

# Product Development

Introduction

Product Development (EP60003)

# What is a Product?

A Product is a set of attributes offered to consumers to fulfill their needs or requirements.

Product Development (EP600003)

# Product Types

## **Broad**

- **Tangible**
- **Intangible**

## **User**

- **Consumer**
- **Industrial**

# What is a Product Development?

Product Development is a set of activities beginning with the perception of a market opportunity & ending in the production, sale & delivery of a product.

# Research and Development



## Basic Research

- Discovery process
- No set timing
- Unpredictable returns
- Long term

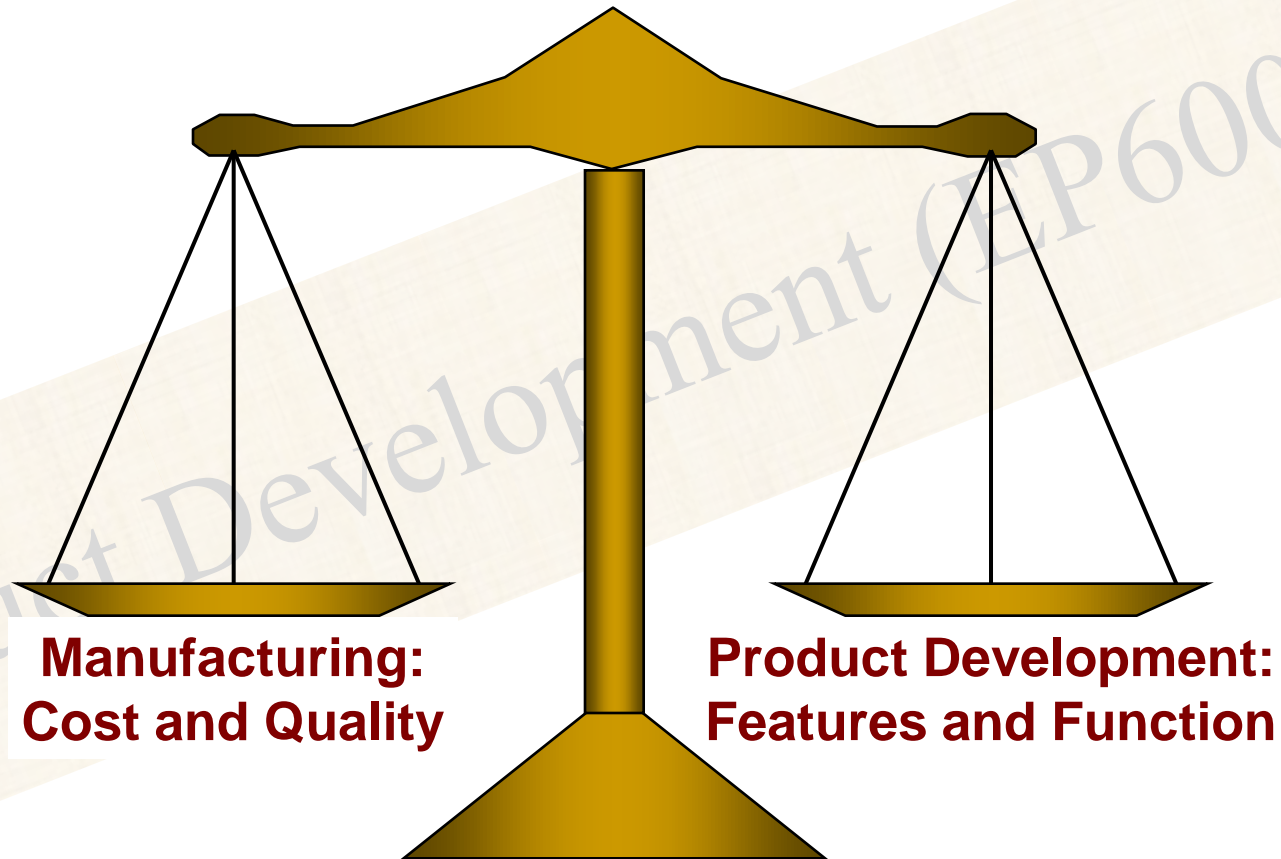
## Technology Development

- Loosely structured
- Difficult to plan
- Less predictable
- Medium term

## Product Development

- Structured methods
- Planned timing
- Predictable outcome
- Short term

# Changing Dimensions of Competition



Competitiveness today is more than ever based on product development capability.



# Assessment of PD

- Product Quality
- Product Cost
- Development Time
- Development cost
- Development capability

# Who design & develops Products?

- Marketing
- Design
- Manufacturing

Product Development (EP600003)

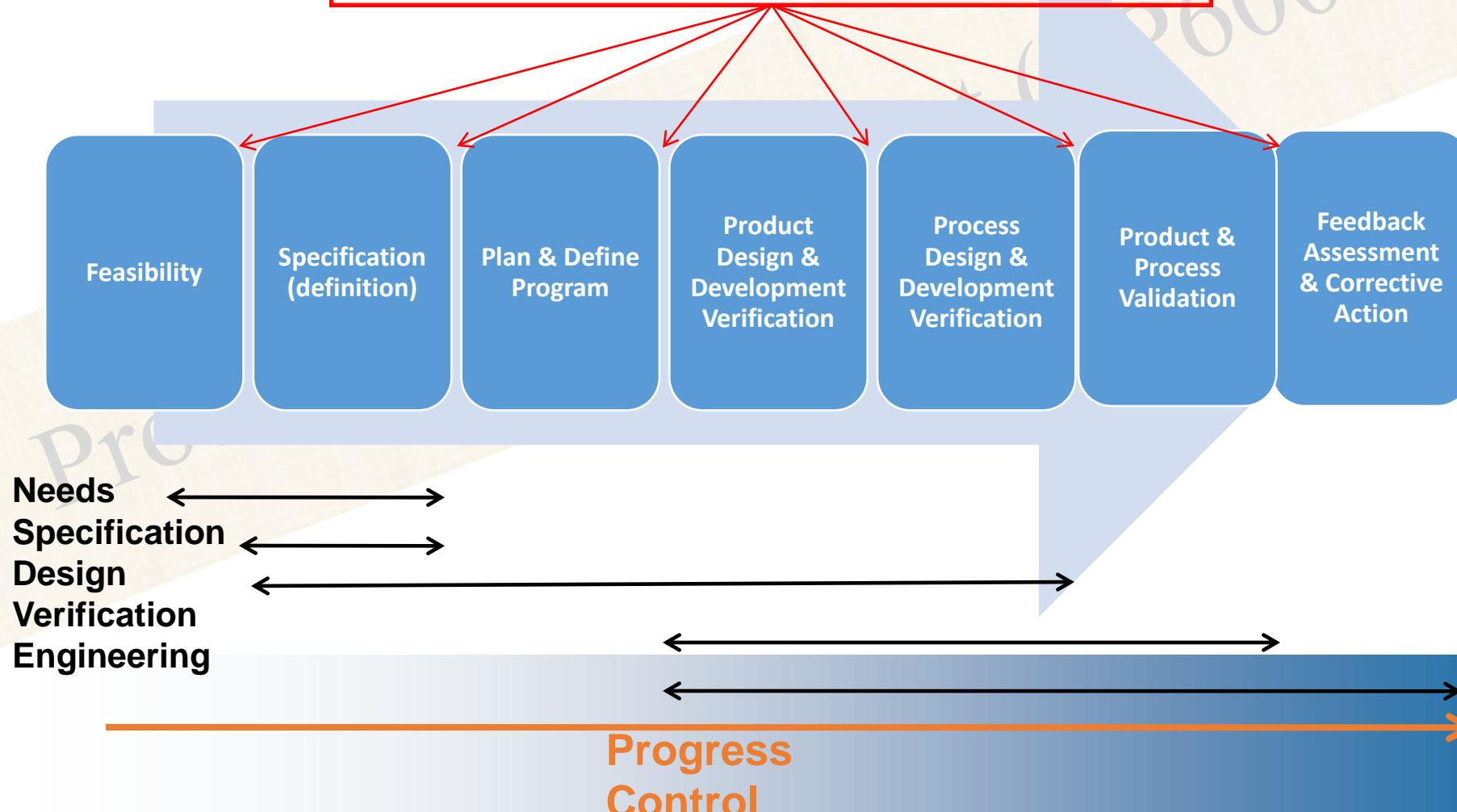


# THE PRODUCT INNOVATION PROCESS



# THE TIMING CHART

## Phase Transition Check Points with Brain Storming Sessions



# PRODUCT QUALITY PLANNING TIME CHART

Concept  
Initiation/Approval

Program  
Approval

Prototype

Pilot

Launch

Planning

Product Design & Dev.

Process Design & Dev.

Product & Process Validation

Planning

Production

Feedback Assessment & Corrective Action

# Duration & Cost of PD

	Stanley Tools Jobmaster Screwdriver	HP-Deskjet Printer	VW New Beetle Automobile	Boeing 777 Airplane
Vol. / year	100,000 units	4M units	100,000 units	50 units
Sales lifetime	40 yrs	2 yrs	6 yrs	30 yrs
Sales Price	\$6	\$130	\$20,000	\$200M
Part numbers	3	200	10,000	130,000
Dev. Time	1 yr	1.5 yr	3.5 yr.	4.5 yr.
Internal Team size (peak)	3 people	100 people	800 people	6,800 people
External Team size (peak)	3 people	75 people	800 people	10,000 people
Dev. cost	\$150,000	\$50M	\$400M	\$3B
Production Investment	\$150,000	\$25M	\$500M	\$3B

# Challenges of PD

- Trade-offs
- Dynamics
- Details
- Time pressure
- Economics
- Creation
- Satisfaction of societal & individual needs
- Team diversity
- Team spirit