PRODUCT ARCHITECTURE DESIGN Spring 2019 Eero Miettinen in collaboration with Helkama and Microsoft

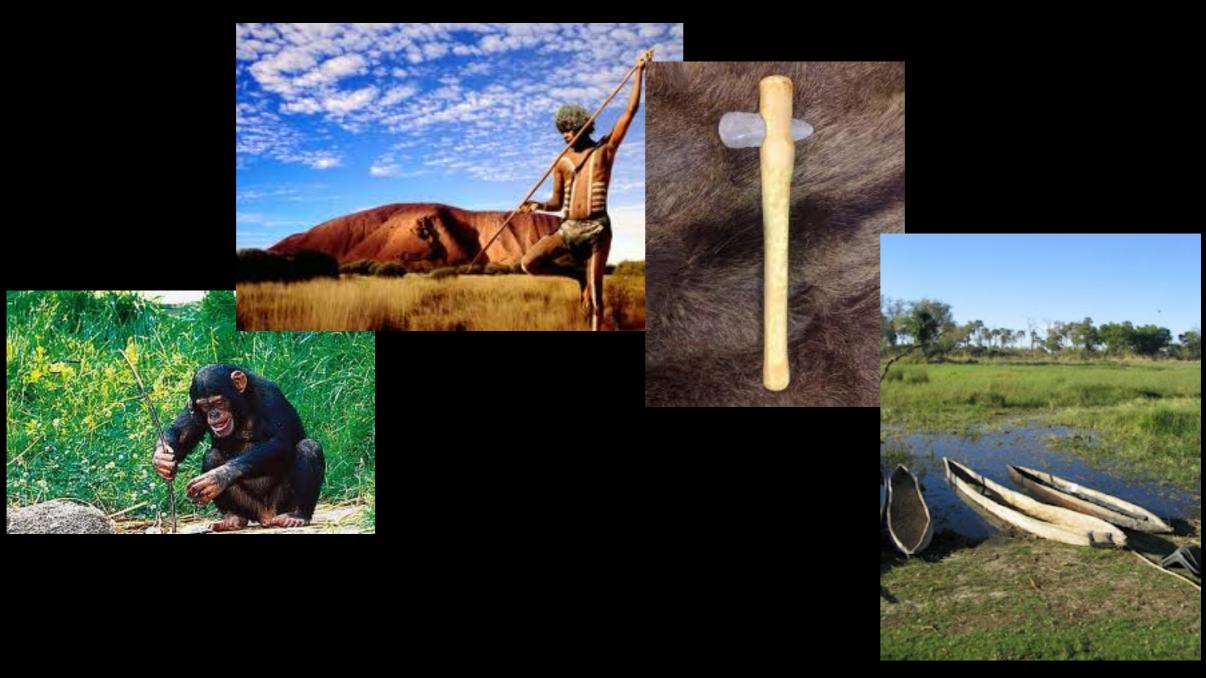




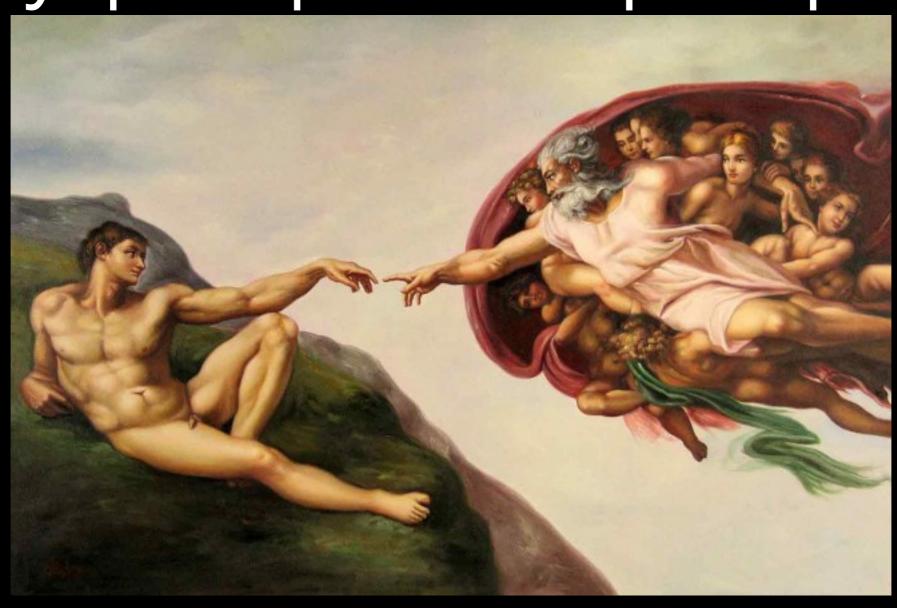
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Some fundamental statements around design...

Design has always been



by people for people



holistic approach fuzzy front end the big picture

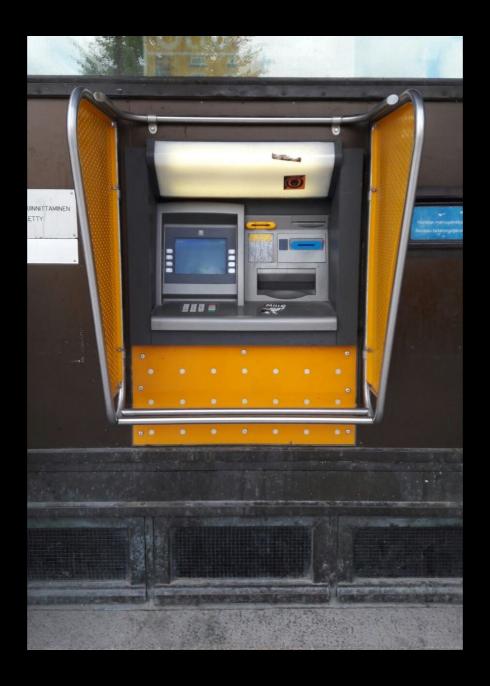


Functionality
Esthetics
Accessibility



Someone always pays

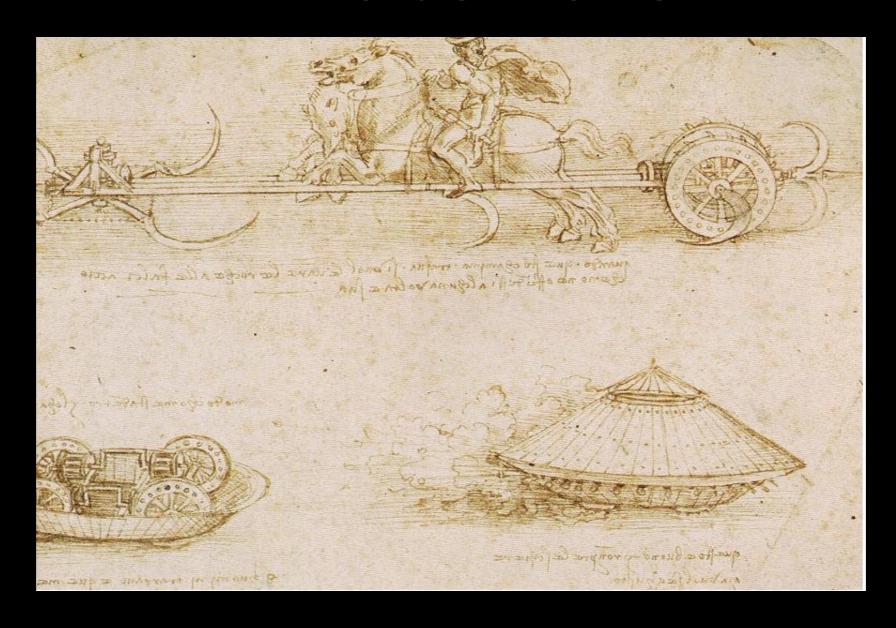




Products

objects, services, applications basic requirement for all succesful activity and business

materials



materials, chosen based on product features, production volumes and cost structure.

elements



elements, basic building blocks with only little of functions

components



components, compilations of functional features ready to be assembled

modules



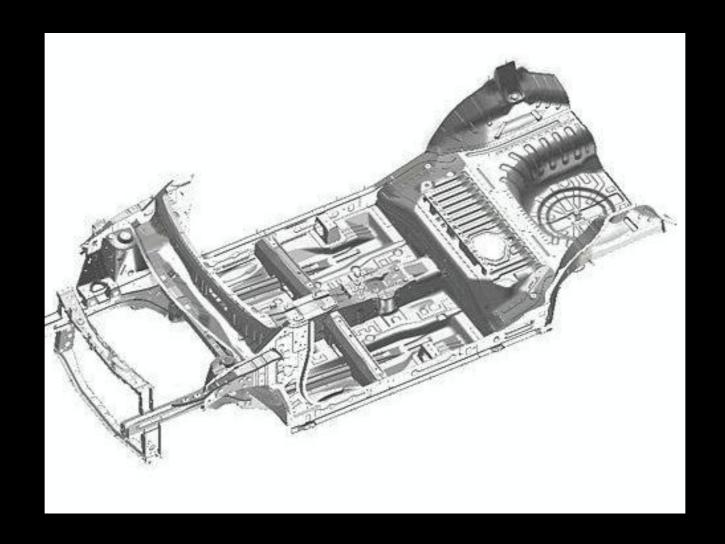
modules, as few as possible to create the widest possible variety of products or product features.

interfaces



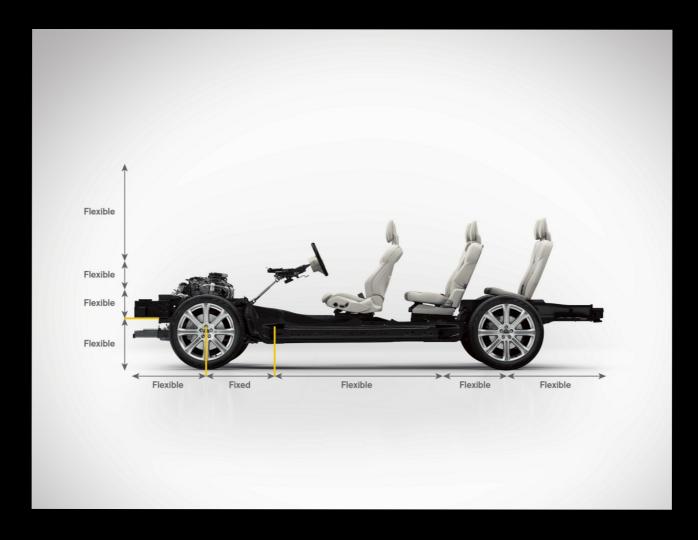
interfaces, as few as possible to connect as many as possible modules flexibly together

platforms



platforms that are shared with as many as possible products

product architectures



product architectures, where one or more functional builds can be scaled or replaced with an alternative one

integration



function integration within a part or component

feature integration within a product

systems



systems design involves external stakeholders

customisation

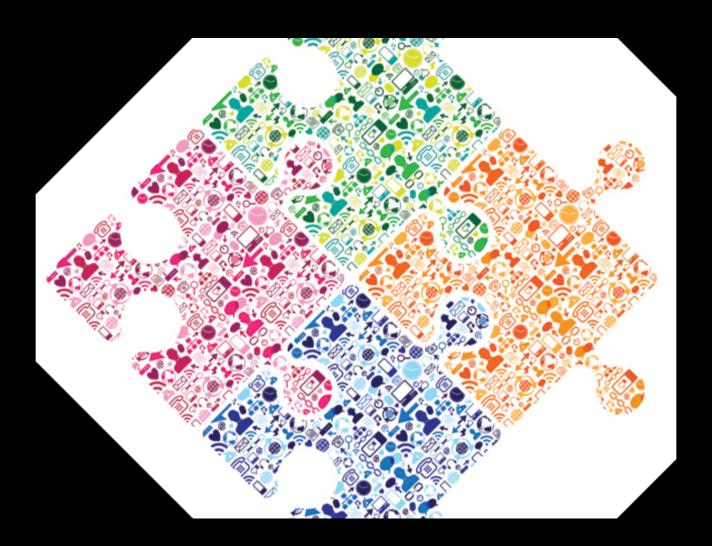


customisation through a set of variables in the product offering

personalisation



means of personalisation turns a volume product into an unique one



demand break down requirements specification



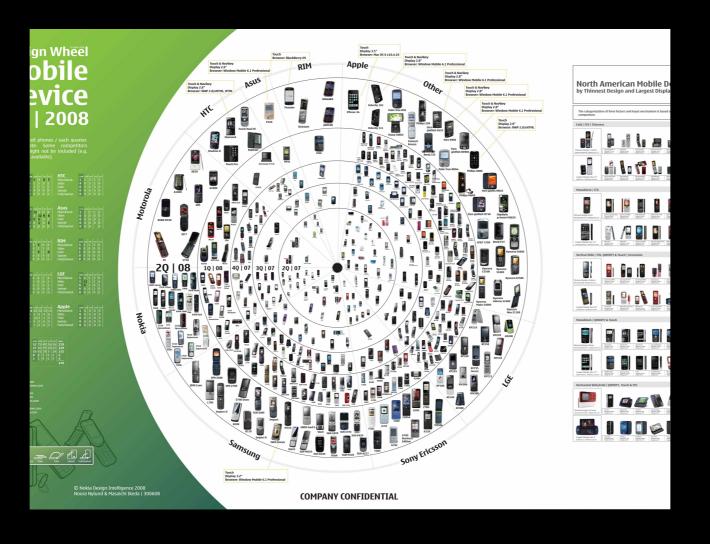
product specification

PENTAX SMC PENTAX Lens Development Roadmap As of Sept.22,2008 Focal Length 10mm 20mm 50mm 90mm 100mm 200mm 30mm 40mm 60mm 80mm 300mm DA 70mmF2.4 Limited DFA MACRO 100mmF2.8 DA 21mmF3.2AL Limited DFA MACRO SOmmF2.8 DA 35mmF2.8 Macro Limited DA 50-200mmF4-5.6ED DA 16-45mmF4ED AL Current DA 55-300mm#4-5.8ED DA 18-55mmF3.5-5.6AL II DALenses 8 DA FISH-EYE 10-17mmF3.5-4.5ED[IF] **DFA**Lenses DA 12-24mm F4ED ALDFI DA* 300mmF4ED(IF) SDM DA' 16-50mmF2.8ED ALDF] SDM DA*50-135mmF2.8ED[IF] SOM DA* 200mmF2.8ED()F] SDM DA 18-250mmF3.5-6.3ED ALDF] DA 17-70mmF4ALDF] SDM DA" 40-250mmF4ED[IF] SDM DA Super Telephoto (Targeted evallability: January 2009) Future DALenses DA* 55mmF1.4 80M DA 15mmF4ED AL Limited III-[Targeted availability: January 2009] [Targeted availability: Spring 2009] DA' somm SOM

product planning

[Marketing date to be announced later]

If Model names, designs, specifications and market learnth schedules of these products are all tentative and subject to change without notice



design research

product calculation

Target group and size global 1000 000

Market area focus
 Finland 10 000

competitors yes, 40 % market share avrg.unit price 200

target market share 60% of local markets

your value added slightly better, a bit more expensive 20

estimated product price

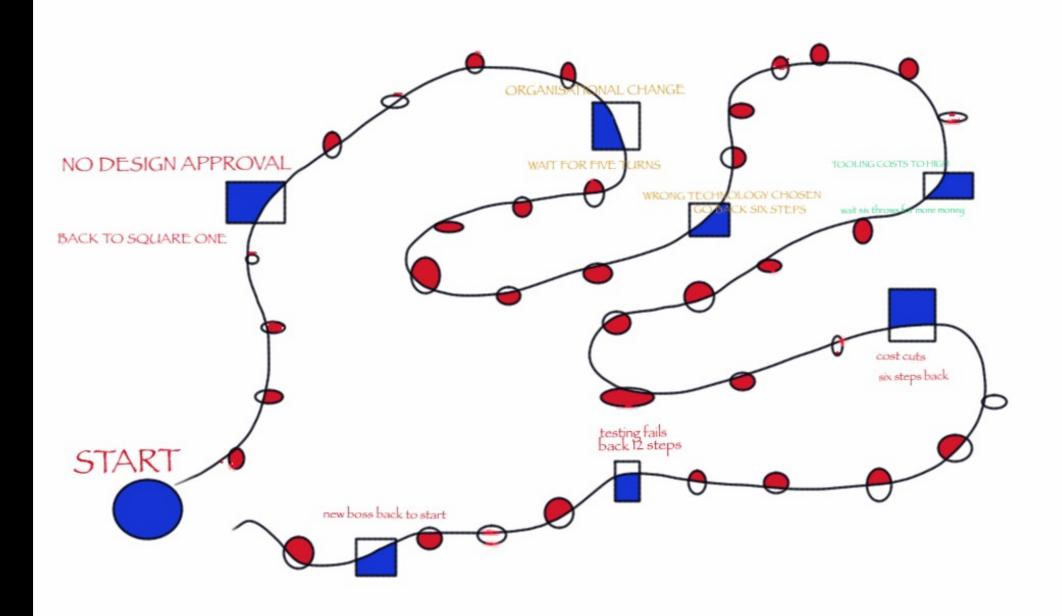
gross revenue targeted 6000x220 1320000

gross margin/ profit7%92400

for product development, production, marketing, distrib 1227,600

design process

PUPPELI



Your 1st assignment

Get organized to teams of 3-5

With your team's present understanding of product- platforms, architectures and systems. Get aquainted with Microsoft and Helkama Velox products and technologies and based on what you learn, formulate 3 questions to ask the company during our briefing sessions with the companies