

# Knowledge Management of Manufacturing Product/Process issues

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**INTRODUCTION**

**KEY ISSUES:**

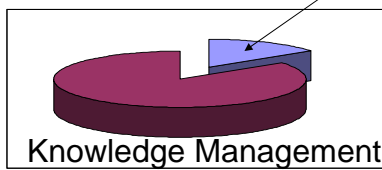
- KNOWLEDGE ON PRODUCT/PROCESS
- COLLECTING USEFUL KNOWLEDGE → EXTENDED ENTERPRISE
- FOSTERING:
  - CONTINUOUS IMPROVEMENT
  - INNOVATION



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**KNOWLEDGE MANAGEMENT**

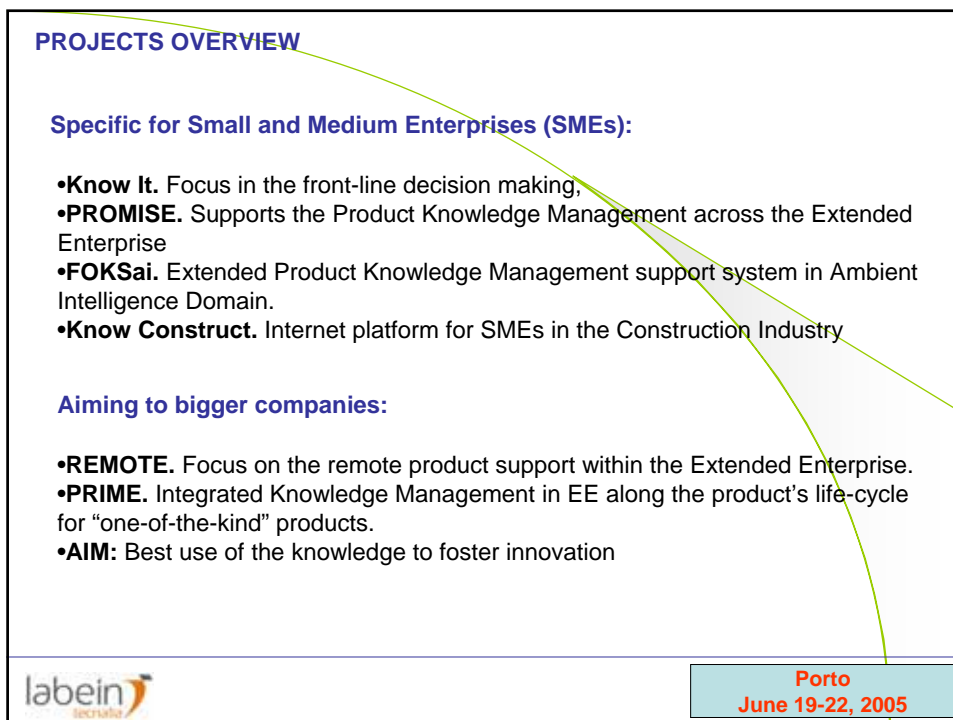
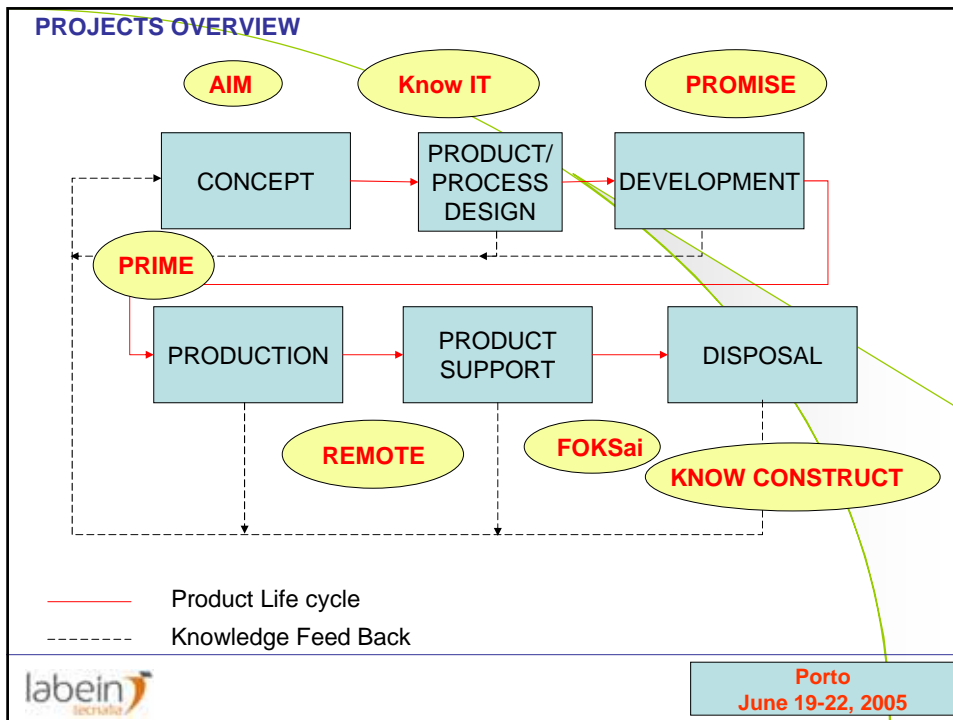
**KM in Product/process**



- EXTENDED ENTERPRISE
- EXTENDED PRODUCT
- AMBIENT INTELLIGENCE



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## PROJECTS OVERVIEW

Project	Starting date	Ending date
KNOW IT	January 2001	September 2002
REMOTE	March 2001	October 2003
PROMISE	May 2001	February 2003
PRIME	April 2002	March 2005
AIM	May 2003	September 2005
FOKSai	February 2004	January 2006
KNOW-CONSTRUCT	March 2005	August 2007



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## PROJECTS OVERVIEW

### KNOW IT

Practical knowledge management to support front-line  
decision-making in SMEs. (IST)

#### OBJECTIVES:

- To support front-line decision-making in SMEs
- To help front-line workers to avoid wasting time and money solving problems
- To improve products and services by using knowledge obtained from Know IT system
- To provide to customers internet-based self-service capabilities
- To encourage continuous improvement culture in SMEs
- To support the improvement of skill of the personnel in SMEs companies



#### PROJECT APPROACH:

Making use of methodologies for knowledge management a web-based portal system is developed in order to improve front-line situations in SME involving management and relationships with customers.



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## PROJECTS OVERVIEW

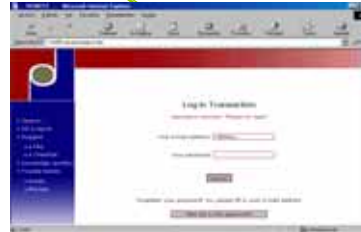


# REMOTE

Remote product/customer support via extended enterprise.  
(Growth)

### PROJECT APPROACH:

The aim of REMOTE, is to extend the manufacturers knowledge base out to the customers' site (extending the manufacturer's factory to include their customers), so that the knowledge can be used or added to at multiple remote locations (as well as at the manufacturer's site). This knowledge will be used by: Customers, and Field Operatives, (and could be used by Technical Sales Support, and Engineering Management).



### OBJECTIVES:

- To reduce the number of product problems
- To reduce of the time needed for the product to be operative at the customer's site
- To reduce of costs of equipment failure / problems at customer site
- To reduce costs of providing customer telephone support
- To reduce costs of supporting field service engineers
- To achieve the expectation of increased customer satisfaction



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## PROJECTS OVERVIEW

# PROMISE

Product Knowledge Management Support System, across the  
Extended Enterprise. (Growth)

### PROJECT APPROACH:

This project is aimed at assisting manufacturing SMEs (from the Automotive sector and the Engineering sector) to support their customers by making use of extended enterprise technologies and knowledge management for customer/product support. The primary goal is to develop a methodology, which enables SMEs to apply extended enterprise concepts for improving product support and development.

### OBJECTIVES:

- To develop a practical extended enterprise methodology and system for comprehensive product support
- To empower customers to be able to solve product problems themselves
- To reduce the resources spent by SME manufacturers in supporting their products
- To improve the support of field engineers
- To reduce the number of 're-visits'
- To increase the speed that problems are corrected
- To reduce the time taken to solve problems



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PROJECTS OVERVIEW



AIM

Acceleration of Innovative ideas to Market. (IST)

PROJECT APPROACH:

AIM goal is to develop a system to support the collection of all useful knowledge throughout the extended enterprise for new and existing process and product developments, and to develop this knowledge into a means of fostering industrial innovations. Innovation by combining the ideas and feedback from all parts of the product life cycle, including customer interaction with existing products and new product ideas, customer service and field engineers, suppliers, and pooling of knowledge between multiple sites.

OBJECTIVES:

- To develop a means of stimulating the creation of innovative ideas and collecting them from people involved with the products and processes. Specifically to increase the number of innovative suggestions, concepts and new designs by 50% in all user companies.
- To develop a way of processing these ideas and storing them into a structured knowledge repository. To ensure that all useful knowledge (innovative information) is saved.
- To develop a means of analysing innovative knowledge to determine which is useful, and which is not. That is, to enable the viability of ideas to be assessed.
- To develop the best means of delivering the innovative ideas to product and process designers for maximum effect.



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PROJECTS OVERVIEW

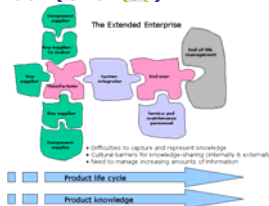


PRIME

Product Integrated Knowledge Management for the Extended Enterprise. (Growth)

PROJECT APPROACH:

The overall aim of PRIME is to help companies working in an extended enterprise environment, to enhance their product knowledge-sharing capabilities. PRIME is specifically directed towards trying to develop mechanisms, which improve the development and support of complex, capital, knowledge intensive products, often customised according to product specification.



OBJECTIVES:

The main objectives of PRIME are to develop a web-based dynamic knowledge repository capable of storing and manipulating all types of product knowledge. This product knowledge repository should have mechanisms, which enables it to be linked up with existing product information systems. Moreover, this product knowledge management system is to be accessible to all actors of the extended enterprise.



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**PROJECTS OVERVIEW**



**FOKSai**

**SME Focussed KM System to Support Extended Product in Ambient Intelligence Domain. (CRAFT)**

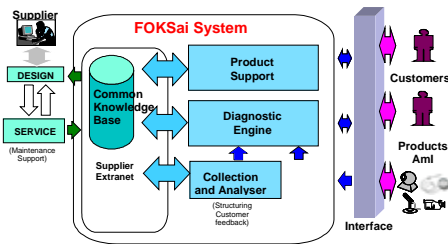
**PROJECT APPROACH:**

SMEs offering already products with Aml elements, intend in a near future to introduce new and/or to improve their current products with even more Aml features, seeing this as their crucial competitive edge.

For such products they need a sophisticated support system. The business objective to be achieved within the FOKSai project is to provide a comprehensive solution of the support to extended products from the Ambient Intelligence domain, which will be affordable for the SMEs manufacturers.

**OBJECTIVES:**

- Remote supervising, problem identification and solving and maintenance of heterogeneous customer systems.
- e-Supporting manufacturer's staff at remote customer site location to solve customer/product problems.
- Proper integration and sophisticated knowledge-based interpretation of the intelligent ambience information and "reactions".
- Gathering and structuring of the Aml-product and process knowledge, from the problems solutions, for the reuse in innovations introduction.
- Direct feedback from user to Aml-product/service design and development.
- Reduction of efforts/costs for searching of the reasons of problems in products containing Aml components.



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**PROJECTS OVERVIEW**

**KNOW-CONSTRUCT**

*Internet Platform  
for Knowledge-based Customer  
Needs Management and Collaboration  
among SMEs in Construction  
Industry.*

**PROJECT APPROACH:**

The project aims to develop a common internet-based platform for SMEs from the construction sector to provide an effective combination of two general functionalities:

- Customer Needs Management (CNM) System: an innovative decision making support system regarding the products characteristics, applications and other consultancy services for SMEs' customers applying the "web enabled dialogue".
- Knowledge Communities Support (KCS) System: a system for SMEs to support an advanced form of co-operation through the creation of Knowledge Communities of SMEs in CI. The system should support the integration, management and reuse of the area specific knowledge via a common knowledge base.



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## CONCLUSIONS

### Key Issues (I):

- **Concepts of:** Extended Enterprising, Extended Products, Knowledge Management
- Scalable methodology and system implementation approach tailored to the companies' needs
- **Changing a company behaviour:**
  - Long, difficult and troublesome process.
  - Top-bottom approach starting from management:
    - Betting on the introduction of new working paradigms supported by ICT tools



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## CONCLUSIONS

### Key Issues (II):

- Important step toward the increase of competitiveness of European companies (including SMEs)
- Surviving will depend on the speed and effectiveness of adaptation to this new environment.
- To support companies in keeping up the pace with new challenges, the main goal is to increase innovation and accelerate its introduction into the market.
- Future research and investigations: "integrated economy"
  - Extended enterprise approaches,
  - Adaptive working practice
  - Adaptive IT infrastructures.



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## CONCLUSIONS

### Major Achievements:

- Ensuring all useful knowledge is saved, stored and reusable
- Stimulating the creation of innovative ideas and collecting them
- Processing these ideas and storing them into a knowledge repository.
- Enabling the viability of ideas to be assessed.
- Delivering the innovative ideas to product and process designers



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## CONCLUSIONS

### Business benefits:

- Overall improved business performance
- Improved working conditions and increase on employees satisfaction.
- Improvement on customer satisfaction
- Reduction of product innovation cycle-time.
- Reduction of time and efforts for solving product/process problems.
- Improvement of process efficiency and reduction of wastes.



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FOR  
YOUR ATTENTION**

**QUESTIONS ?**



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