Web 2.0 for Urban Designers and Planners
by Jase Wilson

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Abstract
The author contends that a class of new and emerging participatory Web-based tools, referred to at present as “Web 2.0,” can and should be used by urban designers and planners to achieve better results in public participation exercises.

A brief overview of the World Wide Web is given—how and why it came to be, where it is now, and a glimpse at where it’s headed. Public participation is reviewed—reasons for it, some of the challenges faced in its practice, and a widely regarded, though seldom implemented model for achieving success with it, based on methods set forth by Christopher Alexander. Ways that Web 2.0 tools can be applied to overcome the common challenges, and ways they can be used to facilitate the model for success are identified. To show how such results can be attained in practice, a hypothetical scenario is constructed, in which a fictional planning team uses the full capabilities of Web 2.0 to facilitate public participation while authoring an area plan. The closing chapter identifies a short list of potential barriers to using the Web in public participation, and offers some ideas for dealing with each.

The research draws from literature written on public participation in urban design and planning, and literature written about the World Wide Web. Interviews of experts from both areas were conducted. Existing and emerging Web 2.0 tools were analyzed, and a test of concept was constructed to prove it’s easy to solicit public feedback using Web 2.0.

This thesis lives on the Web, with comments enabled and welcome, at http://mit.edu/jase/thesis.

Keywords
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Introduction

This thesis is about using new Web-based tools to achieve better public participation results in urban design and planning. With some rethinking of established routines, and a light customization of a few open source Web 2.0 tools, urban designers and planners can readily apply these Web-based methods as valuable supplements, although not substitutes, to their established practices.

Chapter One begins with a cursory, non-technical review of the World Wide Web - why it began, its current state, and some key trends shaping its future as an indispensable resource in urban design and planning, in particular its growing significance in participatory exercises. Examples of Web sites from various areas of interest are used to illustrate relevant concepts.

Chapter Two quickly overviews public participation, starting with the rationale for it, and some challenges faced doing it. One model of successful participation is explored, Christopher Alexander’s participatory plan for the University of Oregon. Though widely recognized as exemplary, the methods he sets forth in The Timeless Way of Building, A Pattern Language, and The Oregon Experiment are nevertheless still uncommon in practice. Certain barriers prevent their adoption, mostly practical, such as having a tight budget with which to carry out the resource-intensive participatory exercises he recommends. The end of Chapter Two looks at how Web-based tools can be used to facilitate these practices, in a way that achieves more results with less resources used.

To help show how the theories presented in Chapter Two can be applied in practice, Chapter Three constructs a hypothetical scenario, in which a planning team uses Web 2.0 to help author a publicly informed area plan.

To conclude, Chapter Four identifies a few potential barriers - some real, most perceived - to using Web 2.0 in constructing publicly informed plans. Recommendations are supplied for helping to overcome the potential barriers.

This document resides on the Web, meant as a conversation starter - a collection of ideas for readers to consider, to reflect upon, and to respond to, if desired. Insights and questions welcome at http://mit.edu/jase/www/thesis.
Chapter 1

The Machine is Us/ing Us*

“The first goal was to enable people to work together better.”
- Sir Timothy Berners Lee, inventor of the World Wide Web

December 25, 1990: After years spent pondering problems with information management, Tim Berners-Lee finishes work on a new invention - a digital information “browser.” In it, he links two previously uncombined technologies - Hypertext, and the Internet, constituting a new system for sharing information. Though it only exists on one computer, he names the project WorldWideWeb, portending what it is to fast become. Initially dismissed by his employer, and scoffed by parties from both the Internet and Hypertext communities, his idea was simply to “enable people to work together better.” (13, 15, 17)

Over the course of the next two decades, the Web has since gone on to transform many aspects of the way we think, work, socialize, play, shop – virtually every area of life. The Web has grown exponentially in both usage and content: In 1991, there was one Web server, located at a European research laboratory. That one Web server hosted a Web site - the world’s first. As of early 2008, there are now over 150,000,000. On average, that’s about 25,000 new Web servers per day, or approximately one coming online every four seconds since 1991. (17, 75)

1990: The first Web server

Fig. 1.01: Berners-Lee developed the WorldWideWeb project on this machine, making it the first Web server. Now, less than two decades later, there are over 150 million Web servers, distributed across every continent, serving up more than 1.5 billion unique Web sites.

Source: http://www.w3.org/

2008: One Laptop Per Child (OLPC)

Fig. 1.02: One of many projects aimed at distributing low cost Web-enabled devices. OLPC will release soon at a price point of $75, fully Web enabled. The “horns” are antennae - they receive and transmit wireless Internet as part of a mesh network, making each machine a Web server-like node.

Source: http://laptop.org/

* “The Machine is Us/ing Us” is the title of an immensely watched short video about Web 2.0, created by Dr. Michael Wesch: http://tinyurl.com/wearethemachine.
The Web’s rapid injection into mainstream awareness came with a mixed bag of emotions, opinions, and speculations amongst groups concerned with matters of the city. Some saw e-commerce as a threat to cities, figuring that digital connections would substitute for what was, until then, the comparative advantage of urbanized areas—information sharing, access to services, and linkage. There was a brief moment of speculation when people thought that the Web might undermine downtowns, by diminishing their value. Understandably so: Web-based financial transactions grew from zero into the hundreds of billions of dollars in the 1990s alone.

Yet, despite the continued success enjoyed by e-commerce participants, fears of the Web replacing the city have been laid to rest. While it continues to re-align many spatial configurations, most prominently those concerned with supply chains, warehouses, and production centers, it has not undermined the value of urbanized places. But the Web does hold vast, under-tapped potential for helping to improve those places. As Berners-Lee noted:

“The world is a world of human beings, as it was before, but the power of our actions is again increased by the Web. It already increases the power of our writings, making them accessible to huge numbers of people and allowing us to draw on any part of the global information base by a single hypertext link.” (33)

And, of great significance to urban design and planning, the Web was conceived from the outset as a tool for supporting better collaboration:

“The idea was that by building a hypertext Web, a group of whatever size would force itself to use a common vocabulary, to overcome its misunderstandings, and at any time to have a running model - in the Web - of its plans and reasons.” (33)
Characteristics of the early Web

The early Web bore characteristics that made it easy to publish information, but difficult to use for collaborative purposes. It was a monologue, inasmuch as it primarily supported information pushing, and it was fragmented, in that it proliferated as information islands. Early Web tools featured complex interfaces, but they controlled relatively simple functions. The early Web was rigid, because it lacked functions that support fluid information interchange, and it was mechanical, in the sense that only very few highly trained computer scientists could build tools, and they only had rudimentary program languages from which to build them.

Even though early Web pages seemed simple in contrast to newer Web sites, they were not intuitive. They were complex, at least from the user’s standpoint. There were few widespread conventions. Competing technologies produced wildly different results, even within individual Web domains, and their functionality simply were not intuitive. The early Web was great for information distribution, but it wasn’t at all conducive to participation. In the early days, enormous technological barriers existed, preventing easy application of the Web to participatory processes. (14, 26, 33, 56)

Web 2.0: the difference

Web 2.0 is a hype term. It was coined by a technology author in the business of selling books on the latest trends. A quick glance at the revision history of the Web 2.0 article on Wikipedia (itself an archetype of Web 2.0) reveals a chaotic flux of contested meanings ever since the term was coined. Nevertheless, it describes a phenomenon with immense potential. Regardless of what the term means to various groups, the continued evolution of several technologies have opened up the Web up to a world of possible applications to real world problems. (78, 129)

Web 2.0 should be thought of as a shift in perception, as existing tools used in new ways. Most of the technologies underlying Web 2.0 capabilities existed long before the term came into vogue. The difference lies in the application of those technologies toward constructing a participatory dialogue, in which even lay users can contribute, rather than a monologue, in which information only flows from publisher to viewer. All the tools that enable what we now call Web 2.0 existed since the early days, but such interactive applications weren’t there yet, nor was the thinking about interaction. (91, 129)
Like the dot com era Web, Web 2.0 bears certain hallmark characteristics. It is a dialogue—a participatory communications ecosystem. It supports convergence, since many information sources are now published as interchangeable, embeddable “streams.” It is elastic because of this interchangeability, and because it has become easy enough to use for mainstream audiences. Such ease of use and fluidity make it organic, as it is now possible for non-programmers to create program solutions to various problems they face, and they have a vast pool of interchangeable technologies, coupled with well-annotated instructions at their disposal in support of such development. Web 2.0 tools feature simple interfaces that control complex functions, making it viable for use as a tool kit for public participation, where ease of use matters greatly.

Elements of Web 2.0

The proliferation of open source program technologies underlies the rapid growth of Web 2.0, although functionality at the program language level is still best understood by advanced programmers. But from these open source underpinnings, a collection of key tools have emerged. These tools, as fundamental building blocks, are the primary drivers of Web 2.0’s growth, as they support a variety of powerful interactive functions, but they do not require advanced programming training to utilize. The list of such tools is quite large, but a handful of the most important among them are presented below.

The wiki, whose name comes from the term wiki wiki (Hawaiian for “fast”), was first introduced in 1995. Its inventor, Ward Cunningham, imagined it as “the simplest online database that could possibly work.” Wikis have grown in popularity ever since then, because they greatly decrease the technological understanding required for users to edit online content. They have come to be used for all manner of collaborative purposes, employed by groups ranging in size from one person to millions. They have proven to be highly scalable, flexible, and supportive of rich media beyond plain text. As they evolve, wikis become large, fluid repositories for knowledge bases.

One of the best known wikis, Wikipedia, is considered by many technology pundits to be an archetype of Web 2.0. It is a global, multi-lingual, rich media encyclopedia that is free to use, and anyone can edit the bulk of its content. Launched in 2001, Wikipedia has expanded to be written in over 100 different languages, the English version of which passed the two million article mark in late 2007. Scholarly work has flourished around Wikipedia’s growth, and numerous case studies have proven its content to be as reliable as well established printed encyclopedias. It has received many criticisms, including its systematic bias toward ephemeral or trivial matters, and the ease with which it can be “vandalized.” However, as more users adopt Wikipedia, the bias towards trivial content continues to diminish, and the problem of vandalism (in which rogue users delete or alter legitimate content) has all but vanished. Tests have confirmed an average corrective reversion time of less than one minute for malicious changes.

Web logs, more commonly known as blogs, are another of Web 2.0’s fundamental building blocks. Initially conceived as nothing more than time-stamped online journals, blogs have risen to near ubiquity as a media outlet. They have been adapted to all sorts of purposes, for both
individual and collaborative authoring. They typically enable user comments on posted material, and some enable full-scale comment threads, making them a powerful tool for interactive discussions. Like wikis, they support rich media, in the sense that users can easily add photos, videos, slide shows, sound clips, diagrams, or any other conceivable form of digital content to their posts, in addition to text.

A substantial contributor to the overall growth of the Web since 2004, blogs have grown exponentially. In 2006, Candace Lombardi noted that “There’s a blog born every half second. ... That’s 175,000 new blogs per day worldwide.” (63)

Open source software underlies the proliferation of blogs and wikis. Hundreds of well-developed open source tools are available, and most are free, and so easy to use that anyone with a basic understanding of digital authoring can write well-coded, media-rich Web content. Wordpress, a popular open source blogging tool, has assembled a community of millions of users, who collectively have deployed millions of blogs. Of these users, hundreds of thousands are novice programmers who build small functions - solutions to various problems - then release them back in to the open source Wordpress community. Thousands of users are advanced programmers who actively develop the core software underlying Wordpress. A handful of core programmers guide the overall development. Working together, the Wordpress community has developed a very rudimentary tool with only a few functions, into an extraordinarily powerful collaborative publication platform in just four years. The core Wordpress software is and will always remain free, though it features a number of commercial upgrades that give paid users even more powerful functions. (63, 133)

Mashups are not a specific technology, but a collection of tools and standards that together enable Web 2.0’s fluidity. Sophisticated yet accessible publication standards give users the ability to combine two or more Web-based data sets. In its most common form, mashups are maps that feature a base layer, served up from a major map provider, such as Google Maps, then extend the base layer with additional data layers containing any form of media. Through mashups, users can attach text, photos, videos, and historic and proposed overlays to places. More advanced users can access the core map technologies, through the publisher’s application program interface. Among the first noted mashups that proved the power of this functionality is the Chicago Crime Map, in which a single programmer overlaid the City of Chicago’s geo-tagged crime reports on to a Google Map. The resultant map gave users the ability to see crime activity spatially, in an intuitive, interactive map. They could sort the data by neighborhood, crime type, number of occurrences, and many other parameters. (40, 77, 122)

Rich Internet Applications (RIAs) are, simply put, robust software tools that live on the Web, as opposed to traditional software which resides on single users’ desktops. Developing rapidly, RIAs are responsive, intuitive, and above all, plugged in to the vast resources of the Web. As RIAs mature, they will become increasingly viable as superior substitutes to traditional desktop applications. Some existing RIAs, like Google’s Docs suite, are fast becoming viable substitutes to software suites, once the exclusive province of desktop software counterparts. In fact, the Web’s current evolution is increasingly toward becoming an operating system unto itself. When RIAs become viable for widespread use, the need for desktop operating systems will diminish. The Web will one day be the Web OS. (13, 43, 91, 112, 126)
Three key advantages come from Web-based applications. First, the software is connected directly to Web-based data streams and other resources. Second, RIAs evolve seamlessly, in that application builders update software tools on the Web server, rather than releasing bundled updates in the form of desktop-installed software versions. This dramatically reduces the software development cycle time, and developers have direct access to usage metrics, further enhancing their understanding of how the software is used, including where its problems lie, and what functions are missing. This means that RIAs will evolve much faster than desktop applications. Third, since RIAs are hosted on the developer's servers, rather than on individual desktops, all users are working with the same software version. This erodes the challenges presented from disparate versions, such as users having a newer version of Microsoft Word needing to “save back” their documents to share with users of an earlier version of the software. (91, 112, 126)

RIA developers all over the globe are producing Web-based alternatives for virtually every known desktop software function. At this point, such applications are too new to realize an advantage over their desktop counterparts. But they will evolve much faster than desktop tools did, and they will eventually coexist with traditional desktop applications. RIAs are of profound significance to urban design and planning, as they will become the means through which users can produce and share non-text representations, such as design drawings and 3D models. Expect, for instance, Google to release a Web-based version of Sketchup - the simple 3D modeling software - within the next three years. When that functionality is realized, it will profoundly change the way public participation takes place. (18, 41)

Though not a technology at all, democracy is another defining element of Web 2.0, and many of the tools that make Web 2.0 so well suited to participation stem from the desire to achieve democratic, collective decision making. The tools used to achieve democratic decisions online are many, ranging from preference functions, rating systems, voting mechanisms, and surveys. Of particular relevance to urban design and planning are the wealth of powerful online survey tools that are becoming every more a part of everyday data collection. (78, 129)

Web-based polling offers a rich alternative to traditional paper-based polling methods. Several of the Web’s characteristics combine to make it a well suited platform for soliciting inputs from participants, regardless of quantity. Polling online takes advantage of the Web’s scalability, its constant presence and asynchronous nature, and its wealth of deeper information on almost any given issue, that can be placed a single hyperlink away from the poll question to which it is relevant. Using simple online polling tools built into the plan Web site, planners can gather feedback as frequently as required, while providing as-needed expanded information to poll participants, and simultaneously automating several of the labor-intensive routines associated with paper-based inputs. Thus the Web-based poll, implemented and used correctly, gives planners a tool kit to better understand participants’ preferences on all manner of issues, while reducing the overall resources necessary to derive information from the results. (79)

Like traditional paper-based polling, online polling can be used as a way to determine participant’s attitudes towards relevant issues, or to make specific choices once alternatives have been explored. But unlike paper-based voting methods, whether they are administered in person or through the mail, online polling is extremely scalable. Planners can solicit, gather, and analyze poll questions without regard to the size of the body of participants polled. Whether five people respond, or 5000, the routines used to derive information from the results require
essentially the same effort on behalf of planners. And, without the extra labor and material costs associated with paper-based polling methods, Web polling can gather more information using less resources. Thus, online poll mechanisms not only grants planners the opportunity to gain a much better sense of participant opinion, they can save finite resources (time and money).

The Web’s constant presence and its asynchronous nature mean that poll respondents do not have to show up to a defined voting location, nor do they need to mail response forms in. Given a reasonable time frame for responding online, voters can decide on issues at whatever time is convenient for them, from wherever they happen to have Internet access. As Web-enabled mobile devices evolve, it’s easy to imagine a process wherein obtained poll responses come from participants who are on the very site that the poll concerns, perhaps even in on-site workshop settings. (21, 22, 23, 71, 73)

In paper-based polling methods, participants have only their personal experiences and whatever information resources are on hand to draw from when formulating responses. Such limitations are fine if the questions seek answers that participants already know (like: “What has been your experience with this intersection?” or “Which neighborhood do you live in?”) but they can be fairly limiting when the questions seek answers involving conjecture or technical matters (like: “What kinds of street furniture do you want on this street?” or “how much should be budgeted for planting annual flowers?”). Such limitations hold especially true when participants are asked to vote during a town hall meeting, where despite presentations and useful printouts, they have little time and little information to thoughtfully respond to the questions posed. However, the Web’s vast multimedia information repository can be tapped in online polls. Planners can supply links to any other Web-based document, in line with the question itself, giving participants any required level of information (along with the time required to absorb that information) with which they can make better informed responses.

Web 2.0 examples

The following examples, drawn from a variety of Web 2.0 sites catering to a variety of purposes, offer a small cross section of Web 2.0 capabilities. The list does not do justice to the broad spectrum of Web 2.0 functionality, but each example offers a small sample of what is possible. Each example includes a brief description, and a note on what makes them relevant to planning. While a few are directly applicable, most are uses of Web 2.0 from other areas of interest that illustrate significant, readily transferable principles.
Encinitas Zone Viewer
URL: http://tinyurl.com/encinitas
Began: 2005
Author(s): City of Encinitas

Summary: An interactive zoning map and zoning database of Encinitas, California. A tool that helps visitors look up the full set of zoning codes and overlays attached to any parcel in the city.

Notes: Although it doesn’t feature many of the hallmark elements associated with Web 2.0 Web sites, it does represent a more vigorous use of the Web in planning. Zone Viewer extends the typical interactive zoning map, by tying it directly to a database of full code definitions. Many municipalities publish an online interactive zoning map, and many publish the full text associated with each parcel. Encinitas takes this practice a step further, by allowing users to look up all zoning codes and overlays directly within the map itself.

Relevance: This tool represents an important first step towards supplying the public with the information they need in an intuitive, easily accessible format. According to planners at Encinitas Planning Department, the tool has greatly reduced their administrative workload. Since it gives curious parties the tools they need to quickly understand the full definition of codes attached to any given parcel, rather than just the shorthand abbreviation for the codes, Encinitas Planners spend less time handling routine questions, freeing up precious resources to handle higher-level work: “We have a lot less phone calls, ... more time to spend with customers at the counter.” This simple Web device has already begun to save Encinitas Planning Department precious resources. And in implementing it, they have shown other planners the surface of what’s possible when the Web is utilized beyond basic information publishing. (25, 137)
Registry of Standard Biological Parts
URL: http://partsregistry.org/
Began: 2004
Author(s): Registry of Standard Biological Parts

Summary: A wiki built to support collaborative research on genetically engineered machines.

Notes: "The development of well-specified, standard, and interchangeable biological parts is a critical step towards the design and construction of integrated biological systems. The MIT Registry of Standard Biological Parts supports this goal by recording and indexing biological parts that are currently being built and offering synthesis and assembly services to construct new parts, devices, and systems."

Relevance: Demonstrates wiki software supporting the development of a pattern language, a concept discussed in more detail in chapter two. In this case, the patterns manifest at microscopic levels, several orders of magnitude below patterns that more readily apply to cities. But the usefulness of wiki software, in support of evolving pattern languages, holds for any given scale or topical focus. This Web site proves that similar online software could be used to evolve a global database of patterns, based on the thinking set forth by Christopher Alexander.

Yet, the establishment of such a directory would only mark the beginning. The real power of such a construct lies in its ability to enable the ongoing evolution of design patterns, keeping all resultant patterns and the discussions leading to them in a globally accessible, searchable directory open to all users. Such a construct would help planners, architects, and other stakeholders queue up generic patterns deemed relevant to any project at hand, from which they could then develop situated patterns collaboratively. The derivative patterns would then be stored online, for future stakeholders to use, further increasing the value of the tool over time. (83, 119, 130)
Flickr
URL: http://flickr.com
Began: 2004
Author(s): acquired by Yahoo in 2005

Summary: Flickr describes itself as being “almost certainly the best online photo management and sharing application in the world.” At the time of writing this thesis, Flickr is far and away the most used, most feature-packed online image sharing site.

Notes: Flickr remains the world’s largest, most feature rich image sharing site, with two primary goals motivating development: to enable easy, rapid sharing of image-based content, and to provide new ways to organize and access uploaded content. It continues to roll out new features, already including ways to tag and describe images, geo-tag images to a map, full comment support on images, and easy image embedding functions, for sharing uploaded content at other sites.

Relevance: Flickr has become a fully searchable repository of images from around the globe. Many are photos of places, providing the multimedia foundation for a full scale “database of places,” in which stakeholders could use the Web to queue up all manner of media related to a specific place. This supports the need to inject good precedents in to public participation discussions. (34)
del.icio.us
URL: http://del.icio.us
Began: 2003 (after a long running precursor site)
Author(s): Joshua Schachter, acquired by Yahoo in 2005

Summary: a social bookmarking Web service for storing, sharing, and discovering Web sites, through tagged, annotated bookmarks.

Notes: A simple yet powerful Web service that incorporates non-hierarchical keyword categorization, in which users tag URLs with any number of freely chosen keywords, and terse description text.

Relevance: Del.icio.us offers a powerful tool set for storing, organizing, and sharing Web-based information. It is of direct significance to urban design and planning, as it gives stakeholders a simple tool for organizing and sharing relevant project information. It is also an extremely powerful way to discover contextualized information, in a way not offered by pure search. Its inventor, Josh Schachter, essentially created the tag function in developing del.icio.us. The tag has since become a hallmark of Web 2.0, offering a powerful organizational framework which underlies many of Web 2.0’s defining characteristics (usability, extensibility, etc.). Schachter describes his invention as a way to “scale” memory, at the individual and organizational level. (87, 88, 98)
We Feel Fine
URL: http://wefeelfine.org
Began: 2005
Author(s): Jonathan Harris, Sep Kamvar

Summary: An awe-inspiring site interactive work of art that behaves like a global “mood ring.” It “listens” to the world’s feelings, by mining new blog posts for the terms “feel” and “feeling,” thus constructing a partial global database of human emotions.

Notes: (derived from the creators’ own description): “Every few minutes, WeFeelFine searches the entire world’s newly posted blog entries for occurrences of the phrases ‘I feel’ and ‘I am feeling.’ When it finds such a phrase, it records the full sentence, then identifies and extracts the ‘feeling’ expressed in that sentence (e.g. sad, happy, etc.).” And since blogs are structured in largely standard ways, the age, gender, and geographical location of the author can often be extracted and saved along with the sentence, as can the local weather conditions at the time the sentence was written. All of this information is saved.

Relevance: WeFeelFine demonstrates what’s possible using the Web to gather, organize, and analyze inputs from a given pool of data. Since this system effectively “listens” to the entire Blogosphere, incorporating inputs from around the globe, its principles could be adapted for use in more situated contexts. If such a technology can be fabricated to listen to a global audience, then the idea could be applied to a geo-portal, in which appropriate parties could input their reactions to a project using natural language, then the machine could be used to derive meaning and overall impressions.

Imagine an online town hall, in which participants share insight on a project. The methods established in WeFeelFine could be applied to the rapid analysis of all inputs, offering urban designers and planners multiple ways to extract information from the climate of opinion, regardless of response scale. (47)
Encyclopedia of Life (EOL)
URL: http://www.eol.org
Began: 2007 (under construction)
Author(s): international consortium of scientists, publishers, full time staffers, and other contributors

Summary: EOL aims to organize and make available via the Web virtually all information - text, data, even rich multimedia - about the approximately 1.8 million species of life present on Earth.

Notes: EOL synthesizes biodiversity knowledge about all known species, including their taxonomy, geographic distribution, collections, genetics, evolutionary history, morphology, behavior, ecological relationships, and importance for human well being, and distributes this information over the Web. It serves as a primary resource for a wide audience that includes scientists, natural resource managers, conservationists, teachers, and students around the world.

Relevance: Another demonstration of how Web technologies can be used to gather and present information from any size of knowledge domain. If we can collaborate to gather all salient information on the earth’s 2,000,000 known species, why couldn't we do the same for human settlements? A searchable, sift-able “database of places,” drawing together qualitative, quantitative, and user-input accounts of places around the globe, would radically transform the way precedent research is undertaken in the design of environments. (31)
Google Docs
URL: http://docs.google.com
Began: full release in 2006
Author(s): Google (original by Writely)

Summary: Google Docs is a free, Web-based word processor, spreadsheet, and presentation application. Users can create and edit documents online while collaborating (even in real-time) with other users.

Notes: Google Docs continues to gain popularity with a growing number of users, and functionality - it is well on the path towards becoming a viable substitute for Microsoft Office, a notoriously implausible software suite to use for collaborative purposes. Built from the ground up as Web-based software, Google Docs already includes a variety of features that are not impossible to achieve in Microsoft Office, like embedding interactive maps and live charts (capable of reading and interpreting real-time online data feeds) directly into documents. Unlike desktop software, users never need to install additional tools to use its features. This removes at least one major barrier faced when using digital tools for collaborative purposes: the need for everyone to be "on the same page" with tools used. With Google Docs, all users are using the same software version, and they don't need to pay for or maintain it. They can use the tools on a Mac, a PC, a Linux box, and increasingly, any Internet-enabled mobile device. In the future, Google will likely offer paid premium services built on top of docs, but for now, it plans to continue offering Docs as an entirely free service.

Relevance: Google Docs illustrates the emerging generation of Rich Internet Applications, the inevitable future of many of today's desktop applications. Within two years, it will support all but the most specialized tools found in Microsoft Word, Excel, and Powerpoint. But it already achieves many important functions that Office and other desktop-based publishing suites do not. It already enables a powerful new form of collaboration amongst users in the development of simple, albeit feature rich and accessible documents. Since it's built on top of Google's core search service, it offers remarkable document search options not found in any desktop publishing suite — one of many features that makes it a good tool set for working more effectively. (42, 43, 126)
Many Eyes
URL: http://tinyurl.com/3btkjm
Began: 2004
Author(s): IBM’s CUE research group

Summary: A free online data visualization software suite. Accepts uploaded data of all sorts, and allows the quick generation of well-designed interactive data visuals.

Notes: By their own account, “Many Eyes is a bet on the power of human visual intelligence to find patterns.” Their goal “is to ‘democratize’ visualization and to enable a new social kind of data analysis.” Their service gives users direct access to visualization methods that have come about fairly recently, which have otherwise remained the exclusive province of skilled visualization professionals and illustrators. And since uploaded data sets become public alongside their derivative visualizations, users have full access to digital source information, not just the resultant charts and graphs.

Relevance: Many Eyes demonstrates, among other things, the emerging ability of Web services to assist with analytic tasks. Beyond mere information storage and retrieval, it hints at the powerful data analysis and visualizations we can expect in the near future. ManyEyes already provides an easy way to create and share many different kinds of sophisticated interactive data representations. (44, 65)
Open Secrets
URL: http://www.opensecrets.org/
Began: 1996 (part of an ongoing project since 1990)
Author(s): Center for Responsive Politics

Summary: An independent Web site tracking the influence of money on U.S. politics, and how that money affects policy and citizens' lives.

Notes: OpenSecrets has become a clearinghouse for data and analysis on multiple aspects of money in politics. An unprecedented resource that illuminates money's role in congressional elections, policy making, and non-profit interest groups. Includes fully searchable, sortable records of charitable contributions from individuals and organizations down to the zip code level. Provides detailed contribution profiles of more than 80 industries in the U.S. economy, fund-raising breakdowns for federal party committees, and analyses of contributions from special interests to members of specific congressional committees. Also profiles the spending patterns of interest groups and major industries, and includes a section on the patterns of Political Action Committee spending and the flow of PAC dollars to each congressional committee.

Relevance: Shows how the Web "opens up" otherwise murky, concealed, or intentionally obfuscated data. OpenSecrets's focus remains chiefly on the flow of money in United States politics, ranging from local elections to the Presidential Campaign. But, after using a few of this site's features, one can see how this tool set could be applied to other public processes, such as negotiations involved in public participation, the flow of tax incentives in development, and so forth.

This tool can be applied directly to matters of urban development, particularly in the disclosure of public financial information. For instance, development tax incentives can be disclosed, even before they are officially granted, opening up tax diversions, and the foregone opportunities they cause. With a system like this in place, it would be much more difficult to abuse development incentives.

Above all else, OpenSecrets.org is relevant to planners, because it shows that even if planners do not bother to use the Web to carry out their work, members of the public will find ways of using it to give themselves a greater say in planning matters. (80)
The Google Earth / Map / Sketchup / 3D Warehouse array

URLs: http://www.google.com/maps/
     http://earth.google.com/
     http://sketchup.google.com/

Began: multiple years (all since 2000)
Author(s): Google, Keyhole, @Last Software

Summary: A loosely knit array of software tools, designed to create, store, and communicate rich spatial media online. As these tools evolve and converge, they and others like them will play a significant role in the future of urban design and planning.

Notes: For the past 5 years, these tools have dazzled users in their evolution, continuing to offer new, intuitive ways to navigate spatial information. Under Google’s direction, they are converging into a single platform.

Sketchup is well known for its intuitive 3d modeling interface. Though hardly simple, it is easy enough to learn that even unexperienced spatial thinkers can create models. Its online user-generated model repository, 3D Warehouse, already contains thousands of useful models for things found in everyday urban settings - bike racks, benches, bulb-out curbs, trees, etc. And its holdings continue to grow every day as more users contribute their designs and as more product manufacturers upload model files for their wares. Many specific models, like famous buildings and streets, are geo-tagged using Google Earth, so that they can be viewed in situ using the Earth interface.

As technology commentator Tim O’reilly puts it, “It becomes clear that Google Earth is not just a data visualization platform. It’s a framework on which hundreds of different data layers can be anchored.” It is fast becoming a substitute for desktop GIS, housing data sets that would otherwise live on local GIS servers, accessible only to other parties who have the same, typically expensive software.

Fig. 1.14 – Google Earth/ Map/ Sketchup/ 3D Warehouse Array
(see Appendix B for full screen shots)
Google Maps is a much simpler construct, but it represents the growing ease with which even lay users can deposit and share mapped information of all sorts, ranging from text accounts, to photographs, panoramas, and videos. The Street View project hints at the future of what these tools will do, offering immersive panoramic accounts of street scenes in major urban areas. It won’t be long before project participants can “plug in” 3D project plans using Street View, to better understand the contextual implications of a proposal.

As time goes on, we can expect functions found in each separate tool to gradually merge.

Relevance: Google’s Earth, Map, Sketchup, and 3D Warehouse tools together play a growing, direct role in urban design and planning. They are democratizing the process of imagining, producing, displaying, and reacting to spatial configurations, and making it easier for professionals to collaborate on spatial projects.

Thought of together, they show strong signs of convergence, the process by which multiple disparate technologies combine to form more valuable tools. Meanwhile, urban designers and planners can use them in all sorts of work routines, ranging from discovering places, to posting 3D proposals that anyone with a Web browser can interact with. Tools like these will become indispensable in urban design and planning, especially those functions requiring widespread distribution of project information, as is the case with public participation. (38, 39, 40, 41, 89, 91)
Significant trends shaping the emergent Web

Web 2.0 and its technological underpinnings hold much potential for far greater functionality. For starters, the Web browser is incomplete. As it is, hardware and software severely limit our interaction with (and understanding of) the information it houses. The map, for instance, suffers from the limitations placed on it by modern Web browsers.

Beyond the browser, researchers around the world are hard at work transforming the digital display surface, breaking down the outmoded desktop / monitor construct in ways we have only begun to imagine. Jeff Hahn’s touch interface dazzled an entire audience when he presented it for the first time at a TED conference in 2006. Within a year, Apple implemented a closely related surface in the iPhone, moving the intuitive touch surface from concept to full blown reality. And though the iPhone is too small to use in elaborate planning work, there is no real limit on the size of such a surface. In a few years, it will be everywhere - touch interface laptop monitors, urban kiosks, even walls of buildings will include this technology, or something even more useful. One can imagine drawing right on top of maps, as intuitively as with tracing paper, except in digital form and therefore hypermedia enabled. Interfaces will continue to evolve, as will the Web’s content, and as they do we can expect an entirely new generation of collaborative spatial tools, attached to a rich global multimedia repository.

Rethinking digital screens altogether, researchers are at work developing new display mediums. The Zaragoza Water Wall, developed by MIT’s SENSEable City group, uses continuous water jets as pixels, displaying content that is served up over an Internet Protocol address, and thus is fully controllable over the Web. It can then be thought of us a Web browser that is a building, using water as its display pixels. The project forces us all to rethink the very nature of the distinction between digital and physical constructs, as it further diminishes the boundary between the realm of bits - the fundamental units of digital content, and the realm of atoms - the fundamental units of physical content.

Interoperability — the ability of computers to extract data from digital content for use in other contexts, enables a whole new way of working with Web-based information. This contrasts traditional media, like books, which have always been constructed as independent documents, static in the sense that they exist as discrete units of information. Interoperability makes information “movable,” affording it fluidity, to the effect that information can be pushed and pulled amongst documents, even in real time through digital sensors and human user inputs. This trend supports a Web of pure data, rather than a Web of documents. (19, 33)

The Semantic Web, essentially a Web that understands its content, was part of Tim Berners-Lee’s initial idea in creating the Web. He envisioned a globally distributed computer network that grants users access to stored information, but also understands the information well enough to interpret it. The Semantic Web continues to evolve, and when it is realized, the Web will again increase in significance. As the Web begins to understand the content we give it, it will be able to assist in routine procedures that are today only achieved through human work. As Web users do things like forge hyperlinks, tag images, and share thoughts, they are teaching the Web what we know and think. Kevin Kelly famously described this teaching and learning process in We Are The Web:
“When we post and then tag pictures, we are teaching the Machine to give names to images. ... Think of the 100 billion times per day humans click on a Web page as a way of teaching the Machine what we think is important. Each time we forge a link between words, we teach it an idea.”

And, as we evolve it, the Semantic Web gets closer in shape and function to our minds:

“...This planet-sized computer is comparable in complexity to a human brain. Both the brain and the Web have hundreds of billions of neurons (or Web pages). Each biological neuron sprouts synaptic links to thousands of other neurons, while each Web page branches into dozens of hyperlinks. That adds up to a trillion “synapses” between the static pages on the Web. The human brain has about 100 times that number - but brains are not doubling in size every few years. The Machine is. Since each of its “transistors” is itself a personal computer with a billion transistors running lower functions, the Machine is fractal. In total, it harnesses a quintillion transistors, expanding its complexity beyond that of a biological brain.” (56)

Ubiquitous access, enabled by declining technology prices set against an exponential rise of processing power, municipal Internet programs, and the rise of public institutions as Internet enablers (like libraries offering free access to Web-enabled computers), means that more users are coming online every day. Increased accessibility, enabled by evolving special-needs technologies such as screen readers, means that even disabled users gain access. The so-called digital divide thus continues to erode, as these trends and programs aimed at granting access to the needy continue. The future is clearly one in which all people have access, regardless of socioeconomic status. (20, 22, 23)

**Shaping the future: User-driven evolution and the W3C road map**

Established in 1994 as an agreement between MIT and CERN, The World Wide Web Consortium (W3C) acts as the primary standards organization for the Web. It is something like a lighthouse, guiding the Web’s development through offering specifications and best practice recommendations. W3C standards serve as the road map of where the Web is headed, by unifying and shaping its underlying technologies. (134)

If the W3C supplies the map, then it is Web users who collectively drive the Web. Preferential selection is the invisible hand guiding its evolution. Web sites or, ever more appropriately, **Web functions** that serve some purpose well tend to attract users, rising in prominence in search engines, directories, and bookmarks, and thus garner more collective user mindshare. The promise of greater sales, or increased ad revenue, make such mindshare a worthwhile pursuit for Web developers, perpetuating the desire to make sites better. But the sites that win are themselves forced to evolve, as newer, more sophisticated alternatives roll out. As expected, sites that don’t work as well ultimately lose by default - they “die” as their user base diminishes. What remains is a collection of sites and functions that are ever more valuable to users.
Web 2.0: of rising importance to urban design and planning

In its early years, the Web proved most useful for publishing information. It was always well suited to this task, but it was little more than an information clearinghouse. Now, as Web 2.0, it is becoming more a part of our lives, in professional and personal contexts. It is quickly flourishing beyond its information publishing specialty, detaching itself from the desktop computer, quietly intertwining itself with all that it touches. Its inventor summarized this broader distribution in a 2007 speech delivered to the U.S. Congress:

In the future, the Web will seem like it's everywhere, not just on our desktop or mobile device. ... Much of the information that we receive today through a specialized application such as a database or a spreadsheet will come directly from the Web. Pervasive and ubiquitous Web applications hold much opportunity for innovation and social enrichment. ... as this new ubiquitous face of the Web is public, it will shape the nature of the public spaces we work, shop, do politics, and socialize in. (16)

Though it was conceived from the outset as an interactive medium, the Web was not initially a well-suited environment for such purposes. Barriers to use were high, and few well functioning interactive tools existed, so payoff was relatively low. Few had access to it, fewer still knew how to navigate its seemingly endless pages.

It has existed for the better part of two decades, and most planners have already begun to use it in basic ways, like researching zoning codes developed in other municipalities. But the Web has evolved to the point that it now demands a rethinking of sorts, as something much more useful than as an information repository. Professionals in all disciplines are forced to reconsider its usefulness and its new offerings. For urban design and planning, the Web holds vast, largely untapped resources. It has potential to become a tool set which, if adopted, will support better planning practices, and the extension of limited planning resources. It is fast becoming an indispensable resource in a variety of other professions, and already plays extended roles in some technologically advanced fields. Urban designers and planners can look to these early adopters, to see how they're using the Web beyond its information publishing capabilities.

Web 2.0 allows urban designers and planners to work more effectively, to summon relevant information with greater efficiency and speed, to draw on a knowledge body that is fast on its way toward encompassing the entirety of humankind's collective knowledge. The planner's knowledge domain is thus extended, through what Joshua Schachter refers to as "scalable memory," granting them nearly instant access to deeper information on virtually any given matter at hand. It is already the world's largest library, its utility as such greatly enhanced by hypertext functions. It is a search-able, tag-able, copy-and-paste-able hyperlinked encyclopedia, useful for gathering knowledge within an ever-widening, ever-deepening sphere of understanding. (88)

Beyond information retrieval, Web 2.0 is also a rich communications tool kit; useful for orchestrating conversations across large numbers of agents, even groups with disparate schedules.
It is now a digital sounding board - a device useful for gathering input from groups of any given size. And, increasingly, it is able to help analyze the gathered data, even in real time as it emerges. (95)

In its capacity as a communications platform, Web 2.0 affords urban designers and planners unprecedented ways to carry out multi-way discussions, between planners and other planners, between planners and other specialists, and, most significantly, between planners and the citizens who are affected in some way by the plans, and who, given the right tools and processes, can become vital participants in the shaping of well laid plans. (21)

While it can never replace skilled planning professionals, the Web can already help them become more adept at what they do, as it connects them to the people and the knowledge they need to carry out their work. Yet even if planners do not embrace the new capabilities on their own, they will nevertheless face outside pressure to do so. As Web users grow more accustomed to sharing thoughts on all manner of issues in online venues, public expectation for the quality of participation will increase.

Planning will look antiquated if it does not adopt the new capabilities, and the profession’s significance could be diminished. However, by pro-actively incorporating the new capabilities now, while they are still new, urban designers and planners will gain a significant boost in communicative power and efficiency. In light of the recent renewed interest in urban living, and the increase in demand for urban design and planning services that will likely result, the field could use a tool set that supports better collaboration.

So the field faces a choice: become more effective, by adopting tools that support better participation practices, or risk losing significance, by failing to embrace what members of the public are flocking to.
Chapter 2
Public Participation and Web 2.0

“...people should seize the new technology to empower themselves; to keep themselves informed about the truth of their own economic, political, and cultural circumstances; and to give themselves a voice that all the world could hear.”
- Thabo Mbeki

While it is difficult to speculate on the timing and nature of future Web capabilities, it is easy to see how Web 2.0 already enables new forms of discussions, and offers powerful tools for enriched public participation exercises. It already gives urban designers and planners ways to deal with commonly faced challenges in crafting publicly informed plans, and it is a tool kit for achieving better results in participation.

Such application is the focus of this chapter, which discusses how Web 2.0 can be used to facilitate and enhance participation exercises. It begins with a brief summary of why participation is vital to successful plans, and why it's of mounting importance that currently used methods are improved, then identifies a few of the common challenges faced in practice. It reviews a well documented (though rarely implemented) model for successful participation, offered in Christopher Alexander's trilogy on achieving organic order through the use of a pattern language. To conclude, it describes ways in which Web 2.0 can be used to address many of the challenges commonly faced in public participation, and ways it can be used to incorporate Alexander's patterns towards enhancing the process. (4, 5, 6)

**Why more effective participation is necessary**

Although members of the public usually lack the expertise necessary to plan their environments, they are nevertheless a valuable source of information in constructing successful plans. The public knows better than any expert what they want and need in their environment, whether or not they have the language and training needed to express it. But, given the right framework and resources for participating, they can become essential contributors to any plan that will affect their surroundings. (4)

Innes & Booher identified five general reasons why planning teams turn to the public for input. Above all, public participation gives the planning team a chance to understand the public's preferences: it is a way to ascertain the opinions and values of a plan area's users. Public participation can also improve the decisions made in the plan, by giving the planning team access to the local knowledge held by the area's users, since they collectively hold a vast, multi-perspective understanding of their environment. A participatory plan can yield more equitable outcomes, since the opening up of the planning process gives stakeholders a chance to identify, communicate, and negotiate their interests. In this way, a participatory plan can, in Innes's and Booher's words, “advance fairness and justice.” It can also lend greater legitimacy
to public decisions, and increase stakeholder buy-in, since participation is, in its ideal form, a democratic exercise that members of the public vest themselves in. Lastly, planning team’s use public participation simply because it is often required by a combination of federal, state, and local laws. (52)

When wielded correctly, public participation is a tool that can help produce plans that enrich their subjects far more than plans without a participatory element. On the other hand, lack of public input can lead to plans that do more harm than good. While members of the public have ideas and wishes for the area to be treated by the plan, they also hold a wealth of knowledge pertaining to it. Their inputs can help ensure a better “fit” between existing conditions and the recommendations made in the plan. (52, 90)

Without such input, it is much easier to make poor or misguided recommendations. Over-simplification, often a hallmark of “top down” institutional planning, can even have disastrous consequences, as Urban Renewal demonstrated. And, as James Scott describes it in Seeing Like a State, “a mechanical application of generic rules that ignores ... particularities is an invitation to practical failure, social disillusionment, or most likely both.” We need look no further than the case of Pruitt Igoe to confirm the accuracy of his statement: expertly planned to endure several generations worth of inhabitancy, the last tower was imploded less than a quarter-century after construction began. The experts - the planners, policy makers, and architects - never bothered to understand the needs and wishes of their subjects, thus the plan failed monumentally. (90)

In “American Cities: What Works, What Doesn’t,” Alexander Garvin recognizes the need for better and more pervasive participation, calling for a new approach that respects the multi-agent, multi-perspective nature of planning and its effects: “while urban planners are in the change business, it is others who will make that change: civic leaders, interest groups, community organizations, property owners, developers, and appointed public officials.” He further acknowledges the inability of planners to “affect a better quality of life from inside a vacuum,” referring to the vitality of non-planners, especially members of the public, in formulating good plans. (36)

To add to the need for better participation methods, the demand for more effective, more pervasive participation has grown in recent years. Garvin describes the broadening scope of planners’ duties of late, which requires ever-greater interaction with the public:

“Over the past few decades, the areas of public concern and therefore of public action have expanded both substantively and geographically. Outraged citizens have demanded action to protect the natural environment, to preserve the national heritage, to provide a range of services that had never before been considered a public responsibility, and to deal with territory outside of local political jurisdictions. The country should be deeply grateful to these activists for insisting that government fill important vacuums.” He then offers a solution: “The situation can be rectified simply by including these new areas of public concern within the scope of city planning and simultaneously including a far broader range of participants in the planning process.” (36)

To Garvin’s list of reasons for better participation practice, we must now add an unforeseen
renewal of interest in denser urban settlements. Rising fuel prices, whole suburbs crumbling amidst foreclosures and over-stretched infrastructure budgets, and an emerging cultural preference to live sustainably will continue to place greater demand on planning services, and will necessarily raise demand for meaningful public involvement.

Challenges commonly faced in practice

Despite the well understood theoretical benefits of public participation, rarely is it willingly embraced and utilized by planning teams, and it’s difficult to find large numbers of cases documenting plans that utilized participation towards significant gain. Despite understood benefits and legal requirements, a number of challenges emerge in participation practice, ranging from matters of practicality to matters of psychology.

Innes and Booher crisply outlined some of the problems faced in participation, as it is carried out using existing (often legally required) tools and processes:

“Legally required methods of public participation in government decision making in the US — public hearings, review and comment procedures in particular — do not work. They do not achieve genuine participation in planning or other decisions; they do not satisfy members of the public that they are being heard; they seldom can be said to improve the decisions that agencies and public officials make; and they do not incorporate a broad spectrum of the public. Worse yet, these methods often antagonize the members of the public who do try to work with them. The methods often pit citizens against each other, as they feel compelled to speak of the issues in polarizing terms to get their points across. This pattern makes it even more difficult for decision makers to sort through what they hear, much less to make a choice using public input. Most often these methods discourage busy and thoughtful individuals from wasting their time going through what appear to be nothing more than rituals designed to satisfy legal requirements. They also increase the ambivalence of planners and other public officials about hearing from the public at all. Nonetheless, these methods have an almost sacred quality to them, and they stay in place despite all that everyone knows is wrong with them.” (52)

The challenges underlying these problems fall into three loose categories, stemming from matters of inclusion, matters of group dynamics, and matters of information and resources.

Challenges with inclusivity

The current town hall approach to participation bears irresolvable contradictions. Conceived as a way to open the discussion to any member of the public who wants to participate, the town hall approach assumes that all citizens who wish to get involved are able and willing to show up to at least one physical meeting, at a fixed time and a fixed place, in order to offer their input on a project or issue. This assumption may invariably hold true for a property developer, whose day job it is to see to it that the plan area is shaped in a certain way, but it
may not hold true for a single mother working two jobs, who can not be reasonably expected to show up. Public input is thus distorted by a “bias of presence,” in which the inputs gathered disproportionately reflect the views of participants for which the assumption holds true, and disproportionately excludes the views of participants for which the assumption is false.

In practice, certain members of the public are excluded from the town hall approach. Certain stakeholders just can’t make it to the meetings. They may have inflexible schedules, pre-occupied during the fixed meeting times. They may also have mobility issues, such as lack of transport to the meeting location, or a health issue that precludes their attendance. Other stakeholders won’t attend the meeting, even if they are fully able to and know about it. They may not like to interact with large groups of people, or they may hold opinions that they do not wish to share with other stakeholders in attendance - the requirement to publicly voice their dissent might discourage participation. In any case, whether they can’t or won’t attend the meeting, their inputs are systematically excluded in the existing town hall approach, when it is used as the only means of public involvement. (21, 49, 52)

Challenges with group dynamics

Even for participants who can and do attend, the meeting itself poses yet another set of challenges, as group dynamics come in to play. Some participants will dominate the discussion, sometimes at the expense of balanced, comprehensive group input. As a result, gathered feedback disproportionately reflects the views of the individuals who get “floor time.” And, when group members share their opinions, their views can be distorted by the physical presence of the group: they might not say what they really think if it could be misconstrued (or resented) by others in attendance. They might instead say what they believe the group wants to hear. As a result, much of the input will converge around the handful of ideas offered by those individuals deemed, even subconsciously, the group’s “leaders.” (104)

The presence of such group dynamics encourages a phenomenon William H. Whyte dubbed “groupthink,” in which group members “try to minimize conflict and reach consensus without critically testing, analyzing, and evaluating ideas.” Groupthink is thought to underlie several of our nation’s catastrophic blunders, including the decision to launch the Space Shuttle Challenger, despite known technical issues, and the decision to approve the Bay of Pigs Invasion, executed by John F. Kennedy after the approval of his advisors (who did not wish to upset him by objecting to his plan). If groupthink can contribute to disasters bearing casualties, it presumably can affect public participation in significant ways. (104, 120)

Challenges with information and resources

Dealing with the potentially overwhelming volume of information produced in the process adds even greater complexity. Managing information is a large enough task within the planning team itself, let alone what happens when the plan is opened up to public input.

Soliciting, gathering, organizing, and analyzing large quantities of information can become an expensive, time-consuming affair. Relying on traditional, often paper-based methods of information processing, the resources required must scale in direct relationship with the size of
the information body, which is itself a function of the number of participants involved and the intensity of their involvement. This direct, relatively inelastic relationship between resources consumed and the intensity of public involvement produces a tendency toward minimization. Since it’s more costly and time consuming (and more complex) to involve greater numbers of participants, or to involve them more rigorously, there is incentive to minimize the breadth and depth of participation. (46, 52)

Limited on hand resources further prevent members of the planning team from ever developing a comprehensive set of alternatives, once inputs are gathered from the public. Limited resources prevents members of the planning team from exhaustively exploring all viable solutions, and limited capital hinders the amount and scope of feedback necessary for solution refinement. (52)

The intensity of resources required, the challenges faced, and the relatively abstract payoff make public participation a contentious matter for some. To them, it can represent a loss of power, as it’s easily perceived as letting amateurs perform functions better suited to professionals. They might think that it dilutes the potency of the decisions they make, or that it “muddles up” their otherwise clear design concepts. Their opinion is likely reinforced by bad experiences, in which the processes applied did not produce meaningful outcomes.

For planning team members who have had to deal with any of these challenges, hesitance to take public participation seriously is understandable - their skepticism of involving the public is based on rational thought. Yet the value that good participation adds to plans is clear, despite the challenges posed in practice. With the right tools and the right processes, participatory planning needn’t be a waste of time.

A model of success in public participation

One model for successful public participation is described in a trilogy of books authored by Christopher Alexander. Together, its volumes set forth a collaborative approach to place making, one that allows an area’s plan to emerge from the real needs and desires of its human users. It is an approach based on the use of design patterns, which serve as a common, adaptable vocabulary of solutions shared amongst the plan’s working group members. Alexander defines a single pattern as:

“...any general planning principle, which states a clear problem that may occur repeatedly in the environment, states the range of contexts in which this problem will occur, and gives the general features required by all buildings or plans which will solve this problem.” (5)

Thus, patterns are little more than good solutions to recurring problems. They can be useful tools in public participation, as they give the planning team and members of the public a solid starting point for shaping the plan. When patterns are used, members of the public who lack design experience are given a straightforward way to understand, communicate, and contribute to otherwise complex design intentions. And members of the planning team are given a logical framework for working through the collaborative planning process.
The rationale for using patterns in planning is that places are given their essential character by sequences of events, or behaviors, that recur in them, and that such patterns of activity are closely related to spatial patterns. Generic design solutions can then be constructed for different kinds of activity patterns, and assembled in to a common vocabulary that even untrained participants can share in. And, unlike fixed codes, such as traditional zoning, patterns are flexible terms, agreed upon by stakeholders through processes of consensus-building. And, whereas traditional zoning approaches planning in formulaic, often rote terms, patterns can be used to achieve the opposite:

“Each pattern describes a problem that occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice.” (5)

The design patterns approach is a useful model for public participation, as it builds toward collectively imagining solutions, given a set of principles agreed upon through consensus-building exercises. Members of the group arrive at a common, flexible language with which to then formulate plans. Having a shared, collaboratively authored language, the group gives itself a framework which enables and encourages constructive, well-informed plan inputs.

To be effective, the pattern process involves the rejection of master plans, based on the acknowledgment that change is likely, and that a fixed image of what an area should be in the future does not readily accommodate change. In contrast, patterns are meant to evolve over time, through periodic re-evaluation, allowing the group to adapt to unforeseeable change.

In The Oregon Experiment, Alexander describes in detail the real procedures and outcomes of using patterns in the participatory plan he helped construct for the University of Oregon’s (UO) campus. His approach to this plan, which set out effective ways for involving the public (in this case, the faculty, staff, and students of UO). Two decades later, the school still uses the process, with successful results. (6)

Yet despite the easily understood, demonstrable usefulness of patterns, they are rarely utilized in practice. One possible barrier to their adoption lies in the intensity of resources required to develop and maintain them properly. With limited on hand resources given for authoring a plan, patterns might be seen as unnecessary, additional work. They also generate a sizable chunk of information which must then be managed, and they require effective communication across potentially large numbers of participants. Furthermore, since they require periodic re-evaluation, they are inefficient to document using paper-based document media.

On the other hand, the large amounts of ongoing data generated in the pattern approach is easily managed by an electronic database. To support collaboration, such a database would need to be available to any eligible participant, whether or not they are at the planning team’s office. In an ideal scenario, the database would allow any participant to edit its contents directly, but such editing must be easy, to accommodate participants who lack experience with digital tools. It would need to track changes, so that the patterns could evolve over time without risk of losing any meaning along the way, and it would need to facilitate “behind the scenes” discussions around each pattern. It would need to include support for rich media, like photos.
and sketches, and it would need to allow appropriate links between the various patterns that form the language.

This is a wiki, in a nutshell. The wiki is an ideal platform to create and manage design patterns. A design patterns wiki could enhance and enable high quality public participation, as it gives planners an efficient tool kit with which to incorporate design patterns. It is available online, and its contents can be edited by any designated participant, even those among them with little or no Web authoring experience. Wikis support the rich media required to describe each pattern, and they track changes. They allow discussions to take place around each pattern, in discussion logs attached to the patterns themselves so that the pattern’s evolving definition and its rationale can be stored and accessed together.

Over time, a community could use a design patterns wiki to build up an indigenous pattern language, giving the exercise and its results a lasting, flexible quality, one that fits their location well. Used in this way, the wiki fully supports better public participation, as it gives urban designers and planners the means necessary to utilize design patterns.

Web 2.0: a public participation Swiss Army knife

The emerging Web can and should be applied to the challenges commonly faced in public participation practice. Web 2.0 already offers readily implementable solutions to many such challenges. If Jonathan Harris and Sep Kamvar can program wefelfine.org to “listen” to the feelings published by Web authors across the entire Web, then planners can program a similar construct to gather and analyze inputs from a participation group of whatever size. If Encyclopedia of Life can thoroughly document all known species of life, then urban planners and designers can use the Web to document all great places on earth, and what it is about them that makes them great, telling the story of each with easily embedded text, charts, diagrams, images, and video, giving much needed models of success to participants. And, if Encinitas can drastically reduce the amount of routine call-ins they receive for basic zoning questions, simply by attaching their online zoning map to a database of zoning definitions, then planners can use the Web to more effectively engage the public in higher levels of conversation.

Web 2.0 essentially solves the challenges faced in dealing with information, with limited on hand resources. If Google Docs can be used to quickly construct, publish, and disseminate sophisticated (and free) online polls, the results of which feed automatically into a centralized, organized data set, then planners need no longer rely on expensive, time consuming paper-based survey instruments to solicit, gather, collect, and organize input. And, if Manyeyes can be used to instantly visualize data sets of virtually any size, then planners need no longer invest significant resources in data analysis.

Lastly, if sites like opensecrets.org are possible, then it’s fairly predictable what will happen if planning teams do not readily embrace the Web to involve members of the public: members of the public will do it themselves.
Enabling best practices

Beyond addressing the challenges commonly faced in practice, Web 2.0 offers many of the tools required to achieve Alexander’s organic order process. It is a process that requires significant coordination of efforts, information, and resources. The elaborate, continually evolving nature of patterns require an effective, publicly editable accessible communications medium.

Web 2.0 offers just such a medium. It can be used as a tool kit that supports the use of patterns, among other frameworks for best practices. It is fast becoming a humankind-wide database of planning knowledge and, increasingly, a well-suited medium to carry out the kind of information-rich, ongoing discussions required to utilize patterns meaningfully in public participation.

Spatial patterns are already evolving in a variety of Web 2.0 contexts: Google 3d warehouse has already become a vast repository of spatial “parts” - urban elements ranging in scale from park benches and curb cuts, up to whole city blocks and neighborhoods. Virtually any conceivable urban element can be searched for, and used in a planning Web site to illustrate and test ideas. And, they can be freely incorporated into Sketchup models, or mapped to precise site locations in Google Earth.

The wiki, a fundamental building block of Web 2.0, fully supports the use of design patterns. In an interesting overlap of topics, the wiki was invented by Ward Cunningham, who, inspired by Alexander’s *A Pattern Language*, created it to store design patterns for software development. He went on to pioneer a design patterns revolution in the software development world. The wiki was invented to facilitate collaboratively authored, evolving pattern languages for software programs, using the Web as the medium. Thus, wikis are already nearly capable of facilitating Alexander’s organic order process. With some modification, the wikis that software developers use to manage their patterns of code can be adapted by urban designers and planners to manage patterns of space, just as design patterns were originally conceived of by Alexander. (118, 123, 125, 130)
Conclusion

Web 2.0 is of clear, significant value as a tool kit for use in the construction of publicly-informed plans. A well implemented, properly utilized Web 2.0 plan Web site offers greater means of public inclusion, by extending the potential participant base beyond only those participants who are able and willing to attend meetings. It can be used to give participants a chance to share their collective knowledge, and to express their opinions thoughtfully, free of many constraints they might face in physical meetings. It can be used by members of the planning team to share the kinds of information that will make better-informed participants. It offers planners new, more effective tools to solicit, gather, organize, and analyze large bodies of information. And, it can be readily adapted to handle design patterns, towards achieving better participation practice.

Yet despite the ease with which we are able to recognize Web 2.0’s potential, there is so far very little understanding of how planning teams might use it to it gainfully in practice. The following chapter offers a hypothetical scenario, describing one way a planning team might use a Web 2.0 plan Web site to help construct a collaboratively authored plan.
Chapter 3

Web 2.0 Enhancing Public Participation: A Scenario

This chapter is an illustration intended to show how public participation can be facilitated and enhanced by Web 2.0. Meant as a demonstration, it explores only one among many ways in which Web 2.0 can be harnessed in current planning practices. Rather than offer an exhaustive exploration of the possible universe of scenarios, it focuses on a fictional case in which a city, preparing to construct a downtown area plan, turns to the Web for help with public involvement.

Backstory

Due to rising fuel costs and a renewed interest in urban living, a Midwestern city of 500,000 begins to experience a recent influx of population in downtown, after decades of decline.

Hoping to make the most of the resurgence, the city decides to develop an area plan over the course of one year, establishing guidelines for redevelopment in the blighted downtown. Learning from past experiences, they hope to succeed in a way that many of their earlier plans fell short. They want the area plan to emerge from the real desires and needs of downtown's users, namely the citizens, interest groups, and nongovernmental organizations comprising downtown's user base. To garner this sort of input across such a broad array of interests, the city knows it must be especially thoughtful in constructing a public participation process that works, within the context of limited budget and time.

Given the recent explosion in online networks and collaboration tools, the city planning department realizes that the Web could help them achieve such coordination. They decide to deploy and maintain a set of online tools that supplement their existing methods throughout the plan's development. They realize that, in employing these tools, the area plan will emerge from a much larger, better orchestrated conversation than it would by relying on existing methods alone.

To ensure that the full potential of the Web is brought to bear in the plan, the planning department issues an RFP for Web consultants to help devise the online tools, and the methods by which they will be used. The winning team submits a proposal, outlining the general specifications for the Web site, as well as recommendations on how the Web site can be “phased in” to effectively integrate with the planning department's established practices. The following is the fictional winning proposal, agreed upon by the planning department and the Web consultants. It describes the resultant tool set and practices, based on best practices in both public participation and Web development.
I. Proposal Overview

This proposal describes the processes and methods involved in authoring a collaborative Area Plan for downtown, using the Web to help facilitate the process. The plan, which will conclude as a plan document, will start from the outset with maximum public involvement in mind. Web-based tools and methods will be used to supplement and enhance established planning methods. This proposal describes a sequence of collaborative processes and the online tools that will facilitate them. Traditional planning methods such as charrettes, site visits, and town hall meetings will be used to develop the plan, but this proposal focuses chiefly on the online tools and methods to be utilized throughout the process.

The plan will unfold across five general phases, each with a specific focus. In many cases, activities within the phases overlap, and certain processes are inherently cyclical, requiring revisiting throughout the overall project timeline. The Web-enabled participatory tools will emerge as needed, throughout the phases, beginning with a basic Web site that evolves as the process unfolds. It gains complexity as the project proceeds, and participation grows with the site, so that public participants are not overwhelmed at the outset with the full array of tools.

The processes described in this proposal involve the efforts of three general groups:

**Members of the public** - The resident citizens, interest groups, and other users of the plan area. The public will be called upon to offer up their fine-grained knowledge of the plan area. The collective values of the public will help shape the plan. They will help to decide which goals guide the plan, the program, and which proposed alternatives will be accepted as part of the final plan.

**The Planning Team** - The consortium of planners, architects, and consultants responsible for overseeing the plan’s development. Planning team members are vital to all aspects of the collaborative plan process. They ensure that important issues are covered. They are also active participants in the process, in addition to acting as facilitators. They oversee the conversations, making sure valuable input is considered at all stages, ensuring that good ideas are not lost in the discussion, and contributing expertise to the discussions along the way.

Cast largely as analysts, synthesizers, and active participants in this process, the planning team will maintain presence throughout all five phases. They will facilitate the conversations online and offline, injecting salient information where needed. Whenever The planning team needs information from the public, they initiate the polls, meetings, and surveys necessary to gather it. And, as experts in matters of urban design and planning, and most likely users of the plan area as well, members of the planning team will actively participate in the discussions.

**The Web consultants** - the winning team chosen by the planning team to develop the online tools described. The Web consultants will oversee the construction, maintenance, and use of the online tools that will help facilitate the collaborative planning process. They will use their understanding of modern Web programming to bring the full potential of the Web to bear in the plan, incorporating best practices and standards-based Web development. As the planning process unfolds, The Web consultants will coordinate the evolution of the plan Web site. They will construct and unveil each element of the site, ensuring that it remains functional throughout the planning process.
In addition to constructing and maintaining the online tools, the Web consultants will recommend how the tools should be used throughout the plan process, to ensure maximum value added. As experts of the Web, they will provide training sessions to the planning team and the public as needed.

The Online Tools

The Web-based tools are in no way intended to substitute for traditional planning methods. Rather, they augment established traditional practices. The online tools will unfold with the planning process, with each tool coming online when appropriate, so that the plan Web site gains complexity gradually. In this way, participants are sure to focus their attention on the right elements at the right time, and are less likely to be overwhelmed by the online environment, which might be unfamiliar to them. To get the most out of the online tools, the Web consultants propose that the site be constructed and operated with a few general principles in mind:

- Users will be required to register (and log in) to access the site’s interactive tools. Although the plan Web site’s general pages can be made visible to any interested party on the Web, the discussion tools will be open only to registered participants, thus ensuring the inputs are those of the public with interest in the plan area. In addition, user login functionality ensures that each participant has a single vote in voting matters. A note on privacy and anonymity: as with traditional voting, users will have the option to remain anonymous in their decisions. Since the Web site is only open to registered participants, it is possible to afford anonymity while still ensuring one vote per participant. This is achieved easily by assigning each registrant a unique, randomly generated alphanumeric ID in the database, then letting each user choose whether or not their name appears next to their inputs (either globally, as a preference, or on an input-by-input basis). By combining required registration with unique random IDs, the planning team ensures each user has the option to remain anonymous, while still keeping a strict one vote per user policy.

- The offline and online conversations will remain congruent. It is the planner’s role to ensure that all meeting proceedings are posted in a timely, uniform manner to the Web site, so that the online conversation stays up to date with the physical meeting conversation. In addition to synchronizing the online and offline discussions, this gives participants who are unable to attend the physical meetings an opportunity to understand where the planning process is at any given time. As a general rule, what’s covered in the meetings will be posted to the Web site as soon as possible, ideally within 24 hours. Meeting proceedings will be written up in HTML, using the plan Web site’s rich text editor, rather than as an attached PDF, thus allowing for on-page comments and in line links to and from the meeting notes and the rest of the site.

- To ensure maximum congruency between the online and offline conversations, all plan meetings will be recorded as video, which will be posted to Youtube, and embedded in the site within the corresponding meeting page.
- Users will have several ways to stay informed of updates. Utilizing modern online syndication tools, the plan Web site will give users many ways to remain up to date with the planning process. When users register, they are given options for how they wish to stay informed. So that users need not visit the plan Web site frequently to manually check for updates, each component of the site will include and RSS feed, along with instructions for using RSS, so that users can set their favorite RSS reader or home page to “listen” for updates. Users who do not wish to employ RSS can opt for one of two kinds of email update - either a weekly digest of the site's activity, or an “as it happens” email notice.

- The plan Web site interface will emphasize simplicity above all else. It will be designed according to Einstein's maxim: as simple as possible, but no simpler. To ensure users are never confused or overwhelmed by the online tools, each component's interface will be built to be intuitive, easy to use, and familiar. It will draw on as many Web conventions as possible, such as the location of buttons, so that the plan Web site draws on what its users already know about the Web.

- The plan Web site will be designed to ensure maximum accessibility. It will be built following the World Wide Web Consortium's guidelines, so that no participant is excluded from using all functions of the online tools. This ensures that special needs users are not prevented from interacting with the site, nor will users experience difficulty operating the site from any standards-compliant browser.
II. The Plan Web site

“The idea was, that by building a hyper-text Web, a group of whatever size would force itself to use a common vocabulary, to overcome its misunderstandings, and at any time to have a running model - in the Web - of their plans...”

- Sir Timothy Berners-Lee, Inventor of the Web

We think of our Plan Web site as something like a tree. It is rooted in the World Wide Web, where we, the users, will access it, and where we will connect it to other useful resources. It will grow as the plan does, across a chain of linear and iterative processes, rather than all at once.

Using hyperlinks, embedding, and mashups, our plan Web site draws on the vast resources of the Web. Yet the purpose of our site remains sharply focused, designed to achieve one simple objective: to help us author the most collaborative, best informed plan possible.

In constructing our site, we do not waste precious resources trying to custom-build and maintain one-off rich media components. Instead, we utilize established, scalable, easy to use third-party services for dealing with rich media such as video, sketches, photos, and maps.

Wherever appropriate, we link our site to expanded information on relevant topics, thus putting the information we need to make better informed decisions just a click away.
Plan Web site: Home page

The Home page launches first, during Phase 1, just after the city announces the plan. It remains active throughout the planning process, serving as the portal for members to understand what features are active on the site, news about the plan, and recent site activity.

Fig. 3.16

Active During:

- Phase 1
- Phase 2
- Phase 3
- Phase 4
- Phase 5
Plan Web site: About page

The About page conveys the purpose of the plan and why the Plan Web site exists. It also lists administrative details relevant to the plan, such as planning office contact information, meeting times and locations, the plan timeline and current status, and member statistics.

About the Plan and Plan Web site
- discusses the background of the plan
- describes the plan process
- describes the plan Web site, including its purposes, and uses
- links to user registration
- lists contact information for the planning team

Upcoming Meetings
- displays dates and locations of upcoming meetings

Member and Site Usage Statistics
- displays total and active number of members
- displays activity metrics, including total comments, total posts, and total uploads

Current Status of the Plan
- displays a timeline of the plan, with phase starts and stops
- tracks where the process is currently
- shows upcoming deadlines

Active During:

| Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 |

Fig. 3.17
Plan Web site: Resources page

The Resources page houses images, videos, maps, diagrams, zoning and policy texts, and any piece of information that assists the collaborative planning process. It is the central repository for all “found” media relevant to the plan, where the planning team and site participants can add essentially any piece of media from any source.

The Resources page also includes tools for organizing the library of content it will become over the course of the plan. The planning team can tag pieces of media, attach metadata to them, and list them in the appropriate index within the Resources page.

Media housed in the Resources page can be embedded in any other of the plan Web site's pages. For instance, a forum user can embed a photo found on the Resources page in to a forum post.

RESOURCES

About the Resources page
- describes the purpose of the resources page
- links to help for using the resources page

Media Library
- visual index of media assets:
- case documents prepared by the planning team
- sketches of concepts or impressions of the site
- site condition photos
- precedent ideas and inspirational photos
- renderings
- diagrams
- interactive maps
- concept clouds
- mind maps
- charts, graphs, and other statistical visuals

Embed This
- includes a collection of tools for quickly embedding any media object in any other part of the site
- detailed instructions for users who need extra information

Active During:

Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5

Fig. 3.18
Plan Web site: Discuss page

The Discuss page houses the discussion forum, and the various polls that will be administered throughout the process. It also gathers all of the comments made on other elements of the site, such as media objects housed in the resources page. Its contents are fully searchable, and users can subscribe to any aspect of the discussion via RSS or email updates.

**DISCUSS**

**Overview of Discussion page**
- introduces users to the discussion forum, polls, and analysis tools

**Discussion Forum**
- collection of topical threads, with links to each
- includes tools to sort by topic, by user type, and by date
- full rich media capabilities within the forum allows any participant to embed any media object housed in the resources page, or elsewhere on the Web
- each thread includes tools for users to stay informed of updates, including RSS and email

**Poll Questionnaires and Results**
- houses the periodic polls and results used to obtain feedback

**Analysis Tools**
- a toolkit of easy-to-use text analytics tools, such as keyword density analysis
- aggregates the sum of all text-based inputs for an overview of the participant’s contributions

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**Active During:**

- Phase 1
- Phase 2
- Phase 3
- Phase 4
- Phase 5

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Plan Web site: The Plan page

The Plan page represents the culmination of the overall process. It comes online towards the close of Phase 4, as elements of the final plan emerge.

After the Web site’s interactive elements close, the Plan page becomes the permanent home of the final plan, with comments still enabled.

THE PLAN

The Plan Document

- Towards the close of Phase 4, draft elements are posted here for one last round of feedback from the public
- At the close of Phase 5, this page becomes the permanent home of the plan, as a fully searchable, linkable, rich media Web document. It houses all the final plan’s contents, including text and images

Comments

- comments remain enabled even after the planning process completes, so that The planning team can still receive feedback on the final plan

Active During:

Phase 1  Phase 2  Phase 3  Phase 4  Phase 5

Fig. 3.20
Plan Web site: Register page

The Plan Web site requires all users to register, and to log in before using the site’s interactive functions.

Registrants are asked to fill in a set of basic descriptors of themselves. They are able to remain anonymous within the site if they wish, though, since the registration page assigns all participants a unique, random Participant ID.

By asking for the participants’ interest in the plan - such as “property owner in the plan area” - it is possible to sort responses by user type.

NEW USER REGISTRATION

Register
- Creates an account each new participant, and collects the following information for each:
  - Participant name
  - Profile name (optional)
  - Participant address of interest (residence or work)
  - email
  - age
  - occupation
  - Interest in the plan (check boxes)
    - resident
    - academic
    - work in area
    - planning team member
    - property owner
    - general user of the area

User preferences
- Remain anonymous?
- Email updates?

Active During:

Phase 1  Phase 2  Phase 3  Phase 4  Phase 5
Plan Web site: other elements

Calendar and timeline
The plan Web site will take advantage of the Web's ability to store and display standardized data sets, in order to solve an important yet often under-addressed aspect of collaborative work: giving everyone access to the schedule of events.

A single embedded Google Calendar will give the planning team all the tools they need to track all events related to the plan, including meetings and deadlines. In a similar fashion, a timeline appearing on the About page will track the process overview, giving everyone involved an understanding of where the process lies from a broader perspective. The calendar will track important, fine-grained information such as meetings and upcoming deadlines; the timeline will track broader-scale events such as phasing.

The public will know the full schedule of upcoming events through the calendar, especially physical meetings, and when responses to questionnaires are due. Using this method, any participant who uses any major electronic calendar (MS Outlook, iCalendar, Google Calendar, etc.) can “subscribe” to the plan’s schedule, so that upcoming events are automatically attached to their own schedule. This method can be used in conjunction with the Site’s RSS feed, and the email notification tools, to ensure that no important deadlines are missed because of lack of information.

Meeting notes
As stated in the general principles, meeting notes from the physical meetings will be posted within 24 hours to the Plan Web site. This way, members of the public who are unable or unwilling to attend the meetings can remain abreast of the latest proceedings. This practice also enables participants to reflect on the substantial content of any past meeting, at any time during the planning process.

Like traditional meeting notes, the online meeting minutes will consist of relevant bullet points recapping the meeting, such as topics addressed, conclusions arrived at, and decisions made. These will be posted as HTML sub pages under the About page, and are therefore part of the searchable body of text housed within the Plan Web site.

Parts of the meetings where a speaker is presenting to the audience will be filmed with a digital camcorder, and the footage posted to Youtube, then embedded directly into the corresponding meeting minutes page. Doing so further ensures that the online and offline conversations remain congruent. And, as with any other part of the Plan Web site, meeting minutes will have comments enabled, further blurring the separation between the online and offline discussions.
Rich media types, sources, and usage

The plan Web site will draw on the powerful rich media capabilities of the Web, to collect, organize, generate, and display a number of multimedia objects. Just as traditional plan meetings usually include display boards for housing such media, the plan Web site will achieve this functionality, but also much more.

Images

Images are embedded through Flickr, where they can be tagged with relevant keywords, mapped to the area plan map, and discussed as individual units of information. Our plan Web site makes it easy for any user, regardless of their computing experience level, to embed any images from Flickr in to any page on the site to which they have interactive access. Among the sorts of images that will handled in this way are:

- sketches of concepts or impressions of the site
- site condition photos
- precedent ideas and inspirational photos
- renderings
- diagrams

Interactive maps

The site’s interactive maps will be served up from Google Earth, where the planning team is able to send their GIS data layers to, including zoning overlays, census data maps, plan area boundaries, and political, physical, or analytical shape files. Anyone working on the plan can add any media item right on top of the site map, such as images, videos, text descriptors, even 3d models of site proposals and existing conditions. The Plan Web site will provide a simple to use interface for adding such objects, and for viewing the interactive map in a variety of different ways.

Data visualization

Data visuals will play a significant role in helping understand the quantitative information relevant to the plan. The plan Web site will include a visualization widget, simple enough to use for any participant to visualize any data associated with the plan. Since the plan Web site itself will become a major source of data that will inform the plan, the data visualization tools will include methods for visualizing the data bound up in the site itself. The discussion forum contents, the meeting notes, the resource data sets, the poll questionnaire results - since all are digital and stored in standardized database language, all are able to be visualized using the plan Web site’s data visuals tools.

Beyond the usual charts and graphs used to display quantitative information, the plan Web site will include text analysis tools that have only come about in recent years, to get a bird’s eye view of the text housed within the site. Such tools can be applied to any aspect of the site, and is structured as a simple query to display visual analysis of the precise body of text the user wishes to analyze.
Concept clouds

One common text analysis visual used for analyzing text bodies is the “concept cloud,” a keyword density visualizer that is programmed to look for important words within natural language text. Using the plan Web site’s text visualizer, anyone can generate a concept cloud that shows the density of terms in any body of text within the site, even filtering by type of user. For instance, a Plan Participant can generate a visual of the most referenced words from the forum, limited to the text inputs from specific user groups, such as: “Show me the mind map for members of the public who are property owners in the plan area,” or “Show me the mind map for all members of the public who work in the plan area.” With such capabilities, there is little need to manually sift through the input results, making the plan Web site a toolkit that extends the planning team’s limited resources.

Wiki mind map

For the initial, generally conceptual phases of the plan, online mind mapping software will be used to maintain a “wiki mind map,” in which the planning team sets up initial focal points, to which participants can add all manner of inputs. The wiki mind map is essentially a visual idea forum, allowing for connections between topics and rich, searchable media.

The result of online collaborative mind mapping is something like a hand-drawn concept diagram often used in complex planning endeavors, except that its current state and history can be tracked easily, and any participant can add to it at any time during its interactive life. Elements within the wiki mind map can be hyperlinked to other, deeper bodies of information as necessary. With a digital interface, the wiki mind map will be set up with exploration tools, so that branches and routes can be “folded” or “unfolded,” revealing more intricacies as needed, while maintaining the strength of the diagram’s focus. And, with digital content, the mind map can be directly searched for key terms, making it a powerful tool for not only generating ideas, but retrieving them quickly.
Proposal: Anytown’s Plan Participation Website

www.ourplansite.org

Fig. 3.22
Proposal: Anytown’s Plan Participation Website

www.ourplansite.org

Poll Questionnaire Screen shot

Fig. 3.23
Proposal: Anytown’s Plan Participation Website

www.ourplansite.org

Fig. 3.24
III. The Process

Phase 1: Setup

Overview
Phase 1 is the “behind the scenes” phase, as it mostly involves the efforts of the planning team and the Web consultants. Though the plan itself will emerge from the coordinated efforts of the planning team and the public over the next year, it requires a good starting structure to guide its evolution. Thus, the majority of Phase 1 will be spent setting up the planning process.

The Planning Team’s Role
At the start of Phase 1, the planning team begins to lay out the logistics of the planning process, including the structure and timing of the meetings. They construct a “marketing campaign” to get the word out about the plan, and identify known stakeholder groups who should be informed through the various information channels at their disposal (local access television, newspapers, the city Web site, town meetings, etc.). They also set about gathering information that will contribute to shaping the plan, including relevant documents pertaining to the plan area, as well as case studies of best practices in similar areas of other cities.

Towards the close of Phase 1, the planning team calls the first meeting, which serves as a debriefing for the public to receive information about the plan and the process envisioned for the coming year. The plan Web site will be unveiled at this meeting, and attendees will be encouraged to visit it after the meeting to register for the site and to respond to a few initial questions, the responses to which will serve as the information basis for the next step in the plan process, establishing goals.

The Public’s Role
Members of the public become active participants toward the close of Phase 1, where their first action is to attend the debriefing meeting. Given that only a relative few members of the public will attend this meeting, attendees will be asked to help spread the word out about the Plan, especially the plan Web site, so that their acquaintances who were unable to attend the debriefing are also invited to participate. During this meeting, the planning team will announce a collaboration with local libraries, which ensures that members of the public with little computing experience can get free training for using the plan Web site, and participants who lack private Internet access can still participate.

They will answer the questions online, using natural language, just as they would in conversation, rather than choosing from predetermined categories of answers. Their collective responses, gathered over a period of one month, will provide valuable information for the upcoming goal establishment phase.
The Web site requires users to register, then asks them to respond to four initial poll questions:

1. “What do you like BEST about downtown?”
2. “What do you like LEAST about downtown?”
3. “Please provide five words describing your vision of downtown.”
4. “Please select the top three issues you would like the plan to address.”

**The Web Consultant’s Role**

The Web consultants work closely with the planning team during this phase to establish specifications for the online tool set, including what tools it will include, where it will live on the Web, and how it will be constructed. They will also ensure that the planning team and the public have the training necessary to use all of the site’s features, and will establish a course of action for the planners for making the most of the online tools.

Rather than deploy the entire Web site at once, the Web consultants begin by unveiling the site’s home page. The site will be deployed in pieces, beginning with the release of the home page, adding more complex interactive tools during the appropriate phase in which they’re needed.

**Outcome**

Phase 1 ends with a general yet informative snapshot of the public’s perception of downtown, what they hope to address with the area plan, and a collection of ideas for potential interventions that might become a part of the final plan. The plan Web site immediately displays poll result visualizations from the time the very first participant offers input, and only becomes richer in meaning as more input is added.

After respondents begin to answer the initial poll questions, a concept cloud emerges from the poll results. Members of the public see their own responses in it, and how their interests relate to the interests of others, including whether they’re inputs fall in the majority or the minority, along with other ideas they had not yet considered. The public begins to see right away how their contributions will directly shape the plan.
Phase 2: Establishing Goals for the Plan

Overview
The plan’s scope and the nature of its recommendations will be guided by a concise set of goals. These goals will not be prescriptive, nor will they come from preconceived assumptions about what the plan ought to address, as is the case with traditional planning methods. Rather, the goals will evolve over the course of Phase 2, derived from the public’s input, guided by the planning team’s expertise. The goals will emerge from inputs gathered in the initial meeting, and from responses to the first questions posed online. These inputs will be used by the planning team to formulate a set of proposed goals, which will be ranked by the public on the plan Web site toward the close of this phase.

The Planning Team’s Role
The planning team works with the Web consultants to analyze results from the initial poll questions using the plan Web site’s text analysis tools, to formulate a list of candidate goal statements. They will post an appropriate number of the candidates to the plan Web site, then ask members of the public to vote on which goals matter the most to them. Armed with a good understanding the public’s desires, the planning team sets about drafting the scope of the plan, for immediate disclosure on the Web site and in the next round of public meetings.

The Public’s Role
Once the candidate goal statements are posted to the Web site, members of the public will vote on which goals matter the most to them. They will choose their top five goals, in order of importance.

The Web Consultant’s Role
As Phase two draws to a close, the Web consultants deploy the next set of Web site functions, including a library of information assets that the planning team gathered, an interactive map showing the plan’s boundaries, with overlays showing specific plan areas and sites of particular interest, and an online discussion form with rich media capabilities.

Outcome
This phase concludes with a ranked list of goal statements, authored collaboratively by the public and the planning team. The plan’s goals will be published to the Web site, for all to see and discuss, as topic threads within the newly unveiled discussion forum. A simple yet effective collaboration between the planning team and the public will generate, prioritize, and determine the goals that will guide the overall plan. In the end, everyone working on the plan will know what matters most in authoring the plan, and what goals should guide its construction.
Phase 3: Defining the Plan Program

Overview
With known goals, the planning team can begin programming the plan itself. The program will determine the kinds of issues to be addressed in the plan. Like the goals, the program will emerge from the collaboration between the planning team and the public.

The plan Web site becomes interactive during this phase, with the unveiling of several tools. The discussion forum is released for general use, and the planning team starts the conversations off by organizing discussion threads around each of the most important goals generated in Phase 2. The Resources page comes online, and houses a wealth of salient information gathered by the planning team. The planning team will publish an appropriate number of online poll questionnaires periodically throughout this phase, to which members of the public will be invited to respond. Used in conjunction with a series of programming meetings held throughout Phase 3, the online tools will help facilitate the development of the plan program.

The Planning Team’s Role
Throughout this phase, the planning team holds periodic charrette-style meetings, reminding participants of the Web site and the fact that any participant can discuss the issues at hand online, anytime. Members of the public are asked to identify a pro and a con for each topic they discuss. As information becomes available, the planning team posts it to the Web site, injecting relevant information into the online discussions. They also use the Web site to post images and descriptions of strong examples of urban design from around the world, lending ideas and creative capacity to members of the public.

Beyond their typical capacity as facilitators of public participation, members of the planning team are themselves active participants in the discussions taking place throughout Phase 3. As facilitators, they are vital for ensuring that no important issue goes untreated. But it is their expertise that will ensure that the plan program shapes up to be a thoughtful, well-informed framework, capable of guiding the final plan to its fullest potential. With the planning team’s active participation, the plan will address all the issues it should in order to be effective, and it will reflect the latest ideas in planning.

During this phase, the planning team identifies areas of convergence (where members of the public agree on certain issues) and areas of divergence (where there are competing viewpoints on issues). Using the plan Web site’s analysis tools, they are able to query input data by user type, so they can see different perspectives of opinion. Actively identifying areas of divergence is critical to ensuring that alternatives are formulated to satisfy the differences during the next phase.

The Public’s Role
Members of the public help shape the plan’s program in this phase by offering their input on draft elements of the program authored by the planning team. On the plan Web site, they are able to comment directly on draft
program elements, offering up feedback that the planning team can use to refine the program.

**The Web Consultant’s Role**
Throughout phase 3, the Web consultants help keep the site maintained, acting as moderators of the discussion forum, and custodians of the Web site. They ensure that the site remains functional, and that any questions posed by the site’s users are addressed.

**Outcome**
Phase 3 concludes with a collaboratively generated program for the plan. Comprised of collaboratively authored guidelines for topics the plan should address, the program lends a framework to the next phase, in which alternative recommendations will be drafted to satisfy the program.

**Phase 4: Exploring Alternatives**

**Overview**
Phase 4 is an iterative step in the process, in which the planning team formulates potential alternatives within the framework of the plan program, then publish the alternatives to the plan Web site for discussion and voting. Two or three rounds of alternative proposals may be needed to arrive at consensus on each aspect of the program, but the plan Web site makes this otherwise resource-intensive undertaking possible.

As phase 4 unfolds, proposed recommendations are posted to the Web site for review, with comments enabled on each, so that the public has one last chance to react to the plan’s draft elements before they are synthesized into the final document.

**The Planning Team’s Role**
The planning team begins to draft alternative recommendations, publishing draft diagrams and policy statements to the plan Web site for review. Sets of alternative solutions are generated to address topics without convergence, which the planners identify by reviewing meeting notes and the discussion forum’s contents. Each alternative uniquely focuses on satisfying one of the contested visions, while others aim to satisfy contrasting visions. This generates authentic alternatives for the public to consider.

**The Public’s Role**
As alternatives evolve through iterative revisioning, they are integrated into the Web site, so that members of
the public can evaluate the pros and cons of each, then vote on their preferences. The public offers feedback on the planning team's draft alternatives during this phases, both through commenting on the draft elements and responding to periodic poll questionnaires.

**The Web Consultant’s Role**

As with Phase 3, the Web Consultant’s serve to keep the plan Web site in working order, and work with the planning team on extracting information from all the data now stored throughout the site’s interactive tools.

**Outcome**

Phase 4 concludes with a final set of recommendations, authored by the planning team, and generally agreed upon by the public. At this point, the planning team is ready to assemble the final plan, which it will perform without the public’s input.

**Phase 5: Synthesizing the Plan**

The planning team spends Phase 5 “tying together” all of the final recommendations generated during Phase 4. This phase concludes the public participation aspect of the plan. After the preceding four phases, the planning team has all the information necessary to assemble the final plan. They take all the conclusions drawn from the participatory process, and synthesize the final plan as a cohesive, publicly informed set of guidelines and recommendations. The final plan is published, then submitted to the Mayor, the city council, and the general public.

The Web consultants close the discussion forums, but leave the plan Web site up for future viewing. Once the planning team finishes the plan document, The Web consultants publish it on the plan Web site as rich media Web pages, comprised of the written text along with the diagrams, photos, and sketches used to illustrate the plan. Comments are still enabled, so that the contents can be discussed over time and possibly modified as needed.
Chapter 4

Maximizing Usage

This chapter identifies a few of the potential barriers that could prevent broader use of the Web in planning, beyond its basic information-publishing capabilities. Each potential barrier is accompanied by recommendations for overcoming the challenges posed.

1. Misunderstanding / lack of awareness within the planning team

Not knowing about, or misunderstanding Web 2.0’s new capabilities poses the largest barrier to its enhancing public participation. If the field does not know what’s possible, then it can never take advantage of the new offerings. Many urban designers and planners already use the Web for gathering information, or for publishing basic plan related information, but few have used it beyond its function as an information repository. Bringing its full potential to bear in participation will require a re-imagining of sorts, both within planning practice, and within planning academia.

Recommendations

Web literacy is needed in the profession and in planning schools, with a special focus on participatory Web 2.0 technologies. All of the learning materials required for this training are available online, with most venues offering them for free. The World Wide Web Consortium (W3C) houses full specifications on most of the Web’s technologies. But it is only one among countless venues offering this information. For instance, Refsnes, a Norwegian company, has developed and continues to grow a free Web development school, accessible at http://www.w3schools.com.

In planning schools, embedding Web literacy into the curriculum begins with the recognition that, while the Web itself is not the ultimate goal of planning, it is a powerful tool set for achieving planning goals. Even offering one elective course that looks at using the Web as a tool, like GIS is taught, would go a long way towards promoting the requisite awareness.

In planning practice, it’s unreasonable to expect that all planners become Web experts. But it is perfectly reasonable to expect and enable some team members to fulfill this role. Most planning teams relegate such responsibilities to the IT department. Discussing the new possibilities with the IT department is a solid first step towards realizing the awareness necessary in practice.
2. Misunderstanding / lack of awareness amongst participants

On the other hand, even if the planning field is aware of the new capabilities, it does little good in facilitating public participation if members of the public do not also share in the awareness. Yet this poses much less of a barrier than lack of awareness amongst planners, as planners, once aware, can easily inform their public of Web-based participatory constructs.

Recommendations

To foster public awareness, planners must communicate the new capabilities using established communication channels. When new online participation tools are constructed, planners must notify the public through a distributed, ongoing awareness campaign. The current planning department Web site, public meetings, a canned closing note to phone-ins and walk-ins, mailers, pamphlets, notifications at the local library - these are some of the many ways to notify the public that the Web will be used in participation. An office-wide blog could also be used to keep interested parties informed of new tools, and as a venue for discussing current and future online constructs.

3. Lack of required skills within the planning team

Knowing about the Web's new participation capabilities does little on its own, if planners lack the skills required to use it for such purposes. With most planning team members already busy with existing work, acquiring such skills can be a real barrier.

Recommendations

There are many ways to ensure that the planning team has the necessary skills to use the Web in participation. The easiest way is to turn to a Web development consultant with expertise in using the Web for collaborative planning, much as the planning team turns to consultants for other specialized services.

Within the planning team, acquiring the necessary skills takes a shift in thinking about the role that the Web plays in work, and very likely a reallocation of resources. The IT department, already swamped with managing the internal computing infrastructure, and the vast body of information it encompasses, might not have on hand the resources needed to begin incorporating the new capabilities. They might need additional resources, as the Web 2.0 participation tools described in this thesis are more resource intensive than basic information Web sites.

In addition to training current team members, offices can also begin looking for new hires who have Web literacy.
4. Lack of skills / training amongst participants

Members of the public might not have the experience necessary to interact with the Web beyond simple routines. Participants might be deterred, if they do not have the information necessary to use the online tools, or if the tools are too complex.

Recommendations

Providing ample documentation within the plan site, in help files, a user forum, and a frequently asked questions page, is one way to ensure users have the information they need to interact with the tools. But planners can take a number of additional measures, to overcome the user training barrier altogether.

By designing the online tools from the outset with simplicity in mind, the planning team can minimize the effects of low user proficiency. An interface that is simple, intuitive, and properly working will go a long way towards ensuring that users aren’t deterred from using the site because it is too difficult. Jakob Nielsen’s Web site, http://www.useit.com, is an excellent starting point for understanding interface usability principles.

Adhering to W3C guidelines for accessibility, found at http://www.w3.org, under “accessibility,” is another solid technique for ensuring maximum usability. Though they are specifications that help Web developers build Web sites that special needs users can access, they are also very effective for building usable sites in general. Following these guidelines also accommodates users who do require special access functions, like screen readers or large typefaces.

Planners can also build upon what members of the public already know about using the Web by following a few conventions. For instance, most major Web sites have navigation at the top of the page, or along the left side. Many sites use the browser default display markup for showing hyperlinks - in blue font face with underline. Good sites also show users where they have been by marking visited links in some way. Though following such conventions might not win any Web design awards, it will help users make the most of what they already know about using the Web.

Beyond ensuring simple, conventional interfaces with documentation, planning team’s might find it worthwhile to invest some resources to actively training participants who do not have the required experience. Portions of the initial plan meetings could be spent going over the tools, with face to face question and answer sessions for those who need extra help. And public libraries should be considered a strong ally, as many provide Web training for citizens, free of charge.

Finally, the plan site’s contents must be accessible to lay audiences. Technical planning terms should be avoided, or where they are necessary, they should be explained with a tool tip, or a hyperlink to more information on the term.
5. Limited public access / the “digital divide”

A legitimate concern about using the Web in planning participation is that some members of the public lack access to the tools required to participate. To be equitable, all potential participants must have access to the tools, otherwise it’s no better than the town hall approach that precludes those who are unable to attend meetings.

Recommendations

Public libraries have become very important Internet access points for citizens who don’t own the required hardware, or who can’t afford Internet service. By partnering with the local libraries, planning teams can open up the process even to members of the public who lack private access to the required technologies.

But even with a partnership between the planning team and the local library, some members are still excluded, whether the mobility necessary to visit the library, or they have schedules that prevent going to the library during hours of operation. In such cases, planners might provide a few loaner machines, purchased wholesale at e-waste markets, in combination with subsidized in-home Internet service, during the planning process.
6. Privacy / permissions

The need for privacy might discourage some participants from offering their inputs online. Yet the planning team must control who is eligible to participate, and to what extent they may participate, and this must be done through gathering some identifying information about each participant. Both needs can be accommodated with the right approach.

Recommendations

It is possible to construct the Web 2.0 participation site to allow anonymity, granted as a selectable option for the user during the online registration process. This is possible, and in a well-constructed Plan Web site, it can be offered without compromising the vital functions of controlling who participates, and how many “votes” they have in the process. Online participation systems can be programmed in such a way that limits responses to 1 ‘vote’ for each legitimate stakeholder only - say, all registered citizens within X feet of the project - while still granting anonymity within the system’s interaction points for those who desire it. Optional anonymity is essential, as contested issues might prevent some stakeholders from voicing their concerns online, if their names are automatically attached to their responses. The same stakeholder who hesitates to show up at the physical meeting won’t likely use a digital system in which their name is automatically attached to their inputs.

The solution is fairly simple in programmatic terms, though too technical to discuss here in detail. The general method for achieving both optional anonymity and participant input control is as such:

1. build the site on top of an encrypted database
2. construct the site with registration and user profile functions, using appropriate security measures in the scripts
3. assign each registrant a unique, randomly generated ID that they may use as their only identifying handle in offering inputs
4. require all participants to register before interacting with the site
5. grant users the option to remain anonymous at the time of registration, and thereafter within their profile settings
6. optional: if controlling who has the right to participate is an issue, use a digital “key,” given to each eligible participant, to grant access. After you identify the universe of legitimate stakeholders, assign each possible participant an ID, then communicate their specific ID to them before they register, requiring that they use this key to unlock the site’s registration function. Then, make the interactive functions open only to registrants, thus limiting the site’s participation tools to key holders.
Appendix A: A proof of concept

To demonstrate that the Web can be used to effectively solicit and analyze feedback with minimal resource investment, I constructed a simple one page project entitled “What Do You Think?” which included renderings of a new building under construction on MIT’s campus. For brevity, I only included a single survey question, with a natural language response input, though in hindsight it would have been just as easy to include additional questions of the check box, rank, and multiple choice varieties. The entire project, intentionally brief, took only 9 hours of work, including time spent setting up the HTML and form, refinement and launch of the page, analysis, and publication of results.

Despite no explicit guidance, nearly all submitted answers assumed a non-neutral position on the project, and many responses were rich with insight that probably could have helped inform a better overall project. The response form (a single, natural language text form) was left open for a week, and two emails were sent to randomly selected members of the MIT community (admittedly, an audience of convenience, but the intention was to prove the concept, rather than gather real empirical evidence). Of approximately 250 recipients, 47 unique participants responded. 40 respondents objected to part or all of the development, 4 approved of the project unconditionally. Only seven were vague, or off topic.

After closing the form, I had a sizable chunk of digital text to deal with, which published directly from the form in to a Google Docs Spreadsheet, where each response constituted a time-stamped, otherwise anonymous cell. To analyze the text, I submitted the results to a free online text mining tool, which broke the text in to discrete sentences, identified key concepts, and spit out metrics on the text body (like word frequency, key word density, etc.)

Better online analysis tools are under development, and certainly the analysis I performed only scratches the surface of what’s possible, but it’s nevertheless noteworthy that, with digital text and a few online tools, I was able to swiftly grasp the climate of opinion amongst those who responded. Though the experiment only yielded 47 responses, everything about this approach is highly scalable. The same method could have handled 4,500 responses with no more resources invested on my part. A paper-based approach to the same analysis technique might have taken days, especially in a situation where there are hundreds of responses to multiple questions.

The purpose of the experiment was not to compile real evidence about the project shown, which was only a convenient example and already well in to its construction phase. Planners who wish to use this feedback approach should certainly give more thought to methodology. However, the experiment demonstrates that feedback can be solicited, collected, and analyzed on the Web, with minimal resources invested, and that this approach to gathering and understanding feedback can be implemented using existing technologies.

boring 8
corporate 4
bland 4
good 4
functional 3
lacking 3
great 2
fat 2
shame 2
fantastic 2
pleasant 2
disappointed 2
annoying 2

Fig. A.01 — Top descriptors
Fig. A.01 — Screen shot: proof of concept Web page
Excerpts from responses

The following are selected excerpts, arranged by position taken: fully for, mixed opinion, or fully against the project.

Fully for:

“Great! Much better use than a parking lot.”

“I think it will be a nice addition to that part of campus; the building architecture seems to fit in to the surroundings.”

“Glad to get rid of that parking lot! just on principle and because it was difficult and annoying to walk through. The green space will be nice.”

Mixed opinion:

“i like the site plan and the massing, the sealing of main street and creation of an enclosed courtyard at the same time. I don’t like the architecture of the building, very corporate looking.”

“I think it looks like a cool building, and that corner needs an anchor, but I’m curious about what’s going on the ground floor and what the pedestrian will experience along main street.”

“Lethally boring - typical commercial development - ‘realistic’ but boring.

“... Overall clean and nice to look at, but actually pretty cold and sterile, and I immediately know there will be no life around the building just based on its look.”

Fully against:

“This building was designed and constructed without keeping the MIT community well informed. More generally, I am troubled by the drastic growth in square footage of new buildings over the past few decades. Our buildings consume vast quantities of fossil fuels and are responsible for substantial greenhouse gas emissions that contribute to global warming. What is the vision for the MIT campus of 2030? 2100? 2200? 2500? If MIT cannot create a vision of sustainability, then who can?”

“rather austere; prohibits symbolic (visual) and literal (physical) access into the campus; does little to mitigate the barrier between ‘town’ and ‘gown.’”

“... It’s also quite boring-looking. Corporate rather than academic. ...”

“... Maybe the graduate students appreciate this type of architecture, but as an undergraduate, I feel alienated.”

“The building itself is boring and looks a little cheap...”

“Assuming MIT is looking for consistency with the windswept, monotonous, boring biotech hub that is Main Street and Kendall Square, this building will be a great new addition. It looks just like the
Brain and Cog building and will provide a good level of unnecessary closure and formality to what is currently a nice, informal edge of campus. Thanks MIT for another bland addition!”

“... I hope this project is not real and if it was, I wish MIT would consider redoing the proposal.”

“This building is far, far too big and fat for its site and way out of scale with its context. It’s a civically irresponsible intervention, and MIT should be utterly ashamed of itself for pushing the project to this extreme. “

“... it is incredibly unfortunate that MIT - the home of the nation’s #1 planning school - appears to care so little about its physical home. It seems that MIT makes no effort to consider its neighborhood presence - or more directly - the needs of its students. The area is sorely lacking in restaurants, retail, and street life, and it is terrible that MIT is putting up a new building at a hinge location, with no ground floor presence. Even if private retail was not an option (which it should be) the institute should have build a café, common space, etc for use by students, if not the public at large. ...”
Appendix B: Case study screen shots

Encinitas Zone Viewer
URL: http://tinyurl.com/encinitas
Began: 2005
Author(s): City of Encinitas

Summary: An interactive zoning map and zoning database of Encinitas, California. A tool that helps visitors look up the full set of zoning codes and overlays attached to any parcel in the city.
Fig 1.05 - City of Encinitas Zone Viewer

Allows members of the public to the zoning map, along with the definitions for the zones and overlays.
Registry of Standard Biological Parts
URL: http://partsregistry.org/
Began: 2004
Author(s): Registry of Standard Biological Parts

Summary: A wiki built to support collaborative research on genetically engineered machines.
WEB 2.0 FOR URBAN DESIGNERS AND PLANNERS

Fig 1.06 - Registry of Standard Biological Parts

Used to store the collective research on genetically engineered machines, from researchers around the world. Shows a wiki used to support design patterns at the microscopic scale.
Flickr
URL: http://flickr.com
Began: 2004
Author(s): acquired by Yahoo in 2005

Summary: Flickr describes itself as being “almost certainly the best online photo management and sharing application in the world.” At the time of writing this thesis, Flickr is far and away the most used, most feature-packed online image sharing site.
Fig 1.07 - Flickr

Largest online image sharing Web site. Lets users upload, organize, describe, tag, map, and discuss images. Images hosted on Flickr can be embedded quickly in other Web sites, making it an ideal tool for storing plan-related imagery.
We found 478 results tagged with vertical and garden.

Jardín Vertical - Caixa Forum
Uploaded on 3 May 2006
By Ana Isar
her photostream, or profile.

Caixa Forum - Madrid
Uploaded on 3 May 2006
By Ana Isar
her photostream, or profile.

Stretching in the garden
Uploaded on 30 April 2006
By tommyimages.com
Tommyimages.com's photostream, or profile.
As a global image database, Flickr has become a powerful tool for finding urban design precedents. Using search, urban designers and planners can find visual examples spanning all manner of design concepts. The above screen shots show some of the thousands of images depicting vertical gardens.
**del.icio.us**

URL: [http://del.icio.us](http://del.icio.us)

Began: 2003 (after a long running precursor site)

Author(s): Joshua Schachter, acquired by Yahoo in 2005

**Summary:** a social bookmarking Web service for storing, sharing, and discovering Web sites, through tagged, annotated bookmarks.
Another powerful device for finding, organizing, and sharing media related to the plan. del.icio.us bookmark lists are easily embedded in other Web pages, making it a useful tool for a plan Web site that requires sharing other, external Web sites.
We Feel Fine
URL: http://wefeelfine.org
Began: 2005
Author(s): Jonathan Harris, Sep Kamvar

Summary: An awe-inspiring site interactive work of art that behaves like a global “mood ring.” It “listens” to the world’s feelings, by mining new blog posts for the terms “feel” and “feeling,” thus constructing a partial global database of human emotions.
A strong example of how the Web can be used in analytical functions. Built as a dynamic work of art, We Feel Fine crawls the Web looking for words related to the word “feel,” then copies their context sentences over to the site, where each “feeling” is displayed as a floating icon in an ever-changing cloud. Users can click the floating icons to see the feeling it represents.
- I feel so bad having to perpetually call someone to turn on the fan turn it off etc
  20 min ago / from someone

- I feel more tired after the nap than anticipated
  18 min ago / from someone

- I feel like I have impeccable judgement when it comes to personnel
  16 min ago / from someone

- I feel sun in the sky you know how i feel reeds drifting on by you know how i feel its a new dawn its a new day its a new life for me
  16 min ago / from someone

- I feel happy because I believe the future is what I will make of it
  13 min ago / from someone

- I feel very excited
  15 min ago / from someone

- I feel about buying a bloody book
  14 min ago / from someone

- I feel compelled to live it and to benefit from it says dwiek who took up piano as an adult and learned to speak Italian in her 50s
  13 min ago / from someone

- I feel colourlovers makes an excellent example of what I’d like to see wp admin themes
  13 min ago / from someone

- I feel shy
  18 min ago / from someone
Beyond interactive art, We Feel Fine offers several ways to analyze the entries. It shows the potential of online survey instruments, which programmed correctly, can be used to instantly analyze a data body of any size.
Encyclopedia of Life (EOL)
URL: http://www.eol.org
Began: 2007 (under construction)
Author(s): international consortium of scientists, publishers, full time staffers, and other contributors

Summary: EOL aims to organize and make available via the Web virtually all information - text, data, even rich multimedia - about the approximately 1.8 million species of life present on Earth.
Fig 1.10 - Encyclopedia of Life

Shows the Web as a global rich media encyclopedia for documenting life. A similar construct could be made by urban designers and planners, to gather rich media documentation of places.
Google Docs
URL: http://docs.google.com
Began: full release in 2006
Author(s): Google (original by Writely)

**Summary:** (derived from the Wikipedia entry) Google Docs is a free, Web-based word processor, spreadsheet, and presentation application. Users can create and edit documents online while collaborating (even in real-time) with other users.
Chapter II

Web 2.0 in urban design and planning

"...people should seize the new technology to empower themselves; to keep themselves informed about the truth of their own economic, political, and cultural circumstances; and to give themselves a voice that all the world could hear."

- Thabo Mbeki

As they evolve, semantic and geospatial technologies will further enhance the Web’s usefulness as a tool set for coping with all manner of urban design and planning situations. Imagination might someday become the limiting factor in developing applications to our field, once those aspects of the emerging Web are better realized. However, urban designers and planners can already apply existing Web 2.0 tools to certain areas of their work — many already do. And even though RIA&D continue to erode the distinction between online and desktop, Web-based tools will always outperform desktop programs in at least one important respect: the programmers’ ability to continuously, seamlessly evolve the application. So, while we’re waiting for geospatial and semantic technologies to progress, we can begin learning and using certain aspects of Web 2.0 tools today, applying them creatively to many problems.

Fig 1.11 - Google Docs

Illustrates well the future of Web-based applications.
Google Docs includes tools for quickly constructing and distributing online surveys.
Results from surveys are automatically deposited in to an online spreadsheet.
Google Docs Widgets: Users can embed data analysis widgets in spreadsheets, which can then be embedded in other Web sites.
Fig 1.11 - Google Docs
Widgets
Many Eyes
URL: http://tinyurl.com/3btkjm
Began: 2004
Author(s): IBM's CUE research group

Summary: A free online data visualization software suite. Accepts uploaded data of all sorts, and allows the quick generation of well-designed interactive data visuals.
Fig. 1.12 - Many Eyes

Gives users access to powerful, simple to use data visualization tools.
Open Secrets
URL: http://www.opensecrets.org/
Began: 1996 (part of an ongoing project since 1990)
Author(s): Center for Responsive Politics

Summary: An independent Web site tracking the influence of money on U.S. politics, and how that money affects policy and citizens’ lives.
Fig 1.13 - Open Secrets

Shows how the public use the Web to promote transparency.
The Google Earth / Map / Sketchup / 3D Warehouse array
URLs: http://www.google.com/maps/
      http://earth.google.com/
      http://sketchup.google.com/
Began: multiple years (all since 2000)
Author(s): Google, Keyhole, @Last Software

Summary: A loosely knit array of software tools, designed to create, store, and communicate rich spatial media. As these tools evolve and converge, they and others like them will play a significant role in the future of urban design and planning.
Fig. 1.14 - Google Earth / Map / Sketchup / 3D Warehouse array
Fig. 1.14 - Google Earth / Map / Sketchup / 3D Warehouse array
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