Interaction Design Centre Web Site Requirements

in the context of the proposed "umbrella" institution: University of Limerick Interactive Media (ULIM)

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1 Introduction

1.1 IDC Site Shortcomings

The Interaction Design Centre's (IDC's) current web site is insufficient, both as a public presence as well as a private resource. The site does not present a professional public image and communicates the centre's competencies and working culture poorly. It does little to augment members' ability to connect, contribute and collaborate. In short, the site is ripe for total redesign, and this document can serve as a partial blueprint.

1.2 Potential Advantages of an "Umbrella" Site

Any redesign effort is best seen in the wider context of interactive media research conducted at the University of Limerick. The IDC is one of several research centres on campus with an interest in interactive media. These centres include the IDC, the Educational Media Research Centre (EMRC) and the Centre for Computational Musicology and Computer Music (CCMCM).

The centres have expressed interest in the development of an umbrella institution, "University of Limerick Interactive Media" (ULIM) for the purposes of pooling resources and projecting a large research presence. (All things being equal, research organizations above a certain size threshold command a stronger "grant gravity".) While there is interest in uniting under a common banner, each centre wishes to retain its respective identity, thus the ULIM initiative proceeds slowly and with caution. Currently, members of the centres wish to explore the value of an umbrella institution virtually—via a linked set of web sites—before committing to its official establishment.

In consideration of this wider context, the need for an improved IDC web site is the need for a site capable of standing alone *and* functioning as a cooperative module within an over-arching framework.

2 Stakeholders & Goals

2.1 Stakeholders

A number of people stand to gain from an improved IDC site, among them research students and staff (both current and prospective), site administrators, collaborative partners and investing institutions. The needs of these stake-holding groups have been assessed informally through interviews with representatives[1], and are presented below in distilled form.

2.1.1 Research Students & Staff (Current & Prospective)

Students and staff need easy access to information that is relevant to their research and information relevant to their research communities. This information includes formal documents (such as published papers, recommended articles, etc) as well as less formal documents (conference photo essays, project profiles, personal profiles, logistical notices, etc). Student and staff representatives from the IDC and CCMCM voiced the following complaints when asked about their respective web sites. (Quotes synthesized from interview notes).

- "I can't update my own information, and I've been asking the administrator to do it for weeks."
- "I can't find what I'm looking for. I can't just search the site."
- "I don't know who is here and who is away. I don't know where people are."
- "I don't know what the various people here are doing."
- "I don't know what's going on here"

Almost everyone interviewed re-iterated the last two of these complaints.

Prospective staff, students and collaborators need to know what the IDC is about. What are the centre's strengths? What goes on at the IDC? What is the working culture like? What research is currently under way? Who is involved, and what are their interests–personally as well as professionally?

2.1.2 Site Administrator

Site administrators want a site that is can be updated quickly and easily with minimum hassle. Consistency is a major concern. Site administration is no-one's primary responsibility at the IDC and has been passed from person to person without continuity. The result is a site rife with inconsistencies in structure, navigation, font-choice and page layout. Since site administration is likely to remain a shared secondary priority within the IDC, administrators need access to inconsistency-resistant methods of updating the site as well as ways to distribute the administrative load.

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[1] Representatives from all groups except grant-giving institutions were contacted. Their needs were inferred from conversations with people who write grants.

2.1.3 Funding Institutions

Funding institutions need a way to find out about the IDC that is quick, engaging and professional. A funding institution considering the IDC as a potential grant recipient is unlikely to have the time or motivation to thoroughly explore a web site. (If the site is viewed at all, it is presumably one of many sites being scanned). In the grant consideration scenario, the IDC site's function is analogous to an entrepreneur's "elevator pitch".

2.2 Goals

Consultation with representative stakeholders and consideration of their needs led to the construction of a list of "site goals". A web site meeting stake-holders' needs must inform, engage, communicate the centre's strengths and working culture, project a professional research presence, facilitate consistent site maintenance, and host an evolving space for collaboration. These goals are discussed in detail below.

2.2.1 Inform

Researchers inside and outside the IDC need to know what projects are currently being pursued. Prospective students, staff and collaborative partners need to know what the IDC has to offer them and how they can contribute to and connect with the IDC. Grant-giving institutions need to know why they should offer funds to the IDC rather than competing organizations. IDC members need to know what is happening—academically and socially—within the IDC.

2.2.2 Engage

The site must be engaging, captivating, seductive. The effort to engage should extend through all included media forms: text, still images, control elements and any other medium incorporated. Since the site is a showcase for a centre with expertise in the field of interaction design, it is vitally important that people's interactions and engagement with the site be positive.

2.2.3 Communicate Strengths

The site must make communicate the competencies of the IDC. In addition to interaction design, the IDC houses experts in computer-supported collaborative work/learning (CSCW/L), Human Computer Interaction (HCI), Participatory Design (PD) and "smart sensor" network development. This range of competencies must be made clear—for the benefit of the IDC (so it remains focused) as well as prospective students and staff.

2.2.4 Communicate Culture

The IDC has a vibrant social culture. There are priceless aspects of the IDC that are informal, humorous and personal. Things like the reverence we share for Colm's fruit cakes, our

appreciation of Jim's candid humor and our amazement at Anne's McGyver-like improvisational skills. People are interested in people. Communicating the unique flavor of the IDC's social culture special is an important part of attracting potential students, staff and collaborators.

2.2.5 Project a Professional Research Presence

The site must project a strong research image. If the site succeeds at doing so, it will augment the centre's ability to obtain grants, improve the centre's public image, and generate a sense of pride internally. Referring people to a kick-ass site representing your workplace feels good and has advertising value to boot. Members of the IDC want to be able to do this.

2.2.6 Facilitate Site Maintenance

Site administration must be as easy and painless as possible so that updates actually happen. Administrative procedures must be robust with respect to the generation (and propagation) of inconsistencies. Administration should be centralized where update tasks concern the IDC as a whole, and distributed to the extent that individuals and teams can control presentation of themselves and their work. Automation is recommended where possible, to streamline routine procedures and encourage stylistic integrity.

2.2.7 Host an Evolving Collaboration Space

The IDC has expertise in the domains of CSCW/L, yet how this expertise can best be harnessed to augment work and learning within the IDC—and collaboration with other research institutes—has not been thoroughly explored. Evidence suggests that a common collaborative space would be useful; IDC members lament the lack of a centralised resource for intra-IDC information, and the centre's compartmentalised physical space restricts the free exchange and cross-pollination of ideas the IDC seeks to promote. Furthermore, the international face of the IDC and the significant role of travel in its activity (conferences, meetings, etc) suggest that remote accessibility would be an advantageous feature for any collaboration space that emerges.

Of all the site goals described in this section, the goal of hosting an evolving collaboration space is the least well defined. IDC members have suggested numerous tools that could inhabit such a space – calendars, informal and formal bulletin boards, etc – however the true value of such tools will only become apparent in the context of their use. Given this reality, the collaboration space must allow for evolution; it should embody the flexibility and extendibility necessary to accommodate a wide variety of potential collaboration tools. A process emphasising iteration early and often is recommended for the generation/selection of the tools themselves.

2.3 Goal Tensions

Each of the site goals mentioned above directly supports the needs of one or more of the stake-holding groups. Some site goals clearly support each other. The goal of

communicating the centre's strengths clearly supports the goal of informing. The goal of easy maintenance supports the goal of projecting a professional research presence. Other goal relationships are not so clearly supportive. For instance, the goal of communicating the IDC's social culture could potentially interfere with the goal of projecting a professional research presence. Since the needs of stake-holding groups differ, there exists the potential for tension between site goals. In order to capitalize on the synergy created when goals support each other – and minimize the potential for confusion and conflict created when they don't – a clear understanding of the inter-relationships between goals is necessary. Presented below are three goal pairings with inherent potential for tension.

2.3.1 Inform – Engage

The chicken and egg quandary about whether to inform first then engage or engage first then inform is just as flummoxing in site design as it is in courtship. Information system designers emphasize the goal of informing, while multimedia professionals tend to place the goal of engaging first. The intended audience of the IDC site includes both information system designers and multimedia designers; viewers are likely to gravitate toward one side of this debate or the other.

2.3.2 Communicate Culture – Project a Professional Research Presence

The IDC is a place where ideas collide, people play, and spaces are intentionally left open for inspiration to appear. At times, the functioning of the IDC is unstructured and chaotic. While these may be deliberate choices that "work", they do not suggest professionalism, deliberate action, or formal methods. Neither, for that matter, do valuable personal details, such as Colm's culinary skill, or the value of Wednesday nights at Guerins. It is clear that prospective students and faculty need a window into the IDC's working and social culture. It is clear that grant (and peer) institutions need to see a polished professional image. It is unclear how the two views can best be integrated.

2.3.3 Facilitate Site Maintenance – Host Evolving Collaboration Space

Since the tool set that can best support the IDC's internal activities is an unknown and will change as the organisation changes, development of a collaborative space will be an evolutionary process. The process will require ongoing site maintenance extending beyond simple form-based operations. It remains to be seen how maintenance effort can be minimised during ongoing development of a useful collaboration space.

3 Building Blocks

Through brainstorming, discussion and an informal audit of research centre sites addressing similar needs, several useful "building block" structures emerged. These elements may be useful, as they directly address one or more of the site design goals.

Building block elements are defined and discussed at this point in order to facilitate subsequent discussion on information architecture.

[Note: Many of the elements presented below respond to the question: "How do you make a site feel alive and current when updating the web site is a low priority?" The duties required of IDC members—research, design, development and formal writing—are time consuming enough without having to develop polished web content from scratch. Unless members are given easy ways to share news and progress, this on-line sharing will not take place.]

3.1 Blurb

A blurb is essentially a short piece of text (and or hypertext) whose function is to generate interest. Updating a blurb involves simply submitting a short segment of text (and or hypertext) via a form. Layout and style are not the concern of the person updating the blurb. Blurbs may function as pointers to expanded content, or simply as news updates. Blurbs have the advantage of adding a degree of life to a page without requiring extensive effort. They are easy to modify and replace.

Blurb Examples:

(http://www.apple.com)

(http://www.dartmouth.edu)

(http://www.lucent.com)

(http://www.cooper.com)

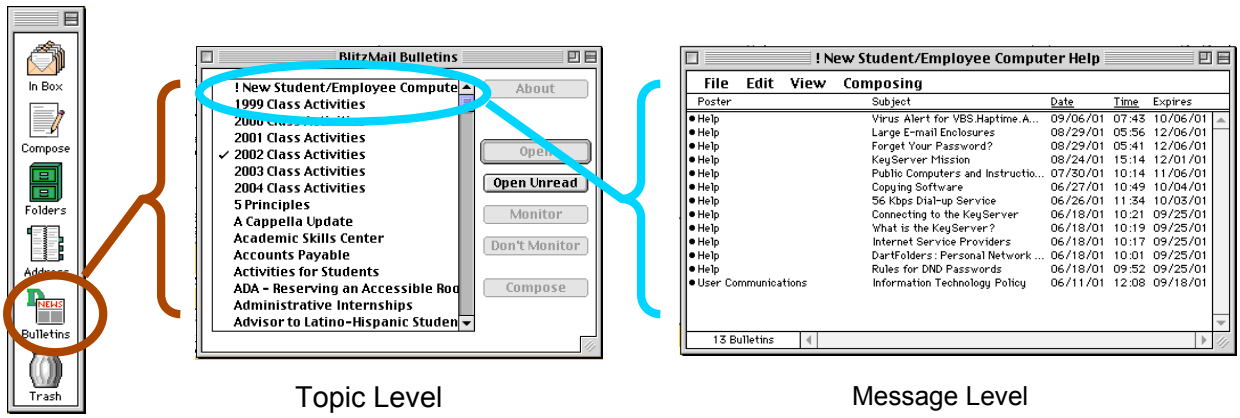
(http://www.maya.com)

3.2 Bulletin System

A bulletin system is a space, subdivided by topic, to which messages can be submitted. It is similar to a threaded discussion in the sense that sent messages become shared property, but it is not presented as a messy thread of messages, responses and responses to responses. A bulletin system is similar to web-based e-mail (in the sense that messages are categorized in a one-level folder structure, and can be previewed by subject header) but the responsibility of categorizing messages falls on the sender—not the recipients. Bulletin systems allow an individual to communicate with a group in an unobtrusive "low maintenance" manner. If you want to monitor a certain topic, you do so. If you are not interested, you don't. People aren't unintentionally left out or informed redundantly, because messages are held in a common space. Assuming messages die after a fixed lifetime, the only significant maintenance operation a bulletin system needs is addition and subtraction of topics.

Bulletin System Examples:

- The Blitzmail™ bulletin system:



Topic Level Message Level

- The "ClassTalk" bulletin system:
http://www.alum.dartmouth.org/~classtlk/index.html

3.3 Slide Show

A slide show is a linked list of images, possibly paired with captions. The interface for a slide show contains the current image, a "next" operator and a "previous" operator. The slideshow construct has several advantages including low maintenance, flexibility, content re-use and accepted informality. Low maintenance: Uploading digital photos and adding captions is a quick way to present a project in comparison to writing a formal article or creating a polished multimedia presentation. Flexibility: Images can be photos, drawings, conceptual diagrams, charts, or anything else that can be represented by pixels. Slide show content can be as complex or as simple (visually) as desired. Content re-use: Slide shows are commonly used for research presentations. A web-based slide show facilitates the sharing of research projects

on-line by allowing researchers to draw from previously created presentation material. Accepted Informality: Slide shows are a less formal medium than other research and design documents. The discontinuity inherent in transitions from slide to slide together with the linear movement of slide shows shifts the responsibility of delineating presentation structure and segway creation from presentation to presenter. Since the quality of public speaking so often lags behind the quality of written work, viewers' expectations are lower for slide shows than for written documents. Slide shows captivate interest without demanding the polish and associated effort expected from other forms of presentation media.

Slideshow Examples:

- http://www.maya.com/Overview/index.html
- http://www.ideo.com/projectarchives.htm
- http://www.cognetics.com/presentations/whitney/index.html

3.4 Random Image

A random image is an image, possibly paired with a caption that is drawn at random from a set. Each time a page is reloaded or revisited, the image and caption are changed. Random images are a simple, active element that can give a page life without overshadowing other page content or requiring extensive upkeep. Random images are effectively employed in pages likely to be visited by a person more than once.

Random Image Example:

- http://www.dartmouth.edu

3.5 Site Sprite

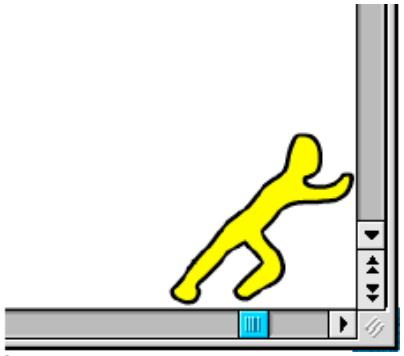
A site sprite is an elusive animated character that "haunts" a page within a site. The site sprite is not visually dominant – it is invisible most of the time. At certain moments though the site sprite appears, doing contextually relevant things. For instance, assume a button on a page causes the window to scroll laterally; the site sprite might appear for a few seconds push the page along. Alternatively, assume the mouse pointer moves from below a certain threshold on a page to above; the site sprite might appear, jump and try to catch the rising mouse pointer, then disappear.

If the sprite is "caught" (clicked upon), it will give an "inside story", a perspective on the content of the page it inhabits. For instance, if the sprite is caught on a page that gives a formal overview of the people that work at the IDC, the sprite might tell amusing anecdotes—in colloquial fashion—about IDC members.

The site sprite is a valuable construct for two main reasons: First, it is engaging. It transforms a web site into a game—a "snipe hunt" of sorts. Visitors to the site who catch the sprite on one page will be tempted to hunt for it throughout the site's pages. A cleverly implemented

sprite, with interesting stories to tell will generate site traffic via word of mouth: "Hey, have you seen that creature that appears in the IDC site when you…" The second value of a site sprite is that it supplies personality and perspective. A site sprite can "get away with" offering insights into an organization in a way formal content can't. The site is the system; the sprite works the system. Framed as a "bad cop / good cop" scenario, the site's formal content is the bad cop and the sprite is the "good cop"; if a viewer doesn't respond favorably to one, the other is sure to catch his/her attention. One or more sprites could be useful in easing the tension between the goals: projecting a professional image and communicating the IDC's informal social and working culture.

Site Sprite Illustration.



Site sprite pushing a page along.

3.6 Snapshot Calendar

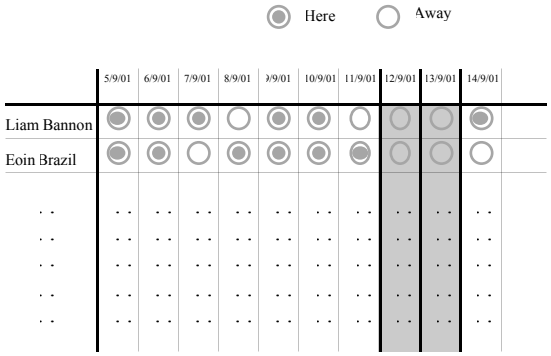
A snapshot calendar provides a quick view of who is "away" and who is "here" over a period of time, beginning with the present day. (Days disappear as they pass). Ideally, the snapshot calendar would enable people to provide whereabouts information on "away" days.

The purpose of a snapshot calendar is to create an at-a-glance view of who is around and who isn't, with some advanced notice. Schedules can become extremely complicated extremely quickly; therefore the snapshot calendar aims at simplicity and ease of data entry, not comprehensiveness. A scenario in which all IDC members use a rudimentary calendar is preferable to a scenario in which only a few IDC members use a more sophisticated calendar.

[Note: Scheduling details that cannot effectively be captured within a snapshot calendar could exist as bulletin topics].

The figure below illustrates one potential form a snapshot calendar could take. It is deficient in (at least) two respects. First, IDC members tend to work in morning and afternoon "shifts", and the calendar's binary daily resolution does not take this into account. Second, the calendar does not provide the option of entering whereabouts information.

Snapshot Calendar Illustration:



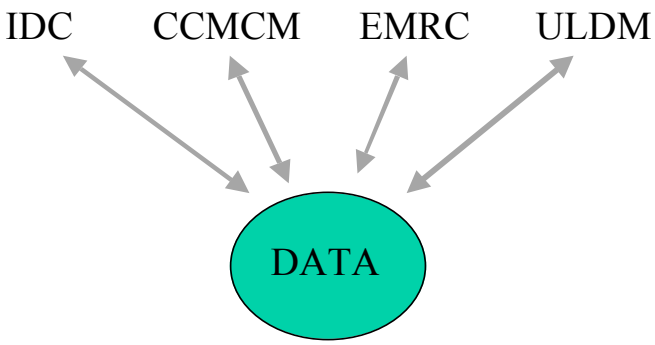
Snapshot Calendar

4 Information Architecture

4.1 Data Accessibility

Given the wider context of IDC site development—a proposed consortium of research centre sites under an umbrella site—it is important that underlying data structures are designed for multiple points of access. For example, suppose a database holds personal profiles for members of the IDC. Certain members are also involved in CCMCM research projects. Records in the database corresponding to these members would need to maintain this information, so that their records would be accessible to a future CCMCM site – and to the proposed research umbrella site.

[Note: It may be that separate databases for each research centre may be inferior to a central database for all the centres. It may be the case that a database is not the best way to represent the data, all factors considered. These issues remain to be grappled with.]

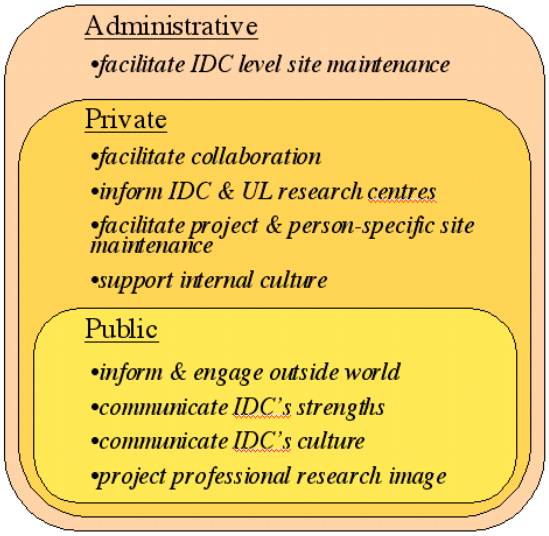


Data directly accessible by multiple research institutions

4.2 Levels of Access - Overview

Within the IDC site, three levels of access are required: public, private and administrative. The public level is the site as visible to the outside world – both people as well as search engine "crawlers". The private level is essentially an intranet. This intranet affords IDC members the ability to update content pertaining to themselves and their projects, and supports intra-IDC activity. In an advanced stage, this intranet could facilitate collaborative work with institutions outside the UL. The administrative level facilitates routine site administration tasks, such as adding a new member to the IDC, as well as updating content pertaining to the IDC as a whole.

The functionality of the three levels should be over-laid, not separate. An IDC member logging into the private level should retain access to the public level, and an administrator in the administrative level should not be denied access to the public and private levels. From the administrative level, the full functionality of the private and public levels should be available. From the private level, the functionality of the public level should be available. The Venn diagram below illustrates how site goals distribute between access levels.

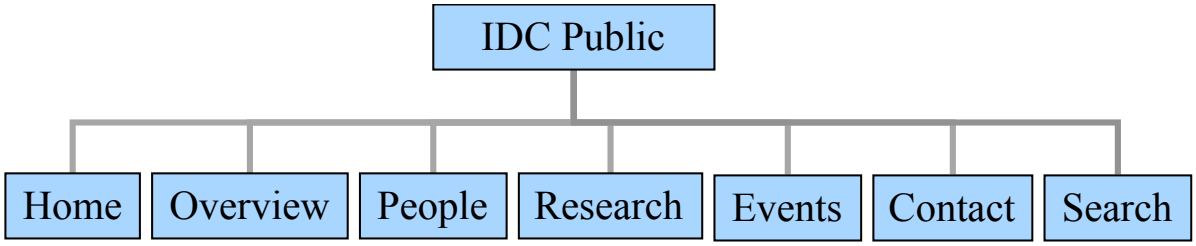


Goal distribution within access levels, and access level intersection. The administrative level has complete access to the functionality of the private and public levels. The private level has complete access to the functionality of the public level.

The following three sections outline an information architecture for the site. Each section addresses functionalities specific to one of the three access levels. Though there is overlap in the functionality of access levels (as described in the previous paragraph), the levels are presented independently for simplicity's sake.

Block diagrams are presented first, then the content of each block is discussed. Diagram blocks are not pages or links per se; they are conceptual groupings.

4.3 Public Level



Given an intended audience of prospective grant-benefactors employees, students, and collaborators, usability is an issue of prime importance for the public site. Based on this concern, the number of subtopics was limited to seven[2]. In choosing subtopics, one consideration was potential tension between site goals – particularly the goal pairs: communicating working and social culture vs. projecting a professional research image and informing vs. engaging. Subtopics were chosen in such a way as to minimize potential goal conflicts, as is illustrated by the figure below:

Communicate Culture *vs.* **P**roject Polished Image **I**nform *vs.* **E**ngage

Home	Overview	People	Research	Events	Contact	Search
C P	P	C	P	C	P	C P
I E	E	E	I	I	I	I

The seven subtopics minimize potential tensions between goals. Each subtopic (aside from Home and Search) prioritizes one competing goal or the other, and each of the competing goals is given adequate representation.

4.3.1 Home

The Home block contains three elements: a welcome section, a random image and a set of one or more blurbs. The Home block is the default "face" of the site presented to visitors; it is the distilled essence of the entire public site.

Site Goals Supported:
inform, engage, communicate strengths, communicate culture, project a professional research presence

[2] This value comes from the work of Steven Covey, who asserts that seven categories is the maximum most people can manage effectively ("First Things First", 84).

4.3.2 Overview

The Overview block's purpose is to impress and inform visitors who are short on time or patience. It must provide beautiful and concise answers to the following questions:

- What is our philosophy?
- Who are we?
- What do we do?
- Who are our partners?
- What are our credentials, our kudos?

The Overview block should also contain a brief discussion on the IDC's connection with the interactive media and music technology classes.

The visual and literary style of the Overview block must suggest extreme confidence and competence. It must convey the IDC's ability to reach *through* technology as a medium; to find "the simplicity on the far side of complexity"(Oliver Wendell Holmes). The Overview block is an opportunity for the IDC to show off.

Site Goals Supported:
inform, engage, communicate strengths, project a professional research presence

4.3.3 People

The People block contains three elements: An overview, a section containing profiles of current personnel and a section on past personnel. The overview should articulate what characterizes people in the IDC, and what makes it unique, socially speaking. The current personnel section is a framework for presenting profiles managed by each IDC member. (For more information on personal profiles, see Section 4.4.1). The section on past staff and students can be more succinct than the section on current personnel, and the two sections must be distinguishable from each other. Ideally, the past personnel section will provide answers to the question: "Where did he/she go from here?" For a great example of a research & design centre presenting its personnel, see http://www.maya.com/WeAre/Staff/shelly.html.

Site Goals Supported:
inform, engage, communicate strengths, communicate culture

4.3.4 Research

The Research block contains five elements: an overview, a section on current research projects, a section on past research projects, a section on publications and a section for demonstrations. The current research projects section is a framework for presenting project profiles managed by each IDC project group (For information on project profiles, see Section 4.4.1). The sections for current and past research projects must be distinguishable, and the

section on past projects can be more succinct than the current projects section. For good examples of research & design centres presenting *past* research project experience, see http://www.maya.com/Portfolio/workscape.html & http://www.ideo.com/projectarchives.htm.

The publications section should present links to publications, sorted alphabetically by author's last name. Ideally, a viewer should be able to re-sort the list of links to publications by publication date and title. The section should also provide the ability to search for a particular publication by author name or publication title. Clicking on publication links should result in publications appearing in one agreed-upon format (perhaps html or pdf) that can be printed without hassle.

Site Goals Supported:
inform, engage, communicate strengths, project a professional research presence

4.3.5 Events

The Events block contains two lists, ordered by date. One list contains events that have not yet happened. The other contains past events.

Site Goals Supported:
inform, communicate culture, project a professional research presence

4.3.6 Contact

The Contact block contains four elements: a list of contacts, a jobs postings section, directions to the IDC and a guest book.

The purpose of the contact list is to direct the flow of e-mail to appropriate destinations. The site administrator should not have to deal with job inquiries, nor should the secretary have to handle the tech questions. Contact e-mail addresses should be functional in syntax – research@idc, jobs@idc, webmaster@idc etc. Mail can be automatically redirected to the right person (or people). This layer of abstraction has two advantages: it preserves continuity when roles within the IDC change and indirectly filters incoming mail by content.

The directions section should be a useful resource for international and Irish visitors alike. Information from the directions section should be easy to print on one or two sheets of paper, and should include all the information a first time visitor needs in order to find the IDC *and* negotiate common scenarios along the way. Information for finding the IDC might include maps, line-by-line directions and relevant bus and train timetables. Scenarios to facilitate might include making a first phone call in Ireland, calling the IDC, calling the university information system, calling a cab, calling the police or hospital, finding local accommodations, using the bus system, finding a decent meal, how to judge prices, etc.

A guest book allows visitors to the site to offer feedback if they so desire. Nobody has to write in one, nobody has to read what is written. Sometimes the most honest critiques and the truest complements are motivated by the absence of pressure that a guest book facilitates.

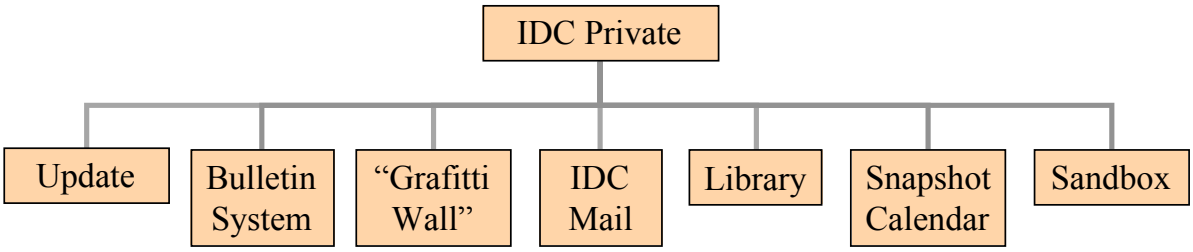
Site Goals Supported:
inform, project a professional research presence

4.3.7 Search

No matter how well the site's navigational structure is designed, the structure will at times be an impediment. The Search block serves as a "navigational bypass" in such situations. The Search block should allow site viewers to find content—web pages as well as any viewable non-html documents (pdf files, etc)—through keyword entry. Given that the site serves a research centre, the ability to search is of primary importance and should be available from all pages on the site.

Site Goals Supported:
inform, project a professional research presence

4.4 Private Level



4.4.1 Update

The Update block contains three sections: Update Personal Profile, Update Project Profile and Update Project Slideshow.

The Update Personal Profile section allows IDC members to create and edit content that represents themselves and their involvement with the IDC. Style and layout should remain constant across profiles in order to preserve visual integrity and convey a sense of team unity. Updating a personal profile involves filling out fields. Some, such as "first name" and "last name", should be compulsory while others, such as "patents" (for instance), should be optional. Individuals should have control over the visibility level of each non-compulsory field: invisible, private and public. Empty fields should be invisible by default. Most fields should be text entry fields (perhaps allowing limited use of mark-up tags such as bold face and italics). There should also be provisions for uploading one's own portrait photo.

The Update Project Profile section is basically the same as the Update Personal Profile section with different fields and a Slideshow-or-Random-Image component (as defined in Sections 3.3 and 3.4 and discussed in the following paragraph). All project group members should have the ability to update that project's profile.

The Slideshow component should have the same visibility levels as fields. Project teams should have the following options regarding the presentation of Slideshow content:

- Present the slide show as an element within the project profile.
- Present Slideshow content as a Random Image (as defined in Section 3.4) within the project profile.
- Present Slideshow content as a Random Image within the profile *and* give viewers the option of viewing the full slide show in a separate window.

The Update Project Slideshow section allows members of a project group to manage their Slideshow (as defined in Section 3.3). Slideshow management should support the following operations: add a slide/caption pair, remove a slide/caption pair and change the order of slide presentation.

Site Goals Supported:
facilitate consistent site maintenance

4.4.2 Bulletin System

The Bulletin System is described in detail in Section 3.2.

Site Goals Supported:
inform, host an evolving collaboration space

4.4.3 "Graffiti Wall"

The "Graffiti Wall" is an informal, unstructured counterpoint to the more formal, structured bulletin system. The goal of the wall is to facilitate spontaneous interchange of rough ideas and "napkin sketches". For an example of a graffiti wall (which unfortunately is erased each time the site is reloaded), see http://www.moonpoint.com/patch/games/Graffiti/graffiti.htm.

Site Goals Supported:
engage, host an evolving collaboration space

4.4.4 IDC Mail

IDC Mail is a convenient way to send an e-mail message to the IDC or any combination of its constituent parties. Existing methods of sending a message to the IDC, to the SHAPE group,

or to the SHAPE group *and* the Z-tiles group are time consuming and error prone. People are unintentionally left out of address lists. This happens most frequently to members who are new to the IDC – members who presumably could benefit most from the very mass mailings they are missing. Addressing messages within IDC Mail should be the epitome of simplicity; this operation should *not* require typing e-mail addresses manually.

Site Goals Supported:
inform, host an evolving collaboration space

4.4.5 Library

The Library is an online reference library for works frequently used within the IDC that are generated outside the IDC. The library contains two sections; a section for external hyperlinks and a section for publications. The publications section should be presented according to the guidelines for presenting IDC publications outlined in Section 4.3.4, and the links section can be presented similarly.

Site Goals Supported:
inform, host an evolving collaboration space

4.4.6 Snapshot Calendar

The Snapshot Calendar block is described in detail in Section 3.6.

Site Goals Supported:
inform, host an evolving collaboration space

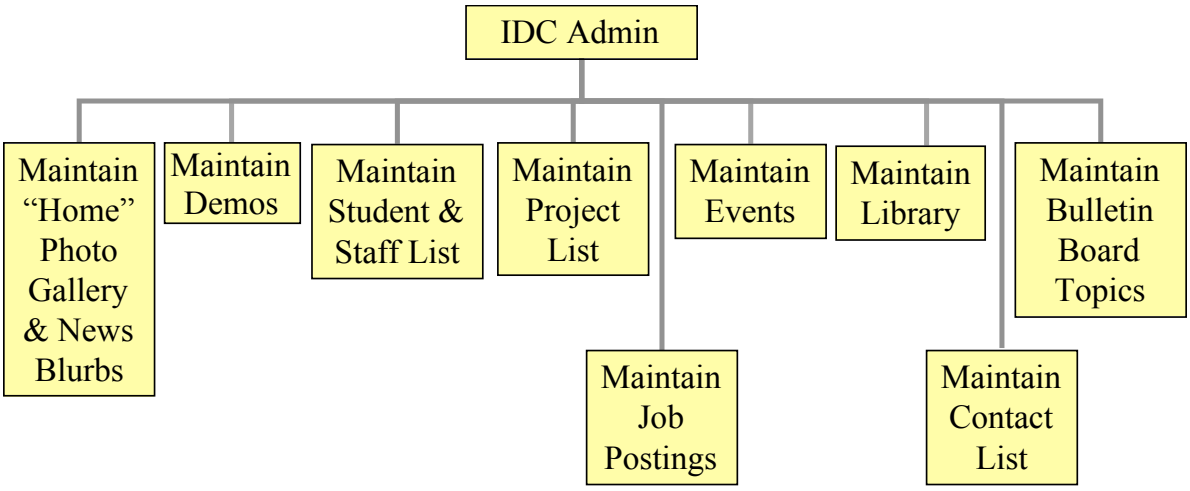
4.4.7 Sandbox

> *"Happiness is living in a neat mess".*
> *- Tom Chapin*

The site as described thus far does not include room for an unstructured messy place: a space where random unfinished bits and pieces can coexist and feel good about themselves. The Sandbox block addresses this deficiency by providing a bounded space for ideas in progress, mock-ups and all sorts of etc.

Site Goals Supported:
host an evolving collaboration space

4.5 Admin Level



The administrative level exists to support the public and private levels. The blocks in the diagram result directly from the functionality included in the other two levels. Unfortunately, there has not been time in this project so far to envision or articulate the blocks' behavior in detail.

5 Visual Design

Initial work on the site's visual design began with brainstorm sessions on connotation and theme. Brainstorms were followed by a search for exemplary sites: sites with visual integrity, sites demonstrating synergy between visual language and content. Following the collection of exemplary site URLs, logo ideas were generated and a prototype site framework constructed. The logo ideas and site framework have not been formally evaluated; they should be viewed as possible sources of inspiration rather than as finished pieces.

5.1 Connotation, Theme & Reference

IDC members were asked for the words they felt most adequately described the IDC, the following list of connotations was generated:

> *research-oriented, playful, creative, scientific, humorous, human-centred, social, multidisciplinary, interdisciplinary, whimsical, spacious, variety*

Additional words and phrases people commonly use in informal conversations about the IDC include:

design, participation, people, possibility, imagination, artifacts, interaction, interactive media, collaboration, community of practice, usability, technology

Unforced metaphor and unifying themes tend to imbue projects with integrity. For example, the integrity evident in the opening sequence of Disney's "The Lion King" extends from the theme: "Circle of Life" ("The Art of Mulan", Jeff Kurti). When IDC members were asked to suggest metaphors for the IDC site, the following themes surfaced:

- IDC as a flower, with petals extending in various directions but meeting at a common center

- IDC as a fertile open space, cleared and re-cleared with vigilance to encourage emergence of the following qualities: liminality, playfulness, creativity and possibility.

- IDC as a garden (combination of previous two themes)

- IDC as a graph (a set of nodes joined by edges) where each node is a discipline (computer science, ethnography, graphic design, etc) and each edge is an interdisciplinary connection. The graph is actively trying to identify existing edges and grow new ones in order to become as strongly interconnected as possible.

- IDC as an ongoing discussion regarding how to design systems combining entities that can be abstracted and formalized completely (data structures and most algorithms for example) with those that cannot (people, consciousness, human motives, needs and emotions, etc.)

- IDC as a sandbox where people interact with each other and artifacts in a spirit of play with the goal of exploring new paradigms for human computer interaction.

While connotation and theme have been explored through brainstorms, referenciality—the assumption of meaning through association—has not been thoroughly explored. Its potential contribution to the site's visual design is yet unknown.

How can the IDC site make effective, subtle use of referential association? What associations does the IDC want to evoke through its site's visual language? How can the site draw upon cliches and capabilities afforded by & perfected in other forms media such as film, story telling, animation and books?

5.2 Sites Exemplifying Integrity in Visual Design

The following sites exemplify integrity of visual style. The visual language of each site successfully supports the identity of the organization the site represents.

- http://www.maya.com

This site places frames content within crosshair lines in a manner evocative of design dimensions or layout guides. The framing is visually consistent with the site's purpose as the public presence for a design company. The framed content exists within a broad expanse of white space, and top-level navigation is kept simple (there are three options, aside from "Home"). This minimalism is consistent with the company's mission: "taming the complexity of technology". Click on "Our Portfolio" (one of the three top-level icons), and the resulting page makes the site's navigational state clear via an arrow pointing from the omni-present "Home" icon to the "Our Portfolio" icon. The same arrow motif directs site visitors from the bottom of the page back to the top. The use of arrows and circular icons suggests flow diagrams and concept mapping, two connotations very much in line with Maya's expertise. Maya's site makes effective use of visual design to support its company identity.

- http://www.dreamworks.com

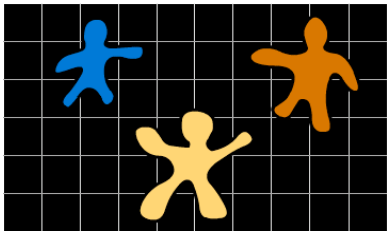
Dreamworks is a professional film company with plenty of experience in the movie business[3], and the visual style of its web site reflects this. The site's aspect ratio and black background frame appropriately call to mind cinema screen "letter-boxing". The animated rollover effect for button backgrounds on the home page—flat blue turns to clouds moving across sky—supports the day-dreamy, cloud watching flavor of the company's branding and creative identity. Click on the "Video/DVD" button, and the resulting page presents a horizontal list of available movies that scroll along for a seemingly indefinite length of time. The length of this list—and the action of scrolling through it—give the impression that Dreamworks is a film studio with experience. The visual language of Dreamworks' site supports the identity of the company.

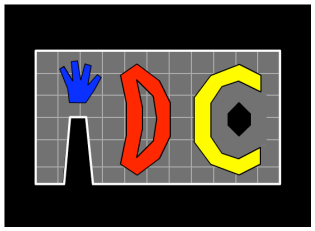
- http://www.google.com

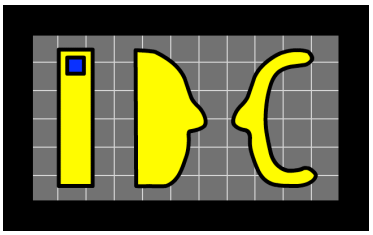
This company is all about searching the web quickly, and their site's elemental visual style reflects this central goal.

5.3 Logo Ideas

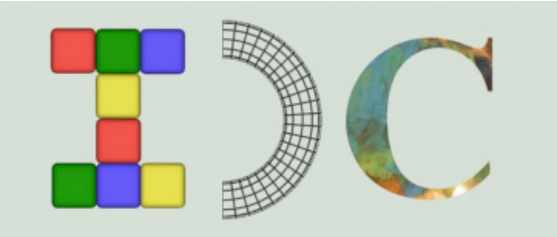
Here are a few prototype logos that may help to generate a logo that works. Their design rationales could be explained, but a logo needs to speak for itself.

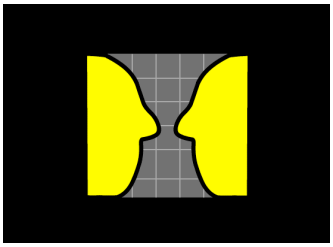






[3] Though the company itself is relatively new, its founders bring to it a wealth of experience.





A 6th logo exists that is not presented with the logos above, because it is animated. To view this logo, see http://136.201.107.105/KL/AnimatedLogo/IDCLogoAnimated.gif, or contact Enda O'Donoghue (enda.o'donoghue@ul.ie).

5.4 Prototype Site Framework

A prototype site framework has been constructed, but not evaluated. To view this prototype, see http://136.201.107.105/KL/SiteInterface/FrameSet.html, or contact Krispin Leydon (krispin.leydon@ul.ie).

6 Usability & Interaction Design

It would be a crime for the Interaction Design Centre to adopt a site designed without careful attention to issues of usability and user interaction. A few specific issues to consider are legibility, navigation, search and control.

6.1 Legibility

The site's text must be legible. Font characteristics such as size, style, color and contrast with background color must serve this end. Client-side availability of fonts and character sets for intended users should be verified. The benefits of anti-aliasing should be explored—if the option of anti-aliasing is applicable.

6.2 Navigation

The site must communicate to the viewer where he is, where he's come from and where he can go at all times. Options must be presented clearly, impossible options should not be included and redundancies should have a purpose. The less navigation required, the better.

6.3 Search

The IDC site is a research site; it should facilitate search and "re-search". The ability to search the site must be afforded the user at all times.

6.4 Control

Control elements must stand out from more passive content. The form of a control element should suggest that element's function.

6.5 Consistency

The site is a world (of sorts) and for this world to be "believed" it must obey its own internal logic with consistency. This consistency should extend to all characteristics of the site, from font color to layout to navigation. Since the "site world" will be interfaced by people in the "real world", the site's internal logic should make sense to a common denominator of intended viewers.

6.6 Browser Technology Awareness

If a viewer's browser lacks a technology (or has it disabled) and this technology is used by the site, the site should recognize this fact and take appropriate action. Viewers should not be presented with a site if it is going to look "broken". The following links may prove useful in meeting this goal:

- The Mozilla organization's "ultimate browser sniffer":
http://www.mozilla.org/docs/web-developer/sniffer/browser_type.html

- The source code for the Smithsonian Institution demonstrates the ability to sniff for browser plug-ins (useful if such technologies as flash or shockwave are employed):
http://www.si.edu

7 Implementation Issues

> *"Reality bats last"*
> *--Alan Cooper*

This paper has built a castle in the sky. What practical issues[4] must be understood in order to build the foundations underneath? Some implementation choices may be obvious, others not so obvious. The following sections briefly address some implementation issues of concern.

7.1 Choice of a Common Denominator

A common denominator of browser technologies and network connection speed must be chosen, based on what intended viewers of the site have available. This choice must be made explicit so that site developers know what web technologies are "legal" options.

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[4] *technical* practical issues

7.2 Data Representation

Databases? Text files accessed via perl or php scripts? Extensive research is required to determine how the site's data can best be maintained.

7.3 Separation of Content, Layout and Style

Content, layout and style should be separated to the greatest extent possible. This enables developers to make adjustments to each aspect of the site independently, and facilitates presenting the same site in multiple ways (text-only and text with graphics, for example).

7.4 Search – Internal/External

The site should facilitate external as well as internal search, and the tools required for these two tasks may have different requirements…

Popular search engines such as Google and Inktomi can penetrate frame sets, even read dynamic content. Google can search dynamic content uninhibited, and other search engines are able to search dynamic content after URLs containing "?"s and "&"s are "rewritten". For information on "URL rewriting, see http://spider-food.net/dynamic-page-optimization-b.html and http://httpd.apache.org/docs/mod/mod_rewrite.html. For information on how to improve the external searchability of a site, see http://hotwired.lycos.com/webmonkey/01/23/index1a.html?tw=e-business.

Requirements for internal search may be more stringent. For example, the established internal search application "htdig" (open-source, from gnu) is capable of searching html and other text file formats (notably pdf), but unable to search dynamic pages. An evaluation of available tools for internal search is required. For a good start see, http://www.searchtools.com.

7.5 Automating Procedures

There are automated tools for finding broken links and monitoring site traffic (What browsers are people visiting the site with? From what countries is the site being visited?). Such tools could be useful…

8 Useful Resources On the Web

8.1 Apache

Apache Project - http://httpd.apache.org

8.2 General Web Development

Webmonkey - http://hotwired.lycos.com/webmonkey
DevShed - http://devshed.com
irt.org - http://www.irt.org/index.htm
WebReview - http://www.webreview.com
WebTechniques - http://www.webtechniques.com
eXtropia - http://www.extropia.com

8.3 Graphics Automation

ImageMagick - http://www.imagemagick.org

8.4 Java Servlets, JSP

JRoundup - http://www.jroundup.com
Resin - http://www.caucho.com/index.xtp

8.5 JavaScript

Learning JavaScript - http://www.javascriptmall.com/learn/contents.htm
Doc JavaScript - http://www.webreference.com/js
JRoundup - http://www.jroundup.com

8.6 Perl

The CGI Resource Index - http://www.cgi-resources.com

8.7 PHP

PHP: Hypertext Preprocessor - http://www.php.net
PHP Resource Index - http://php.resourceindex.com

8.8 Search

Search Tools - http://www.searchtools.com
ht://Dig - http://www.htdig.org