professional) sports and people with a disability. The official and preferred term for sports played by people with disabilities is para-sports. Narrow focus on wheelchair team sports.

One company that takes responsibility for the prominence of para-sports is the 'Nederlandse Olympisch Committee * Nederlandse Sport Federatie' or, in short, NOC*NSF.

They are the head of the sports federations and associations in the Netherlands. The NOC*NSF has multiple responsibilities: preparing elite athletes for the Olympics and the Paralympics and raising awareness for other sports.

The NOC*NSF aims for three goals (see Figure 1):

- Letting 12 million people play sports in 2032 in the Netherlands,
- Everyone feels welcome at a sporting club,
- Top 10 rankings worldwide.

These three goals are essential for this graduation topic.

In 2000, NOC*NSF decided to take more para-sports seriously. It should not be organised in a different association but fully immersed within the non-disabled sport sports associations. This immersion strategy worked well until 2016 when signs emerged that the full potential was reached. This can be seen in the growth of medals during the emergence, with a peak at the 2012 Paralympics. After this, the amount of medals was not reached, and a new approach and strategy needed to be developed for further progress.



12 Million people participate and move sportive exercise a minimum of 3x a week



Enjoyment of Sport athletes, volunteers, supporters, and professionals give their enjoyment of sport an 8 or higher



Top 10 TeamNL is among the 10 most successful elite sports countries in the world

Figure 1 the three essential goals of the NOC*NSF 2022.

Next to the goals derived from the current strategy NOC*NSF(2021) has set for all sports in the Netherlands, the para-sports identified goals for themselves, of which the most relevant are:

- professionalisation of classification
- further development of the Paralympic program
- structure of the identification of athletes with paralympic potential
- increase awareness among the general public.

As the classification is often unclear for the layman in para-sports, which makes communication about the sports complex, a minimum knowledge about the classification is needed for this thesis.

The NOC*NSF has defined nine classifications for Paralympic athletes (sight problems, paraplegia, amputation, brain damage, mentally handicapped, impairment in all limbs, impairment in legs, impairment in arms and upper body and others). Every classification contains multiple sports (like swimming, athletics, wheelchair basketball, etc.), leading to around 50 categories competing in the Paralympics. Esther Vergeer, the Chef de Mission of the Paralympic team for the Paralympics of 2024, stated: "The Paralympics are too inclusive; there is no real competition" (NOS, 2022).

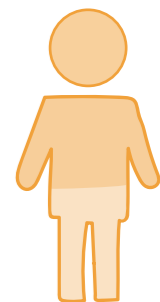
This thesis only focuses on wheelchair team sports, meaning that only three (paraplegia, amputation and impairment in the legs) of the defined classifications apply to this thesis, see Figure 2.



Amputation



Impairment in the legs



Parapalegic

Figure 2 the three classifications applicable to this thesis.

Figure 3 shows the diversity and complexity of Paralympic sports.

For this project, the main stakeholders are NOC*NSF, the Dutch sports federations and associations that focus on including people with a disability and, of course, the athletes themselves. Esther Vergeer will also serve as a sparring partner in this project, representing Paralympic athletes from her role as Chef de Mission of the Paralympics.

Other potential stakeholders are the International Olympic Committee (IOC) and the International Paralympic Committee (IPC) because of regulations but are not directly involved due to the limitations of this thesis. Next to the official organisations involved in para-sports, the insights and opinions of sports broadcasters and sports enthusiasts who are non-disabled-sporters will be considered.

If nothing changes within the NOC*NSF and the Dutch sports federations, para-sports will stay an 'overlooked' sport. They will not accommodate and inspire children and people with a disability to play sports.

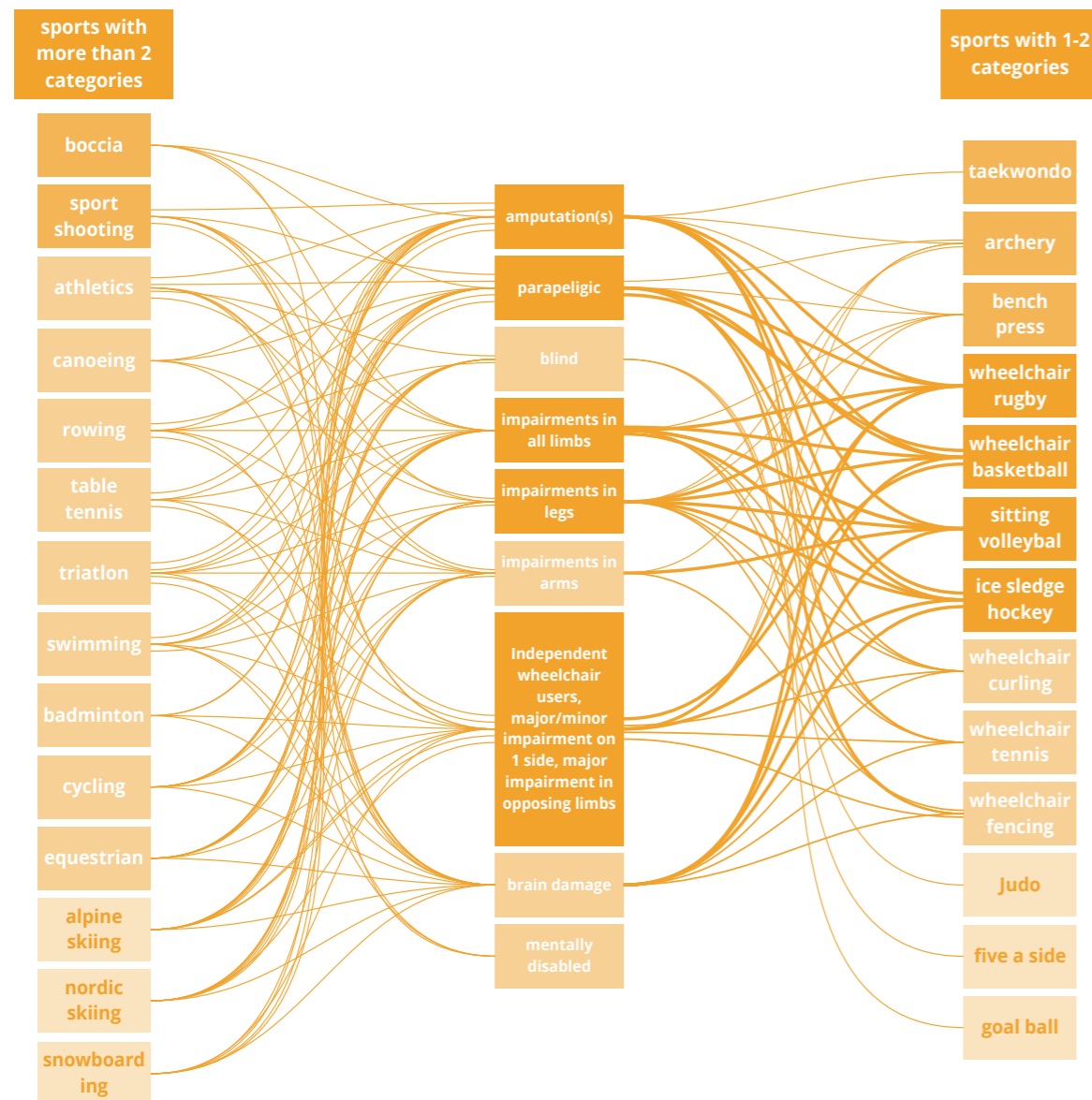


Figure 3 the complexity of para-sports

1.1 Design Assignment

This graduation project will start by investigating the paralympic sports world, mapping out opportunities, limitations and challenges. The next part will focus on one case, a particular para-sport, to learn how that sport became successful. The designing phase will combine the most promising opportunity and the learnings from the case, especially its success. The challenge of this graduation lies in the broad scope of the project, the variety of sports and the silo structure of the federations.

My design goal is to make a visual explanation for Dutch federations that facilitate wheelchair team sports in the Netherlands with problems maintaining their numbers of athletes, building a competition, conserving and expanding their facilities, and professionalising independently.

How can wheelchair team sports in the Netherlands be effectively supported in their journey towards professionalisation in preparation for the Paralympics 2032 in Brisbane?

1.1.1 Goal

As the introduction states, playing sports for disabled people is not an equal playing field.

At this point, the strategy of the IPC is to keep the Paralympics as inclusive as possible. On the other hand, the NOC*NSF sees the Paralympics as a high-performing tournament, meaning fewer options should exist for all handicap categories. The stakeholders have different views on how to deal with para-sports. As mentioned on page 15, the stakeholders vary on the best sports to set an example.

This graduation project aims to create a new strategy for the top Paralympic sports. The strategy will include role models for people (with a disability) and the attention of the general public, media, sponsoring companies and sports federations.

The sub-research questions are:

- Why is para-sport important?
- What does the Paralympic sports world look like?
- What can/should the NOC*NSF do about it?
- Are there any examples?

1.1.2 Focus

For this project, the main focus will be on para-sports hosted at the Paralympics.

As the scope is still too big, I will focus only on elite sports, not recreational ones.

To scope it down even more, I have chosen to focus on summer sports because most winter Paralympic sports are snow-related and not ice-related (like the Winter Olympics), which is less interesting for the Netherlands.

Since the paralympic summer sports still consist of twenty-two sports, I will only design for team sports with physical disabilities in the waist and legs. This results in designing for Wheelchair Basketball, rugby and sitting volleyball. Wheelchair sports with a direct competitor can also include badminton, table tennis, fencing and tennis. The choice for team sports is because team sports have the biggest challenge of recruiting enough athletes to fill a team and competition.

After researching the broad field of all paralympic sports, I will focus on one sport as an exemplar. I will create a tactical roadmap to professionalise paralympic team sports from the conclusions.

1.2 Summary

This graduation project aims to address the challenges and limitations in the Paralympic sports world and develop a new strategy for elite Paralympic sports.

The ultimate goal is to create more inclusive and high-performing competition to equalise paralympic sports compared to able-bodied sports that collect attention from the general public, media, sponsoring companies, and sports federations. An attempt to reach the ultimate goal will be by focusing on the existence of role models for people with disabilities, and researching the sports through observations.

By narrowing the scope to wheelchair team sports at the summer Paralympic sports and studying one specific sport as an exemplar, the project seeks to extract valuable insights to develop a visual explanation for professionalising Paralympic team sports.

Key Takeaways

- This project is about summer paralympic team sports and how to professionalise them
- It starts broadly by screening all paralympic sports.
- It will converge by focusing on one exemplary sport.

2 APPROACH: EFFECTUATION

This graduation project focuses on professionalising Paralympic sports. Given the setting of NOC*NSF, which represents many federations and associations, complex stakeholder management, including many uncertainties, is part of this project.

This thesis is not the first to try and create an overview and give suggestions for improvement. In the past, the research was done in a sports-oriented way: to work towards a fixed goal. This thesis chooses a different approach, effectuation, to generate a diverse look at the current situation.

Effectuation is a theory with explanatory and predictive power developed by Sarasvathy (2001). Sarasvathy developed a theory based on entrepreneurial reasoning and approaching a problem. This chapter will summarise this theory and how it will be applied in the project's framework.

2.1 Effectuation

Effectuation is the opposite of causation. The latter is goal-driven and searches for the means to reach this chosen goal. It helps with solving choices. Effectuation is to search for the means available and let that lead the way to the outcomes. It helps with constructing ideas (see Figure 4).

Sarasvathy (2001) describes causation as planning a dinner party where you think about the desired menu and what you need to buy, the table layout, the guests' dietary preferences, and everything you need to think about to create the perfect dinner party. In contrast, effectuation is like opening the cupboard to see what is in the house to make a meal.

The effectuation problem space consists of Knightian uncertainty, Goal ambiguity and Environmental Isotropy (Sarasvathy, 2008). These three elements are the base of effectuation.

Knightian uncertainty points to the fact that it is impossible to calculate the chances for future consequences. As there are no precedents, it is not possible to predict the probability or impact.

Goal ambiguity means that the preferences are not given or well ordered. So, the interpretation of the outcome can change during the process.

Environmental isotropy refers to the fact that it is unclear what elements of the surroundings to pay attention to and what to ignore. Anything and everything can be part of the solution.

Effectuation theory applies in unpredictable situations, meaning circumstances can change over time. Also, choices should be flexible and not set in stone. At last, the environment is non-adaptive, meaning working within the surroundings available.

These three elements are important to this project because they show that there will not be work with predictions but with the information gathered during the thesis. These three elements are the base of the five effectuation principles explained in the next chapter.

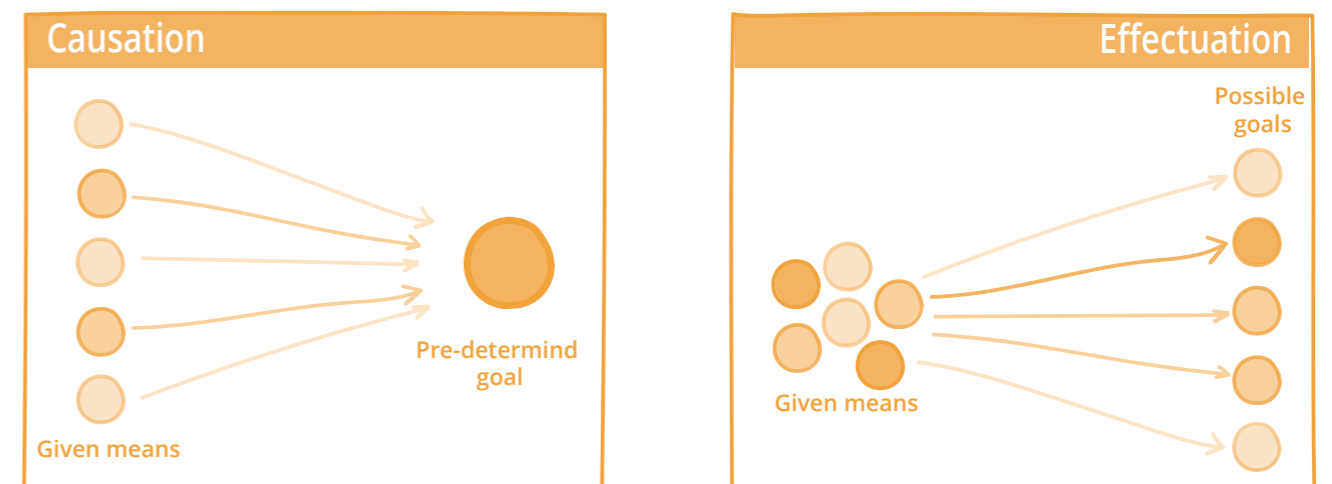


Figure 4 Causation vs. Effectuation (adapted from Sarasvathy, n.d.)

2.2 The Five Principles of Effectuation

Effectuation builds upon principles: a bird in the hand, affordable loss, crazy quilt, lemonade and Pilot-in-the-plane principle (Prashantham, 2019).

Figure 5 shows the five principles of effectuation (Prashantham, 2019)

A **bird-in-the-hand** is the first principle of effectuation. It starts with looking at your means and how to use them instead of setting a goal and finding what you need. As the saying goes, a bird in the hand is worth two in the bush. It generates a more creative process by looking into the available means, mostly leading to more novice outcomes. Means are indicated here as: who am I, what do I know, and whom do I know (Prashantham, 2019). In other words, the identity, the knowledge base and the social networks of myself and the NOC*NSF. These three means interlace, influence each other and grow throughout the process.



Figure 5 the five principles of effectuation (Prashantham, 2019)

The second principle is **affordable loss**. In this principle, the entrepreneur calculates how much money, time or other things the entrepreneur can afford to 'lose' when he/she starts. The entrepreneur starts with the money and other means and sees where to go. At the beginning and throughout the process, he/she defines the risks and losses he/she will take. With the losses, he/she is willing to try to maximise the outcome (Prashantham, 2019).

So, you define at the start of the project how long you are willing to use/pay for the means, the people and the duration of the project before you reach a conclusion. Defining the affordable loss is the opposite of focusing on what can be achieved if the project succeeds.

In other words, what affordable loss means for the NOC*NSF on reputation, money and medals. After looking into the NOC*NSF, an exemplar study is done on the Dutch tennis federation, looking at their process and what they gained from their transition to an immersed wheelchair, standing tennis federation.

Following the affordable loss principle is the crazy quilt principle. Here, the entrepreneur finds partnerships willing to work with to realise goals, such as co-creation. Instead of looking at other companies as competitors, working together towards the same goal and not needing to reach stakeholders' goals is essential. If done correctly, it can decrease initial investment and spread risk over the group of allies (Prashantham, 2019).

During the **crazy quilt** phase, the NOC*NSF can determine who they can work with. For instance, they can work with federations, stimulate federations to

work together or work with rehabilitation facilities. The crazy quilt phase is outside the scope of this thesis.

In effectuation, turning unexpected situations into opportunities is essential, marking the fourth principle: the **lemonade principle**. In causation, people avoid unexpected moments and stick to a plan. Effectuation will use unexpected opportunities because the goal is not set in stone; surprises can be essential moments where the deviation is critical. As the saying goes: if life gives you lemons, make lemonade. Embrace what you get and use it to your advantage.

For the NOC*NSF, this means not getting too stuck towards goals but keeping evaluating the process and making something of the possibility when possible.

At last, the **Pilot-in-the-Plane** Principle: Non-Predictive Control points back to the fact that there is no explicit goal in effectuation to work towards. There is a certain degree of control of the future in effectuation, yet it is optional to control it (Sarasvathy, Effectuation, 2008). As in causation, they say, "To the extent that we can predict the future, we can control it."

The pilot-in-the-plane principle is the last one. It builds on the other principles, where you are the project's pilot and take charge of the plane (project). Instead of losing control in unexpected situations, you gain more direction.

This means for the NOC*NSF that even though the lemonade principle states that you should grab chances to explore, the NOC*NSF should still control the outcomes when it seems not to go the right way.

NPD effectuation

The original form of effectuation is a circular process. See appendix I. Because the original form is limitless in time and outline, the New Product Development (NPD) effectuation process is used for this thesis. The NPD effectuation process is a linear version of the effectuation process, further developed by Duening (2012).

The main difference with the circular effectuation process of Sarasvathy is that it does work towards a goal: a new product, a project like this thesis, yet with the means of the classic effectuation.

Due to time constraints, this linear NPD process is more optimal for this thesis.

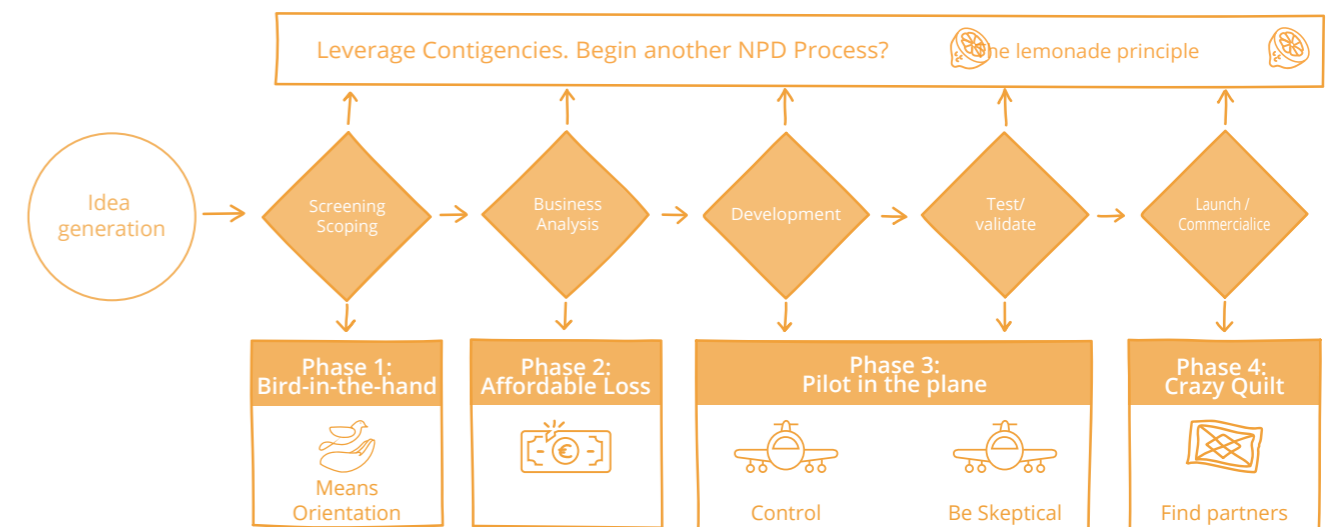


Figure 6 NPD process of effectuation (Duening, 2012)

2.3 Approach for this project

The previous two paragraphs describe the theory of effectuation. Figure 7, depicts the theory as applied in practice in this project and research to answer the design challenge.

Phase 0: Idea generation

Idea generation is the start of the project. During this phase, everything is still possible, creating the first rough borders for the project. In this thesis, the idea is to design a strategy to professionalise the wheelchair team sport in the Netherlands.

Phase 1: Bird-in-the-hand

During the first phase, screening takes place by divergence takes place while screening the field of paralympic sports and discovering success stories and opportunities, with these opportunities and researching possible means, reaching conclusions to converge again.

Phase 2: Affordable Loss

After diverging and converging to define what is possible for the NOC*NSF (what they can afford to lose and what they will gain) and after framing the means, needs, and affordable loss, an analysis of one sport will be used as an exemplar.

The concept of using an exemplar originates from Product Design, where one product is thoroughly analysed; the learnings from this exemplar generate other products of its category. In this case, sports categories replace products.

Phase 3: Pilot in the Plane

The pilot in the plan phase starts with development. Ideation takes place by diverging all the possible outcomes. Small tests with the target group concepts will be made and tested in this phase. One concept will emerge from the development takes place by conducting small tests with peers, clients (para-athletes) and a sports federation.

Phase 4: Crazy Quilt

The final concept will be presented with conclusions, discussions and recommendations.

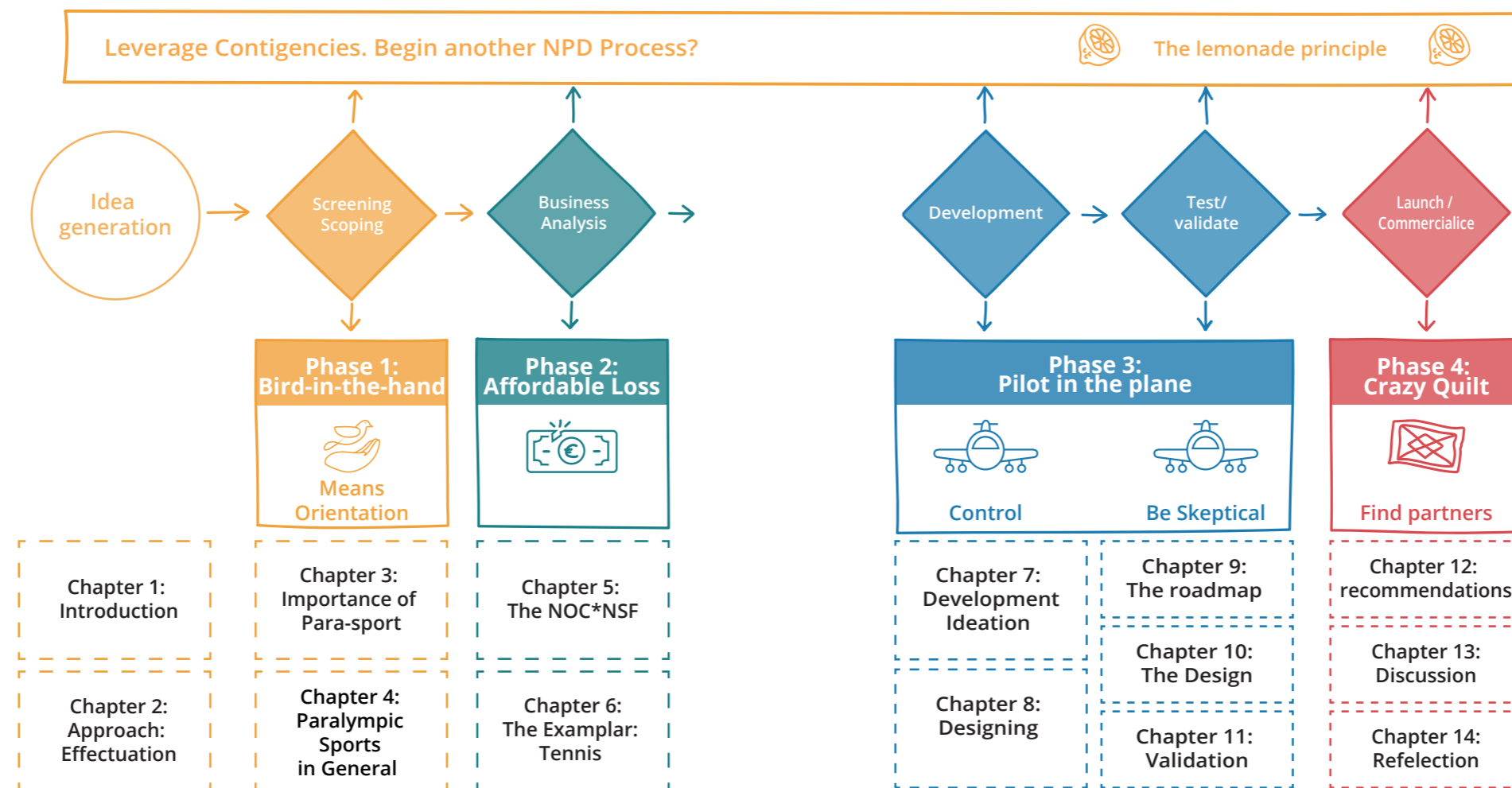


Figure 7 shows the structure of this thesis applied to the NPD Effectuation approach.

2.4 Research methods

The research methods described below, will be needed to realise this thesis successfully. Each type of method is explained, as are the different techniques used.

This thesis used the following methods:

1. desk research
2. semi-structured interviews
3. phenomenological research
4. context mapping interviews
5. creative session
6. personal ideation
7. evaluation

As part of the bottom-up approach that suited the research question, different methods were used to collect data based on what was currently happening in the world of para-sports (1, 2, 3, 4). In line with the creative and collaborative approach of the effectuation method, research techniques were used that supported this type of data collection and analysis (5, 6, 7).

Desk research

During the desk research phase, information is gathered to understand para(lympic) sports. Information is gathered by browsing the web pages of certified sports agencies, reading papers, and other media channels. The elaboration of these methods can be found in appendix B.

Literature study		Lit
	Podcast	Para Watchers
		Pod
	Documentaries	Rising Phoenix
		Doc 1
		Crip Camp
		Doc 2
		Human Playground
		Doc 3

Semi-structured Interviews

Semi-structured interviews are interviews where the open-ended questions are predetermined in a specific structure, yet the conversation leads the interview. These are done to understand the experience of participants in para-sports. The elaboration of these methods can be found in appendix C.

General interview with para-athletes with a physical disability	Triathlon	SI1
	Sitting Volleyball	SI1
	Wheelchair Hockey	SI3
General interview with the father of a para-athlete with mental disabilities	G-Hockey	SI4
Interviews with companies	Retired	SI5
	Current	SI6
	Foundation 1	SI7
	Foundation 2	SI8
	KNLTB	SI9

Phenomenological research

Phenomenological research is a research approach that aims to describe the nature of a phenomenon by exploring it from the perspective of those who have experienced it (Neubauer et al., 2019). The goal is to describe the meaning of that experience in terms of what and how it was experienced. As part of this thesis, I visited multiple tournaments. At these tournaments, I observed how the sporting events are structured and the level of the competition. Also, I tried to speak with as many people as possible, reaching athletes, spectators and people of the organisation. The choice for phenomenological research is to experience the different sports and get a more immersive understanding of the context. The elaboration of these methods can be found in appendix D.

Round 1	ABN-AMBRO Tennis tournament	PR1
	Badminton	PR2
	Ice-sledge hockey	PR3
Round 2	Euro Para Championships	PR4

Context mapping interviews

Context mapping interviews overlap with semi-structured interviews. The most important difference is that context mapping interviews are used to dive deeper into the context, and worksheets are used to help during the interviews. The interviews are done with people who have (had) a significant contribution to the wheelchair tennis sport. I have interviewed them using worksheets to visualise their thoughts (see appendix E). This type of interviewing guides the interview so the interviewee can visualise the comparisons instead of leaving it for my interpretation. The elaboration of these methods can be found in appendix E.

Active in an organisation and para tennis player	CM1
Active in organisation	CM2
Mother of a wheelchair tennis player and active in the tennis association	CM3
Active in an organisation and para tennis player	CM4

Creative session

Creative sessions are used to generate ideas towards the design goal. With peers of the TU Delft or company mentors, creative sessions were to discuss, brainstorm and see different perspectives on the context. The elaboration of these methods can be found in appendix F.

Stakeholder persona building	CS1
Pillar brainstorm	CS2
Session with NOC*NSF	CS3

Personal ideation

In between the creative sessions, personal ideation also took place. During personal ideation, multiple techniques were used. Ideation is a cyclical event which can occur at pre-arranged moments but can also appear suddenly, drawing inspiration from different activities and generating ideas by stimulating creativity. The elaboration of these methods can be found in appendix G.

Design with Intent	P11
How to's	P12
Problem Definition	P13
List of requirements	P14
Mind mapping	P15
Future Visioning	P16

Evaluation

The concept was evaluated with peers, company and experts about the concept in context. The evaluation was done in a similar way as the semi-structured interviews. An initial interview guide was made, yet a flowing conversation was most important. The elaboration of these methods can be found in appendix H.

With a rising wheelchair team sport	VA1
With the project manager Paralympic team	VA2
Semi-structured with three journalists at the European Para Championships	VA3
Paralympic and Adapted sports project leader	VA4
With Chef-de-mission Paralympics	VA5
Second evaluation with project manager Paralympic team	VA6

Research Phase

Phase 1: Bird-in-the-Hand

Ch3: Why is para-sport important?

Ch4: What does the paralympic sports world look like?

Phase 2: Affordable Loss

Ch5: What can/should the NOC*NSF do about it?

Ch6: Are there any examples?

Lit

Pod

Doc 1 & 2

Doc 3

SI1-3

SI4

SI5-8

SI9

PR1

PR2,3

CM1-4

Design Phase

Phase 3: Pilot-in-the-plane

Ch7: Design opportunities and requirements

Ch10: Validation

CS1-3

PI1

PI2,5,6

PI3,4

VA1-6

2.5 Summary

This graduation project focuses on equalising Paralympic sports using effectuation as an approach for para-sports (2001).

Effectuation, developed by Sarasvathy, involves searching for available means to guide outcomes instead of setting predefined goals. The project follows a phased approach and incorporates the five principles of effectuation: Bird-in-the-hand, Affordable loss, Crazy quilt, Lemonade and Pilot-in-the-planes.

Various research activities support the project, including desk research, interviews, observations, and creative sessions.

The goal is to provide a strategic roadmap consisting of insights and recommendations for stakeholders in para-sport.

Key Takeaways

Causal logic has worked in the past but has reached its full potential; therefore, a new logic is used: **effectuation**.

Effectuation looks at given means and possible outcomes instead of working towards one particular goal.



Phase 1: **Bird-in-the-hand**

Phase 1 consists of chapters 3 and 4. They aim to gain a broader understanding of the topic and all the different fields.

The importance of sports in general and the specific importance for people with a disability will be explored from a theoretical perspective and combined with initial interviews (desk and field research).

Providing an introduction to the sporting world, addressing its structure and variations across different sports through desk and phenomenological research.

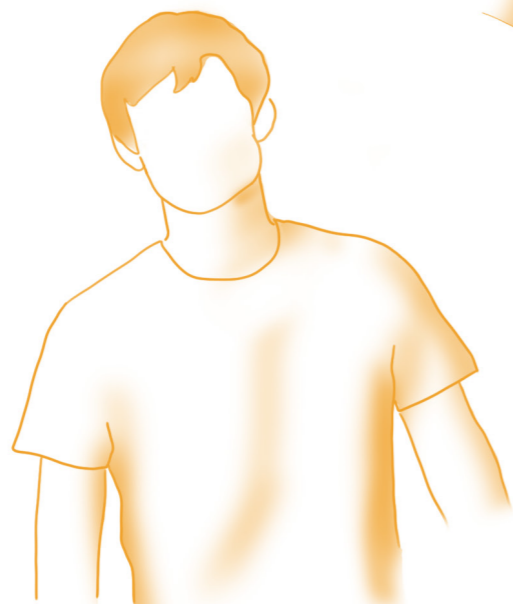
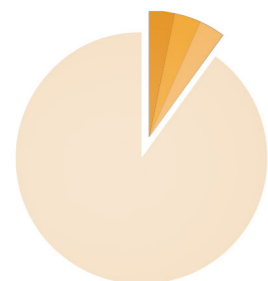
3 IMPORTANCE OF SPORT FOR PEOPLE WITH A DISABILITY

Playing sports is essential for many different reasons. The main reason is to maintain physical and mental health and get a sense of belonging (in a group).

The importance of sports applies to people without a disability and those with a disability. Although all scientific research is done for people without a disability, it is safe to assume that playing sports has the same or maybe more physical and mental advantages for people with a disability.

To show some estimated numbers:

- The Dutch population consists of about 18 million people,
- 10% of the Dutch population (1,8 million persons) has a mild to severe disability (WHO, nd.),
- of whom 1.2 million want to play sports (Fonds Gehandicapt en Sport, 2022).



3.1 Participating in sports is Essential

When participating in a sport, a person creates endorphins and reduces cortisol, the so-called stress hormone. Also, it creates a goal for people to feel that they have a purpose essential for a healthy lifestyle.

3.1.1 Importance of exercise

There are various advantages to playing sports. The NOC*NSF promotes sport because it contributes to better fitness, muscle strength, a healthy lifestyle, good sleep and reduces medical consumption. It can improve the health conditions of people with chronic illnesses and reduce the risk of cardiovascular diseases, osteoporosis, obesity and strokes (NOC*NSF, 2023).

Research from Harvard Medical School states the importance of regular exercise for blood circulation. During exercise, muscles need more blood. When exercising regularly, the muscles grow because the blood vessels expand their network in the muscles. The enzyme levels in the cells of the muscle boost, allowing them to use more oxygen to create more energy. The more oxygen in the blood, the more efficient the metabolism (Harvard, 2023).

The increase in blood flow, and therefore the increase in oxygen in the body, is significant for people with a disability. Depending on the disability, injuries may occur, like pressure sores and blisters. The more they move and improve their blood flow, the better their physical health will be (Peterson, Renstöröm, 1986).

Durstine (2012) states, "By participating in sports, there is good blood flow through the body, making blood reach the whole body. Physical activity can optimise physical functioning and enhance overall health and wellbeing".

Scientists have proven that physical activities have a positive effect on mental wellbeing. While participating in physical activities, the brain releases endorphins. Endorphins are hormones that make people feel better (Dinas, 2009).

Participating in sports contributes to mental wellbeing. Adequate physical activity helps to combat depression, slows down the development of dementia, and reduces the occurrence of mental health issues (Bruce, 2008). At the same time, sports can lead to increased self-esteem, self-confidence, and (social) skills (NOC*NSF, 2023).

3.1.2 Importance of participation

Another essential attribute of playing sports is that it ensures a kind of social cohesion. Sport connects and unites. It fosters greater understanding and respect for each other. Participating in sports often means participating in society.

Sport shapes who we are, what we do, where and when, and most importantly, who we do it with. The opportunities to meet people through sports are also called the "contact hypothesis." Sports clubs and organisations play a crucial role as meeting places for various individuals. They provide people with a sense of belonging in society, simultaneously building social capital. In other words, people expand their networks, enabling them to achieve goals beyond sports.

Research indicates that members of sports clubs generally report higher life satisfaction. They have more social interactions and tend to trust others more than non-members. Through this interpersonal contact, greater mutual understanding fosters social cohesion (NOC*NSF, 2023).

All benefits found in research are significant for people with or without a disability.

3.1.3 A decrease in sports participation in the Netherlands

Despite the goal of the NOC*NSF to reach 12 million people to play sports, there has been a negative trend that more people stop playing sports. Especially the influence of COVID-19 has been significant in this negative trend. Only in 2022, there was a first increase in people playing sports since 2018, although still not reaching the level before COVID-19 (NOC*NSF, 2023).

There is no comparable data for people with a disability, yet people believe the trend is the same.

3.1.4 Paralympic sports are not visible

As pervasive as social media may be, para-sports remain largely invisible. On platforms such as Instagram or TikTok, the primary providers of Paralympic sports clips are the Paralympics socials. On TV, the Paralympics are shown once every four years and are not accessible on sports streaming services such as Viaplay or Eyecons.

Sports journalists are starting to pick up the Paralympic sport, mainly because of the impressive results of Diede de Groot (tennis) and Jetze Plat (hand biking/triathlon).

In 2023, there is a podcast about Paralympic sports (called Para Watchers). Some shows touch upon sports, like the Dutch show 'Je Zal het maar Hebben', where they show how to live with a particular disease, and most times, if they play a sport, this will be mentioned as well.

While participating in sports for the first time, many people with a disability felt valued again. Next to the feeling of belonging, participating in sports helped them to accept their handicap faster. Besides these two points, sports help with an escape from their daily (social) challenges into challenges they can handle. This feeling of value is one of the reasons for the creation of para-sport.

Key Insights

- Exercise is essential to maintain health
- Participating in sports influences the brain in a positive way
- In the Netherlands, participation in sports is stagnating
- Not much attention/time to follow Paralympic sports on mainstream channels or social media sites



Figure 8 is an overview of the participation of sports in the Netherlands over the years (NOC*NSF, 2023)

3.2 Sport for people with a disability

3.2.1 All people need a purpose

After World War II, many casualties ended with spinal cord injuries. The hospitals could not do anything more for them. Nevertheless, a Jewish doctor, Ludwig Guttmann, who fled Germany, had a plan (IPC, nd). He developed a method to save these people by turning them around regularly to prevent misalignment and putting them into wheelchairs. The treatment helped, but by now, these people needed a purpose. Sir Ludwig's goal was to reintegrate them into society, meaning getting them back to work and playing sports again. After that, Sir Ludwig started the Stoke Mandeville Games, where 16 people competed in wheelchair archery. The Stoke Mandeville Games expanded to more sports and people from different countries. In 1960, the Mandeville Games became the Paralympic Games (IPC, nd).

Para does not refer to people with paraplegia (spinal injuries) as many think. Its origin comes from the Greek word para, which means parallel, indicating these games are held parallel to the Olympics (IPC, nd).

3.2.2 It is a big group

Even though people with a disability are a minority group, the World Health Organization estimates that 1.3 billion people worldwide are disabled, meaning that 1 out of 6 have a disability (WHO, 2023).

In the Netherlands, the knowledge centre (Kenniscentrum Sport & Bewegen) estimates that 1 out of 10 people has a moderate to severe disability, meaning almost 1.8 million people (Kenniscentrum Sport & Bewegen, 2019).

1.8 million is a significant number of overlooked people in our (sporting) society. The Disabled Sports Fund (Fonds Gehandicaptten Sport), which is responsible for the sport participants index (SPI), mentions that a third of people with disabilities are active athletes, a third are willing but do not know about the possibilities to play sports, and a third do not want to participate in sporting activities at all. This division means that almost six hundred thousand people can be supported to find a way of exercising that fits them (Fonds Gehandicaptten Sport, 2022).

The two groups that want to and participate in sporting activities make up a group of 1.13 million people, almost the same size as the National Soccer Federation (KNVB) (NOC*NSF, 2021). This large group also benefits here by the feeling of belonging.

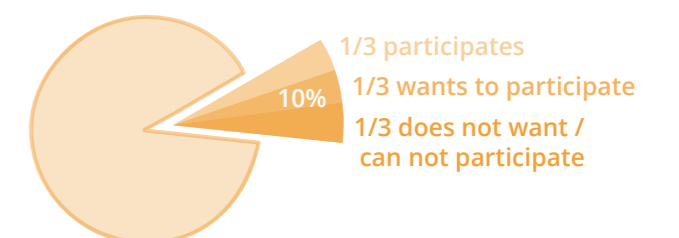


Figure 9 the division of people with a disability and their sports contribution (Fonds Gehandicaptten Sport, 2022)

3.2.3 A feeling of belonging

The feeling of belonging is essential. However, as stated in the previous paragraph, being around like-minded people is also essential. Other (para-) athletes understand the daily struggles and can talk about them, yet understand if someone does not want to.

“Being around girls who used wheelchairs helped me accept my wheelchair better.” ~interview #2

From interviews (n=5), the essential part of participating in sports is finding a sense of belonging. This acceptance is created by being with like-minded people, setting goals, and being able to reach them. The research of Durstine 2012 backs these findings.

“When I played tennis again, I had the idea that I could be a mother to my children again” ~interview #4

“I could see how many steps I had taken forward, this motivated me that I could do something” ~interview #1



Key Insights

- People with a disability can participate in society due to the vision of Sir Ludwig
- There are about 1.13 million people in the Netherlands with a disability who want to participate in sports
- Playing sports gives a feeling of belonging and acceptance

3.3 Summary

Participating in sports is vital for overall wellbeing, as it improves physical and mental health and provides a sense of belonging for people with disabilities. Exercise promotes good blood flow and enhances physical functioning.

Sports release endorphins, reducing anxiety and depression.

People with disabilities benefit from sports by finding a sense of belonging, accepting their disabilities, and escaping daily challenges.

However, there is an inequality between non-disabled sports and para-sports, with limited visibility on mainstream and social media and accessibility for para-sports.

Efforts are needed to promote para-sports and ensure equal opportunities for the 1.13 million people in the Netherlands who participate or want to participate in para-sports.

Key Takeaways

Participating in sports is essential for mental health because of exercise, social connections, finding a purpose/challenge and feeling like belonging in a group.

The group of para-athletes is about 1,13 million people, who are difficult to follow and watch on various media.

4 SCREENING AND SCOPING OF PARA-SPORTS

This chapter will address six main points: the hierarchy of sports organisations and their structures, the role of the NOC*NSF, and the variety of para-sports, with the role of the NOC*NSF, the main tasks, the origin of the NOC*NSF, and the founding of para-sports federations.

In 4.2, the variety of the para-sports is explained and concluded with decisions on what to focus on.

4.3 explains the main insights from the phenomenological research, research by observation and experience, done while visiting the badminton, tennis and ice sledge hockey events.

4.1 Sport structure

The world of (para-)sports can be perceived as complex as a multinational company. The international structure trickles down into countries, towns and villages: from the international Paralympic committee to the various sports associations.

The National Olympic and Paralympic Committee of the Netherlands (NOC*NSF) consists of three roles:

- the National Olympic Committee,
- the National Paralympic Committee,
- the Dutch Sporting Federation.

From preparing elite athletes for the Olympic and Paralympic Games to raising awareness of other sports, the NOC*NSF has multiple responsibilities.

4.1.1 The NOC*NSF

The 'Nederlandse Olympisch Committee * Nederlandse Sport Federatie' or, in short, NOC*NSF, combines two sports organisations in the Netherlands.

The National Olympic Committee, part of the NOC*NSF, originated in 1912, being the middleman between the Dutch sporters and their federation and the hosting Olympic Committee (NOC*NSF, sd). Being the middleman is still one of their primary purposes, with their current goal to compete as competitively as possible: be a stable top 10 contender globally (NOC*NSF, 2022).

At the end of doing research for this thesis (July 2023), the Olympic team's Chef-de-mission stated that the athletes' story is more important than

the attainment of medals (NOS, 2023). Not all federations align with the statement of Pieter van den Hoogenband. The Ice Skating Federation states that medals are significant, without them, the funding goes away. Also, they say that the achievement of the medals creates the story (van der Eijk, 2023). These developments can be important for the future of this thesis, although out of the scope for now.

The NSF part originates from 1959 (NOC*NSF, sd). Sports participation was growing, and not all sports were part of the Olympics. The non-Olympic sports unions together formed the foundation of the National Sports Federation, with the primary responsibility of an overarching entity of the various sports federations. Their current goals are to engage 12 million people to play sports every week in 2032 and for everyone to feel welcome at a sporting club (NOC*NSF, 2022).

In Figure 10, the hierarchy of the sporting organisations is shown. The NOC*NSF is in the middle, communicating with all different stakeholders. At the top is the International Paralympic Committee, which mainly communicates between the NOC*NSF and international sports federations.

The IPC is responsible for which sport is/can become a paralympic sport; they look at the international interests. The International Federation focuses on sports and international competitions. When focusing on sports, they consider whether the sport can be further developed by, for example, changing the game's rules.

When looking into the international competitions, they focus on the intensity of the year program, the timing of the world and continental cups.

When planning the international calendar, communication with the countries is essential; this is one of the areas of focus of the national federations. They also take responsibility for the national para-athletes who compete internationally and the sporting structure in their country. Therefore, communication from the NOC*NSF is needed with the associations. These associations

make participating in sports available on all levels and, in most sports, facilitate athletes to perform at the highest level possible.

In Figure 11, as an example, the structure of the various organisations is shown within the soccer world.

This is just one example of a sport, it demonstrates how complex it would be to consider all federations. When zooming out for the full picture the NOC*NSF is in contact with 77 federations (not all para-sports) (NOS*NSF, nd). So for this thesis, focusing on Paralympic wheelchair teamsports, we explore four federations, see Figure 12.

This shows the complexity of the management of the NOC*NSF and the connections with all federations. The federations do not connect with each other, so exchanging knowledge is not standard procedure.

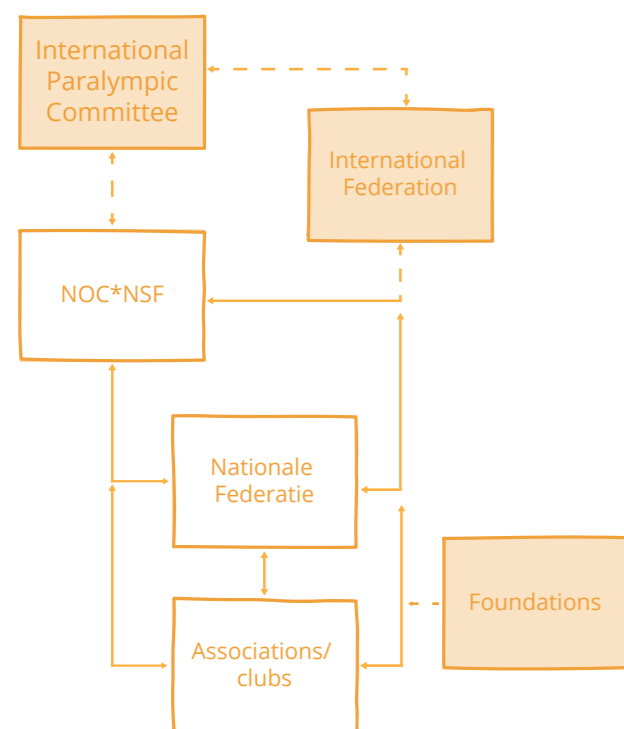


Figure 11 a visualisation of the hierarchy of sporting organisations

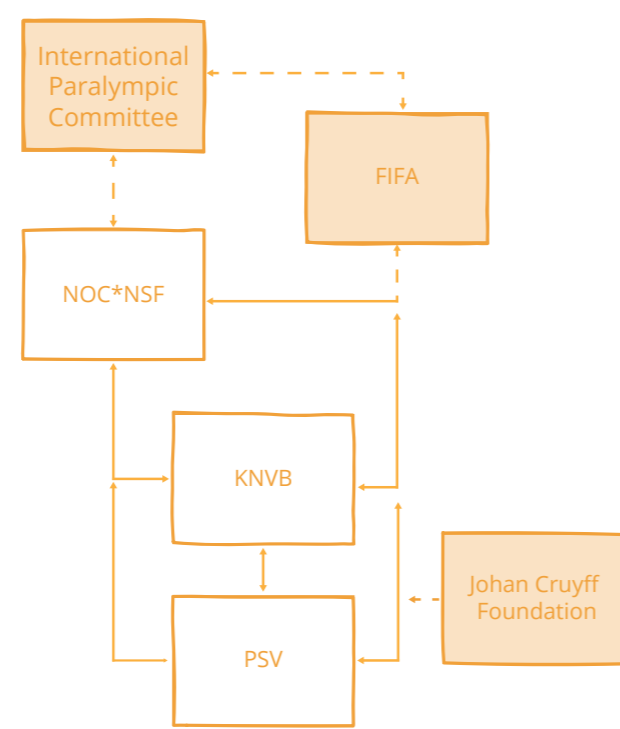


Figure 10 a visualisation of the hierarchy of sporting organisations applied to soccer.

4.1.2 The history of the para-sports federations

The history of the Association for the Disabled (Gehandicapten SportBond) is less extensive than the various non-disabled sports associations. The concept of wheelchair sports has only existed since WWII.

Before, there was only a sports association for deaf people. The deaf-sporting association has always been a separate organisation and still is. After the Second World War, inspired by the movement of Sir Ludwig, the Netherlands also started an association for injured war veterans who became disabled during the war. This association is called the 'Bond voor Nederlandse Militaire Oorlogs- en Dienstsachtoffers' (BNMO). Soon it was clear that not only war veterans benefited from playing sports but also other people with a disability, and it became the Dutch disabled sports association: Nederlandse Invalide Sportvereniging (NIS) in 1951.

The NIS evolved into the Nederlandse Bond Aangepast Sport (NeBAS) in the nineties. In 2000, the NOC*NSF worked with the NeBAS, starting an integration process to normalise para-sports with non-disabled sports (Volkskrant, 2000).

The integration resulted in the NOC*NSF being responsible for the Dutch Paralympic team and the NeBAS, now called Gehandicaptensport Nederland (GN), being responsible for sports that do not have a non-disabled version, like goalball and boccia (NOC*NSF, sd).

In 2000, NOC*NSF decided to take para-sports more seriously. It should not be a different association but immersed with the "able" sports association. The immersion worked well until 2016, when signs emerged that this strategy was outdated. This is, for instance, seen in the medal count, with a peak at the 2012 Paralympics. After 2012, the number of medals dropped, and a new approach and strategy needed to be developed for further progress.

Next to the goals the NOC*NSF has set for all sports in the Netherlands, the para-sports department has identified its own goals (Team NL, 2022), with the most relevant for this thesis:

- professionalisation of classification,
- further development of the paralympic program,
- structure the identification of athletes with paralympic potential,
- increase awareness among the general public.

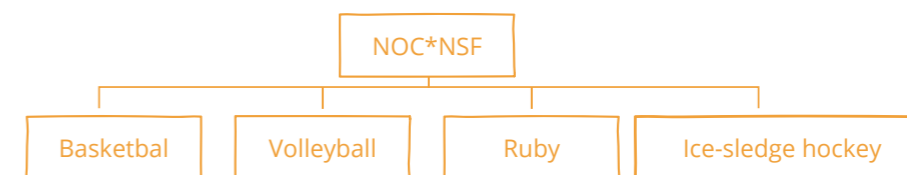


Figure 12 the federations used for this thesis

4.1.3 Recreational sports

Next to the NOC*NSF, the sports federations, associations and athletes, several specific foundations focus on the funding and participation of people with a disability to play sports on a recreational level. For instance, the Esther Vergeer Foundation initially started to enable people with a disability to play tennis. They made an activation for tennis associations on how to incorporate wheelchair tennis by lending wheelchairs and are now starting up “sport-policies”. These polyclinics are at the hospitals to accommodate the children who have disabilities and guide them in possible sports they can participate in (Esther Vergeer Foundation, 2023).

Another important foundation for the sporting world of people with a disability is Fonds Gehandicaptensport (FGS). This foundation is also working on getting the right equipment to the right athlete. When playing sports, a specific wheelchair is needed. The FGS explains that a person needs to ask for funding for a sporting wheelchair with the municipality he or she lives in. The municipalities often have a specific wheelchair you need to buy and may not be the best suited for the athlete. Therefore, FGS wants to relieve the municipalities from this burden. They also want to help sports associations to incorporate para-sports. On top of this, they also want to enhance the visibility of sports with a disability by creating a marketing campaign and an online platform where the scores of the highest league of each sport are displayed to increase ease of use for the fans and journalists. Next to the Esther Vergeer Foundation and the Sport Gehandicaptensport, smaller foundations focus on a specific para-sport.

Sometimes, these foundations are set up out of frustration due to the bigger federations’ political and bureaucratic rules or an individual player’s willingness to give back to society.

Even though it seems common knowledge that elite sport encourages mass participation, Haut et al. found no general effect that confirms this (2018). Haut et al. also argue that there is an effect bound to certain heroes. This research says it is bound to certain heroes or leaders compared to general sporting accomplishments. Nevertheless, they acknowledge that it has happened for specific sports, in certain periods, or countries like the Boris Becker effect. In my own words, girls start playing soccer because of Lieke Martens but not because of the achievements of the soccer team at the World Championships. Even after popular movies, you can see an increase in a sport (The movie The Hunger Games led to more archery, for instance, a remark made by Jonah Wilthagen, TeamNL Archery).

In conclusion, several foundations fund and support recreational players; therefore, they are not the focus of this thesis. Scientific research shows that the results of team sports are not correlated to more sports participants.

Key Insights

- The NOC*NSF is responsible for Olympic, Paralympic and all other sports
- The primary role of the NOC*NSF is to lead Dutch high-performing athletes to success by relieving them from their peripherals.
- The NOC*NSF has the responsibility for Paralympic sports since 2000
- Other stakeholders are concerned with leisurely sports

4.2 Different types of para-sports

While screening the para-sports scene, multiple possible scopes came to my attention. This paragraph explains the differences per category and why choices were made.

4.2.1 The contrast with able-bodied sports

The first and most apparent separation in sports is between athletes without a disability and para-athletes. While non-disabled sports logically have more participants, mainly because fewer people have a disability, the knowledge of the different para-sports is unknown to the general public. Few people know of boccia, wheelchair rugby or goalball, all Paralympic sports.

The non-disabled body sports are perceived as the standard sport, are easier accessible on national television, and are overall more well known.

4.2.2 Paralympic vs Para-sports

Paralympic versus para-sports may sound confusing because one is the abbreviation of the other. However, there is a difference. Para-sports are all sports for people with a disability. Paralympic sports are the sports included in the Paralympics. As stated in Chapter 1, this project focuses on high-performance team sports and sports played at the Paralympics.

The choice to focus on high-performance sports is made because these sports are the most attractive to watch. To some extent, it is comparable with ‘regular’ sports and for personal preference. Next to this, it came to my attention that it can be a problem to create groups of like-minded people with a disability interested in wheelchair sports. When participating in a wheelchair or sitting sports

(sitting volleyball and ice sledge hockey), around a minimum of five people are needed in one team, and to play the game, five more opponents are needed. This problem, combined with multiple sitting team sports, makes the potential high-performing wheelchair athletes spread out over too many sports. To choose between these seated sports, I have chosen to stick to sports which are part of the Paralympics. These sports should be on a high worldwide level with sufficient global competition.

4.2.3 Physical versus mental disability

For this thesis, several choices have been made to narrow the scope. One is focusing on people with physical disabilities instead of mental disabilities. The choice for this focus is based on an interview prior to this research (see appendix C) with a father who has a son with Down syndrome. The first thing I learned from this interview is that the father wanted to talk to me before I could speak with his son, as he was very protective of him. Coming in contact with this particular audience (with mental disabilities) is more complex than people with physical disabilities, and interviewing them is much more complicated. During the interview, the father said that their sport was an adapted and lesser version of, in this case, field hockey. For him and his son, participating and playing sports were most important. Also, often, people with a mental disability have multiple different disabilities and even balance problems.

Due to these complexities, the choice is to focus on people with a physical disability, where these complexities may also exist, yet in smaller portions.

4.2.4 Team versus Solo Sports

In the Dutch Paralympic sports world, team sports are poorly developed, reflected in the medals earned at the last Paralympics. The Netherlands has achieved many individual medals in athletics, swimming and cycling. There are also some medals in sports requiring a minimum of one competitor, like tennis, badminton and table tennis.

In team sports, there is only one golden medal: basketball.

One of the problems the NOC*NSF mentions is that team sports have a tough time recruiting participants. Clubs face significant challenges when assembling teams for a specific Paralympic sport.

Another difference is the division of individual sports into multiple classifications. In athletics, there is a 100m sprint for blade runners, for people with short stature, and many more. However, team sports cover the total of different disabilities in one class, see appendix H for an example of the different structures.

The situation between individual and team sports is very different; the first has too many categories for outsiders to understand and may be too inclusive. The latter has difficulties bringing up multiple teams for a good, strong competition.

Because the thesis focuses mainly on expanding the competition and rivalry for para-athletes, the choice is to focus on team sports.

Therefore, there is more to win in the area of team sports.

Key Insights

- Para-sports should not be directly compared with their non-disability-sport. There are multiple different reasons why the non-disability-sport may be more successful
- Paralympic sports are sports that are included in the Olympics, being the most high-performing sports
- Due to convenience, this thesis focuses on people with a physical disability
- There is more to gain with the promotion of team sports than individual sports

4.3 Phenomenological research

During the screening and scoping phase, information was gathered through phenomenological research.

Phenomenological research is a research approach that aims to describe the nature of a phenomenon by exploring it from the perspective of those who have experienced it (Neubauer et al., 2019). The goal is to describe the meaning of that experience in terms of what and how it was experienced.

A way to explore was to watch para-sports activities that were accessible during the time of the screening/scoping period and within travel distance. I focused on observing the event structure and competition level during these research moments. Next, I also tried to speak to as many people as possible, such as athletes, spectators and people from the organisation to understand their position and dreams for their sport.

The following tournaments were visited for the complete research see the associated appendix:

- Wheelchair-Tennis at the ABN AMRO Tournament (appendix D),
- Ice Sledge Hockey NEPHIL (appendix D),
- Badminton (appendix D).

Wheelchair-Tennis

At the ABN AMRO open in Ahoy, men's tennis and wheelchair tennis tournaments were held together. It is a professionally organised tournament; people need to buy tickets, everything is dressed to look the same, and there is a food court and sporting area for visitors.

Even though the court of the wheelchair players was next to the training courts, there was a stand built and a referee who told what was happening. In total, it looked imposing. The games I watched were also impressive, at a high level. The high level could be seen in the athletes' competitiveness, professionalism, fitness, and game insight. Bystanders waiting to see the able-bodied tennis players practice were attracted to watch the wheelchair tennis, and they enjoyed themselves, as I found out when asking the spectators around me.



Figure 13 the ABN-AMRO tennis tournament in Rotterdam.



Figure 14 NEPHIL tournament in Dordrecht.

Ice sledge Hockey

The look and feel of Ice Sledge Hockey was a lot less professional. There was a banner in front of the sports centre and a flag in the ice ring. The tournament was between four European countries (the Netherlands, Belgium, France and the UK).

The competition itself varied in competitiveness. The team that had the most competitive players was the winner. After asking around at the spectators, I understood that the team in the Netherlands was a combination of the four Dutch associations but not the national team.

Badminton

When visiting the badminton tournament, I was unsure if I was in the right place until I saw the players. There was no banner in or outside.

During the interviews, I discovered that the number four in the world (women) competed in this tournament to get enough practice. Also, she competed in the men's category to get proper opposition.



Figure 15 a para-badminton tournament in Delft.

Overall impression

One thing was clear while conducting the field research during the tournaments: the level of competition and participation varied enormously. At the tennis tournament, the level of competition and participation were high. The goal of the tennis players was to compete and win.

The level of competitiveness was not the most important when visiting the badminton and ice sledge hockey tournaments. There is a significant difference between people who want to compete in recreational play and people who want to play fanatically.

In the case of badminton, the number 4 in the world in the ladies' competition played in the men's competition to get some opposition.

These conclusions lead to the creation of the following three definitions, important for the reduction of the scope of the thesis :

- High-performing sports: the highest level of a competitive league,
- Competition: there are regular matches (weekly),
- Competitive league: the highest level in the league structure.

Key Insights

- the level of competition in para-sports varies a lot;
- this thesis is chosen for high-performing sports, competition and a competitive league

4.4 Summary

The screening and scoping phase establishes that the NOC*NSF has a broad range of responsibilities, one of them being the Paralympics.

Research done showed many possibilities to focus on while framing para-sports.

Also, playing sports has vast benefits for physical and mental health.

Desk research about the different para-sports confirms the phenomenological research, which defined that:

- competitive sports are high-performing sports,
- are the highest level of competitions,
- that there are regular matches, and
- that the league must have a structure.

Key Takeaways

- The NOC*NSF is a middleman in the sports world, therefore interesting to design for
- This thesis will focus on sports of people with a physical disability who play a team sport included in the Paralympic summer program.
- A high-performing sport needs a competitive league with a structure for promotion, demotion, and regular matches.



Phase 2: **Affordable Loss**

This phase describes the strengths of the NOC*NSF and what funding and organisational skills they need to proceed with this project. This is done through desk research and interviews with members of the NOC*NSF and others. Chapter 6 focuses on wheelchair tennis, their learnings as an exemplar and how to translate it to other sports. This chapter uses desk research, context-mapping interviews and phenomenological research.

5 BUSINESS ANALYSIS NOC*NSF

This chapter looks into the means of the Paralympic Department of the NOC*NSF and what they can afford to 'lose' when proceeding with this project. The approach of Sarasvathy will be used, as explained in Chapter 2.

A recaption of the definition of affordable loss is that you define at the start of the project how long you are willing to pay for the means, the people and the duration of the project before you reach a conclusion.

The main means of the NOC*NSF are their influence at political/ governmental level, money received from the government, sponsorships and the success stories of their athletes.

To increase awareness of Paralympic Sports, the NOC*NSF can afford to put in money and time. The relationship (and reputation) towards the stakeholders of the NOC*NSF is essential to keep in contact.

Although the goal for the Paralympics in Brisbane in 2032 has been set, it is uncertain which medals will be won, so there is no direct loss.

5.1 Means orientation

In general, in every non-disabled sport and para-sports, it is widely understood that more success will attract more sponsors. Therefore, a sport will gain more visibility, which leads to more possibilities and facilities for the athletes. This so-called Boris Becker effect has been thoroughly researched (Haut et al. 2018).

"It's a chicken-egg story, we can't grow further if we don't have money, and nobody wants to put money into us because we're not growing." ~interview 5

One of the main conclusions is that the more high-performing athletes there are, the more people will start playing that sport, which, in the end, is one of the goals of the NOC*NSF: more people participating in sports.

Getting people to participate is a complicated task. The emphasis will be on the means of the responsibilities of the NOC*NSF for the Paralympics. They generally have different political means like close contact with the Ministry of Public Health, Wellbeing and Sport. The role here is to obtain funding and address nationwide sporting problems. The NOC*NSF gets a tiny stream of money compared to Public Health and Wellbeing.

The structure of all the organisations and federations that deal with para-sports in the Netherlands also makes an overview difficult. The probability of ending with several isolated events is big. Nevertheless, there have already been crossover events between the NOC*NSF and the Ministry of Public Health and Wellbeing, like the handbike battles where rehabilitation centres compete with each other by competing and participating in biking up the Kaunertal (HandbikeBattle, 2023).

Also, the NOC*NSF is the most crucial player in the Netherlands to achieve the highest level of the sport, making them the ones in contact with all important sports stakeholders.

Of course, money is essential in participating in the Paralympics, but raising awareness and acknowledging the value of participating and winning is the second biggest means of the NOC*NSF. I would even state here that raising awareness is maybe the first means they could and should use.

Key Insights

Important means are:

- creating more awareness and visibility,
- attracting more sponsors,
- structuring the organisations.

5.2 Affordable loss

So what is in it for the NOC*NSF to do this?

If they do nothing, they will most likely keep finding new athletes in approximately the same sports and continue on the same level.

So what can happen if the NOC*NSF spends more time and money is that the NOC*NSF can become one of the first organisations leading in paralympic sports worldwide by becoming a steady top 10 contestant. A steady top 10 contestant is preferred, but focusing on the affordable loss is good.

NL as a steady top-10 player

The knowledge and experience of the various organisations involved with Paralympic sports is growing compared to other countries. Therefore, the Netherlands has a steady group of para-athletes competing at the highest level.

As stated in the report of the Nederlandse SportRaad (and my findings), the knowledge of who, what and where in the para-sports is splintered and distributed amongst a small group of people and many organisations, a suggestion can be made to collect and combine all information to improve other para-sports. (Gelijkwaardig en inclusief; Nederlandse Sportraad 2022).

Reputation and Medals

One of the goals of the NOC*NSF is to win more medals at the Paralympics in Brisbane in 2032. The road to Brisbane is not thoroughly planned because the number of participating athletes is uncertain; therefore, this thesis will not harm the number of medals for the 2032 Paralympics. This goal may feel shallow, but it is one of the most essential media moments of the NOC*NSF.

Money

Due to the effectuation process, not knowing the process's outcome, it is challenging to write about money.

More financial means will help to build the structure, the facilities, the financial security for the athletes and, therefore, the future of para-sports. The general view is that the distribution of the (financial) funding towards para-sports and Paralympic sports athletes is unclear.

At this moment, the NOC*NSF tends to prioritise money towards the most successful sports.

There might also be a need to renew or redesign specific infrastructure for the individual athletes, the teams and supervisors, including health therapists, to create higher performance. These costs also need to be included in the calculations of funding that they are willing to put into this project.

People and time

Two of the main resources the NOC*NSF has to its advantage, are time and people. They would be able to form a small research group with a time frame to consider this thesis's results and further develop the recommendations.

Control

One thing that the NOC*NSF cannot afford to lose is the control over the para-sports. In 2000, they put a great deal of time into accommodating the para-sports to the non-disabled sports federations. This has led to past success and is how they want to succeed. Nevertheless, the federations find it difficult and are eager to give the responsibility of the para-sports away. An example of this is Basketball Experience Nederland (BEN), which showcases the sport well and reaches higher levels, mostly with the women's national team.

Even though this is an incredible accomplishment of BEN, the NOC*NSF must keep control over the federations so they can learn from each other and that further polarisation does not take place, or worse, that the federations do not believe in the NOC*NSF.

Key Insights

The means NOC*NSF has:

- People
- Money
- Organisation /Structure

The possible loss can be:

- Control over para-sports

5.3 Summary

In summary, the NOC*NSF mainly relies on its connections with politics (Ministry of Health, Wellbeing and Sports), other funding organisations and stories of successful athletes. They can invest money and time into experimenting with this project. There is no immediate loss.

The NOC*NSF must maintain a good relationship with the people they work with closely, i.e. the IOC, IPC and the Dutch government.

As the Paralympics in Brisbane 2032 are too far away, we cannot predict how many medals will be won, so there is no immediate risk of losing anything in the short term.

Key Takeaways

- The NOC*NSF mainly has political ties and can work with the best Dutch athletes
- They have time, money, power and people to spend on this project
- A good relationship is essential to maintain during this project
- Due to uncertainty about medals in 2032, there is no actual loss

6 WHEELCHAIR TENNIS

In this project, wheelchair tennis serves as an exemplar. Tennis is initially chosen as an exemplar based on the success of the previous and current situation.

An exemplar comes from the engineering where one product, for example, a vacuum cleaner body, stands for injection moulded casings, allowing the transposition of learnings of that particular manufacturing technology onto most other injection moulding casings with comparable parameters (e.g. wall thickness, volume, type of plastic). Paralympic sports are not the same as vacuum cleaner bodies, yet learnings can be transposed to fit other sports.

In this chapter, you will read about the success of (wheelchair) tennis in medals, organisation and types of competition, and thus the choice to focus on tennis as an exemplar.

6.1 A Paralympic sport with a rich and growing history

Wheelchair tennis is one of the classic para-sports. The Netherlands has a rich history with legends like Esther Vergeer. Currently, the Netherlands is ruling the tennis courts in multiple categories, leading to wheelchair tennis being the most successful competitor sport of the Dutch Paralympic team of the last four Paralympics.

6.1.1 A successful history

The impressive history of wheelchair tennis in the Netherlands starts with Esther Vergeer, who succeeded in winning everything she competed in for ten years (ITF, sd). Not only did she compete in singles competitions but also in doubles; she competed mainly with Maaïke Smit and Marjolein Buis.

6.1.2 Ruling the current situation

At this moment, Diede de Groot is number one in the world. The Netherlands has two other people in the top 10 in the women's rankings and in the men's top 10 ranking, two individuals in the quad division (a disability in three limbs or more), the top two are Dutch and the two upcoming players (ITF, sd).



Figure 16 photograph of Esther Vergeer in action (Getty Images)

6.1.3 Tennis is the most successful non-individual sport of the last four Paralympics.

In the four previous Paralympics (Tokio 2021, Rio de Janeiro 2016, London 2012, Beijing 2008), the most gold medals were achieved for the Netherlands by wheelchair tennis players, with a total of nine gold medals achieving at least one single and one gold medal each event (NOC*NSF, sd).

The other non-individual sports in which the Netherlands has achieved a gold medal, are wheelchair basketball (2021) and table tennis (2021, 2016, 2012). The other 39 golden medals are for all individual sports, the most successful being swimming and cycling (NOC*NSF, sd).

These results show that there must be a good organisation to create athletes who perform outstanding.

Non-individual means a competitor is required to play, compared to swimming or athletics, where practising and performing can be done independently.

Key Insights

- Wheelchair tennis is the most successful non-individual para-sport, as seen by the medals earned in the past and current situation.
- Swimming and cycling are the most successful individual para-sports.



Figure 17 Team NL winning all five golden medailles at the European Para Championships 2023 (EPC media kit)

6.2 The uniqueness of tennis: infuse competition

The uniqueness of tennis: infuse competition

The Dutch tennis competition does not separate non-disabled players from para-athletes. Instead, this unique structure creates greater competition and an important social aspect.

The lack of differences in rules allows players in a wheelchair to compete in local areas instead of creating a unique wheelchair-only competition where they most likely have to travel through the whole of the Netherlands, making the sport more accessible. The accessibility of the sport was found very valuable by the people I interviewed during the context mapping interviews (see appendix C).

6.2.1 Infuse sport is unique to tennis

Tennis is unique because the Dutch Tennis Federation (KNLTB) has chosen to integrate (or 'infuse') athletes without a disability with para-athletes. Due to the structure of the competition, mixing the two 'worlds' is not a problem. Instead, most tennis clubs enable para-tennis to create wheelchair teams that compete in the regular competition. Generally, the same rules apply except that the ball can bounce twice for wheelchair players.



Figure 18 wheelchair tennis and standing tennis playing together.

6.2.2 The competition structure allows for accessibility

The KNLTB has developed a structure where the individual playing level ensures that everyone can play in a challenging, open competition. Every player gets a number according to their level of playing. The level is scaled from 9 to 1. Nine means the player is a novice, and one means the player is a pro. This number is kept for a full calendar year. The level number is based on the results of the matches played. After every official game, the ranking goes up (when won) and down (when lost). The ranking structure is designed to keep the competition fair.

The competition is played in a team of 4-8 people, mostly a team that consists entirely of athletes without a disability or teams fully consisting of athletes with a disability team. Nevertheless, it can be combined into one team. The most common competition style is four singles and two doubles matches.

Because of this ranking system wheelchair tennis is not perceived as a special or 'only' para-sport. Another advantage of the open competition and recreational tennis was that wheelchair tennis could be played closer to home, as travel could be an issue for some (interview 1).

6.2.3 Social acceptance

Social acceptance is vital to the success of infuse tennis. By including wheelchair tennis in the competition, the feeling of belonging and being a part of society is enhanced. As read in Phase 1, mental and social acceptance is crucial. With complete immersion from the tennis federation, the athletes feel recognised.

"I didn't want to play sports with just disabled people, I wanted, I can play tennis with anyone, like hand-biking"
~interview 1

"you have to get out what you can get out, you can play in the regular league, doesn't matter if you play wheelchair tennis, mentally challenged or otherwise .. it has nothing to do with whether you have a disability"
~interview 2

Key Insights

- An open competition makes people feel welcome
- Wheelchair tennis is perceived less as a paralympic sport because they do not only play with other athletes with a disability
- Travelling can be a bottleneck for athletes to choose a sport

6.3 Well-organised hierarchy of playing levels

If you want to compete at a higher/more professional level than the association competition, there is a tournament structure for only wheelchair tennis. These tournaments are a step to international competition, where interest is seen from multiple stakeholders.

6.3.1 National tournaments as a step towards international play

The competition structure for wheelchair players is the same as that for non-disabled tennis players. People play against wheelchair players of their category. There are also tournaments where wheelchair tennis players can play against non-disabled players, called infuse tennis.

Besides the infuse competition, there are also wheelchair tournaments. At the official wheelchair tournaments, people can play for the ranking level. In these tournaments, only players who play in a wheelchair can compete, equalising all types of handicaps by making them seated. All wheelchair players in the Netherlands are listed through these tournaments.

Tennis has two disability classes: quad and men/women. In the quad division, a player has a disability in three or all limbs. These players can compete in a manual or electric wheelchair. When playing doubles, the teams can be mixed based on gender. In the men/women class, the player has to have a disability while permanently using their wheelchair to play; this is also called an open-class competition. Open class means that the athlete needs to be in a wheelchair, but the exact handicap does not matter.

6.3.2 Strict rules about qualification help to keep the sport fair

The professional tennis league has a different structure than most other sports competitions; after the national tournament, the next level becomes international.

To play internationally, an athlete has to have a medical examination and an International Player Identification Number (IPIN). With the medical check, a doctor states the exact impairment of the athlete, showing that the athlete cannot compete standing. To prove this, the athlete and doctor fill out a form with medical evidence of the disability, like X-rays, MRI, or other medical proof.

After the medical examination, the athlete can apply for the IPIN. At this moment, the athlete registers themselves and declares to play honestly. After finishing these two procedures, the athlete can play in international tournaments (ITF, 2022).

6.3.3 International layers in competition

Once an athlete plays internationally, there are tournaments at four levels: Grand Slams, Super Series, ITF 1, 2, 3 and Futures. The first three, i.e. Grand Slams, Super Series and ITF 1, are the more competitive competitions, these competitions are hosted by the International Tennis Federation (ITF). The ultimate competitions are the Grand Slams: four competitions with a special organisation and highest status. These are the Australian Open (AUS), Roland Garros (FR), Wimbledon (UK) and US Open (USA) (ITF, sd). The four Grand Slam tournaments also have the highest status for non-disabled tennis players. They are played at the same time.

The Super Series consists of five other tournaments with high states.

In men's singles rankings, the top 20 athletes cannot participate in Futures tournaments to keep competition equal, and they can only enter two ITF 3 events in a calendar year when ranked in the top 10. Women and quads cannot compete in Futures events when ranked in the top 10 and can only play two ITF 3 tournaments during a calendar year (ITF, 2022).

In comparison to able-bodied sports, the structure is quite the same. The main difference is the titles of the different levels and that the non-para competition is made for larger numbers.

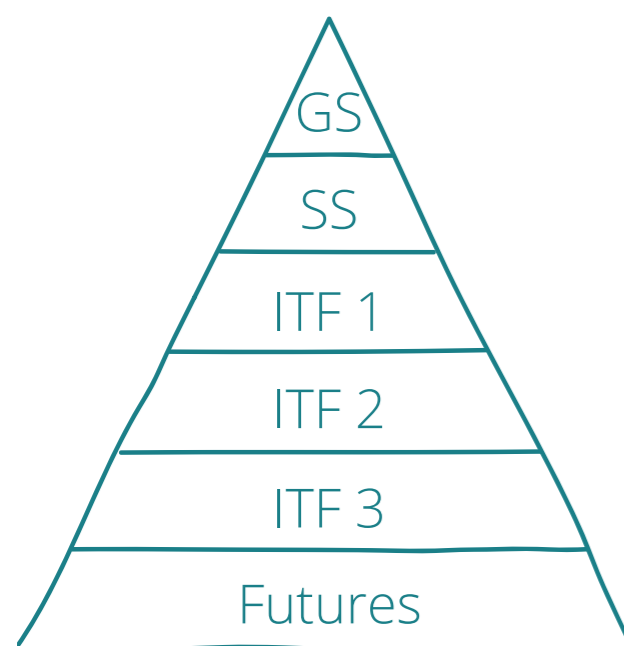


Figure 19 the international tennis tournament structure.

6.3.4 Organisation structure allows fair competition

It is fascinating to notice that wheelchair tennis is the only para-sport where the players can constantly perform at the international top level. The question arose of how that was possible. Perhaps a different strategy or maybe organisational structure could be the case.

Further research was done.

To find this answer, I approached the National Tennis Centre, where I spoke with the current assistant national coach. During the interview, I understood that in tennis, there is a natural feeling of equal treatment, as I quote:

"I see no difference, it's also very normal to see no difference, I also treat them equally, I wouldn't even think about it either. I would make the same jokes to them as to the standing. It is woven together too."

Furthermore, on the question: how do you know there is no difference? His answer showed surprise as to him they all are equal, and the tennis federation has the same facilities for all professional top tennis players:

"The KNLTB facilitates training here, they get two training sessions a day, there is a physio here, a nutritionist, travelling coaches, indoor courts, outdoor courts, gravel courts, own physio, own gym, everything is here, there are play sight courts and a data analyst."

The players and everyone needed to play on the highest level is there. The organisation treats the needs of wheelchair athletes the same as standing athletes. The structure of the two is practically identical: with the same person leading the organisation.

The Dutch tennis federation proves that merging non-para sports and wheelchair sports can be a success. Instead of facilitating a separate organisation, they used all their knowledge to build a successful program. The so-called cross-pollination of knowledge, facilities, support and other challenges has proven very lucrative.

Key Insights

- Growth is made possible by structuring the national competition well within the international competition.
- There are rules that the best player can still participate in less prestigious events to get enough practice.
- An organisation that balances para and able sports is essential to treat paralympic athletes like Olympic athletes.

6.4 Summary

In conclusion, wheelchair tennis can serve as an exemplar for this project due to its past achievements, current success and unique characteristics. The Netherlands has a rich history in wheelchair tennis, with legendary players like Esther Vergeer and current top-ranked female player Diede de Groot.

Wheelchair tennis has been the most successful non-individual sport for the Dutch Paralympic team, earning numerous gold medals in the last four Paralympics.

The sport's inclusivity and social acceptance are noteworthy, as it integrates disabled and non-disabled players in the same competition structure. Additionally, the well-organised hierarchy of playing levels, national tournaments, and strict qualification rules contribute to fair and competitive wheelchair tennis at national and international levels.

Overall, the organisation of wheelchair tennis provides valuable insights that can be applied to other sports and demonstrates the importance of inclusivity and accessibility in athletic competitions.

Key Takeaways

- An impressive history still in the making is considered a good example.
- Combining the paralympic tennis player with non-disabled-bodied athletes helps promote the disabled tennis sport.
- A structured competition with a clear tournament hierarchy lets the wheelchair sport flourish.
- A similar treatment structure woven into the Sports federation is important for implementation.



Phase 3: **Pilot-in-the-Plane**

In phase three, the main conclusions of phases one and two are concluded and combined. This phase of piloting your own plane contains the choices based on literature and design methodology. This will be explained in chapter 7.

Chapter 8 explains the roadmap. Chapter 9 explains the NOC*NSF kitchen, a website that enables the first two horizons. Chapter 10 is about validating these two designs, done during the Euro Para Championships.

7 DESIGN OPPORTUNITIES AND REQUIREMENTS

Before being able to develop multiple design directions, it is necessary first to define the frame.

While defining the design opportunities, a design process has taken place. The design process incorporates specific steps for ideation. The project conducted creative, co-reflection, and reflection sessions to foster the ideation phase. During this process, brainstorming techniques,

such as How-to's and explorations with Design with Intent cards, were used, along with collaborative creative sessions with peers (refer to appendix F).



Figure 20 a visualisation of the amount of stakeholders

7.1 Stakeholders - General

The first barrier while designing was deciding for whom to design. This thesis considers four stakeholders: the NOC*NSF, the federations, associations and athletes. To design for all is too complex for this project. Considering the extent of stakeholders (see Figure 21) helps understand why choosing who to design for is important. The choice to design for federations is explained in this chapter after describing the design process and then the design choice.

7.1.1 Stakeholders brainstorm with peer

A simplified persona was created for each stakeholder during a brainstorm with a Strategic Product Design peer. The reason for a simplified persona was to quickly let the peer understand the stakeholder and their specific needs.

While creating the persona, we looked at the possible directions for who and what to design for. Each stakeholder's persona contains the role, with whom they communicate and influence. After this pressure cooker, we mapped out the stakeholders on the axis, means and influence.

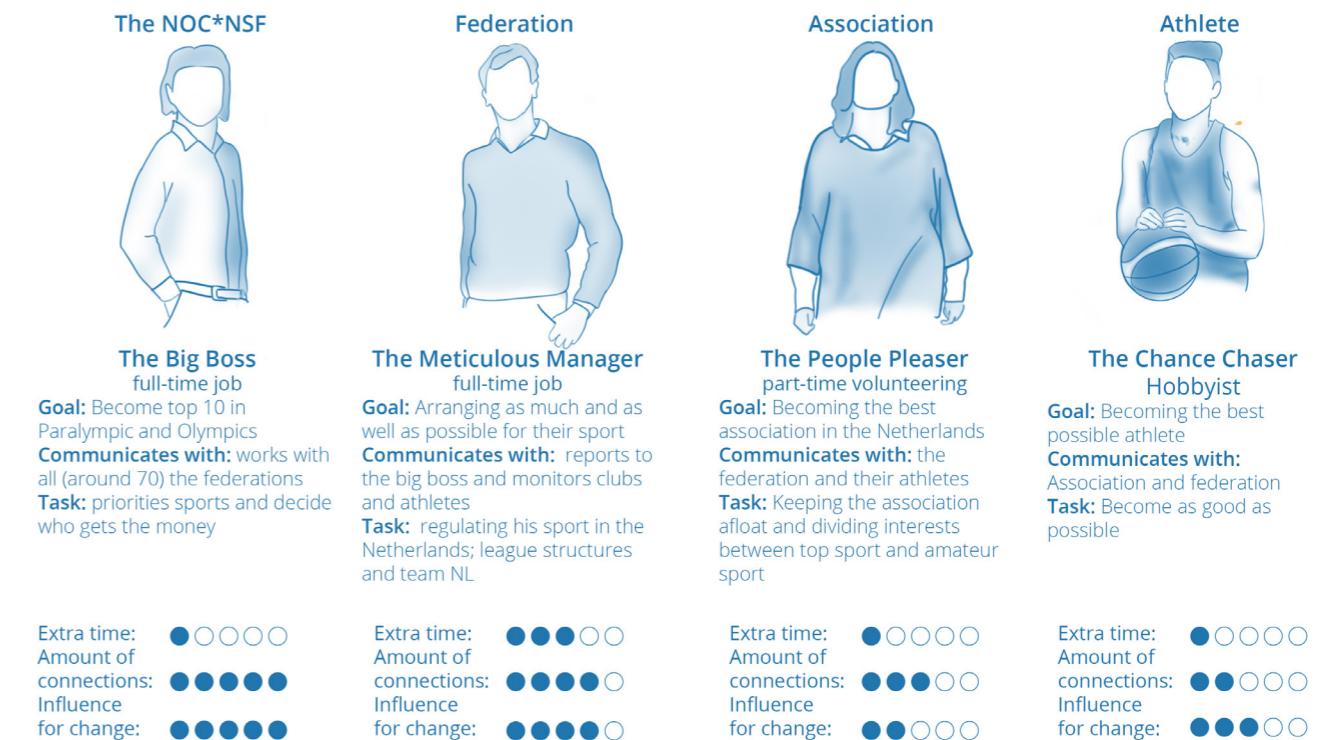


Figure 21 the created persona's during the brainstorm

7.1.2 The analysis stakeholders

The main stakeholders from phases 1 and 2 are the NOC*NSF, the Federations, Associations and the athletes. In the paragraphs below, their prominent role and their design requirement will be described in more detail.

NOC*NSF

The NOC*NSF is high up in the command and wants everything to go well and smoothly with all the different federations as umbrella parts underneath. As the mother company, they are also busy enough only to supervise the projects and only want to get updates occasionally. The will and enthusiasm to change and explore para-sports have to come from the underlying organisations. These federations also need to be more financially independent, which means that the NOC*NSF will only help as a guide and with political or government issues.

Federations

A federation is responsible for the national success of those athletes and teams wanting to grow with their Paralympic dreams. Mostly, they have done this by trying to copy non-para-sports. The comparison with non-para sports has not always been successful. However, thinking and implementing new things is not as simple for a federation without ideas, means, and money.

Associations

At this point, the associations do not know how to facilitate sports for people with a disability and that they can. Most associations facilitate sports for people with a disability when they have personal reasons like they have a disability themselves or their child. They then try to determine what is needed to set up the Paralympic sport for their association.

Athletes

The federations should not ask much of the Paralympic athlete. They already have to put in much energy to be able to compete. If they want, they can be involved in changing the current competition. Nevertheless, as an athlete, it is nearly impossible to start a competition.

Para-athletes can contribute by being visible on social media and telling their stories.

Mapping out the stakeholders

Figure 22 maps the four stakeholders on means and impact. On the x-axis plots, the means range from low to high. The term refers to the means orientation of effectuation (Saravathy, 2001), emphasising what and whom I know. As mapped out, both the federations and the NOC*NSF have the highest means of contact with influential sporting people. Athletes have the lowest means as they are primarily in contact with the other stakeholders and not international.

On the y-axis plots, the impact is from low to high. The impact is about what they can realise in redesigning the sporting structure on the level of changing the rules or being able to bring personal opinions to the media. Athletes feel this impact. They can go to the media and get support. The federations have the most influence on who to talk with to realise what they want.

7.1.3 Summary

The sporting world has four main stakeholders: NOC*NSF, federations, associations and athletes. The NOC*NSF wants to contribute to a more professionalised sporting world but lacks the time and effort to help every federation. Therefore, the design must be a stand-alone requirement and suitable for a federation to use individually.

I believe designing for the federations has the most significant impact on the whole system. With the power and the means, the federations have the most opportunity to redefine sports. The associations have the willpower yet lack the means. The athletes can contribute to the impact yet have low means.

Therefore, the design will be focused on the federations.

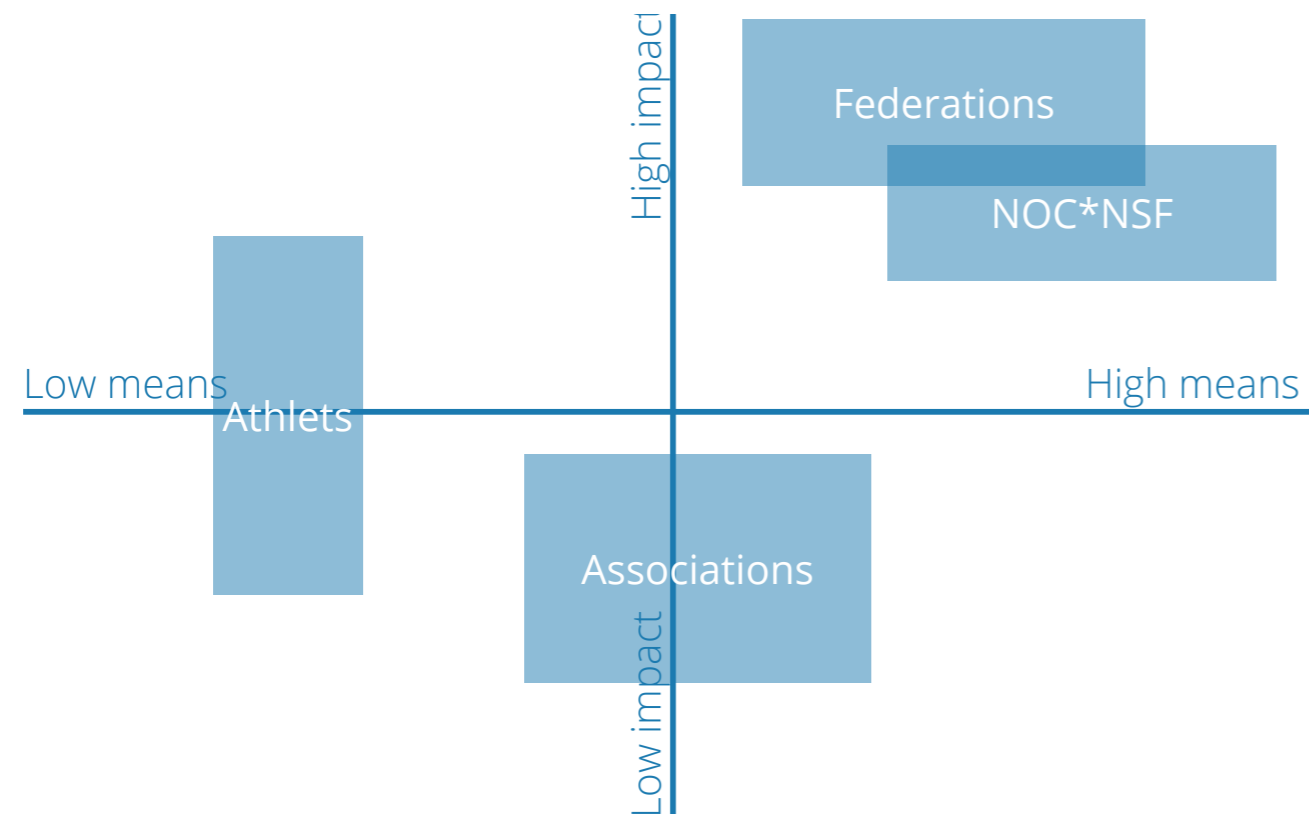


Figure 22 the stakeholders mapped out over means and impact.

Key Insights

- The NOC*NSF wants minimal effort and maximal means. The effort is time and money, and the means are the medals.
- Federations require clear guidance to relieve them of difficulties of their tasks, making them more accessible and more manageable
- Associations require guidance on how to set up Paralympic sports smoothly
- Athletes want easy access to sports and enjoyment, with optional minor tasks

The design should include:

- Minimal effort for maximal means. The effort is time and money, and the means are the medals for the NOC*NSF.
- Clear guidance that relieves the difficulties of these tasks, making them more accessible and more manageable for the federations
- Guidance on how to set up Paralympic sports effortless for the association
- Imperceptible, easy access sports and enjoyment for the athletes

7.2 The main pillars for professionalising Paralympic wheelchair team sports

From my research during phases one and two, these four primary pillars were derived: competition, organisation, money, and cross-pollination. An explanation of these four pillars is given below. These are constructed from the research explained in phases 1 and 2. The direct conclusions are put together here and are needed in the later design.

7.2.1 A creative session with peers

This creative session is based on Fronteer's theory in their book Collaborate or Die (2022). The goal of this session was to work together with people who are not sport-minded but creative and can come up with out-of-the-box solutions.

First, after a warm-up through storytelling about your favourite student sport, brainstorm about the four pillars using the method How To's.

After the break, the How To's were placed into a morphological map, designing possibilities of combinations of the four pillars.

The possibilities from the How To's were realistic and formed possible pathways for federations to grow, but putting it together was very challenging; exactly what choice to make with so many solutions. The discussion arose about whether there is one exact way to suggest or if showing possibilities is enough. This led to the insight that one fixed solution may not be a realistic outcome.

There are many possibilities to design and implement for federations, but there is not one direct solution.



Figure 23 the How To's

7.2.2 The main pillars to professionalise paralympics sports

During the brainstorming session, it became clear that some ideas were fundamental and others a reaction or follow-up on the first idea. With this in mind, I reviewed the findings and constructed four main pillars for professionalising Paralympic sports.

Competition

Based on the phenomenological research from chapter 4 and the interviews from chapter 6, it is evident that being able to play in a competition is significant.

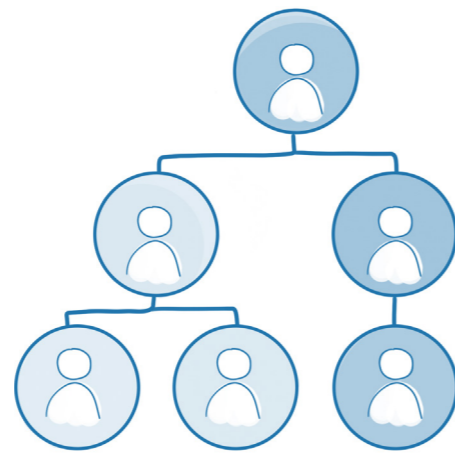
In badminton and ice sledge hockey, a group of people enjoyed playing together. However, at tennis, it was clear that the people playing were serious about their sport. The standard of the tennis matches was high, making the game perceived as more professional.



Competition

Organisation

In Chapter 6, I interviewed multiple people who are/were influential in setting up wheelchair sports for specific associations. They gave insights into how the KNLTB was structured and how wheelchair tennis is structured nowadays. The interview with the assistant national coach revealed that the tennis organisation embraces wheelchair tennis and takes it as seriously as its able-bodied variant, leading to its success. The sport of wheelchair tennis has been embraced by all, even creating a fully integrated (international) sports federation.



Organisation

Money

Money is one of the main factors in our society. Everyone I have spoken to said they needed money to improve and make the para-sport more professional. The fact that the (local) federations need money is essential to set up the structure, competition, and other support. At this moment, the athletes, most of whom do not earn enough money to support themselves, should also be able to earn money. Without a reasonable salary, athletes cannot sustain themselves. A strategy for how to earn money is essential.



Money

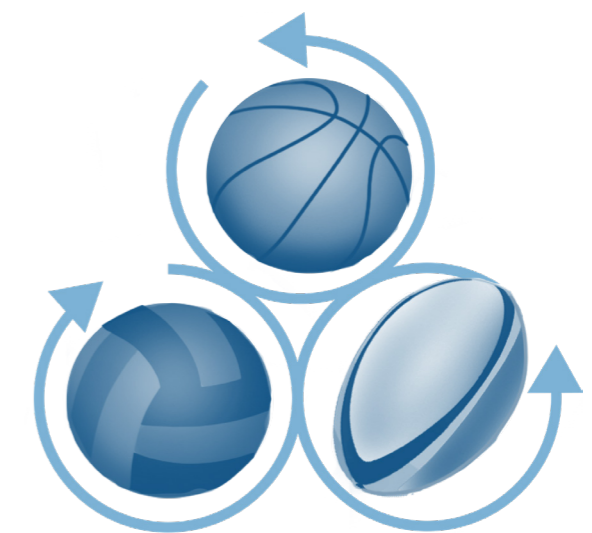
Cross-pollination

Chapter 6, "Wheelchair Tennis," introduces the cross-pollination pillar. The cross-pollination between seated and standing players is a total immersion, with lots of praise (and success for the para-athletes).

Cross-pollination, in this sense, is, of course, not possible for all sports. Nevertheless, other types of cross-pollination, like coaching or coming in contact with other sports, or combining sports in one sports event like the European-Para-Championships may very well be possible.

The design needs to be suitable for these four pillars:

- Competition
- Cross-pollination
- Money
- Organisation



Cross-pollination

7.3 Designing towards a goal

7.3.1 Company brainstorm

Together with the two company mentors of NOC*NSF, we brainstormed using a prototype focusing on designing for federations and the four pillars.

Figure 24 shows the first prototype. See appendix G for more details. After presenting the current prototype, the conclusion was made that the design was still too broad for all. Nevertheless, the four pillars of professionalising address the core issues in paralympic sports.

The goal of the project was too broad to design successfully. Therefore, we brainstormed about a future vision together. This resulted in:

“Creating the new sustainable wave of Team NL talents”.

A future vision is a creative way of describing a desired future. It becomes a goal to design a roadmap of Horizons, defining which step is needed at a specific time. The future vision is explained in chapter 7.4.

7.3.2 Design Goal

After brainstorming with peers and the NOC*NSF, it was clear that a specific goal to design is needed. Before creating a full future vision first, a design goal is needed. Therefore, the following design goal was formulated:

The goal is to design for federations that facilitate wheelchair team sports in the Netherlands that need support to professionalise by giving them a guide they can use independently.

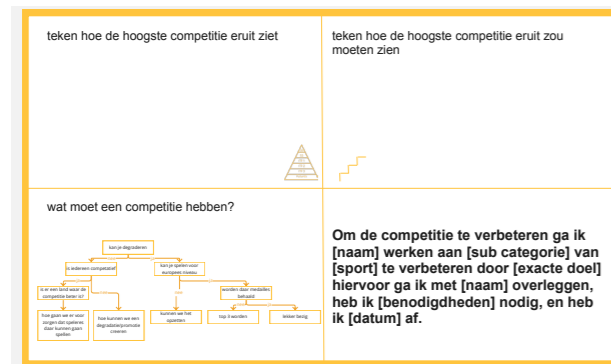


Figure 24 the first prototype shown to the NOC*NSF

7.4 Future Vision

The Paralympic Games are the most significant group sports events for people with a disability. Therefore, the timeline for the NOC*NSF is paced by the years of the Paralympics. With a strategy in place till 2028, a new strategy is needed for 2032. The vision for 2032 is: “creating the new sustainable wave of teamNL talents”. Breaking down the sentence into three parts thoroughly explains the future vision:

- Creating the new wave,
- ensuring sustainability,
- and embracing TeamNL talents.

This future vision is created during the company brainstorm.

Creating the new wave

As mentioned above, there is a well-planned strategy that will still be fruitful till 2028. The new wave of athletes is not “raised” in a singular sporting structure. They have been able to cross sports and learn, enriching their sporting knowledge due to the cross-pollination pillar explained, see chapter 7.2 or the first explanation of implementation in chapter 8.

Sustainable

To maintain the sporting structure strategy for multiple years, the structure must focus on maintaining and enthusing young new people. Adding young athletes prevents one batch of superstar athletes by creating a healthier circular group.

TeamNL Talents

Most athletes attending the Paralympics in Los Angeles in 2028 will likely retire after the Games. Retirement is a natural step for the athletes. So in 2032, a new and less experienced group of athletes, whom we will call the ‘talents’, will participate. The intention is that the increase of talents continues and that a team does not grow old together.

Key Insights

Most important future vision of the Paralympics athletes:

- creating and maintaining the influx of new talents



7.5 Personal ideation

After brainstorming with peers and the people of the NOC*NSF, I created a rough sketch of a roadmap to fit the future vision and horizons of how to accomplish the future vision. This problem occurred after brainstorming with the NOC*NSF on how the federations initially would start with this process. This initiated brainstorming of possible designs and how to engage the federations, creating four rough concepts see figures 25-28.

The approaches used to create these concepts were: brain drawing and design with Intent cards (Lockton et al., 2010). These concepts were evaluated on the criteria if they fitted the federations needs of minimum effort maximum means. By choosing a specific design to implement in the first horizon. The final roadmap and design are presented in chapters 8 and 9.

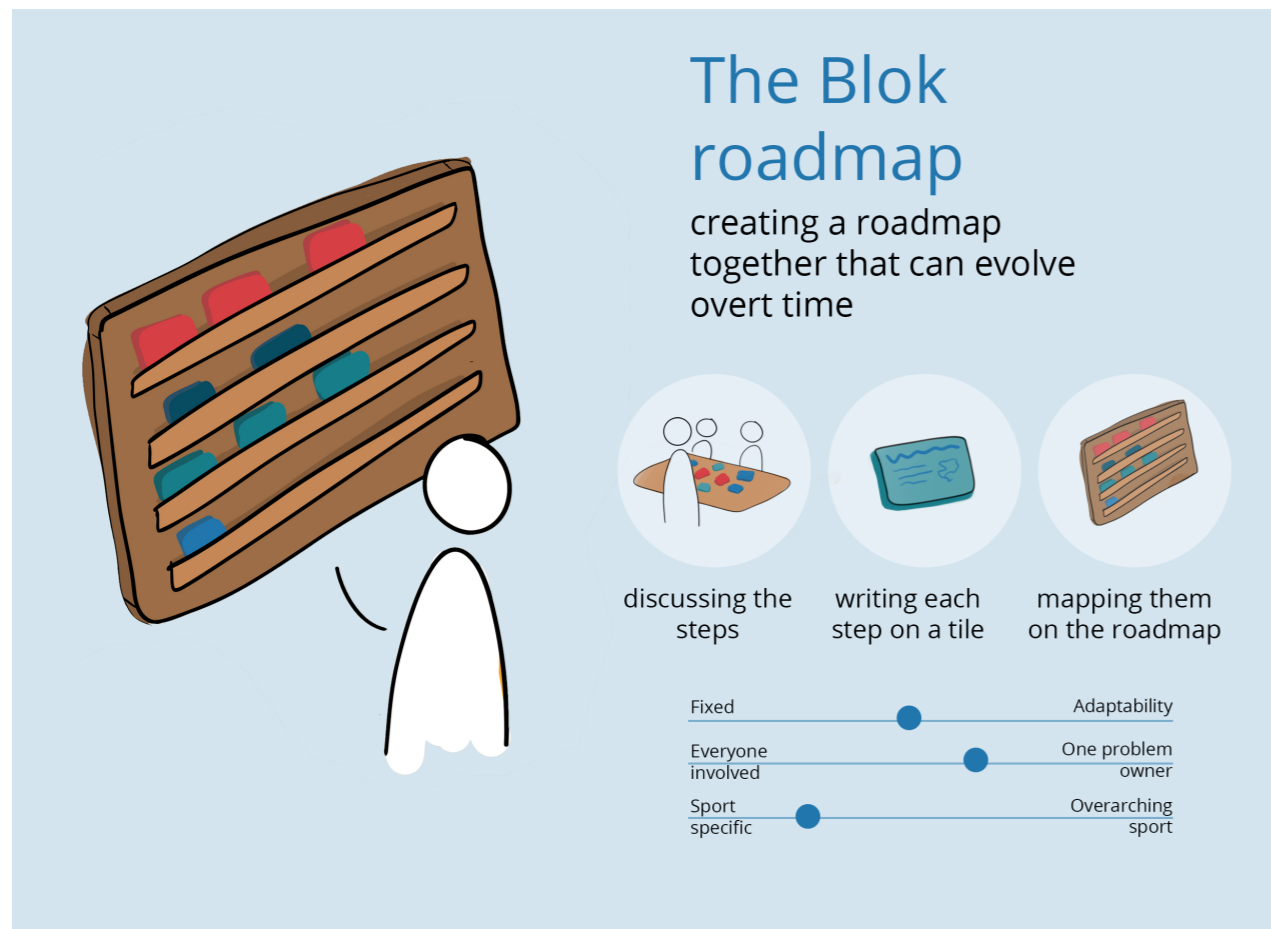


Figure 25 a visualisation of concept 1: the blok roadmap

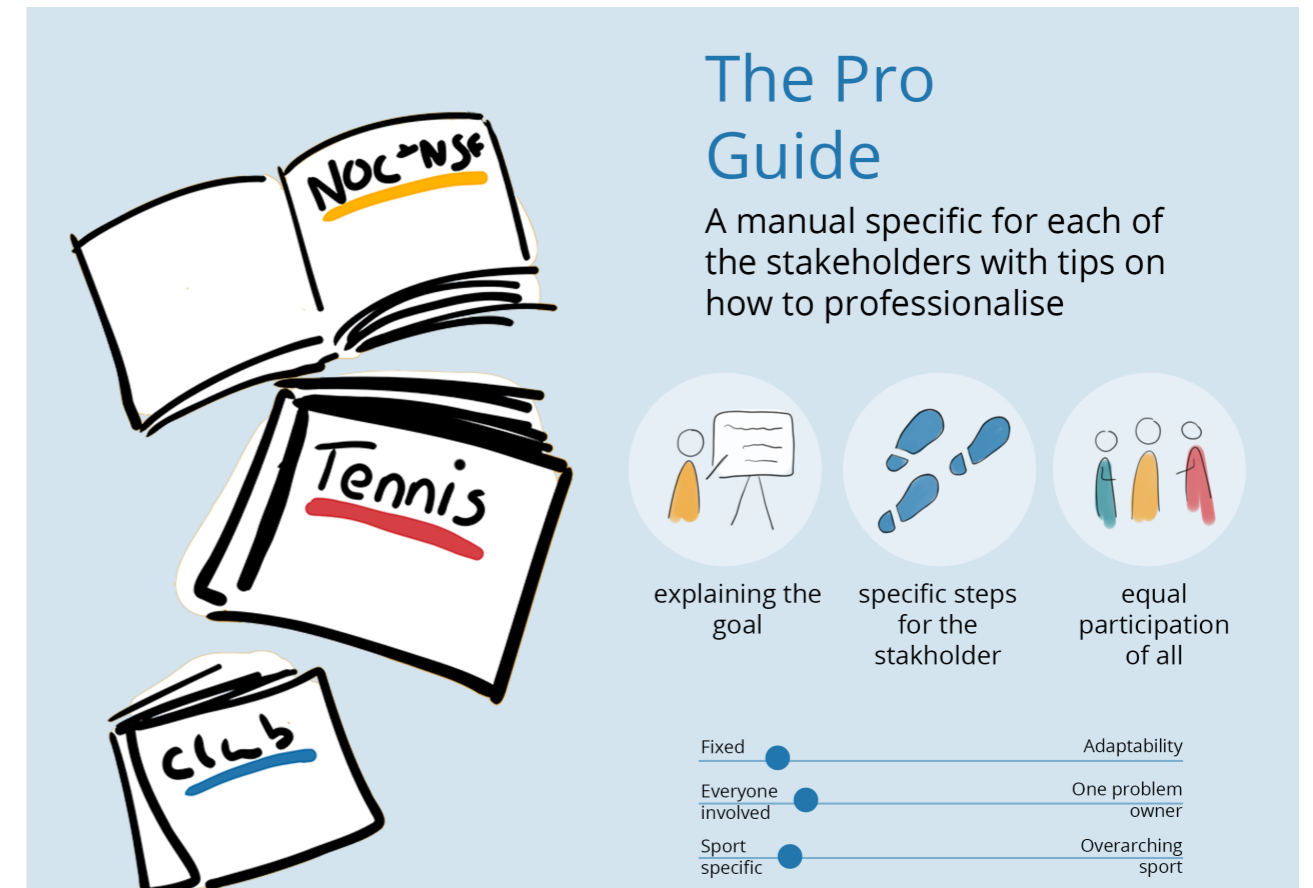


Figure 26 a visualisation of concept 2: the pro guide

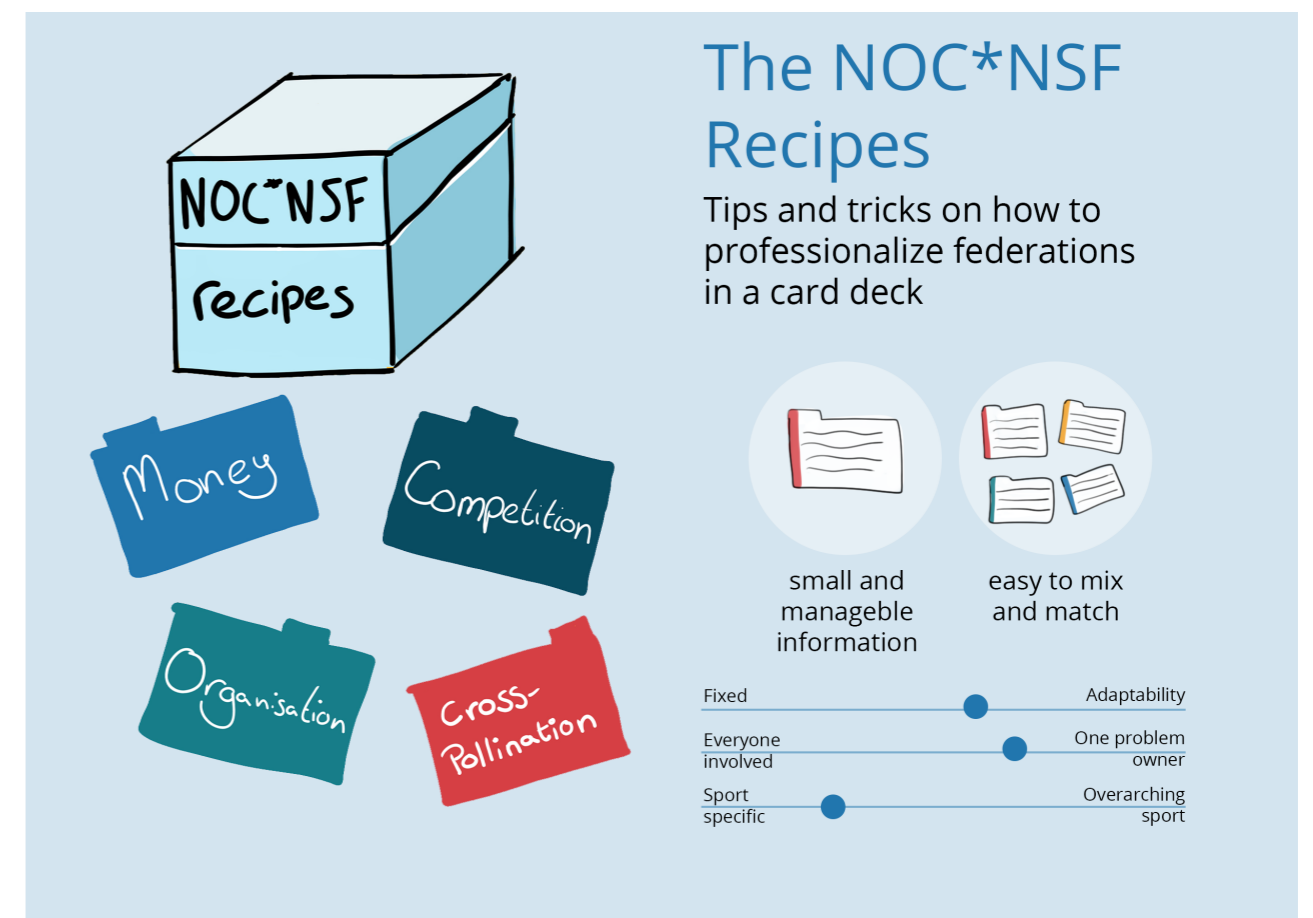


Figure 27 a visualisation of concept 3: the NOC*NSF Recipes

8 THE STRATEGIC ROADMAP

One of the recurring statements in various interviews is that growing as a sport and earning money as an athlete is a chicken and egg-story. Another issue was that starting from scratch was expensive and time-consuming. The strategic roadmap breaks through this perpetuation of the chicken and the egg. The roadmap is the logical conclusion based on the findings in chapters 3 to 6.

A visual combines the goal and the federation component underneath the goals. The section about the federation is separate from the stakeholders because the federation is the executive party.

Chapter 7 explains that the four pillars under the federation components are competition, organisation, money and cross-pollination. Each pillar has its main task explained.

Next, the other stakeholders' roles of the NOC*NSF, associations, and athletes are mentioned in terms of what they can contribute.

At last, the possible other partners are explained. Here, non-direct sports organisations could be of help during the process.

As the roadmap will be an important design to improve the status of the para-sports, a website will also be designed for the federations to use, the so-called NOC*NSF Kitchen. The use and creation of the website will be explained in depth in Chapter 9.

Horizon 1: Sparking

6 months start jan 2024

Goal
Froming a personal identity

Federation
Ideating on possibilities and structuring what they want

Horizon 2: Uniting

1 year: aug 2024-2025

Goal
Creating partnerships and developing sporting structures

Federation
Findin partners and creating new plans

Horizon 3: Collaborating

3 years: aug 2025-2028

Goal
Implementing new sporting structures

Federation
Leading the implementations and redirect were needed

Horizon 4: Maintaining

4 years: aug 2028-2032

Goal
Continuing and perfecting the sporting structures

Federation
Maintaining the competitions and redirect were needed

Future Vision

Paralympics Brisbane 2032

2 1 3

Creating the new sustainable wave of TeamNL wheelchair team talents

The Four Pillars

Competition	Map out how competitive your competition is and it's growth possibilities	Develop the new competition	Implementing a new/ improved competition	Keeping the competition most competitive
Organisation	Map out how your organization will be able to fully support Paralympic sports to its full potential	Start implementing the new organizational structure, and develop a structure how to organize the new sporting structure	Implementing an equal intergal organizational structure to bring Paralympic sports to its full potential	Maintaining the equal organization
Money	Map out how much money you are willing to invest in this project and are there partnerships to be made	With partners map how much money is to invest and how the ROI and the strategy to finally be able to pay the athletes	Working together with different partners and sponsors to achieve financial stability and payment for the athletes	Achieve financial stability, an full-time payment for atheletes
Cross-Pollination	Find options for cross-pollination, or which sports it could work with	Find other federations or partnerships that could work to achieve your goal	Keeping up the cross-pollination	Continue creating new opportunities for other cross-pollination

Stakeholders

NOC*NSF	Igniting the spark with NOC*NSF Kitchen	Helping to connect with the right people	Facilitatino the elite athletes to the Paralympics	
Association	Focus on the season	Give input on the strukture	Compete in competition and give feedback	
Athletes	Focus on Paris 2024	Rest, focus on the season, give feedback and be a role model to help recruitment	Compete in competition, give feedback, and be a role model for young athletes	

Partners

Universities: Strategic Product Desing, Sports Sciens, Kinesiology, Economics	Universities: Strategic Product Desing, Sports Sciens, Kinesiology, Economics
	Health care authorities
	Other Sports Federations

8.1 Horizon 1: Sparking

The first horizon starts in January 2024 and lasts about six months. This phase is about defining the current status of the federation and sparking new opportunities within the federation. This phase is done with a website called the NOC*NSF Kitchen, see Chapter 9 for more details, and which federations will be chosen, which will be done in consultation with the NOC*NSF and the Dutch Paralympic Committee. This roadmap is designed for wheelchair team sport federations.

Goal

The goal of this horizon is to form a personal identity. Personal identity is an essential first stage. Knowing how the specific federations work, their strengths, weaknesses and threats make it easier to create a mutual goal with other federations, later exploring the opportunities while mapping out the strengths, weaknesses, and threats. These opportunities are most likely to be explored by the four pillars.

8.1.1 The four pillars

Within the NOC*NSF Kitchen, the NOC*NSF introduces the four pillars to the federations. The federation can work toward a clear goal by working on these pillars individually and with their strengths and weaknesses.

Competition

When the federation focuses on the competition, it maps out what it is doing now. It compares to different successful sports. Together with NOC*NSF Kitchen, it sparks growth possibilities.

Organisation

Most federations do not have an equal structure in their organisation compared to the non-disabled variant. They can grow by reflecting on that and setting a goal where they want to work towards the organisation.

Money

This roadmap is to stop going back and forth on how much money is needed to start, and the federations need to plan out how many personnel hours and money they can afford to put into this reorganisation. By making a plan, the federations can do possible ROI planning.

Cross-pollination

Cross-pollination is only at the end of the first horizon. First, the federation must shape the other three pillars. Nevertheless, the federation must brainstorm with whom it wants to work and towards what goal. Again, the NOC*NSF Kitchen helps this process by sparking possibilities.

8.1.2 Stakeholders

The federation is the main body at work during this process, yet as read in chapter 4.1.1, the NOC*NSF, associations and the athletes are essential to make this project succeed.

NOC*NSF

The NOC*NSF ignites the spark with the federations by announcing the launch of the website NOC*NSF Kitchen and sharing the global dates of the different phases. Sharing global dates is essential because even though everyone can do these steps separately, everyone who wants to participate must have their plan in order when Horizon 2 starts.

Associations and athletes

For the associations and athletes, there is not much involvement yet. Most associations are in the middle of their competition schedule and must focus on that.

The athlete is at the start of the Paralympic year, and the complete focus should be on that. For these reasons, these two stakeholders are less critical in this phase. Athletes not practising to go to the Paralympics can be asked for feedback. However, they may not fit into the highest level of athletes, so their opinion of the athletes going to the Paralympics can vary.

One can argue that the associations and athletes are important in providing feedback on the process, especially now. That is true. Nevertheless, implementing the roadmap as soon as possible is preferable because of possible delays. Associations can give feedback at the season's end (around June/July). For the athletes, however, it is not sure when they can respond, with competing in the Paralympics and mostly taking a well-deserved break afterwards would delay the process unnecessarily.

8.1.3 Possible partners

For this stage, consultancies or Strategic Product Design Students could be helpful. It is not easy to look at yourself critically. Therefore, an outsider may help a federation understand who they are and discover their possible goals.

Also, more knowledge can be gained by working together with other universities like sports science and kinesiology. Working with them from the start, initial problems may be resolved before even starting the competition. Therefore these studies can be helpful in the ideation of who to work with in the future.



8.2 Horizon 2: Uniting

After six months, the second horizon starts: Uniting. This phase takes about a year, from August 2024 to August 2025. This phase is about creating partnerships and developing possible new sporting structures.

Goal

With the well-defined personal identity that the federations have created and the possibilities ahead, the federations will collaborate, redefining the current sporting structures. In this phase, the federations must be open-minded and welcome others with open arms.

8.2.1 The four pillars

In the second horizon, the four pillars are guiding and inspiring, together with NOC*NSF Kitchen.

Competition

In this phase, new competition opportunities should be explored with other federations and possible partners. They are breaking through standard competition setups and creating a new format.

Organisation

With the new contacts made during phase two, it is essential to consider how the organisation will sustain itself when working together, possibilities like making an overlapping committee or just other types of collaborations, and deciding how to work together and dividing specific roles to avoid double work.

Money

As with competition, discussing money before starting a collaboration is essential. Talking about money contributions at the start on investing money and how to gain money.

Cross-pollination

As stated above, this phase involves contacting other federations and partners. Getting in contact is needed to open up the possibilities to different sporting structures. On top of this, the new connections can also inspire combining different types of cross-pollination, like working more closely with the non-disabled variant of the federation sport.

8.2.2 Stakeholders

In horizon two, the stakeholder involvement of the NOC*NSF decreases, and the involvement of the associations and athletes increases a little bit.

NOC*NSF

Through the online NOC*NSF Kitchen, the NOC*NSF will help connect the federations. Contact can be reached by networking events or connecting the right person with another. The NOC*NSF will have the overall idea of what the federations want and know how to connect the ones with a similar goal.

Associations and athletes

In phase two, after the Paralympics, the associations and athletes can give their input at certain times. This feedback will work as a guideline for the federations.

8.2.3 Possible partners

As in phase one, keeping an outside opinion with consultancy and Strategic Product Design students is still preferable. Also, an involvement of, for instance, sports science like kinesiology is helpful to ensure that the sports, health and scientific insights are involved. Maybe asking for a sports economist's contribution can help define specific goals.



8.3 Horizon 3: Collaborating

After a year and a half, the first draft of the collaboration becomes visible. The collaboration phase to implement the new sporting structures will take three years, from 2025 to 2028.

Goal

The goal of Horizon Three is to implement the new sporting structure. The implementation can be done through a direct or gradual implementation. The federations will lead the implementations to learn and redirect as needed.

8.3.1 The four pillars

In phase three, there is a shift in the importance of the pillars. In the first two phases, competition and cross-pollination are inspirational goals to work towards, but they have become a reality. The organisation and money pillars become more time and attention-consuming than cross-pollination and competition.

Competition

In this phase, the first implementation of realising the competition should be accomplished. The implementation does not have to happen directly and on the highest level. Nevertheless, it can happen gradually, for example, in the youth competition or by implementing changes step by step.

Organisation

The organisation will have just launched their new competition. The launching takes time and rearranging to accomplish. Alongside the visible work it does through the competition, the organisation should reevaluate again, to see if the size still fits the goals and will elevate the organisation to a Paralympic level.

Money

At this point, the first primary investment should have been made and should be working toward earning money for the federations, associations and athletes.

Cross-pollination

Just like competition, cross-pollination will have achieved its goal. Nevertheless, cross-pollination options should be explored to keep this strategy renewed. Continuous learning is upheld by keeping in contact with the other federations.

8.3.2 Stakeholders

In Horizon Three, the NOC*NSF stakeholder involvement shifts from helping to focusing on the 2028 Paralympics. The involvement of the associations and athletes grows.

NOC*NSF

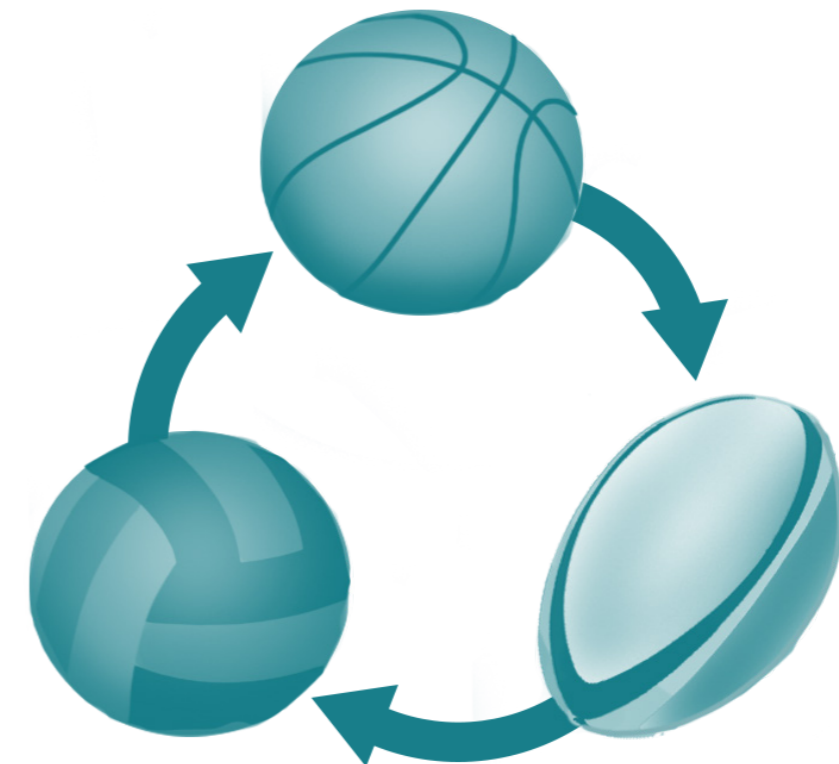
For the NOC*NSF, the next Paralympics are coming up, meaning they must facilitate the new athletes on their way to the event. While doing this, they will still facilitate the connections between federations.

Associations and Athletes

The main goal of the associations is to compete within the new structure. They will be generating feedback by participating and competing with the athletes. This also applies to the athletes who will start preparing for the 2028 Paralympics.

8.3.3 Partners

In phase three, the possible partners shift from educational partners to other federations and healthcare authorities. These partners help set up the competition and are part of their organisation.



8.4 Horizon 4: Maintaining

This roadmap's last horizon consists of the last four years of the eight and half years. It is time to continue the new sporting structure from idea to implementation.

Goal

Change is scary, so it is easy to change back to the previous format if there is a setback. Nevertheless, this is what we want to avoid. Continuing the sporting structure and redirecting where needed makes for better and stronger competition.

8.4.1 The four pillars

In phase four, the plans go from a conceptual form to implementation.

Competition

The first competitions will be implemented in the third phase. There is an ongoing opportunity to adapt the competition structure and decide if the competition level needs to be as competitive as possible or if it can stay at the current level.

Organisation

Hopefully, the organisation has become equal to its non-disabled sports form. If this has not happened, a way to work toward this will be a priority in this phase.

Money

In this phase, the significant errors are out of the competition, and there will be time to reach out for sponsorships to achieve financial stability and work towards fully paid athletes.

Cross-pollination

As in phase three, cross-pollination is no longer a main working point. However, it is still essential to continue inspiration.

8.4.2 Stakeholders

In the last phase, the NOC*NSF has a controlling role, while the associations and athletes have a more significant role in giving their feedback.

NOC*NSF

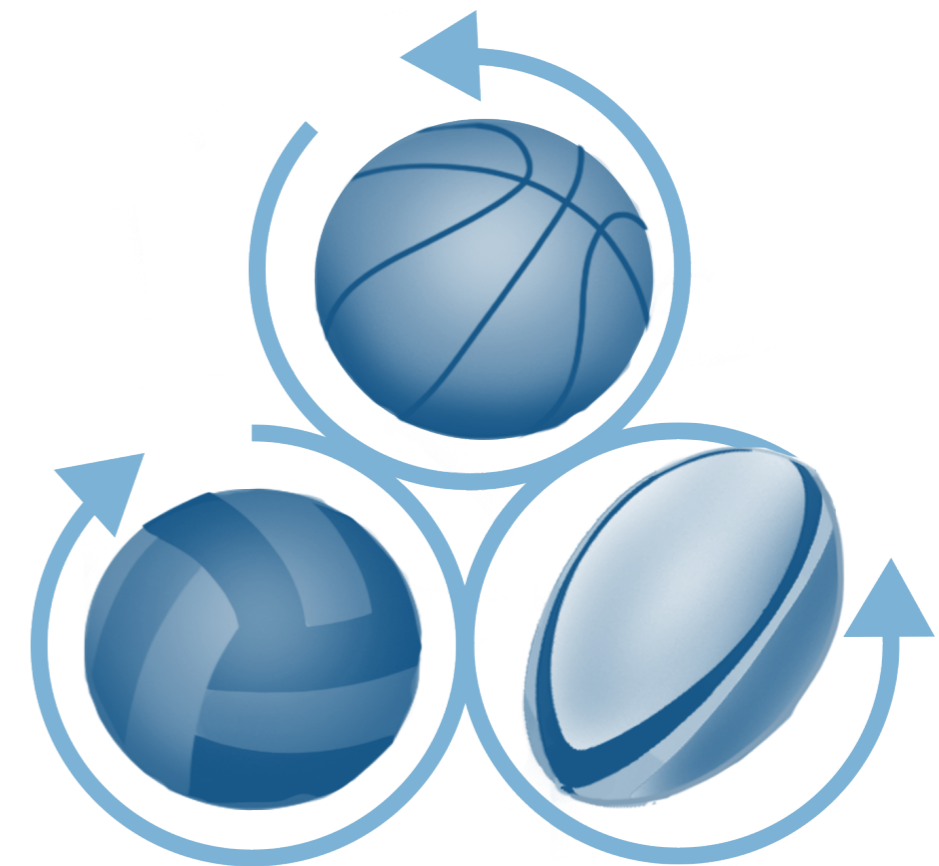
At the start of this phase, the NOC*NSF can also give feedback on the learnings and achievements regarding the Paralympics of 2028. Later in this horizon, they will focus on the Paralympics of 2032.

Associations and athletes

As in phase three, the associations and athletes participate and give feedback to the federation.

8.4.3 Partners

During phase four, NOC*NSF works with partners such as various federations and healthcare authorities. These partners play a role in organising the competition and are integral to their respective organisations.



8.5 Summary

The roadmap consists of four horizons; the first is [Sparking](#) from January 2024 to July 2024, where the federations will define their personal goals.

From September 2024, a year-long second horizon will occur: [Uniting](#). During this horizon, the federations will explore new opportunities by speaking to different federations and other partners and making new partnerships.

In the third horizon, the inspirations turn into implementations [collaborating](#). In this phase of three years, the new sporting structures should be implemented.

In the fourth horizon from 2028 till 2032, with the continued development of the league, working towards the future vision is the [maintaining](#) horizon.

The future vision is, "creating the new sustainable wave of teamNL talents" in 2032. The four horizons together ensure the realisation of this future vision. See also pages 86, 87 for the full tactical roadmap.

Each horizon consists of the following components:

- Goal
- Federation
- Four pillars
- Stakeholders
- Partners

The goal of the various components seems self-explanatory. The goal of every specific horizon is stated.

9

THE DESIGN: NOC*NSF KITCHEN

As read in Chapter 8, next to a strategic roadmap, something like a unique website or intranet is needed to catalyse the movement for the federations: the NOC*NSF Kitchen. As Chapter 7 concludes, the design should inspire and empower the federations. This design should be easy to understand and use.

9.1 Format

A suitable format is needed to design a concept that the federations can use. Different design formats were developed in the ideation phase, see appendix 9.

The final decision was made to design a website/intranet. The main reason is that an online platform can enable content updates and connect federations.

To continue to grow and learn, it is crucial to maintain the connection and communication between federations. This way, the federations will not need to reinvent a strategy on how to grow, what works and what does not. The federations and the NOC*NSF will be able to update the content of the four pillars. Also, federations can keep a blog so others can see and comment on the process, giving tips and tricks and learning from each other.

Creating connections and updating the content is only possible on a digital platform. Therefore, a physical design is not convenient.

The reason to design an online platform and not an app is because the federations work on their laptops when working. The content is not needed instantly at every moment, so an app is redundant. Also,

with large quantities of information, a website is the preferred format. Of course, other possibilities, such as using an intranet with a landing page on the internet and the information behind a member's login, will be considered, depending on how the different stakeholders use the internet and what they will be willing to share.

Nevertheless, it can be argued that it is easy to forget an online platform because it is not constantly visible. The federations' intrinsic motivation is needed to maintain information updates.

The website is also intuitive to use. By presenting the content in a commonly used way for websites, no training is needed for the users.

9.2 Content

The website's content inspires and empowers the federations to take action and create a plan. The website starts with a home introduction page. From there, it is easy to go to the introduction pages of the four pillars. This page will guide the federation on how to grow for that particular pillar. Next to the information on the four pillars, there is also a blog where each federation can log its activities.

9.2.1 The home page

The links to the four pillars are displayed most prominently on the home page. The prominent placement is because the four pillars are the primary information point of this website. There is a generic text about what the site is about, the home page links to a blog, and the person's profile.

9.2.2 The four pillars

The pillars are divided into four different pages. The division is made because there is no direct order of what to do first. Also, by dividing the four pillars into four different pages, the information stays short and manageable.

On the individual introduction page of one of the pillars, the possibility components are introduced, and once this is clicked on, the federation is guided to the page explaining that particular component.



Figure 29 a visualisation of the welcomes page of the NOC*NSF kitchen

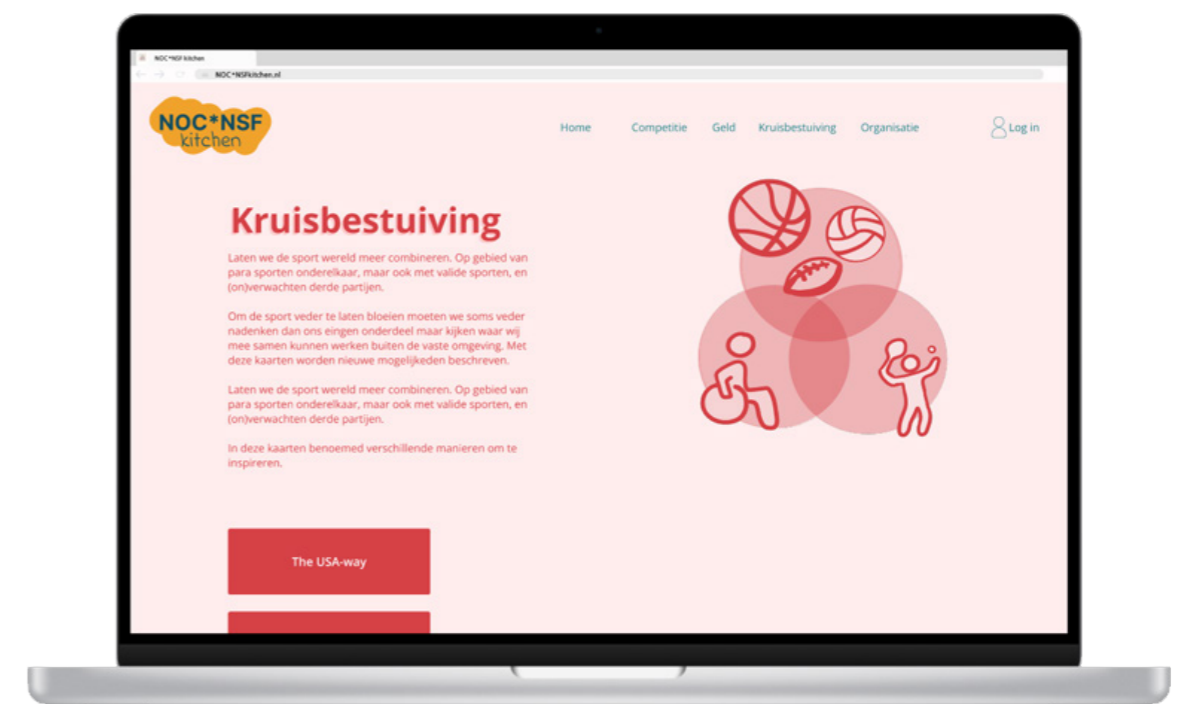


Figure 30 a visualisation of the cross-pollination pillar page of the NOC*NSF kitchen

9.2.3 The component page

The component page includes a short introduction, a checklist of minimal means and three indicators. The short introduction explains exactly what the component is about and where inspiration comes from, and it consists of an example if this is available.

Following this, the minimal checklist is shown. This checklist demonstrates the sub-goals of this component, breaking it down into smaller, more manageable goals.

Below the checklist, three main components are shown on a scale of one to five circles. One circle means it is easy, and five shows that it can be experienced as difficult.

At the end of the page, a person is showcased from the federation that has implemented this particular component at its best. Their profile will have an email address to allow for direct contact.

9.2.4 Blog

The possibility to write a blog is also on the site next to the explanation of the four pillars. The blog is an easy way for federations to share their progress. It can also be used to quickly ask for help from federations that have succeeded in a specific component, hereby gaining tips and tricks.



Figure 31 a visualisation of the first half of a possible component page

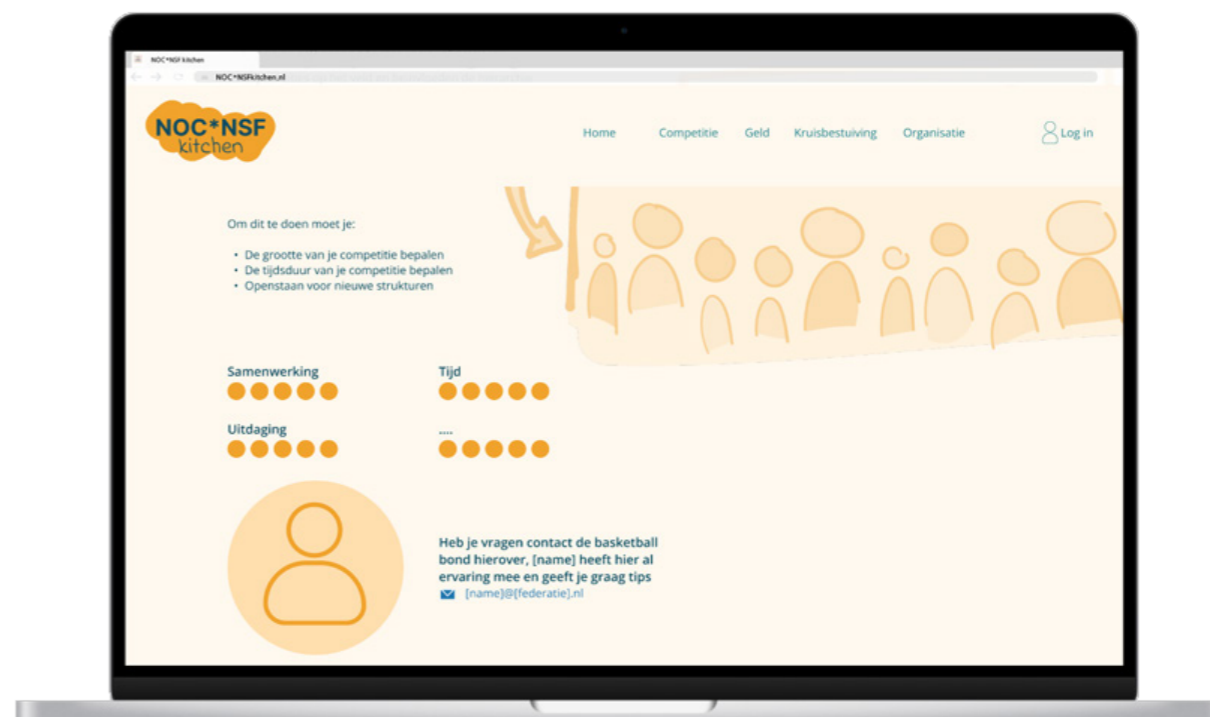


Figure 32 a visualisation of the first half of a possible component page

9.3 Implementation

The primary responsibility for starting this project lies with the NOC*NSF to ensure that the roadmap implementation can start in 2024. The website and content need to be created before the start of this year.

Because the creation of the website is nothing complicated, the website's skeleton can be made or bought.

The content, on the other hand, is slightly more complex. It would be most valuable if the federations with a success story directly wrote about the topics they knew best.

The guidelines are already constructed, as seen in the design. Nevertheless, gathering the information from different federations will take time and is best started as soon as possible.

As the project has various challenges (the collaborations of the federations, gathering all information, and willingness to share the information), starting on a small scale is considered more manageable. As this thesis is written about wheelchair team sports, I suggest starting with them. However, I would ask all federations to start this opportunity simultaneously. This will allow the cross-pollination to reach its full potential. Once it is up and running for the wheelchair team sports, it can grow to other sports areas.

9.4 Use

The NOC*NSF has a fully functioning website. When a federation wants to participate, the NOC*NSF sends them a link. With this link, the federation comes to a site where they must create their federation page by filling out what sport they are and what they are building. By completing the information, the NOC*NSF Kitchen database grows. After completing this, the federation can now use the NOC*NSF Kitchen freely. By browsing through the site, they can look at other federations' sports blogs or see the categories of one of the pillars. When wanting to ask a federation about something they are interested in, the federation can email directly.

9.5 Summary

Empower

The design needs to inspire the federations because it is impossible for the NOC*NSF to guide all federations equally. The Paralympic section of the NOC*NSF has twenty-six Paralympic federations to look after. The NOC*NSF Kitchen will give them the tools to understand and the inspiration to do it themselves.

Inspire

By linking the federations together, more knowledge can be combined. For example, a small federation can understand how successful federations have created their progress.

Use

The design should be easy to use. It should not take time to start up and clean up or have a minimal use time, meaning that the design should be able to be used in parts. Also, the design should be intuitive without a learning curve.

Understand

The information in the design should be written for the federations. This will make it easier to understand and help the federations work with and utilise the information more efficiently.

10

CONCEPT VALIDATION

This project aims to support Paralympics wheelchair team sports in the Netherlands towards professionalisation in preparation for the Paralympics of 2032 in Brisbane. The roadmap and the NOC*NSF Kitchen help achieve the later derived design goal, namely:
“to design an independent guide to support professionalisation of federations that support wheelchair team sports in the Netherlands.”

Sessions with relevant experts were held to validate these statements. These varied from short semi-structured interviews with journalists at the European Para Championships to an hour-long talk about the results with employees of the NOC*NSF. The overall results were very promising, yet there is always room for improvement.

10.5.1 Four pillars

The NOC*NSF enthusiastically picked up the explanation of the four pillars and semi-structured planning for the federations.

The explanation about the four pillars per horizon gave the federation tools for guidance on where to go. The pillar about money could be more detailed, yet everyone agreed that it is the most difficult because it differs from the federation and is a thesis on its own.

Horizons

The first horizon, ‘sparking’, was picked up very enthusiastically as a moment of reflection to look at your own federation. The following metaphor was created: You cannot love someone if you do not love yourself.

During a conversation with a NOC*NSF employee, she even stated that they should reflect on the company as a whole. It turns out that sometimes it is unclear who is responsible for what in which organisation, and some parts of the organisation do not have the answer.

There were comments about the pacing of the horizons. Whether the time frame could be shorter was discussed, but it was thought that half a year is manageable if it should be done with multiple sports.

The second horizon was a logical next step. However, it became clear it was necessary to explain the NOC*NSF Kitchen, as questions appeared on how this would happen without the stimulation of the NOC*NSF.

Setting up the time pacing was relatively easy because it was determined in advance that the design was for 2032. Nevertheless, horizons 3 and 4 were merged in the first design. It proved challenging to keep up the collaboration without guidance; therefore, adding a fourth horizon was advised. Adding the fourth horizon resulted in three precise measuring moments in the design. The measuring points were considered positive by the NOC*NSF.

Also, the third and fourth horizons were considered more vague than the first two. The vagueness is logical for a roadmap, yet it does make getting the steps done more complex.

10.5.2 Future vision

During a validation conversation with a colleague of the NOC*NSF, they correctly emphasised that the roadmap does not sufficiently capture the future vision. The future vision is: “creating a new sustainable wave of teamNL talents”.

This future vision is a goal to work towards and hold on to after 2032, meaning searching for new athletes. The recruitment of these new athletes should be included in the heading of possible partners. In addition to financial support, healthcare authorities can also include education in sports. An example is already the sports clinics of the Esther Vergeer Foundation. Nevertheless, cooperation with rehabilitation centres could also help here.

The media also has a role in achieving the future vision. The role of the media is educational and to create awareness. For instance, there could be a straightforward platform where people can find para-sports results during the first horizon. The creation of this platform is a current project of the organisation “Uniek Sporten”. In Horizon Two, journalists can publish stories from the Paralympic games and create as much buzz as possible. Compared to now, it would be nice to have a journalist per sport in Horizon Three and Four, when mainly one journalist writes about all para-sports.

Among other things, by clearly adding these two possible partners to the roadmap, it is more likely that new young athletes will join.

10.5.3 NOC*NSF Kitchen

The design for the website mainly got positive responses. At first, the person from Basketball Experience Nederland (BEN) was sceptical because he thought he had to write a lot and found it easier to get a coffee with someone with a question. Nevertheless, with a short instruction on what to write down, he changed his mind: from asking global questions during a coffee, an upcoming federation can now ask more specific questions, making the most out of valuable time.

Two helpful tips that I received from the BEN employee were that not every federation has a personal email address for the Paralympics department and that it is for some sports still an extra task on top of their task of the non-disabled body sport.

The NOC*NSF was also quite enthusiastic about a low-key connection platform. Mostly, it is to have a place of connection between federations and a place where all information is gathered.

Also, the development of the website can be added to the roadmap so the connection stays relevant. For example, in Horizon One and Two, the website also shows ideas from the NOC*NSF to inspire the federations. Towards Horizon Four, the goal will be about the website’s content written by and for the federations creating communication together.

I have received design-specific tips to design as calmly as possible. This means choosing a simple overview over a decision tree and putting the strategic roadmap on the website.

10.1 Conclusion

Overall, there was a positive reaction to the designed elements. With the feedback gathered during the validation, an addition was made to the roadmap, resulting in the following definite roadmap.

Horizon 1: Sparking

6 months start jan 2024

Horizon 2: Uniting

1 year: aug 2024-2025

Horizon 3: Collaborating

3 years: aug 2025-2028

Horizon 4: Maintaining

4 years: aug 2028-2032

Future Vision

Paralympics Brisbane 2032

	Goal	Federation	Competition	Organisation	Money	Cross-Pollination	
The Four Pillars	Froming a personal identity 	Ideating on possibilities and structuring what they want	Map out how competitive your competition is and it's growth possibilities	Map out how your organization will be able to fully support Paralympic sports to its full potential	Map out how much money you are willing to invest in this project and are there partnerships to be made	Find options for cross-pollination, or which sports it could work with	
	Creating partnerships and developing sporting structures 	Findin partners and creating new plans	Develop the new competition	Start implementing the new organizational structure, and develop a structure how to organize the new sporting structure	With partners map how much money is to invest and how the ROI and the strategy to finally be able to pay the athletes	Find other federations or partnerships that could work to achieve your goal	
	Implementing new sporting structures 	Leading the implementations and redirect were needed	Implementing a new/ improved competition	Implementing an equal intergal organizational structure to bring Paralympic sports to its full potential	Working together with different partners and sponsors to achieve financial stability and payment for the athletes	Keeping up the cross-pollination	
	Continuing and perfecting the sporting structures 	Maintaining the competitions and redirect were needed	Keeping the competition most competitive	Maintaining the equal organization	Achieve financial stability, an full-time payment for athelets	Continue creating new opportunities for other cross-pollination	
	Stakeholders	NOC*NSF	Igniting the spark with NOC*NSF Kitchen	Helping to connect with the right people	Facilitatino the elite athletes to the Paralympics		
		Association	Focus on the season	Give input on the strukture	Compete in competition and give feedback		
Athletes		Focus on Paris 2024	Rest, focus on the season, give feedback and be a role model to help recruitment	Compete in competition, give feedback, and be a role model for young athletes			
Partners	Universities: Strategic Product Desing, Sports Sciens, Kinesiology, Economics		Universities: Strategic Product Desing, Sports Sciens, Kinesiology, Economics				
			Health care authorities Other Sports Federations				
Recruitment	Media	A clear communication stream	Working with the momentum of the Paralympics	Communication about the competition and a partnership with the federations		A partnership with the federations	
	Health care	Recruitment support	Recuitment and financial support	Recuitment and financial support		Recuitment and financial support	
NOC*NSF Kitchen	Launched by the NOC*NSF to inspire federations		Inspire federations and bring them in contact with eachother		The platform becomes more like a blog were the federations create the content		




2
1
3

Creating the new sustainable wave of TeamNL wheelchair team talents





Phase 4: **Crazy-Quilt**

When following the structure of Sarasvathy, the crazy quilt phase is when you search for opportunities and partners. It is a bit optimistic to use the opportunities and find partners for this thesis as it ends. Nevertheless, in this phase, this thesis will be discussed, concluded, reflected on, and recommendations made so other students and/or the NOC*NSF can pick up this project and continue it.

11 THE DISCUSSION

Sarasvathy's effectuation approach has shaped this report by looking at what is within reach by talking to people and analysing sports. Together with the qualitative research methods, this thesis achieves a unique goal.

Using the effectuation approach, somebody else who also wanted para-sports to be more in their rightful spotlight could have ended up somewhere completely different. Nevertheless, someone who analysed the same sports and with the same goal would have come out with a similar draft.

From the literature study, phenomenological research and interviews, it became apparent that there were still many opportunities to grow in different areas. The improvement opportunities could be grouped into cross-pollination, money, competition and organisational areas. Together with the future vision of creating a sustainable future for wheelchair teamNL, this led to the currently designed roadmap. The website was also designed to give the federations tools to get started and not have to make everything up again.

Using an entrepreneurial approach was very important for this thesis. This approach created a bottom-up rather than a strategy forced upon the federations.

This bottom-up approach led to the insight that para-sports do not always have a fixed

place like a dedicated group or person within the federations. Another insight was that a competition is interesting when people participate and are all equally motivated to play their best. It has also shown that it is not just a so-called "framed adapted sport" from the non-disabled-bodied version. Playing sports can be combined with their non-disabled-bodied version or other sports. This requires federations to work together, an emerging trend, as seen in the Euro Para Championships.

While writing this thesis, I was given much freedom to research and explore as I wanted. Therefore, fixed organisations and structures did not restrict or influence me. Nevertheless, I mainly looked through the eyes of the NOC*NSF and less from the perspective of the other stakeholders, federations, associations, and athletes. This perception arose because I had more means available at the NOC*NSF. A follow-up study could examine the four pillars of professionalisation from one specific federation.

This thesis also focuses on wheelchair team sports. However, the final design is such that other sports, such as racket sports (padel, squash, badminton), could use the same strategy. How to implement this strategy in other sports categories would also be a possible follow-up research question.

Also, several times during the research phase, the question arose: should para-sports achieve the same level of competition as non-disabled-bodied sports or is the inclusion something that makes para-sports unique?

I believe non-disabled-bodied and para-sports can learn well from each other. Especially for wheelchair team sports, I think it is essential to professionalise. A (nationwide or regional) competition at a high level can inspire people to join. It might be easier for para-athletes to perform in individual sports to show their personal growth and strength.

On the other hand, non-para-sports can, at the same time, learn a lot from para-sports, especially regarding mental health. Because most, if not all, para-athletes have already gone through mental struggles besides playing sports, you notice that mental health is considered a vital part of the sport. This does not mean you should be treated differently. The influence and addition into para-sports of mental health issues is beyond this project's scope and could be investigated further.

The complexities of sports for people with a mental handicap or disability were clear early on. Therefore, this thesis focused entirely on physical disabilities in order to streamline the goals and identify and develop a design within the allowed time frame. Further research could explore how the sporting community can best support and develop opportunities for those with mental disabilities, such as Down's syndrome.

For this report, I used an approach that was new to me: effectuation. In Sarasvathy's form, effectuation is a cycle that is repeated over and over again. Also, there is no goal, and the process leads you the way. This caused much confusion initially because when

writing a thesis, you end up working towards a clear goal, and then how do you know how many cycles to go through? Therefore, the choice was made to go for the NPD Effectuation. Here, you work towards a goal with your approach: a new product development. Working towards a new product development is against the initial principle designed by Sarasvathy.

Another option could be to use the standard double-diamond approach of the British design council. Graduates often fill in this approach to fit their design method. Maybe a different outcome was possible using this approach.

Possible follow-up studies

- Investigate how the four pillars of professionalisation work from one specific federation point of view.
- Research on how able-bodied sports can learn from less able-bodied sports.
- Investigate whether the four professionalisation pillars also apply to other sports categories.

Future steps

The website must be finished to start working with this roadmap. Steps need to be taken to activate and motivate the federations. To motivate the federations means that someone within the NOC*NSF must be given the task of overseeing and monitoring the federations, which could be included in the job description of the Paralympic and Adapted Sports project leader.

12 THE RECOMMENDATIONS

Next to possible further research on this subject are recommendations for the design and the company.

A time frame was created to implement the roadmap with the NOC*NSF Kitchen. This time frame was created in June and validated in August. At that time, it seemed viable to start the project in January 2024. Unfortunately, the end of the whole project, namely this thesis, is only reached in October 2023, which makes the start of the implementation tight to realise. A different timeline will be suggested in consultation with the NOC*NSF.

Secondly, the roadmap should be translated into Dutch. The translation is logical because the NOC*NSF and the federations work in Dutch. When translating, it is important to address the tone of voice. I recommend using a simple and friendly tone of voice. The federations and associations will be more included in the project because they understand the roadmap. An example of this is calling the association 'clubs', the term used day by day.

This leads to the following recommendation: the NOC*NSF needs to decide how they want to share the roadmap. The roadmap contains much information and can be overwhelming. Only showing parts can be a strategic step. See Figure 29 on pages 120,121 for an example of a strategic roadmap.

The roadmap is a strategy to reach the desired future vision created at a certain time. This means that the NOC*NSF needs to look critically at the subsequent steps when reaching the next horizon. Also, the roadmap can apply to other categories of sports, like racket sports. Nevertheless, learning from former mistakes is essential.

Also, I recommend that the NOC*NSF adds an overview of this project to one of their employees' job descriptions. Even though they are just a facilitator, the strategy does need to stay alive at the NOC*NSF. The constant awareness within the NOC*NSF is essential for the improvement and the importance of para-sports. The process can be drastically affected if the federations do not feel seen or heard during the restructuring.

Firstly, I want to express my sincere respect for the NOC*NSF employees working on Paralympic sports. It is a difficult task with many possibilities, and everyone has an opinion. They are practising what they preach. The Paralympic team is immersed in the structure of the NOC*NSF and occasionally meets to discuss Paralympic matters. This is what they also envision for the federations.

I recommend that the NOC*NSF also tries to use a more bottom-up approach when creating their strategies. This is not easy when dealing with many sports federations and when all the means available are on a higher level. An entrepreneurial approach can help.

Also, as I have experienced during my thesis, the Paralympic department is starting to raise its voice. Nevertheless, I believe this can be done even more. It is a hardworking team.

To conclude, there is still a lot to do professionalising the Paralympic sports, yet with one step at a time, hard work, and a bit more bravery, change is near.

FROM MOVEMENT TO MEDALS: A STRATEGIC GUIDE TO PARALYMPIC SUCCESS

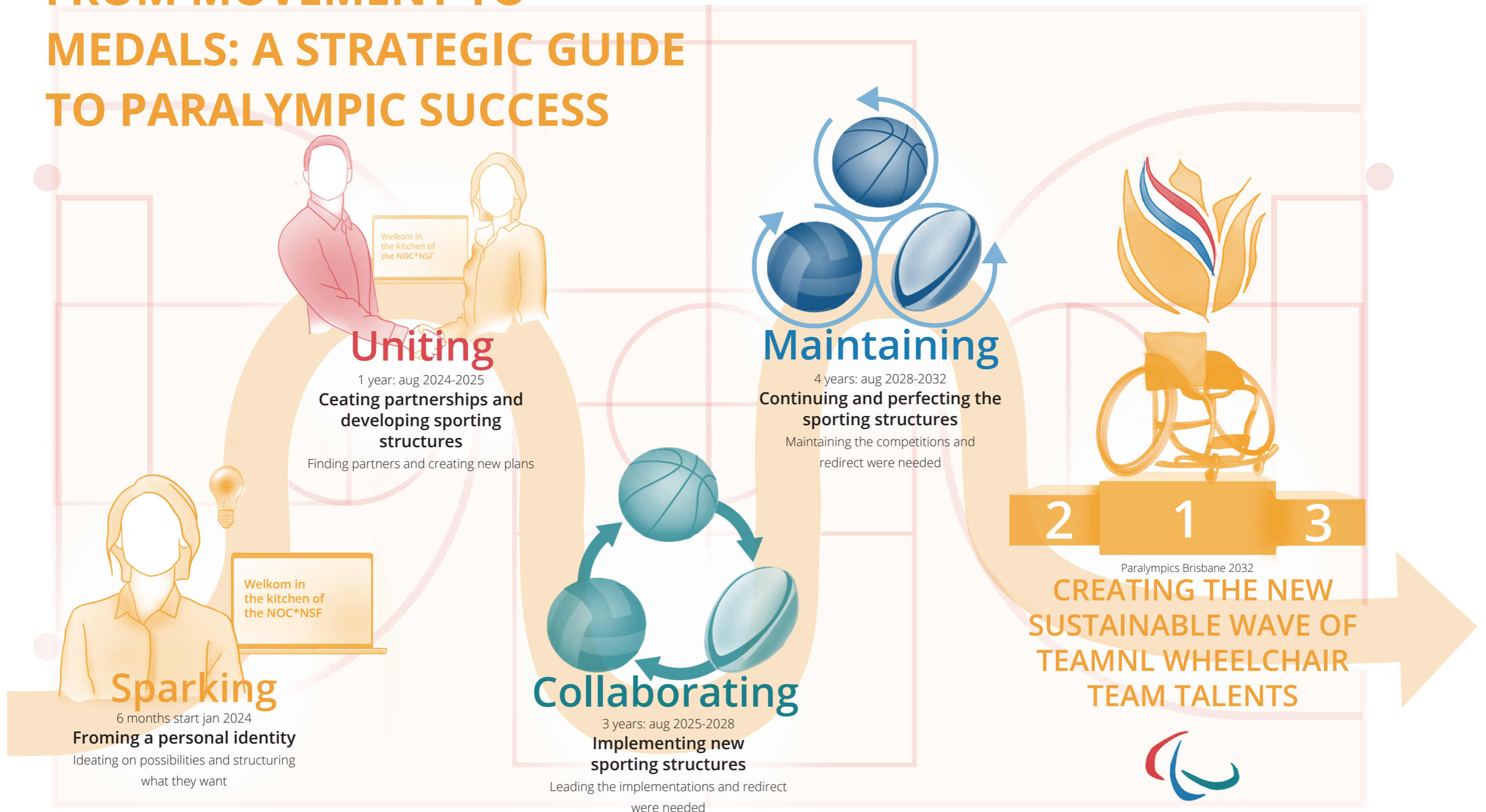


Figure 33 a visualisation of a strategic roadmap for federations

13 THE CONCLUSION

This thesis seeks to answer the overarching research question: “How can wheelchair team sports in the Netherlands receive effective support in their journey toward professionalisation, with a focus on preparation for the Paralympics 2032 in Brisbane?”

The thesis is divided into the research section (phases 1 and 2) and the design section (phase 3). The research section addressed the sub-research questions, whilst the conclusion of the design section was rooted in the established design objective.

The first phase, “Bird in the Hand”, explored Para-sports’ significance and provided insights into the Paralympic landscape. The second phase, “Affordable Loss”, examined the strategies available to the NOC*NSF to advance the professionalisation of Paralympic sport, along with case studies highlighting successful professionalisation efforts in Paralympic sport.

Research section

Why is para-sport important?

Key findings from this study are on the importance of sport in supporting mental health through the benefits of exercise, social interaction, purposeful challenges and a sense of community. The diverse community of approximately 1.2 million para-athletes continues to be under-represented in various media. Efforts must be made to promote para-sports and ensure equal opportunities for the 1.13 million people in the Netherlands who currently participate or aspire to participate in para-sports to address this gap.

What does the Paralympic sports world look like?

The paralympic sports world is a complex hierarchy system, where the NOC*NSF stands in the middle of international and national organisations on group sporting events. The Paralympics are the highest-performing sporting event in the world for people with a disability. Only the most prestigious sports are allowed at this event. Nevertheless, not all para-sports are reaching their full potential. A stable competitive framework was created through phenomenological research at sporting events (ABN AMRO Tennis OPEN, Ice sledge hockey NEPHIL and a badminton tournament) and interviews. The recognition that high-performance sports require a stable competitive framework with structured promotion and demotion systems, as well as consistent game schedules, underscores the importance of addressing these elements in the context of this research.

What can and what should the NOC*NSF do about this?

The significant political connections of the NOC*NSF and its ability to work with elite Dutch athletes, combined with sufficient resources in terms of time, money, influence and personnel, underline the potential for success of this project.

Are there any examples of professional para-lympic sports in the Netherlands?

Wheelchair tennis is a professional sport with impressive achievements of past and current players. The integration of wheelchair tennis alongside non-disabled athletes is proving to be a catalyst for developing wheelchair tennis. A well-organised competitive framework, with clear tournament hierarchies, has been crucial to the growth of wheelchair sports. Similarly, the assimilation of a parallel treatment structure within the overarching sports federation is essential for effective implementation.

Design section

This study recognises the four main stakeholders in sports: NOC*NSF, federations, associations and athletes. Given their resources, they emphasise empowering federations because of their potential to transform sports. Key design considerations include minimising effort while maximising resources, providing clear guidance to facilitate tasks, and ensuring accessibility and enjoyment for athletes.

This study identified four pillars for professionalising Paralympic sport in the Netherlands. These pillars include the importance of competition, illustrated by the different levels of commitment observed in different sports. Effective organisation, as demonstrated in the case of wheelchair tennis, proved essential. Financial support emerged as a universal necessity, enabling athletes' structural development and sustainability. In addition, cross-pollination, although context-dependent, promises to enhance the professionalism of para-sport. These pillars are crucial considerations in the design and development of Paralympic sport.

To answer the main question: How can wheelchair team sports in the Netherlands receive effective support in their journey toward professionalisation, with a focus on preparation for the Paralympics 2032 in Brisbane?

The answer is a roadmap with the steps and goals for the four stakeholders. With the NOC*NSF, the associations, the athletes and the federations as key leaders, the four pillars of professionalisation (money, organisation, cross-pollination and competition) are mapped out to work toward a new wave of a sustainable team NL.

With the release of the NOC*NSF Kitchen, the support needed for the federations to know how to start and take on this project is available. By means of this website, the federations can learn and easily communicate with each other.

14 MY REFLECTION

If you had told me in March what my project would achieve, I would not have believed it. This disbelief comes from several factors. To begin with, I started this project with a broad scope focused on Paralympic sports. As I worked further on the project, I had the freedom to explore areas I was interested in, and I am very grateful for that opportunity. However, this led to a challenge in defining my precise problem statement. I felt very few people were familiar with para-sports, which I believed needed immediate change. However, around the project's midpoint, I realised that more than a hundred days were too short to change the world, so I decided to choose my battles wisely. This focus helped me work towards finishing a manageable thesis project that I am proud of and being able to explain what I am doing to the people around me.

Apart from wanting to change society's perception of para-sports entirely, I also struggled with my approach. I enjoy the trial-and-error process and experimenting with new ideas. Therefore, applying the effectuation approach spoke to me, and I am glad I applied it to my project. Effectuation fits well with my preferred work cycle: looking over my available resources, determining how to use them, and finding people to help me. This cycle provided me with a sense of purpose and reassured me that I was not just winging it.

When comparing the effectuation approach to the British Design Council's Double Diamond approach, which some view as a visualisation of various design methods and not a specific approach in itself, I believe my project would have been very similar. However, I would have had less confidence in my work. I think this lack of confidence would have been because the Double Diamond approach can be applied to almost any project, from designing a milk frother to creating a corporate guide for implementing design thinking in a large corporation. This approach means that it lacks a specific starting point. For someone who easily becomes overwhelmed by too many choices, attempting to change society's perception of para-sports while having the freedom to start anywhere would have been too much.

Furthermore, besides offering clarity at the beginning of my project, the effectuation approach also provided me with a structure for my report. This structure was particularly helpful because writing is not my strong suit. For this project, I drew inspiration from reports created by friends and peers. Suppose I were to compare my work to the Double Diamond approach used by my peers. In that case, I might have tried to incorporate every aspect of their reports into mine, potentially making it even less understandable.

Reflecting on the rest of my project, I really enjoyed the entrepreneurial/qualitative approach. Being able to talk to many people who have a passion for sports and are willing to tell me their stories fueled me during this project. During this whole project, I only was not able to talk to one person. This demonstrates the will and enthusiasm of these people who deserve more attention in the spotlight. I hope this project has inspired people around me to keep their eyes open for para-sports and take the time to admire the sports.

In conclusion, I really enjoyed this project because it was truly my project, complete with all the choices and responsibilities that accompanied it, although with the occasional nudge to narrow the scope here and there.





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