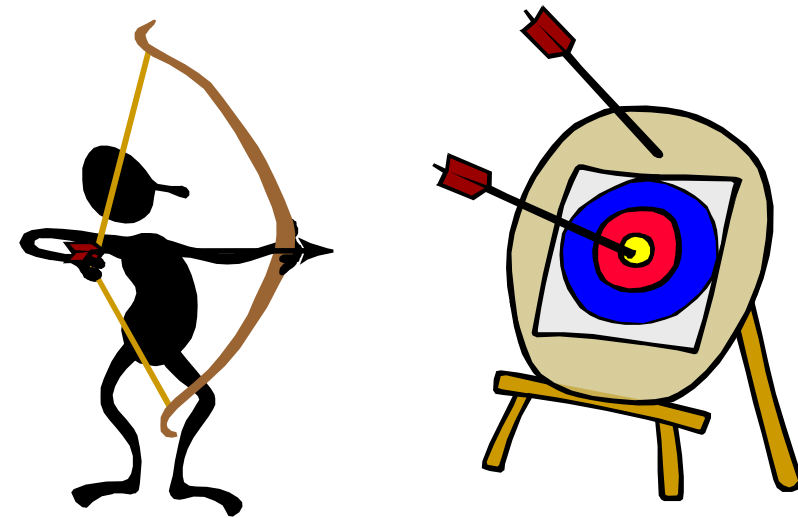


Presentation Overview

Objectives:

- Procurement Strategy
- Information Flow
- Interoperable & Object Oriented Model
- Challenges In IT





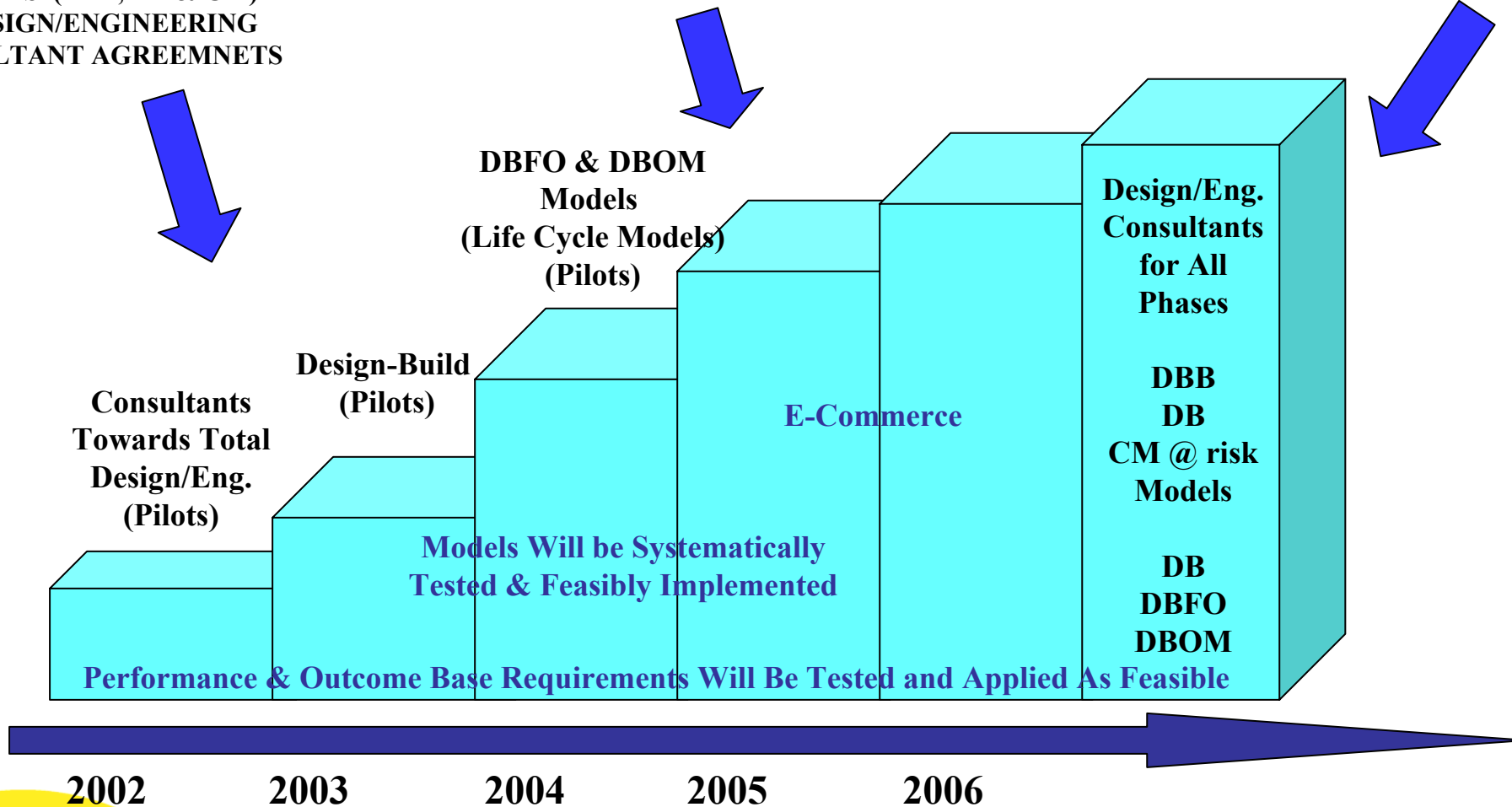
Capital Investment Procurement Development Phases

**FINNISH ROAD
ADMINISTRATION**

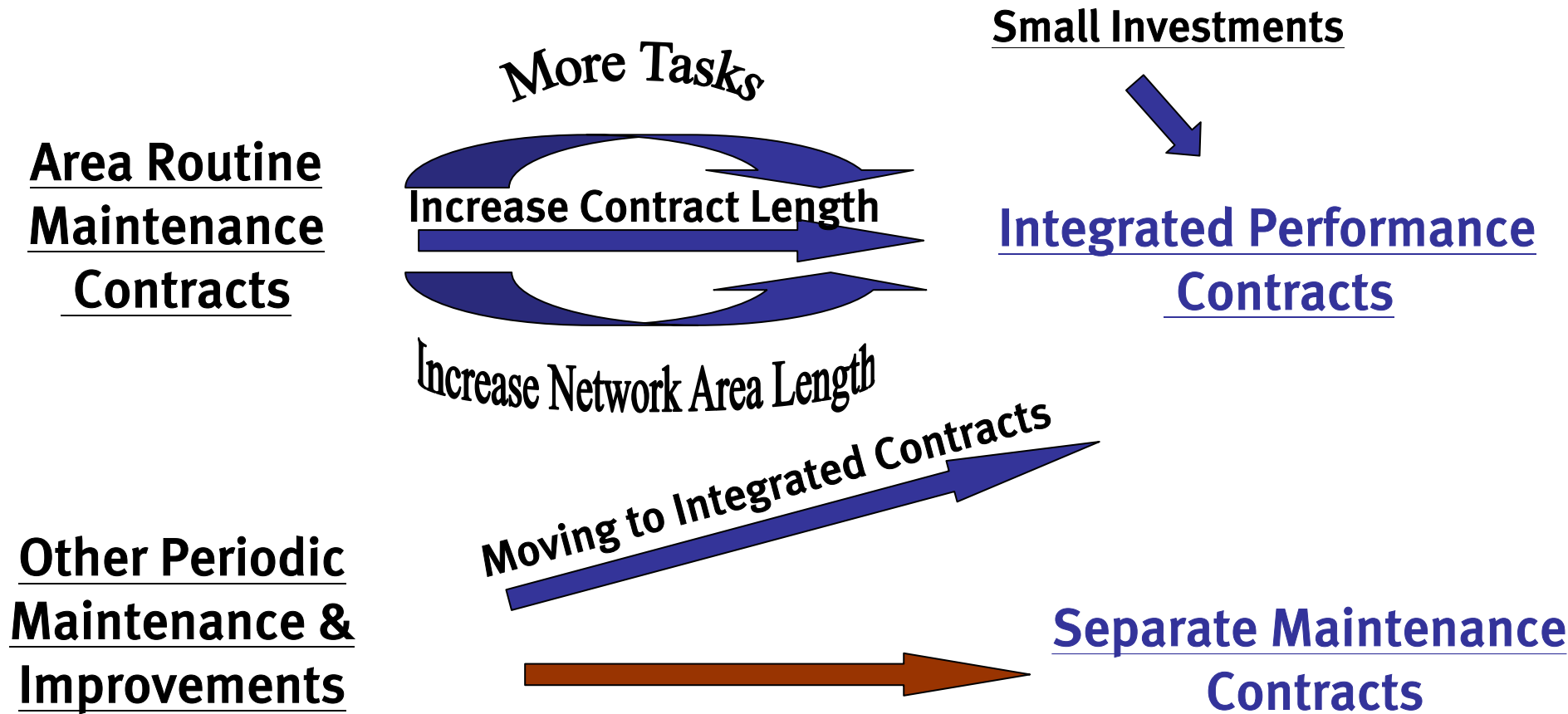
**IMPROVEMENTS TO
PRESENT PROCUREMENT
MODELS (DBB, DB & CM)
& DESIGN/ENGINEERING
CONSULTANT AGREEMENTS**

**DEVELOPMENT, TESTING, &
IMPLEMENTATION OF NEW OVERALL
INCLUSIVE PROCUREMENT MODELS**

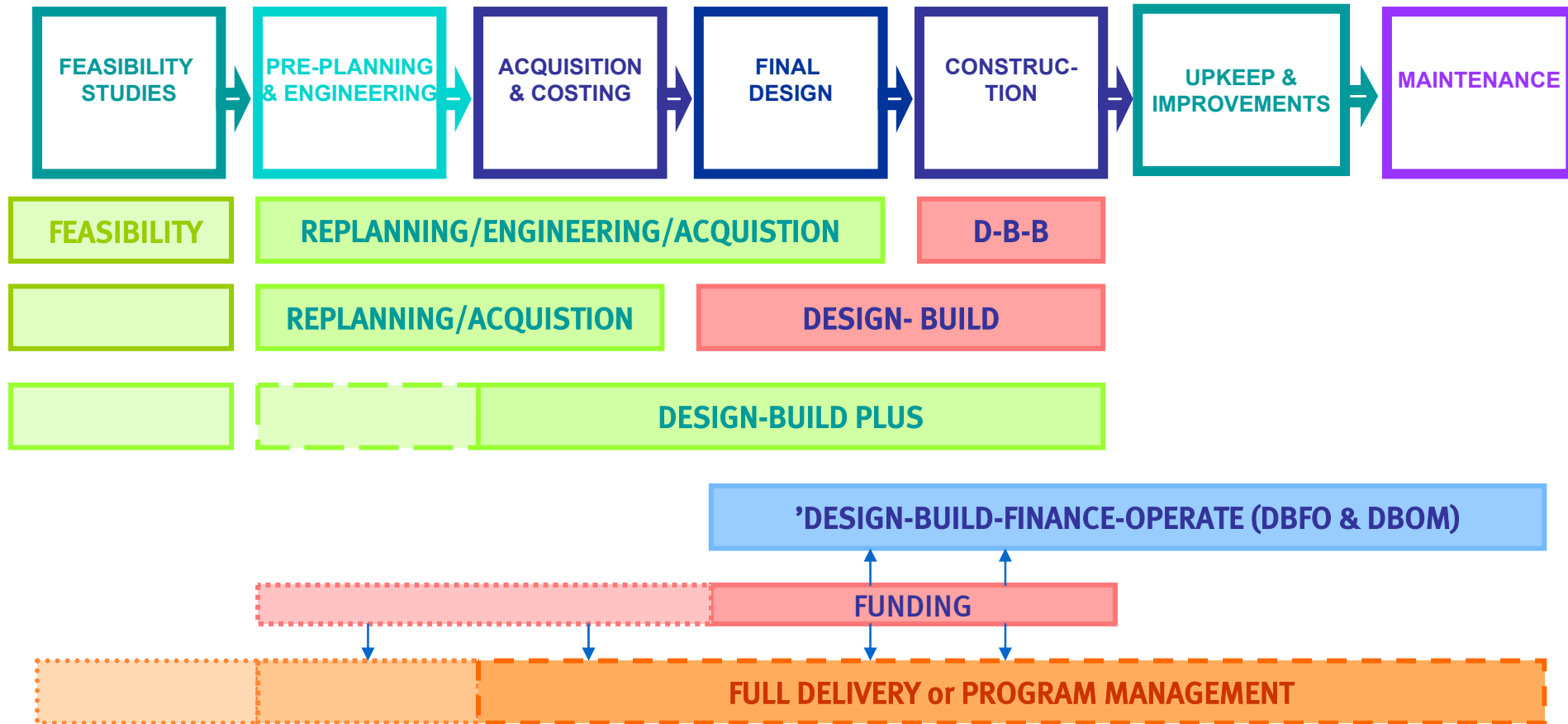
**DIVERSE PORTFOLIO OF
CAPITAL INVESTMENT
PROCUREMENT METHODS
IN OPERATION**



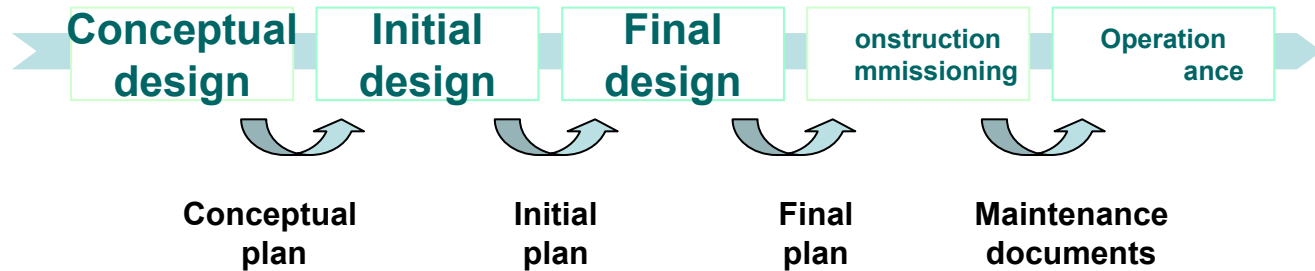
Maintenance Or Asset Management Contract Development



Capital Procurement Methods

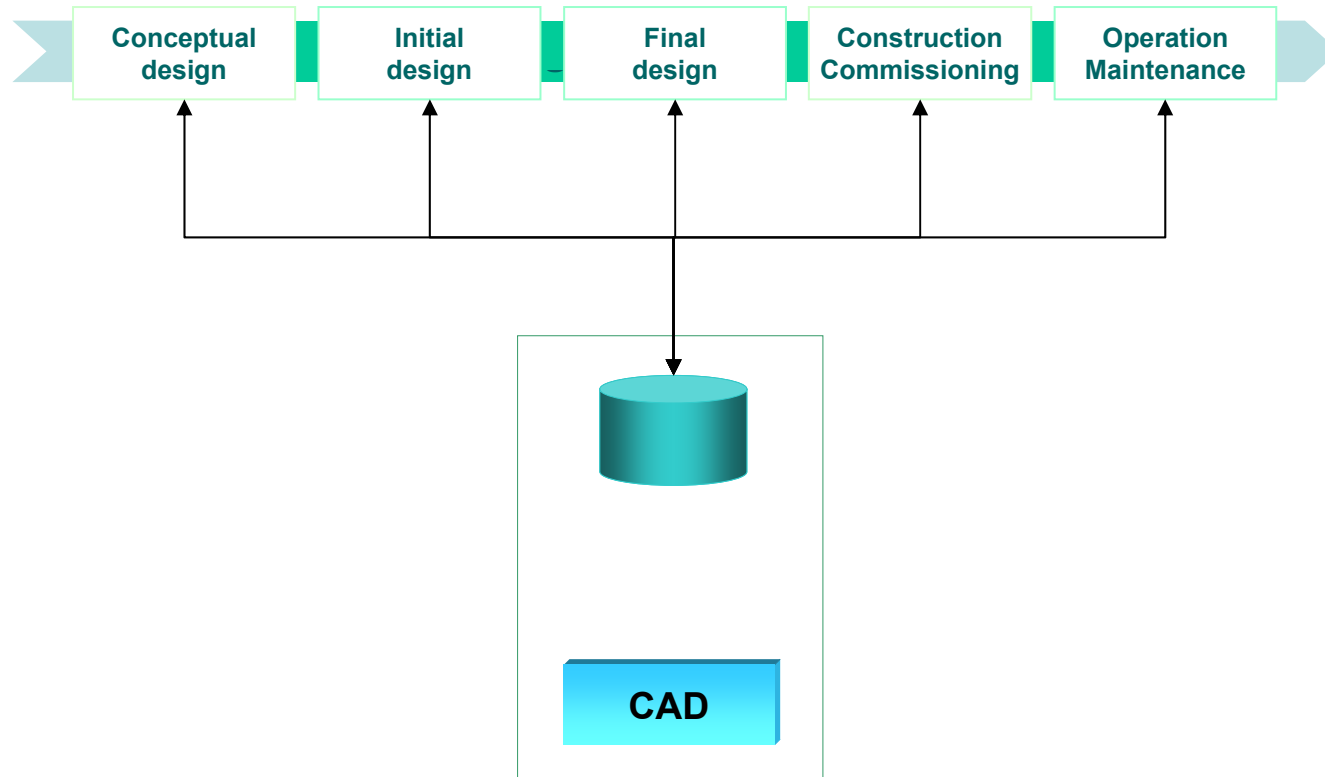


Traditional Design



- ***Document based thinking***
- ***No reuse of information***
- ***No interoperable tools***

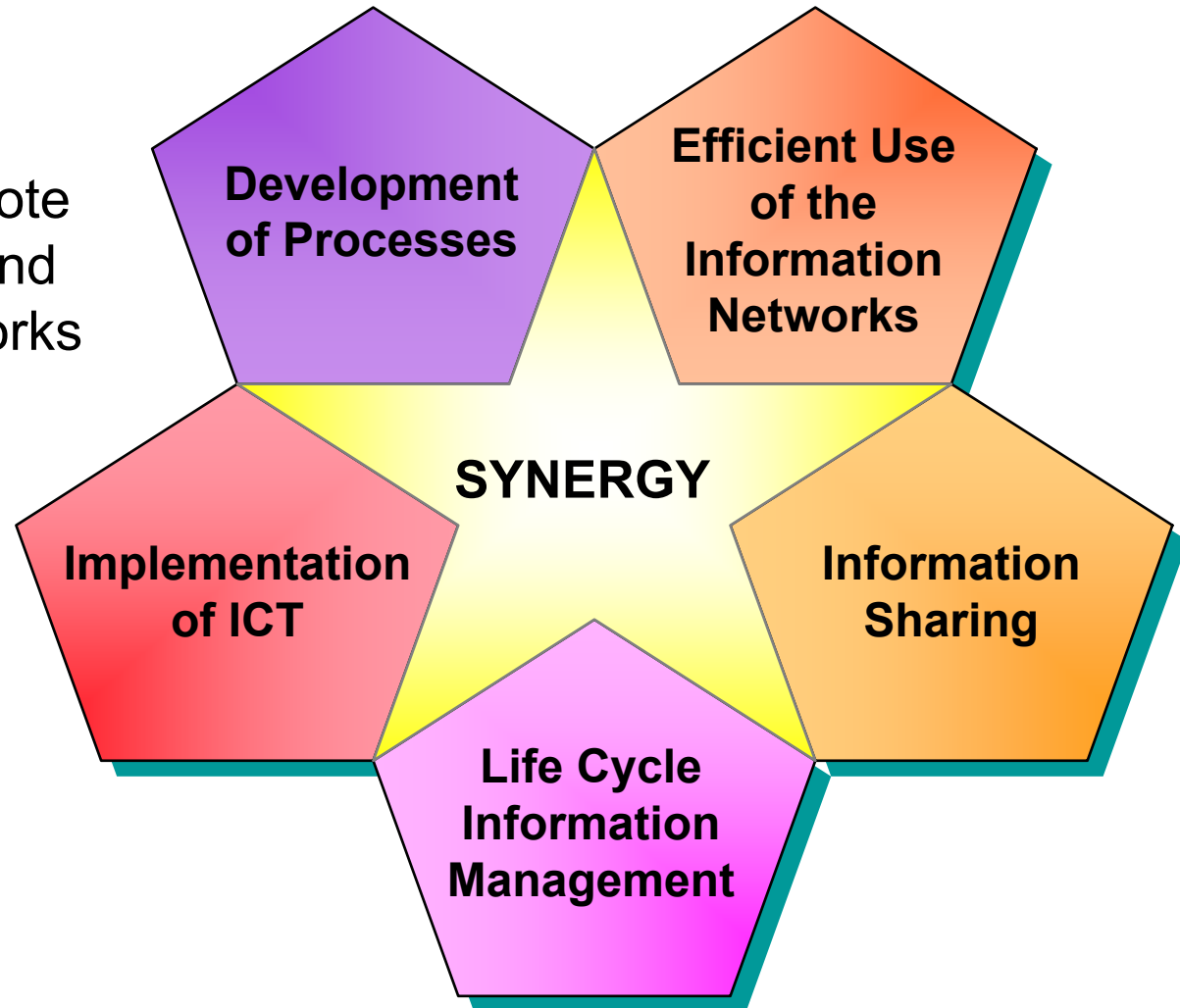
Integrated Design



- *Life cycle thinking*
- *Reuse of information*
- *Interoperable tools*

Information Networking in the Construction Process

The target is to promote the implementation and use of ICT and networks as the enabling technologies to re-engineer the Construction and Asset Management processes





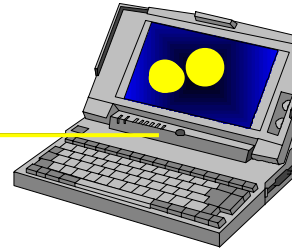
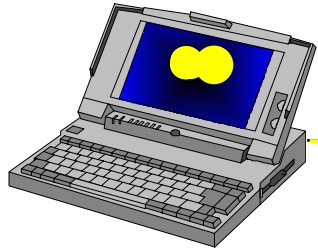
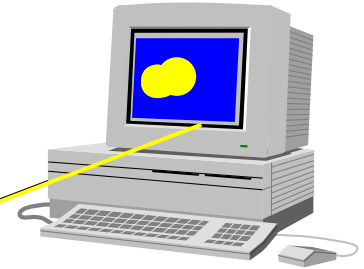
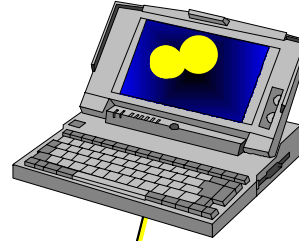
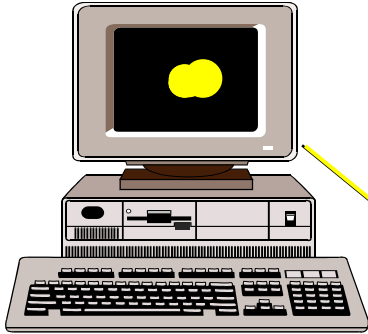
FINNISH ROAD
ADMINISTRATION

Goal in the Future

Design/Engineering

Geometry

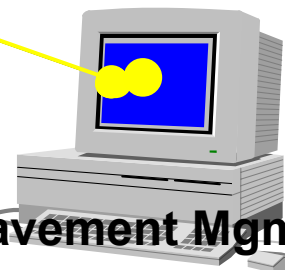
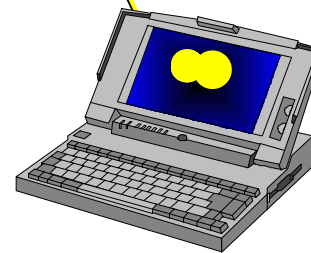
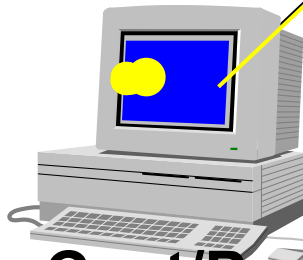
Product Specifications



Common Data Model -
Object Oriented Data Directly
between different systems

Traffic Services

Maintenance Mgmt System



Cost/Procurement

Pavement Mgmt

Road Weather Info. Services

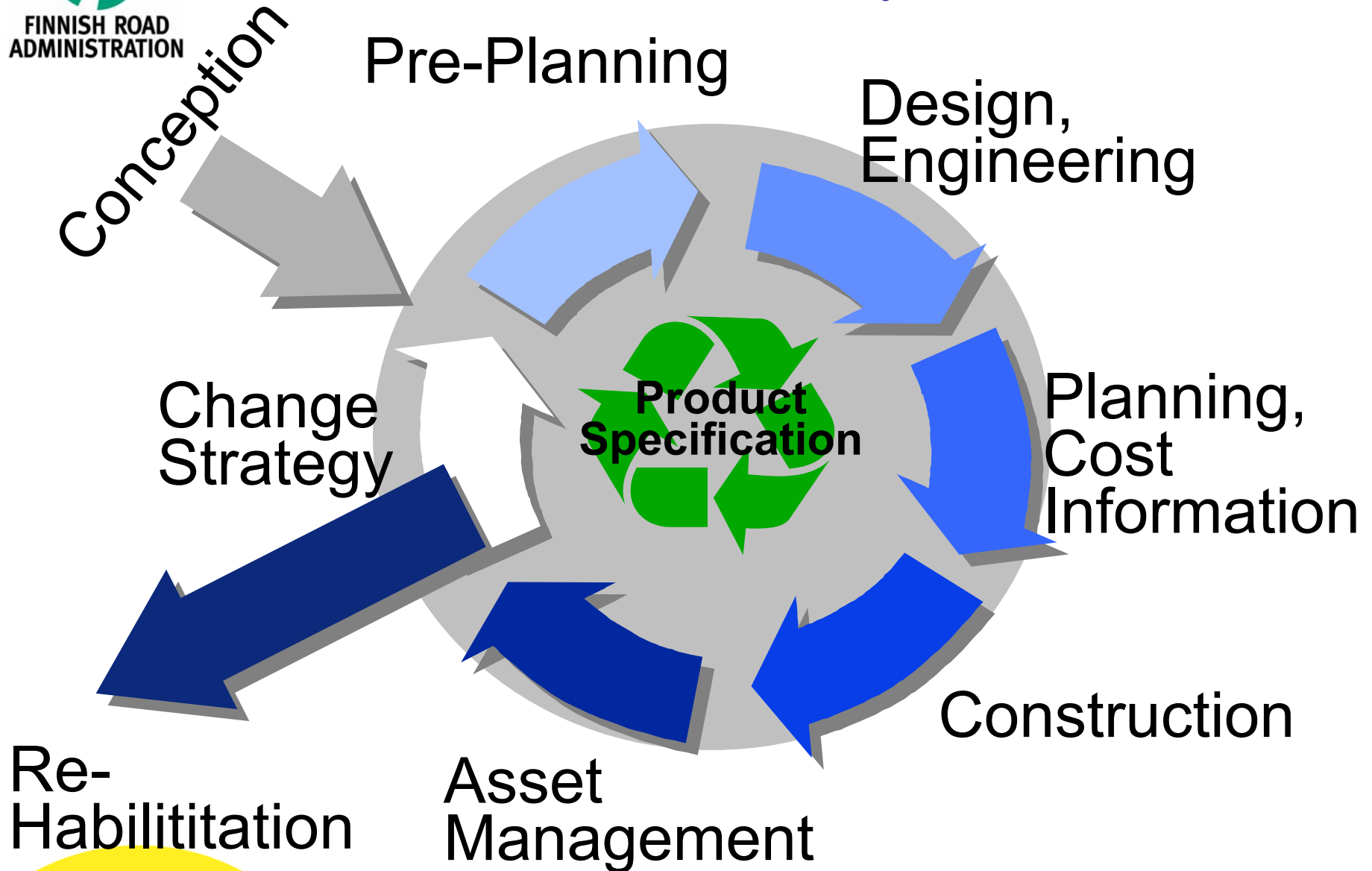
Systems

Data

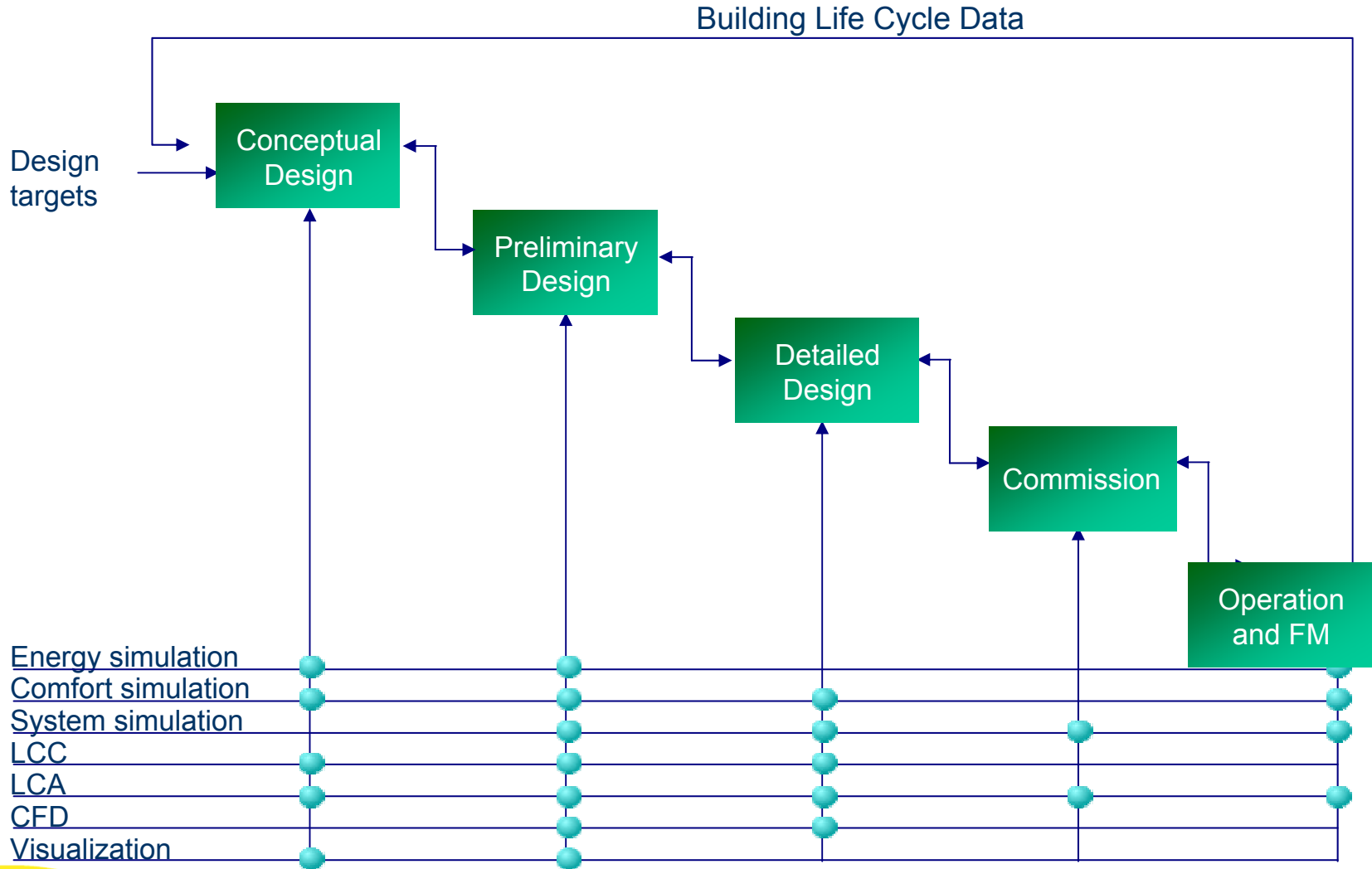
Pekka Pakkala -FINNRA March 15 2004

Source: VERA - Arto Kiviniemi & Pekka Pakkala

Information Lifecycle



Software Tools in Design Process



Construction Process

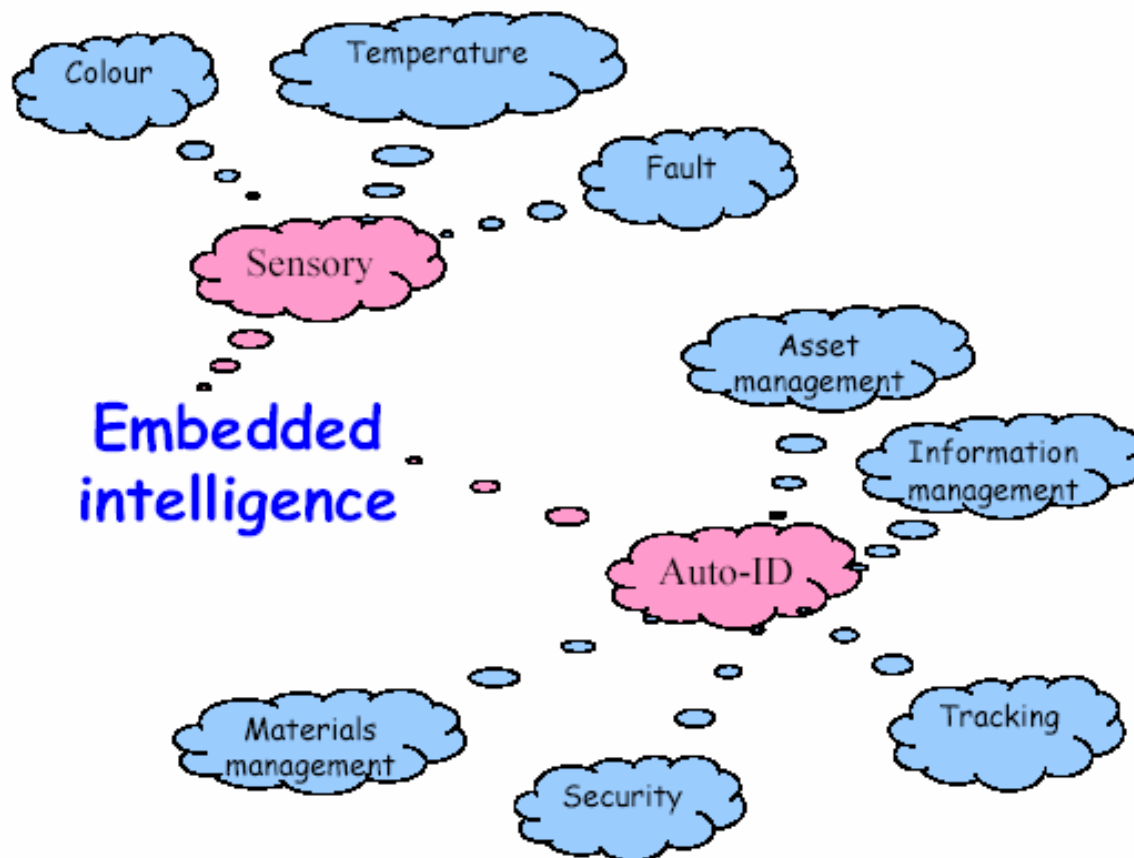
■ Information as a part of the product:

- Asset Management database based on as-built information
- Product Information must be a part of the electronic procurement and commerce
- Electronic product libraries with direct interface to design and procurement software & data models - XML?

■ Need for development:

- eCommerce
- Product information & software tools
- Construction processes
- Contracts & Procurement Methods

Embedded Chips



Challenges In Data Model

- **Costly Development of Object Oriented-Interoperable Model**
- Software Market Competition
- Common Nordic Procurement System
- Service Provider Community Must Develop
- Integration of Design & Construction
- Interoperable & Open Based Systems
- New Technologies - IT, Embedded Chips & Digital Roads
- Can now address **Longer Life-Cycles & Whole Life Costs**
- New Tools for Efficiency, Quality & Innovative Designs
- Visualization and 4D
- Global Partners Available to Have Continuous Design
- Remember - IT - **IS JUST A TOOL - Not a Solution**

Hi-Tech Traffic Management

