PRODUCT PLANNING & DEVELOPMENT

Advanced Manufacturing Laboratory
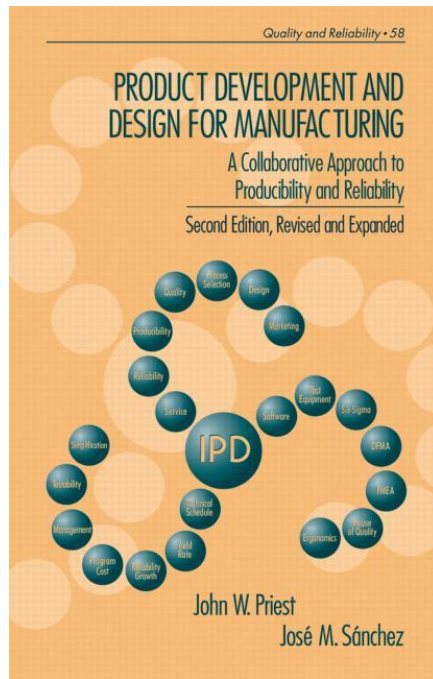
Department of Industrial Engineering
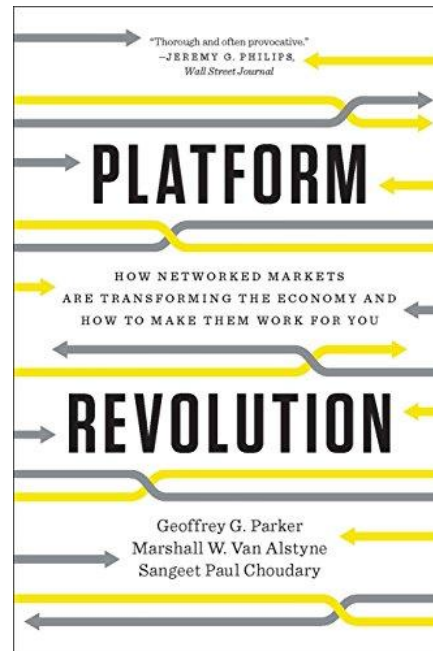Sharif University of Technology

Session # 2

Course Description (*Continued…*)

- **Product Development in the Changing Global World**

- **Developing Successful Products**

- **Stages of Product Development**

Session Resources

Chapter 1:
Product Development in the Changing Global World

Chapter 1:

Today

Innovation as a Last Resort
- Michael Treacy

FROM THE JULY–AUGUST 2004 ISSUE

Product Development in the Changing Global World

FIRM	YEAR	EMPLOYEES	MKT CAP
BMW	1916	116,000	$53B
UBER	2009	7,000	$60B
MARRIOT	1927	200,000	$17B
AIRBNB	2008	5,000	$21B
WALT DISNEY	1923	185,000	$165B
FACEBOOK	2004	12,691	$315B
KODAK	1888	145,000	$30B (heyday)
INSTAGRAM	2010	13	$1B (acquisition)

Something has changed

Product Development in the Changing Global World

2018

RANK	COMPANY		FOUNDED	USBn
1.	Apple *		1976	890
2.	Google *		1998	768
3.	Microsoft *		1975	680
4.	amazon *		1994	592
5.	f *		2004	545
6.	Tencent 腾讯 *		1998	526
7.	BERKSHIRE HATHAWAY		1955	496
8.	Alibaba.com* *		1999	488
9.	Johnson & Johnson		1886	380
10.	J.P.Morgan		1871	375

2008

RANK	COMPANY	FOUNDED	USBn
1.	PetroChina	1999	728
2.	EXXON	1870	492
3.	GE	1892	358
4.	中国移动 China Mobile	1997	344
5.	ICBC	1984	336
6.	GAZPROM	1989	332
7.	Microsoft	1975	313
8.	Shell	1907	266
9.	SINOPEC	2000	257
10.	AT&T	1885	238

* Companies based on the platform model

Sources: Bloomberg, Google

Largest global companies in 2018 vs 2008:

Seven out of ten are now based on platform business models

Product Development in the Changing Global World

"If things seem under control, you're not going fast enough."

Mario Andretti

Customers want customized products with more performance and options at a lower cost.

Knowledge, people, equipment, facilities, capital, and energy are scarce or more costly.
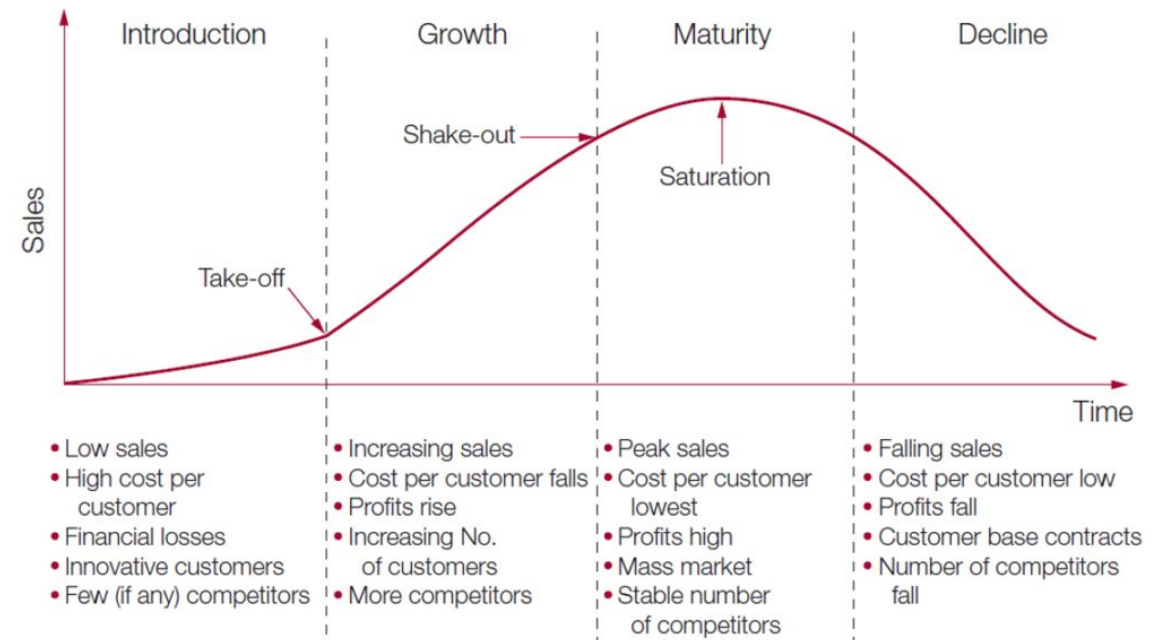
Product Development in the Changing Global World

- Cost, time and quality are the main variables that drive customer needs.

Product Development in the Changing Global World

- **Product development efforts must be focused on product's**
  - function,
  - project schedules and deadlines,
  - and cost,

- **As well as other life cycle issues such as:**
  - Customization,
  - Technical risk,
  - Simplicity,
  - Produce-ability ,
  - Quality,
  - Innovation,
  - and service

Product Development in the Changing Global World

Value can be measured by a series of critical marketing parameters such as:

Performance

Quality

Cost

Styling

Innovation

Service

Reliability

Availability

Value = Relative worth (or perceived importance) of a product to the customer.

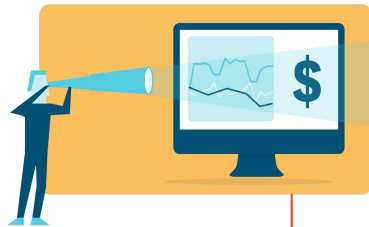# Product Development in the Changing Global World

- A company has to be willing to put itself at risk everyday through innovation.

- A key goal of product development:
  - Identify technical risks early in the development process
  - Implement methods to minimize risks' potential occurrence and effect.

Innovation as a Last Resort, Michael Treacy, Harvard Business Review

Technology risk: Will it work?

Product Innovation

breakthrough

fundamental

incremental

routine and minor

Business Model Innovation

Marketplace risk: Will they want it?

At one company, it can take as many as 250 raw ideas to yield one major marketable product." (Peters, 1997)

Product Development in the Changing Global World

Global business perspectives

Anticipate Future Market Demands

Manage Global Relationships

Reduce Time to Market

Excel in Customer Service

Product Development in the Changing Global World

Trends Affecting Product Development

- Rate of innovation
- Software tools, rapid prototyping, and virtual reality
- Mass customization and customized "on-demand" production
- Core competency, partnerships and outsourcing
- Internet and telecommunication
- Electronic commerce
- Flexibility and agility
- Global manufacturing
- Automation
- Environmental consciousness
- **Platform revolution**