Phase 1

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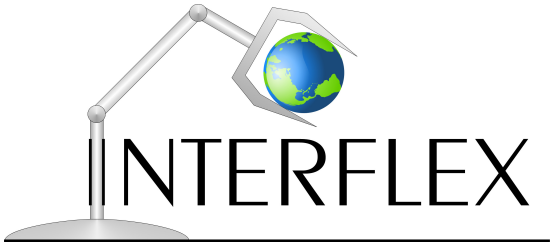

1 Collaboration

1.1 Belbin

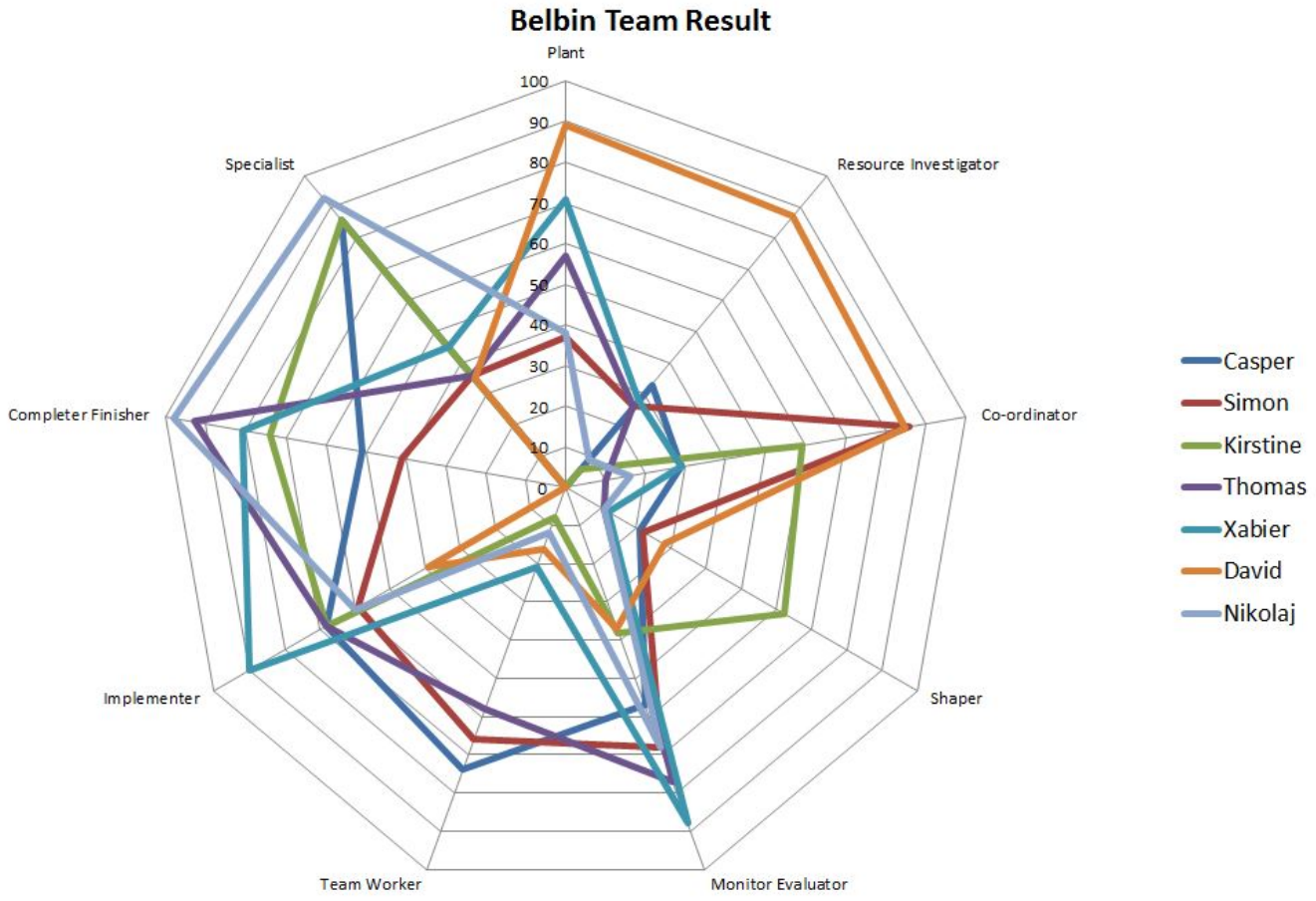

Figure 1.1: Belbin Self-perception "Spiderweb"

This table (table 1.1) is based on the results of the individual tests, which is also reflected by the spider web chart (figure 1.1). The table shows the strong and weak roles for the team profiles.

It is very clear that the group has a major potential when it comes to developing solutions to perfection, while being able to investigate the different possibilities. This could be explained by the amount of specialists in the group.

It is also very clear that the group lacks drive and a key person to set the pace of the work processes. The group has to be aware that the beginning of project is the vulnerable timespan. This is due to the missing Plants who provide creativity and innovation to the group, together with the resource investigators who makes sure the actual ideas are possible at all.

Contribution:	*Allowable Weaknesses:*
Top 3 roles:	
Monitor Evaluator	
Sober, strategic and discerning. Sees all options and judges accurately.	Lacks drive and ability to inspire others. Can be overly critical to others.
Implementer	
Practical, reliable, efficient. Turns ideas into actions and organizes work that needs tobe done.	Somewhatinflexible. Slow to respond to new possibilities.
Completer Finisher	
Painstaking, conscientious, anxious. Searches out errors. Polishes and perfects.	Inclined to worry unduly. Reluctant to delegate.
Worst 3 Roles:	
Shaper	
Challenging, dynamic, thrives on pressure. Has the drive and courage to overcome obstacles.	Prone to provocation. Offends people's feelings.
Plant	
Creative, imaginative, free-thinking. Generates ideas and solves difficult problems.	Ignores incidentals. Too preoccupied to communicate effectively.
Resource Investigator	
Outgoing, enthusiastic, communicative. Explores opportunities and develops contacts.	Over-optimistic. Loses interest once initial enthusiasm has passed.

Table 1.1: Top/Worst 3 Belbin Self-perception for the group

1.2 SWOT

The SWOT-table (table 1.2) is a combination of all group members individual SWOT-tables. By combining each SWOT-table into one, we get a very good overview of the strengths and weaknesses for the group.

By looking at the two boxes with strengths and oppotunities we see that there is a lot of words and sentences that indicates that our team is great at solving and working with problems and furthermore is very well structured. The two boxes that contain weaknesses and threats indicates that the team is marked by stubbornness, non-shapers and non-innovative members. This implies that the team probably will have a hard time getting ideas and to start working on a problem.

It is a kind of a paradox when we take a look at the strengths and weaknesses of the team. We are very good at solving and working with problems, but at the same time we are having difficulties finding and or creating these problems. This means that the team should be aware of difficulties in the beginning of the projekt and not so much later on.

1.3 Competence triangle

In order to learn more about each group member a competence triangle was created (figure 1.2). The competence triangle separates competences that are on a personal, theoretical and experience level. This is done to get a better understanding of how people view themselves and what their education involves. Each member wrote down 2-3 things about themselves and each item was discussed and how it related to the project.

The group have a lot of math and programming focused people. The group does not have a lot of business oriented people.

1.4 Conclusion

The team has had a lot of difficulties finding a problem that we wanted to work with. We have been using innovative tools including brainstorming to come up with ideas particularly around e-waste but we never got anything useful. After a meeting with the supervisors who told us that we needed to move forward, we decided to work with an idea that was mentioned in the introduction of the project.

By looking at the results from the Belbin and SWOT-table it is not surprising that the team ended in the situaton that we did. It is apparently very clear that the team has a weakness when it comes to idea generation and as well a strength in problem solving. Prospectively it would be a good idea to look at the results from the team tests so we don't end up in the same situation as we already have.

Strength	Opportunities
Patient(2)	Problem solving(3)
Tolerant	Good presenter
Open minded	Broad contacts
Working with others	Interested in management
Communicative	Solve problems on time
Strong work ethics (2)	Able to structure the report
Adaptable	Can finish a project.
Team player	Can work from somebody's schedule
Open minded	Can work late
Communicating	Not afraid to delegate and face impacts
On time	Mindful of others and open for com-
Social	munication for instance the workload
	Can work in different areas
Experience (work)	Idea generation
Effective	Technical skills
Technically skilled	Easily can learn other subjects
Clever	Team worker
Logic thinking	
Able to prioritize	
Well organized	
Decisive(2)	
Ambitious	
Thorough	
Decisive	
Dedicated to solving issues/problem	
Comprehensive	
Discipline on my own	
Creativity and innovation	
Weaknesses	**Threats**
Stubborn(2)	Not a specialist
Impatient	Easily get stressed
Inflexible	Impatient, if others don't understand
Being on time	Might be difficult to understand
Express my ideas	Bad at solving problems myself
Unwilling to recognize the value of my	Bad at remembering details
work	Might ignore good suggestions when focused on oth-
	er/own ideas
Not starter (If goal is unclear)(2)	The development phase might be slowed
Loses focus easily(3)	down
Not very innovative/creative (2)	Reduced working time
Overview	I like parties and going out/I prefer fun
Working fully on my own	over work
Skeptical within my area	Focus on too many areas
Not a perfectionist	We might never get started
Bad at keeping track of who knows what	Bad at getting ideas to startup a project
Meeting deadlines	Losing focus
Uncomfortable with uncertainty	Need things planned in good time
	Get stalled in some point of the project
	Don't finish on time

Table 1.2: SWOT-table

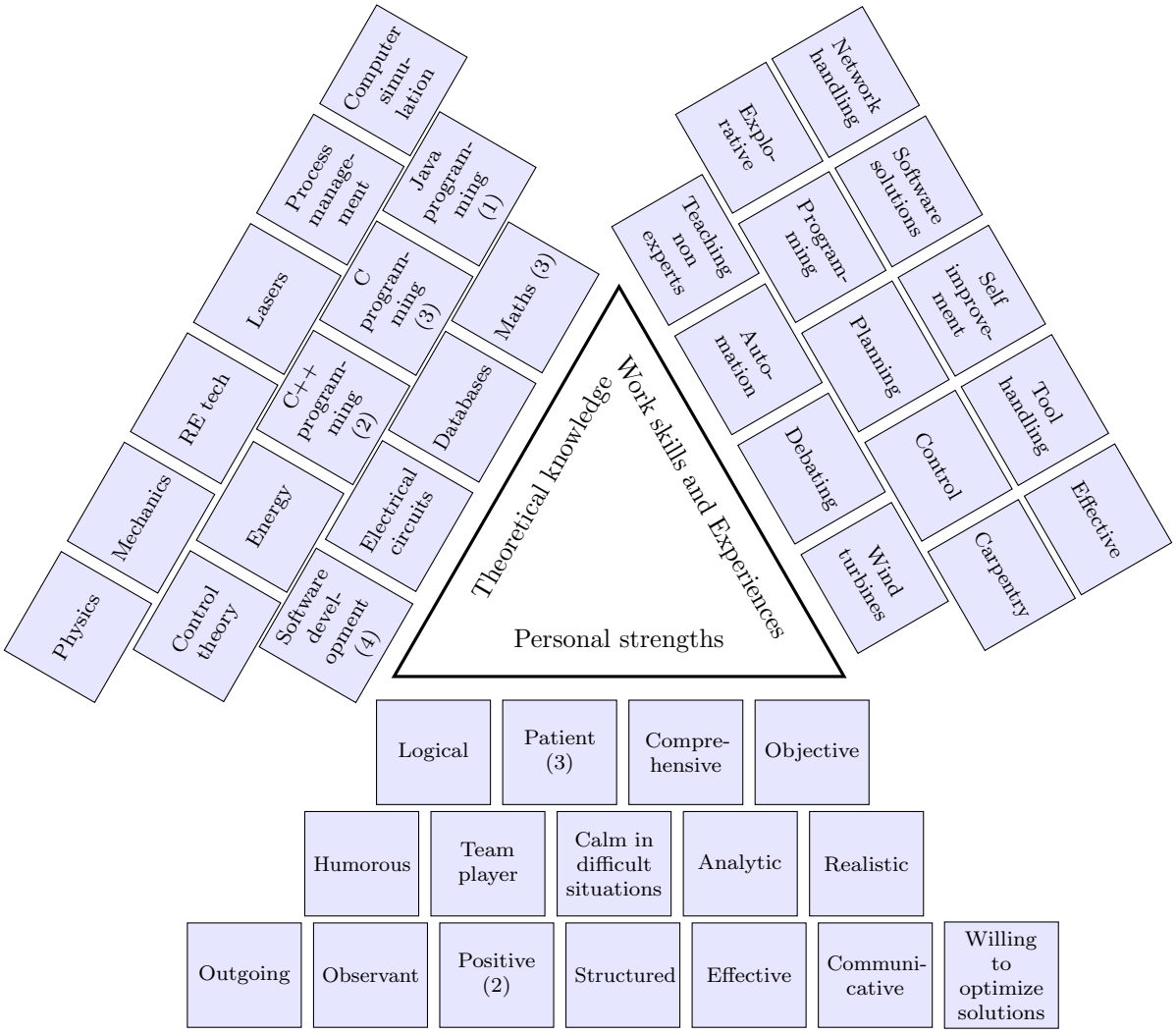

Figure 1.2: Competence triangle

2 Innovation and business

2.1 Pictures

For an idea generation process we all sat around the same table and passed around pictures. We started with the pictures faced down so we would pick them at random. When passing the pictures around, each of us said what came to mind when looking at the pictures, always keeping in mind that we were to make a creative functional robot. We made sure not to comment on each others thoughts so all thoughts were allowed.

It was very interesting to see how different pictures generated different thoughts. There was a picture of an opera singer, and the thoughts there were: "Loud", "Hard work", "Love for your work", "Human interaction", "Service provider", "Sound recognition" and "Training algorithms". Another picture was of a cellphone and the thoughts there were: "Interface", "Monitoring", "Portability", "Connectivity", "Extension/Multi-functional", "Compact", "User experience", "New experience", and "Awareness/focus".

(a) Picture of opera singer used in the idea generating process.

(b) Picture of cellphone used in the idea generating process.

Figure 2.1: Pictures used in the idea generating process

In the beginning of this process several of us found it to be some what a waste of time. It was difficult to see how a picture of an opera singer should help us design a robot. After the process, however, we all agreed that we had come up with some really good words, and a lot of them were words that we would like to describe our product, e.g.: "Mobility", "Safety", "Combined knowledge", "Service provider" and "Precition". Other words we would have to make sure would not end up describing our product, e.g.: "Loud", "Danger", and "Legal issues".

2.2 Business Model Creator (IDEA - BMC)

After defining the business idea we wanted to specify problems that our idea could solve. To get the maximum from our idea, we decided to make a business plan. The question was how to generate cash flow and to create value for the customers and this helped us answer it. It helped us to better define the situation in which we found ourselves and the direction we should take.

We started with "Value Proposition", which should help us define the services we would like to provide and the products we will develop the business model for. We saw this step as very important and that it will define the course of our business plan, so we decided to spend some time thinking about how we could define what we are going to do and the value we want to create for potential customers.

In the end, we defined our customers as the companies in the welding industry. Companies working on improving the welding technology and companies with non-mass production. We expect the first to be interested in acquiring the technology to implement it to their own system to gain a competitive advantage and the latter one can use it to improve their production and facilitate flexibility of the production, making it possible for further customization of their products and reduction of costs and time.

Customer Configuration Channel				
Channel	Awareness	Evaluation	Purchase	After Sales
Internet	✓	✓	✓	✓
Product brochures		✓		
Journals	✓			

In the next step, we began to define ideas related to the product. We saw an opportunity in creating value from our product as an innovation in areas, where the competitors failed to achieve it. We decided that the best option in terms of price of the final product would be to suit the current market price, as it would be almost impossible to sell it under the price and selling it with a high price would not be profitable for our customers as the value it creates for them is not crucial for their production.

Will have to make the following comments in reference to the product configuration:

- We are trusted partner in a highly integrated value chain. We focus on adding value in a very specific chain.
- As we focus on developing the technology necessary for the development of sensing system lines for automation of welding, a strong relation with our partners will be necessary, as we need the rest of the technology and components, in order to create the full product.
- Our processes will be quite the same as the industrial production in general:
  - Inbound logistics
  - Production
  - Outgoing logistics
  - Sales and marketing

There is also the financial part. Our prices depend on the product features. The more or the better the features, the higher the price, so it will be more expensive if we had to develop a new type of product with different specifications than if they buy the standard product. We will try to make a price list suitable to all kinds of potential customer's production.

Finally, we have the customer configuration. We have an extremely narrow area of focus, but we can develop the product in response to the customer needs, which we know. As this is not a cheap product and the market is not that big, we will try to keep our customers through loyalty programs, where customers are rewarded for remaining loyal to our product. This is also a good way to acquire new customers, because if they are happy with the service/product we provide them, it is very likely that they will provide positive references and recommendations and spread the message about our product.

3 Expert skills