



CRC

for

Premium

Quality

Wool

# Wool Research & Development

Produced for the CRC for Premium Quality Wool undergraduate program by;  
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# Benefits from R&D

## Farm Production

- direct benefit
  - new technology
    - production increases
    - prices fall
  - OK if cost fall > price fall
  - also lower produce price means cheaper product inputs

## Processing

- indirect benefits
  - benefits consumers
    - product prices lower
  - producer benefits
    - uncertainty regarding amount
    - blends
      - less wool
      - but more demand
  - processor funding

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# Effect of Technology Adoption

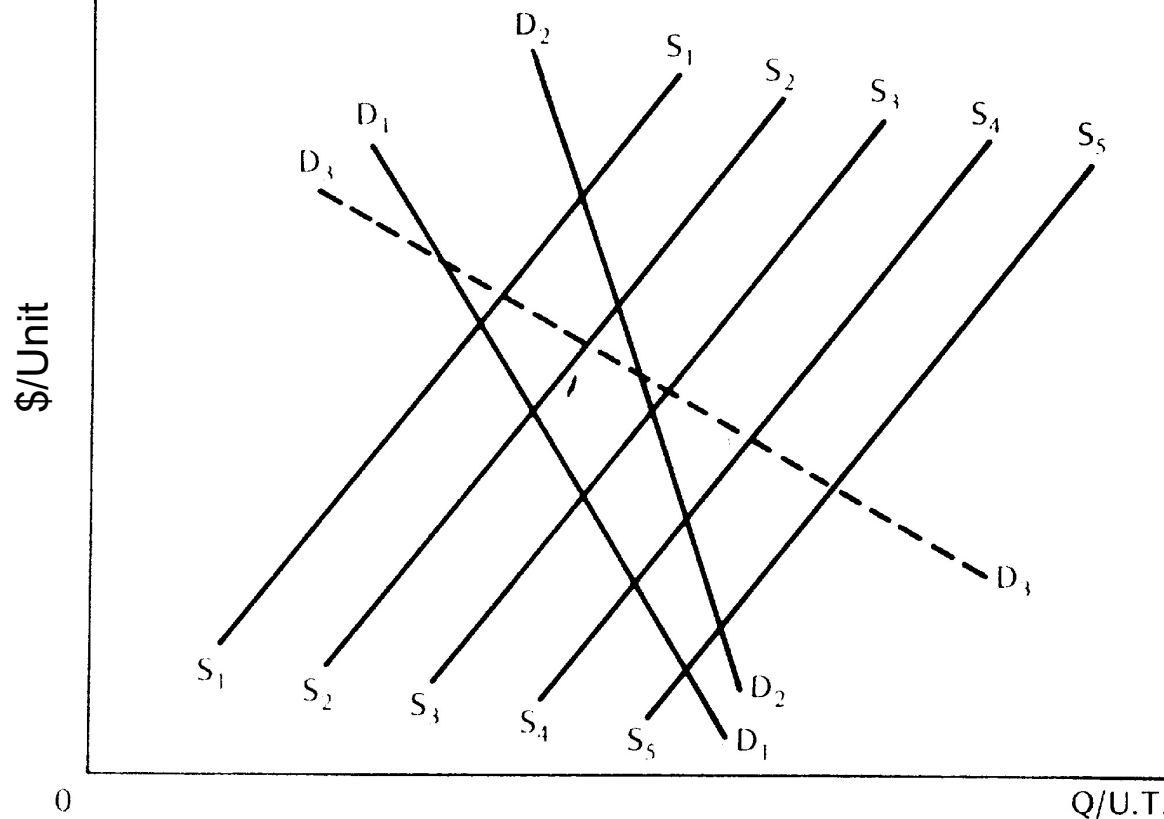


FIGURE 13.5 THE DESIRED IMPACT OF ADVERTISING IN AN ECONOMIC STRUCTURE WHERE AUTONOMOUS INCREASES IN SUPPLY ARE ANTICIPATED



# New Products / New Markets

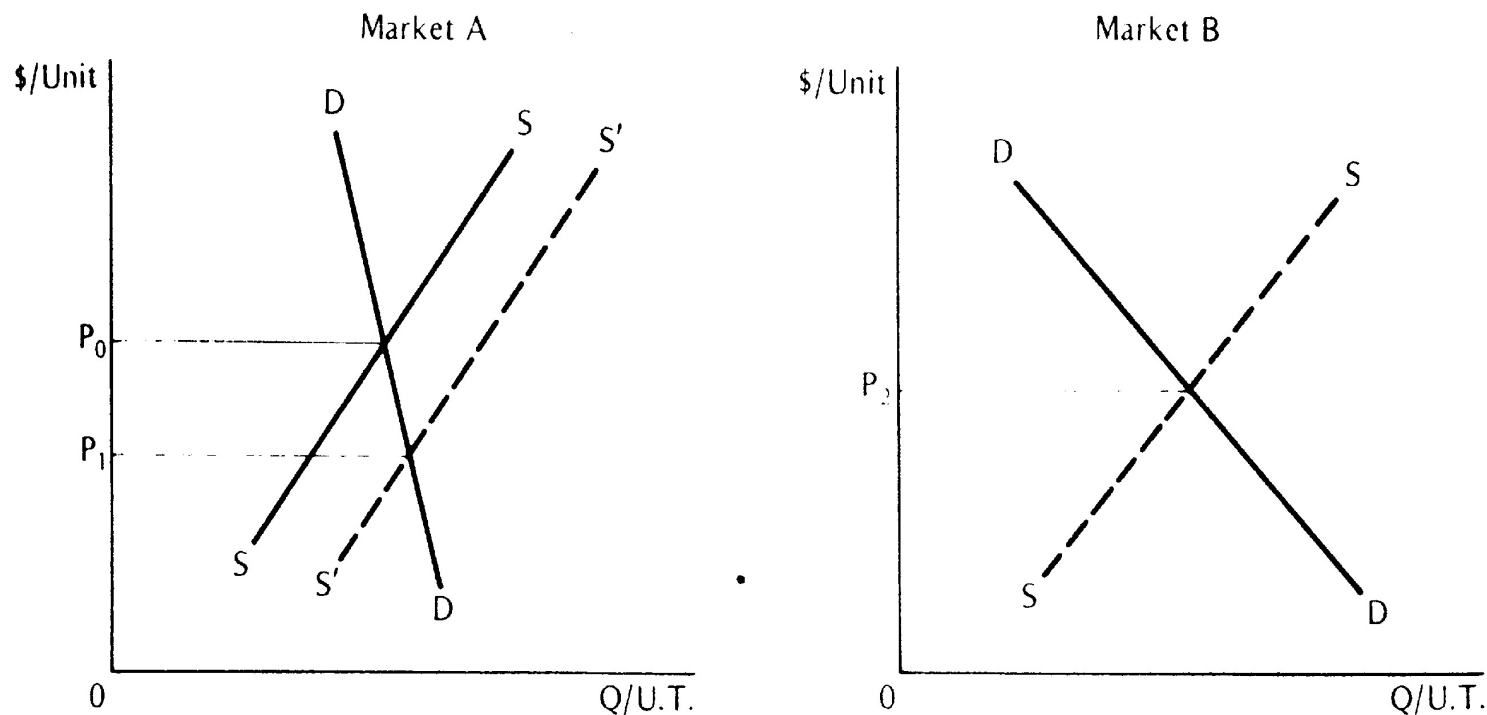
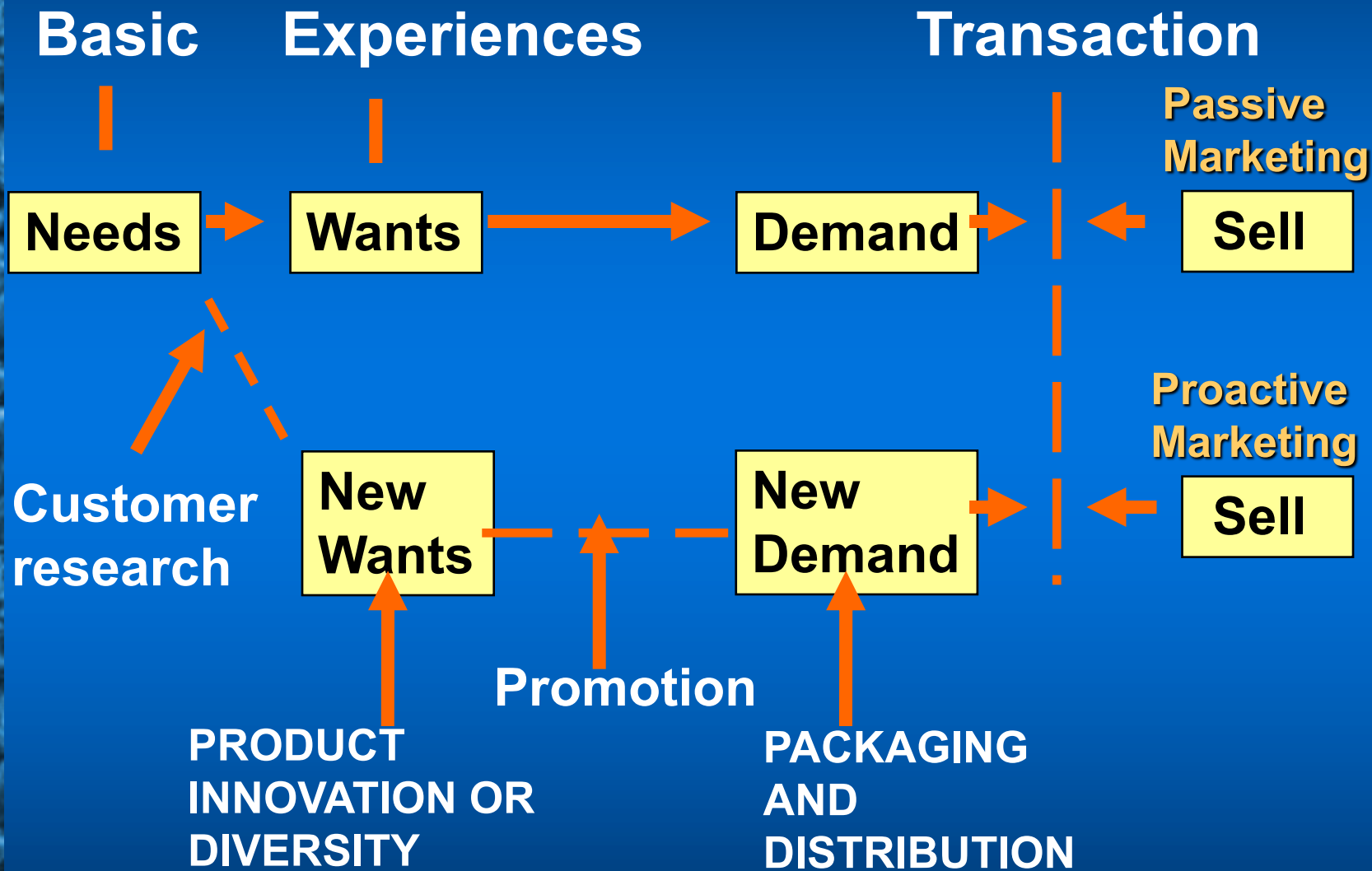


FIGURE 13.6 ILLUSTRATION OF THE IMPACT OF DIVERTING SUPPLY FROM A HIGHLY INELASTIC MARKET TO A SECONDARY MARKET WHERE DEMAND IS MORE ELASTIC OR LESS INELASTIC



# New Products





# Drivers of Innovation

- **successful retailing in the US**
- **product differentiation**
  - niche markets
- **product innovation**
  - new interest
- **flexible manufacturing**
  - to meet changing consumer trends
- **cost reductions**
  - productivity gains

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# Critical Marketing Functions

- assembling raw material
  - selling innovation
  - quality
  - pricing
- producing raw material
  - cost of production
- processing raw material
  - process innovation & efficiency
- New Products
  - identifying consumer needs
  - developing new products
  - promoting new products
    - industrial
    - consumer

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# Synthetic Fibre Marketing

- fibre processing optimised
  - includes polymer inputs
- fibres developed to meet markets
  - e.g. blend fibres
- fibres developed to meet consumer needs
  - e.g. microfibres
  - e.g. Tactel®
    - ICI then Dupont
  - e.g. Lycra®

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# Dupont R&D

- **Fibre**

- polymers
  - fundamentals
  - synthesis
  - modifications
  - multi-component
  - recycling
  - fabrication
- composites
- coatings
- fibre science
- colour science

- **Process**

- process development
- modeling, simulation
- hazard control
- optimisation
- measurement & control

- **\$1 bn p.a. TOTAL R&D**



# Wool R&D Players

- **Improving Production Efficiency**
  - Woolmark, CSIRO DAP, CRC for PQW, Depts of Ag, private consultants, Universities
- **Selling Innovation**
  - AWEX, AWTa, processors, brokers, private companies
- **Consumer Research**
  - Woolmark, processors
- **New Product Development**
  - Woolmark, CSIRO TFT, WRONZ, processors
- **Processing Innovation**
  - Woolmark, CSIRO TFT, Universities, WRONZ

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# Wool Innovations

## Product

- machine washable wool
- fire-resistant wool
- insect-resist wool
- OPTIM™
- Sportwool™
- fibre specification

## Process

- blends
- low temp dyeing
- high speed carding
- Sirospun
- Solospun
- Treotek
- Spinbulk
- lincLITE
- Flexiwool
- biopolishing

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# Critical Issues

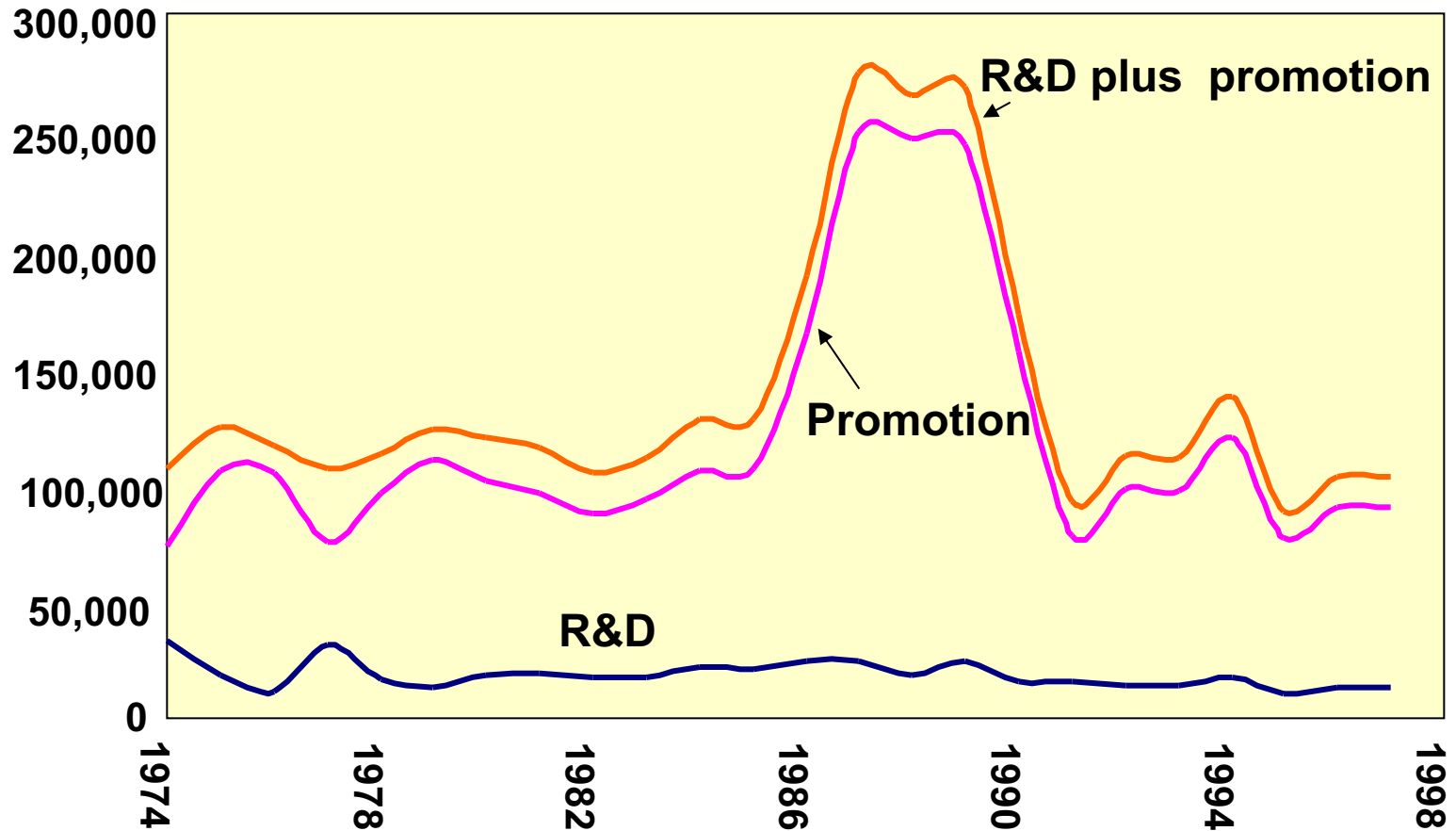
- **Funding**
  - producer and/or processor
- **Priorities**
  - measurement of benefits
- **Diversity of Ideas / Incentives**
- **Innovation**
  - new & better processes / new products
- **Technology Adoption**
  - producer / pipeline / consumer



# Grower: R&D and Promotion

Receipts (\$000's)

(1997/98 prices)



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# R&D Structure: Wool into 21st Century

- 4 world regions
  - Nth America, East & West Europe, Asia
    - competition for limited supply
    - reduce crowding out
- compulsory levies
  - free rider
    - allocate to competing regions (growers)
- competition for R&D \$\$
  - CSIRO TFT, WRONZ, Aachen, Universities

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# R&D Structure: WRONZ

- **Product User Groups**
  - industry
  - researchers
  - consumers
- **generate**
  - research directions
  - new products
  - information flows

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# Woolmark R&D

- commission based
  - consumer research
  - benefit-cost analysis
- early industry input
- ZAC input
- new, unique wool product advantages
- new processing routes

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# Taskforce Structure

- market failure rationale
- commercial norms
- minimal intervention
- focus on innovation
- implementation
- contestable funding
- urgency
- minimal government role
- high calibre Board
- lean & efficient staffing

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Peter Auer

Source: Wool Future Directions Taskforce (1999)



# R&D Principles

- respect from the industry for research
- justification of research to the industry
- peer review for quality assurance
- priority funding by the whole industry
- balance fundamental and applied research
- high quality researchers are essential
- collaboration is integral to progress
- industry beneficiaries must be involved in development and progress
- researcher input into new directions
- IP should not be a priority

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