

Trends in Omega 3 @



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BASF SE – Human Nutrition

1 | Trend 1

Market Segment diversification and penetration

2 | Trend 2

**Higher EPA/DHA concentrates
Customized EPA/DHA ratios**

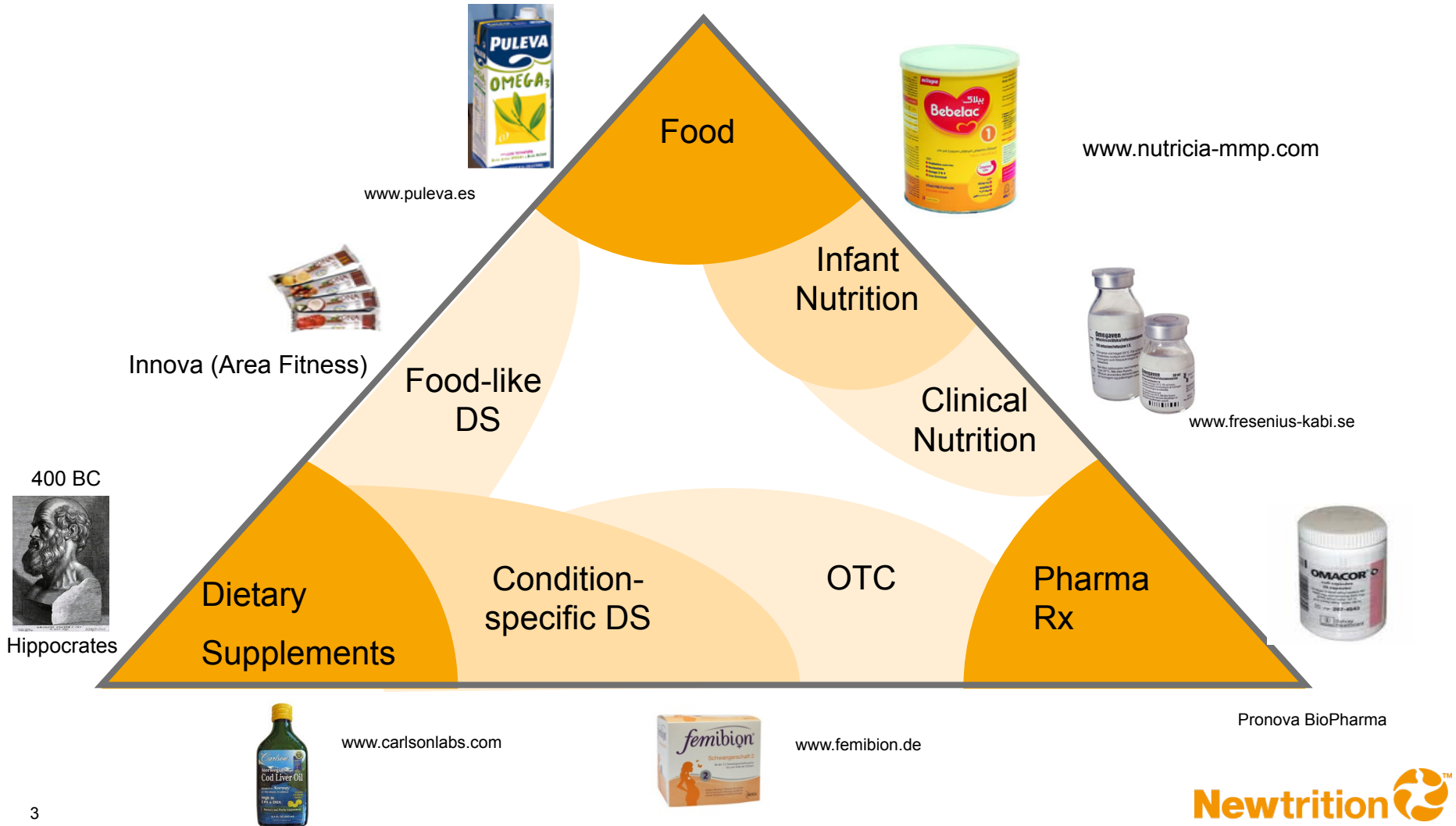
3 | Trend 3

New delivery forms

Trend 1

Market Segment diversification and penetration

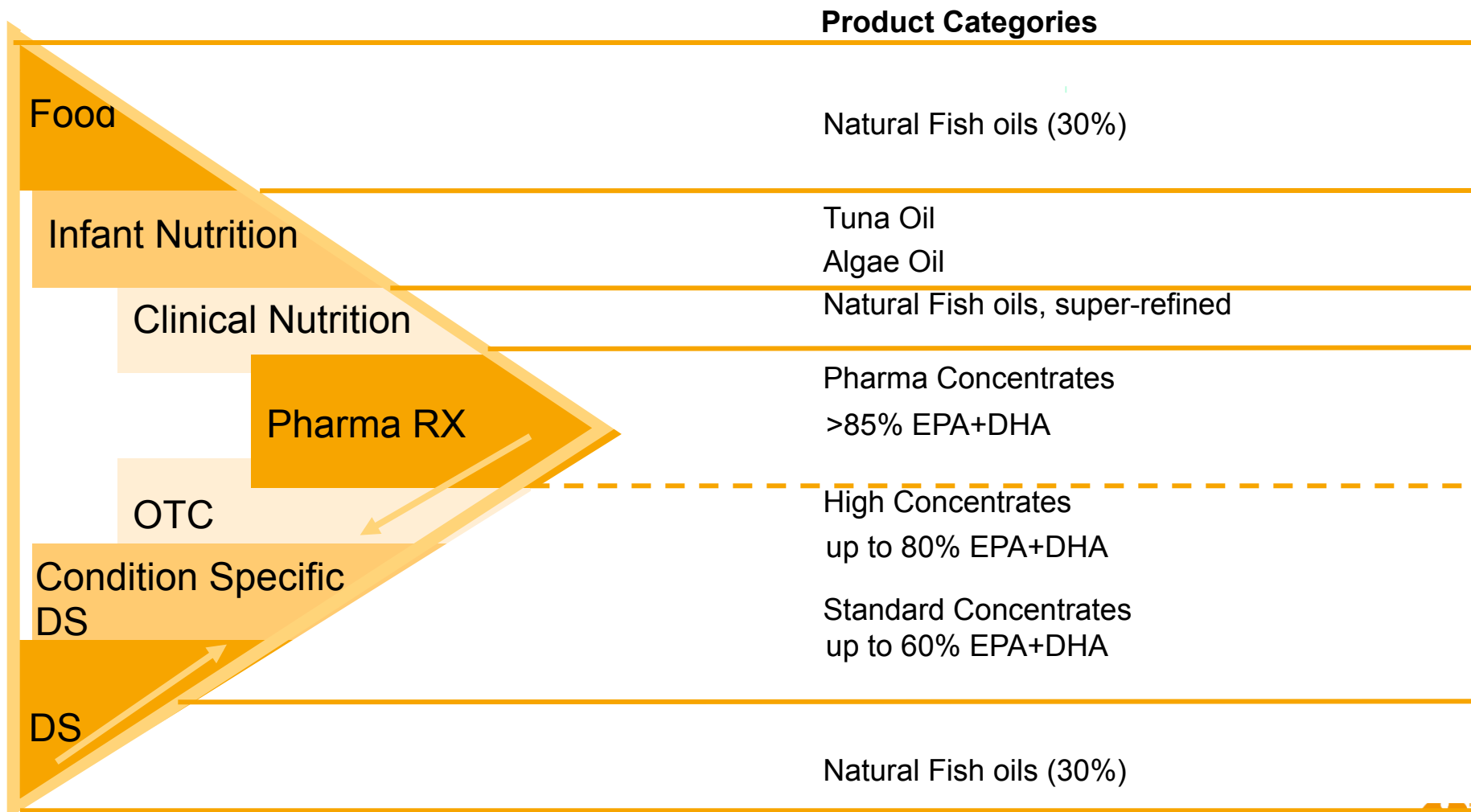
Omega-3 presence in all Nutrition & Pharma market segments



Trend 1

Market Segment diversification and penetration

Matching market segments and Omega-3 Product categories



1 | Trend 1

Market Segment diversification and penetration

2 | Trend 2

**Higher EPA/DHA concentrates
Customized EPA/DHA ratios**

3 | Trend 3

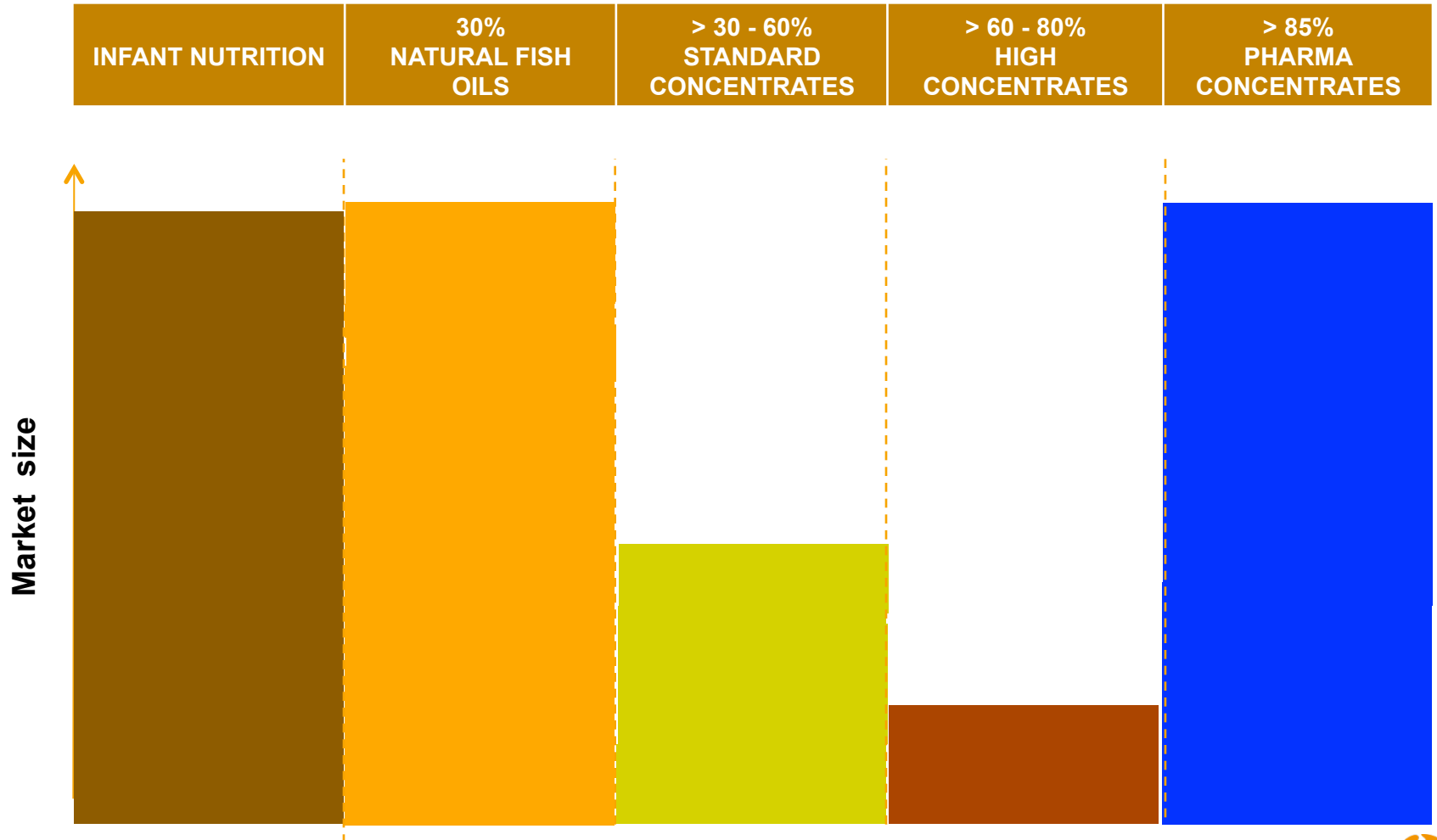
New delivery forms

Trend 2

Higher EPA/DHA concentrates

Customized EPA/DHA ratios

Omega-3 product categories



Trend 2

Higher EPD/DHA concentrates

Customized EPA/DHA ratios

Reasons why ?

- Reduction of supplementation with undesired fatty acids or other non essential component
- Optimized Omega-3 / Omega-6 ratio
- Increased consumer compliance (smaller capsules, one-capsule-a-day)
- Health condition-specific supplementation requires
 - higher absolute doses, and
 - higher relative concentration of EPA vs DHA
- Concentrated EPA/DHA offer the possibility to differentiate against commoditized fish oil supplements, and participating in premium markets
- Concentrated EPA/DHA offer the option for brand marketers to tailor a company-specific/proprietary EPA/DHA ratio



Trend 2

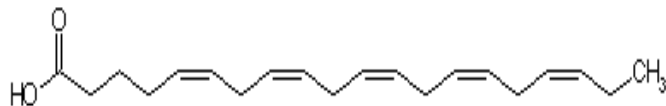
Higher Omega-3 concentrates

Customized EPA/DHA ratios

EPA's and DHA's Distinct Health Benefits

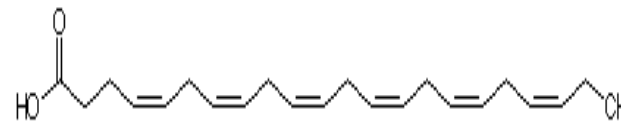
EPA

- Reduce triglyceride levels
- Anti-thrombotic
- Anti-arrhythmic
- Mood disorders
- Anti-inflammatory



DHA

- Lower blood pressure
- Brain health
- Pre & post natal formulations
- Eye health



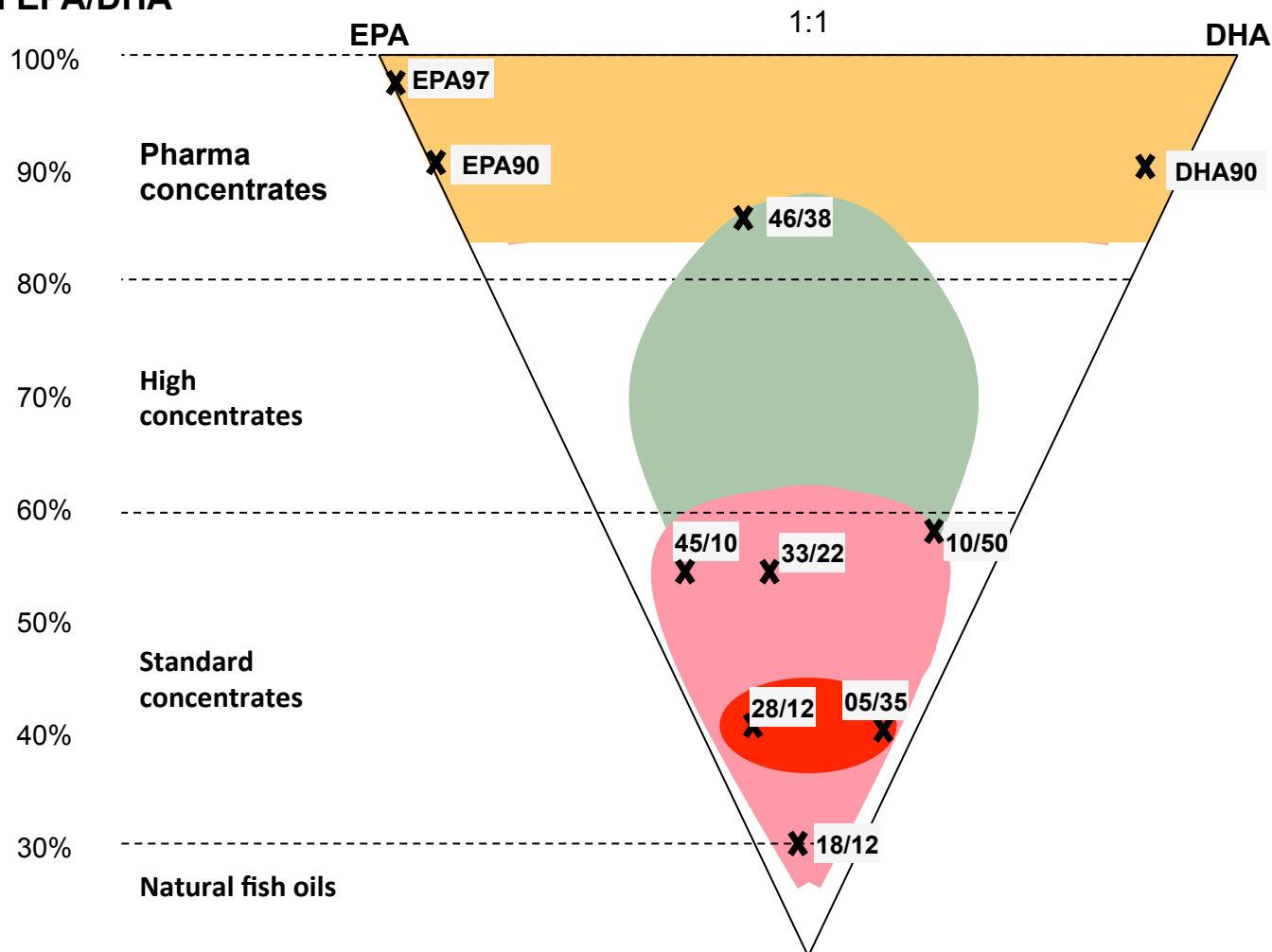
Trend 2

Higher Omega-3 concentrates

Customized EPA/DHA ratios

Need for different separation and concentration technologies

Total EPA/DHA



HPLC

Urea concentration

Short path distillation

Low temp. crystallisation

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**Higher EPA/DHA concentrates
Customized EPA/DHA ratios**

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New delivery forms

Trend 3

New delivery forms

.... Standard delivery forms do not recognize the diversity of consumer preferences

Challenges for consumer-convenient daily intake

- Swallowing problems for elderly and children



- “Pharma perception”:

*Oh my god,
I am sick!*



- Dosage burden:

several capsules



Customer needs

- Escape from commoditization of the softgel category
- Enable differentiation through new concepts
- Reach new and growing consumer groups (children, elderly)
- Establish higher margins through premium products

Trend 3

New delivery forms

Delivery solutions

- Ideal delivery form for consumer groups needs to reflect market and consumer diversity

- Options:

- Liquid supplements (bottled oils)
- Syrups
- Chewable tablets / gums
- Pre-mix powders
- On the tongue sachets
- Tablets
- One shots



BASF is set up to serve Omega-3 market trends, based on broadest technology portfolio, after focused recent acquisitions

Sandefjord, Norway



- First Marine Oil Factory in Norway
- Founded 1935
- EE & TG concentrates

• *Pharma, OTC, DS*

- **Omacor/Lovaza**
- **PronovaPure**

Callanish, Scotland, UK



- Site for for lipid concentration for nearly 30 years
- EE concentrates
- Fish Oil concentrates

• *Pharma, OTC, DS, Clinical Nutrit.*

- **Maxomga**
- **Crystalpure**

Brattvaag, Norway



- Founded 1986 as Napro Pharma
- Deodorized Fish Oils
- Bottles
- EE & TG concentrates

• *DS, OTC, Food*

- **Omevital**

Illertissen, Germany



- Founded 1945
- Deodorized Fish Oils

• *Food, Infant Nutrition*

- **Omevital TG Gold**

Kalundborg, Denmark



- Opened in 2009

• *Pharma*

- **Omacor/Lovaza**

Ballerup, Denmark



- Production of encapsulated fish oils since 1988
- Fish oil powders

• *Infant Nutrition, Food*

- **Dry n-3 Powders**

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