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Exercise 1: Product planning

ETSA02 Programvaruutveckling - Metodik



Exercise 1 - Goals

- Hands-on work: plan what your robot will offer the market
 - business planning
 - feature-level requirements engineering
- Output for projects: lean canvas and list of your robot's key features
 - features aligned with business and product goals



Exercise 1 - Agenda

- Introduction (15 min)
 - Market-driven requirements engineering
 - Features and feature scoping
 - Product roadmap in context
 - One page business plan: “Lean canvas”
- Work in groups (60 min)
 - Based on your preparations, discuss your market analysis
 - Fill in the blanks in the canvas
 - Specify the key features of your robot
- Reconvene and report (15 min)
 - Share your findings with the group
... but not the trade secrets!



Market-driven vs. bespoke RE

- Market-driven development - bring a product to an open market
 - Market-driven requirements elicitation is based on market analysis
- Bespoke development - customized development for specific customer
 - Requirements elicitation done with the customer
- In the projects, there will be a mix:
 - First, market-driven RE until you have a customer
 - Second, requirements evolve through negotiations with the bespoke customer
 - (Also successful procurement of another group's robot requires RE, i.e., reviewing of requirements specified by other groups)

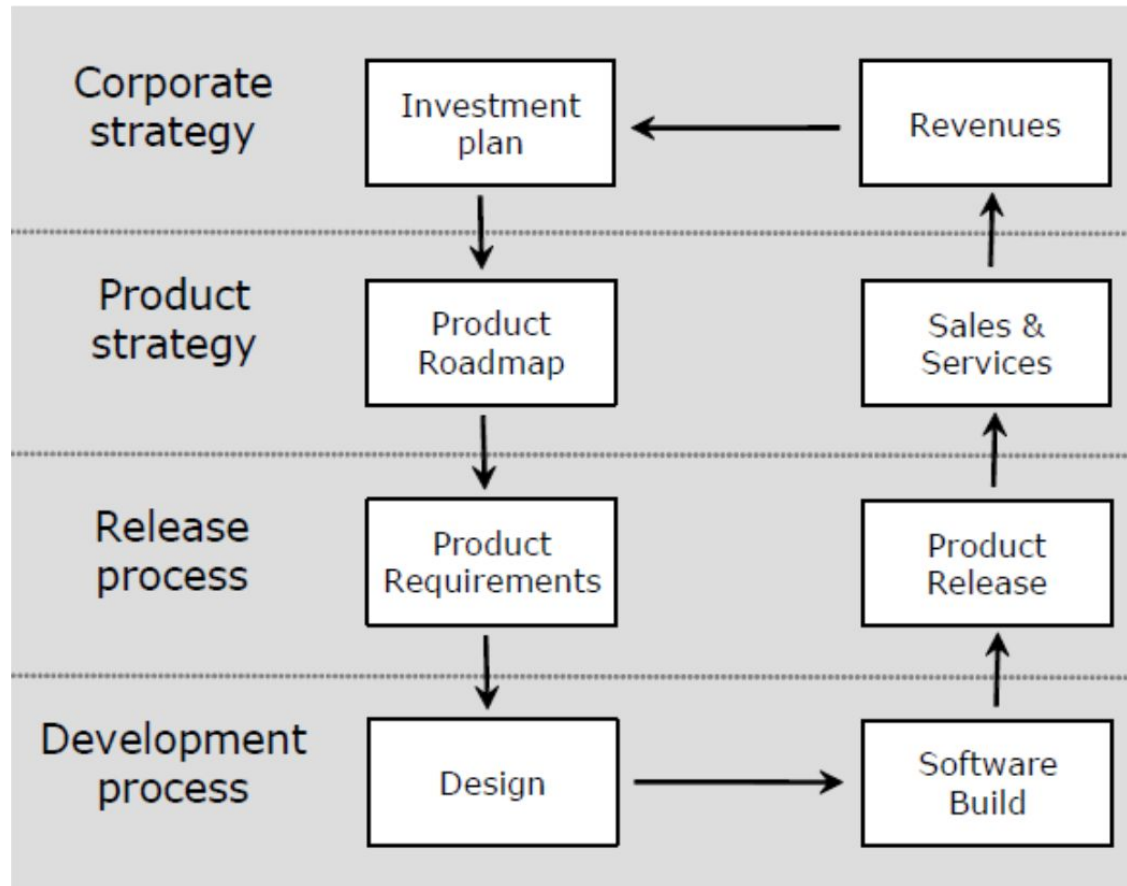


Features and feature scoping

- “Feature” (SV: “produktegenskap”) has many definitions, e.g.,
 - *“a product characteristic from user or customer views, which essentially consists of a cohesive set of individual requirements”* (Chen et al., 2005)
- Possible approaches to support feature elicitation
 - Literature studies (incl. the Web)
 - Competitor analysis
 - Interviews/workshops with potential future customers
 - Purchase reports from analyst companies
- Not enough time to implement all possible features
 - Need to prioritize and select a subset → feature scoping
 - Product roadmap maps features to product releases



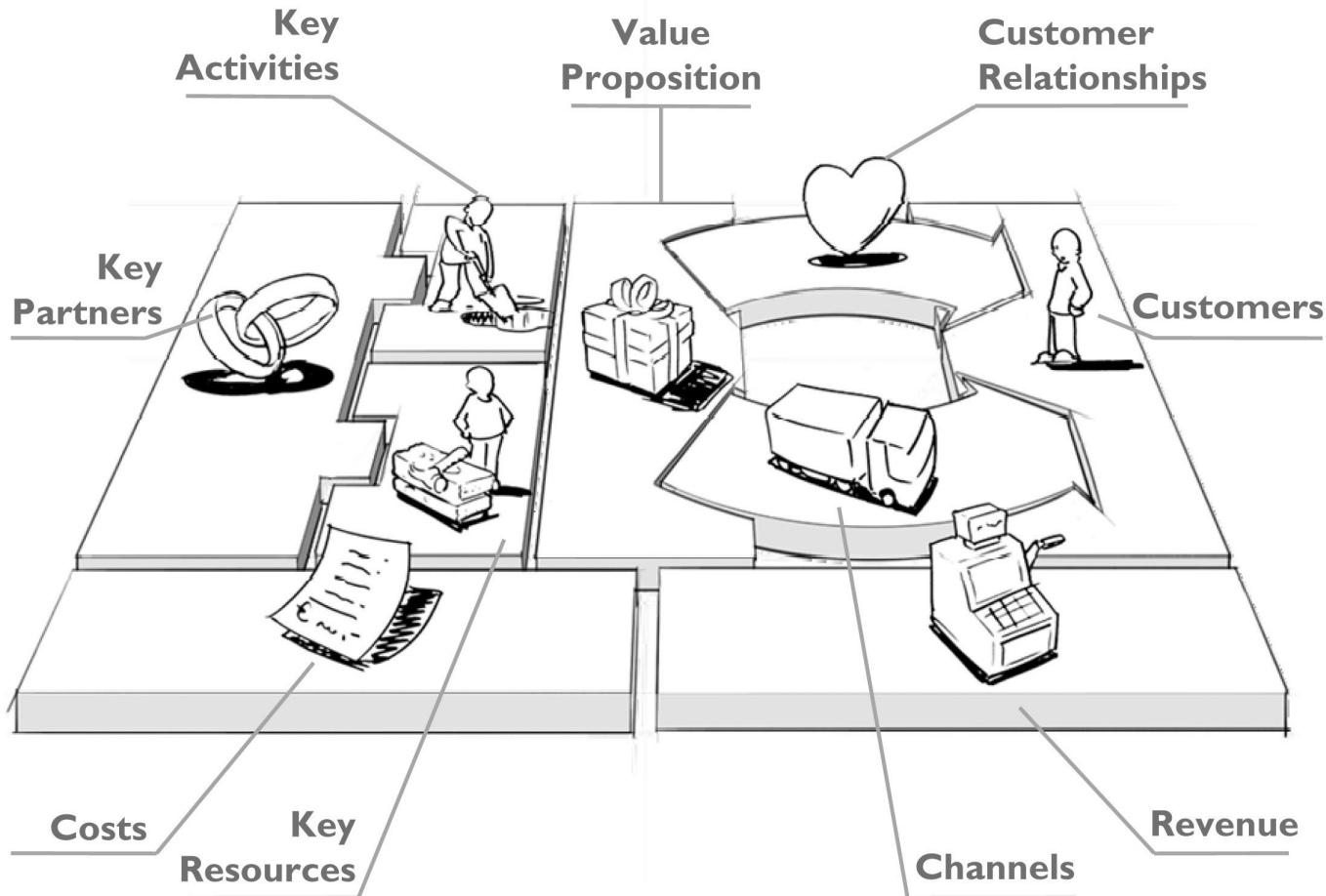
Product roadmap in context



(Regnell and Brinkkemper, 2005)



Business model canvas



(Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers, Osterwalder and Pigneur, Wiley, 2010)



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(Lean Canvas is adapted from The Business Model Canvas and is licensed under the Creative Commons Attribution-Share Alike 3.0 Un-ported License.)



Lean canvas - Recommended order

1. Problem: What problem is your robot going to solve for your customer?
 - e.g., Defeat wall crawlers? Track down mobile leaders?
2. Customer segments: Groups of people you aim to reach?
 - e.g., All groups? Droid-heavy teams? Teams with quick melee bots?
3. Unique value proposition: What is your marketing promise?
 - e.g., “droid with adaptive bullet strength” or “leader very hard to hit”
4. Solution: How is your robot going to solve the problem? [Sprint 2: MVP, Sprint 3, final release]
5. Channels: How to communicate with customers? [pitch at Robot fair, Robot Market]
6. Revenue streams: How will you generate cash? [bespoke customer, Robot Market sales]
7. Cost structure: What costs incur when operating your business model? [time only, deducted from project budget]
8. Key metrics: How will you measure that your business is successful?
9. Unfair advantage: Why can't competitors copy your ideas?



Specify a handful of features

- Feature 1
 - Feature 2
 - Feature 3
 - Feature 4
 - Feature 5
-
- Are the features aligned with your lean canvas?



References

- Chen, K., Zhang, W., Zhao, H., Mei, H. An approach to constructing feature models based on requirements clustering. In: *Proc. of the 13th IEEE Int'l Conference on Requirements Engineering (RE'05)*, pp. 31-40, 2005.
- Muraya, A. Lean Canvas. <https://leanstack.com/leancanvas>
 - Complete step-by-step example: <https://leanstack.com/LeanCanvas.pdf>
- Osterwalder, A. and Pigneur, Y. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*, Wiley, 2010.
- Regnell, B. and Brinkkemper, S. Market-driven Requirements Engineering for Software Products, In *Engineering and Managing Software Requirements*, Aurum, A. and Wohlin, C. (Eds.), Springer, 2005.

