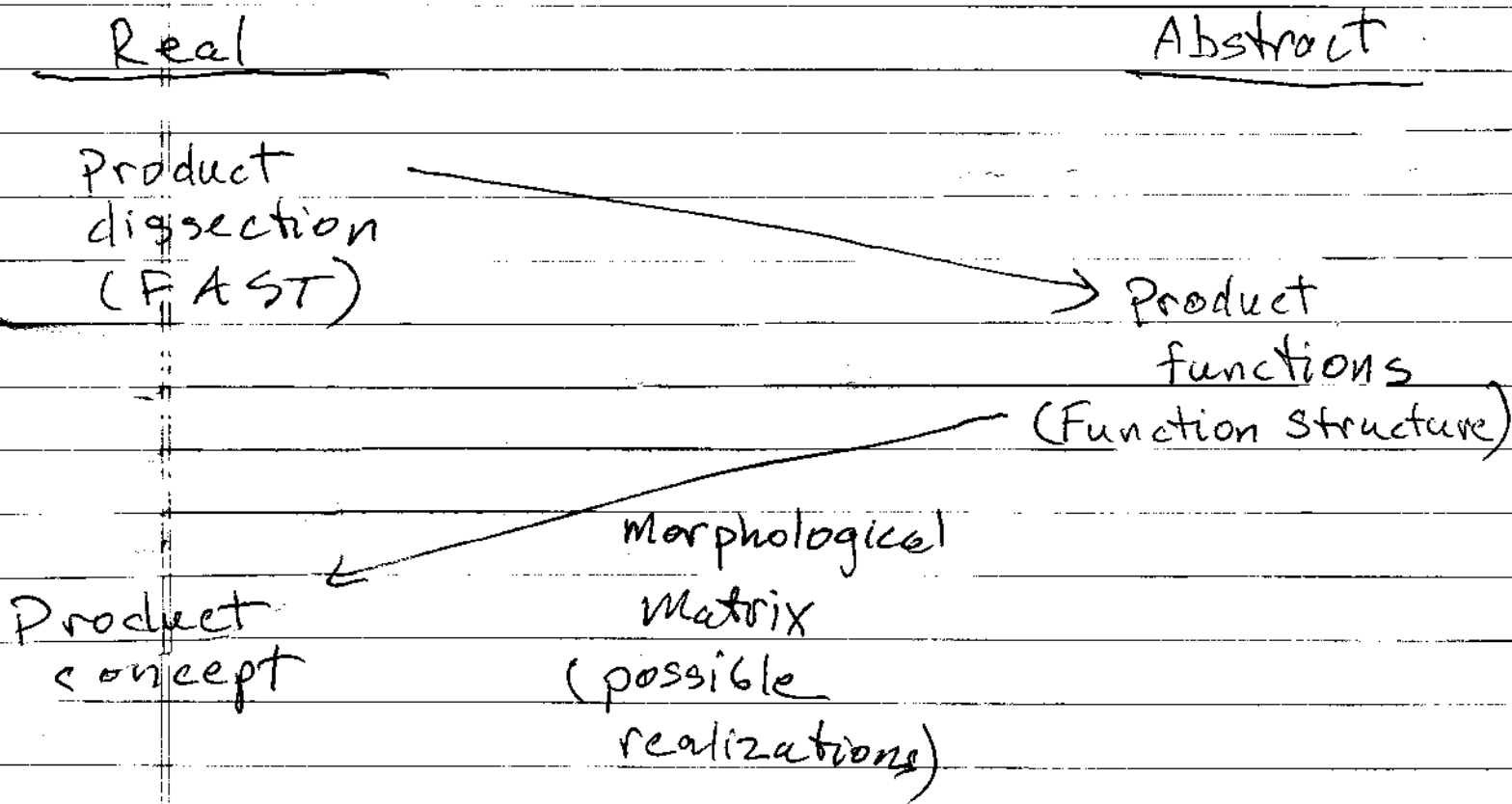


# TIM 80C Lecture # 5 (4-12-16)

- 1) Review Product Design
  - from dissection to function-structure to product concept
- 2) Product strategy & prototype
- 3) Organizing a start-up: roles & responsibilities
- 4) typical timelines for start-ups

# ① Review of Product Design



## References

German Design (function & form)  
Engineering Design, Pahl & Beitz

Japanese Design (Quality)  
Quality Engineering using Robust Design, Phadke

American Design (Usability)  
The Design of Everyday Things, Norman

## ② Product Strategy

Product Strategy has 2 key components:

(1) A design concept for the product

- functions
- Form (how functions are realized)
- Description of how the product will work.  
(step 7 of Design Process, lecture 4)

(2) A plan for how the start-up will develop the design concept into a working product

Resources: people (skillsets), equipment, facilities, other.

Source of Resources: where will the start-up obtain the resources? In-house? Outsource?

Schedule: When resources are needed? - prototype  
- production

# prototype ( $\alpha, \beta$ )

Design Concept



## prototype

- communicates the main features & benefits of the product
- helps stakeholders envision what the product will do
- identifies & clarifies upcoming technical challenges

## $\alpha$ version

- have key features & be interactive
- be used to identify & solve key technical challenges

## $\beta$ version

- more polished than  $\alpha$
- can be used by stakeholders & customers to demonstrate the value of the solution; gather data (performance, cost, user reaction); set expectations



Production

### ③ Organizing a Start-Up

Roles  
(+titles)

Responsibilities

Chief Executive  
Officer (CEO)

- leads & manages people
- sets business goals
- gets the funding

Product/Technology  
Team

Chief Technical  
officer (CTO)

- develops & implements the product strategy

VP of Product  
Development

- leads the development of the product concept, prototyping & user testing

VP of Manufacturing

- leads the production of the product
  - coordinating with suppliers
  - quality control
  - Supply Chain management

# Roles

# Responsibilities

|                               |  |
|-------------------------------|--|
| VP of Marketing & Sales       | <ul style="list-style-type: none"><li>- Develops &amp; implements the market &amp; business (competitive) strategy</li></ul> |
| Chief Financial Officer (CFO) | <ul style="list-style-type: none"><li>- perform cash-flow analysis</li><li>- create a financial strategy (budget)</li></ul>  |
| other                         | Legal, Human Resources (often outsourced)  |

## ④ Typical Timelines

(1) TIM & OC "economy"  
(10 weeks)

- creating the business plan
- conceptual design
- market strategy
- financial strategy

(2) Actual economy

1-2 years

- execute the business plan
- getting funding
- building sales