37208-ENG - LABORATORY DIGITAL INNOVATION AND MANAGEMENT (DIM) – DIM LAB

30/04/2025

Preparation to the Labs

Agenda

- What have we learnt from the PBLs: **key takeaways**
  - PBL 1: Planning and product strategy
  - PBL 2: Opportunity identification and customers' needs
  - PBL 3: Concept generation
  - PBL 4: Concept selection and testing
  - PBL 5: Design and economics
- **Lab Overview**
- "**Homework for Lab 01**"

Takeaways from PBL1 (Planning and product strategy)

- NPD does not occur in a "vacuum" but is **embedded within a specific company.**
- Product strategy indicates **how the introduction of new product contributes to achieve company goals** by addressing specific markets with a given value proposition.
- The selection of NPD projects must be informed by an internal (resources, existing portfolio, positioning) and external analysis (competition, PEST).
- Planning relates not only to the **creation of new products** , but also the **improvement of existing ones.**

Takeaways from PBL2 (Opportunity identification and customers' needs)

- Opportunities consist in the **rough match between a need and a possible solution.**
- Once opportunities have been generated on the basis of hypothesized challenges, **customers' needs have to be identified and validated** with real data.
- **Define the potential target customer**, empathize with her/him (persona model, customer, customer journey map).
- **Collect data** using **interviews**, survey, focus groups, observing the potential customers using similar products.
- During this phase **focus on the needs not on the solution**.
- Remember that customer needs and products specifications are not the same thing! **First focus on customer needs, then try to translate them into functional requirements**.

Takeaways from PBL3 (Concept generation)

- The **concept** is a rough representation of the product and **how it addresses customers' needs.**
- Before starting with generating possible concepts, **customers' needs have to be identified and translated in product specifications** (i.e., metric and value encapsulating what the product has to do).
- Product specification are determined by translating customer needs from the “language of the customer” to specific metrics.
- **Metrics** measure one feature of the product that addresses customers' needs (e.g., weight of smartphone addresses the need of "being easy to transport"). At least one metric for each need must be established. Each metric should be associated with a unit of measure (e.g., for the weight of a product, it's grams or kilograms).
- **Needs and metrics are linked through the “House of Quality” tool**, which provides you with more awareness of what the product must do to meet customer expectations.

Takeaways from PBL4 (Concept selection and testing)

- Once concepts have been generated, they need to be **evaluated and selected.**
- Structured concept selection involves ***screening*** **and** ***scoring*** **processes**, based on a comparison of the relative strengths and weaknesses of the concepts.
- Once one or few concept have been selected, a response from the target market regarding the few selected concepts is solicited.
- **Testing** can be used to improve a concept and estimate the sales potential of the product.
- Testing often uses **prototypes.**

Takeaways from PBL5 (Design and economics)

- **Design for manufacturing (DFM)** helps to optimize the product design for efficient and cost effective manufacturing.
- To application of DFM requires the **estimation of the unitary costs of manufacturing** and the reduction of costs related to components, assembly and production processes
- **To analyze the economic viability of NPD processes** there are quantitative and qualitative analyses.
  - Quantitative analysis involves measuring revenues and costs, and computing **NPV** as well as **break-even point** and **margin of safety**
  - Qualitative analysis involves examining interactions between the project and the firm, market, and macroeconomic environment.
- Sometimes a NPD are started because of positive externalities for the company (e.g., acquisition of competences, first mover advantage)

Overview of the Labs (1/2)

Lab	Day	Topic	Presentation by teams (during the Lab)	Feedback by the faculty (upon the Lab)
00	30th April	Product-company	- Selected product and company	- Confirm teams' selection
01	7th May	Product strategy and planning (PBL 1)	- How does the NPD fit the product strategy? - Expected timeline for the project and Project Management - Empirical strategy for need validation	- Confirm mission statement - Refinement of strategy for need validation
02	14th May	Customer needs, product specifications and concept generation (PBLs 2 and 3)	- Customers' needs - Product specifications - House of Quality and benchmarks - Set of generated concepts - Testing strategy	- Feedback on process/outputs of the need validation/product specifications/concept generation - Refinement of the strategy for concept testing

Overview of the Labs (2/2)

Lab	Day	Topic	Presentation by teams (during the Lab)	Feedback by the faculty (upon the Lab)
03	21th May	Concept selection and testing (PBLs 4 and 5)	- Scoring/selection of the concept - Concept testing and rough estimation of customer demand - Assumptions of economic analysis	- Feedback on the scoring process and output - Feedback on the testing process and output - Feedback on the assumptions of the economic analysis
04	29th May	Product development economics (PBL 5)	- Estimated costs - Economic analysis (break even and NPV)	- Feedback on the assumptions and outcomes of the economic analysis - Suggestions for the final presentations
05	4th June	Final presentation	- Proposal of improved product and justification	- Overall comment on the product development process and outcome

“Homework for Lab 01”

10-12 minutes presentation (7-8 slides) + 5-7 minutes feedback

1. Short description of the selected company-product dyad
2. Analysis of company product strategy (value proposition, market, product portfolio)
3. How does the improvement/introduction of the product contribute to the company product strategy
4. Mission statement for the product innovation
5. Project timeline (GANTT or WBS)
6. Strategy for need validation
7. Possible questions