

Distributing Multimedia Elements to Multiple Networked Devices

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- Hu?
- Pervasive computing, Aml?
- ICE-CREAM
- OZONE
- Conclusion

 ► Hu?

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- A programmer
- A system analyst
- A computer scientist (NWU);
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Now:

- Department of industrial design, TU/e
- Distributed interactive multimedia
 - systems
 - user experience

 ▶ Pervasive computing, Aml?

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This talk: the presentation of multimedia content on distributed yet connected objects in the home environment

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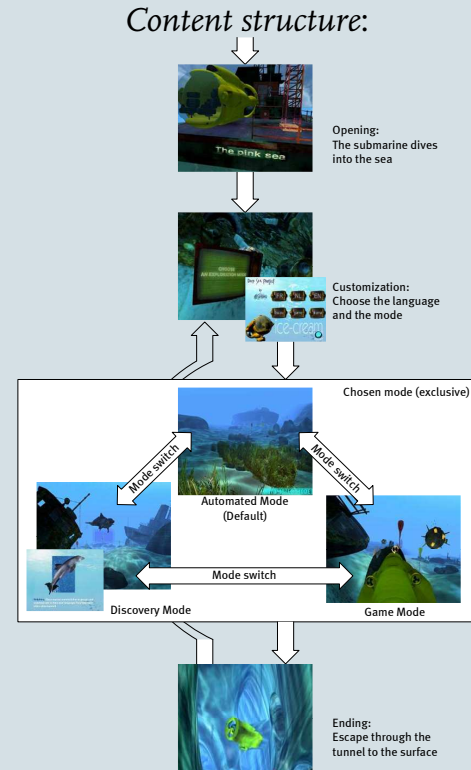
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- Synchronized lighting effects and robotic behaviors
- Grabbing and storing of content elements
- Wide range of interaction possibilities

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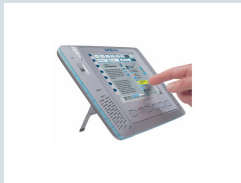
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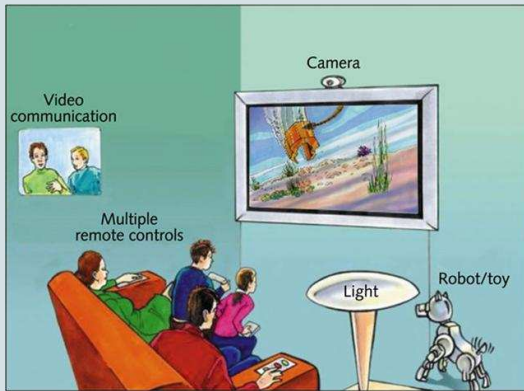


► ICE-CREAM ► Devices

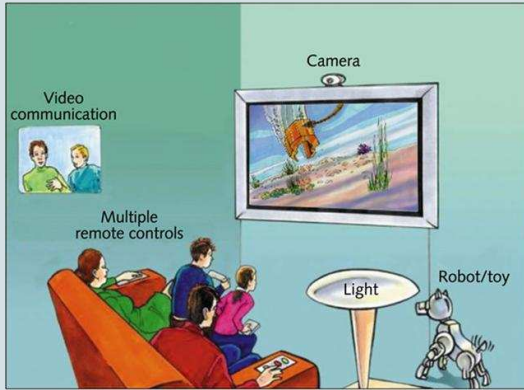
Media Elements	Presentation devices
3D movie	42" Plasma display HiFi audio system
Graphic interface	iPronto (portable display with a touch screen)
Lighting effects	Color lights lights in the room
Vibration	Toy submarine
Controlling devices	
	GamePad controller iPronto touch screen Toy submarine



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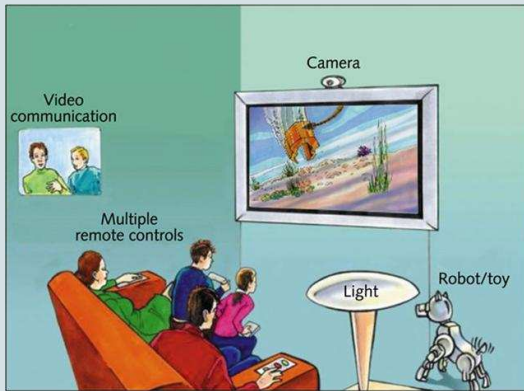


Instruments:

Fun The Appeal questionnaire from Philips Research

Presence The Television Commission Sense Of Presence Inventory (ITC-SOPI) from the UK Independent Television Commission

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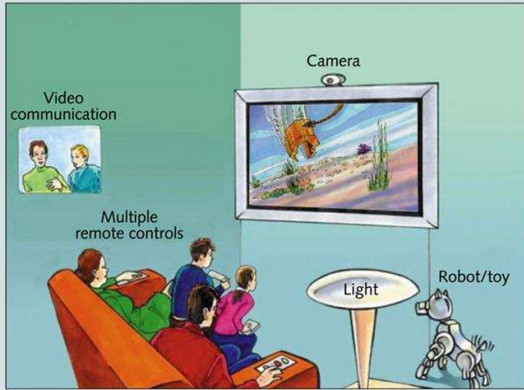
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Experiment:

Level of Control	Distribution		
	None Dis.	Lighting Dis.	Display Dis.
LowControl	yes	-	-
MediumControl	yes	yes	-
HighControl	yes	-	yes

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Factors:

- Enjoyability
- Attention
- Challenge
- Curiosity
- Control
- Pride
- Presence
 - Spatial Presence; – Engagement; – Naturalness;
 - Negative Effects

 ► ICE-CREAM ► Results**Level of Control effect**

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Only Naturalness had been affected in both the *LightingDistribution* condition and the *DisplayDistribution* condition. Pride and Spatial Presence were significantly higher in *LightingDistribution* condition and not in *DisplayDistribution*.

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Number of Users effect

The participation of a second user increased all the measurements of the Appeal questionnaire, but decreased the overall presence.

 ► OZONE

Integrated embedded platform architecture for consumer oriented ambient intelligence applications that provide content and context relevant information and services to users anywhere and at anytime.

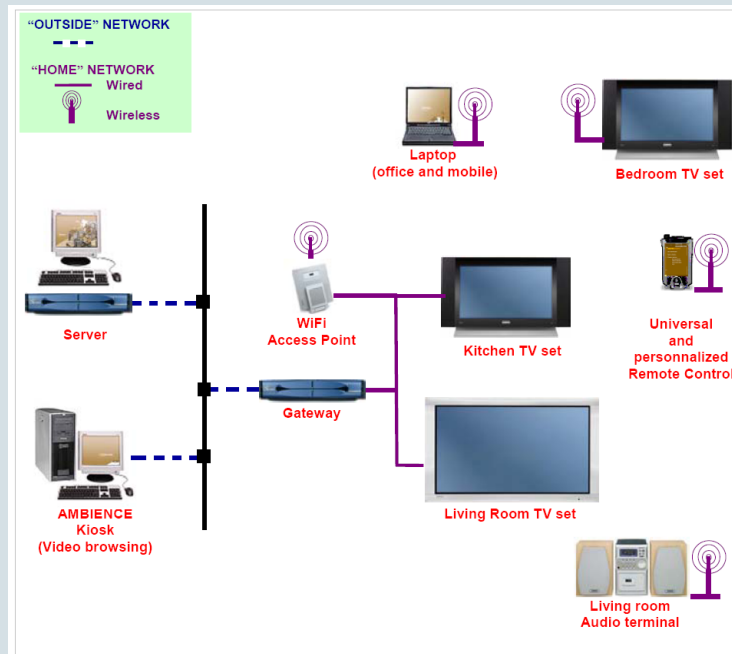
 ► OZONE

Integrated embedded platform architecture for consumer oriented ambient intelligence applications that provide content and context relevant information and services to users anywhere and at anytime.

- a top layer for service enabling applications;
- a middle layer responsible for seamless task migration, and
- a bottom layer for high performance computing at a low power level.

📖 ▶ OZONE ▶ Follow-me

Link video content from one terminal to another and move around while maintaining the visual presentation on different terminals.



 ► OZONE ► The linking concept

The linking concept: several members of the same family want to watch the same video content on more receiving devices in more locations and at the same time.

- Connecting two or more receivers and to synchronize the same video content on the two devices.
- Proximity detection was used to initiate the receiving of video content by the second device.

 ► OZONE ► Feedback from the users

This linking concept was demonstrated and evaluated with users in a realistic home setting in the HomeLab of Philips Research:


- The linking concept was perceived as quite natural
- Perceived value: useful but skeptical
- Image quality was identified as one of the most important factors for acceptance of the system.

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- Image quality was identified as one of the most important factors for acceptance of the system.

Crucial: the relationships between subjective acceptance of quality degradation and the optimal coding mechanism to apply.

 ► Conclusion

Evaluation of these applications revealed the following areas for promising new research:

- **Assessment methodologies** that operationalize multi-attribute concepts like fun and attractiveness, before we talk about user experience in general;
- Interaction with content by users in the home environment: **Design and Evaluation**;

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- **Assessment methodologies** that operationalize multi-attribute concepts like fun and attractiveness, before we talk about user experience in general;
- Interaction with content by users in the home environment: **Design and Evaluation**;
 - Distribution of ambiance effects in synchronization with or as a part of the content;
 - Efficient configuring of scalable video and allocation of resources based on subjective quality evaluations.
 - Methods for subjective video quality assessment in dynamic network environments.

Questions?