

Course : COMP6100/Software Engineering
Effective Period : Desember 2017

Design Engineering

Session 11 - 12

Acknowledgement

These slides have been adapted from Osterwalder, Alexander et al. 2010. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. JWS. New Jersey. ISBN: 978-0470-87641-1. Chapter 4.

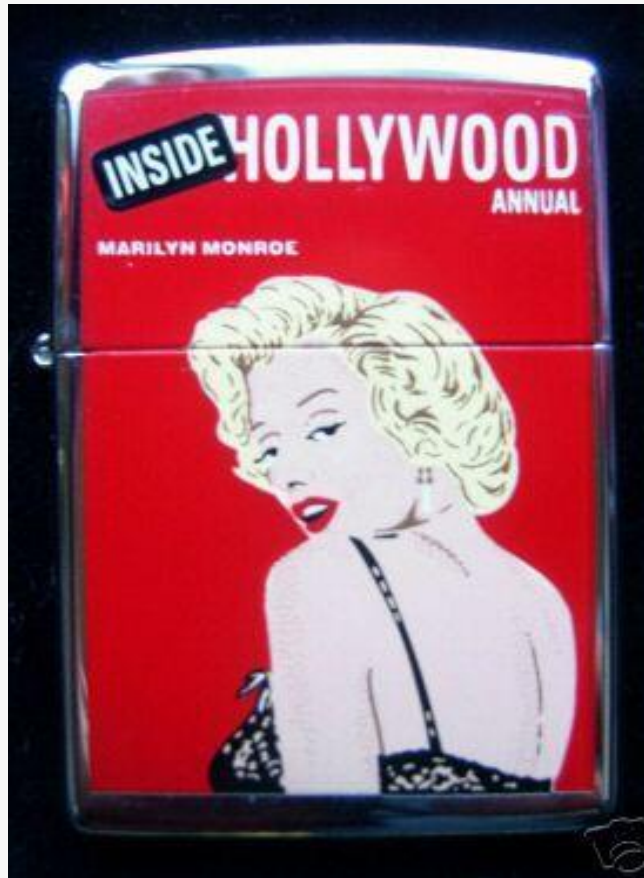
Learning Objectives

LO 2 : Analyze the potential business project using business model framework

Contents

- What makes a good design ?
- Factors affecting design performance
- The design process 1 – Recognition of the problem to be solved
- The design process 2 – Creative phase
- The design process 3 - Implementation

What so good about this product?



What makes a good design ?



Alternatively –
How can we assess these designs ?

The Design Process

What makes a good design ?

- Fit for purpose
- Cost effective
- Successful ?
 - Iconic
- Long lasting

Does the job its design for in the most effective, efficient manner.

Factors affecting design performance

- Cost effective
- Satisfies service requirements
- Can be made – achievable

Like this ?



The Design Process

A methodology which requires a logical, sequential analysis of the design problem to be solved.

Set out in stages which helps us to progressively develop a solution to the problem set.

The best solution given the Technology available at the Time.



The Design Process 1

Recognition of the problem to be solved

BRIEF

- Recognition of problem
- Identification of needs
- Recognition of situation

INVESTIGATION

- Research in topic – what exists already
- Collation of relevant information
- Analysis of topic
- Specification of requirements

The design process 2 – Creative phase

IDEAS

- Generation of realistic ideas to satisfy product design brief and functional requirements

EVALUATION

- Evaluation of ideas against the specification
- Identification of proposed solution

DEVELOPING

- Sketching, modeling refining proposed solutions

The design process 3 – Implementation

PLANNING

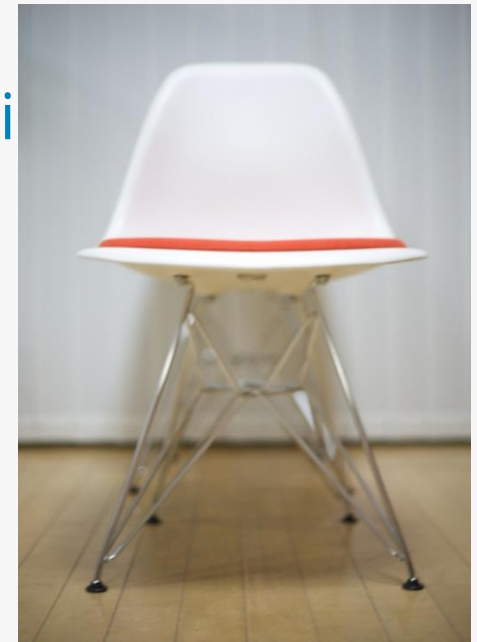
- Drawings from which the product can be realized
- Parts list, planning sheets for realization

Manufacture

- Make the product to design
- Evaluate in the field

Revisit the original design

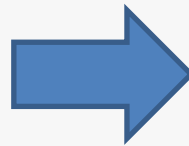
- Good designs ‘evolve’ over time



The Design Process

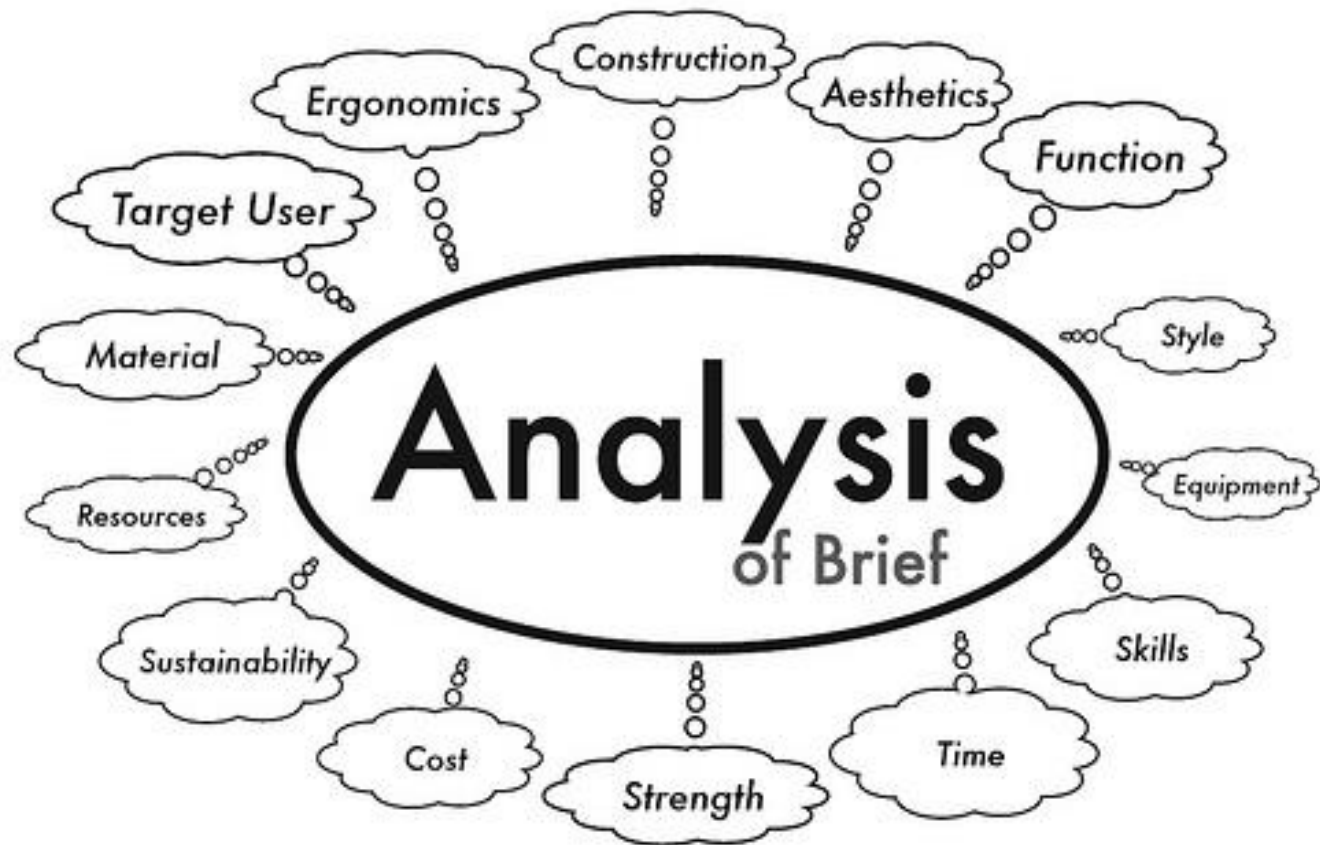
In reality we produce products which satisfy an immediate need as the customer wants it yesterday.

Major innovation in design and manufacture require us to look into new materials, manufacturing technologies and potential markets to structure



The Design Process

Analysis of the Design



The Design Process

In engineering we use the design process to provide solutions to problems – by applying a logical set of stages. In reality these are usually reduced in length because of;

- Previous experience / knowledge
- Custom and practice
- What the competition are doing

References

- Alexander Osterwalder & Yves Pigneur, **Business Model Generation**, John Willey & Sons. Inc. Hoboken, New Jersey, United States of America, 2010, ISBN: 978-0470-8764-1 (**BMG**)
- Schaper, Michael.(2011). **Entrepreneurship and Small Business 3-rd Asia-Pasific Edition**. John Wiley & Sons Autralia, Ltd. Milton. ISBN: 978-1-74216-462-5. (**ESB**)

Q & A