From sensors to actuators: engaging audiences into natural interaction systems

Alterface / Salto™ Approach
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Outline
• Alterface Quick Overview
  – Vision
  – Approach
• Products and Applications
  – Example of natural interaction: the Station™
  – Other Products
• Salto Technology
  – Development Choices
  – Rationale

Overview

Vision
To facilitate man-machine interactions with multi-sensory devices

Market focus: interactive settings for
  • Education and Entertainment (E&E) actors such as museums, leisure parks...
  • Information and Advertising (I&A) actors such as chains, infopoints, resellers...
that
  • Rely on natural interaction
  • Are spectacular and accessible to the general public
  • Allow one to fit contents and entertainment

Mission
Alterface develops the software platform which makes it possible to develop interactive solutions in physical spaces.
  – Robustness and reliability for intensive, real-time usages and automation
  – Modular and flexible in order to allow diverse uses with various types of sensors/captors.
  – Allows for natural interaction and manages intelligent scenarios
Concretely?
We develop software for solutions that are…

WITHOUT INTERFACE ("natural" use)

IMMERSIVE (user WITHIN the info)

INTERACTIVE (system reacts to user’s actions) & PROACTIVE

INTERACTIVE (system even anticipates)

Fields of mixed-media, multimodal interface, pervasive computing…

Technically speaking

XML scenario with access to any contents (images, video, sound, 3D…)

Feedback to users for interaction loop

Market approach

• Engine directly ?
  1. Projects
  2. Offer simplification -> products (i.e. solutions)
  3. Products -> contents by third parties
  4. Engine as such

Interaction & Involvement

Webster dictionary

• Interaction (date: 1832)
  – mutual or reciprocal action or influence

• Involvement (date: 14th century)
  – archaic: 1. to enfold or envelop so as to encumber
     2. a: to engage as a participant, members involved in building a house
     b: to oblige to take part: right of Congress to "involve the nation in war" e: to occupy (as oneself) absorbingly, especially: to commit (as oneself) emotionally <was involved with a married man>

• Emotion (date: 1579)
  – 2 a: the effective aspect of consciousness 1: a state of mobility 2: a psychic and physical reaction (as anger or fear) involving changes that prepare the body for immediate vigorous action

Key challenges (personal view)

Interaction shall lead to involvement through emotion

– Paying attention to the learning curve for effective manipulation: technology should not inhibit

– Interaction should go beyond (mere) reactivity* -> need for surprises, emotions (storytelling)

– Only a strong (emotional) impact will provide users with a long-lasting experience

* Though ‘responsiveness’ (fast response time) is instrumental in modern systems
Interaction for Education – one approach

1. Provide the user with a rich experience
2. by involving this user into a story, with narrative tension (goal, means…)
3. Have him/her take part in the (inter)action, with a real control
4. Surprise/challenge her/him
5. Include ... joy and fun ..., i.e. provoke emotions

Interaction – Involvement – Emotion

This is notably key in “learning by doing”, but also in pure ‘education’ and probably in ‘training’ and other more professionally-oriented activities.

Interaction for Edutainment – Station™ approach

1. Invisible technology (the user does not see the camera sensor) -> no barrier
2. Involve through user’s own image
3. Provide control through ‘natural’ body behaviour/gesture
4. Provoker emotions through artefacts on the user’s image
5. Make the interactive scenario a story

Interaction – Involvement – Emotion

Story

This is notably key in “learning by doing”, but also in pure ‘education’ and probably in ‘training’ and other more professionally-oriented activities.

Station™

Immersive, interactive station

Immersion (front screen + user’s own image)

Interaction

Control

Choice !

Mixed-Reality (MR) content

Edutainment examples

Edutainment = Education & Entertainment

• “Knowledge is memorized more effectively when mediated actively than passively”
• Learning by doing
• Involvement / Emotion

Examples
• PASS (Science Park), Frameries, Belgium
  • Understand that for learning you need to dare and behave
  • EuropEmotion at Mini-Europe,Bruparck,Brusel
  • Discover some key values of Europe through 7 games
• Futuroscope, Paradisio, Océade…

EuropEmotion
Relying on the Salto™ engine, a portfolio of products/solutions is presented to the market:

- Kiosk
  - Reaction, Pro-action, Interaction
- Station
  - Immersion, Emotion, Interaction
- Trace
  - Centralization, Personalization, Follow-up
- Arena
  - Group Interaction, Show, Special Effects
- Vision
  - Seeing the invisible, manipulation
- Engine
  - On-demand Interactive Elements

- Physical setups are installed at customer sites.

The “Kiosk”

- Reactive/interactive display station without interfaces (Keyboard, mouse, touch screen)
- Piloted using body gesture analysis (general behavior, hands, fingers)
- Information adapted to circumstances

The “Station”

- Players immersion into contents (Magic mirror)
- Players are “in situ” with or without props. No gloves, no glasses...
- Interactions between players and the virtual world
- Content catalogue or ad hoc developments.

The “Arena”

- Interactive Attraction up to 80 players
- On stage players and interacting public
- Special effects on stage and for the public
- Optional Motion Platform