LIQUID – holistic knowledge installations

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Zusammenfassung:
LIQUID zielt darauf ab Museen zu verbinden, indem es virtuelle und virtuell-real-gemischte Austellungen bestehend aus verteilten Inhalten ermöglicht; parallel zur Digitalisierung von Teilen der Inhalte der Museen entsteht eine mehrdimensionale Struktur, die aufgrund ihrer Flexibilität und Dynamik ideal für die Anforderungen kultureller Einrichtungen wie Museen ist. Am Anfang steht die Frage "Was möchte ich erzählen?" und aus dieser Frage wachsen die die Strukturen der Informationen im Datenraum. LIQUID verfolgt somit einen vollkommen anderen Ansatz als das die konvetionelle, lexikalische Behandlung von Information, die auf dem Kozept von "Versuch und Irrtum" (oder besser gleich "trial and error" lassen) beruht - LIQUID schafft verständliche Wissensstrukturen, bevor entsprechende thematische Informationseinheiten eingefügt werden.

Abstract:
LIQUID is aimed at connecting museums by designing virtual or mixed reality exhibitions consisting of shared content; parallel to digitizing parts of a museum's content is setting up a multidimensional order, flexible, dynamic and fitting the needs of cultural institutions like museums. At the beginning, there is the question 'what do I want to tell?' and following this quest for information its order in space is structured. LIQUID is thus diametrically opposed to the conventional (lexical) treatment of information, which is based on the concept of trial& error, because Liquid generates an understandable knowledge structure, before contents-related unities are inserted.

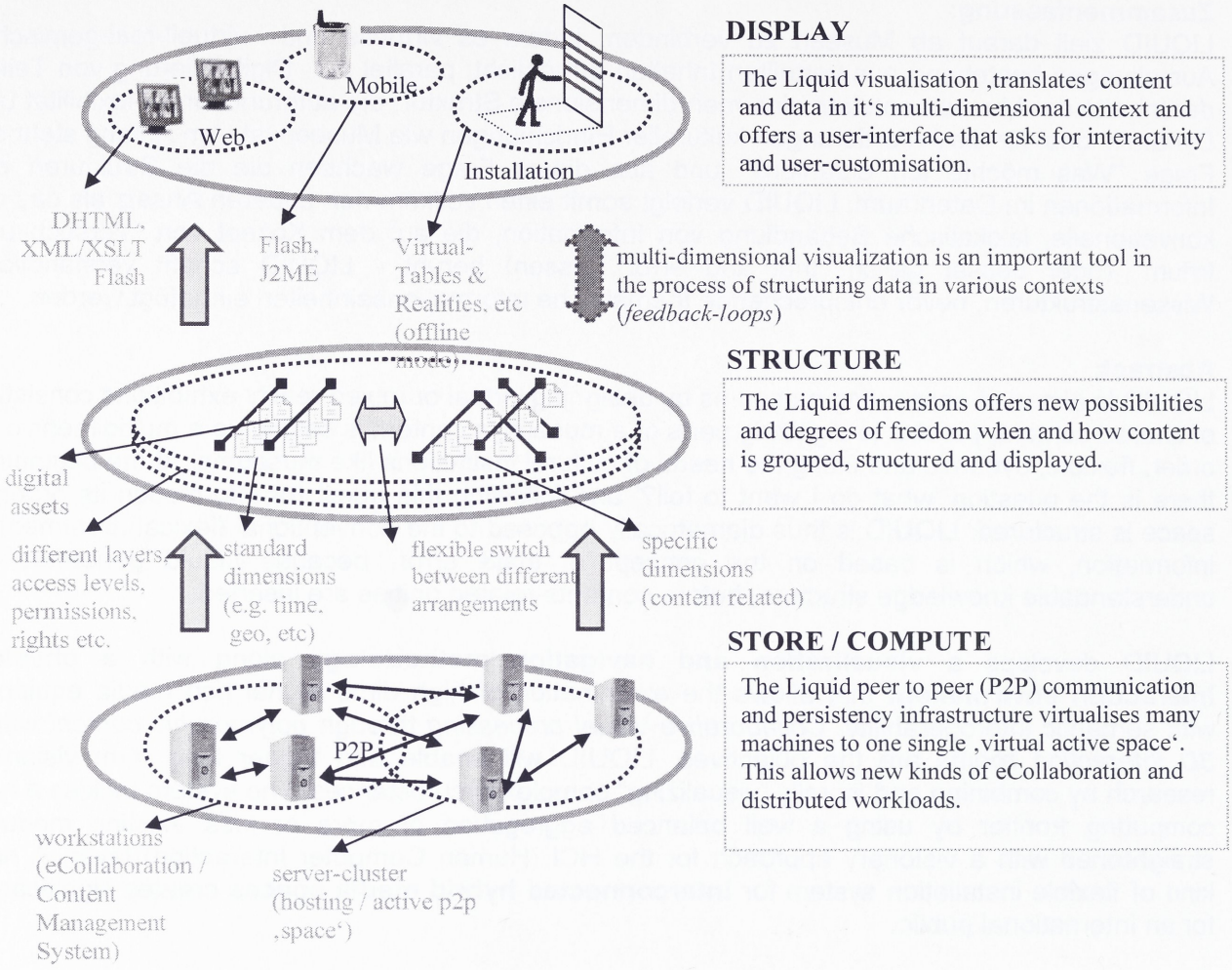
LIQUID develops a **visualization and navigation methodology** along with a **physical interaction environment** that allows the examination of high dimensional rich media equipped with semantic interoperability. *Collaborative visual processing* through *polymorphic content within 3D interaction rooms* are the objectives. LIQUID will enable and trigger long term visionary research by combining and literally "visualizing" complex circumstances. The system tackles a new computing frontier by using a well balanced aggregation of more or less existing modules straightened with a visionary approach for the HCI (Human Computer Interaction) layer. A new kind of flexible installation system for **interconnected hybrid media spaces** creates significance for an international public.

- LIQUID develops flexible components – like interaction walls - for physical, cross media installations equipped with fine-grained navigation and interactivity.
- The user, visitor or curator interacts with the system in an abstract two-dimensional navigation and visualization-environment for interwoven rich media content.
- The interface allows the free combination of interface-elements (building blocks) to assemble streams of information following one's associations. Navigation through a multi-dimensionally stretched innovative space will be possible. (Visualization of deduction, abstraction, contextualization and associations).
- LIQUID brings voice, data and video together in a unified network to enable new forms of collaboration and presentation of rich media in context (*IT convergence*).

LIQUID aims to be an every-day-working tool as well as a **permanent and significant showcase** for Europe's international public and cultural diversity. The utilization of LIQUID will be the deployment within archives, libraries and museums (cultural-heritage-sector) but also universities,

SME's, NPO's and micro-businesses of various kinds. The empowerment of such a venture lies in developing ways of interaction and sharing between all those different parties. LIQUID works because *peers* just have to enter and monitor their specific parts within the "landscapes" of data and at the same time through semantic interoperability can hook into and interweave with other areas (*polymorphic characteristics*). The "sexy" appearance of LIQUID's **interconnected hybrid media spaces** at museums and public places creates awareness and functions as a **focal point for interdisciplinary activities**. Increased creativity, productivity and trade in the creative sectors as well as advanced knowledge- and educational-transfer all over Europe is aspired.

LIQUID – Schematic platform visualization



DISPLAY

The Liquid visualisation ‚translates' content and data in it's multi-dimensional context and offers a user-interface that asks for interactivity and user-customisation.

STRUCTURE

The Liquid dimensions offers new possibilities and degrees of freedom when and how content is grouped, structured and displayed.

STORE / COMPUTE

The Liquid peer to peer (P2P) communication and persistency infrastructure virtualises many machines to one single ‚virtual active space'. This allows new kinds of eCollaboration and distributed workloads.

LIQUID integrates three layers in one compact solution:

- On a "store/compute" level it uses a peer-to-peer (P2P) approach that virtualizes servers, workstations and client-machines to one, big *virtual-server* or "*space*". This space is *active* in the sense that it's *agent-based* and *real-time*.
- On a "structure" level a generic dimension model is used that offers a system to build ontology's and according to that groups and "positions" digital assets in a multi-view fashion. The conjunction with the P2P model underneath enables the creation of digital exhibits, libraries or rich media experiences of cultural assets across museums and cultural institutions in a collaborative manner.
- The "display" level is open for all kinds of devices (web, mobile, installations, etc) and aims to offer innovative, multi-dimensional visualizations and navigations where rich-media is shown in context (*knowledge-maps*).

LIQUID user interface (one possible ensemble):

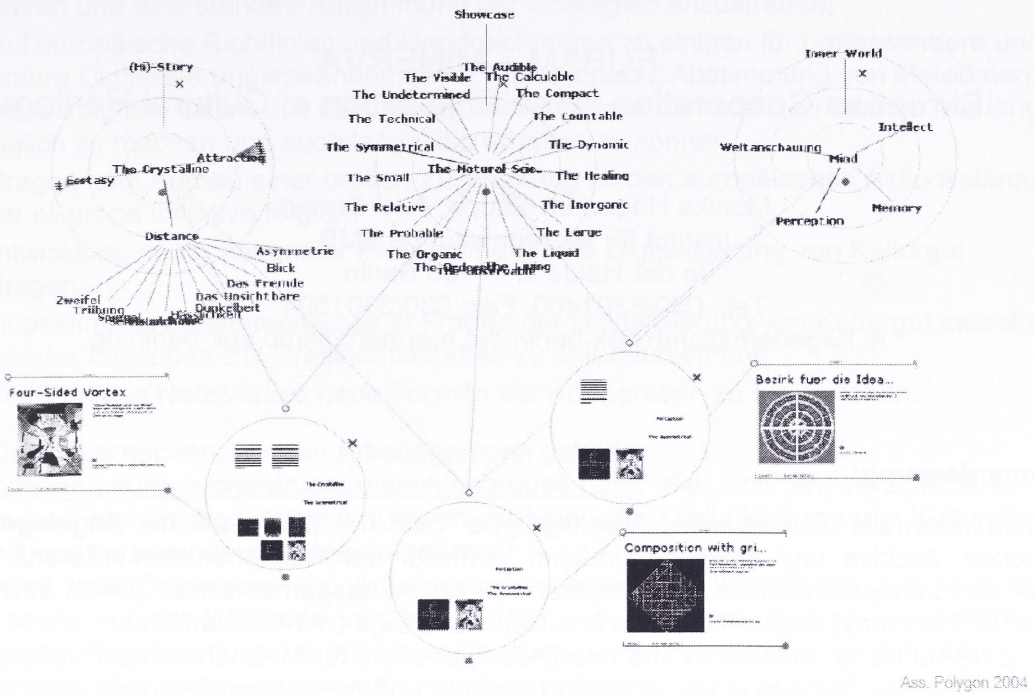


Image: Association Polygon

LIQUID offers an adaptive and multi-dimensional visualization and navigation interface.

- The CONAV (Concentric Navigation) is a star-shaped navigation system that allows you to enter the wide diversity of the frame of reference. CONAV provides a clear-cut overview and easy navigation of complex hierarchical structures.
- The CLUSTER displays a pool of exhibits, positioned at the step between the initial navigation display, CONAV, and the individual exhibit as displayed in the PRESENTER.
- In the PRESENTER you can view a particular exhibit, topic or person in detail; similar to how you would stand in front of a picture for a while and take in additional information.
- Specific navigation controls (like time- or geo-navigation) can be added to this system according to specific needs.
- All interface elements can be combined in an arbitrary manner. This way you can create a "knowledge-map" and put things in its context according to your interests. (E.g. by linking the PRESENTER to another CLUSTER, you can access relations, links between individual objects that provide new perspectives on each other, revealing aspects that are usually ignored).