Components of AR as a mass medium

Layar's view on standardization
My first www experience

Summer 1992

CERN document library
Some time ago ...

New medium gains traction
Curated eco-system

World Wide Web

Massive distribution
Media specific content

1994 - 1998
An emerging mass medium

Augmented Reality

New medium gains traction
Curated eco-system

Massive distribution
Media specific content

2009 - 2010
The Layar AR platform

2.000.000 Users

3500+ Developers

900+ Layers Published

1.600.000 augmented objects served per day
Missing elements

• No standards
• Content made for each browser, no interoperability
• Global search for content
‘Where is ...’

Cathedral of Saint John the Divine
The Cathedral of Saint John the Divine, officially the Cathedral Church of Saint John the Divine in the City and Diocese of New York, is the Cathedral of the Episcopal Diocese of New York. Located at 1047 Amsterdam Avenue, New York, NY 10028 (between West 110th Street, which is also known as “Cathedral Parkway”, and 113 Street) in Manhattan’s Morningside Heights.
Request format: 
Knowing the context

- Layar uses simple HTTP GET for "get_POIs"
- Custom list of parameters to tailor response
  - Position: latitude, longitude, altitude, accuracy
  - Filter settings for a layer

/lat=45.24362&lon=2.3234&alt=35
&userId=24da446e&lang=nl&countryCode=NL&CUSTOM_SLIDER=24&RADIOLIST=2&range=1500&accuracy=8
List of POIs

• The AR view is a list of POIs
• No ordered structure like a web page (Layar uses JSON array)
• For each POI we need:
  • Position (lat, lon, alt or relativeAlt)
  • Display information (text)
  • Resource locators: URIs for images, objects
  • Interactions (we call them actions)
• On a layer level (all POIs) we need:
  • Style elements for default styling
Live & Dynamic information
Refreshing AR view

• Data in AR view might be changing rapidly.
• Like on www, using HTTP with variable refresh rates is sufficient in most cases.
• Obviously, like on MMOG, other protocols might be more appropriate for certain types of experiences.
• Don’t forget: It’s a mass medium, what will publishers and content providers adopt most easily? SMPP? Really?
3D content

• Each POI has associated resources (representation of the POI)
• 2D or 3D content placed in real world
• The object itself:
  • 3D format taking into account low bandwidth (.l3d format)
  • Authoring tools supporting the format
  • Representation depending on distance
• Placement and pose of the object:
  • Position, rotation, size
  • Pose with respect to real-world features
• Animation and scripting (think of MMOG)
Stories & Games
Interaction with POIs

- True mass media need interaction with users
- Representation of UI to the user
  - Layar will pull web browser model through to AR view
  - HTML, javascript, css for UI
  - Allows for information and interaction (text + buttons)
- But don’t forget link between AR view and the ‘flat web-like’ UI
  - Link from object (POI metadata) to visual UI
  - Link back from visual UI to objects

layar://mylayer/?action=refresh&someparam=3
Layar Stream: search and discovery in AR
Finding the content

• AR content is not just another type of web content
  • It’s placed in real space!
  • It’s only relevant at its specific location
  • (and it might be moving all over the place)
  • It’s more difficult to link to other content
• Crawling AR content is a challenge
  • Role of catalogs
  • Role of content providers
Summary

• Components to consider in standardization
  • Request including context information
  • List of POIs
  • Object format and representation in space
  • Interaction with objects
  • Indexing and search
• Layar will adopt standards where possible and will lead new standards where needed
Thank You

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