

The experience of ambient technologies in eLearning

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TeL'04 - Technology Enhanced Learning
22 August 2004



CAS Software AG

Well Informed. Always and Everywhere.

- **CAS teamWorks**

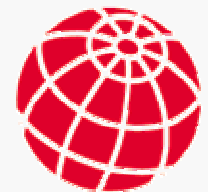
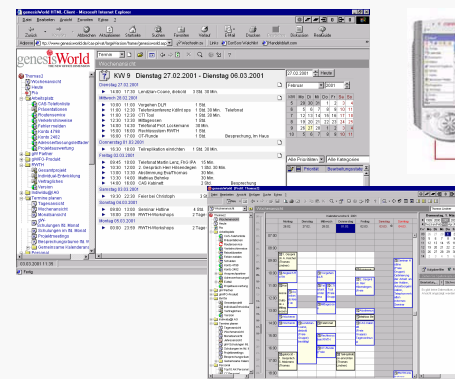
Intranet/Extranet Groupware for increased cooperation.

- **CAS genesisWorld**

CRM/Groupware for increased customer satisfaction.

- **CAS Campus**

University Management system



Main Barriers

- ... for successful take-up and deployment of eLearning
 - Fear of miss-investment due to lack of established solutions, companies, standards etc.
 - Lack of time for eLearning
 - Lack of expertise to use eLearning solution
 - Inadequate accessibility (barrier free access) and usability (interoperability)
 - Lack of a customised, tailored eLearning service
 - Failure to integrate eLearning with the work and life process
 - Inadequate (restricted) low-quality learning content
 - Doubts about eLearning benefits and expected expensiveness of eLearning solution

AmbientLearning: Project Objectives



- Validate and demonstrate an innovative learning **service** in four European countries that:
 - is easy-to-use
 - is pragmatic
 - provides access to high quality learning content
- Based on:
 - the latest mature R&D results
 - the latest findings in Ambient Intelligence

TRAINING CENTER



INFOWORLD



Partners



CAS, STZ-MIT



CPG



CITY,
STRATEGAKIS



Training
Centre,
Infoworld



Keys for Success



1. Trainee Autonomy:

- Self-controlled -> **Profile/context**
- Exploration room -> **Flexible large content integration**

2. Trainee Mobility:

- Knowledge „just-in-time“, face to situations or objects.
- Immediate evaluation of theory understanding.
- Stimulation of theoretical knowledge request.
- Ongoing delivery -> **Multimodal Broadband Access**

3. Automatisation of the learning content delivery

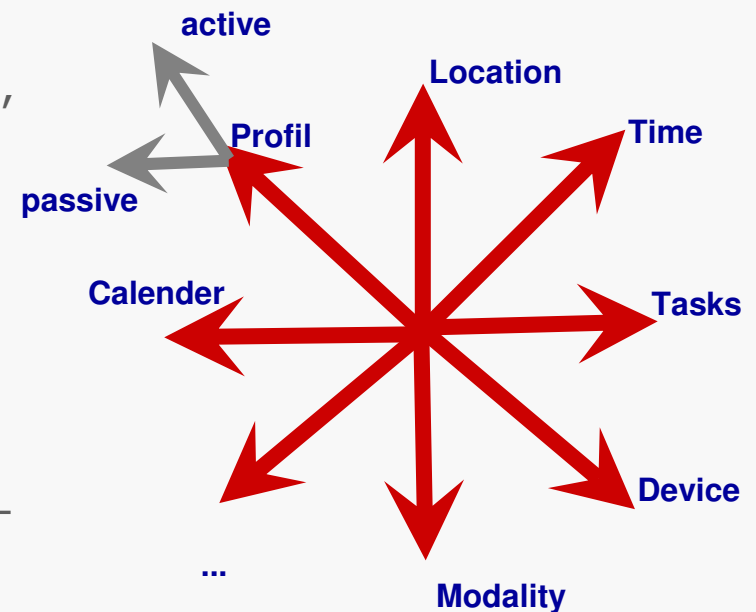
- Ambient Intelligence -> **Context-aware system using available groupware systems data.**

CAS Campus
CAS teamWorks
CAS genesisWorld

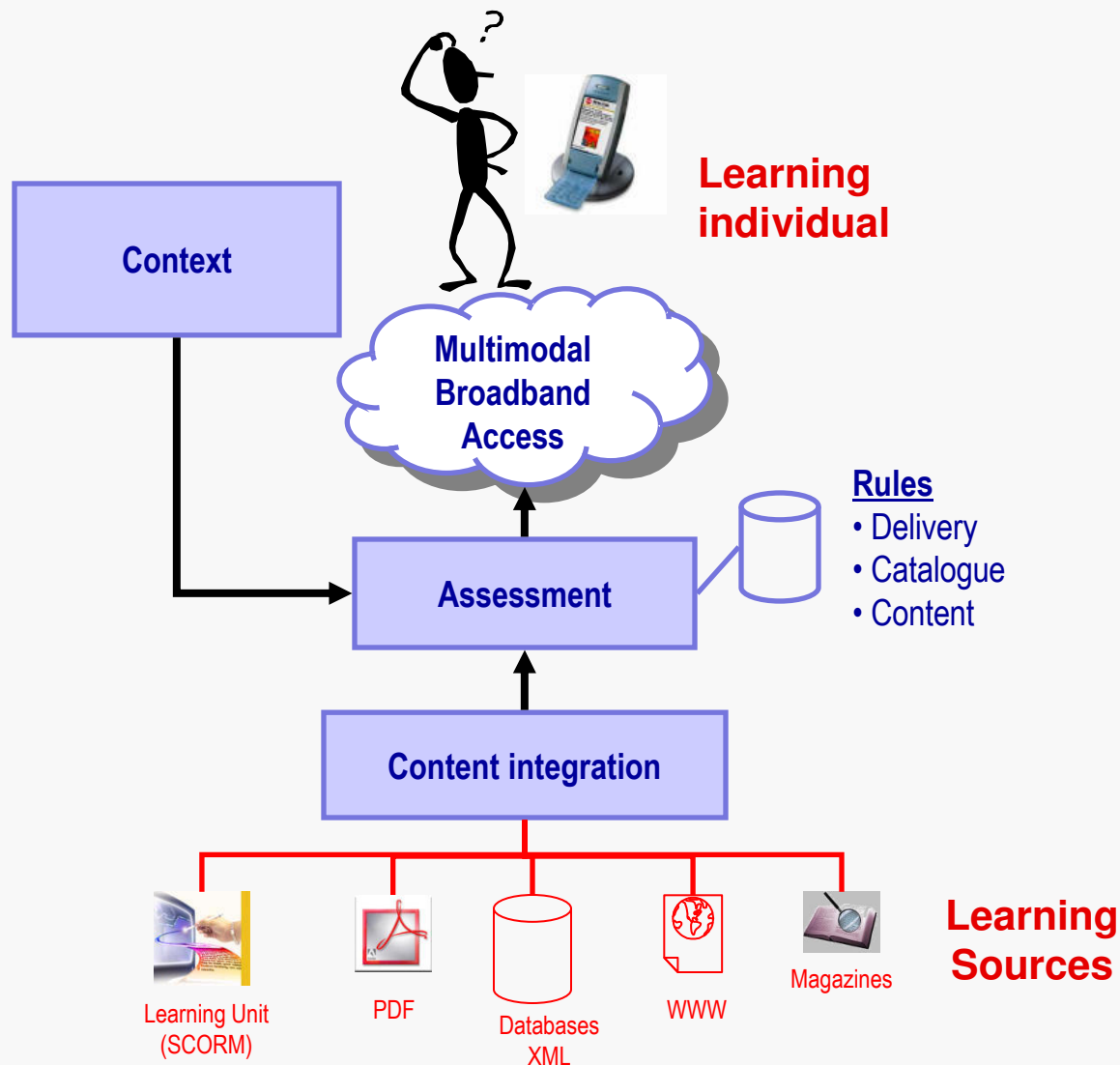


■ Pro-active exploitation of trainee contexts:

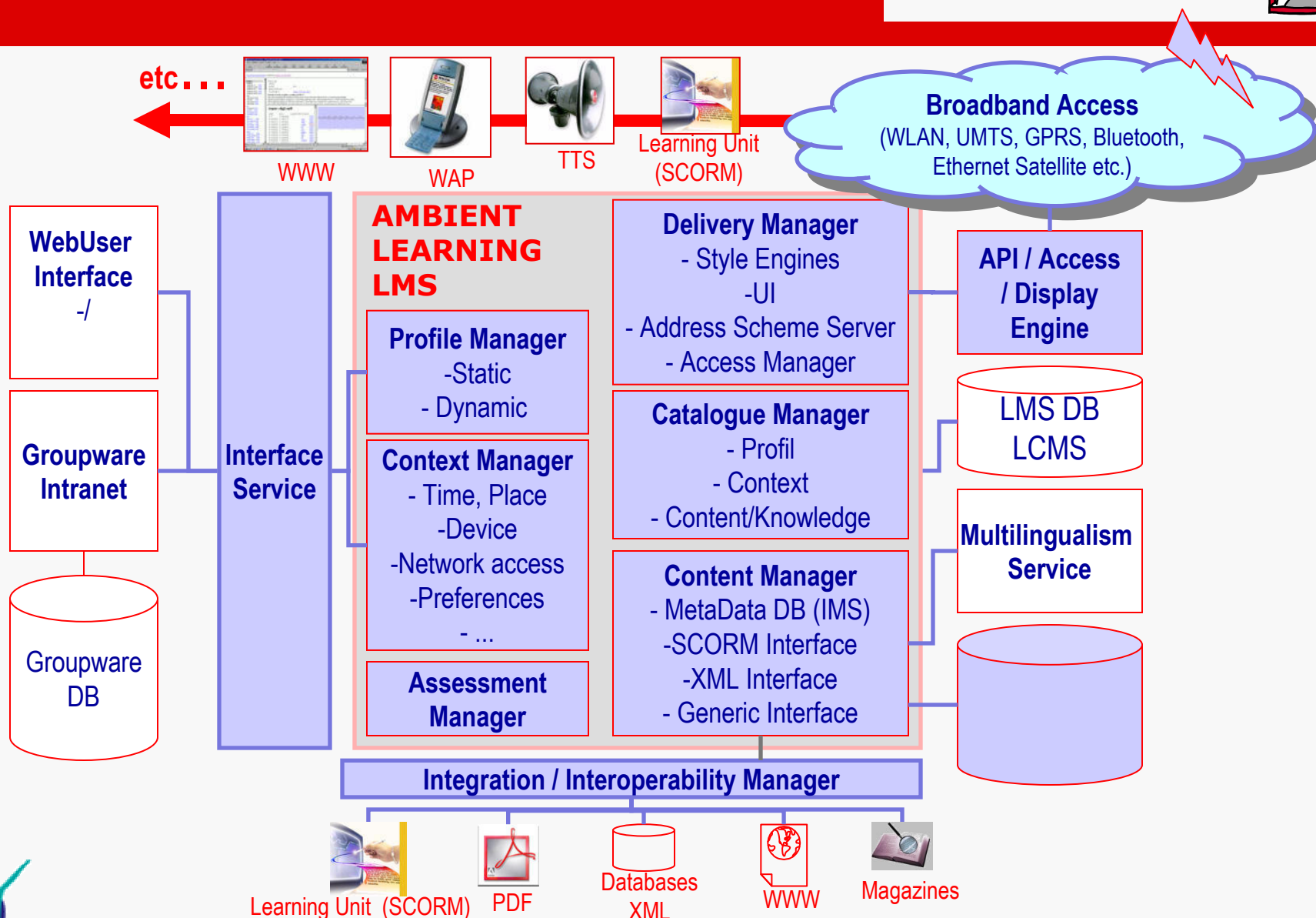
- **User context:**
 - Geographical location
 - „Active profile“
 - Social situation (e.g., who are you with, and people that are nearby)
 - Schedules, agenda and tasks settings
- **Data processing context:**
 - availability of resources (e.g., battery, display, network, and bandwidth), resources that are nearby (e.g., accessible devices, and hosts)
 - Physical context (light, noises, temperature etc.)
- **Time context**
- **Context history** to learn user history – „passive profiling“



AmbientLearning Architecture (1)



AmbientLearning Architecture (2)



Exploitation within School e-Labs

■ Instrumentation laboratories

- Context-based delivery of learning contents according to real (or totally simulated) experimentation context

■ Industrial simulation games

CAS teamWorks

- e.g. enterprise simulation using Intranet/Extranet technologies (CAS teamWorks)
- Context-based delivery of learning content according to virtual corporate profiles and contexts

■ Integration of the whole student context

CAS Campus

- Administrative data, learning programme, participation, evaluation results etc.
- Automatic learning content delivery according to student profile and context (groupware – CAS Campus) – e.g. experimentation tutorials

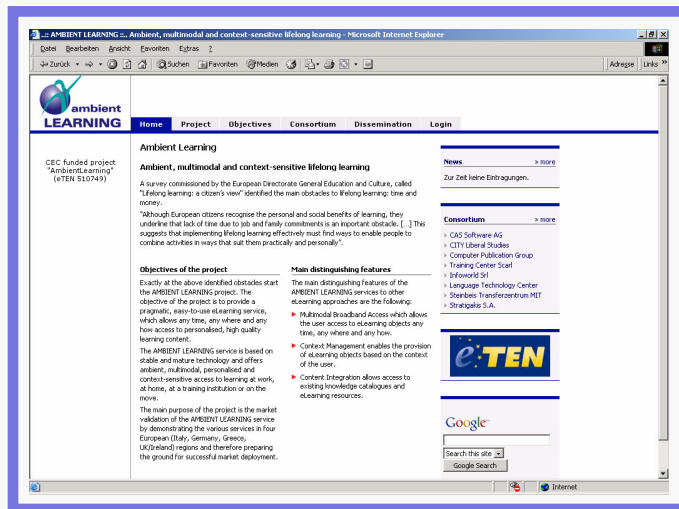
For more information...



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■ CAS Software AG

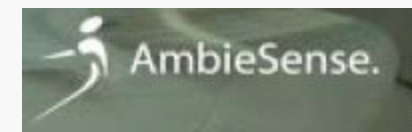
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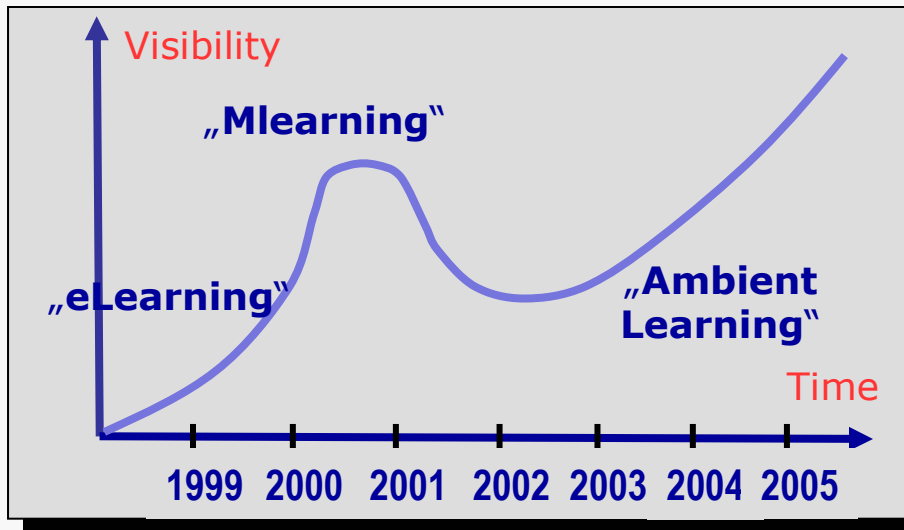
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• In cooperation with:

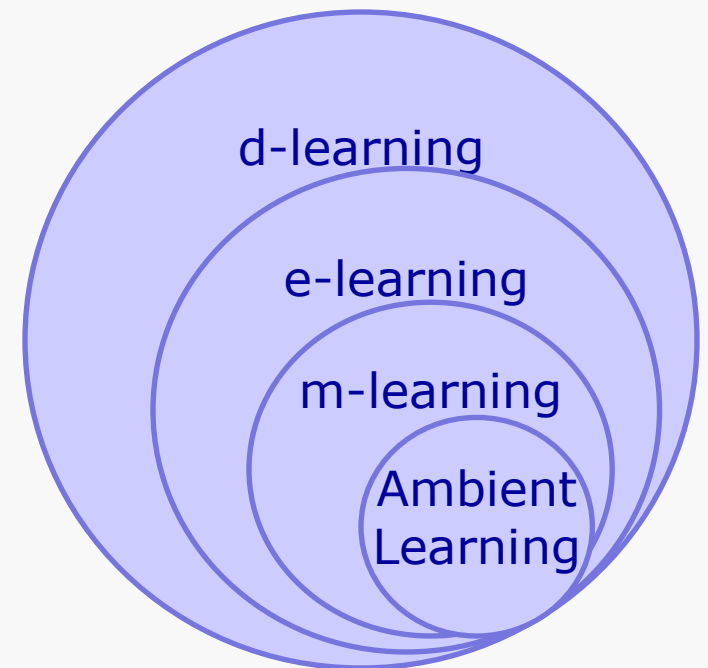


Technology Enhanced Learning



Tech. Trigger Pick of inflated expectation Through of disillusionment Market consolidation

Ambient Learning - a New Stage of E-Learning



Mobile Learning

- Mobile devices will allow the combination of theoretical learning with practical learning:
 1. Get knowledge „just-in-time“, face to situations or objects.
 2. Evaluate understanding of the theory by practical experiments.
 3. Stimulate theoretical knowledge request by practical needs or interest.
- Develop a new way of life-long learning by associating simultaneously theoretical materials with practical experience and situations

New eLearning Spaces Allowing Increased Learner Autonomy



- **Exploration** : Looking out, examine, investigate in an unknown area
- **Information** : Get information as result of the computer working speed and the network technologies.
- **Communication** : Support is available on-demand everywhere and every time.
- **Collaboration** : Individual learning is seen as a groups processes result („Tele-presence“).
- **Documentation** : Storing and retrieval of information is supported by computers and relieve individual for an increased cognitive capacity.
- **Presentation**: Self-controlled learning allowing learners to decide when, how, and the purpose of the learning results formulation.

Based on „Auf dem Wege zum autonomen, selbstgesteuerten Lernen im Netz“ - Prof. Dr. Otto Peters - 2000