

manu
net



Chemicals
devan
Protecting Textiles



The Devan Group



PROTECTING and MODIFYING TEXTILE SURFACES

New and innovative properties and functionalities focusing on
Sustainable Entrepreneurship



The company

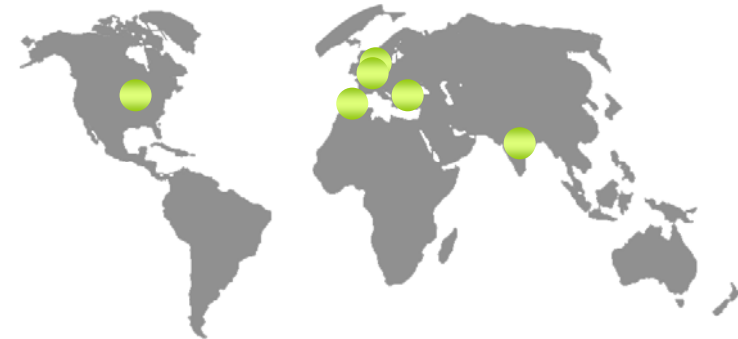
The Company was established in 1977

Figures 2008

Volume :	4.200 T
Turnover:	13.000.000 € (Consolidated)
Export:	65% (worldwide)
HR:	45 people

Offices

- Head Office Ronse - Belgium
- Derby - UK
- Porto - Portugal
- Greenville (SC) - USA
- New Delhi - India
- Izmir, Istanbul - Turkey





Different?



Our Business Model

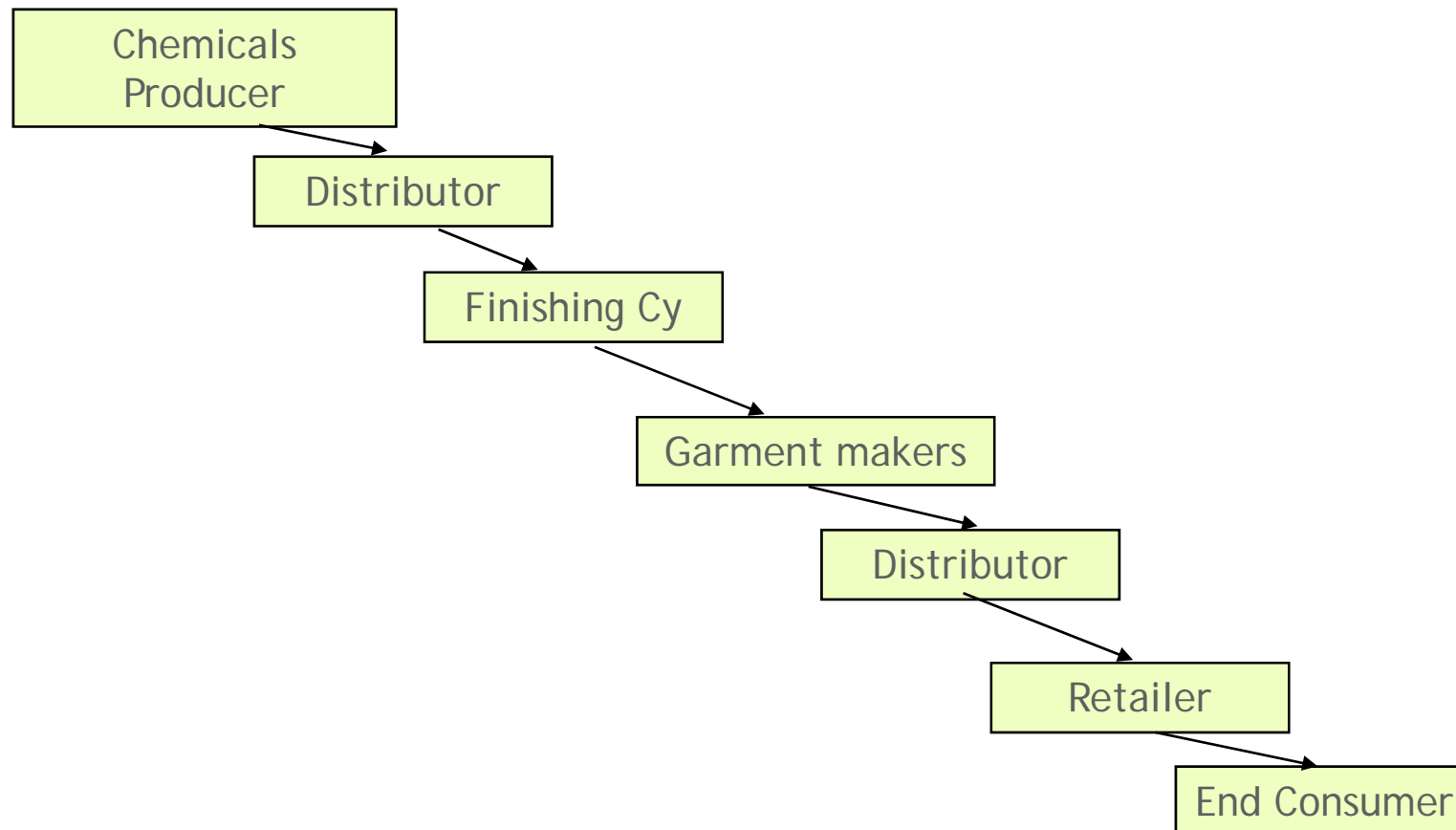
Innovation in:

1. Marketing Strategy
2. Human Resources
3. Products



Innovation in Marketing Strategy

Traditional Marketing Model: The “push” model



Innovation in Marketing Strategy

Traditional Marketing Model: The “push” model

Challenges:

- Textile production is cost driven
 - How to communicate innovation?
 - Control of higher price along the complete chain?
 - Control of the brand name?

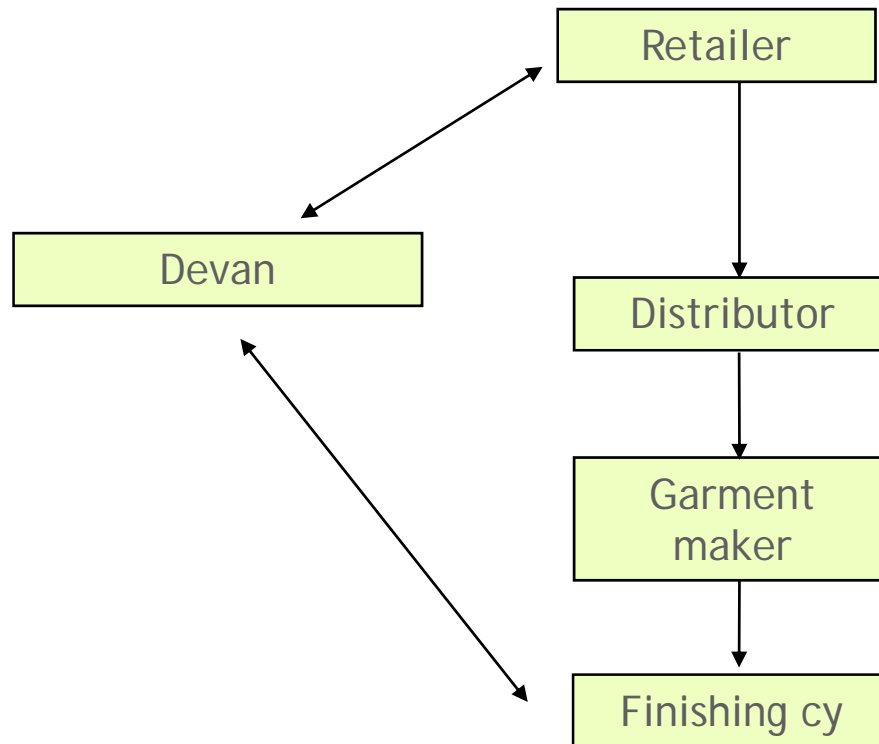
- Conclusion: always a price discussion



Innovation in Marketing Strategy

Devan Marketing Model: The "pull through" model

Phase 1: The concept



Advantages of the Pull Through model

- Brands & Retailers specify the technology
- Trend Spotting
- Devan is considered a preferential innovative partner
- Control of prices and margin
- Reduce the risk of copying



The Business Model

Innovation in:

1. Marketing Strategy
2. Human Resources
3. Products



Innovation in Human Resources

- Highly qualified human resource at all levels (45 full time)
 - 10% PhD
 - 60% University degree
 - Chemistry
 - Textile
 - Marketing
 - Finance
- 20 % of the human resource work in R&D
- 10% of turnover is invested in R&D (internal & external)



The Business Model

Innovation in:

1. Marketing Strategy
2. Human Resources
3. **Products**



Innovation in Products

Sustainable technologies

- Non-migrating antimicrobial technology (**Ægis**)
- Halogen free flame retardants (**Eco-Flam**)
- Chlorine free shrink resistant wool process (**Dylan**)
- Masterbatch (**@2spin**)
- More ecological insect repellent technology (**Insecta**)
- Integration of Nano Technology



Innovation in Products

CONCERN FOR ECOLOGY DRIVES NEW BUSINESS DEVELOPMENT AND IS REFLECTED IN OUR PRODUCT RANGE



Consumer Concepts

APPAREL

- UNDERWEAR
- SOCKS
- SHIRTS
- SPORTSWEAR



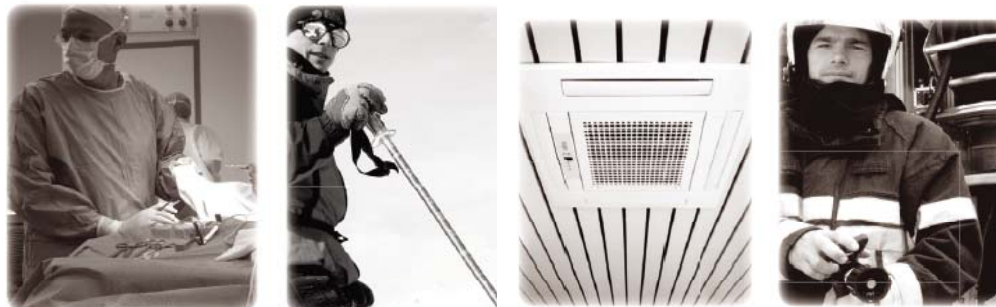
HOME TEXTILES

- BEDDING
- UPHOLSTERY
- CARPET
- TOWEL



TECHNICAL TEXTILES

- MEDICAL
- OUTDOOR
- FILTRATION
- WORKWEAR



Manunet Project: AM-Plasma

New Advanced antimicrobial concept based on atmospheric pressure plasma technology for high durable textile applications

Partners:

- Technical University of Ghent (TO2C)-Flanders
- GRINP (Piedmont)



Budget: 617.000€ (290.000€ funded)

Timing: 57 MM / 2 years



Objectives

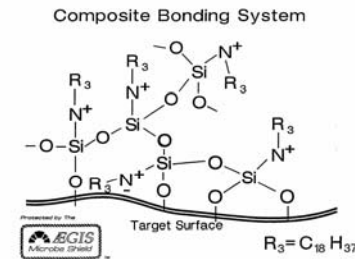
- To develop a new sustainable antimicrobial concept based on the optimal combination of new formulated non-migrating antimicrobial and new atmospheric plasma process.
- In order to
 - To reduce the risk of nosocomial diseases by protecting the textile with an antimicrobial
 - To improve wash durability specially in heavy duty laundry processes such as in hospitals (100 wash cycles)
- To develop a specific atmospheric plasma equipment fulfilling the textile needs (speed, width, process,..)



SMEs Alliances

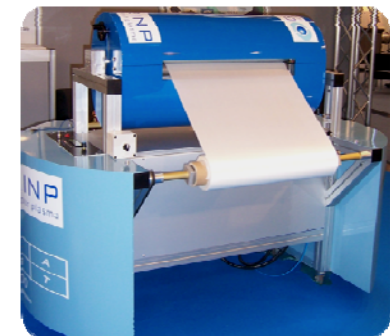
Devan (chemicals manufacturer)

- New formulation of monomer and prepolymer organo-functional silane (non-migrating antimicrobial)



GRINP (equipment manufacturer)

- New atmospheric pressure plasma process



New process, new sustainable treatment
For an existing growing market



Textile in hospitals

- Linen is responsible for 17% of the nosocomial diseases.
- One hospital bed = 2 up to 7 Kg linen/day
- One surgical operation requests 17.5 m²
- 3 main categories:
 - Linen (bed sheets, blankets, towels,...)
 - Clothing (uniforms and patient gowns)
 - Specialized textiles (bandages, compressure socks,...)



Nosocomial disease

- Definition
 - Hospital acquired infection
- Statistics
 - UK
 - 100.000 people/year
 - 5.000 patients died/year
 - Cost of treatment : 15.000 €
 - France
 - 600.000 people/year (6-10% of the people hospitalised)
 - 800 millions €/Year (2004) extra cost



Nosocomial disease



- Statistics
 - Belgium
 - 75.000 people/year
 - About 750 patients died of the direct consequence
 - USA
 - 1.8 million/year
 - 20.000 patients died in 1998 as a direct results
 - The cost of treating nosocomial infection is estimated at \$4.5 billions/year



Risks during the use of the Textile goods

- Cross contamination
- Protection of the patient
- Protection of the medical staff
- Transfer from the patient to the health care professionals garments and then subsequent patients
- To avoid the textile to be a microbe « harbour »
- To protect the textile from microbial damage (i.e. towels)



Bed sheets

- Volumes for France
 - For hospitals : around 500.000 beds (1998)
 - For retirement houses : around 700.000 beds (2007)
- Benefits
 - Nosocomial diseases reduction
 - Economical impact
 - Decrease of patients affected
 - Reduction of the laundry conditions
 - Environmental impact
 - Economical impact
 - Reduction of the packaging
 - Environmental impact
 - Economical impact



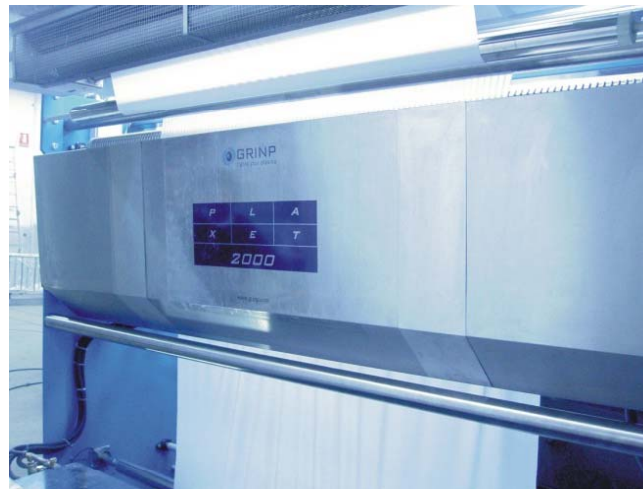
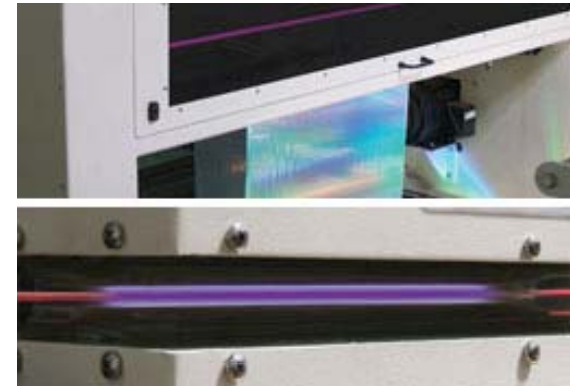
Ecological Advantages

- Non-migrating antimicrobial
 - Durable and effective for the life of the goods
 - no risk for the environment
 - no risk for the patients
- Plasmma is a Sustainable / Green technology
 - Low water consumption → « dry » technology (decrease >50%)
 - Low energy consumption (reduction of 80%)
 - Low chemical usage



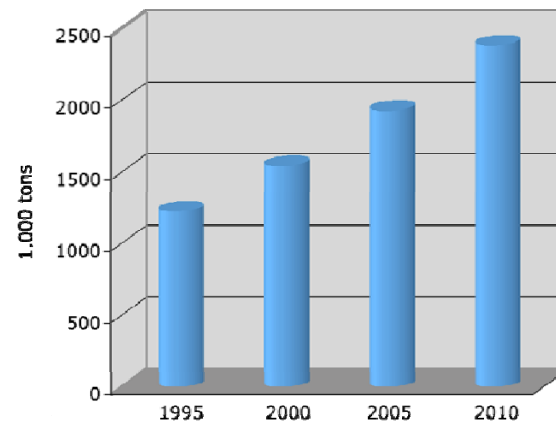
Economical Advantages

- Relative low investment (<250 K€)
- Easy to introduce in SME mills
- Cost-efficient application
- Flexible process
- Increase the competitiveness with the Far East



Market potential for Devan

- Healthcare market is the most dynamically expanding sector in the technical textile.
- Healthcare market is growing at 5%/Y.
- Healthcare market is not depending of the overall economical evolution



Forecast world consumption of medical textiles, 1995-2010^[1]

[1] Source: DRA, <http://www.davidrigbyassociates.com/DRA%20WEBSITE%2003/assets/TTandN.pdf>



Market potential for Devan

- 100T/Y of antimicrobial equivalent to 1 M€/Y
- Possibility in other textile markets (sport wears, technical textile) good for another 400K€/Y



mæmedicalTM  powered by
Devan

Market potential for GRINP

- 6 machines over 2 years (1.5 M€)
- Increase of HR (5 people)
- Licence fee



Challenges

- To reach a sufficient process speed (>20m/min)
- The dissemination of the technology
- To convince the medical sector that the new technology will allow them also to reduce significantly the laundry cost by reducing temperature and chemicals.



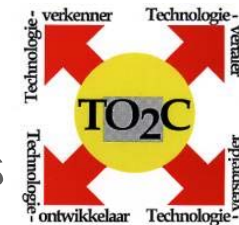
Intellectual properties

- GRINP and Devan are not competitor but partners
- GRINP can further patent its equipment as Devan can patent its formulations
- The process will be licensed to production mills
 - Plasma machine (GRINP technology)
 - Plasma parameters (defined by GRINP and TO2C)
 - Antimicrobial formulation (Devan)
- Devan has already experiences with this business model (wool shrink resistant and washable)



Benefits of a Manunet project (1)

- Good size project
 - Limited number of participants
 - Duration (short & medium term R&D)
- Focus to industrial processes
- Designed for SMEs
- Good assistance from IWT
- Easy and quick procedure
- Funding allows to involve RTD
- Scientific support from RTD
 - Input of expertise on new breakthrough technologies



Benefits of a Manunet project (2)

- Industry sectors are geographically concentrated → allows to work with region having the same interest
- Networking
 - Exchange of experience
 - Exchange of commercial leads
- Emphasis the partnership between SMEs



Remark

- Each partner introduce its file in its region.
- Two procedures running in parallel
- One partner could get the grant the other not





Thank You

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