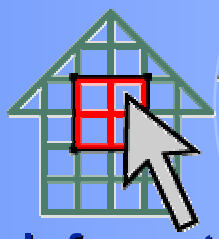


Vera

Information Networking in the Construction Process

National IT programme for the AEC/FM Industry

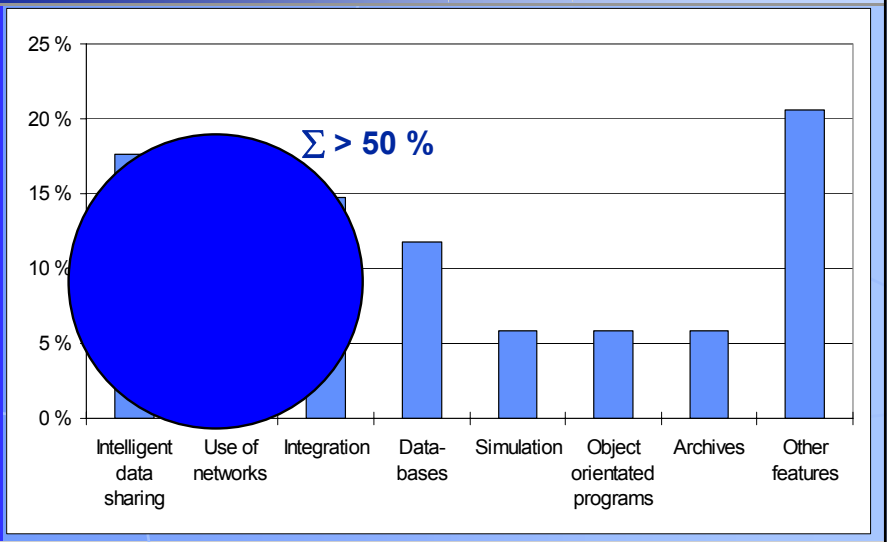
Arto Kiviniemi
arto.kiviniemi@vtt.fi

CIB W78 - June 1998

Technology Programmes

- VERA - “Information Networking in the Construction Process” is a national technology programme for AEC/FM industry funded by Tekes, Technology Development Centre of Finland
- VERA is one of the 15 current Finnish technology programmes in the AEC/FM industry field
- Technology programmes are means of creating new technological know-how through the co-operation of companies, research institutes and universities
- The programmes promote the technological development of a specific field of technology, industry or even of an individual company

Unused features in current technology



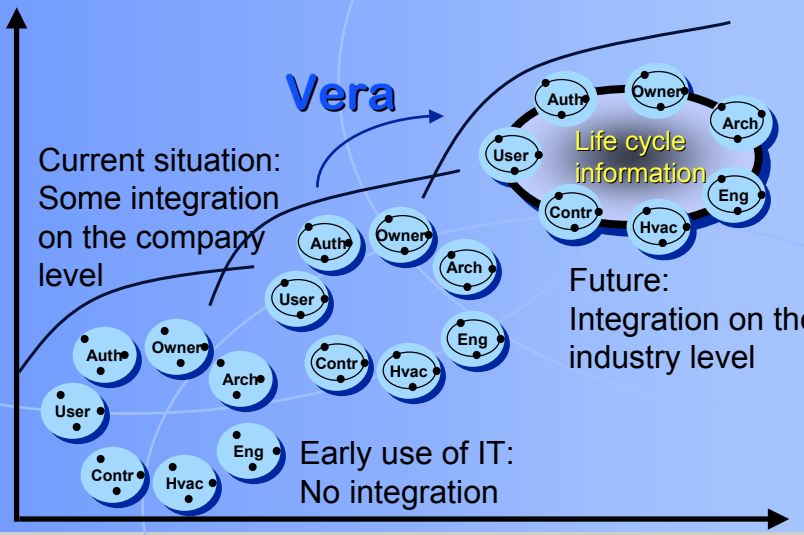
Vera TEKES

Current problems

- The work is mainly done with computers but most of the information is still exchanged on paper
  - ☑ overlapping and non-value-adding work
  - ☑ reproducing the information causes friction and errors
- Each player is producing information from their own point of view
  - ☑ needs of other parties and phases of the process are missed
- Implementation of the existing know-how is missing
  - ☑ from theory to tools
- The gap between the top users and average know-how in the AEC/FM industry is too large
  - ☑ benchmarking and education is needed

Vera TEKES

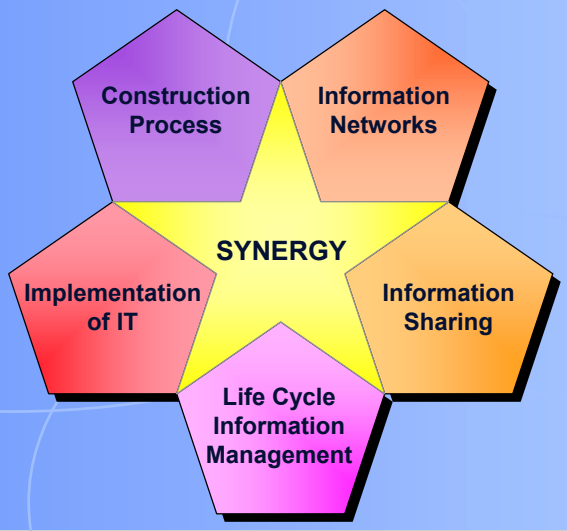
Integration steps



Vera programme

- The programme was approved in May 1997
  - ☑ the target is to promote the implementation and use of IT as an enabling technology to re-engineer the construction process
- Schedule
  - ☑ six years; 1997 - 2002
  - ☑ evaluation of results after the first three years
- Volume
  - ☑ total budget is 170 million Fim (~ 32 million US$)
  - ☑ 40 % by Tekes (~13 million US$)
  - ☑ 60 % by the AEC/FM industry (~19 million US$)

Programme components



Vera TEKES

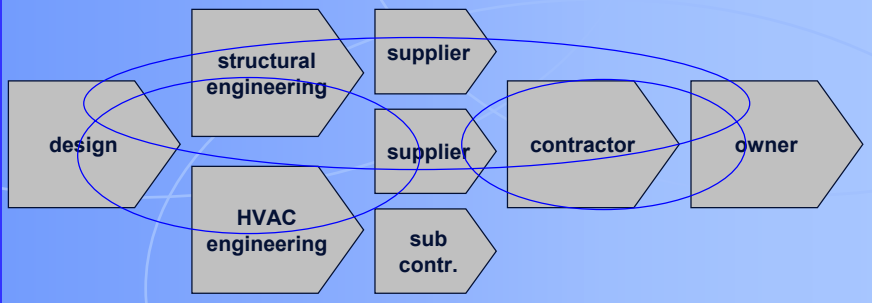
Main areas of the programme

- Key issues:
  - ☑ construction process development
  - ☑ efficient use of IT
  - ☑ efficient use of information networks
  - ☑ information management
  - ☑ lifecycle information and information lifecycle
- Key technologies:
  - ☑ product models
  - ☑ object orientated software
- Key people:
  - ☑ building owners and facility managers:
    - they will have most benefits
    - they can set requirements for the other partners
    - the “demanding client” concept

Vera TEKES

Project principles

- Develop the construction process and IT solutions simultaneously and promote R&D in networks
  - ☑ projects which include several parts of the value adding chain in construction process
  - ☑ no interest in projects for just one domain



Vera TEKES

Projects

- VERA programme is only a framework, the projects are mainly coming from the industry
  - ☑ own interest
  - ☑ business strategy
  - ☑ economical benefits
- Project funding
  - ☑ 20 % for the research institutes and universities
  - ☑ 80% for the AEC/FM industry
  - ☑ international co-operation is seen as an advantage
- Connection to IFC
  - ☑ no support for the software development unless data sharing and networking are in the scope
  - ☑ all projects connected to the data sharing must use or support IFC

Vera TEKES

Project situation

- Research Projects
  - ☑ 1997 11 projects, total volume 3,4 million Fim
    - Tekes funding 2,7 million Fim (79%)
  - ☑ 1998 currently 2 projects, volume 1.1 million Fim
    - Tekes funding 0.8 million Fim (73%)
    - Tekes budget 3 million Fim
- Industrial Development Projects
  - ☑ 1997 18 projects, total volume 32,8 million Fim
    - Tekes funding 12,8 million Fim (39%)
  - ☑ 1998 currently 15 projects, 12,0 million Fim
    - Tekes funding 6,3 million Fim (53 %)
    - Tekes budget 12 million Fim

TEKES

Research Projects

URL http://www.vtt.fi/cic/vera/english.htm

Project name	Organisation
IAI Forum Finland	VTT
Alternative Methods in Product Modelling	VTT
SCENIC Support Centres Network for IT in Construction	VTT
ELSEWISE European Large Scale Engineering Wide Integration Support Effort	VTT
Benefits of IT in Construction	ToCoMan
VIRAPS - Virtual apartments	UIAH
Construction IT Theses	TUT

TEKES

Industrial Development Projects 1

URL http://www.vtt.fi/cic/vera/english.htm

Project name	Organisation
Virtual Project 2000, Software Development:	
Contractors for Building Services	Tietovalli
FM/PM	Viatek Companies
Architectural Design and Electrical Engineering	AIO Group
Main Contractors	ToCoMan
HVAC Engineering	Progman
HVAC Product Libraries in Networks	Take
Information Management in the ThermoNet Delivery Chain	ABB Installation
FACI, Facility Management Integration	Ruokosuo Architects
Ratas Manual for Structural Engineering	RTS
Project Manual for Construction Clients	RAKLI
PESU, Renovation Planning	Jukka Tikkanen Architects
FINNCORE, Construction process reengineering	YIT Companies
SUMA, Supply management by product concept	YIT Companies
RECO	YIT Companies
ProPlan, Production planning system	YIT Companies
Development of Data Management and Construction Process	Skanska
Finnish Strategy in Product Modelling for Building Services	Take

Industrial Development Projects 2

URL http://www.vtt.fi/cic/vera/english.htm

Project name	Organisation
Deployment of IT on Construction Site	U.Lipsanen
Management of Changes in the Construction Project	Riitta Korhonen Architects
Software Interfaces for Design, Construction, Marketing and Facility Management	Jidea
Integrated Tendering System for Timber Houses	Niemenharjun puuteollisuus
KURNET - Extranet Solutions for the Municipal Proprietor	Jyväsdata
TOTU - Information as a Part of the Product	Onninen
Finnish Construct IT Center - prestudy	Building Information Institute
Transfer Methods in the Networks for Trade Information in the Construction Industry	CM Systems
IAI International Technical Secretary	ToCoMan
Tecmi Software	Siimisoft
Information Networking for Prefabricated Wooden Elements	Iin Fasadi
3D Modelling of Existing Buildings	Tilat
Pipemodeler Software	Cadex Software
Project Server for SMEs	RaksaNet
LINK - Integration of Design Tools for Electrical Engineering	Granlund Engineering
Interactive WWW Tools for Traffic Design	Matrex