

Provalor

produkt valorisatie

Innovation & business models for valorisation of side streams

Paulus Kusters
Fusions conference 18-10-2013

VERSPILLING VAN BEDERFELIJKE PRODUCTEN

Totale verspilling per voedselgroep, in percentage van de productie (Europa)

Productgroep	Percentage van de productie
Aardappels en andere knolgewassen	50%
Groente en fruit	45%
Granen	33%
Vis	30%
Vees	20%
Zuivel	12%

A high % of vegetables is wasted

Primarily on esthetical aspects (size/shape)

↓

opportunities for improvement

2

Provalor : Value creation in the foodsector

Core business :

Upgrading lower value vegetable raw materials (side streams) to high value innovative ingredients through development of innovative know-how and business models.

Examples :

- High quality juice from by-products from vegetable processing
- Dietary fibres from vegetables as high value ingredient in sauces, meat and cheese
- Carotene rich natural ingredients



3

Hidden vegetables in juices and cold soups

Approved SGF/FKS₄

Vegetable based ingredients

Tapenade

Meat and meat products

Sauces

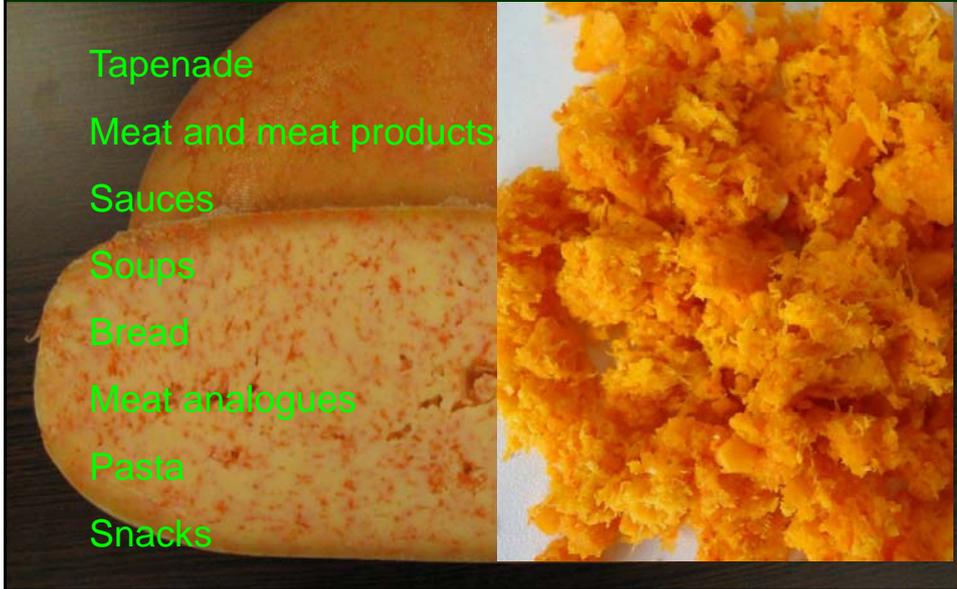
Soups

Bread

Meat analogues

Pasta

Snacks



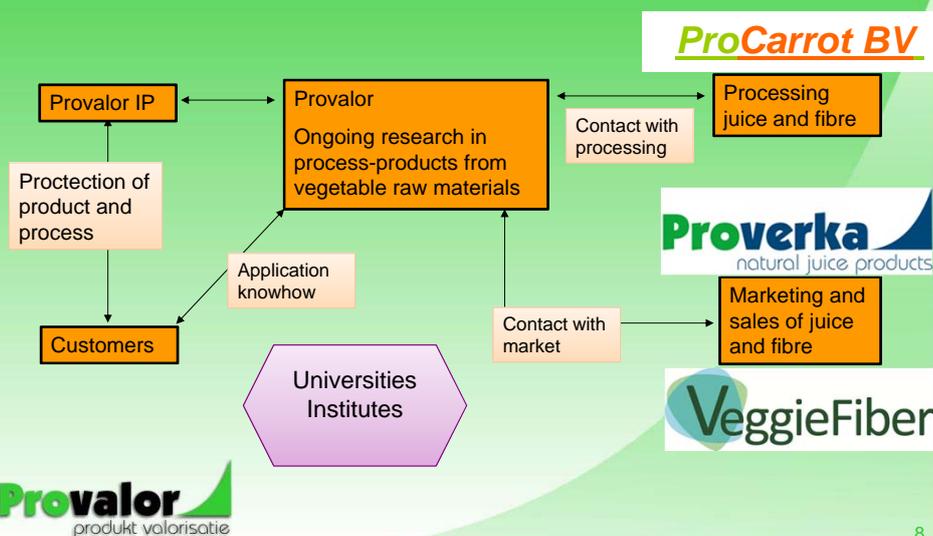
More opportunities



Provalor: key choices

- ① Focus: vegetables
- ① “Waste” as a raw material
- ① Understanding the (consumer)market
- ① Solid social trends: health and sustainability
- ① Sound scientific and proprietary knowledge
- ① New chains based on new partnerships.

Provalor : Value creation in the foodsector



Provalor : Value creation in the foodsector

I.P.

Provalor has developed and is owner of know-how protected by patents in the field of juice extraction; the production and applications of vegetable dietary fibre; other related areas.

- Vegetable juice (EU, Can, USA)
- Natural colours (NL)
- Vegetable fibre as ingredient (Can, USA, EU)
- Vegetable puree from steam peelings (NL, EU)



9

Businessmodel in juices

Unique qualities of the products made with Provalor technology

Juice

- Low to negative value raw material turned into value
- High fresh market quality raw materials compared to industry quality raw material
- Year round fresh production for high taste and customer flexibility
- Year round processing => reduced investment and fixed costs
- Customised recipes for vegetable juice cocktails



10

Businessmodel dietary fiber

Unique qualities of the products made with Provalor technology

Dietary fibre

- Low to negative value raw material turned into value
- Unique capability of moisture absorption by the fibre
- Healthy food supplement (fibre) reduces calories foodproduct
- Improved texture and structure of the product
- Increased dietary fibre support gut health (claim)
- Allergen free dietary fibre

Financial opportunities dietary fiber

Value creation by application of vegetable dietary fibre in a meat product.

Product or aspect	Value
Production price dietary fibre	€1250/ton
Sales price dietary fibre	€ 2500/ton
Replacement of meat of	€ 3750/ton
For consumer claim on "rich in fibre"

Provalor further steps

Presently the Provalor know-how and applications are ready for the market and can be sold to interesting parties and partners.

Typical approach:

- Sign NDA
- Create Preliminary Business case to demonstrate feasibility
- Sign cooperation agreement structured around :
 1. Knowhow supply by Provalor
 2. Payment of lump sum
 3. Payment of license or service fee.

Summary

- ① Provalor and Partners “save” annually >8.000 ton healthy vegetables
- ① Proven technology and business model
- ① Further international development has started in different areas
- ① Key for success is continuous innovation and R&D and down to earth business sense.