



**Dutch Association of Manufacturers of
Food Processing, Packaging and Bio-Based Systems**

Food Processing the Dutch Way

Jan Hak, President

President GMV / FME, CEO QuaTerNes

Vice President, Head Emerging Markets Metropolitan Food Security

Agri, Dairy & Food Processing Seminar - Gujarat State, 12 January 2013





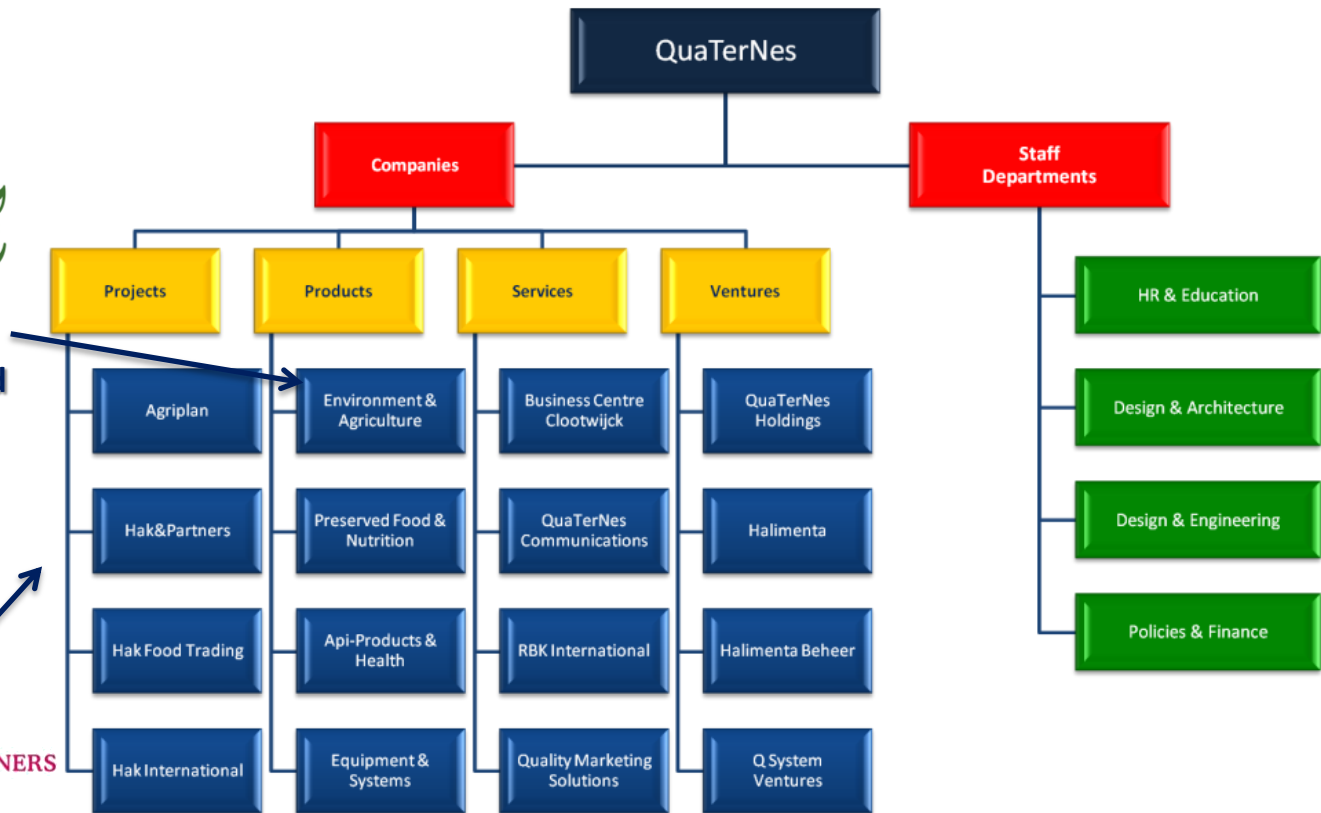
QuaTerNes

Faridabad



Faridabad

HAK PARTNERS



GMV

Members cover a high percentage of total machinery production in all sectors of the industry: fruit, vegetables, feed, meat, fish, dairy, bio-based products, etc.

Member in:

- **FPME** (Food Processing Machinery Europe)
- **Europama** (European Committee of the National Associations of Packaging Machinery Manufacturers)
- **Copama** (International Confederation of Packaging Machinery Associations)



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Facilitating Food



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The Netherlands: 'High Tech in Agriculture, Food, Horticulture and Water'

World Leading Technology Companies

Turn-over 2012: EUR 11,4 billion in high tech systems, 42% outside the EU
(80% poultry, 70% cheese and > 50% potato processing systems)





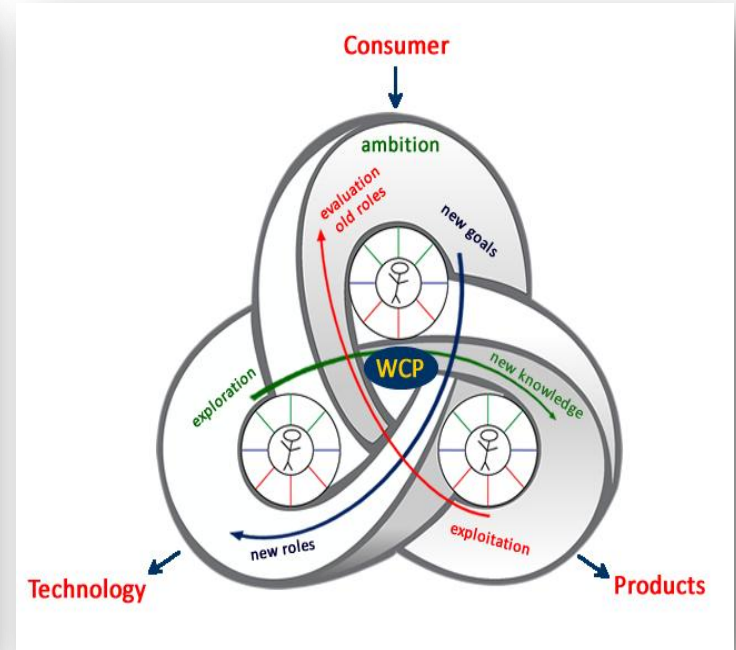
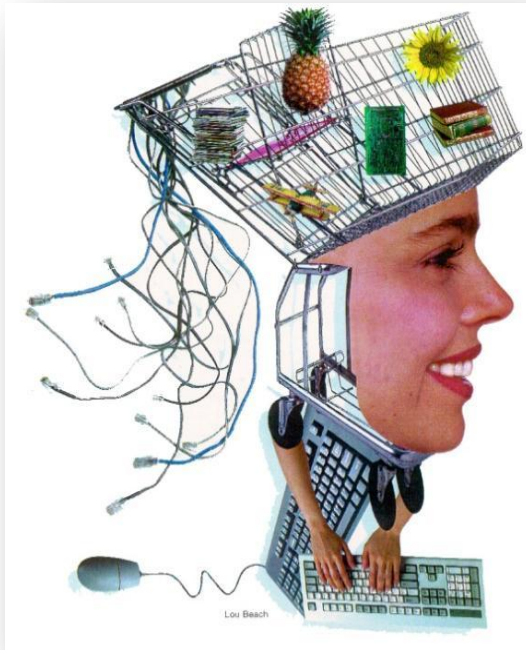
The Netherlands: 'Food Valley'

Turnover 2011: EUR 70 billion in agri-food products;
Staff 2011: 10% of labour force is dedicated to the Agro & Food Section

(2nd Largest world exporter)



Market-led Approach





Diversification of demand in Metropolises: from food to fashion to pharmaceuticals



Pharmaceuticals

*Functional foods,
Pharmaceuticals*

Fashion

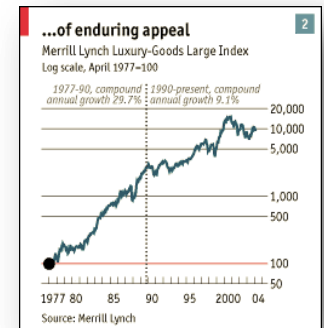
*Flowers, Flavors,
Fragrances*

Food

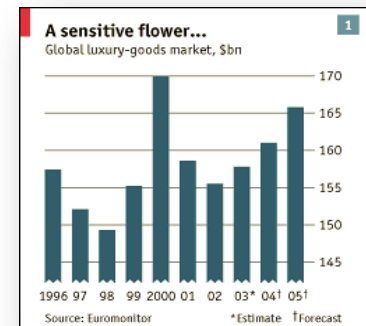
*Fodder, Food Crops,
Vegetables, Fruits*

Energy

Fuel, Fibers



Which is a 100-fold increase
between 1977 and 2005



World spending on luxury goods
in 2005: US\$ 165 bln

Shift in Consumption Basket

Urban people have more purchasing power



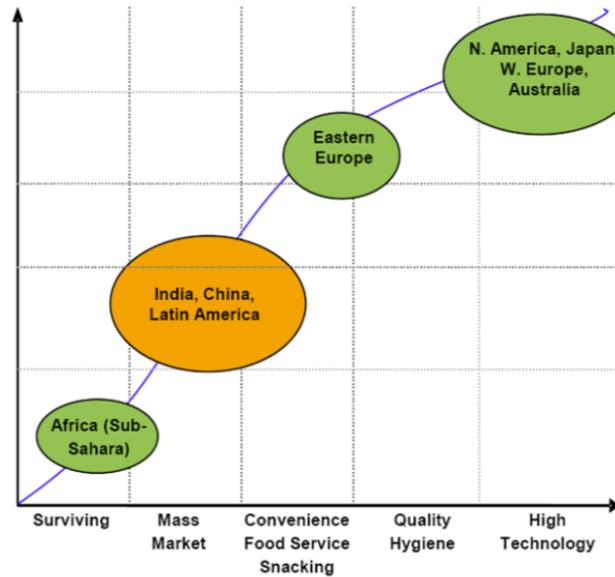
Diet/Functional/
Organic Foods

Convenience foods

Snacks/Prepared meals

Dairy, meat, fish, fresh
fruit juices, beverages

Carbohydrate staples



Increasing consumption of
processed food

Increasing consumer discern
towards safe, healthy and
quality food

Transparency in food chain
“from farm gate to food
plate”

Strategic Outlook



Society:

- Ageing population
- Growing high(er) income population
- Wealth of choice
- Increasing incidence of chronic non-communicable diseases like:
Obesity, Cardiovascular diseases, Hypertension, Diabetes mellitus and various cancers





Function of Food

- WHAT Calories → "experience" → nutrition & health, variety
- WHEN Regular → grazing and snacking
- WHERE In-home → out-of-home
- WITH WHOM Social → individual
- HOW PREPARED From scratch → ready-to-eat, heat and eat





Trends in European society

(According to Wim Lageweg, MVO -2011)

Needing social cohesion (and safety)

- Especially older generation
- In more individualistic world



Increasing suspicion (decreasing authority)

- Especially young generation
- Towards: institutions, banks, large corporations





Needing “Roots and Wings” (and origin)

- Especially cultural “creatives”, self determination
- Regional identify, interest in origin and process

Stressing sustainability

- Especially awareness of scarcity

Increasing transparency

- Especially sharing knowledge
- Pressure on media, social media



Market/Chain

Pressure

Purchasing power
of retailers and Food
Service

Very short lead times

High service levels

7 day supply

Quality / food
standards

Competition

Requirements

Increased use of EDI

Support wide range
of products

Shorter shelf life
products

Reduction in
additives

Bio & Green and
Emotion

Product traceability

Operations/Packaging

Pressure

Integrated systems
structure

Variable batch sizes

Effluent /
waste reduction

Lowest cost production

Just in time operation

Requirements

Forecasts of
requirements

Reduced dependency
on people

Plant flexibility

High speed
changeovers

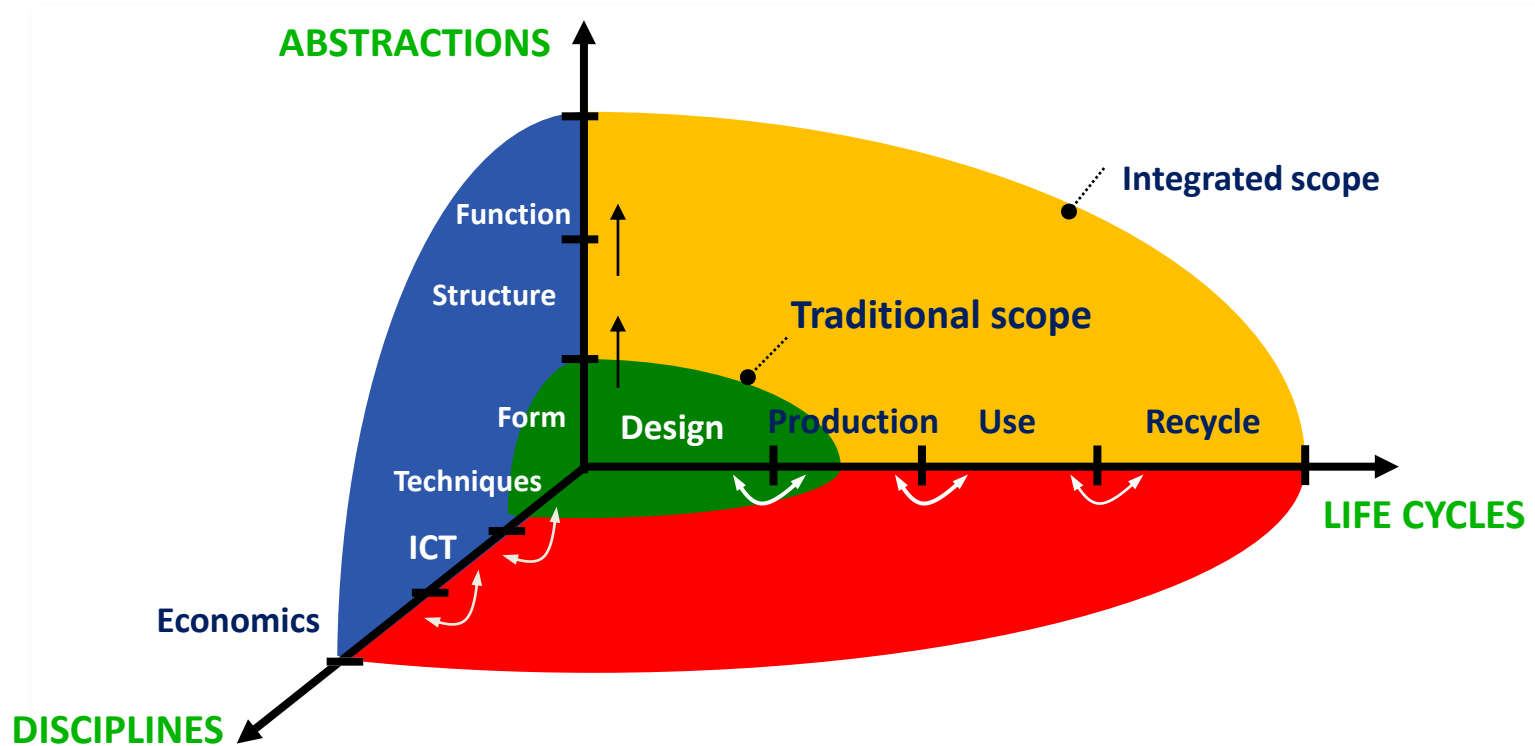
Scheduling production
and maintenance

Product recovery
systems

Detailed records
of operations



Integrated Approach product and process development





Indispensable Benefits of Food and Packaging

- Protection
- Freshness
- Sensory appeal
- Portability
- Convenience
- Differentiation
- Performance
- Time saving
- Channel growth
- Communication
- Relevance
- Esteem
- Equity enhancement





Key trends enabled by packaging:

- Nutrition / Health
- Flavor
- Convenience
- Value
- Variety
- Fun
- Time
- Affordable luxury
- Security and Authenticity
- Quality
- Sustainability and





Examples from the potato value chain:

Create more added value

- Healthier, convenience

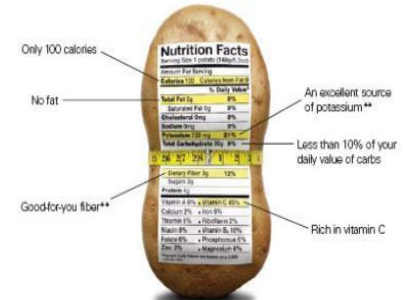
Distinguish yourself

- More variations
(functional, organic, exceptional)
- Competition
(new packaging ideas, developments on shop floor)

Reach new customers

- Consumer groups

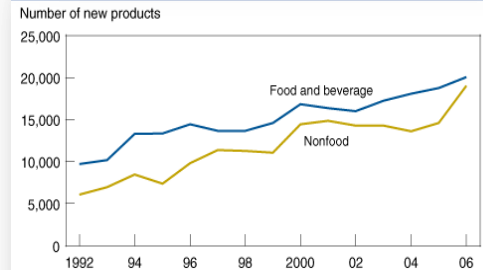
Get the skinny on America's favorite vegetable.



The Healthy Potato.



Food and beverage introductions up 106 percent in 1992-2006



Note: Nonfood items include health and beauty aids, household products, pet products, and miscellaneous items (e.g., tobacco, car care, lighters).
Source: Datamonitor, Productscan Online.



Health and Nutrition

Less fat and calories

- **French fries**
Smaller portions, focus on preparation other than frying, new frying technologies
- **Potato chips**
Smaller packages, baked, reduced in fat, light





Health and Nutrition

Sodium and Acrylamide

- **Sodium**
Less, offer sachets
- **Acrylamide**
Lighter fries, changes in frying process, less potato ingredients (extruded snacks), enzymes



Energy and Environment

- Supply chain integration
- Low carbon footprint
- Local sourcing of potatoes
- “Controlled” potato cultivation
- Reduction in use of pesticides
- Organic potato products
- New varieties (resistance)





Trends to watch

- 1. Functionality and Sustainability** **Finding the balance**
- 2. Sustainable Packaging** **Focus on recyclability**
- 3. Paper-based Packaging** **Keep the Molecule in Play**
- 4. Stand-up Pouches** **Maximum Flexibility, Sustainability and Convenience**
- 5. The Development of Bio-plastics** **A viable eco-friendly solution?**



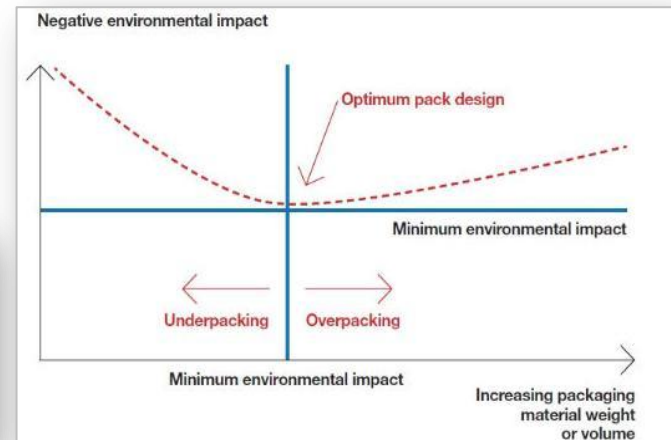


1. Functionality and Sustainability

Aim:

Finding the balance between under-packaging and over-packaging

- Packaging prevents food waste
- Saves resources
- Part of solution for an overall resource efficient society
- Facilitating sustainable lifestyles





2. Sustainable Packaging

- Concern about personal impact on environment
- Demand for "green" packaging:

- ✓ recycled content
- ✓ re-usable
- ✓ degradable





3. Paper-based Packaging

Wax is out

- Wax replacement packaging
- Water based technologies
- Reducing landfill costs, boasting recycling levels





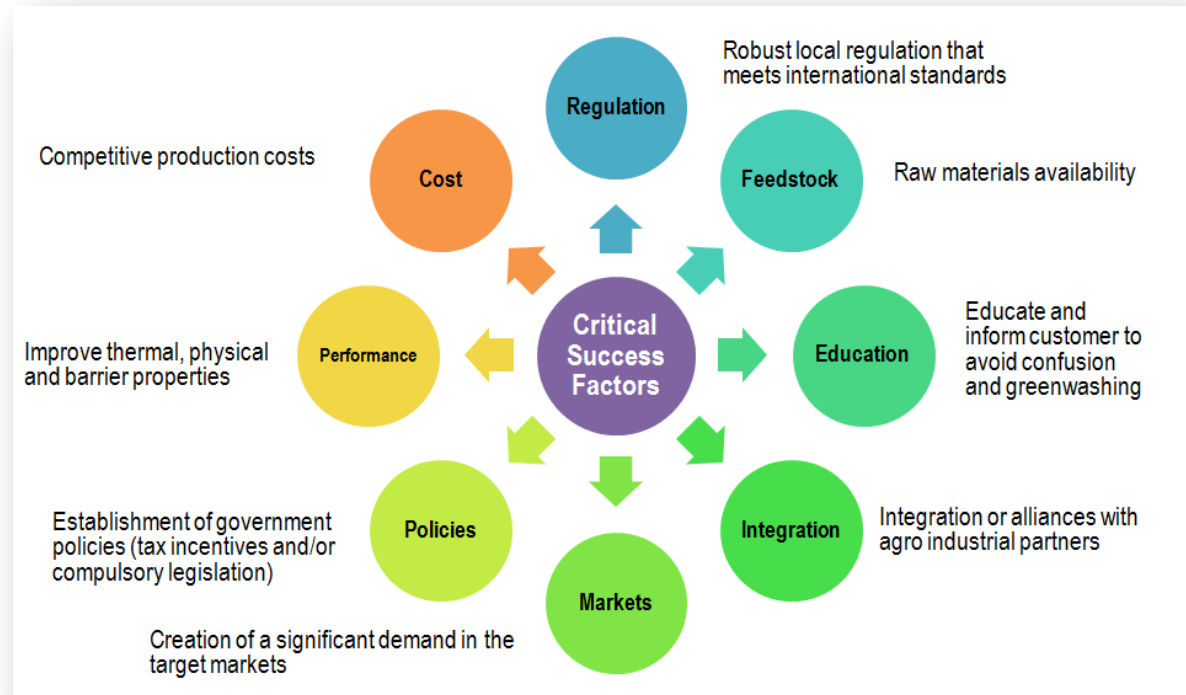
4. Stand-up Pouches

Maximum Flexibility, Sustainability and Convenience

- Replacing ridged containers
- Reducing landfill costs, boasting recycling levels



5. Development of Bio-plastics – What's in the name?



Distinction between: Bio-based, compostable, biodegradable, etc.





Final Remarks:

1. Freshness
2. New Technologies





1. Freshness

- Packaging differentiation by "Green" aspects
- Innovator: Best practices in fresh produce
- Freshness Phobia
- (Organic) Freshness
- Intelligent and active packaging





2. New Technologies

- **Pulse Electric Field (PEF)**

*For liquid products like juice, milk, soup
High voltage pulses, lengthens storage life*

- **High Pressure Conservation**

 - Ultra High Pressure (UHP)**

*For products that has to be sterilized or pasteurized
Pressure up to 1,000 MPa
Disables micro-organisms and enzymes*

- **Cold Plasma**

*Cold gases with electrical charge disinfect
the surface of packaging*





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Goals through Centres of Excellence:

- **India – Dutch Cooperation Business and Academia**
- **Create New Business Opportunities and Stimulating Entrepreneurship**
- **Jointly Securing Food for Urbanized Areas**
- **Spin-off: Effects in Innovations in Science, Technology, Education, Training and Know-how Transfer**



Metropolitan Food Security

Strategy to Success - 7 P's:



1. **People**
2. **Professionals**
3. **Plan**
4. **Pro-active**
5. **Performance**
6. **Planet**
7. **Prosperity**