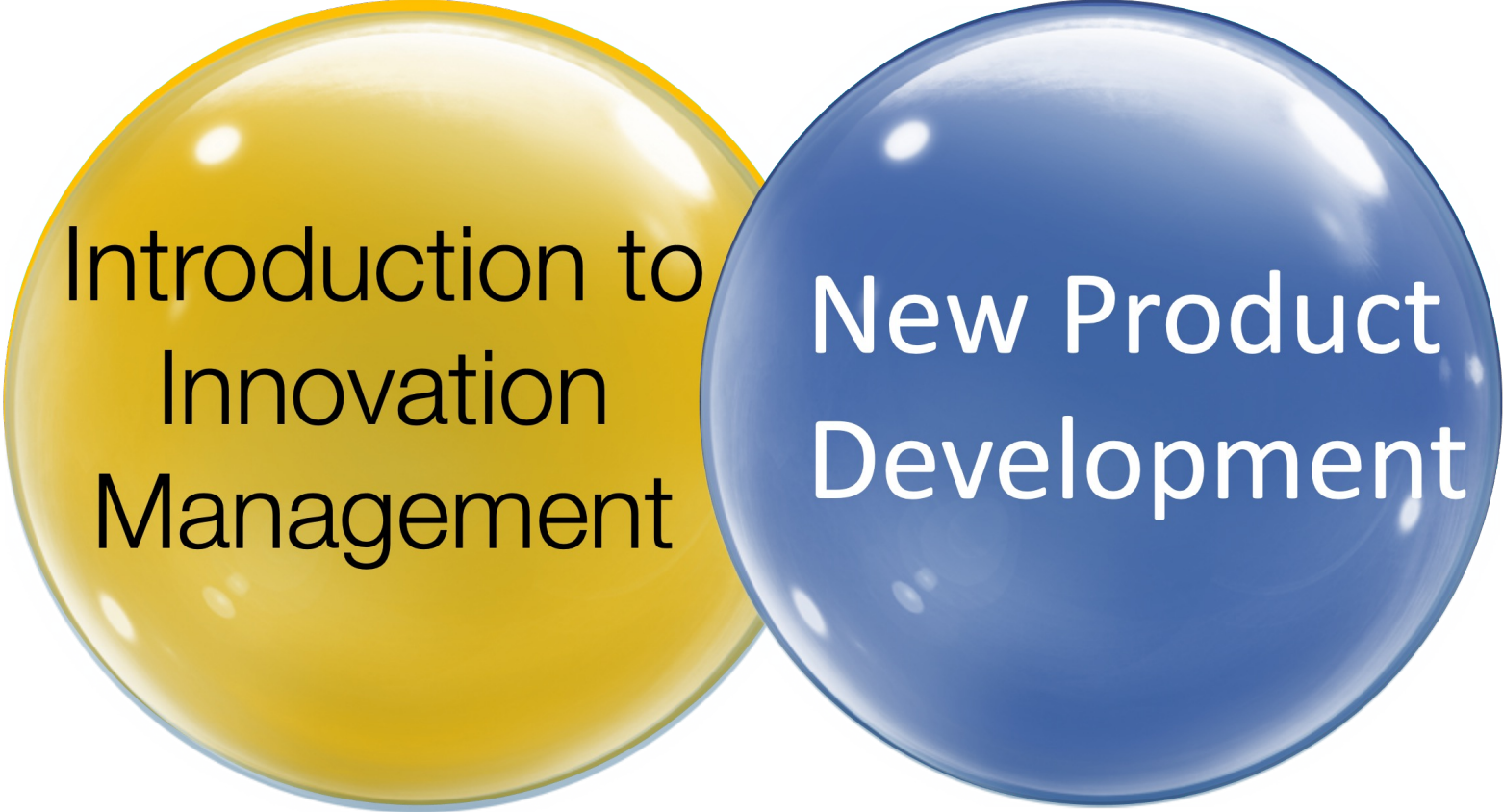




Introduction to
Innovation
Management

New Product
Development



June 2023
Session V
Alan Mumby

consider this,

when a company reduces its commitment to innovation, is there likely to be a reduction in the development and launch of new products?

Unfortunately this nearly always coincides with a decline in their market share.



Goerz Anschütz



Minimum Palmos

large format plate cameras

Innovation
& NPD



Leica (1925)



Exacta (1936)

Pioneers

single-lens
reflex camera

New Product
Development



Contax (1932)

Precision engineered products,
complex design architecture

Innovation
& NPD



Canon (1936)



Nikon SLR (1959)

Imitator
Later Entrant



Nikon (1946)

New Product
Development



The pioneers were the technology and market leaders for a period of time.



The Japanese copied German technology, made it better and lowered the price.

The pioneers?



in 1959 £258



In 1959 the new mini cost £538

The average worker earns £13 2s 11d (about £13.15)



Nikon SLR (1959)
camera £186
lense £72
Total £258
today £5,067



Nikon D6 Digital SLR (Camera Body)
camera £6,255
55mm lense £455
Total. £6,710

So how much for a mini



In 1959 the new mini cost £538
£10,500 approx. 'today's money'



the new electric mini - £28,500

In context

innovation can lead to a lot of company success.

Are new products the output of an organisation being innovative?

or looked at another way – is NPD part of innovation process ...or philosophy

innovation management is the methodology we can adopt to ensure good ideas are transformed into something of value.

the actual development of new products is the process of transforming business opportunities into tangible products (or services).

For me...?

managing innovation concern the conditions that have to be in place to ensure that the organisation as a whole is given the opportunity to develop new products?

NPD management can also concern the management of the disciplines and professional inputs that are involved in the development of new products.

Marketing & Manufacturing

Each of these professional disciplines have developed their own perspectives on the subject of NPD. These are based largely on their experiences of their involvement in the process.

manufacturing perspective

Traditionally, manufacturing management tends to consider and examine the development of new products from a manufacturing perspective,

that is, how can we most effectively manufacture the product in question?

marketing perspective

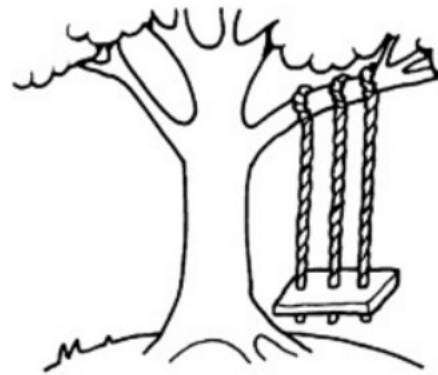
Marketing, on the other hand, would traditionally take a slightly different perspective and would be concerned with trying to understand the needs of the customer and how the business could best meet these needs.

But producing what the customer wants - may or may not be either possible or profitable.

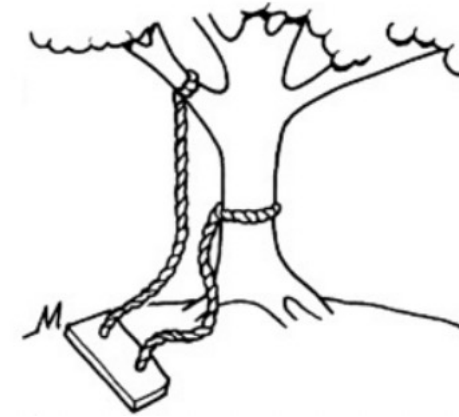
The lack of a common approach to the development of new products is due to this multiple perspective.

the salutary tale of
‘How not to design a swing’....
or the perils of poor product development
coordination and communication

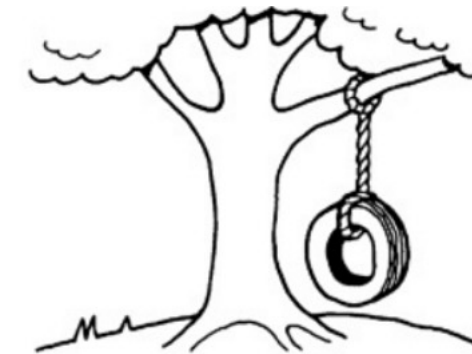
1. Salesman meets the client



3. The Designers; from what they're told, design the product



4. Production Planning: Saw it as....



the client thought he'd described....

2. Sales: describes the job to the design team



5. Production Manager's product team manufactures....

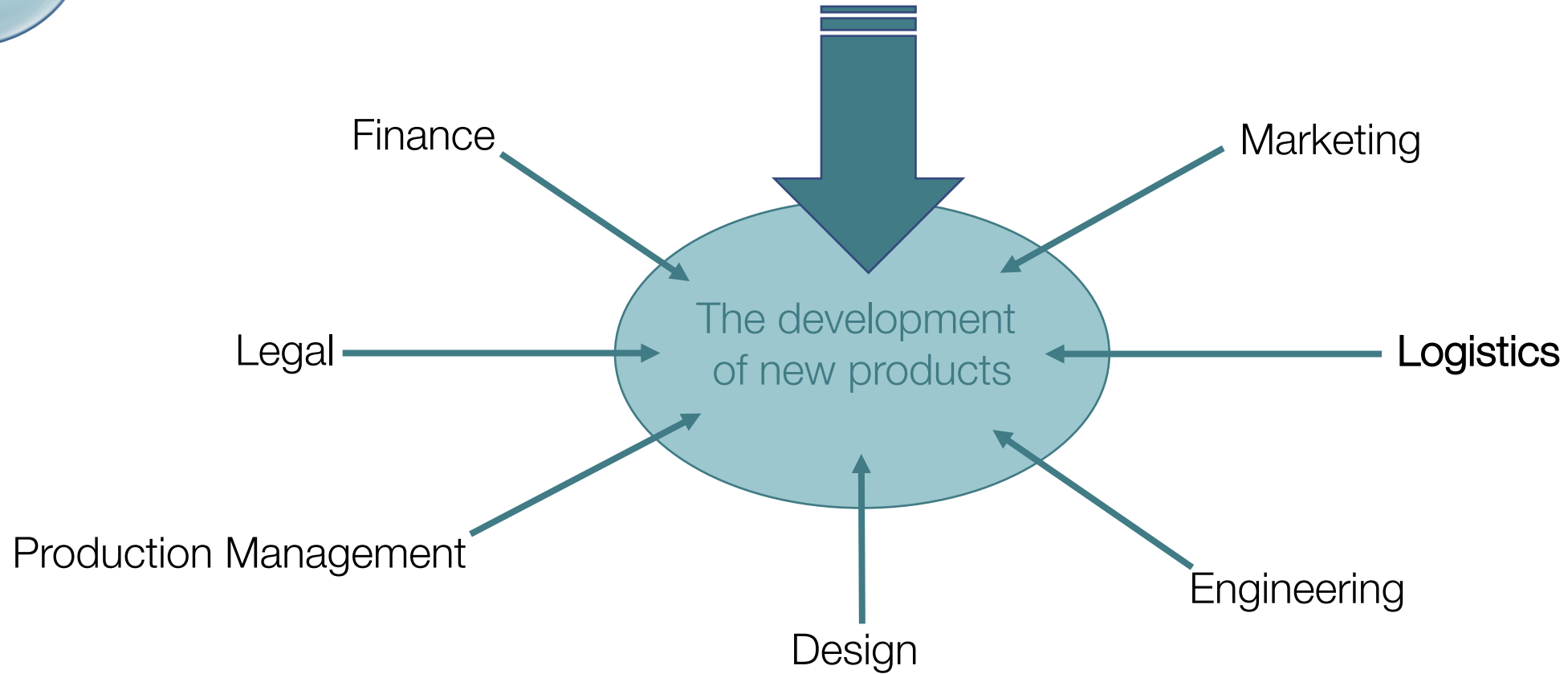


6. Service Engineers: installed...

Innovation
& NPD

New Product
Development

NPD Manager



The variety of views presented on the subject is not a weakness. Indeed, it should be viewed as a strength, for these different perspectives all bring something to the table.

Product Development Decisions: A Review of the Literature - Krishnan & Ulrich (2001)

In their paper they consider the decisions made within the context of a single project in actually developing the product.

considering the decisions a company makes in establishing two aspects

- an organisational context
- and in planning development projects.

Krishnan & Ulrich (2001)

For organisational convenience, they further divide decisions within a project into four categories:

- 1 concept development,
- 2 supply-chain design,
- 3 product design,
- 4 production ramp-up and launch.

1. Concept Development

Concept development decisions define not only the product specifications and the product's basic physical configuration, but also the extended product offerings such as life-cycle services and after-sale supplies.

1. Concept Development

There are five basic decisions to be made.

1. What are the target values of the product attributes?
2. What will the product concept be?
3. What variants of the product will be offered?
4. What is the product architecture?
5. What will be the overall physical form and industrial design of the product?

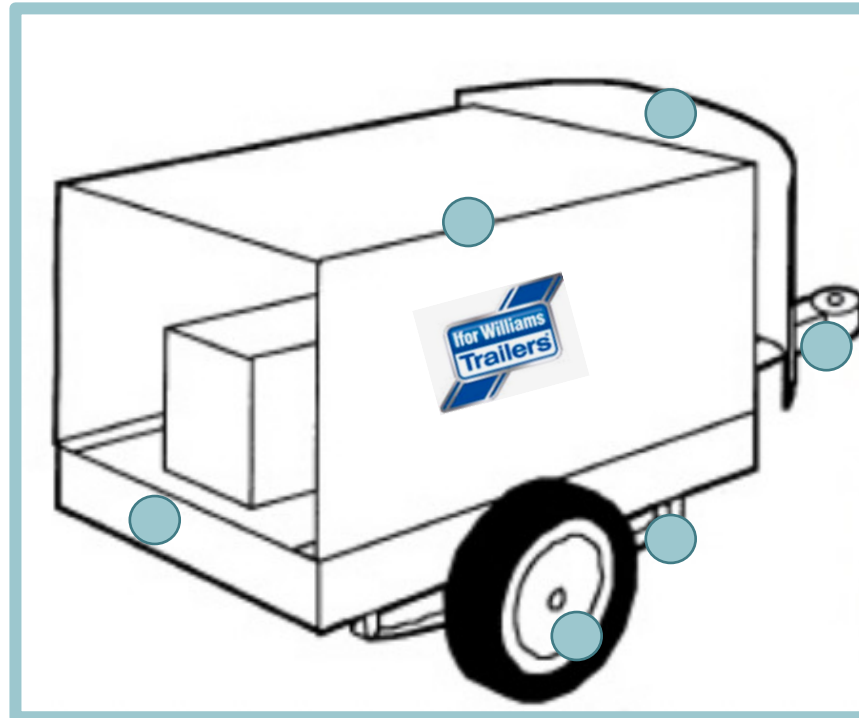
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Product Architecture ?

In design, product architecture is related to the functional elements and physical components of products and is used to define “the basic physical building blocks of the product in terms of what they do and what their interfaces are to the rest of the device”

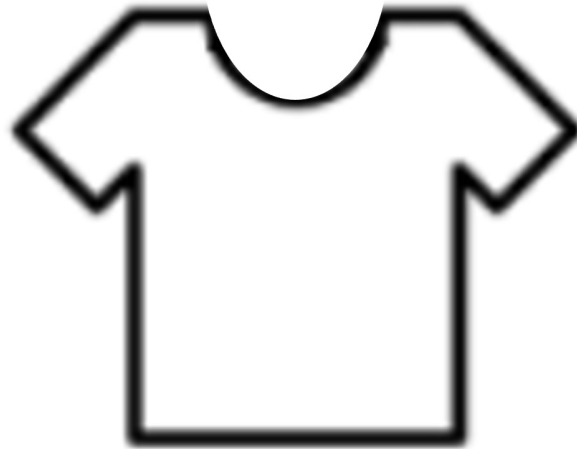


bed	supports the load
box	protects the load
fairing	minimises the drag
springs	suspends trailer structure
hitch	connect to the vehicle
wheels	transfers load to the road

1. Concept Development

There are five basic decisions to be made.

1. What are the target values of the product attributes?



1. What are the target values of the product attributes?

product attributes?

Product attributes are additional characteristics of a product.

Simple example:



Standard
Product

2. Supply-Chain Design

The term supply chain is used to encompass both the inbound and outbound flow of materials,

but can also include the supply of;

- design, creativity,
- technology input,
- intellectual property and services to the company.

2. Supply-Chain Design

Supply-chain design decisions therefore include supplier selection as well as production and distribution - and address the following questions.

- Which components will be designed specifically for the product?
- Who will design and produce the product?
- What is the configuration of the physical supply chain?
- What type of process will be used to assemble the product?
- and
- Who will develop and supply the process equipment?

For organisational convenience, the four project into four categories:

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Krishnan & Ulrich's 'Product Development Decisions: A Review of the Literature'

Brown and Eisenhardt 'Product Development: Past Research, Present Findings – and Future Directions'

Product Development Decisions: A Review of the Literature

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This paper is a review of research in product development, which we define as the transformation of a market opportunity into a product suitable for sale. Our review is informed by accompanying work in the adjacent fields of marketing, operations management, and engineering design. The scope of this breadth is covering the range of the entire research landscape. We focus on product development projects within a single firm. We also devote our attention to the development of physical goods, although much of the work we describe applies to products of all kinds. We look inside the "black box" of product development at the fundamental activities that are made by managers or analysts. In doing so, we adopt the perspective of product development as a deliberate business process involving hundreds of decisions, many of which can be rationally supported by knowledge and tools. We contrast this approach to prior notions of the literature, which tend to examine the importance of environmental and contextual variables, such as market growth rate, the competitive environment, or the level of technological readiness.

1. Introduction and Scope
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PRODUCT DEVELOPMENT: PAST RESEARCH, PRESENT FINDINGS, AND FUTURE DIRECTIONS

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KATHLEEN M. EISENHARDT
Stanford University

The literature on product development (PDM) is growing. This research is varied and vibrant, yet largely unorganized. In this article, we first organize the literature on product development into three streams of research: product development as a rational process, product development as a social process, and product development as a strategic process. We then discuss research findings in each of these streams, highlighting the commonalities and differences in the properties of firms that are successful in each stream. We conclude with a discussion of future research directions, including new methods, new products, new markets, new customers, and new competitors. We conclude with a discussion of future research directions, including new methods, new products, new markets, new customers, and new competitors.

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The writing of this article was generally supported by funding from the Alfred P. Sloan Foundation to the Stanford University Corporate Industry Program. Kathleen M. Eisenhardt also was generally supported by the Foundation Faculty Salary. The authors thank Deborah Goodenough, D. Charles Galletta, Barbara Henderson, Bill Koss, Laura Kopp, and other members of the Stanford University Faculty for their helpful comments. In addition, they thank Susan E. Jackson and the anonymous reviewers at AMR for their thoughtful suggestions.

A blue sphere with a white highlight at the top left, containing the text "Innovation & NPD".

Innovation
& NPD

A blue sphere with a white highlight at the top left, containing the text "New Product Development".

New Product
Development

Next week

Collaborative product development

Team Hafren
Bernie Lessimore
Adam Fairbank
Iwan Mason
Jayne Hughes

Team Dwfor
Krista Reid
Ryan Thomas
Rob Isaac
David Holman

Team Conwy
Joanne James
Haydn Griffiths
Victoria Hadley

16:15hrs this afternoon

Team Teme
Paul Wiffen
Lisa Pugh
Adam Farmer

Team Cleddau
Craig Ayres
Max Wright
Mark Gibbons
Hannah Verrall

Team Ceiriog
Adam Morgan
Jamie Butcher
Tim Hunt

15:00hrs this afternoon