

Session 2
Front and Back End
of Innovation



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Review

Innovation Is:

Invention

+

Commercialization

Review

Characteristics of an Innovator

The Innovator as an inventor is:

- Attentive to the needs of the customers.
- Eager to clearly explain the idea.

The Innovator as an entrepreneur is:

- Passionate about commercialization.
- Eager to make the business proposition.
- Prepared for set-backs.

Review

What can Innovators Expect?

You will fail

Fail early to succeed sooner!

Review

What can Innovators Expect?

Unknowns >> Knowns

Don't panic due to uncertainty.

Review

Consider the “big picture”

View innovation from multiple perspectives:

Does it fit corporate objectives?

What is it (physically)?

What does it do?

How well does it do the job?

How will it be managed and by who?

What information management is required?

Logistics

- Who are we?
- How will this class work?
 - Smartcycle Website
 - Syllabus
 - Dropbox
 - Google docs
 - Pinterest
- Class meetings
- Assignments
- Grades

Tell us about yourself

- Name
- What degree program are you in?
- Why are you taking this class?
- Have you done an online class like this before?
- What was your favorite toy when you were little?

Baylor U (Waco, Texas): Christina_Griffin, Jonathan_Bomar, William_Kretschmer and Amber_Bradley

St. Louis U: Hashim Alsadah, Jenna Ezzell, and Talal Alanqawi

www.smartcycledesigns.info

- Find it.
- Down load the syllabus
- Look for your assignment

Google docs

- Watch for an email from dkkleinke@gmail.com
- Accept the shared folder.
- Upload a test document.

Pinterest

- Create a pinterest ID using the email from the class
(or email me with whatever email you used)
- Look for Darrell Kleinke (search “pinner’s”)
- “Follow” me
- I will invite you to pin, accept the invitation

Logistics

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Front and Back Ends of Innovation

Affects on:

Product Planning and Development

Jonathan Weaver & Darrell Kleinke

UDM MPD Program

References

Karl T. Ulrich & Steven D. Eppinger: Product Design and Development. Third Edition. McGraw-Hill, 2004.

Ullman, David G.: The Mechanical Design Process. Second Edition. McGraw-Hill, 1997.

Pugh, Stuart: Creating Innovative Products Using Total Design. Addison-Wesley Publishing Co., 1996.

Bishop and Magleby: A Review of Technology Push Product Development Models and Processes, Proceedings of DETC'04, DETC2004-57496.

Innovation greatly impacts the development process.

- It has been estimated that 85% of the problems with new products not working as they should, taking too long to bring to the market, or costing too much are the result of a **poor process**.
- Approximately 75% of the manufacturing cost of a typical product is committed **once a concept for the product has been selected**.

Innovation “book-ends” the product development process

Product Development:

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

Characteristics of Successful Product Development

Does it satisfy customer needs?

Product quality is ultimately reflected in market share and the price that customers are willing to pay.

Product cost determines how much profit accrues to the firm for a particular sales volume and a particular sale price.

Duration and Cost of Product Development*

- Very few products can be developed in less than one year, many require 3 to 5 years or more.
- The cost of product development is roughly proportional to the number of people on the project team and duration of the project.
- A firm will almost always have to make some investment in the tooling and equipment required for production. This expense is often as large as the rest of the product development budget.

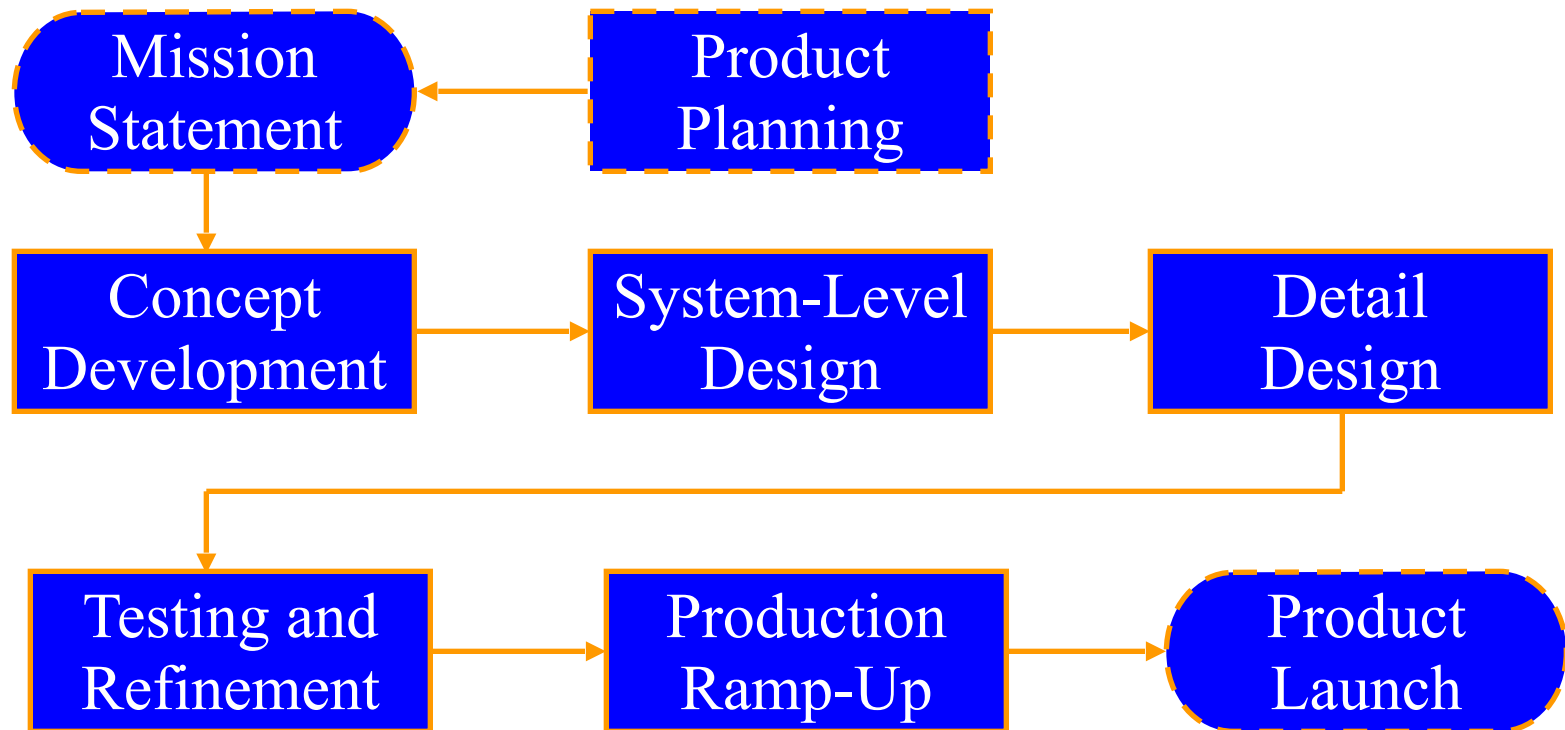
The economics have to make sense

To earn a reasonable return on investment, the resulting product must be appealing to customers and relatively inexpensive to produce.

Should we use the same PDP for all the products?

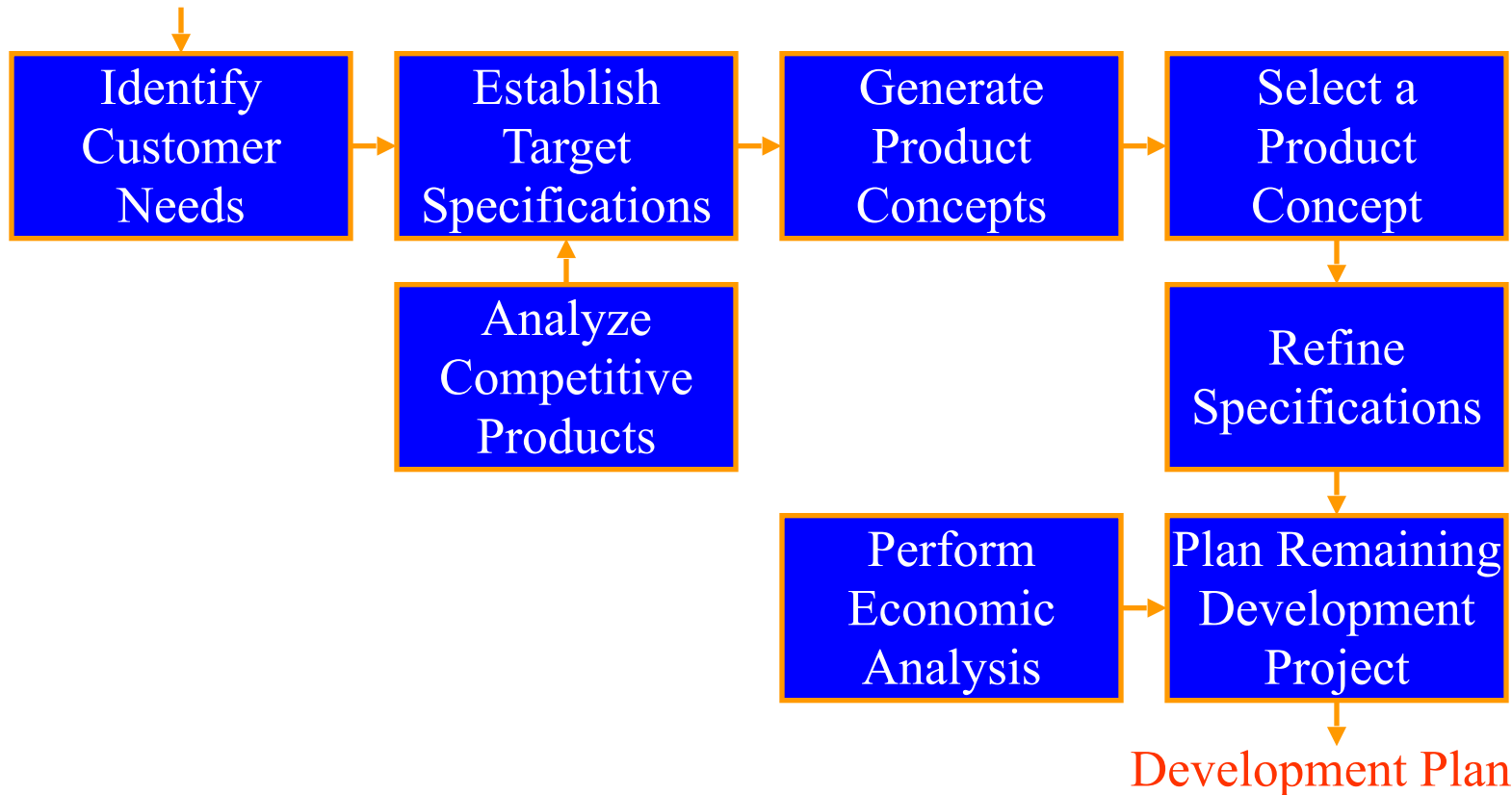


A Generic Product Development Process



Concept Development*

Mission Statement



Project progress depends on forward vision

The team, often with the support of a financial analyst, builds an economic model for the new product.

The model is used to justify continuation of the development program and to resolve specific trade-offs among, for example, wanted features and manufacturing costs.

Final Remarks*

- It is extremely important to follow a structured process to develop a new product.
- We have presented a generic process which needs to be “customized” for products that are different from those of products that have been developed in the past.
- If you are interested in learning more about the product development process, you will see that all of the steps in the generic process are, in fact, occurring in your company's process.

The Front and Back Ends of Innovation will greatly influence the Product Development Process!