CONVIVIO

INTERACTION MUSEUM
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Abstract

The goal of the Interaction Museum project is to collect a variety of interaction techniques, methods and systems and make them available to the Convivio community. The iMuseum will present videos and software applets via an on-line website, making it easy to search, compare and present individual techniques. The Interaction museum will also host *exhibits* that provide edited presentations of selected material, for professional, educational or research purposes, e.g., interaction techniques for small displays.

We have developed an initial working prototype and have collected feedback and material from senior researchers and designers during two symposia, in France and in the United States. We plan two additional symposia in 2006 and plan to launch the museum in late 2006.

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01.
Introduction

01.01
Design Problem

Interactive system researchers and designers face a common problem: unlike other design fields (architecture, industrial design, graphic design), we have no shared repository for viewing and comparing interaction techniques. We have no common access to the history of our field, nor is it easy to show students or designers specific examples of good practice. Because interaction is dynamic, we need a dynamic and interactive medium to view and understand it. Videos and interactive software are ideal for illustrating interactive systems, but to date, no coherent, complete and easily-accessible collection exists. Earlier attempts, such as the SIGCHI video series, were not produced systematically and are difficult to access. We need to create a process and structure that encourages on-going collection of new material and facilitates access for a variety of users.

01.02
Interaction Museum

The Interaction Museum project is creating an on-line museum and eventual on-line publication that gathers together interaction techniques, interaction design methods and examples of interactive systems which will be made available to the Convivio community.

We are taking advantage of recent advances in networked video technology to present videos and software applets via our website, in order to make the entries easy to search, compare and present. The Interaction museum will encourage submission of individual entries and also host *exhibits* that provide edited presentations of selected material, for professional, educational or research purposes, e.g., interaction techniques for small displays. etc.

Our initial focus is on capturing historical advances in interactive systems, while the materials can still be obtained. In the longer term, we view the Interaction Museum as a novel kind of on-line publication, in which Convivio and HCI-themed conferences have a consistent outlet for preserving advances in interactive systems.

01.03
Intended Audiences

The Interaction Museum will be an essential resource for industry practitioners, teachers, students and researchers. Practitioners will have access to a wide collection of existing interaction techniques, which will serve as inspiration or comparison as they develop their own designs.

The Interaction Museum will also provide an outlet for practitioners to share their novel ideas with the research and design community, without going through the standard print publication process. Teachers will be able to select specific examples that illustrate HCI concepts and students will be able to search the Interaction Museum to help them with course projects. In addition to contributing material, researchers will be able to search and reference other interactive system designs and use the database for developing, applying or testing interaction models and theories.

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02.
Project Description

02.01
Interaction Museum content

The Interaction Museum uses ZOPE, an open-source content management system. Figure 1 illustrates the current architecture of the interaction museum:
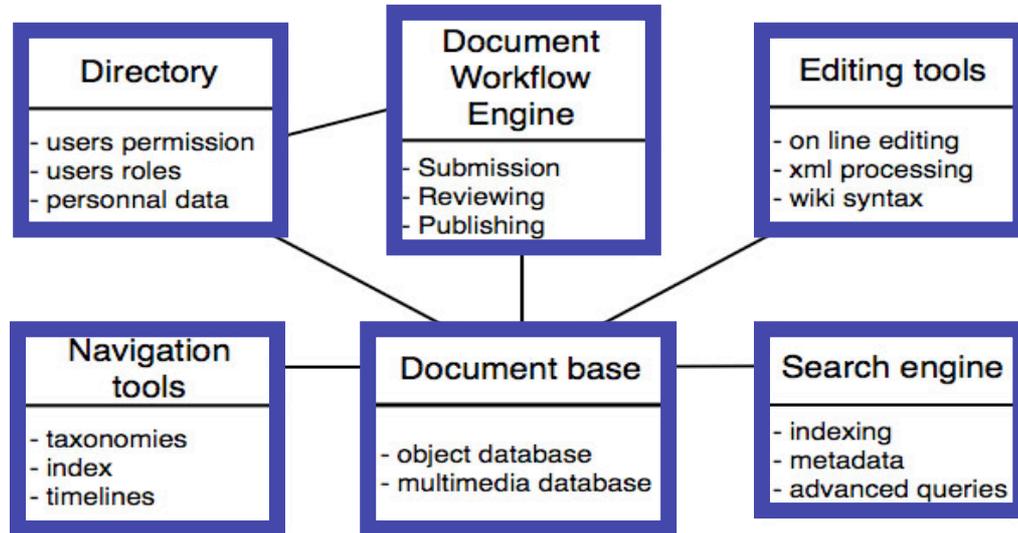

Figure 1: Architectural overview

We use a standard format for meta-data about each entry, to facilitate searching and comparison. Users will be able to search individual entries directly or via exhibits. For example, a historical exhibit would present a chronological view of certain interaction techniques. An exhibit on interaction with small-screen devices, such as PDAs, might include both examples of specific designs as well as research results on human sensorimotor capabilities relevant to small-screen displays. Researchers and graduate students will be encouraged to publish different ways of classifying the contents of the Interaction Museum, e.g., taxonomies of interaction techniques or the use of Fitts' law to compare pointing-based interaction techniques. Figure 2 shows the current site map, providing these different forms of interaction with the museum.
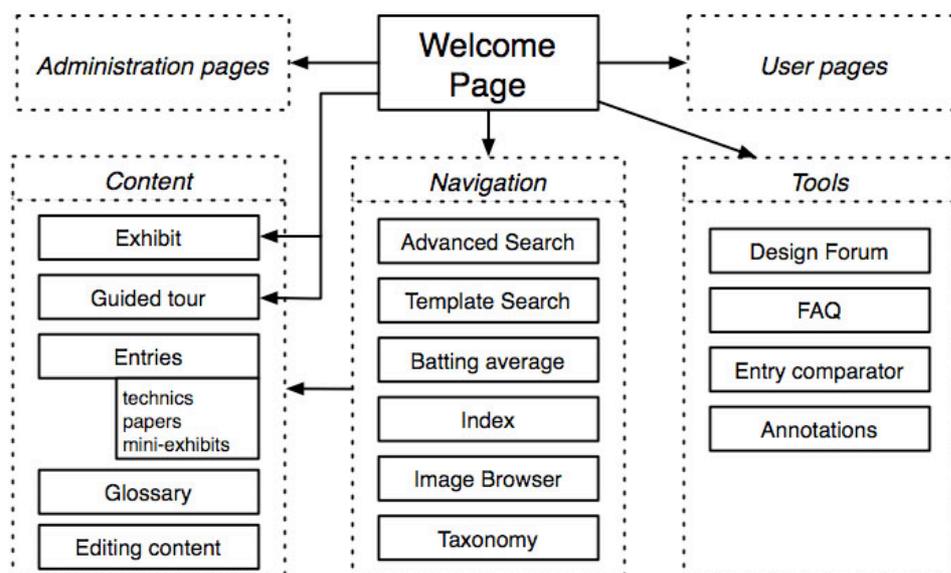

Figure 2: Site Map

02.02
Graphic design
Figures 3 and 4 show the original visual design proposal, which uses shades of gray as the background since the Interaction Museum content is both colourful and highly interactive.
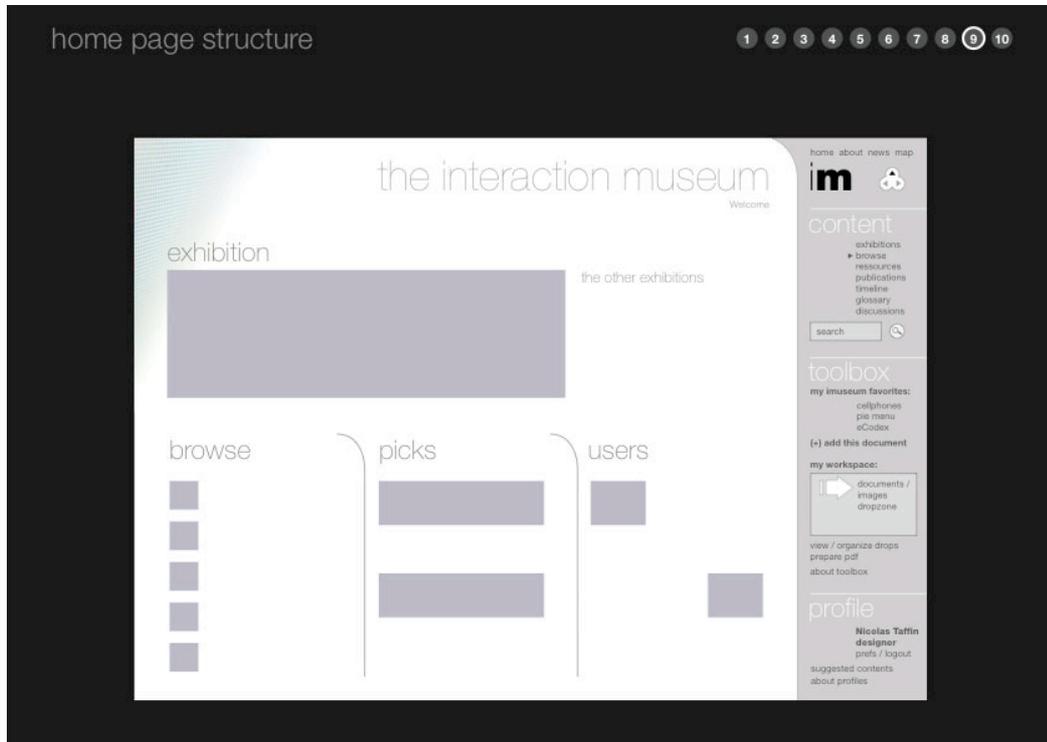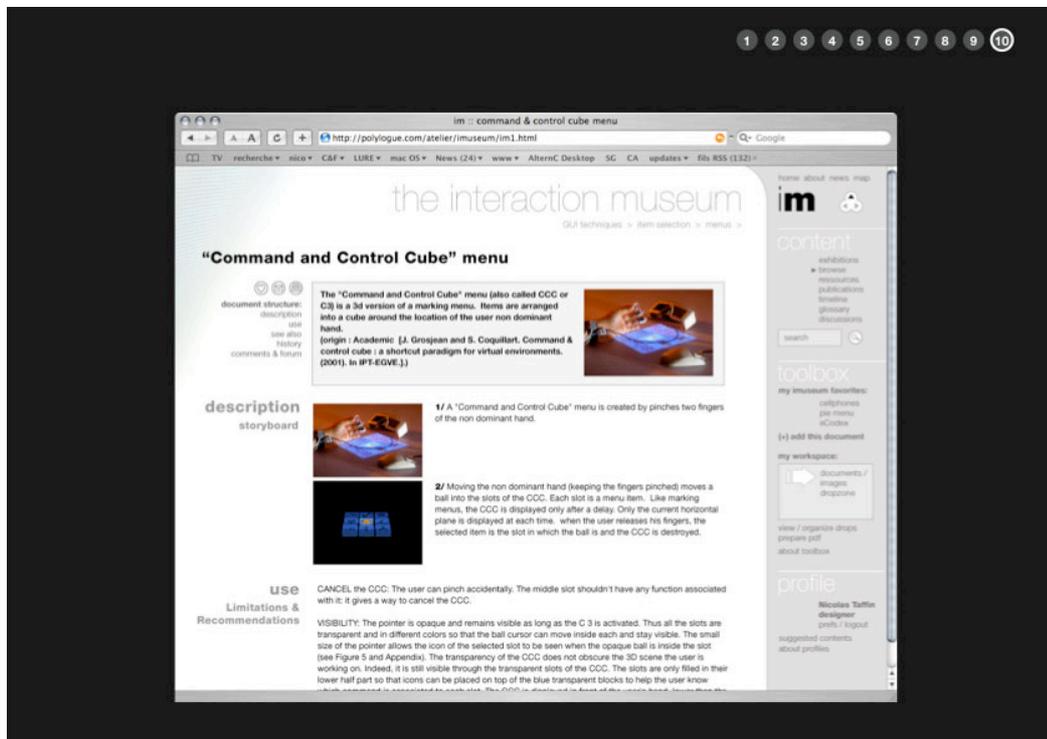

Figure 3: Layout design

Figure 4 : Graphic design with sample content

02.03
Entry structure

Each entry has a common format, with a required identification section, including a title, brief text description, keywords and an image. Next, we require a storyboard, which consists of three to five annotated images, which illustrate the dynamic nature of the interaction technique, method or system. After that, we have a number of optional sections, including additional storyboards to illustrate different uses, videos, software applets, references to published work, etc. Figure 5 shows the current working prototype with an example of the 'Fold 'n Drop' technique. We plan to incorporate the visual design above later this year, before the launch.

Figure 5: 'Fold 'n Drop' entry example

02.04
Review and publication process

Our goal is to create a living museum in which anyone can contribute both new entries and exhibits. A volunteer editorial board will monitor new entries, ensuring that they are accurate and sufficiently distinct from other entries, with appropriate cross-references and metadata. They will also check new entries and exhibits for validity. The review process must be as lightweight as possible but is necessary to ensure the high quality of the interaction museum's content.
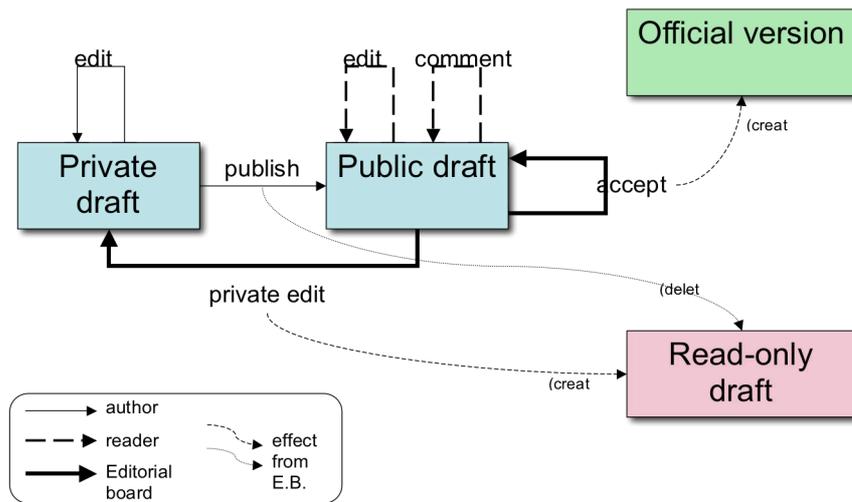
Figure 5: Review and publication process

<h1 align="center">03.
Progress-to-Date</h1>

03.01
Project phase overview

The Interaction Museum is organised in three main phases, including an inital design phase, a development phase and a final launch phase. Evaluation is included throughout all phases of the design process. We have successfully completed phase 1 on schedule, and are currently in phase 2.

03.01.01
Phase 1: Completed on schedule

We hired Jean-René Courtois to work full time as an engineer on the project and have also had Caroline Appert (Ph.D. student), Michel Beaudouin-Lafon (Professor), Emmanuel Pietriga (Research Associate) and Wendy Mackay (Research Director) actively involved in the design and implementation of the system. We are using Zope, an open source content management system, and have created an initial, working prototype of the website and database of interaction techniques. We explored a number of options for how best to collect, organise and store information and created a template and a number of working examples of both entries and exhibits. We consulted with Nicolas Taffin, a graphic and web designer, who created an initial proposal for the visual and interaction design of the museum. However, since we did not have a signed contract, we were unable to hire him in 2005. Now that the Convivio contract has been signed, we plann to hire Nicolas in March 2006 to work on the graphical and visual aspect of the design. (Note: INRIA hired Jean-René Courtois, even though the contract had not been signed, because without him the project could not have proceeded and they were willing to take on the risk that it might not be signed. We are very pleased that this has all been resolved and have continued Jean-René's contract through to the end of 2006, as originally planned.)

We created a mailing list of over 60 key researchers who are interested in participating and contributing to the interaction museum. We held the first Interaction Museum symposium, on schedule, in Paris on 17-18 June 2005. We invited key interaction design researchers to help us define a common format for individual entries and associated metadata. We created video prototypes of both entries and exhibits, which were published on the website: http://insitu.lri.fr/imuseum

03.02.01
Phase II: In Progress

We revised our design based on feedback from Symposium I. We changed the venue for the planned second symposium to coincide with the UIST (User Interface Software and Technologies) Conference, since there was no Convivio conference in 2005, the originally planned venue. As in the first symposium, we invited key researchers in the field to comment on our current design and we worked with them to create entries based on their original material. These entries are being used to seed the museum.

We are continuing, as planned, to enhance the software infrastructure. We have implemented an editorial process (for submission, evaluation and publication of new entries and exhibits) which is based on feedback from the participants at the two symposia and members of our mailing list. We are currently moving into the test phase, in which we will ask external, selected people to submit entries and have them evaluated.

In December, we presented the project to the Convivio Steering Committee and agreed that we would change one of the proposed exhibits to include design methods as well as the originally-planned interaction techniques. We discussed the future of the interaction museum and the steering committee agreed that we will produce the interaction museum as agreed, but will then INRIAR will responable for the longterm maintenance. We have active interest from ACM to publish the interaction museum as part of the ACM Digital Library and may also be able to publish it through INRIA, in France. Our ideal solution would be a joint-publication process, by which the material has the prestige and long-term protection offered by the ACM, but have INRIA assume the editorial

responsabilities and ensure a European focus. The project, under any longterm solution, will clearly identify Convivio EU F-5 Network of Excellence as the original sponsor.

We plan to begin working with the editorial board and solicit new exhibits in the next month. We plan a beta-test launch at the CHI conference, which will be held in Montreal, Canada this year and will open the museum to a wider group for submission of entries and exhibits through to the fall.

03.01.01
Phase III: Planned for fall 2006

We will launch the Interaction Museum via the Convivio website, with publicity at HCI conferences and organisations and through our contacts in academia and industry. (We have agreement from the conference chair to launch the Interaction Museum in conjunction with the UIST'06 conferenc in Switzerland, October 2007. We will also hold meetings and/or symposia at conferences including CHI and Convivio, as the opportunities arise.)

Phase III will begin 'normal operations', in which we will systematically solicit and incorporate new and historical material into the Interaction Museum.

03.01
Progress: original timeline

1. **Phase I:** Initial development of Prototype 0.1   (March - May 2005)
   done   Create initial prototype using existing material with initial graphic design. Entries will consist of text descriptions with illustrations, interactive demos, videos, images, keywords, references to published work, etc.

2. **Symposium I**   (17-18 June 2005, Paris)
   done   Organise a 2-day symposium with invited key contributors to evaluate, prototype, collect and organise additional material.

3. **Phase II:** Limited launch & Symposium II   (October, Convivio'05, Athens)
   done   Expand prototype to incorporate symposium I feedback, add collected material and make available on-line for limited external review. Organise Symposium II to evaluate prototype, collect and organise new material, and establish initial editorial board.

4. **Infrastructure development**   (October 2005 - February 2006)
   done   Incorporate Symposium II feedback. Implement working infrastructure to support submission, review and editing process in a scalable, robust form.

5. **Beta-test launch**   (May 2006)
            Publicise the launch of the beta-test version. Begin process of accepting, reviewing and editing new contributions from external participants. Collect use data and suggestions. (Consider a CHI 2006 presentation and meeting.)

6. **Phase III:** Prototype 1.0 launch   (September 2006)
            Editorial Board in place, to review new material (via submission or from related HCI conferences). Refine infrastructure as required.
   New: Planned symposium at the UIST'06 conference in Switzerland.

7. **Hand-off** (proposed: ACM Digital Library)   (January 2007)
            We are currently discussing the possibility of handing off the interaction museum to ACM, but must still work out issues of access, maintenance, etc.