PRODUCT DEVELOPMENT AND CONSUMERS' ATTITUDES

PrimeFish

Horizon 2020 Programme

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Agenda

- **Product development**
- **New Product Development (NPD) strategies**
  - **Classical top-down approach**
  - **Bottom up-approach (consumer-led, consumer driven)**
- **Sensory and consumer science as part of successful product management**
  - **Descriptive methods**
  - **Rapid Sensory profiling methods**
  - **Sensory affective testing**

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Top-down approach

5 Steps of product development
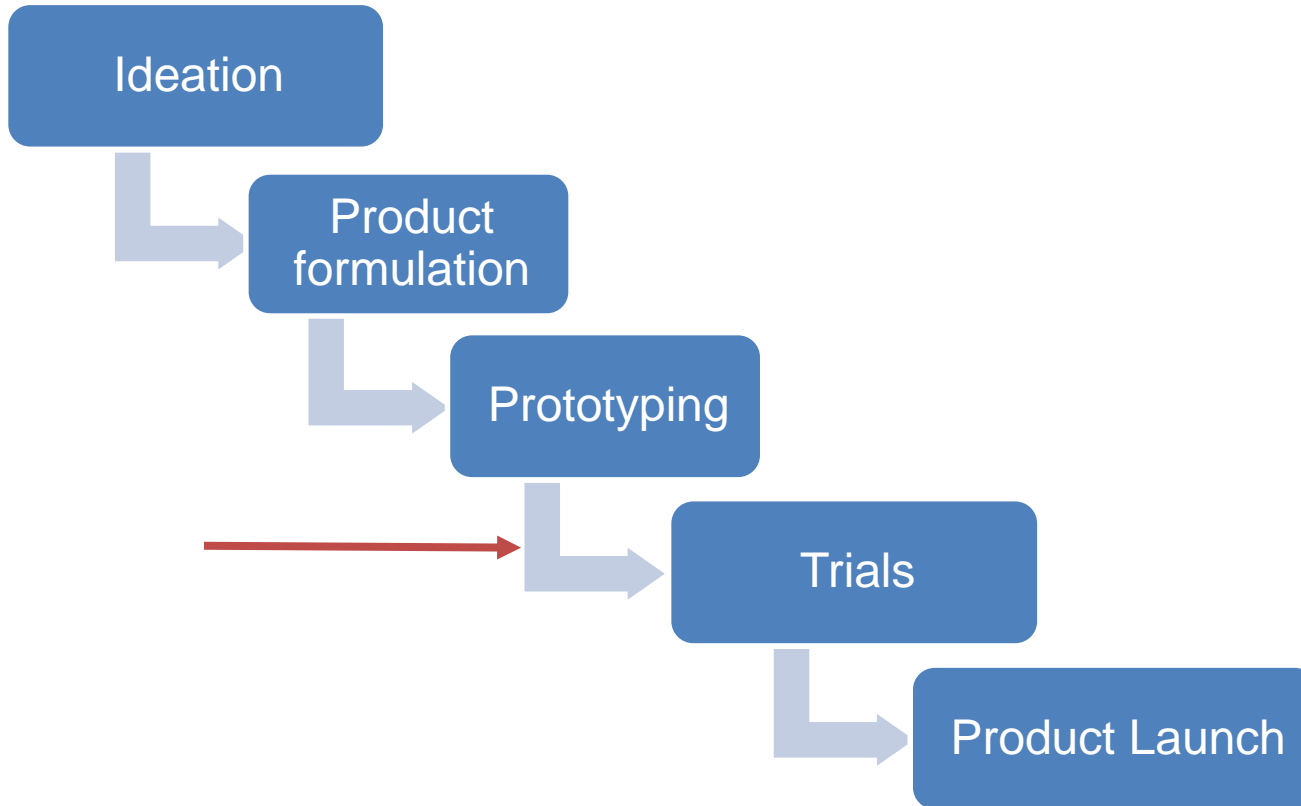
Driver of product development / Ideation
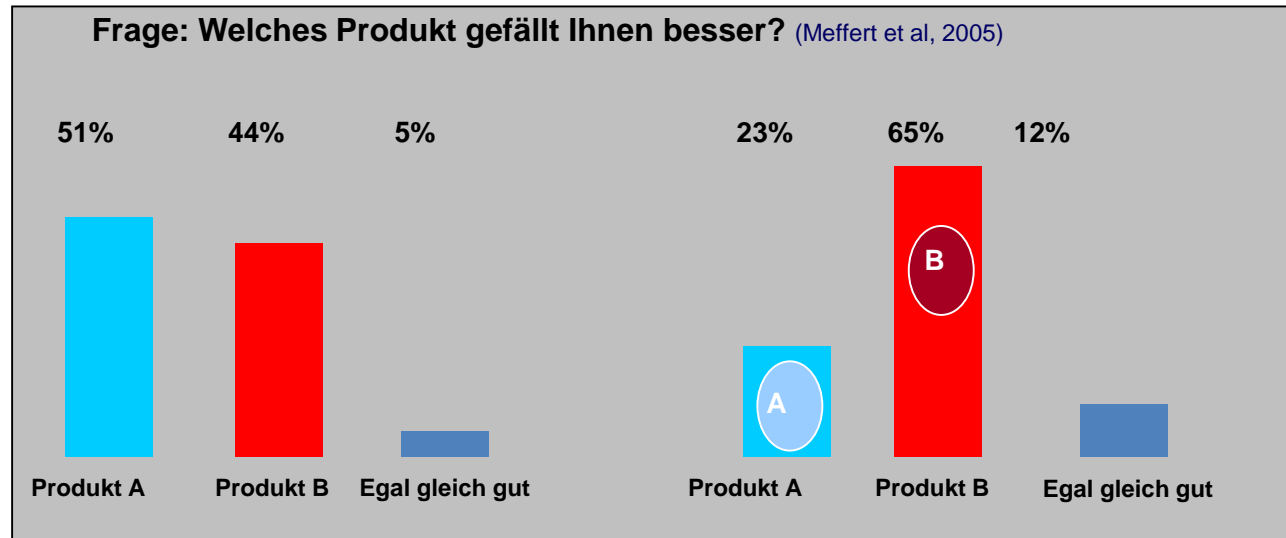

- ☐ **Owner**
- ☐ **Cooperation with external institutes**
- ☐ **Student worker**
- ☐ **R & D Department**

However,…

- **90-95% of NPD fail because they do not satisfy the needs of consumers**
  - **Low rate of purchase**
  - **Products fail because consumers**
  - **do not want them, they may be too expensive to make, the marketing effort**
  - **was insufficient or the whole process took too long and the demographic changed**

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Expectations vs experience

Frage: Welches Produkt gefällt Ihnen besser? (Meffert et al, 2005)

| 51% | 44% | 5% | | 23% | 65% | 12% |
| Produkt A | Produkt B | Egal gleich gut | | Produkt A | Produkt B | Egal gleich gut |

Ergebnis: Produkt A: Produktimage << Produkterlebnis
                    Produkt B: Produktimage > Produkterlebnis

Foodtrends

□ Consumer involvement and engagement is increasing during the last years

  ▪ individualised products

  ▪ personalised products

□ Use of internet and participation

In social network can make the interaction with the consumer much easier
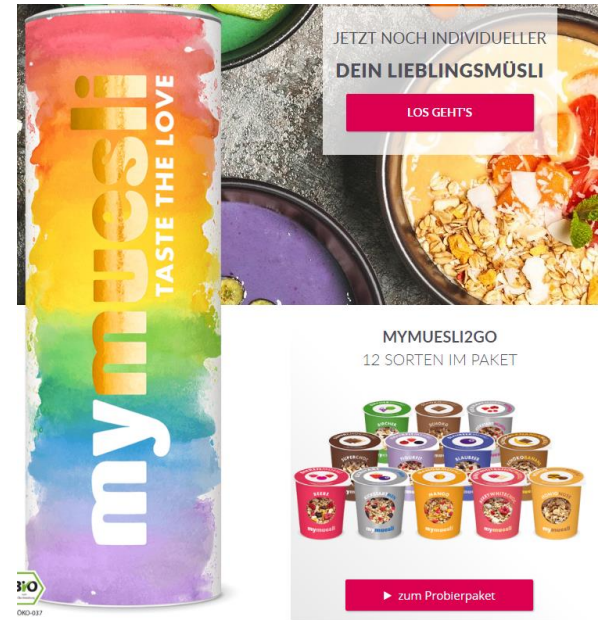
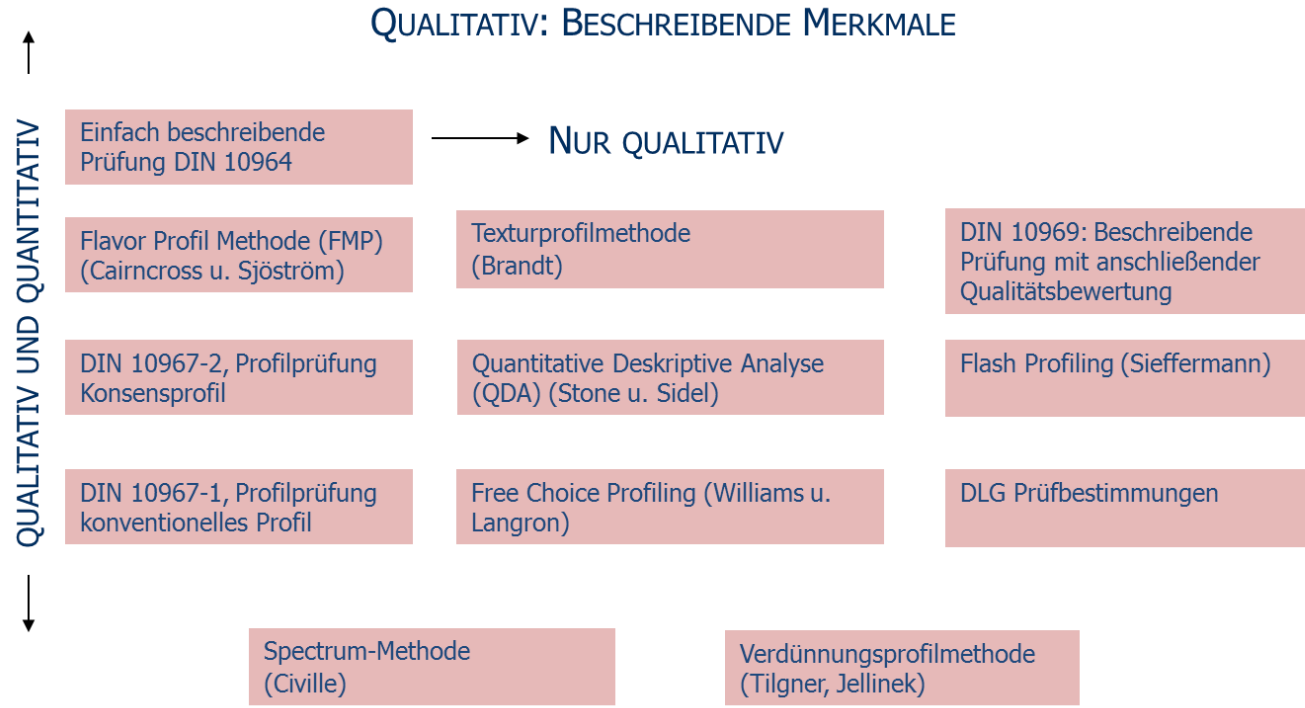# Approaches of product development

Bottom-up approach

Consumer-driven product development

Which characteristics are the most important ones for the consumer?

Sensory Methods

Class	Question of Interest	Type of Test	Panelist Characteristics
Discrimination	Are products different in any way?	analytic	Screened for sensory acuity, oriented to test method, sometimes trained
Descriptive	How do products differ in specific sensory characteristic?	analytic	Screened for sensory acuity and motivation, trained of highly trained
Affective	How well are products liked or which products are preferred?	hedonic	Screened for product use, untrained

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Descriptive Methods

QUALITATIV: BESCHREIBENDE MERKMALE

QUALITATIV UND QUANTITATIV

Einfach beschreibende Prüfung DIN 10964 → NUR QUALITATIV

Flavor Profil Methode (FMP) (Cairncross u. Sjöström)

Texturprofilmethode (Brandt)

DIN 10969: Beschreibende Prüfung mit anschließender Qualitätsbewertung

DIN 10967-2, Profilprüfung Konsensprofil

Quantitative Deskriptive Analyse (QDA) (Stone u. Sidel)

Flash Profiling (Sieffermann)

DIN 10967-1, Profilprüfung konventionelles Profil

Free Choice Profiling (Williams u. Langron)

DLG Prüfbestimmungen

Spectrum-Methode (Civille)
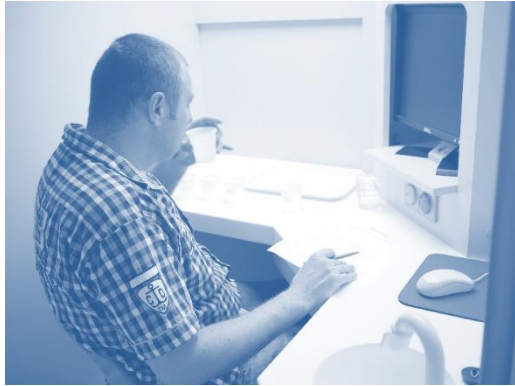
Verdünnungsprofilmethode (Tilgner, Jellinek)

QUANTITATIV: MESSUNG DER INTENSITÄTEN

QDA

1. Simple description

2. Collection of terms, discussion of references

3. Training of the scales

4. Test measurements

5. Final measurements

Working with a panel

… **and (unfortunately) the human is…**

- **notoriously variable**

- **difficult to calibrate**

- **easily to bias**

- **varying in mood and motivation.**

Source: ttz Bremerhaven

Rapid Descriptive methods

- **Flash Profiling**

- **Ranking Descriptive Analysis**

- **Free Sorting**

- **Projective Mapping**

- **Check-all-that-apply (CATA)**

- **Temporal Dominance of Sensations (TDS)**

Flash Profiling

- Developed by Sieffermann in 2000

- Panelists are allowed to use their own terms

- Use these terms to score the products

- Assumption: panelists do not differ in their perception, but in their manner to describe them

- Less training and less time consuming

- Two-Step Process
  Selection of individual terms
  Comparative ranking of the products according to the terms at the same time

Ranking Descriptive Analysis

- Modification of Flash Profiling
- Developed in 2010 by Richter et al.
- Untrained tester
- 1. Selection of terms
- 2. Ranking of the products according the terms on ordinate scales
- All products are presented at once

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Free Sorting

- Consumer test a set of items and group them according to similarity

- Objective: group products according to similarities or differences using their own personal criteria

- After sorting the panelist describes the groups with their own terms and attributes

- N= 9-15 / n= 20-50

Projective Mapping

Napping

- Grouping of products on a defined sheet of paper

- Tasting of the products

- Placing thmen into groups on the paper as they wish

- Further modifications are known

    - Ultra-flash profiling (addition of descriptions)

    - Partial -napping (napping is concentrated on one specific attribute)

Check-all-that-apply

- Easy and rapid method
- Collection consumer information by answering multiple choice questions
- N=50-100 consumers

Sensory Affective Testing

- Use of liking to capture the emotive sensory response of consumers

- Preference and liking in terms of specific attributes of a product (appearance, flavour , texture, taste, overall impression…)

- Qualitative (focus groups, single interviews)

- Quantitative (consumer tests)

Quantitative tests

- Involvement of large number of consumers (at least n=60)

- Mainly at the end of product development

- Optimisation processes

- Acceptance test

- Preference test

Qualitative Tests

- Small numbers of suitable screened individuals (6-10 consumer)

- Product and packageing concepts

- Creation of ideas

- Less expensive

- Gaining deep insights of motives

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Typical scale

1. → Liking·of·outside·appearence¶

Extremely·Dislike	¤	¤	¤	¤	¤	Extremly·like
1¶ ¤	2¶ ¤	3¶ ¤	4¶ ¤	5¶ ¤	6¶ ¤	7¶ ¤

¶

2. → Liking·of·colour¶

Too·less	·¤	perfect	·¤	Too·much
-2¶ ¤	-1¶ ¤	0¶ ¤	1¶ ¤	2¶ ¤

Results

Acceptance values for product # 1
1 (dislike very much) to 7 (like very much)

Ireland; n=71   Germany, n=64

* significant different p< 0,05
t Test

Summarised Distribution JAR-attributes

* significant different p< 0,05
Chi-Quadrat

Ireland, n= 71   Germany, n=64