Internet of Sports

Centre of Health Innovation 2017-2020.
Region Jämtland Härjedalen - the heart of innovative ideas in Sweden.

Processes for commercializing science within sports technology and public health. This is our mission and this project made it possible to create a process that we can share with you.

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The Internet of Sports team at SWSRC

Project scope

To become an international platform that contributes to regional competitiveness and one channel or more for commercializing two products or more within IoS.

Long term:

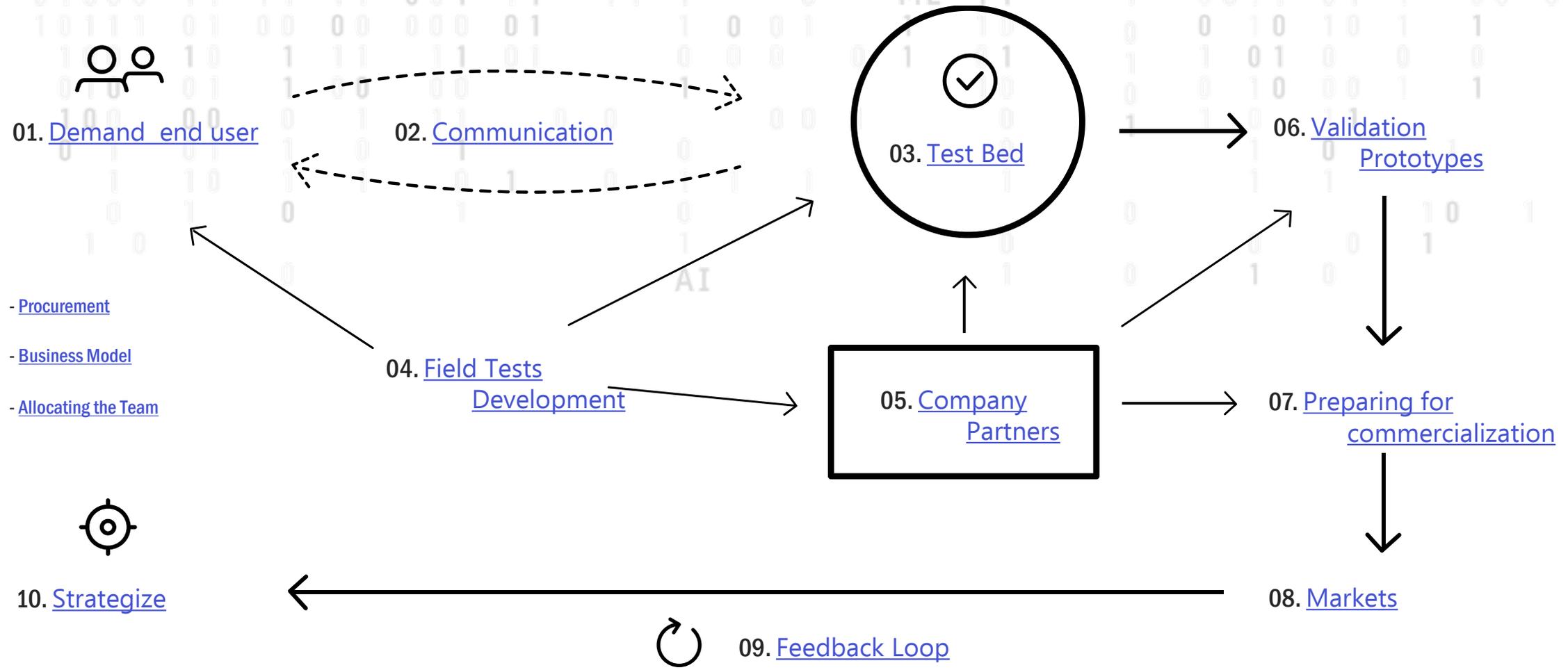To establish Centre of Health Innovation as a node for Internet of Sports (IoS).

Demand driven science
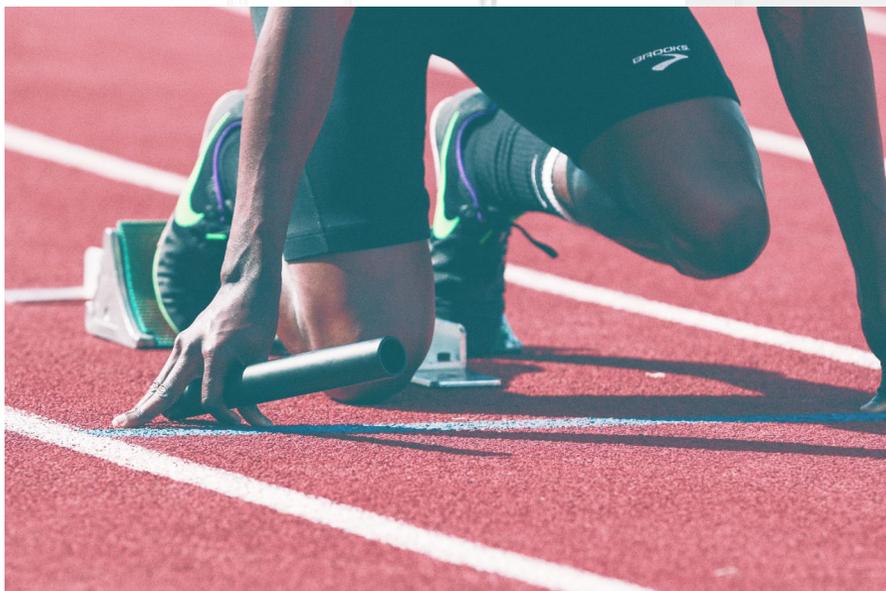# with citizens and companies
at center stage

We think differently. We are different. We move borders, mentally and physically. With our excellent knowledge in sports-and-performance technology, we create solutions and products that are not yet out there, we create new systems, we work with sensor technology, artificial Intelligence and many more things in sports, health tech and outdoor. We collaborate with research centras internationally and in Sweden.

This is Internet of Sports and a process to bring science to market!

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Companies for regional growth – focused communication speeds up the pace!

01. Demand end user

02. Communication

03. Test Bed

06. Validation Prototypes

- Procurement

- Business Model

- Allocating the Team

04. Field Tests Development

05. Company Partners

07. Preparing for commercialization

10. Strategize

08. Markets

09. Feedback Loop

Click on the headlines to read more

Demand end user

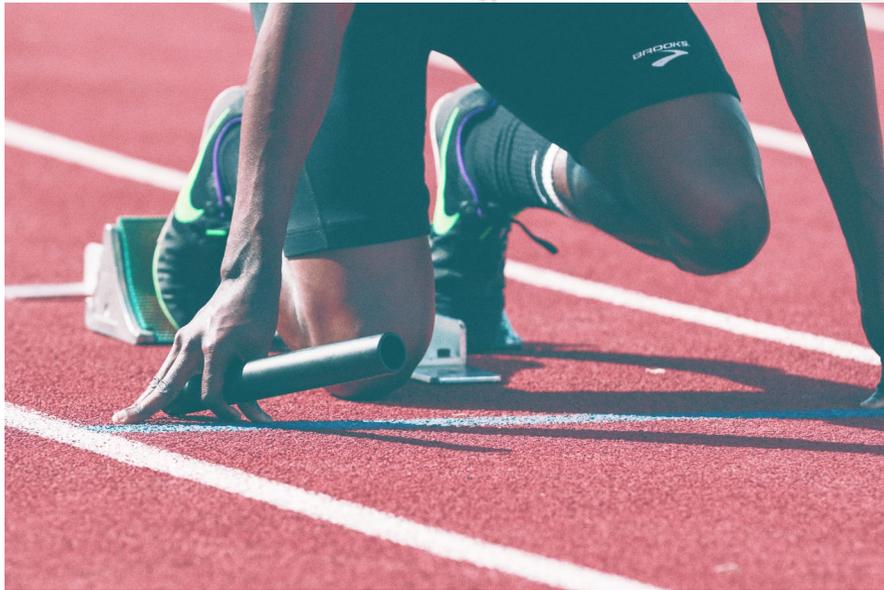## So, what is "focused communication"?

The process "science to market" is commonly used, but it is the way we communicate and work that makes all the difference – and that makes the Internet of Sports project to stand out. Everything starts from the global view, and the knowledge of market strategy is crucial to bring into the project from the beginning. To start from the broader perspective is important to be strong in any regional or local view, and to better shape the project towards:

1) Regional, national strategies and Agenda 2030.
2) Company strategies and needs that fits the markets to become competitive.
3) End users/ and or society demands.

To communicate focused this knowledge has to be combined with science from the start, there can be no "gap" between science and market. The team working towards the demand has to reach an understanding from day one.

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Demand end user

We scan the markets for products and services – to try to secure that they don´t exist, but development within health tech runs faster than a fighter jet. You go to bed and think that you are the first one inventing the product, and when you wake up there is competition already!

This is why it is so important to keep track on markets and at the same time keep need owners and end users close. Everything we do in our project is demand driven and has identified end users that we integrate in the process. The key to speeding up the process to market is to gather the whole team from day one and find a common understanding that we all have to serve the different strategies to become successful.

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Communication

This area looks simple to many, but it is the most difficult area to perform in - for some people. Communication is a key to the foundation of all successful cases and businesses. – and not THAT you do it, it is HOW you do it. Transparency, honesty and clear goals is crucial. To always communicate out from the regional, national strategies and the markets is what makes all the difference. You cannot fail one of them! To deliver on deadlines is what shapes the nature of the communication together with clearly understanding what spot the project is filling in the broader strategic agenda. Trust and understanding between people working on the case puts the dot over the "i". You can never start a project without defining the goal and allocating the people most suitable to reach it – AND create understanding between them to move the product faser through the process.

The skiss illustrates how communication flows between scientists on the testbed and need owners/ end users together with market specialists. With this comes a completely open behavior, no hidden agendas – this bar can only bet set by the project manager that needs crucial support from academy, department, CEO or participating leadership.

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Test bed

Our testbed has been a space for "open innovation" where end users, scientists and companies meet and develop together, but as we have not been able to take on everyone that wanted to be a part of a case – we have also offered inspirational readings around the test bed to be able to spread inspiration and awareness of how useful technology is, even to those who are not technicians.

A testbed should be an area of open innovation, a sandbox where we can run different tests and create prototypes for new products and services - and meet, no matter if we are part of a case or just interested in development.

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Test bed

Internet of Sports has executed the following cases that are now in different phases on their way to market. In most of the cases it takes longer than the length of the project to be able to first invent from zero and then take the product to market - and it has to be executed from zero to create something new to compete with.

1. Ski Team Sweden

a) Alpine GNSS tracking system

b) Cross country/ biathlon GNSS tracking system

c) Biathlon app for females (periods) (with UmU)

2. Swedish Olympic Commitee - App for acclimatization Tokyo 2020 (with Rinaldo)

3. Company Case Future - Digitized speed helmets.

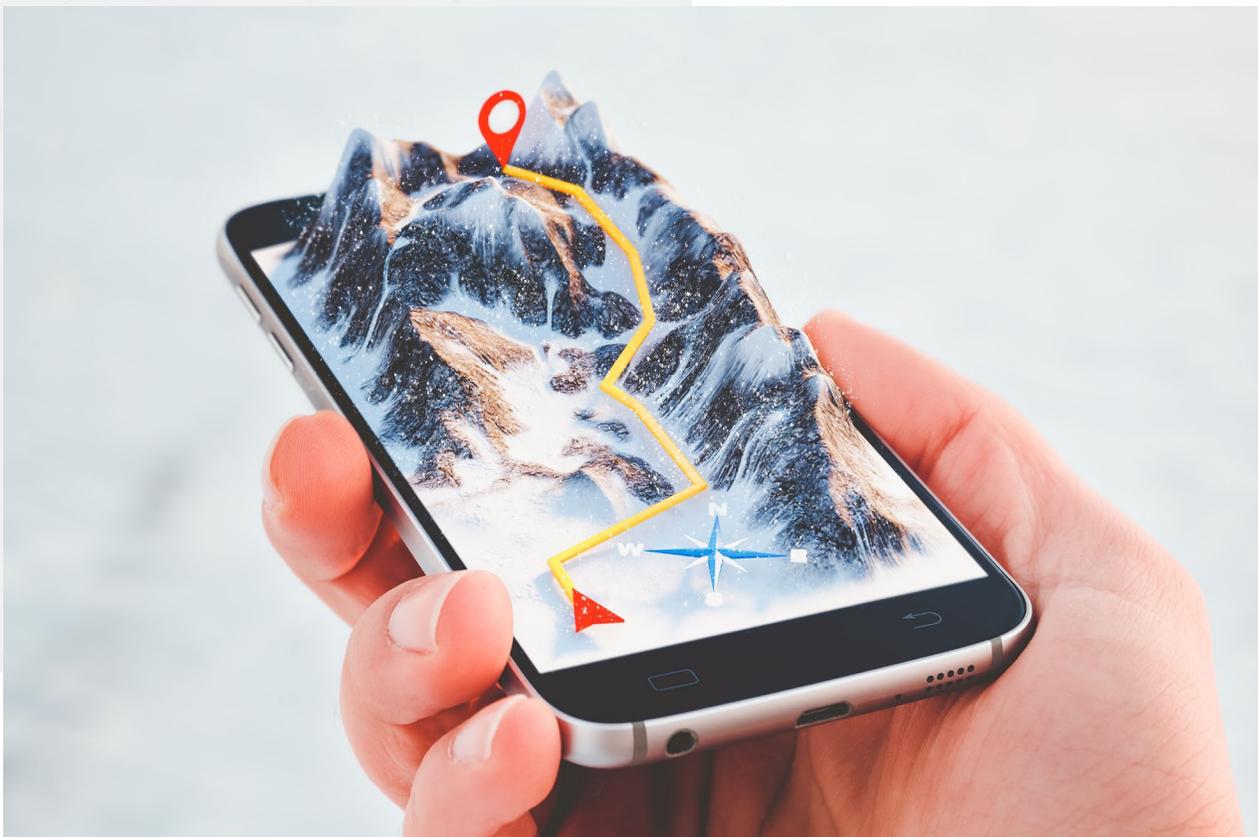**4. Company Case Arena** - Arena management for youth competitions.

5. Company Case Ranbrandt - App for tourism and maps (moved to private actor for opportunity)

6. Company Case Marslade - Community/ app for tracking/ events.

7. Company Case Trangia - Digitized function on classical camping equipment.

8. Company Case Snowboard Consulting - Measuring for construction of new ramp.

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Field tests - development

During development of a new product we have executed several field tests where we have started by putting together product parts from skisses made by our scientists. The more positive testing the more we can add functions, put pressure on the product and run pretty hard outdoor tests together with our team of end users and needs owners.

Different products have different long paths from R&D to market. Generally a project of 3+ years is a very short period of time to go through the whole chain, it is impossible to measure market impact during the project period.

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Company - Partners

Communication with companies and organizations is ongoing and never stops. Involvement in cases is important either as a producer/ supplier or the company that will launch the product/ service, it can also be a sports club or a national team. With "mass follows class" we refer to top athletes pressuring products to the limit that we can scale down to mass market – to encourage citizens to exercise. This falls into our public health-goal.

We have to understand the companies and how they strategize on their market. The project has excellence from R&D to market, our understanding of market strategy and commercialization makes us a good partner.

If your organization or project lacks market strategic knowledge, make it a priority to retrieve it, this makes all the difference in trust. Also remember that market strategy and market communication/ marketing is not the same thing, the later is purely operative.

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< Back to Process

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Validation prototypes

Verification and validation of prototypes are two very important factors that needs to score 100%. Coming out from the initial testbed activities the next step is verification to secure, for instance, that a software carries no bugs and meets specifications. When we have brought it up to a level where we can validate it we are ready to for a broader test. With validation we secure that the product meets the needs and requirements. Is it ready for market?

How good does it need to be for the company that releases the product to be competitive? Sometimes adjustments will be needed, and at all times the end users are involved. It can also be that we decide, together with the launching company, that only a few features on the product is to be launched – and later on more will be added. It is important to understand markets and work closely with the companies. Timing means everything.

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Preparing for commercialization

The company will prepare the product for launch. In most cases this happens outside the project as the project is too short. It is on our side though, to keep track of the markets up to the point right before preparing for commercialization.

We don't want to develop something that will land on the market and found itself in immediate competition. The company we work with is aiming to be stronger, so we need to be wide awake and take in signals – but at the same time the company has a large responsibility towards watching their own market. Development in tech runs very fast.

The most important matter in this area is for us to understand the nature of the company processes to channel our science.

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Markets

At this point we are not involved, except for that we know what was the goal of the company and we understand that goal – as a part of the chain from R&D to market.

Feedback is important, and communication continues with each actor in a feedback loop to science and market watch within the project. This leads to new ideas and new development.

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Feedback loop

After launch the product will be in use. The loop containing feedback and communication continues back to the beginning, co-operating with nr 10 Strategize, where the information is handled. Feedback from end users and need owners (the target group) is very important to develop new products and services or to add and develop the present one – this is no secret, but how to triangulate and put it into a new concept might be the difference between the wheat and the corn.

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Strategize

This is the most important area to achieve long term impact and to keep on developing new products and services that meets future demand – when we arrive here the product we made are already aging.

Sometimes, and especially in health tech and industries that move rapidly, we constantly have to build new strategies from new demands. The feedback loop is vital to know how the end user feels about the product, but this also needs to be combined with the ongoing market watch. It all comes back to the global view – no matter what we do, the local view is depending on it.

When the feedback comes in, it will be combined with new market intelligence and a new triangulation where old factors and factors that we estimate are mixed together to find a new development. Skills in triangulation between "impossible" areas and future areas is absolutely necessary to have.

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Procurement

These steps can be used on the private market as well as if your platform is academic, state or municipality. If you run a project and you are not a private actor you will fall under public procurement.

As an example, this can be used when needs are identified that can be met by the market. This is also an advantage as it brings in the knowledge we have just talked about in this presentation.

When there are needs in the organization that not yet exist in shape of services/ products on the market and when new development is required, and maybe even research for suppliers to develop a new product or service – "Innovation procurement" is the tool to use. Innovation procurement is a tool for enabling the development of those public services needed to meet societal challenges today and tomorrow.. It is also, when used the right way, a sharp tool that can hit the ground running.

Read more >

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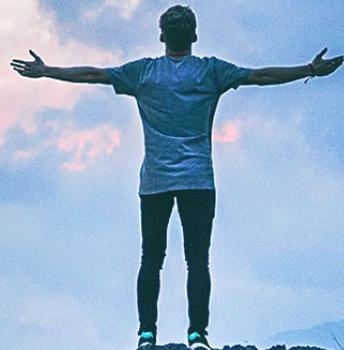
Procurement

We have executed several innovative procurements in our project and directed them straight from the target and from the goal and results that needs to be delivered. Very narrow and sharp – focusing on delivery.

This is our simple process:

1. Identify the case goal, results to achieve and the product or service that will be developed.

2. Create the partnership that will deliver the chain from R&D to market/ end user and understanding between them.

3. Identify the parts of the chain that falls under procurement.

4. Specify exactly what the demands in these parts of the delivery are.

5. Draw up the procurement to the point and to meet delivery. It is often forgotten to put demands on open communication and DRIVE, this is needed.

Procurement must be looked at as a part of the deloverychain.

More on innovation procurement here:

https://www.upphandlingsmyndigheten.se/en/subject-areas/innovation-procurement/when-to-use-innovation-procurement/

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Business modell

Our business model is the developed flow model, this model reminds us how the products flows and where we can gain something from it, or use it in a desired way. This business model is easy to tweak and to scale up, that is extremely important as the tech markets are moving fast and demand changes and develops rapidly. Again, simplicity is important to keep everyone onboard.

The following has been added in the business model (click to read more):

> OBSERVATION AREA

> AGENDA 2030

> BUSINESS AREA

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Business modell

OBSERVATION AREA

Except for scanning the markets (market intelligence) we also observe fluctuations in prices and added services/ packaging, price elasticity and – what might this product be worth in the eye of the end user or need owner?

Contracts and agreements needs to be executed before the case starts so that ownership, potential patents and costs have a clear home.

Next >

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Business modell

AGENDA 2030

Sustainability, inclusion and equality needs to be communicated and glued to the process in different ways, depending on the nature of the case. This can be materials, staff, ways of implementing the products, arenas or chosen parts of the agenda that we see fit to push for. A suggestion is to look at regional goals and take the opportunity to strengthen them.

Next >

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Business modell

BUSINESS AREA

We already know from our flow model that the product has a market/ that there is a demand for it, but here we need to position it properly in the market space. This depends on the product or service, on the target group it will be directed to and if we can diversify into other areas with it. When a product has been positioned correctly it will be known for a certain feature and have a certain image, and it will of course be profitable so that people working with it and investors can get a return.

Profiling from its position can take slightly different shapes depending on the goal, pricing needs to be accurate and on target as prices in the surrounding can be fluctuating. Packaging and profiling that specific package is always important depending on target group, there is an advantage to develop the product together with end users, profiling can be many things from shape, color, usability and performance to the environment it is presented in.

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Allocating the Team

Chose the team out from mentality and delivery – everything comes back to mentality. So many people think that they have an open mindset, but in reality, there is a small group of "few" that really practice it. The team members has to be put together from the goal and what needs to be delivered. They also need to have a greater understanding on how to work together without personal prestige involved. Personal agendas is one of the worst things that can happen to a team – if these agendas are used the wrong way. There can only be one leader in the team and the whole project has to understand its goals.

The team also needs to be prepared to deliver on time – always. That is one of the core assets in a successful team. You just know that everyone around you will rip their hearts out do this together. Some people call it "winners mentality", we can call it "no fear mentality", or maybe "no prestige mentality". This is harder within the academies.

For each case there might be a new team of individuals, what is right for one case might not be right for another – to build the team out from the goal is important.

> The team

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Gunmarie Persson
Outdoor/Sales Representative

Kee Bergman
Project Manager Market Strategist

Matej Supej
Professor Case manager

Marko Laaksonen
Ass. Professor Supervisor

Michaela Hoernfeldt
Software Engineer

Alessandro Galloppini
Performance Engineer

Magnus Jacobsson
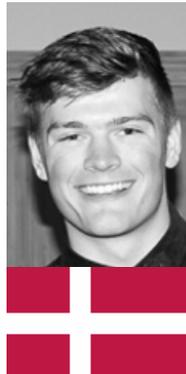Software Engineer

Benedikt Fasel
Doctor/Supervisor

Adam Olofsson
Software Engineer

HC Holmberg
Professor/International Supervisor

Sophie Brundin
Internship Public Health

Mads Kjaer Madsen
Internship Ski Team Sweden

Gustaf Holst
Internship Inlines

Lars Hallstroem
Internship Snowboard

Matthias Gilgien
Associate Professor Supervisor Snowboard

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