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Innovate or Perish: Why Product Development is a Must

Probo Y. Nugrahedhi
Department of Food Technology
Soegijapranata Catholic University

AIMS

- To understand driving forces & principles of food product development as well as methods for developing new products
- Be able to analyze factors affecting product development and solving embedded problems
- Be able to both conceptually and practically develop a new food product

- Introduction to NPD
- Principles & Practice of consumer oriented NPD
- Consumer in PD
- Product Mapping
- Food Product Development Process
- Technical Development
- Evaluation in Early stage of NPD

Mini Projects:

- Product concept
- Consumer Wishes meet Product Concept
- Prototype & Sensory evaluation

Silabus

Make a new product inspired by this bicycle!



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Other corn shellers



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Make a new corn-based products!



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Categories of new food products

- Me-too products
- Line extensions
- Repositioned existing products
- New forms of existing products
- Reformulated new products
- New packaging of existing products
- Innovative products
- Creative, true new products



- Q: Is creativity the only requirement needed by a product developer?

The creative ideas must ...

- Satisfy needs and desires of consumers and at the same time attract customers
- must be within the skill level, technical capabilities and managerial and financial resources of the producing company
- must be able to be implemented

*Steps in
product
development
(in general)*

Business strategy

Customer needs

Product development

Product testing

Market testing

Product launch preparation

Product Launch

Post-launch evaluation

Generating
(creative)
idea(s) is one
part of product
development
process



So, creativity is important but it is not the only factor!

- Many factors involved in the success of new product to the market
- But, the first question should be raised is ...
- Why new product development?

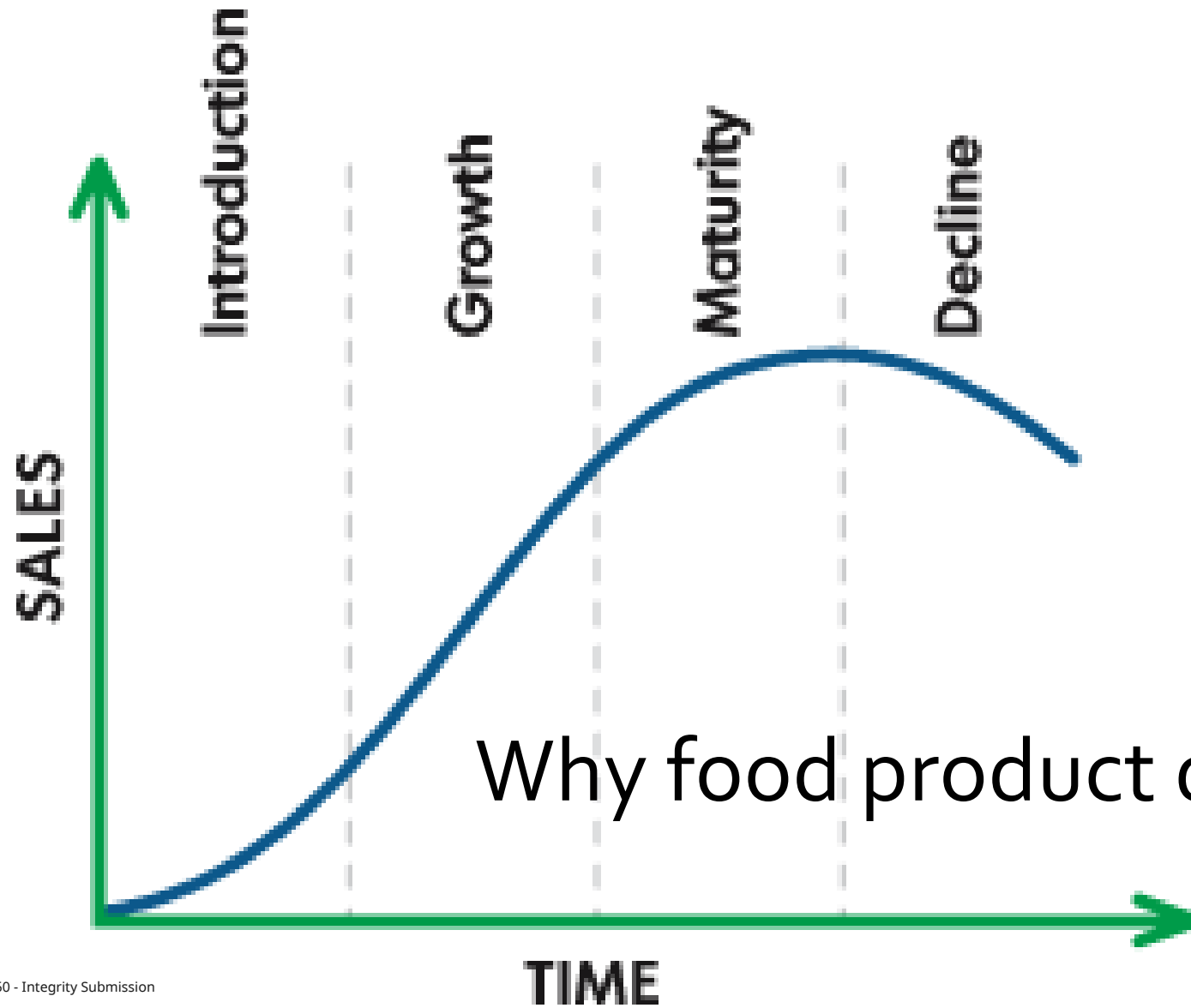


Why food product development ?

- Changes of consumer needs
- Competitive tool
- Providing sufficient food of desired quality
- To contribute to sustainable food production

| Food product development is a continuous process |

Product Life Cycle Curve



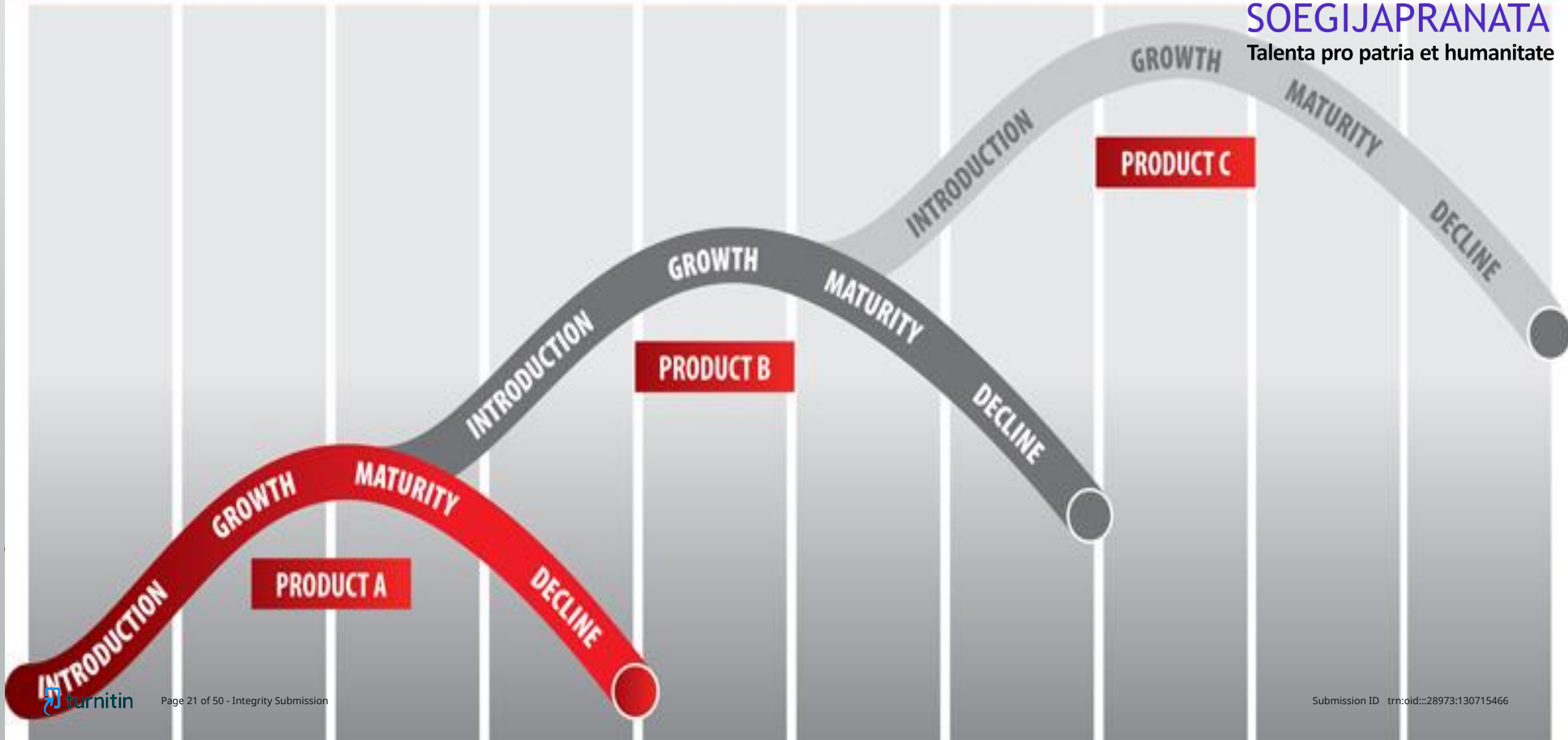
Why food product development ?



PRODUCT LIFECYCLE MANAGEMENT

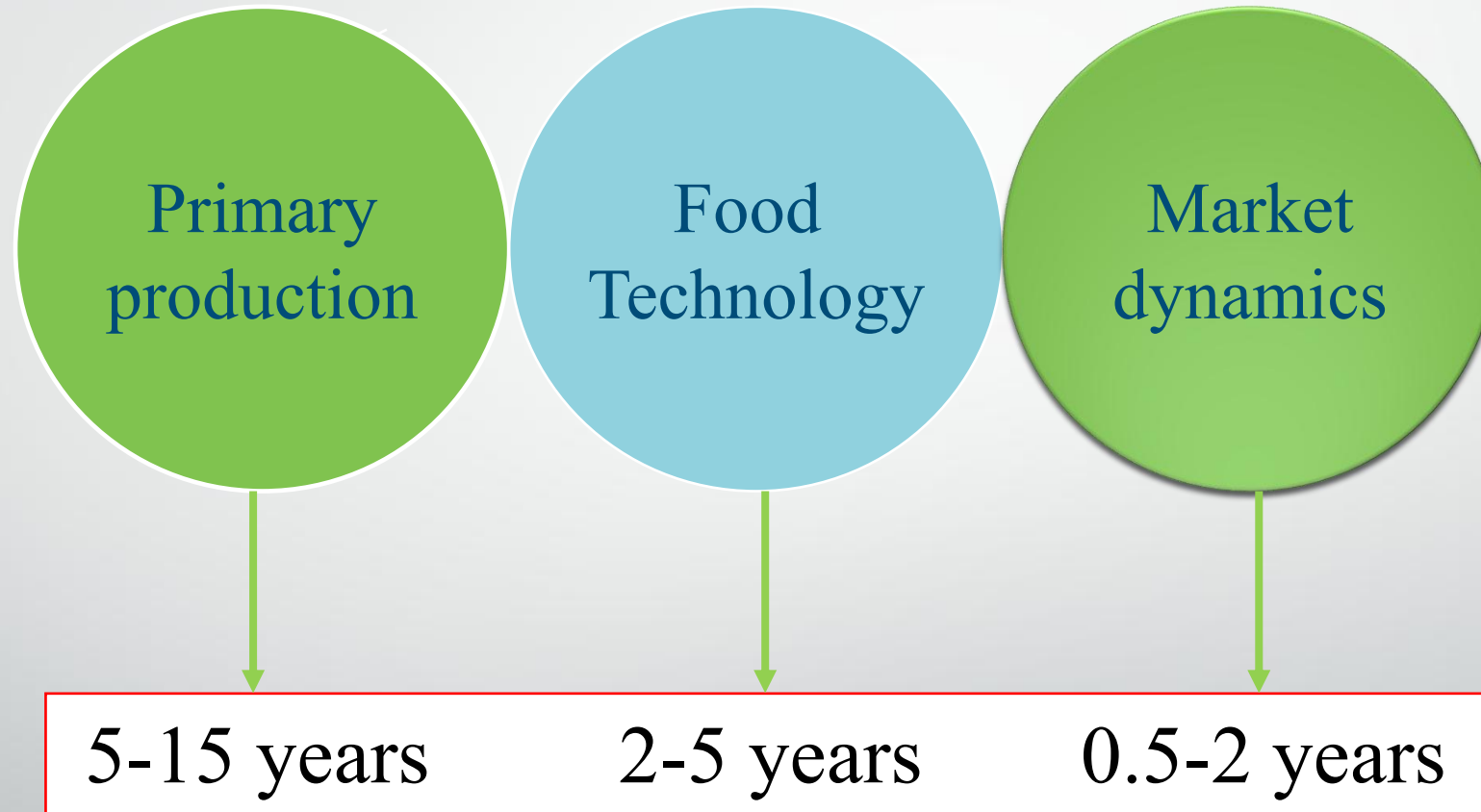


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Time scales in chain elements





Consequences of different time scales

- Much faster developments possible in the market
- Line extensions, me-too products
- Real innovations will cost considerable time in the food industry



High failure rates in food PD

- Two out of three new product introductions disappear from the shelves within a year
- The number of products that do not make it through the first stages of product development is even higher
- 72% of true new products and 55% of line extensions fail



Important factors for successful products in the successive stages of the PD Process

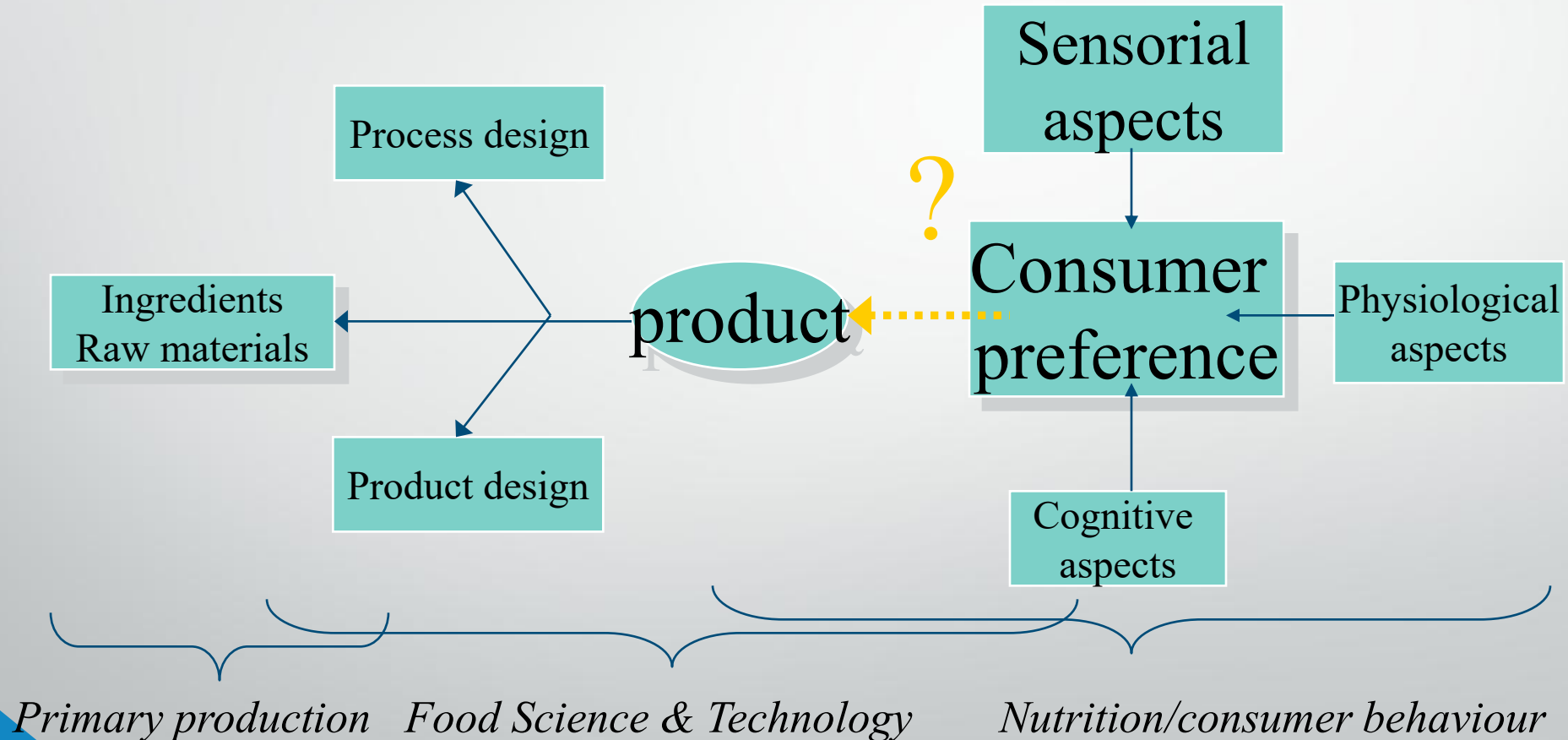
- Stage 1: *Product strategy development* – integration of the product development program with the business strategy, clear description of the market and consumers, identification of market and consumer needs.
- Stage 2: *Product design and process development* – quantitative design specifications, multidiscipline integration, use of new techniques, feasibility analysis.



- Stage 3: *Product commercialisation* – multifunctional integration, planning and scheduling, market testing, business analysis.
- Stage 4: *Product launch and evaluation* – organisation and control, fast problem solving, evaluation of launch, production, distribution and marketing, evaluation of outcomes.

Challenges in food PD

1 Reversal of the production chain





Other challenges

2Mass-individualization

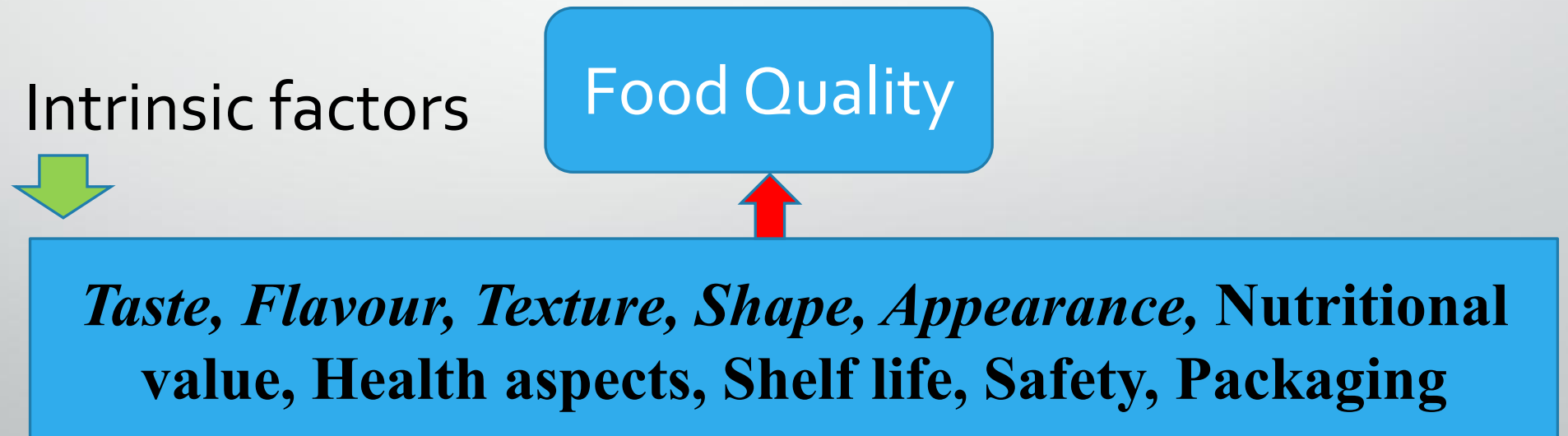
3Globalization

4Chain approach

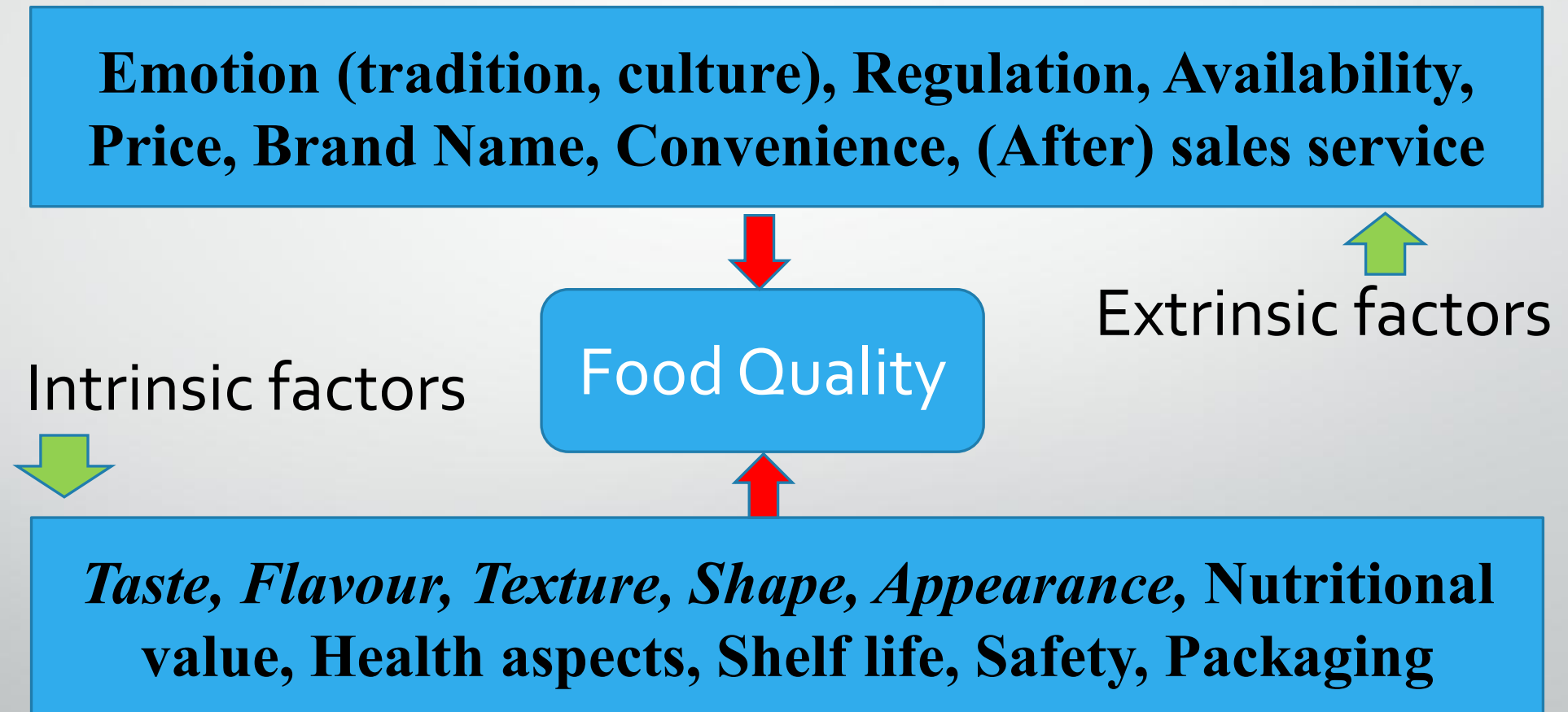
5New technologies

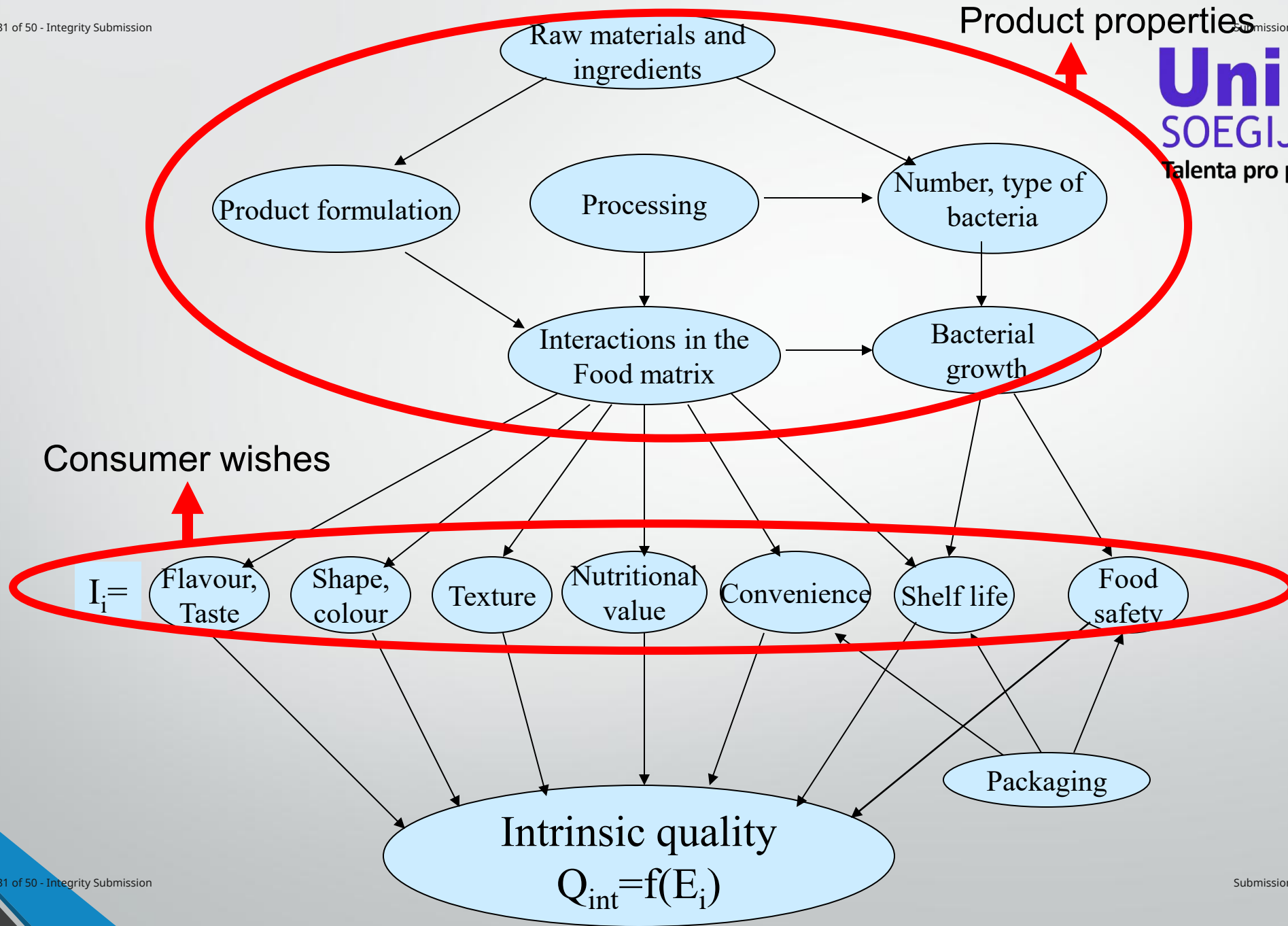
6...

6 Broadening of the quality concept



6 Broadening of the quality concept







- Intrinsic food quality attributes are controllable by the food technologist
- How we can link this to consumer wishes, i.e., how to design a food?



Food Product ?

Company vs. Consumer

- The company
- a basic functional product to which it has added packaging, aesthetics, brand, price and advertising, to give a total company product.

- The consumer
- a bundle of benefits, relating its tangible and intangible attributes to their needs, wants and behaviour.

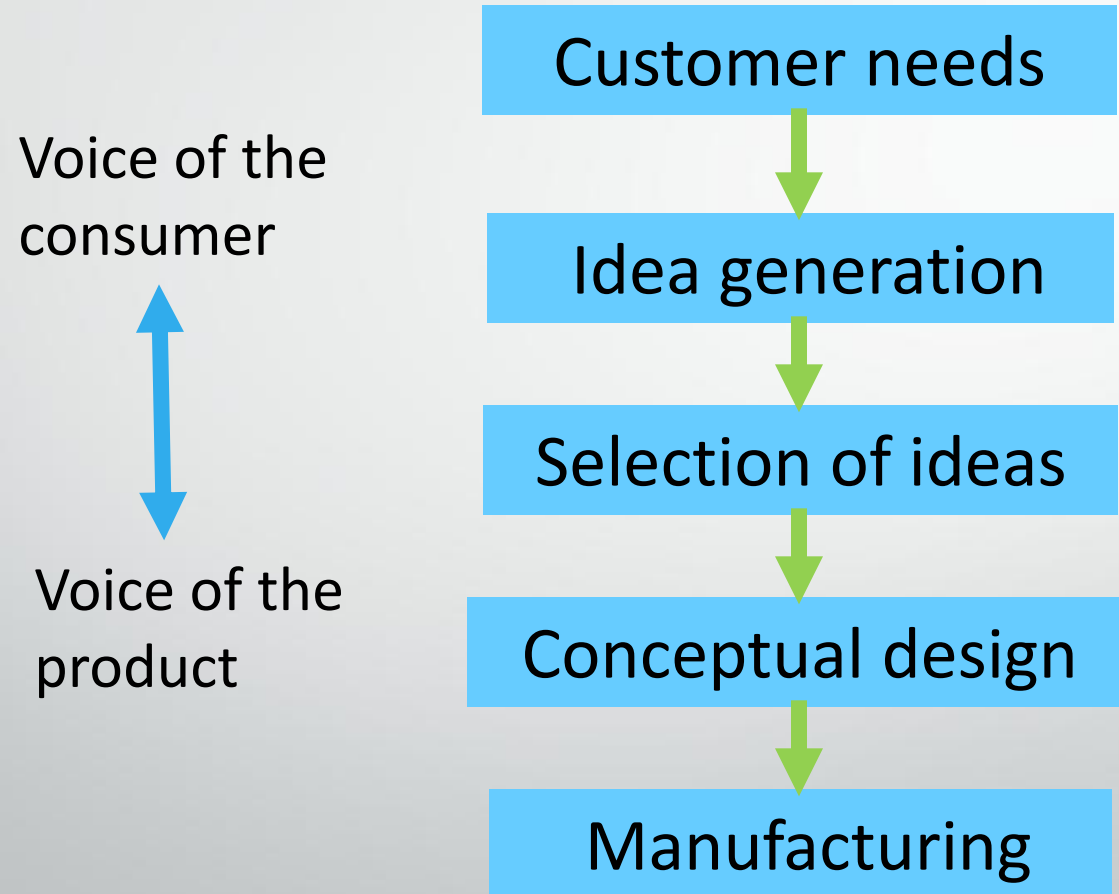
Product Development



- Consider the goal of new food product development
the *consumer*
- Who is the one who is going to buy our new products?
the *consumer*



Product Development





Framework for an integral model of product innovation in food production systems

1. A thorough *analysis* of the socio-economic developments in specified markets
2. *Translation* of consumer preferences & perceptions into consumer categories
3. Translation of consumer categories into product assortments



4. Grouping of product assortments in product groups in different stages of the food supply chain
5. Identification of processing technologies relevant for specified product groups
6. Analysis of state of the art in relevant processing technologies
7. Matching state of the art of specified processing technologies with future needs

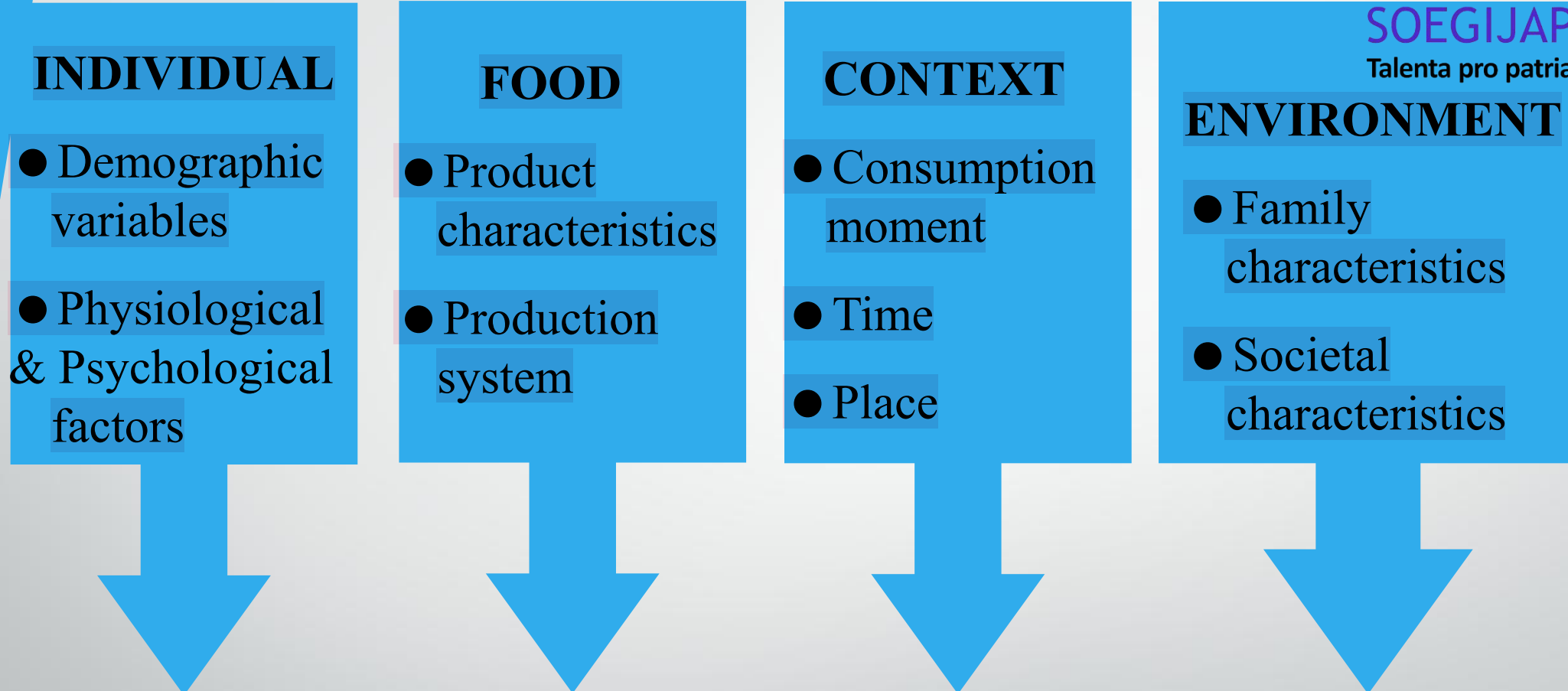
- Position of the consumer is starting point
- Food technologists must be able to produce food with the desired quality
- Delivering quality is to satisfy the expectation of the consumer

Then:

- Who is the consumer ?
- What does the consumer expect ?
- How can we meet the expectation ?



1



FOOD PERCEPTION BY CONSUMERS



Market has been changing

The consumer is now:

- Better educated
- More demanding
- Less predictable in their purchase behaviour
- Eat more outside homes
- More conscious about health related aspects
- ...



consumer prototyping

- the *environment-conscious* consumer
- the *nature and animal-loving* consumer
- the *health-conscious* consumer
- the *convenience* consumer
- the *hedonic* consumer
- the *price-conscious* consumer
- the *variety seeking* consumer

Consumer decision process

1. Problem recognition



2. Search behavior



3. Evaluation of alternatives



4. Purchase

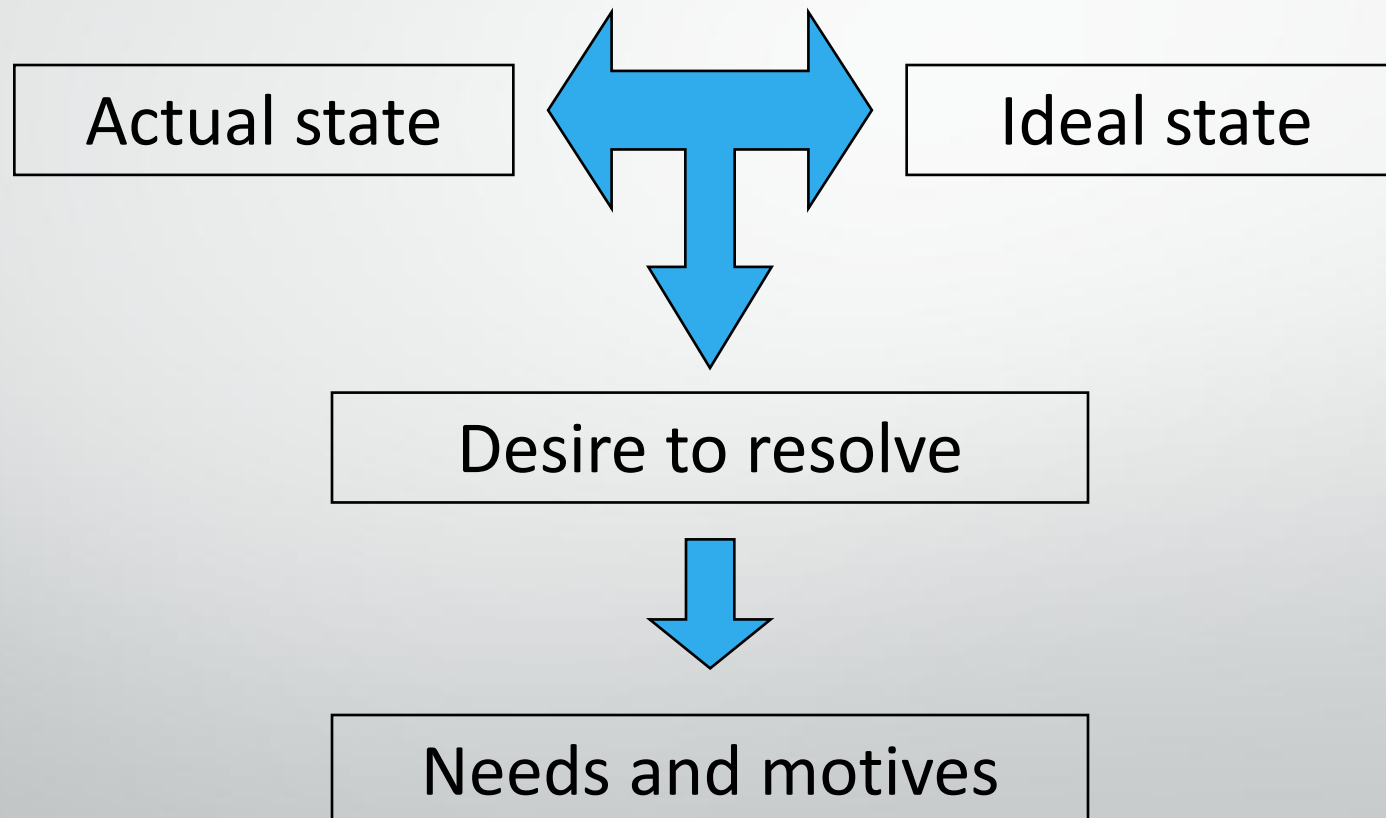


5. Evaluation of purchase



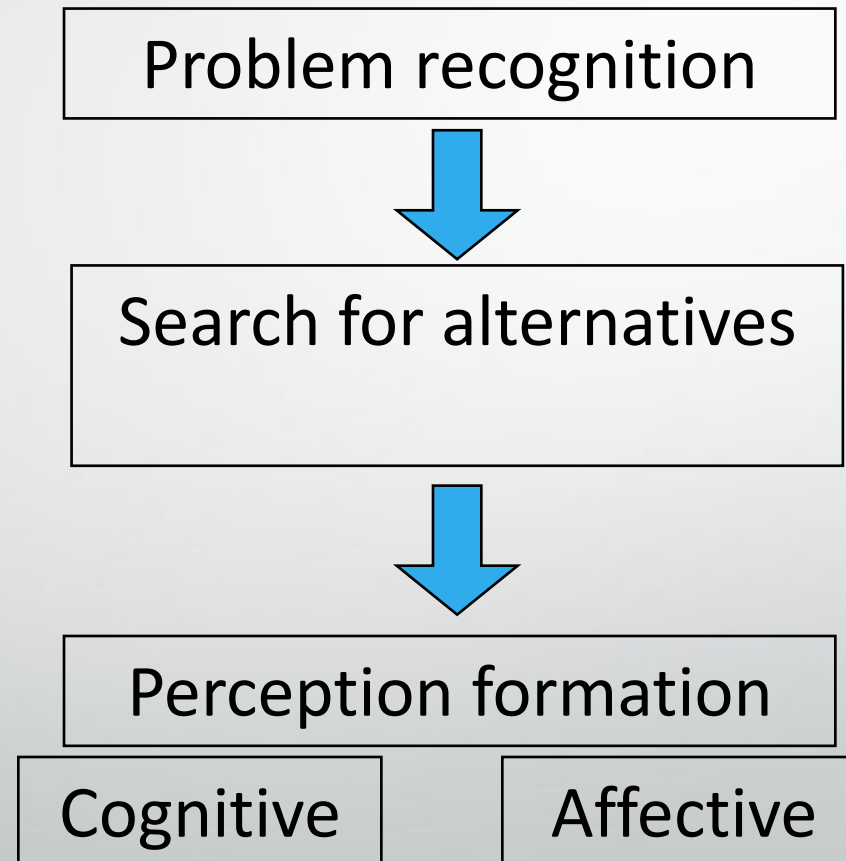


1 Problem recognition



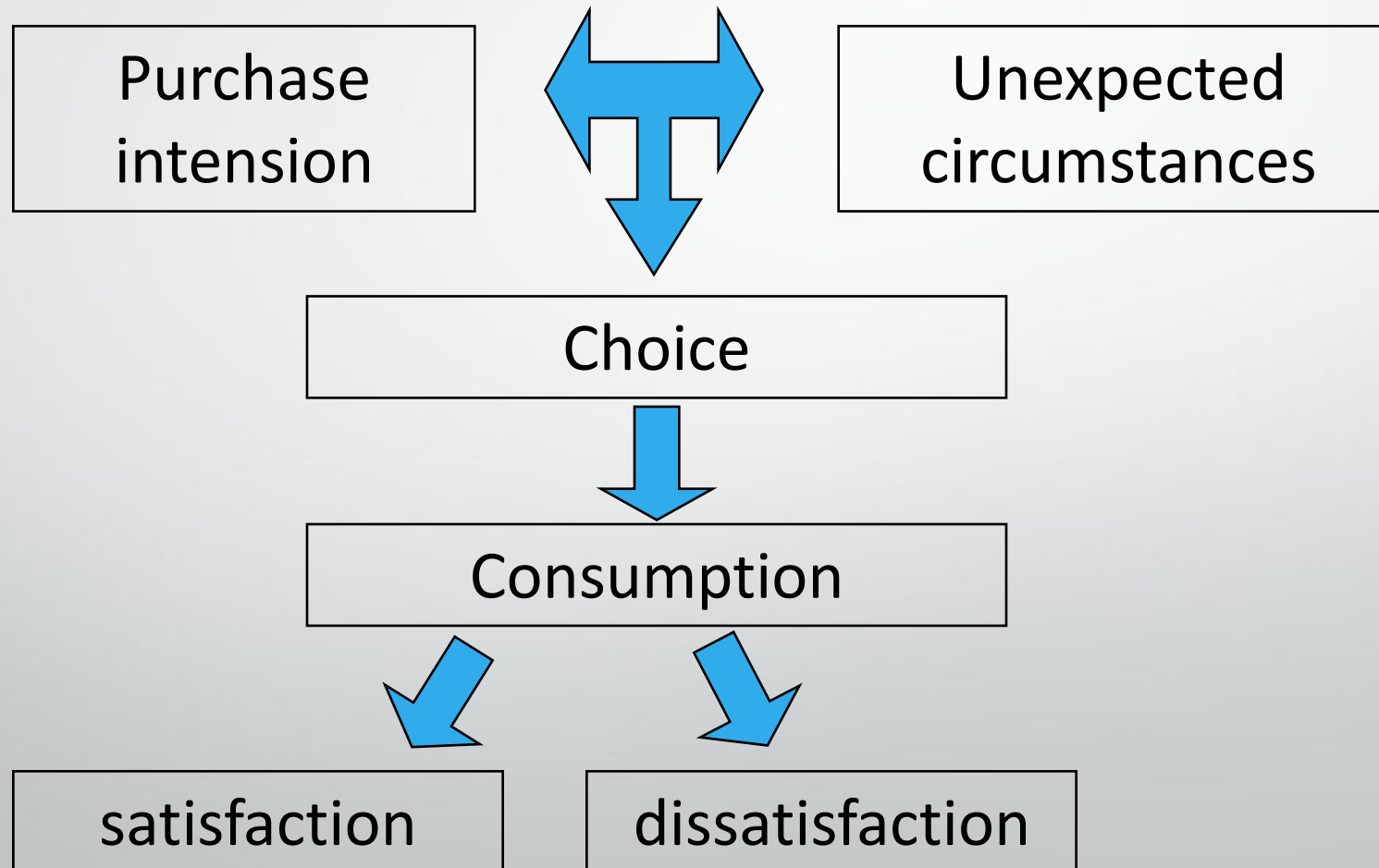


2 Search behaviour + 3 Evaluation of alternatives





4 Purchase & 5 Evaluation





New Product = Product Differentiation ?

What the product does to the customer

Rather than

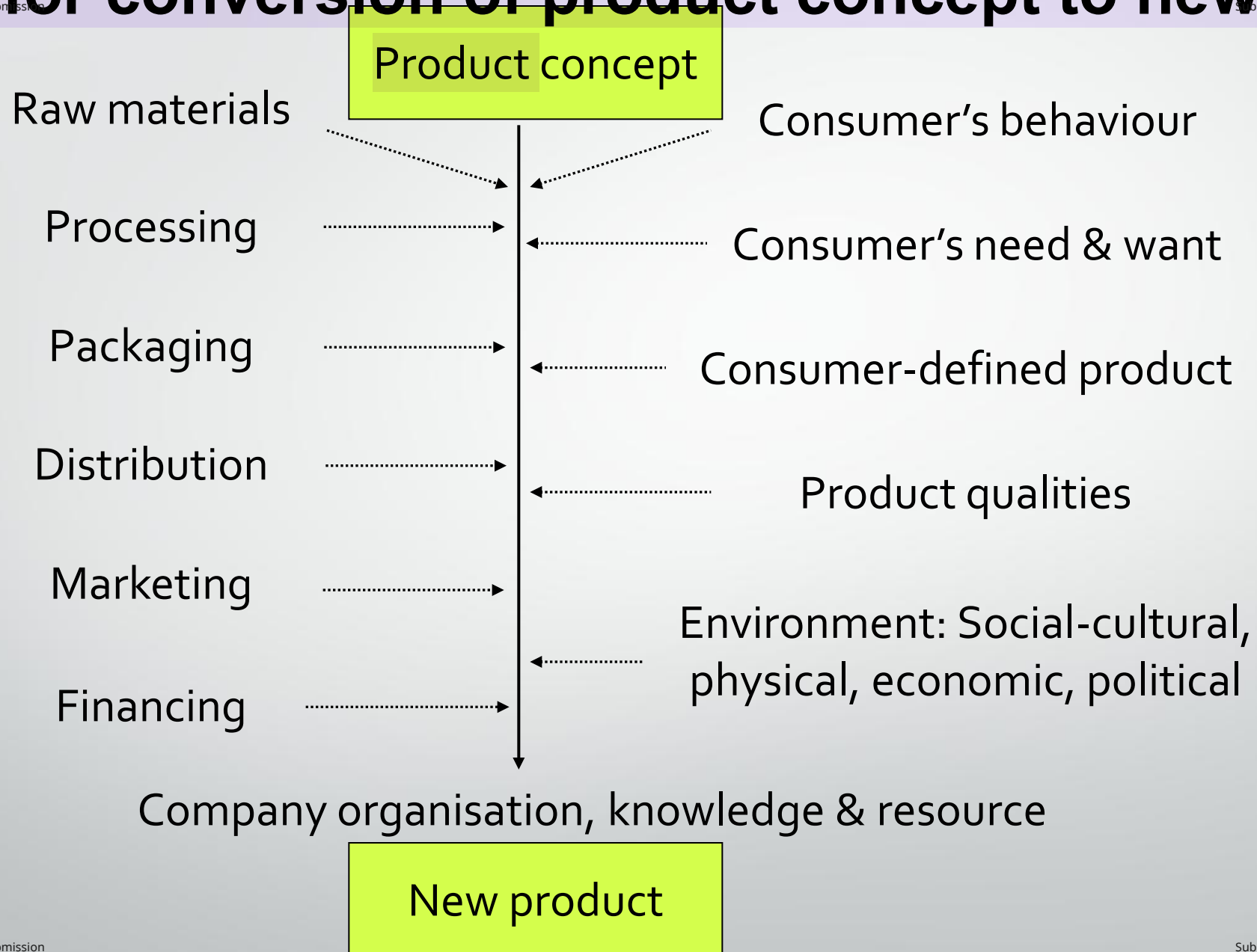
What the product is



Effort and Outcome of Product Development

- Short development time → Quick to market, but easily duplicated
- Intermediate Term (1 year) → Difficult to duplicate
- Long Term / Applied Research (2-5 yrs.)
 - Develop new technology
 - Patent or strong trade secret

Knowledge for conversion of product concept to new product





Conclusion

- Product development brings one company to grow (and win the competition)
- Creativity leads to highly innovated product yet other factors should be considered, especially ...
- Consumers' voice is the starting point
- In addition, sensory properties must be optimised during the process of product development

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And many others...