

Monitoring a National Construction IT Programme



Information Networking in the Construction Process

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Content of the Presentation

- Tekes and technology programmes
- Vera - Information Networking in the Construction Process -programme
- Monitoring team, process and some recommendations
- Some comments about the monitoring process
- Some key factors of the Finnish R&D activities



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What are Technology Programmes?

- extensive programmes initiated by Tekes and consisting of numerous projects
- focused on a key technology sector
- implemented in co-operation by companies and research units
- companies can participate with their own projects or by joining in common research projects
- projects are partially public, but all the results are owned by the organisations participating in the project

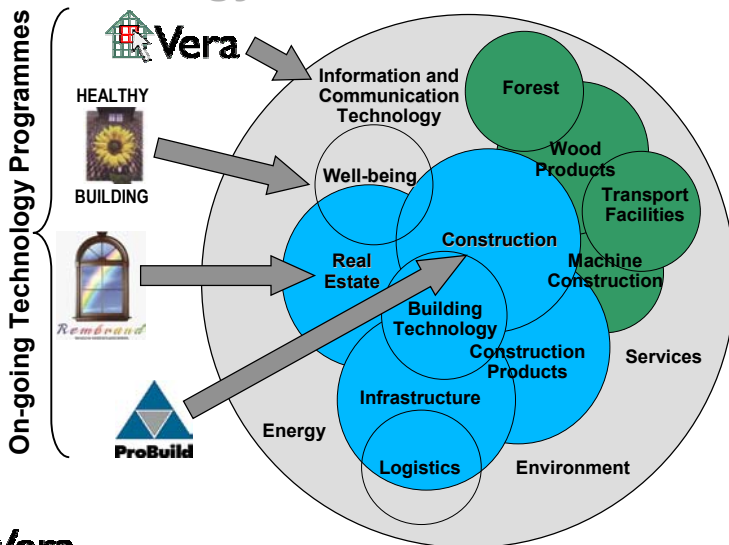


Tekes



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Tekes: Construction and Wood Technology Clusters

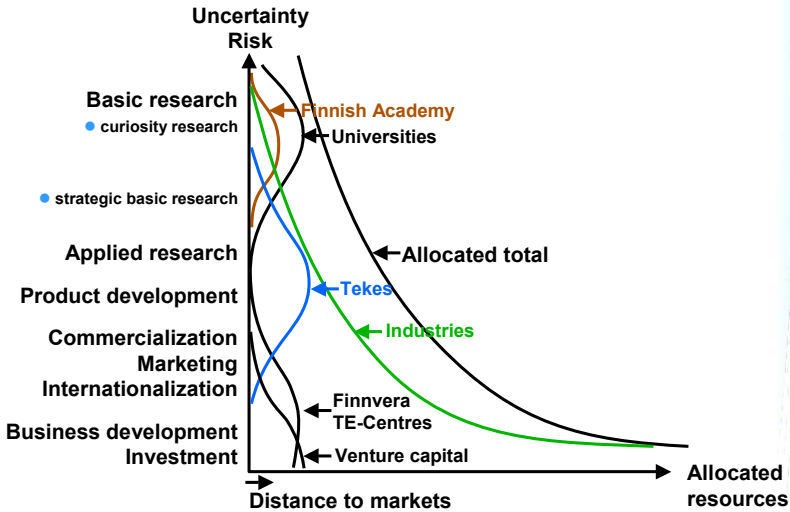


Tekes



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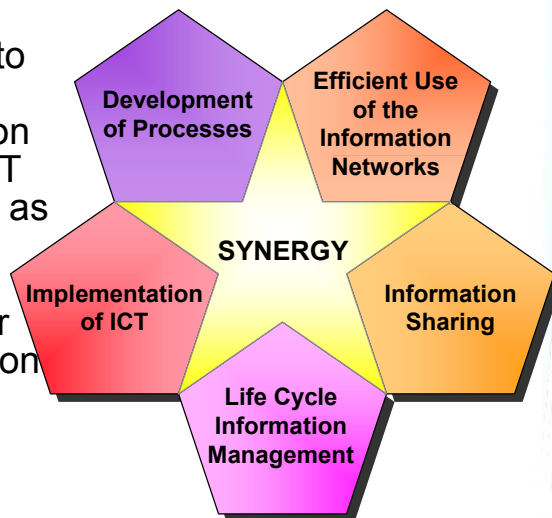
Allocation of R&D resources



Vera Programme Components



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



Programme Schedule and Volume



- Information Networking in the Construction Process
 - Finnish national Construction IT Programme by Tekes (National Technology Agency)
 - Schedule - six years; 1997 - 2002

- Total volume

Original budget	~170 million FIM	(~28 million €)
Current estimation	~260 million FIM	(~43 million €)
~40...45 % by Tekes	~120 million FIM	(~20 million €)
~60...55 % by the industry	~140 million FIM	(~23 million €)

- Current situation

Research projects:	33	/ 24 million FIM	(4 million €)
Industrial projects:	72	/ 126 million FIM	(21 million €)
Total:	105	/ 150 million FIM	(25 million €)

Short project presentations in the web: <http://cic.vtt.fi/vera/english.htm>



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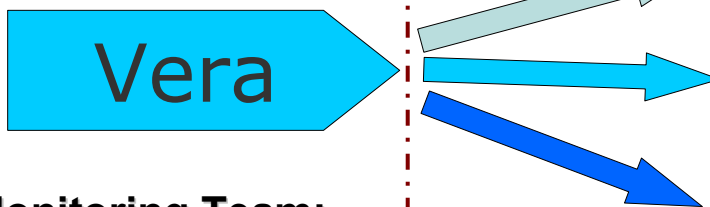


Monitoring (Mid Evaluation)



1997-2000

2000-2002



Monitoring Team:

Matthew Bacon, BAA

Kaj Hedvall, RAKLI

Coordination: IMI/TUT (Innovation Management Institute of Tampere University of Technology; Pekka Berg, Satu Raak, Juha Nummi)



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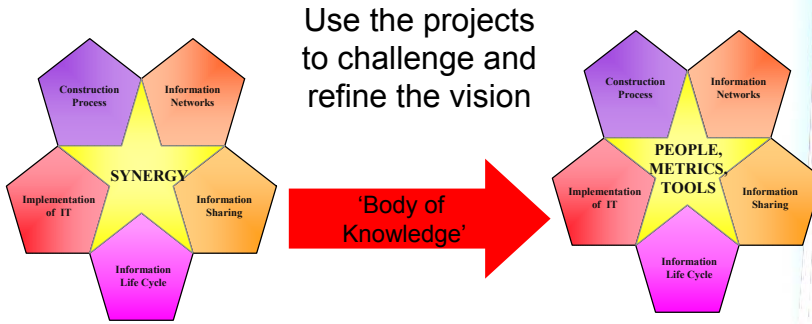
Objectives of Monitoring

- Whether or not industry's expectations have been met by the Vera programme
- Are the results well disseminated and is industry applying those results
- What are the indicators that would demonstrate change and improvement
- Benefits of Vera to the projects, and the contribution of the projects to the Vera goals
- Are the goals of the programme still valid or should the future focus be changed

Monitoring Process

- Matthew Bacon's focus & method:
 - whether the expectations of the industry have been/are being met
 - how well the results are disseminated
 - how the industry is applying the results
 - interviews of 10 completed/completing projects
- Kaj Hedvall's focus & method:
 - the role of Vera as a generic tools programme for the entire real estate and construction industry
 - the interaction between Vera and other technology programmes
 - the benefits of Vera to the projects and the contribution of the projects to the Vera goals
 - interviews of 10 projects closely related to property management and real estate business
- IMI/TUT
 - Co-ordination and internal assessment
 - bottom-up: questionnaire to all Vera projects + 15 interviews
 - top-down: Steering Group interviews + workshops

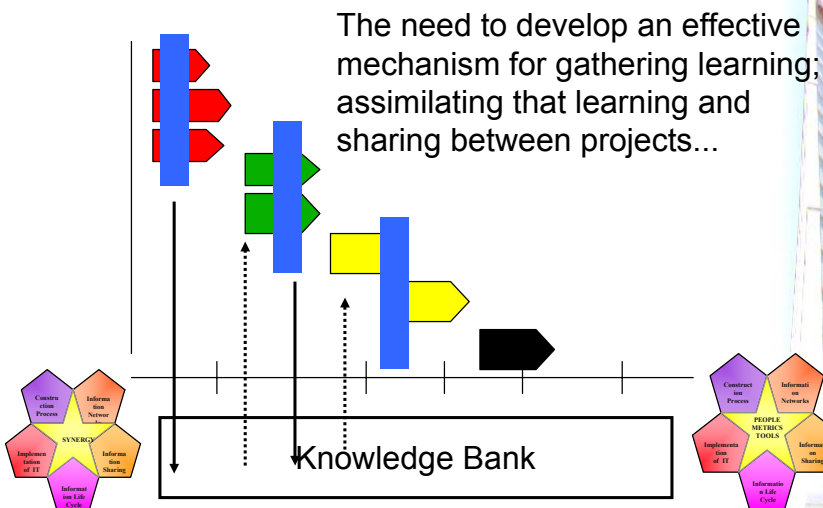
Recommendation (1)



WHERE VERA HAS COME FROM

WHERE THE 'BODY OF KNOWLEDGE' IS LEADING VERA TO

Recommendation (2)



Recommendation (3)

Metrics must be used to show why there is a need for change and what the benefits of change will be.

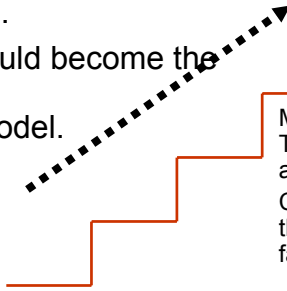
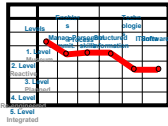
The industry need to develop

a 'value model'.

TIMI project could become the basis of that model.

Level	1	2	3	4	5	6	7	8
1. Level								
2. Level								
3. Level								
4. Level								
5. Level								
6. Level								
7. Level								
8. Level								

Value model



Metrics need to be developed. There is anecdotal evidence as indicator for change. Companies are changing, but the rate of change could be faster.

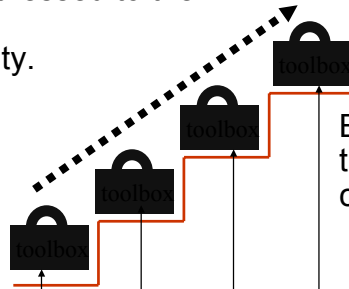
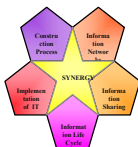
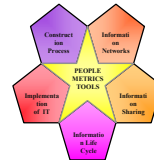
'Measuring the Benefits of IT'

Recommendation (4)

Change will arise when individuals can see how to change...

The 'packaged' learning from projects should be addressed to their

level of maturity.

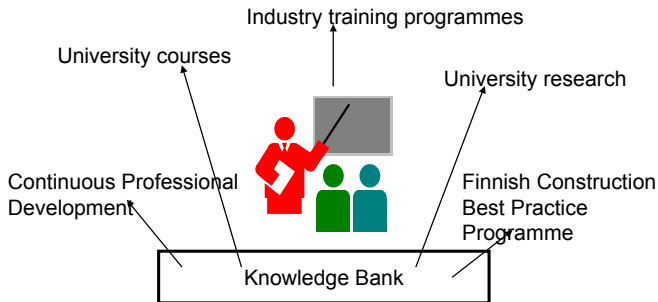


But where does the training in IT come from?

Knowledge Bank

Recommendation (5)

Vera programme should add a further development area: “To enable people in organisations to implement the change”



The value of the ‘knowledge bank’ needs to be exploited for the benefit of the whole industry.

Some Comments about the Monitoring Process

Internal Monitoring Process

- The value of internal evaluation by IMI/TUT was questionable.
- The main problems were:
 - it is difficult or impossible to measure results in the mid-term phase. The monitoring process should concentrate to the objectives and activities
 - division in research and industrial projects was mostly ignored in reporting the results
 - lack of definition in terminology caused non-coherent answers
 - comparing different projects in different stages did not bring any value for monitoring
 - lack of transparency made it difficult to estimate the real meaningfulness of some comments

External Monitoring Process

- The substance of the work of external evaluators, Matthew Bacon and Kaj Hedvall, was significant and gave much valuable information for the programme management in 2000...2002.
- The lesson learned was that it is important to use highly qualified experts who have a personal vision about needs of the industry and the goals for R&D.
- Subjective visions are more valuable tools for technology programme management than a “quasi scientific” approach trying to measure less important issues.

Openness and Publicity Dilemma

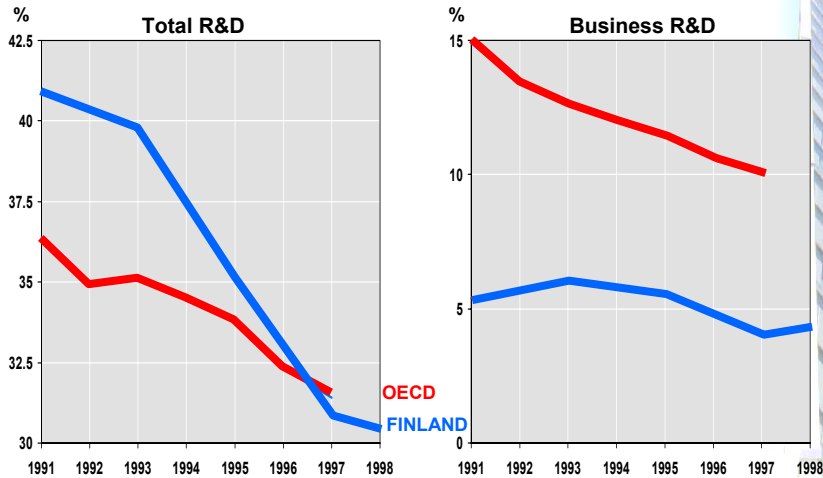


- One of the main results was the need to improve gathering and dissemination of the learning from projects
 - However, it is important to consider the degree of openness and publicity of the projects carefully
 - Otherwise it can lead to a situation where the most innovative companies do not participate in the programme because they would lose part of their competitiveness by sharing the information
 - It is important to find the right balance
- This is a common problem in any technology programme in Finland, not specific to Vera

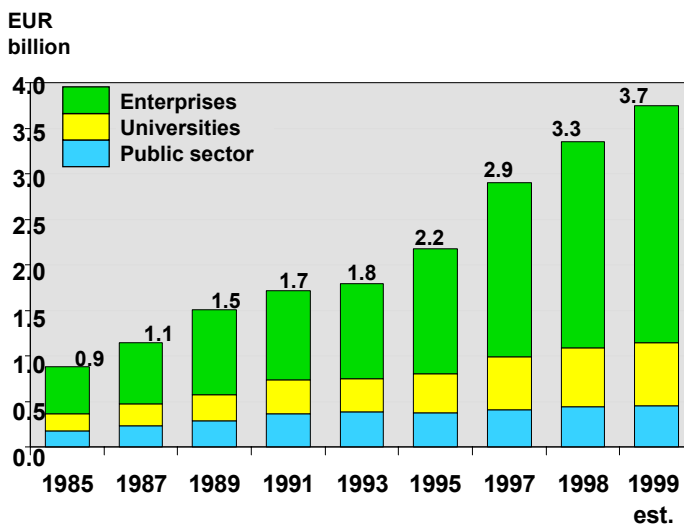
Some Key Factors of the Finnish R&D activities



Share of public financing of R&D in 1991 - 1998



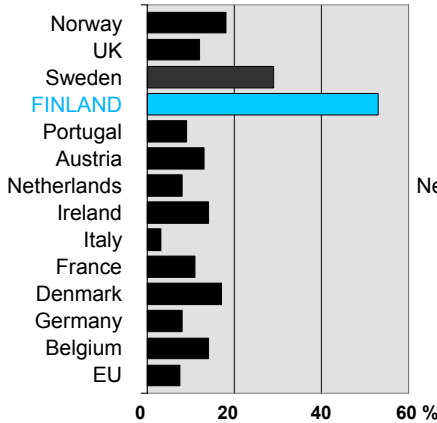
R&D in Finland in 1985-1999



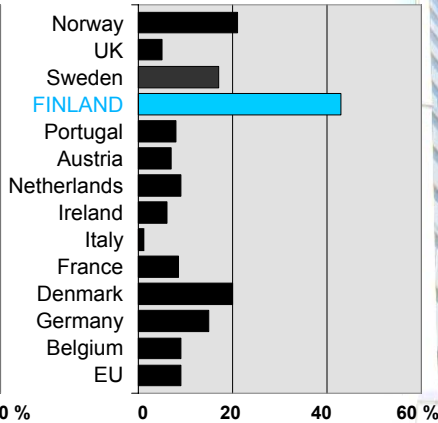
Co-operation between companies and universities and research institutes



Share of innovative companies having co-operation agreements with universities (1994-1996)



Share of innovative companies having co-operation agreements with public research institutes (1994-1996)



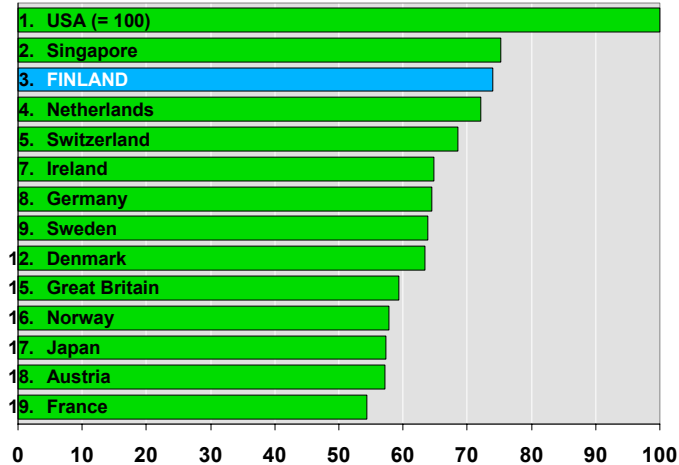
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Source: Eurostat, Enterprise DG, 2nd Community Innovation Survey



J05/00-06

The World Competitiveness Scoreboard 2000



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Source: IMD (International Institute for Management Development),
The World Competitiveness Yearbook 2000.



J01/00-06

Matthew Bacon's Conclusion



- “I believe that Finland has much of the technology it needs to drive forward with its Vera programme.
- The focus should be less on the development of new technologies, but more so on how these technologies need to be applied, and the development of the skills needed to apply them.
- Finland is not alone in addressing these issues - but she has a unique opportunity to take an holistic view of them, because of the Tekes approach.
- The Vera programme in my opinion is unique in that it attempts to define a complete picture for an information network.”