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Company Participation in "Extreme PSS Innovation – 15 ECTS"

Extreme Product Service System Innovation is a 15 ECTS project course that prepares students for work in product service development. The idea is that the product development projects of the course should be clearly anchored in close cooperation with industrial companies or with real societal needs, so it is important to develop good project ideas to work with partner companies.

The work is performed in project teams with tutor support from both industry and academia. The collaboration provides benefits for both students and industry partners:

- The students will be able to apply their knowledge when developing solutions to real problems within limited time and cost frames.
- They gain unique insight into both present and future ways of working and collaborating on innovative product-/service development.
- Industrial companies gain access to innovative thinking and methods, conducted by well-trained students (and coaches) who are not limited by traditional working patterns.

The students work according to a research-based innovation model called the BTH Innovation Process (see Figure 1). The model applies Design Thinking to stimulate innovation activities based on customer and user needs, to develop prototypes of future products and concepts.

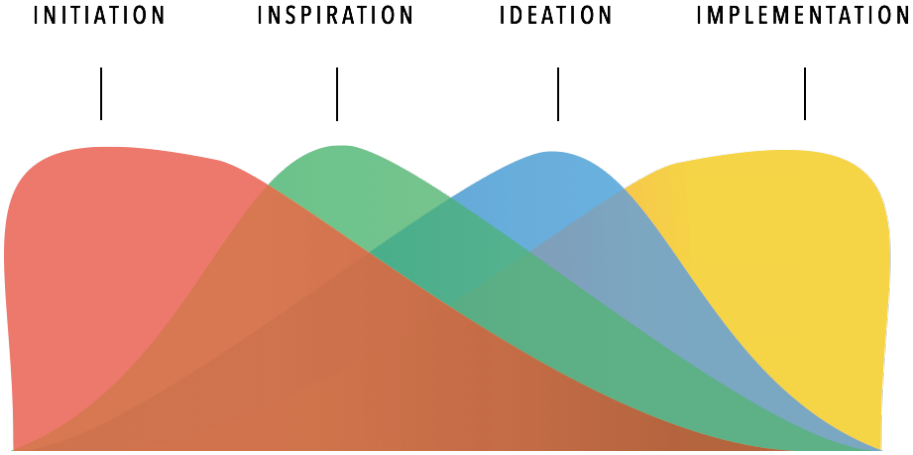

Figure 1. The overall phases of the Design Thinking process (details of the phases are hidden).)

The process also serves as a 'gatekeeper' for the progress of the project as there are gates included that are natural meeting points for the student teams and business partners.
The project is divided into the following phases matched with BTH Innovation process (after each phase, an evaluation and decision gate).

- **Group assignment;** The projects start with a presentation of the company's wishes and thoughts about the projects. After this, the students choose which project they want to participate in. The final group composition is determined based on personal preferences and results from a valuation of student preferences using the Stanford Team Construction Method.
- **Phase 1 –** *Initiation*: During this phase, students identify opportunities, clarify problems, and prepare the team with roles and rules for how they will collaborate.
- **Phase 2 –** *Inspiration*: Includes Needfinding, Benchmarking, TrendWatching, TechWatching, Exploration Prototyping, etc. One wants to create a ground and understanding for customers,

problems, and opportunities as well as competing solutions. The basis must be based on user needs.

- **Phase 3 –** *Ideation*: Idea generation and concept design. The creation starts with extending the design space and develop creative ideas. Here you can also begin to build simpler prototypes to explore and learn as early as possible in the project.
- **Phase 4 –** *Implementation*: Depending on the solution and context, the students create prototypes that are increasingly advanced and complete. They test and validate their solutions, often with intended users. The students also develop a business model associated with the prototype.
- **Launch;** The prototype is launched at companies and at the university. Hopefully, this includes media coverage of student work and results.

Some important points that facilitate project execution for both companies and students:

- The project should be designed to include all steps from conceptual/prototype needs analysis, that is, a **whole development process**. Because the project is going through idea generation, concept selection, constructive design and prototype production within product service development, this is a prerequisite for a successful project. It is appropriate that the company, together with BTH, will provide an initial specification regarding project expectations.
- **Anchoring** the project in the company's organization; Although a project description is available at the start of the project, interaction between students and companies is inevitable. It is therefore important that affected parties at the company are informed of what is happening and able to support the project implementation and allocating resources to the project.
- **Understanding and dialogue** regarding the problem between the actors (academic and industrial supervisors); It is important that both the company and BTH's supervisors see the same main problem in the project as this clearly facilitates the development of the project.
- **Understanding and acceptance of the process**; The students will complete the project based on a general model of product service development, which usually differs from the model available at the company. It is important that you accept this and try to contribute without controlling for the project to progress - i.e., to avoid managing the project according to standard management models.
- The project is a student project; It is the students who will do the project, not the company nor BTH.

More information:

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