



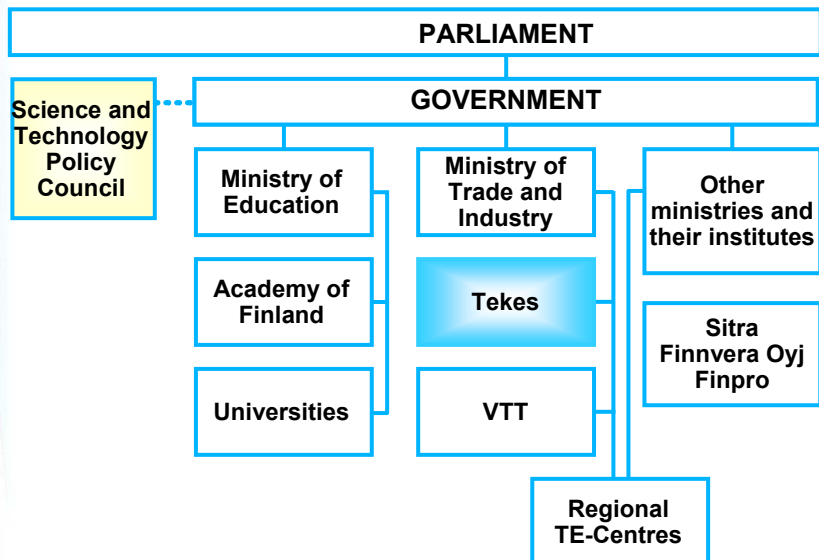
Overview of Finnish Approach to ICT R&D for AEC/FM Industry



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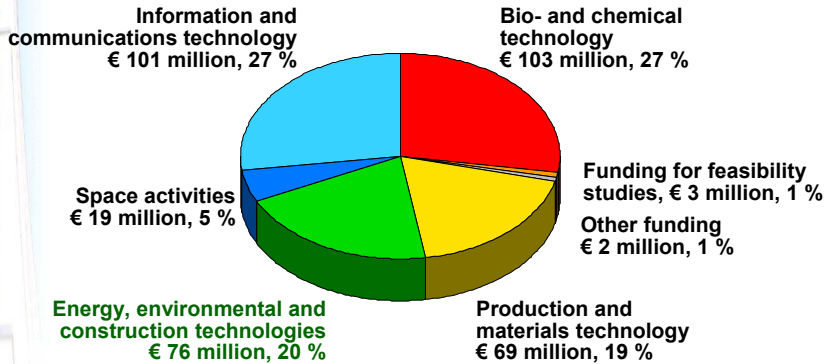
Public sector activities of R&D in Finland



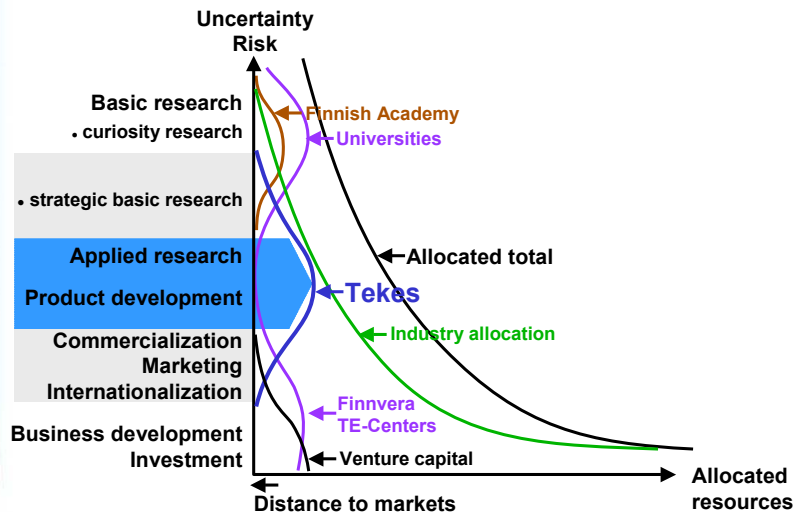


Total Tekes R&D funding in 2000 by field of technology

Total € 373 million (AU\$ 688)
and 2 297 financed projects



Allocation of R&D resources



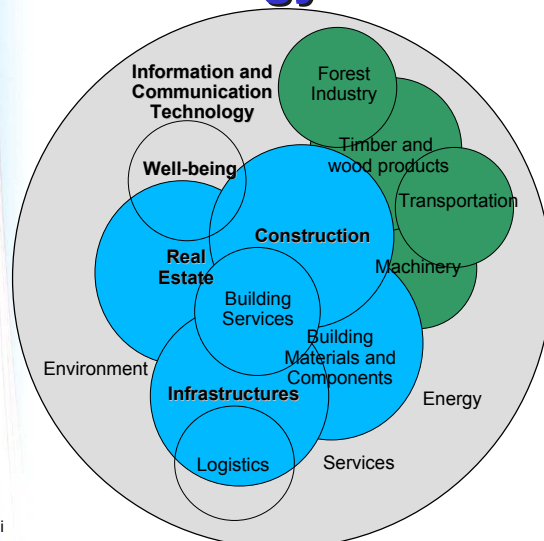


Technology Programmes

- Extensive programmes initiated by Tekes and consisting of numerous projects
- Focused on a key technology sector ⇒ pro-active tool to influence the R&D interest areas and create the critical mass
- Implemented in co-operation by companies and research units
- Projects and results are partially public, but the results of industrial projects are proprietary



Tekes: Construction and Wood Technology Cluster



Tekes mission:
R&D must become a constant part of the normal business also in the AEC/FM industry

Change in the basic philosophy:
We must move from minimizing the costs to maximizing the added value



Vera Technology Programme

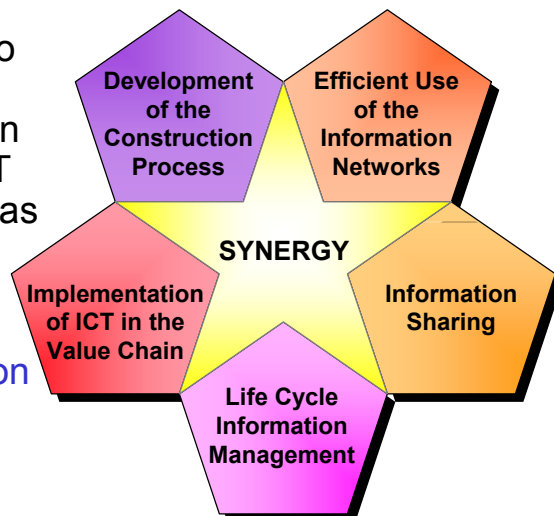
- Information Networking in the Construction Process
- Schedule - six years; 1997 - 2002
- Total volume

~45 % by Tekes	120 million FIM	(AUD 35 million)
~55 % by the industry	140 million FIM	(AUD 41 million)
Total budget	260 million FIM	(AUD 76 million)
- Allocation January 1997...August 2001
 - Research projects: 35 / 26 million FIM (AUD 8 million)
 - Industrial projects: 90 / 174 million FIM (AUD 51 million)
 - **Total:** 125 / 200 million FIM (AUD 59 million)
- URL: <http://www.tekes.fi/vera/>



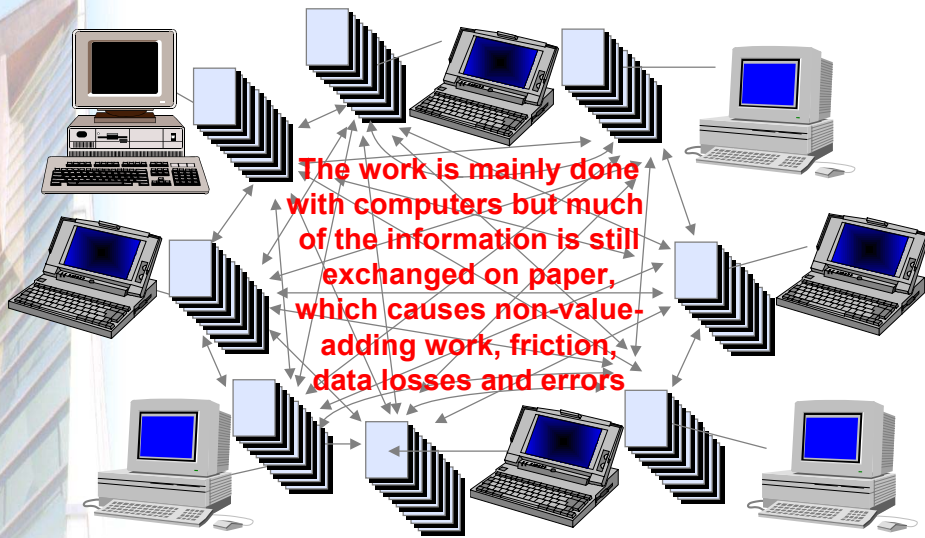
Target

The target is to promote the implementation and use of ICT and networks as the enabling technologies to re-engineer the construction process

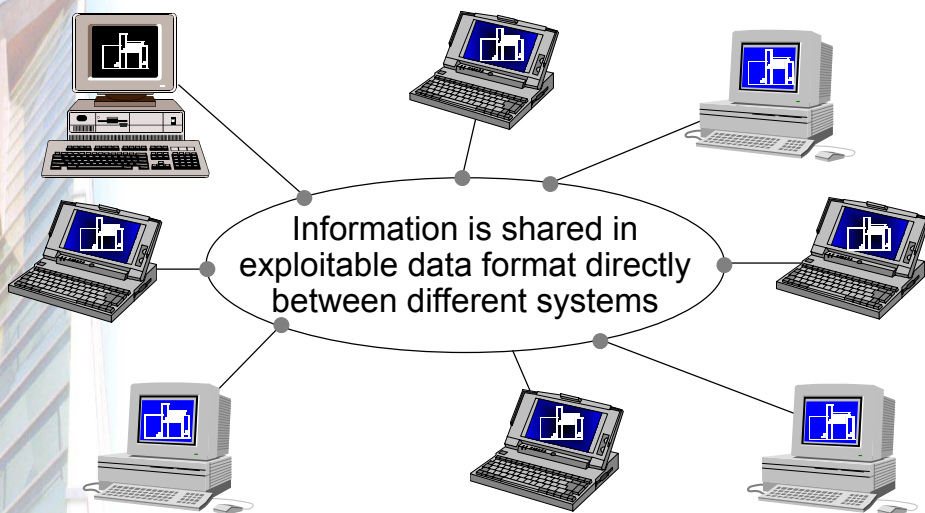




Current Problem

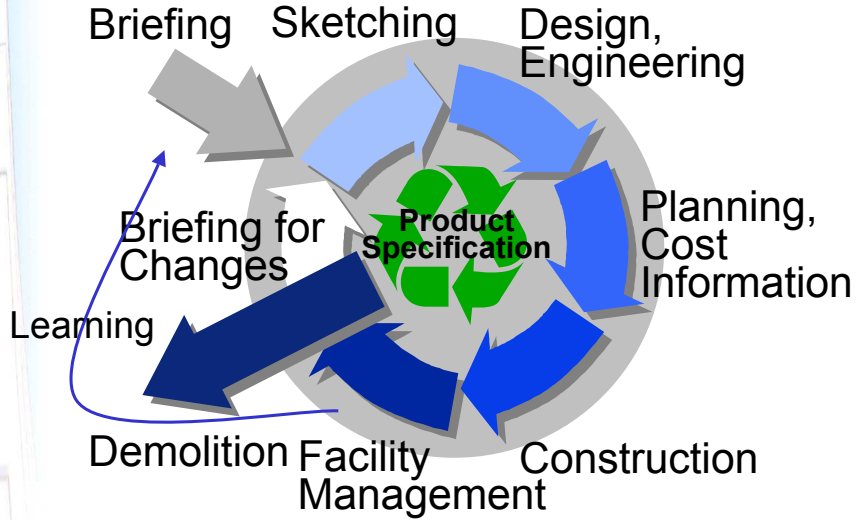


Goal in the Future





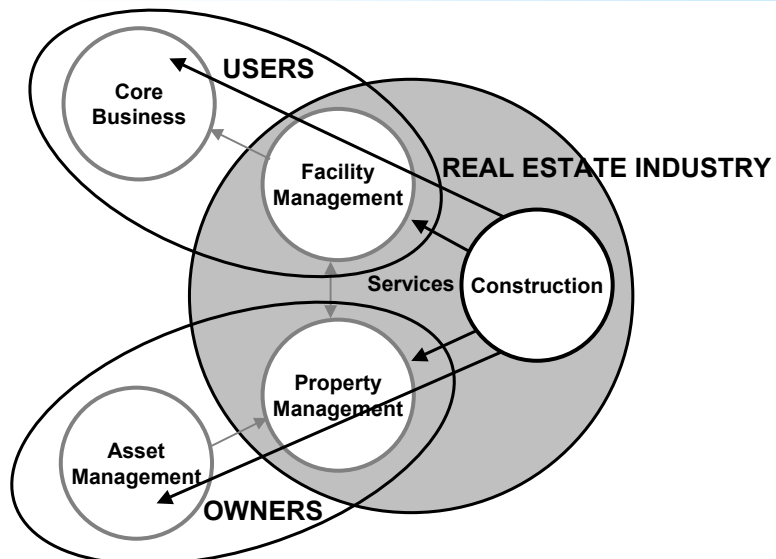
Information Lifecycle - Project View



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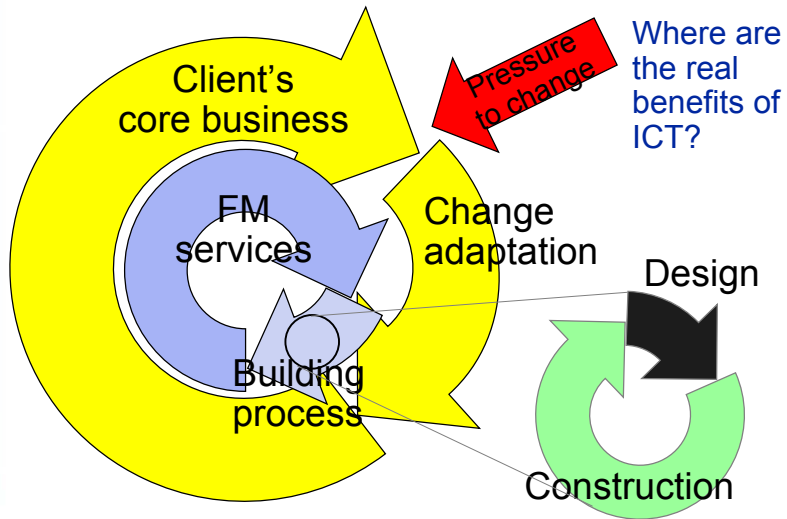
New View to the AEC/FM Industry



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Real Life Cycle View ?



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Helsinki University of Technology (HUT-600) Auditorium Project




A case study in the application of:
Industry Foundation Classes & 3D/4D Models

CIFE Summer Program 2001, Stanford University


Virtual reality



Visualization
Lighting simulation




Comfort Simulation




Architectural

4D Simulation




The Project Architect:
 “We are amazed that this
 [sharing of product model
 data in IFC format]
 is working in practice”

Energy Simulation



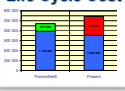
Production
planning




**Construction
Estimating**

**Mechanical
Design**

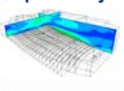
Life Cycle Cost




Environmental
Analysis



Comp. Fluid Dynamic




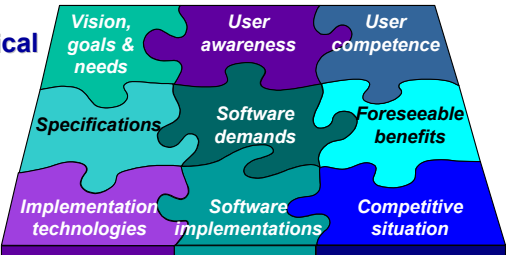


Implementation of technological leaps


Implementation components

Technological push





Needs pull



Daily Business

Daily Business++

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16

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