

**THE MARCUS WALLENBERG PRIZE SYMPOSIUM –
STOCKHOLM - 10 OCTOBER 2003**

**HEXENURONIC ACID – EVOLUTION OF THE DISCOVERY
AND THE IMPORTANCE OF MULTIDISCIPLINARY
COLLABORATION**

ANITA TELEMAN & JOHANNA BUCHERT



HELSINKI UNIVERSITY OF TECHNOLOGY
FOREST PRODUCTS TECHNOLOGY

PART 2

IMPORTANCE OF MULTIDISCIPLINARY COLLABORATION

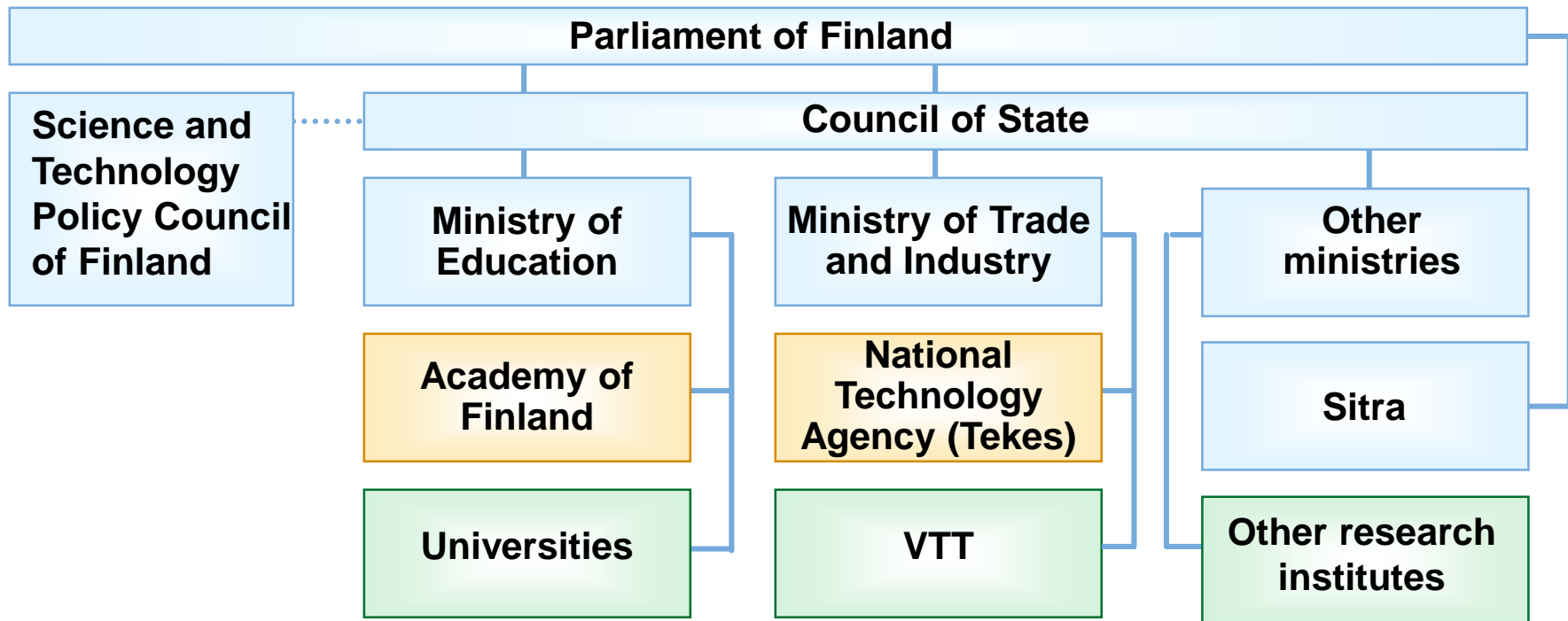
Dr. JOHANNA BUCHERT



HOW TO CREATE A MULTIDISCIPLINARY TEAM

- **Small country ⇒ everybody knows everybody**
- **Funding (TEKES) has effective role in creating multidisciplinary teams**

PUBLIC SECTOR RESEARCH IN FINLAND



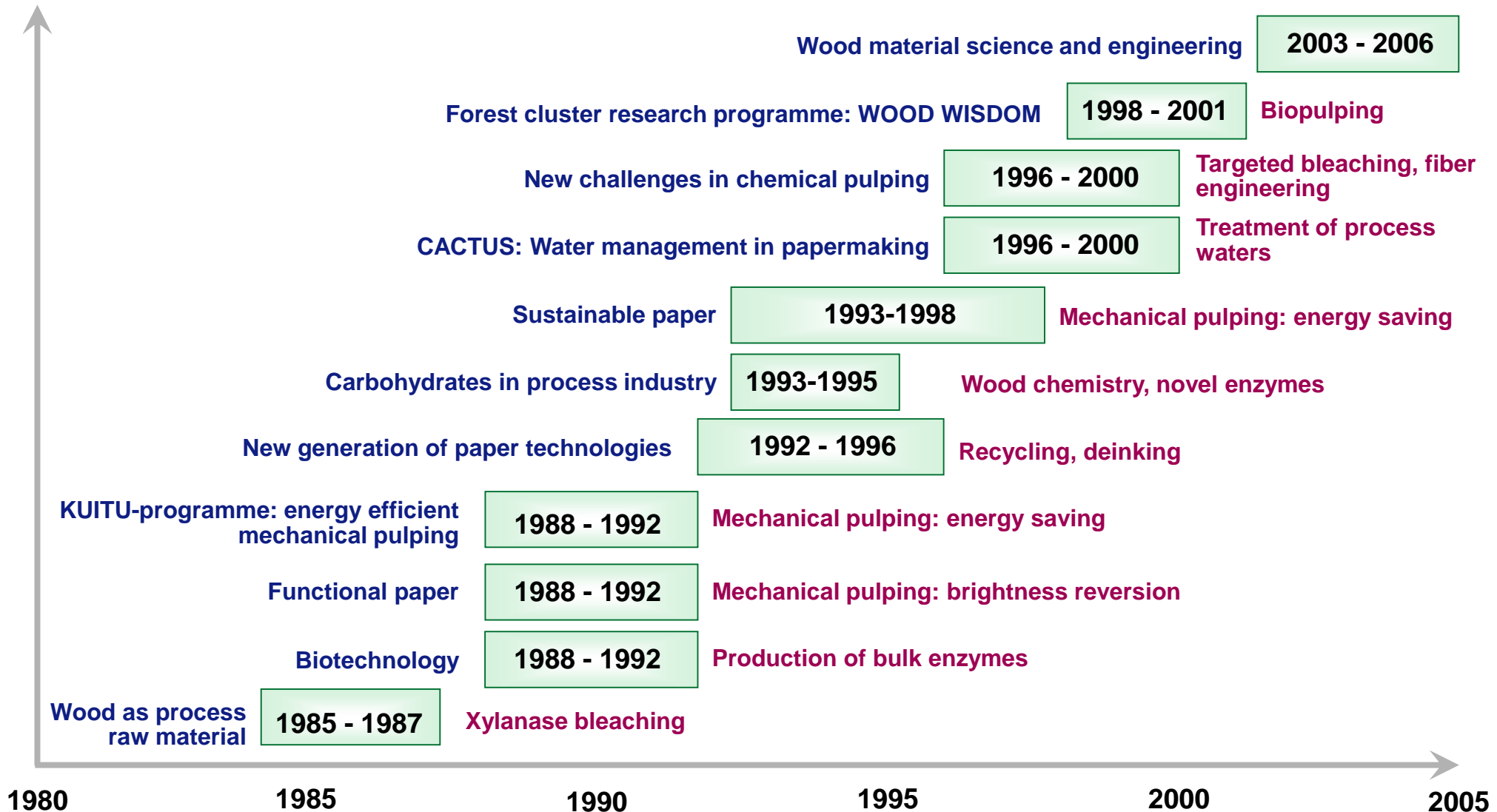
ROLE OF FUNDING ORGANIZATIONS/ CONTACT PERSONS IN APPLIED RESEARCH

- **Strong theoretical and technological background**
- **Risk taking, ambition level**
- **Ability to combine science and practise**
- **Interpretation of scientists' message to industry in the early phases**
- **Translation of the industrial needs to scientists and to scientific questions**

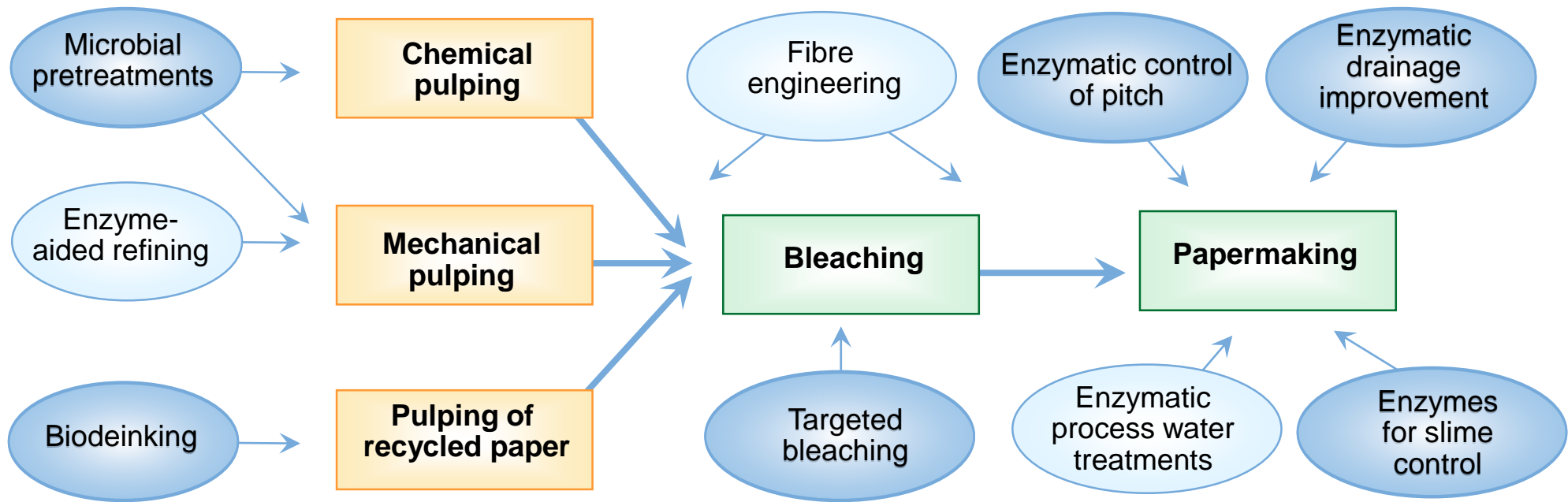
BIOTECHNOLOGY AND PULP AND PAPER TECHNOLOGY TOGETHER

- **Pulp and paper biotechnology research programme started already 1985 by TEKES**
 - ⇒ **Scientists informed on non-traditional ways to do things**
 - ⇒ **Potential of biotechnology has been exploited in**
 - **wood chemistry**
 - **process development**
 - **process control**
 - **product development**

TEKES RESEARCH PROGRAMMES RELATED TO PULP AND PAPER AND P&P BIOTECHNOLOGY RESEARCH



BIOTECHNICAL APPLICATIONS IN PULP AND PAPER PROCESSING



CARBOHYDRATES IN THE PROCESS INDUSTRY

Management group

- Project managers
- Industrial members
- TEKES

- Regular management group meetings



Project
A

Project
B

Project
C

- Seminars
- Project meetings

- HUT
- VTT
- JyU
- KCL
- HU

ROLE OF INDUSTRIAL END-USER IN SUCCESSFUL RESEARCH

Requirements

- **Strong technological background**
- **Capability to tolerate, understand and interpret scientific jargon**
- **Capability to question the scientist' results**
- **Capability to foresee the technological potential of scientific results in very early phases**
 - **Active steering group member ⇒ company can rapidly take the technological lead (ref. Andritz, UPM-Kymmene)**



MULTIDISCIPLINARY RESEARCH GROUP

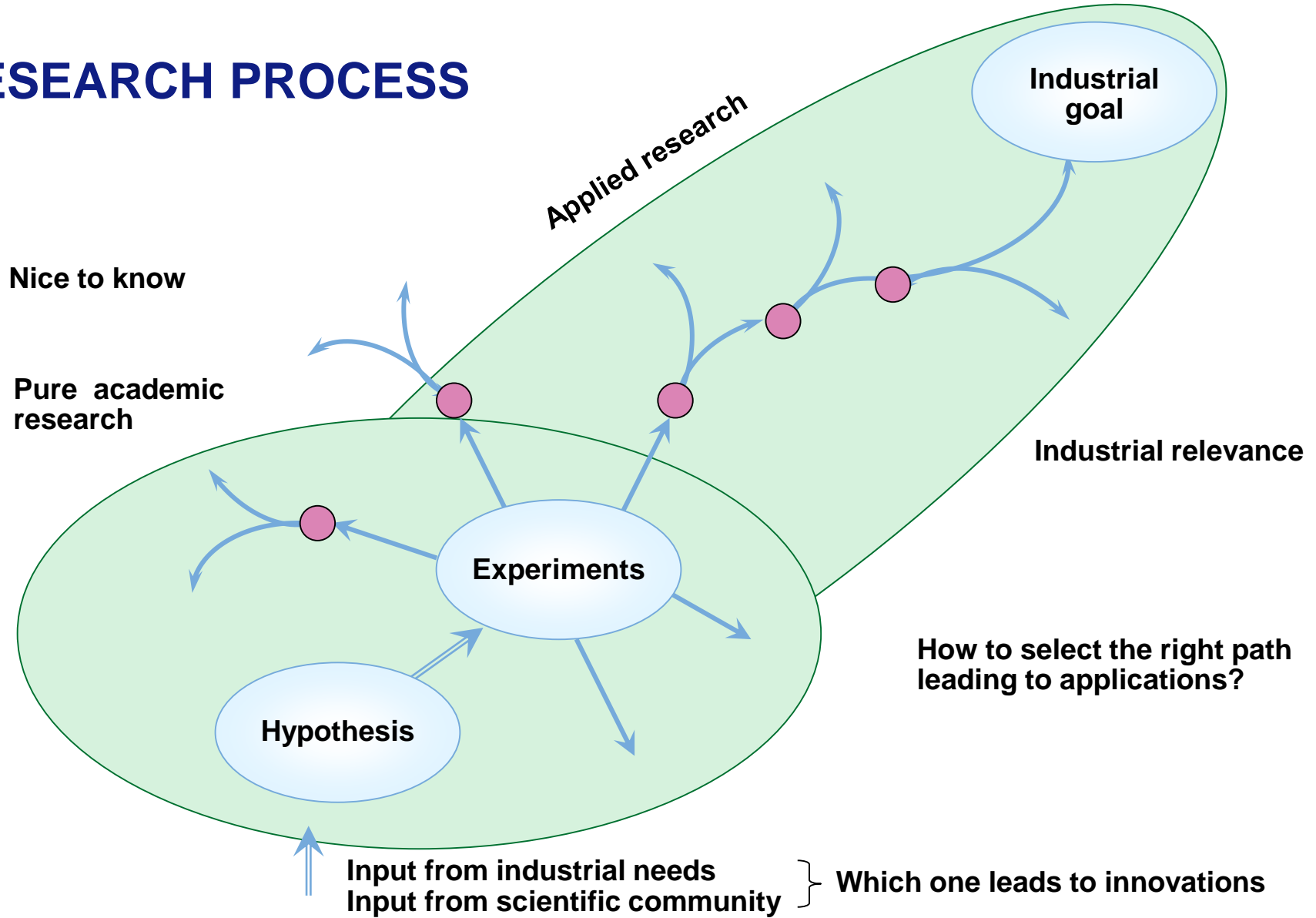
Strengths

- **New ideas and approaches**
- **Different personalities (introverts, extroverts)**
- **Questioning old truths: WHY**

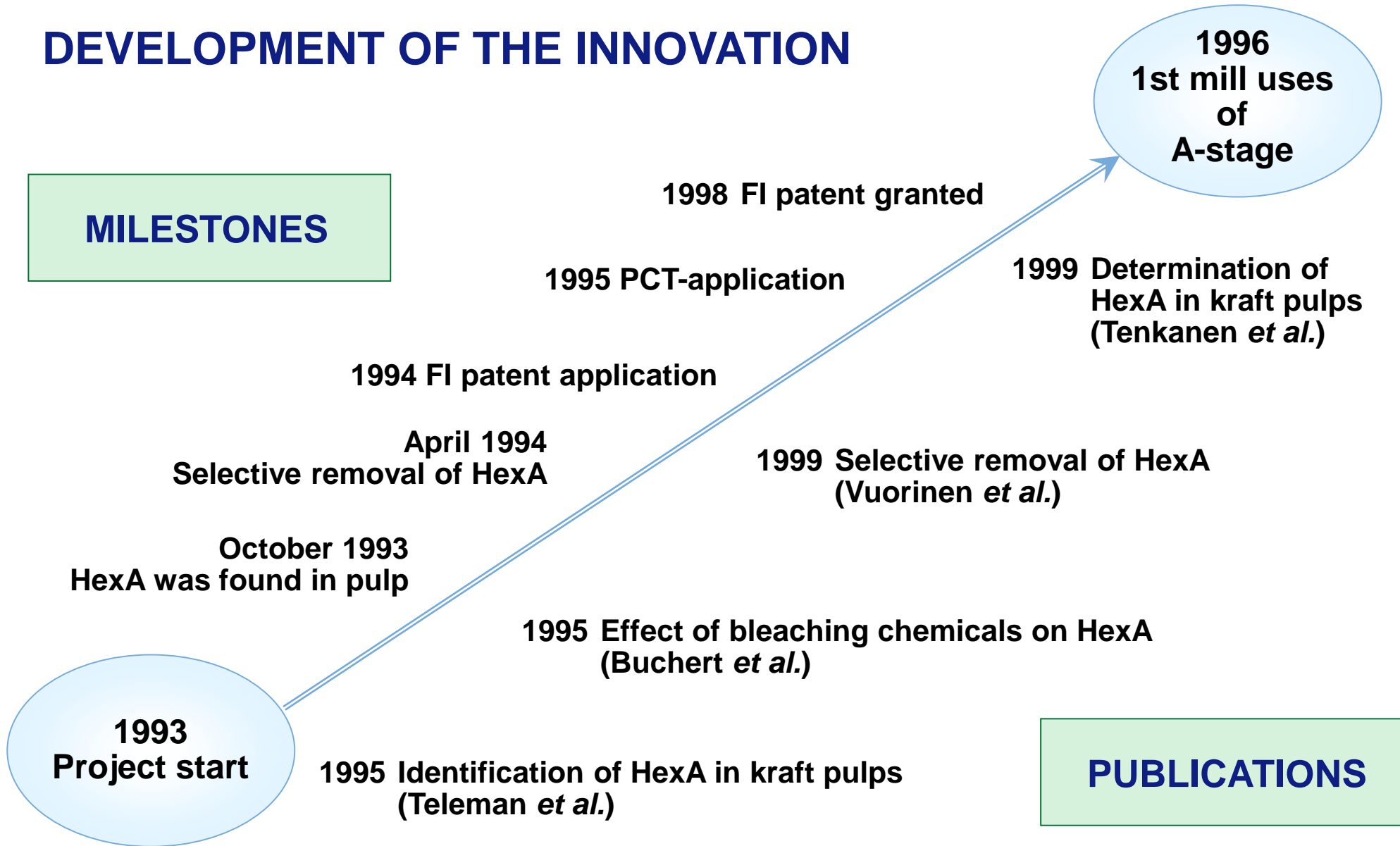
Weaknesses

- **Lack of common language**
- **Territorial thinking**
 - **Scientists with new competence have to earn credibility**
 - **May take time**

RESEARCH PROCESS



DEVELOPMENT OF THE INNOVATION



ACKNOWLEDGEMENTS

- **Prof. Tapani Vuorinen, HUT**
- **Prof. Maija Tenkanen, University of Helsinki**
- **Christine Hagström-Näsi, TEKES**
- **Industrial steering group of the Carbohydrate Programme**
- **Olavi Pikka, Andritz**