Intranet Design Annual

The 10 Best Intranets of 2007

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Even though this report was published in 2007, we believe it continues to be valuable for many intranet designers: since these were *award-winning* intranets, many companies can still benefit from learning from these case studies.

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Executive Summary

The 10 best-designed intranets for 2007 are:

- American Electric Power (AEP), United States
- Comcast, United States
- DaimlerChrysler AG, Germany
- The Dow Chemical Company, United States
- Infosys Technologies Limited, India
- JPMorgan Chase & Co., United States
- Microsoft Corporation, United States
- National Geographic Society, United States
- The Royal Society for the Protection of Birds (RSPB), United Kingdom
- Volvo Group, Sweden

Nine winners are traditional company-wide intranets. The winning Comcast design is an extranet that supports both internal marketing staff and external vendors, affiliates, and marketing partners.

Contrary to last year, when most of the winners hailed from outside the US, this year six of 10 winners are American. Of the four winners from other countries, three come from countries that have generated many past winners: Germany, Sweden, and the UK. Given the size of Germany and the UK, it's not surprising that they've had so many winners. Sweden's continued top placement, however, is striking. Maybe there's something to the claim that Scandinavians emphasize good design. (Then again, other Scandinavian countries have never produced a winner here, so maybe Sweden rules in intranet design.)

Most of this year's winners are from countries that have fostered previous winners. However, we also have a new country represented this year: India. Although the World Bank Group used an Indian design agency when it won in 2002, the bank itself is a multinational organization headquartered in the US, so we counted its intranet as US-based. Thus, Infosys is the first winner truly based in India. Having India join the ranks of winning countries is a clear symbol of its growing might as a software superpower.

RISE OF USABILITY IN MANUFACTURING

We typically have several winners from the financial services industries. This year, we have only one: JPMorgan Chase.

Compared to past years, we have many more manufacturing companies in this year's top 10. Viewing "manufacturing" broadly, this sector has four winners: AEP, DaimlerChrysler, Dow, and Volvo. Last year, we noted that "manufacturing companies have historically focused on physical concerns and thus have less experience in creating good screen-based designs." Of course, in the modern world, manufacturing is highly intertwined with computers because it's a highly knowledge-intensive business. We can hope that the prominence of manufacturing companies among this year's winners symbolizes this important sector's embrace of the value of usability, and that the previous poor showing of manufacturing intranets is truly a thing of the past.

While most winners are big companies, we also have two winners from the non-profit sector: National Geographic Society and The Royal Society for the Protection of Birds. As this shows, you don't have to be a large organization or a traditional company to benefit from intranet usability. Well-designed intranets support employees and volunteers in achieving non-profit missions just as well as they improve productivity and thus profitability in for-profit businesses.

MULTIMEDIA, NEWS, AND RATINGS

A trend from last year was even more pronounced this year: intranets are going multimedia. On the simpler end of the scale, "photos of the day" grace many homepages, and beautiful bird photos illustrate many top stories on RSPB's intranet. On the higher end of the multimedia spectrum, video is proliferating — often for training purposes, but also for executive communications. AEP has its own TV studio for intranet productions, offering both streaming video and live webcasts. National Geographic has webcam feeds that would be the envy of most organizations, including one focused on Alaskan grizzly bears.

Many intranets have long offered news feeds, but this year's winners have taken extra steps to make their news offerings more relevant to employees, both for internal news and for industry-related external news. Labeling and categorization are more extensive than before, and several intranets let users rate and comment on stories.

Star ratings and user comments have long been found on public websites — from Amazon.com to weblogs — but they become much more useful on intranets, where they're not degraded by the Bozo effect. Employees of the same company have shared goals and interests, they have passed the quality filter of getting hired, and they have their reputations to protect. For all these reasons, ratings and comments from colleagues are likely to be much more useful than those of random blog readers.

In addition to providing news on its intranet, Microsoft offers its employees a range of email newsletters and the ability to get stories through a newsfeed (RSS). The email newsletters are a simple way to reach beyond the intranet to give employees news on their mobile devices. This only works, however, because the messages are formatted for mobile devices, which is rare.

AEP doesn't use an automated feed for outside news. Instead, an editor reviews the available stories and posts only those that will be of most use to the company's employees. Such extra work is amply rewarded in employee productivity by saving people from long lists of irrelevant news. For example, at JPMorgan Chase, the intranet homepage is viewed 620,000 times per day, so even one superfluous headline that required one second to scan would cost the company the equivalent of 22 full-time employees in lost productivity. The JPMorgan Chase intranet team is equally selective, displaying only the most important news on the homepage.

Of course, in some cases, you just have to provide the news, even when it's not particularly work-related. For example, DaimlerChrysler provided the latest scores during the soccer World Cup in Germany. If they hadn't, employees would surely have spent much more time following matches on external sites.

In terms of respecting employees' time, perhaps the ultimate design feature comes from the Volvo Group. The company's *5 Minutes Only* area gives people the most important information they need that can be consumed in five minutes.

MULTINATIONAL INTRANETS

Most of the winners support users in several countries and several languages. The predominant approach is to select one or two primary languages and use them for the company-wide features and content, and then supplement this with country-specific information in the user's own language.

For example, DaimlerChrysler offers global content in German or English, automatically setting the initial language based on the language preference settings in the user's browser. It's somewhat rare to see browser language preferences used correctly on public websites, so it's great to see this feature making inroads on intranets.

Dow uses English for most global content, but translates the most important content into six other languages (Dutch, German, French, Italian, Portuguese, and Spanish). It also translates selected content into Chinese, Greek, Japanese, and Thai.

Although translation is important, it's not sufficient for a true multinational user experience. Dow's intranet shows how to further achieve this with its employee recognition application. Users can nominate employees in other countries for a recognition award, and if the award is approved, recipients are notified in their local language. Even better, the awards are appropriate to the recipient's culture, and can be redeemed locally. Without this true internationalization of the underlying features, consider how difficult it would be for, say, a German manager of a cross-functional team to give an award to a deserving employee in Brazil. Such a manger is not only unlikely to know Portuguese, he or she is unlikely to know what a Brazilian might appreciate receiving as an award or which local vendors might offer redeemable certificates. At Dow, the intranet comes to the rescue, thus encouraging more cross-cultural employee recognition.

Several intranets featured a simple, but highly useful design element to help users work with overseas colleagues: a world clock. Calculating time zones and understanding the International Date Line's effects are difficult for humans but trivial for computers. Let them do it, and you'll never again call clients or colleagues at 4 a.m. on a Sunday, thinking it's their Monday afternoon. As an added benefit, a prominently placed world clock serves as a tangible reminder of an organization's worldwide status.

TECHNOLOGY PLATFORMS

The 10 winners used a total of 49 different products for their intranets' technology platforms. Clearly, intranet technology continues to be an unsettled field.

The most-used products were: Windows Server, Google Search Appliance or Google Mini, SharePoint, SQL Server, Google Maps, Omniture, and Vignette.

Some people might claim that it's "unfair" to include Microsoft products on this list, given that Microsoft's own intranet was one of the winners this year. Obviously, Microsoft tends to use Microsoft products, but many other winners did so as well. Also, IBM won last year's competition, and many other technology companies have won throughout the years. In each case, we gave the awards for the quality of user experience on the intranets, not for the product lines. The profile of Microsoft's intranet serves as a valuable case study in how to design a great intranet while building on Microsoft products — just as last year's IBM intranet profile is useful to the many companies that employ IBM products.

STANDARD UI, NO STANDARD CMS

For several years, we have noticed a trend toward firmer standards for intranet pages. In the early years of intranets, it was a free-for-all, with each page author creating his or her own design. Gradually, more and more intranets have become template-based, which ensures consistency in the user interface across the intranet.

Standardized navigation bars, menus, and page footers are the most common elements in consistent intranet user interfaces. Centralized style sheets (using CSS) further enhance commonality in page appearance. Beyond pure technology, design style guides are also becoming common, and JPMorgan Chase even has an Intranet Design Review Board to interpret and expand its user interface standard. The board also grants exceptions to the standard in those few cases where it's sufficiently warranted.

This year, all the winning intranets were template-driven and relied on a content management system (CMS). Strikingly, most intranets used their own homemade CMS. Thus, even though there are standards within each intranet, there's no standard across intranets, even in the choice of CMS.

WEB TRENDS WITHOUT THE HYPE

Intranets tend to avoid the over-hyped fads that wash across the Web. Several winners have blogs this year, but the blogs are restrained, emphasizing useful information instead of "what I did on my last date." Microsoft even has a blog for its intranet's managing editor to discuss features and news coverage.

Ajax was widely used this year, but — fittingly for intranets — it's applied as an add-on feature that's integrated into useful contexts as opposed to being used for its own sake. Often, users won't even notice it's there. For example, Comcast displays nicely designed content previews that look like super-tooltips when users roll over lists of brand assets. Similarly, AEP updates the user's custom list of links without refreshing the rest of the page, DaimlerChrysler updates its homepage stock ticker, and Microsoft shows the results of employee polls (a popular feature on many intranets) as soon as the user has voted.

Slightly more noticeable, but still with an emphasis on utility rather than glitz, is the use of Ajax maps on the RSPB's carpooling page. When users click on a map marker, it brings up a photo and other information about the employee who's driving from that location, without otherwise changing the map or the rest of the page.

The employee directory search (the people finder) is a killer app on most intranets. Microsoft uses the over-hyped Internet concepts of social networking and degrees of social distance in a pragmatic manner to make its employee search even better, sorting results by degree of distance from the user. Often, it makes sense that users would want to find people closely related to them; such sorting can be very helpful in a big organization where many people may have similar names or the same job titles.

Is there anything more hyped that wikis? We started to see some wiki use on intranets in 2005, and this year National Geographic Society employs many wikis in a highly useful manner. Is there anything more pragmatic than an acronym explainer? Internet hype meets intranet utility in National Geographic's *NG Lingo* wiki, which explains the Society's many internal acronyms and specialized terminology ("base camp" = the headquarters buildings). Such an intranet feature is especially helpful for new employees; this year's winners included many more features to facilitate the "onboarding" (new employee) process.

BREAKING WEB USABILITY GUIDELINES

In general, an intranet is a type of website, and most Web usability guidelines apply to intranets. But different usage contexts create important differences as well. All usability depends on two big questions: who are the users, and what are their tasks? The answers to both questions differ between websites and intranets: Web users are customers, while intranet users are employees, and their tasks differ accordingly. Most important, any given company has only one intranet — at least that's what we recommend — meaning that users won't surf past the intranet on their way to another one, as they do with websites.

AEP provides an interesting example of the implications of these differences: Its intranet collaboration area, *The Agora*, is a blatant violation of the Web guideline to avoid made-up terms as navigation options. (Granted, "agora" is not literally made-up; it's Greek for "meeting place." Still, the number of electricity company employees who know Greek is small enough that, for all practical purposes, it may as well be made-up.) On a public website, this type of navigation would be a sure-fire recipe for having users overlook the feature. Few people have time to click on things they don't understand. By contrast, on an intranet, employees see *The Agora* every day, and will click it eventually.

In most cases, however, it's better to stick with established Web design conventions. For example, Comcast's customization form includes a *Save & Continue* button that is correctly placed at the bottom-right side of the form — the same place that 99% of e-commerce sites and other functionality rich websites place their equivalent buttons.

INTRANETS BECOMING ESTABLISHED

Across the first three Intranet Design Annuals (2001–2003), the winning intranets were 4.3 years old on average. Across the three most recent Annuals (2005–2007), intranets were 7.5 years old on average.

Looking back, it seems that most intranets were founded in the 1990s, then left to grow haphazardly. In contrast, the current decade is one of consolidation and emphasis on (finally) making the intranet work well as a business tool.

Intranets are definitely getting bigger. Across the first three Design Annuals (2001–2003), the average intranet contained 200,000 pages; across the three most recent Annuals (2005–2007), the average intranet contained 6 million pages.

Intranet budgets are also getting bigger, though we had one winner this year with an annual budget of only \$8,000, so it's still possible to design a great intranet on a shoestring. Mainly, though, the winning intranets have gained substantial management support and have reasonably big budgets.

Averaged across the winners, there was one intranet team member for every thousand employees. This ratio means that intranet team efforts are magnified a thousand times. Such a high degree of leverage is why intranet design can have such a tremendously high ROI when done well.

Big intranets mean big numbers. For example, Microsoft's intranet homepage is viewed 5 million times each month. With this much use, it's more critical to get the design right than it was back when intranets were toys for a few pioneers. Intranets have become critical resources that companies rely on to run the everyday business.

WHO OWNS THE INTRANET?

Intranets tend to have one of three homes in the organization. Of the 2005–2007 winners:

- 35% were in Corporate Communications
- 27% were in Information Technology or Information Systems (IT/IS)
- 19% were in Human Resources (HR)

The remaining 19% of award-winning intranets were based in a variety of other departments, including Web Marketing and Public Affairs.

If you had to select a single organizational placement for all the world's intranets, statistics imply that Corporate Communications is the best place. But in reality, we won't make that recommendation, since most great intranets are based elsewhere. The only recommendation we can make is to consider the history and culture of your own company and consider Corporate Communications, IT, and HR as the three most likely candidates.

INTRANET BRANDING

Last year, we noted a dramatic upswing in the number of winning intranets that were branded (that is, they had a separate name, as opposed to being called something like "the intranet"). We also warned that one year doesn't a trend make.

Indeed, this year, the proportion of branded intranets among the winners is back down at 60% — very close to the long-term average of 62% we've recorded over the years. In other words, more good intranets are branded than left nameless, but there are so many good unbranded intranets that we can't recommend branding for its own sake.

Intranet names this year include: AEP Now, Comcast Store, MSW (Microsoft Web), NG Insider, Sparsh (meaning "touch" in Sanskrit), and Violin.

ROI

The ultimate imperative for usability is to "show me the money." What's the benefit to the business of improving the user experience? Sadly, most intranet teams continue to have weak data on their work's monetary value. The exceptions to this rule are impressive:

- Comcast's marketing extranet has reduced versioning and distribution costs by 50-60% and reduced delivery time even more.
- Infosys has experienced a 65% drop in help desk calls since launching its redesign. When you consider the cost of running a help desk, reducing calls this much is a major savings.

Almost all intranets see increased use when they improve usability. If something is bad, people tend to avoid it; when it's good, they use it more. Improving usability will often double use across the entire intranet, but improving individual features can produce much bigger gains. For example, after its redesign, Infosys had 1,100% more submissions to its organization-wide news section — that is, *eleven times* more submissions — and 588% more entries to its *Team Spirit* section.

Overview of the Winners

Like previous winners, this year's Design Annual winners emerged from widely different backgrounds and underwent diverse development experiences.

FIVE COUNTRIES

The 10 winning intranets serve organizations based in five different countries: The United States (US) had six winners; and Sweden, the United Kingdom (UK), India, and Germany each had one.

EIGHT INDUSTRIES

The winning designs span a variety of industries and specialties, including automotive, non-profit, chemical, energy, environmental, financial services, IT/computer/software, and publishing.

Interestingly, two winners are focused on helping safeguard the environment: The Royal Society for the Protection of Birds (RSPB) and the National Geographic Society.

For the first time, two automotive companies are winners in the same year: Volvo Group and DaimlerChrysler.

Each year, we have at least one winner related to the finance industry and one involved in technology. This year is no different: among the winners are JPMorgan Chase, Infosys Technologies Limited, and Microsoft.

LARGER WINNING ORGANIZATIONS

Last year, a new trend emerged: we saw much larger organizations taking the lead in intranet design. In fact, the smallest winning organization in 2006 had 8,200 employees; in previous years, winners sometimes had fewer than 100 employees.

For 2007, winners include two relatively small organizations — one with 1,500 employees, another with 1,700 employees. The next-smallest winner, however, has a whopping 20,000 employees; the largest winner has almost 383,000. The average number of employees at winning companies, then, is almost 90,000 people.

With so many employees, creating a cohesive and consistent design across the intranet is often challenging. Larger organizations inevitably have more concerns: more politics, procurement, and often times "too many cooks stirring the broth." As intranets mature, however, intranet teams in large organizations appear to be mastering these challenges. In fact, they're managing to both reign in and capitalize on the sometimes competing challenges of having a surfeit of creativity, resources, and output that result from having numerous people involved in intranet projects.

LARGER TEAMS (THOUGH STILL RELATIVELY SMALL GIVEN THE WORK THEY DO)

Just as this year's winning organizations are larger on average, so too are their intranet teams. Across the winners, intranet team sizes range from 20 people down to a single person. (Note, however, that the company with just one in-house team member, Comcast, also employs two external design firms; also, Comcast's winning entry is more of an extranet.)

The shift in team sizes shows us two important things:

First, large teams demonstrate a commitment to the intranet on behalf of not only upper-level management, but also many internal group and department heads. Intranets have come a long way from the days of "one IT employee posting an employee-benefits PDF."

Second, the continued presence among winners of relatively small teams illustrates how even a tiny team can do wonders if the designers and content providers are seasoned, creative, dedicated, and capable of managing organizational politics. In fact, teams of all sizes accomplish a phenomenal amount of work, and help make the intranet relevant for an increasing number of employees and project teams. If we look at the number of people on intranet teams as a percentage of the number of users these intranets support, we see that that average team constitutes just .09% of the organization.

Furthermore, people who are part of an intranet team are not necessarily involved full time. Many intranet team members have secondary or even primary roles in other departments, such as maintaining the public-facing website or working on the IT or internal communications staff. This trend continues unchanged from all previous years' reports.

Increased high-level backing for intranet teams, combined with their relatively small size (compared to total number of employees), means that this year's winning intranet teams are not only lean, but also powerful. Obviously, this is a potent combination for creating a world-class intranet.

For highlights about each intranet team, see the *Intranet Team* section in each profile.

INCREASED IN-HOUSE DESIGN

This year we saw more do-it-yourself intranets than in the past. Six winners used only in-house resources to create their design, while four used some combination of in-house resources and outside firms. This stands in stark contrast to some past years, in which the winning intranets were often primarily designed by third-party Web design firms. What this year's results tell us is, that while outside design firms can offer valuable expertise and industry experience, when it comes to intranet design, nothing beats inside knowledge of an organization and what its employees need.

TAP THE WINNING DESIGNERS' ADVICE

As in years past, all winning designers have one thing in common: their intranetdevelopment experiences have produced valuable insights for other companies to use when redesigning their own intranets. To explore these insights, see the **Lessons Learned** section at the end of each intranet profile.

THE 10 WINNERS LISTED IN ALPHABETICAL ORDER		
American Electric Power (AEP) (United States)	Taking an idea planted at a usability conference and nurtured over dinner — with the aid of a paper tablecloth — American Electric Power applied a world-class design staff and less than \$100,000 to create an unbeatable intranet: the new AEP Now, which informs and inspires employees.	
Comcast (United States)	Want a great design? Take risks. That's the lesson from the Comcast Store, an extranet that supports the company's marketing operations. Bold design choices, including expert use of white space and color, enable users to breeze through the site and quickly locate essential information.	
DaimlerChrysler AG (Germany)	The DaimlerChrysler AG Employee Portal's clear navigation, personalized content, and extensive intranet applications make it approachable and easy to use, drawing 60,000 users daily.	
The Dow Chemical Company (United States)	The Dow intranet's news offerings, clear navigation, and many intranet-based applications support a wide variety of employees and boost productivity — a winning combination.	
Infosys Technologies Limited (India)	This intranet has a special mission: To keep pace with the company as it adds almost 50% more employees in a year. Named Sparsh — "to touch" in Sanskrit — this intranet lives up to its billing, achieving three essential yet difficult attributes: to motivate, communicate with, and unify employees.	
JPMorgan Chase & Co. (United States)	The redesign mandate: Better meet the incredibly diverse needs of employees, while lowering costs. Add in a merger, and creating a great design might seem unattainable. Through superb planning and unwavering focus, however, the intranet team delivered a world-class intranet.	
Microsoft Corporation (United States)	Microsoft's corporate intranet is also the company's primary showcase for Microsoft Office SharePoint Server 2007. The fact that the company's more than 70,000 employees prize it for news, information, and as a guide to Microsoft's many internal sites, however, highlights its success as an intranet.	
National Geographic Society (United States)	Taking cues from an organization's existing products can save time, boost focus, and help foster an incredible user experience. Witness NG Insider, the National Geographic Society's intranet, which features a clarity and design reminiscent of the Society's well-known <i>National Geographic</i> magazine.	
The Royal Society for the Protection of Birds (RSPB) (United Kingdom)	Just a handful of people maintain The Royal Society for the Protection of Birds' intranet. To judge by its delightful design, however, you'd never know it. This lively website devoted to environmental concerns soars with creativity.	
Volvo Group (Sweden)	A testament to the power of clear design and judicious use of templates, this Volvo Group Information Online (Violin) redesign helped rein in 10 years of uncontrolled growth and over 800 websites. The result helps employees speed through their intranet tasks while enjoying the ride.	

Common Themes Among the Winners

MANAGER SUPPORT ACROSS GROUPS

In years past, designing great intranet sections seemed relatively easy to do. Creating a great across-the-board intranet was more difficult, however, due perhaps to the challenge of getting different teams to work together to make the intranet a shared and well-designed productivity tool. Now, however, organizations recognize that many different teams and managers must be involved in creating a consistent overall design, no matter which department ultimately foots the bill.

PERSONALIZATION

Many entries and almost all of the winning intranets offer extensive personalization features. This is not surprising, considering that today's intranets feature vast information and support widely varied users. Designers use personalization to streamline information delivery and to present the right material, at the right time, to a user's intranet desktop.

Also, compared with previous years, today's designers and intranet teams seem to have more funds available for creating a personalized experience. Organizations' internal record-keeping also seems to have improved, making it easier to accurately track who users are — and thus what applications and information they should have access to — once they've logged in.

E-CARDS

We all receive e-cards over the Web from friends. Intranets have taken a cue; many now make it possible for employees to send greeting, thank you, and recognition cards to colleagues and subordinates.

PHOTO OF THE DAY

The "photo of the day" is becoming a real killer app on intranets, both for people who want to share photos and those who just like browsing them to see a different side of their colleagues. In a typical model, employees submit photos to be posted and an editor selects the daily photo. The chosen photograph is often available on the homepage and in other locations as well. At Microsoft, for example, *Snapshot* appears on the homepage and changes daily, while a *Snapshot* gallery displays photos from the previous five days.

AEP also has a daily photograph on its homepage, and Infosys has a photo of the month. Although RSPB doesn't have a photo of the day per se, the photograph that appears with its *Top Story* news items often shows actual volunteers participating in an event.

VIDEO AND TV

Television has infiltrated the world, and now the intranet. While video and television are still not widespread, we are seeing an increase in television-type intranet offerings. The idea? Video is more personal than the written word. Accordingly, several organizations offer company meetings, reports, and commentary from executives on their intranets. For example, one of our winners, JPMorgan Chase &

Co., uses video extensively throughout its intranet for three primary reasons: training, introduction to new marketing campaigns, and offering wider access to important meetings and forums.

Some sites even have their own TV station. American Electric Power, for example, offers AEP-TV. The intranet team benefits from both a state-of-the-art studio — built to support streaming video and live webcasts — and employees with related proficiencies.

CORPORATE CALENDARS

Now that everyday intranet users — not just techies and content providers — have grown more comfortable with adding information to the intranet, intranet-based calendars are growing in popularity. We are seeing a mix of event calendars and project calendars, all of which are helpful for scheduling and communicating.

The Comcast marketing extranet, for example, offers a marketing events calendar on its homepage. Similarly, Microsoft's *Events Calendar* is a showcase for Microsoft-related events; a simple form lets any employee submit a calendar entry. Finally, RSPB offers *RSPB Diary Dates* on its intranet homepage.

WORLD CLOCK ON THE HOMEPAGE

Coordination among geographically distributed teams is critical. Having a clock that shows the time in various countries can be a tremendous help, especially when trying to schedule meetings and events or determine when people might be at their desks. Many sites — including those at Dow, Infosys, and JPMorgan Chase — let users choose the locations shown on their homepage clocks. World clocks tied explicitly to the geographies in which a company operates help reinforce, for all employees, the fact that they work in a global organization.

IMPROVING THE WORK/LIFE BALANCE

More sites are attempting to strike a better work/life balance, often through classified advertising or groups devoted to specific issues. For example, the National Geographic Society's intranet offers classified advertising and an array of staff news items, including births, volunteer news, and *Critter Corner*, where employees swap animal stories. At RSPB, links to "for sale" and "wanted" items appear right on the homepage, helping draw users in.

RATE STORIES

Reading content is one thing, but helping others choose what to read and even write is also helpful. To this end, intranets are now letting users rate site content. The Dow, Comcast, and RSPB intranets all offer such a feature.

NEWS: INCREASED VARIETY AND CATEGORIZATION

In the past, intranet developers often had trouble obtaining enough interesting news to fill a site. These days, however, we are seeing more and more news, often slotted into various categories, such as industry, corporate, and group-specific. Designers are also making it easier for users to decipher news types through labels and groupings. For example, Dow offers industry news (a *My News* feature) along with news specifically about Dow. Volvo Group has three sections: a main news item, news items about Volvo Group, and news items about the Volvo Group's various companies. AEP Now offers both internal news and external news related to

employee needs. RSPB offers press releases and internal news, and JPMorgan Chase offers both internal and external news.

THEMES THAT REPEAT FROM 2006

It is not uncommon to see themes recurring from year to year among our Intranet Design Annual entries and winners. This year we saw a repeat of several of last year's themes, including:

- Design Standards: Using templates and design guidelines is increasingly common. More than letting various business units simply drop content into pages, many intranet teams are assigning them design responsibilities for various sections. When many people design different sections of the intranet, it's very important that they have standards and templates to follow.
- Content Contributor Training: Increasingly, companies not only
 encourage content contributions, but also make it incredibly easy for
 people to post content. To that end, companies provide content
 training for new contributors, ongoing instruction, and simple
 interfaces so users can post and edit with minimal training.
- Sections Specifically for New Employees: As we saw in the 2006 Design Annual, most companies offer a section specifically designed to meet the needs of new employees. On an intranet, this section essentially tells new employees where to start: what to do first, which forms they need, and who to go to, plus provides a bit of background on the organization. Some sites go a step further, and help orient employees to their office, building, and even geographic area, perhaps detailing local restaurants and nightlife. Volvo Group's Employee Center and the JPMorgan Chase intranet both provide a wide range of employment information designed for both new and seasoned employees.
- Advertising on the Intranet: The best, easiest, and most effective way to make users aware of an intranet feature is to ensure that the feature has a simple, seamless design. Still, users typically don't just browse around an intranet to see what they're missing. Regardless of the design quality, as more and more intranet features are added, users might need help finding them. One solution to this problem: employ creative advertising, like our winners Infosys and RSPB. If you do go the advertising route, though, beware: It's easy to implement this incorrectly. In particular, intranet advertising campaigns can have a negative effect on usability by distracting or annoying users, or directing them to features they don't want or need to use. So, test advertising features before introducing them.
- Intranet Favorites: More and more intranets are letting users save their favorite content pages or tools to a Favorites location often a persistent part of their user interface. This is especially helpful for users who access the intranet from remote locations with scarce bandwidth as it lets them quickly jump to the relevant intranet page to accomplish a task.

- Stock Quotes: For years now, stock quotes have been a common feature of intranet homepages. AEP displays their stock price on the homepage, along with the corporate mission and corporate performance. JPMorgan Chase displays a Market Watch on its homepage.
- **Homepage Polls:** More designers are spicing up their intranet's homepage with user polls. Dow, for example, offers Give us your feedback! — an online quick poll hosted on the homepage. It asks users a short question about something relevant to most Dow employees along with a choice of five predefined responses. Infosys also offers an employee poll. Polls are a fun, small way to get people involved. Also, displaying the answer summary gives employees insight into their colleagues' opinions on various topics.
- External News: Today, external news (for customers) is often linked to or reprinted on the intranet (for employees). Intranets are increasingly employing RSS feeds as well, to make it easier for employees to stay abreast of corporate and external news.
- Acronym Wikis: Knowing what acronyms and initials stand for helps all employees, especially new ones. Many organizations have a list, glossary, or application to help employees cut through the acronym clutter. For example, National Geographic Society offers wikis, one of which houses an NG Lingo section containing most (if not all) of the organization's common acronyms. The JPMorgan Chase intranet also includes acronym definitions in its search results.

American Electric Power

Using the intranet:

American Electric Power (AEP) is one of the largest electric utilities in the US, delivering electricity to more than 5 million customers in 11 states. AEP ranks among the nation's largest electricity generators, with nearly 36,000 megawatts of generating capacity. AEP also owns the nation's largest electricity transmission system, a nearly 39,000-mile network with more 765 kilovolt extra-high voltage transmission lines than all other US transmission systems combined. In 2006, AEP celebrated its 100th anniversary.

Headquarters: Columbus, Ohio (US)

Number of employees the intranet supports:

20,000

Production facility locations: 11 US states,

extending from Michigan to Texas

Sales: \$12.1 billion (2005)

Design team:

In-house (the Corporate Communications department's InterActive Media section)

Members:

William Amurgis, manager of intranet strategy; Joshua McClurg-Genevese, senior interactive designer; Don DeHoff, contract Web developer; David Azusenis, senior IT software developer; Terry Cowans, senior IT systems analyst; Jim Matson, principal IT systems administrator

SUMMARY

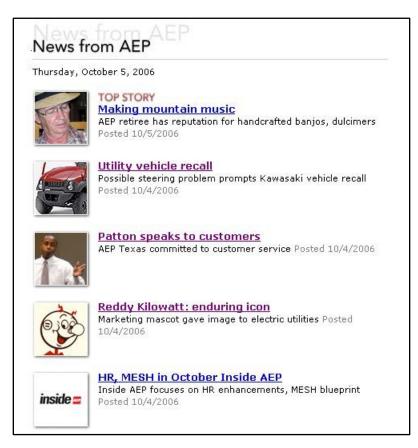
The idea for redesigning AEP's intranet began at a New York City conference, then evolved over dinner with the help of sketches on a paper tablecloth. With this foundation, a world-class design staff, and less than \$100,000 in redesign funds, AEP went on to produce an unbeatable intranet. The intranet — dubbed AEP Now — supports AEP employees and management by enabling timely information exchange and numerous productivity enhancements.

AEP's intranet is a study in how good choices help produce an excellent intranet. In general, some of an intranet designer's most difficult decisions involve choosing what to place on the main homepage. For example, if a designer concedes to every department's requests, the homepage will likely end up too cluttered, making it hard for users to easily locate what they need.

At AEP, designers carefully managed such requests, allowing only the best items — that is, those best for the intranet's actual users — onto the homepage. In the end, they chose a combination of elements that communicate, motivate, and inspire employees.

Before making those choices, however, designers visited employees in their work environment and watched how they actually used the intranet. One surprise: in more remote offices, employees relied heavily on the intranet to read the daily corporate news. (This is not at all uncommon; an intranet's most-used applications often include the news and address book sections.)

Appropriately, then, AEP Now offers internally written news at the top of the homepage in the "News from AEP" section. The heading makes it abundantly clear that the news is written by and for people within the organization. On the front page, a clear thumbnail image — appropriate for the size allocated to it — appears with each internal story. When a story lacks a suitable image, a company logo appears.



Pictured: The homepage's internal *News from AEP* section contains the most relevant news and data, the publication date, and supporting images, along with clear titles and descriptions.

AEP Now also offers news from outside the organization that relates to employees' needs. The *News from Outside AEP* section's clearly written headlines, sub-headlines, publication dates, and sources make it easy for employees to quickly scan for relevant news and stay abreast of energy industry changes and public opinion trends.

Providing employees with trusted, third-party sources for industry information is priceless: any organization offering a public service — not to mention a basic need — must ensure that it maintains high levels of public satisfaction.

Even so, providing this viewpoint does require an investment: AEP subscribes to various individual publishers — including the <u>Copyright Clearance Center</u> — to legally republish external news on AEP Now. A skillful staff writer, well versed in energy industry issues, determines which wire stories are most relevant and harvests news items every day, usually taking an hour or two to scan and republish them.

News from Outside AEP

Montana maps clean coal complex

Diesel fuel and power part of IGCC plant planned in Montana Posted 10/5/2006 - The Energy Daily

NERC rebuffs recommendation for faster reliability audits

NERC says no to reliability audits on a two-year cycle Posted 10/5/2006 - The Energy Daily

Greens blast TXU for 'irresponsible' coal plant plans

Coalition takes aim at TXU's plans to build 11 new plants Posted 10/5/2006 - The Energy Daily

Railroads weigh new basis fees amid federal scrutiny

Federal review of railroad fuel surchages may prompt changes Posted 10/4/2006 - Wall Street Journal

Illinois governor backs electricity rate freeze

Rate freeze in Illinois becomes hot political issue Posted 10/4/2006 - The Energy Daily

Los Alamos breakthrough could cut fuel cell costs

New class of catalysts could lower cost of fuel cells Posted 10/4/2006 - The Energy Daily

Pictured: The AEP Now homepage offers links to pertinent external news items, which a skilled editor harvests and posts each day.

In addition to the homepage news, the intranet's *News & Events* page offers internal and external news from the past seven days. The page also offers a link to the corporate calendar.



Pictured: Beyond the homepage news, the intranet offers a *News & Events* page with internal and external news from the past seven days. The page also includes links to the corporate calendar, a news archive (extending back to 1996, when the first intranet appeared), various internal publications, an e-mail subscription service, and more.

Knowing that the average employee visits the intranet at least once per day, the designers took the opportunity to use AEP Now as a tool for unifying and inspiring employees. Witness the primary corporate mission statement, which appears in the upper-right part of the homepage:

Bringing comfort to our customers, supporting business and commerce, and building strong communities.

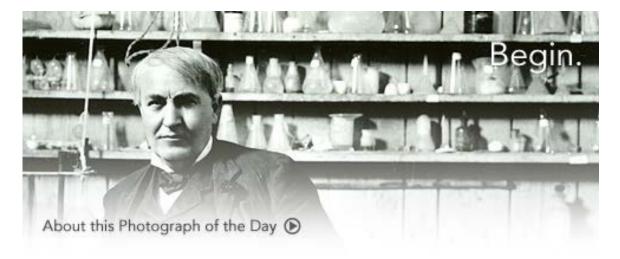
Users can click a link to read more details about the corporate mission. While displaying a mission statement might seem like a small feature, AEP dedicates a large part of the homepage — and "above the fold" real estate at that — to supporting the company's mission, and it's worth it. Reminding employees about the company's goals, and unifying their efforts, helps support employees in making the right choices throughout their day.

The homepage also includes corporate performance measures, which range from the company's stock price to injury severity rates. To obtain buy-in for listing these metrics on the intranet, the redesigners sat down with the necessary business groups and discussed the benefits of giving this data prominent homepage placement. The moves have gained widespread acceptance and even praise. For example, the head of AEP's Safety & Health group lauded the intranet team for featuring injury severity rates so prominently, making it clear to all employees that the company takes safety at least as seriously as its earnings. Unfortunately, most corporate performance measurements (aside from stock price and the number of customers without power at any given moment) are only updated monthly. Even so, this candid look at the organization's performance on several fronts is highly effective at helping reinforce corporate goals and indicating what might need improvement.

Corporate Performance		
Customer outages	5,967	
Injury severity rate	25.65	
Power plant availability	92.13%	
Earnings per share	\$2.73	
SAIDI	191.5	
What do these numbers	: mean?	

Pictured: The intranet homepage includes several corporate performance indicators, from customer outages (customers currently without power) to earnings per share.

The intranet also includes lighter items to further engage employees. For starters, the *Photograph of the Day* is the first major item on the homepage. The senior interactive designer chooses the photographs, which vary enormously in subject matter, on the basis of quality and beauty. The designer also writes a brief caption for each image. Many of these photos are simply awe-inspiring — especially those of a historical nature. AEP has a substantial photograph repository to draw from, and the many historical images nicely supported the organization's 100th anniversary celebration in 2006.



Pictured: The homepage *Photograph of the Day* draws from AEP's extensive inhouse archive of current and historic photographs, such as this image of Thomas Edison.

The homepage also displays a *Quote of the Day* and *Fact of the Day*, which are fun, below-the-fold items. AEP's intranet manager selects these by scanning the day's business and industry news. This section also includes a link to a *Why did we choose this?* disclaimer stating that while AEP might not agree with the quote, it's an opinion from the public domain that's worthy of attention. Such efforts can help inspire employees to address or refute perceived issues; in any case, employees benefit from numerous perspectives on their industry.

Quote of the Day

"We haven't found a major use of electricity for which there aren't great opportunities for savings."

-- David B. Goldstein, director of energy programs at the Natural Resources Defense Council and a recipient of a MacArthur Foundation award for his work on applianceefficiency standards

Source: the Wall Street Journal

Why did we choose this quote? Previous quotes...

Fact of the Day

Compact fluorescent bulbs can often cut lighting costs by 75%, and they last at least eight times as long as regular incandescent bulbs.

If each U.S. household replaced one regular bulb with a compact fluorescent, according to the Environmental Protection Agency, consumers would collectively save more than \$600 million a year. The energy saved, meanwhile, would be enough to light seven million homes, and the greenhouse-gas reductions from power plants would be equivalent to taking one million cars off the road.

Source: the Wall Street Journal

Why did we choose this fact? Previous facts...

Quote of the Day

"Who wants an ugly power line? I feel if you need electricity, put it in your own backyard. It's not going to be used by us."

-- Shirley Wilt, 60, of York Haven, Pa., who fears that AEP's proposed 550-mile line from West Virginia to New Jersey might slice through part of her 3-acre hillside property, passed down from her greatgrandfather

Source: USA Today (see full article)

Fact of the Day

Demand for electricity is predicted to jump 19% in the next decade. But miles of transmission lines will likely rise just 7%, the North American Electric Reliability Council (NERC) says.

Source: USA Today

Why did we choose this fact? Previous facts...

Why did we choose this quote? Previous quotes...

Pictured: Examples of the *Quote of the Day* and *Fact of the Day*, drawn from different days.

Current weather conditions with links to five-day forecasts, national radar, and extreme weather events appear just below the homepage fold. Employees can customize weather information to any of AEP's 50 largest office locations.

At many organizations, displaying weather on the homepage would be an inefficient use of valuable space. For the electric power industry, however, weather is crucial operating information. Inclement weather often produces downed lines and outages,

while extremely hot or cold weather can produce a spike in demand and tax the transmission network. No surprise then that AEP even has on-staff meteorologists to provide forecasts and identify market opportunities. Also not surprisingly, the intranet weather sections consistently see some of the site's highest traffic levels.



Pictured: Weather information is crucial for many energy industry employees.

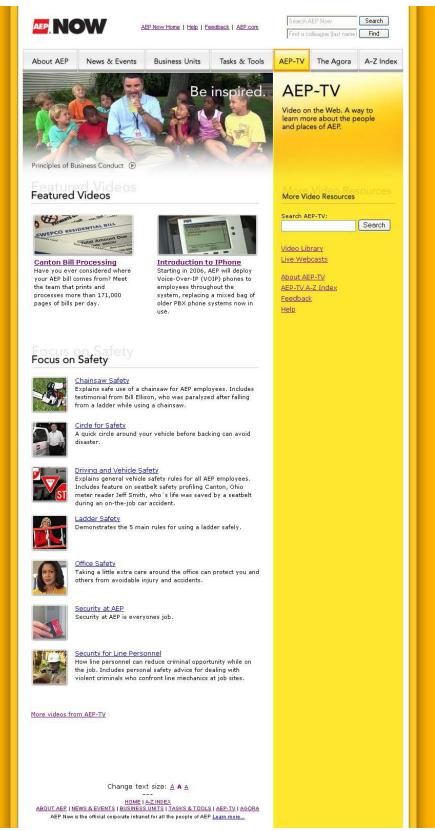


Pictured: The AEP Now homepage offers extensive features, including internal and external news, *AEP-TV*, and information about the corporate mission and corporate performance, plus relevant daily quotes and photographs.

Beyond well-selected images and the written word, AEP Now also communicates via another medium: *AEP-TV*. Creating an entire corporate television channel, even with an intranet team's help, is no small feat. AEP's intranet team, however, has the support of senior management, and this makes a world of difference.

To produce *AEP-TV*, the managers of three Corporate Communications department sections — the Intranet, the Streaming Media Group, and Video Services — work together. At AEP, these groups often support each other, making *AEP-TV*'s development much easier. What also helps: the managers have similar corporate interests (communicating relevant information to employees, and helping them do their jobs) and report to the same director. Finally, AEP has its own state-of-the-art studio, built to support streaming video and live webcasts.

In all videos, the managers must ensure that they're conveying the right information and projecting an appropriate corporate image. For example, if an employee in a video is not wearing the proper personal protection equipment, such as goggles or gloves, the scene must be edited or re-shot.



Pictured: AEP-TV is a joint production of three teams that are wholly invested and report to the same director.

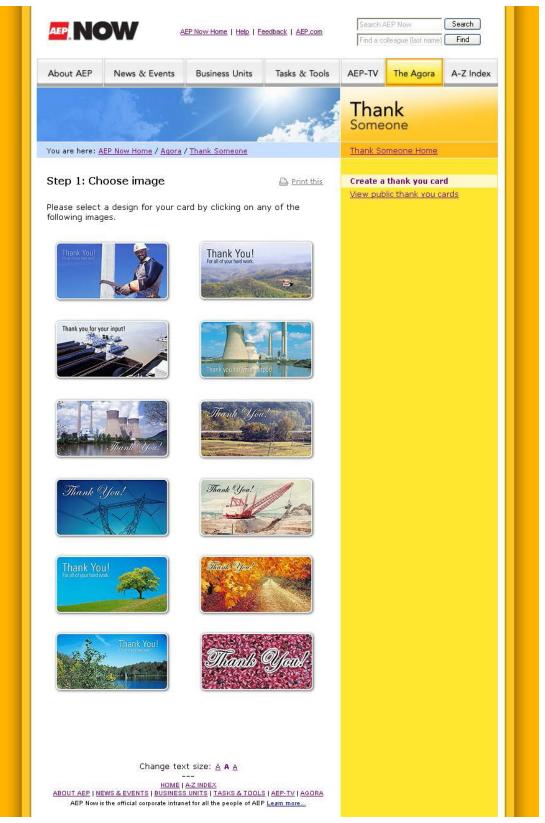


Pictured: A details page for a particular video includes options for watching the video, as well as ordering, e-mailing, or downloading it.

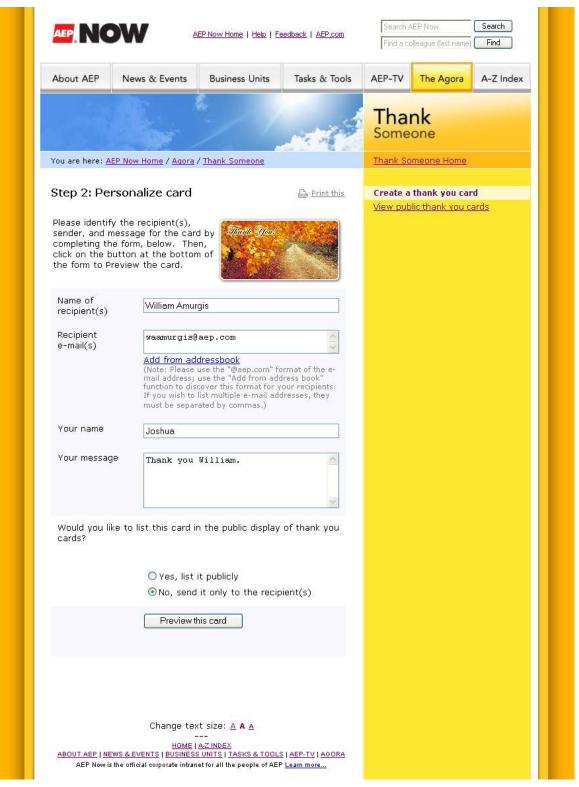
What better way to make a colleague feel good than by praising his or her work? The AEP intranet helps employees do this by offering online thank-you cards. Designers developed these e-cards to encourage expressions of appreciation for a job well done. Appropriately, this feature doesn't include birthdays or other life events.

This approach, and the offering itself, is beneficial for several reasons, including:

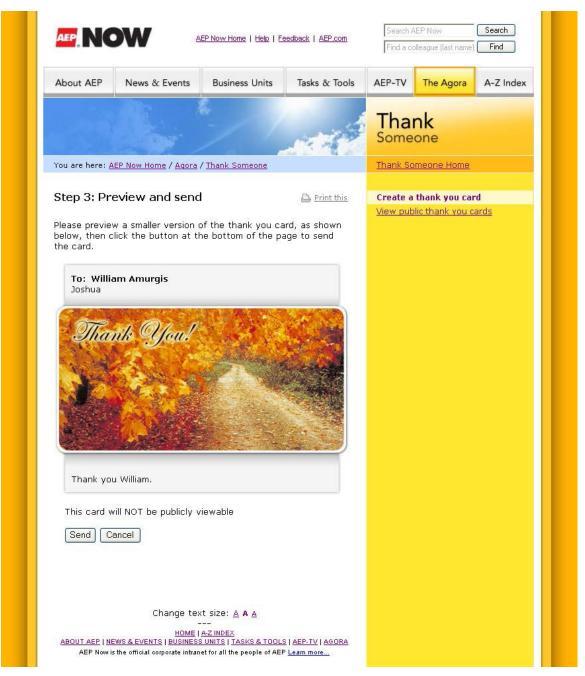
- Often, employees don't have the opportunity to thank a colleague in person, but will do so in an online setting.
- The recipient is notified by e-mail, but the cards can be made public.
 As a result, those thanking someone can also let others including managers know about a job well done.
- Offering the cards reminds people to thank colleagues, even if they don't actually send a card.
- The cards are attractive, and relate to the energy industry and energy jobs: they show power lines, cranes, and even someone working high atop a pole. In other words, the card images are not just generic smiles, hearts, and flowers.
- The interface for sending a card is fast and easy.



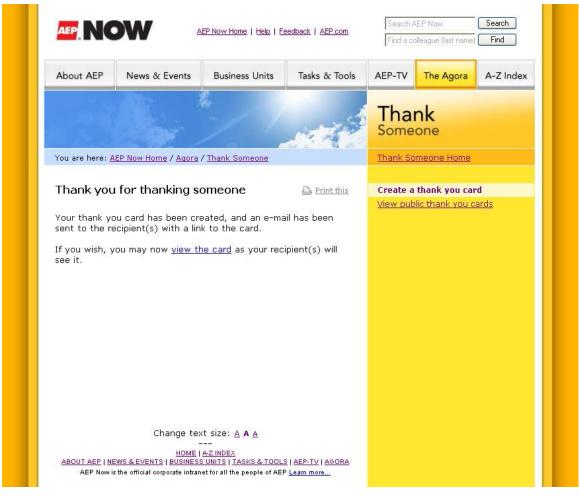
Pictured: Available thank-you card images are not only highly attractive, but also relevant to the energy and power industry, as well as specific jobs.



Pictured: After selecting a card image, users fill in a simple form, indicating the recipient, sender, sentiment, and whether the card should be made public.



Pictured: A final preview screen allows a sender to proof the card and adjust whether the card will be public or private.



Pictured: After sending the card, a confirmation screen thanks the sender — a nice touch. The sender can also view the card as the recipient will see it.

To: William Amurgis

From: Joshua



Thank you William.

Print this card | Learn more about AEP Now's online thank you cards.

Pictured: The e-card process is complete when the recipient sees the card with the image, sentiment, and sender's name.

The site includes one special feature at the bottom of intranet pages. Designers added a *Change text size* option, remembering that with an aging workforce comes a collective deterioration in eyesight. This is a highly useful feature, as anyone over 40 will generally attest.

Change text size: 🛕 🗛 🛕

Pictured: Designers added different sized A's to the bottom of all intranet pages, making it easy for people to view the text in a larger or smaller size.

In closing, AEP's intranet benefits come from thorough planning, management support, and its designers, who have both substantial design expertise and wideranging industry knowledge and experience. AEP Now informs and inspires employees, beginning on the homepage and continuing throughout the site.

URL AND ACCESS

The intranet's URL is http://AEPnow/. "The name was chosen 10 years ago, at the intranet's inception, to emphasize the immediacy of the medium relative to print," notes William Amurgis, AEP's manager of intranet strategy. By default, AEP Now is the start page for all employees' browsers, though they can change the start page.

To better communicate the intranet's purpose, and hopefully retain users, the intranet prominently features the word *Begin*. "Even if employees open their browsers with the intent of going elsewhere, we wish to convey fresh, compelling information before they continue on their way," says Amurgis.

An abridged intranet version is also available on the Internet (http://AEPnow.com/), and features news and benefits-related information. This site, however, is maintained separately, and often results in duplicate effort. "Our goal in 2007 is to enable access to the internal version from the outside, and also to create a mobile version optimized for handheld devices such as the BlackBerry," he says.

CONTENT MANAGEMENT

CMS, Templates, and Directing Design

The AEP content CMS is largely custom-developed. Still, the database-driven CMS evolved organically, and is due for a redesign.

To modify content, content managers either use custom administrative interfaces or directly edit individual Web pages.

Departmental sub-site owners maintain their own intranet portions; the intranet team recommends that they use Macromedia Contribute, and several dozen currently do. "This page editor enables site owners to maintain the content of their sites, but shields them from altering the design or navigation," says Amurgis.

As this arrangement suggests, the core intranet team is somewhat separate from the sub-site teams. "I manage the core intranet, which consists of broad, corporate information, while the business units are responsible for their own sub-sites," he says. Some business units request direct help from the core intranet team. Others use templates designed by the core intranet team, while still others completely build their own sites — and occasionally restrict access to members of their own business unit. "More often than not, though, business units come to us and ask us to build their sites," he says. That approach is preferable, since it ensures greater consistency of intranet page design.

Manual News Feeds

In terms of the outside news featured on the site, the team intentionally eschews automated news feeds. "We subscribe to news services, and pay for the rights to republish news, but we choose and cut/paste the stories ourselves," says Amurgis. "I've never seen an automated news feed that I really liked. Either the volume was off — too much, too little — or the display was convoluted. I prefer our manual approach. To me, there's no automated replacement for a skillful editor who knows the key issues and can determine which stories are most relevant."

For harvesting and republishing stories, Amurgis says AEP maintains agreements with the Copyright Clearance Center and various individual publishers. One AEP Corporate Communications staff member — who's not actually part of the formal intranet team — harvests stories daily. "Personally, I love that we're able to offer so much external news, since many of the company's decisions are understandable in

the context of broader developments within our industry or the economy. We don't operate in a vacuum, and public opinion is vital to us since we offer a public service and a basic human need," notes Amurgis.

TECHNOLOGY

Core Technology

The intranet was built primarily using Photoshop, Dreamweaver, and .NET, and — by design — no portal software. "To us, technology is just a tool to help us achieve our vision — we never let the technology dictate the design to us," says Amurgis. "This is one reason we abhor portal software."

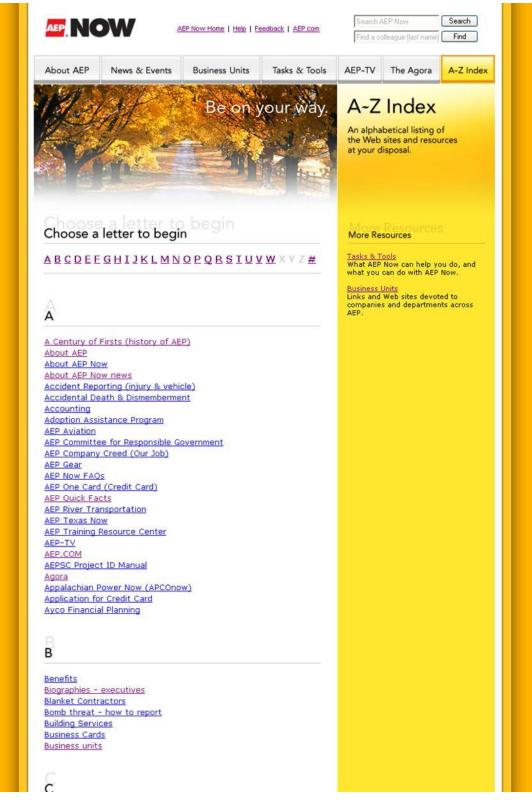
The intranet runs on three Web servers, each of which includes Windows Server 2003 R2 64-bit, four dual-core AMD 2.2 GHz processors, 8 GB RAM, Gigabit NIC, and load-balancing via Cisco Content Switches. According to Jim Matson, a senior architect within AEP's IT group, "content is uploaded via FTP to a central staging server where replication software pushes it out to all production Web servers." The blog and discussion environments run on Movable Type software.



Pictured: The *Discussion of the Week* page, showing several responses to the week's question. AEP uses blog software to manage the discussion, and prefills an employee's identity to avoid potential abuse.

The site's *Search* is supported by an internally hosted Google Search Appliance. How well does the appliance work? "Frankly, I'm pleased with the Google search," says Amurgis. The appliance, installed about three years ago, replaced a "substandard search" tool. Adding a feature with the name "Google" in its title was — at least partially — an attempt to win users back to intranet search, because many had grown to distrust it. In addition, "I realize there are other search tools out there, maybe even with better features, but the Google search interface is familiar and comfortable," he says.

Interestingly, the AEP intranet's A–Z Index and navigation regularly receive more traffic than the search box — a sign that the index and navigation are well designed for users' needs.



Pictured: The A–Z Index is an alphabetical directory of internal and external Web sites. In previous versions of the corporate intranet, this was the only form of navigation available beyond a few quick links.

Ajax Workaround for IDs

The site currently employs Ajax, albeit only behind the scenes. "In the *My Tasks & Tools* area of the *Tasks & Tools* page, we needed the ability to sense the identity of employees, in order to display their custom list of links," says Don DeHoff, AEP's contract Web developer. "Previous experience told us that if we tried to directly detect an employee's network ID by turning off anonymous access to this page, some might receive a login prompt. This was undesirable, since we wanted even those employees who did not or could not login to the network to benefit from the common tasks we listed for them."

To circumvent this problem, DeHoff hammered out a hybrid approach using Ajax. "When employees first encounter the *Tasks & Tools* page, they are presented with a message saying they have no tasks defined, and a link to *Manage your tasks*. This links to a page where we detect the user's network ID, thus eliminating the possibility of a log-in prompt on the homepage," he says.

This process also saves a cookie with the detected ID to the employee's PC. Then, on future page visits, JavaScript attempts to read the cookie. "If it finds this cookie, it requests the employee's custom task list, via an out-of-band call to a .NET page, which queries the employee's tasks from the database. These links are then displayed on the page using JavaScript to replace the contents of a tag," he says.

GOALS AND CONSTRAINTS

Goals

AEP had three specific goals for the AEP Now redesign:

Make the site more attractive Decrease page download times Create a more coherent navigation system

Constraints

In terms of constraints, "I do not believe in constraints," says Amurgis. "Most people will tell you that time, staff, and money are key constraints. I respectfully disagree. We can always prioritize whatever resources we have, based on a clear understanding of corporate strategy and values, and postpone — or shed — work that is deemed to be lower priority. In other words, we will do as much as we can, and ensure that what we do is of the highest value."

BASIC INTRANET FEATURES

The AEP intranet offers many features, including:

- Corporate and industry news, updated several times each workday
- Market and weather feeds
- Site search, employee lookup, and an online org chart
- An extensive on-demand video library and frequent live webcasts
- Time and expense reporting, benefits management, and travel tools
- A photo gallery and other materials to celebrate AEP's centennial
- Collaborative tools, including discussion, items for sale, and online thankyou cards

USERS

AEP has almost 20,000 employees in 11 US states, extending from Michigan to Texas. These employees run power plants, manage and maintain the power grid, serve power customers, and staff all related corporate and administrative functions.

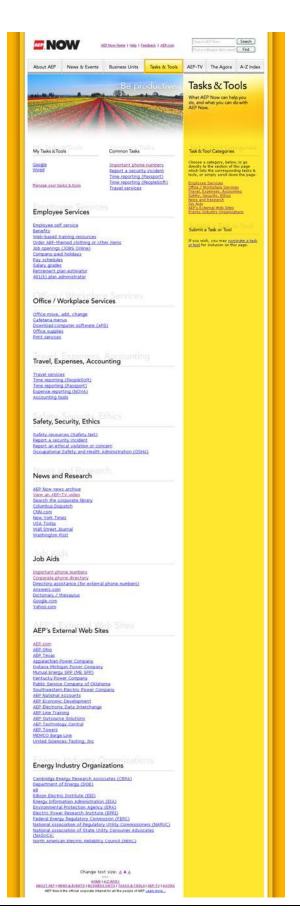
USER TASKS

"Common tasks, to me, are synonymous with corporate tasks," says Amurgis. "That is, they should appeal to everyone across the great expanse of our corporation, providing value to all while also instilling the sense that we are all part of a larger whole." Accordingly, all intranet features, including news, the stock price, AEP-TV, About AEP, Find a Colleague, and the Agora collaboration area should reinforce the notion of a larger whole. "No matter the location — and AEP serves some very small communities — you can feel a part of the entire corporation through AEP Now," he says, adding that all the same features and content are accessible regardless of office location.



Pictured: The *Find a Colleague* page, showing the information returned after searching for a particular colleague. The page includes links to the target person's e-mail address, location in the online org chart, and supervisor.

The most common employee intranet tasks are reading the news, time-reporting (a requirement for all employees), accessing market information, and checking the weather. The business unit sub-sites support most mission-critical employee tasks, including power-outage management, power plant availability, and benefits enrollment. For the core intranet, "our focus is on the common, corporate tasks — and to be a conduit to the business-unit-specific tasks," says Amurgis.

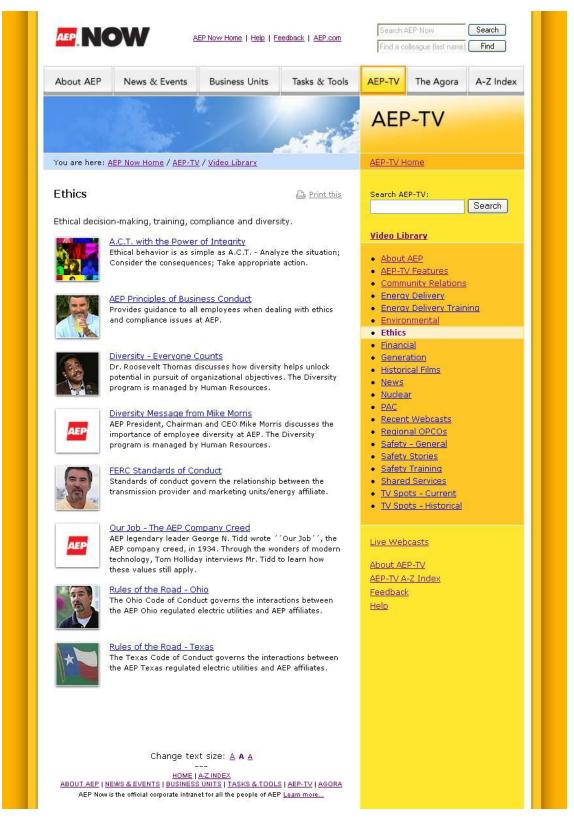


Pictured: The *Tasks & Tools* page features quick links to the most common tasks (organized by subject area) and lets users manage their personalized links.

One of the most widely used intranet features is company, industry, and market news. "News stories are posted several times a day, from both internal and external sources," says Amurgis.

One especially innovative feature is the *AEP-TV* streaming video library, which includes more than 500 archived videos, ranging from vintage company commercials to safety techniques to interviews with key company officials. "We also stream live webcasts to all employee desktops, such as call-in discussions with our executives whenever we release quarterly earnings," says Amurgis. The company's extensive network bandwidth resources help make all of this possible.

The company typically runs a new, live webcast once a month. The chief executive officer also hosts occasional town hall meetings, and takes live call-in or e-mail questions from employees. (The intranet team attempts to answer outstanding questions in a subsequent news story.)

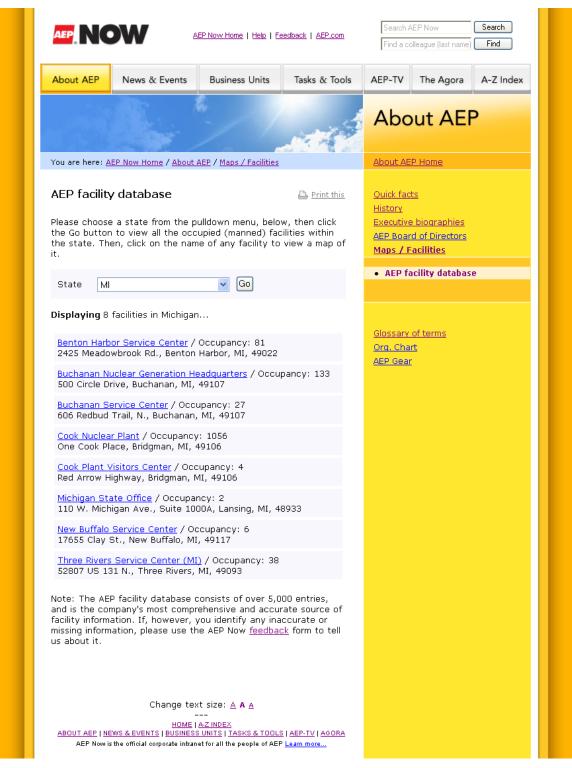


Pictured: A view of the AEP-TV video library, with ethics-related videos highlighted. Each video teaser contains a thumbnail image and a brief description.

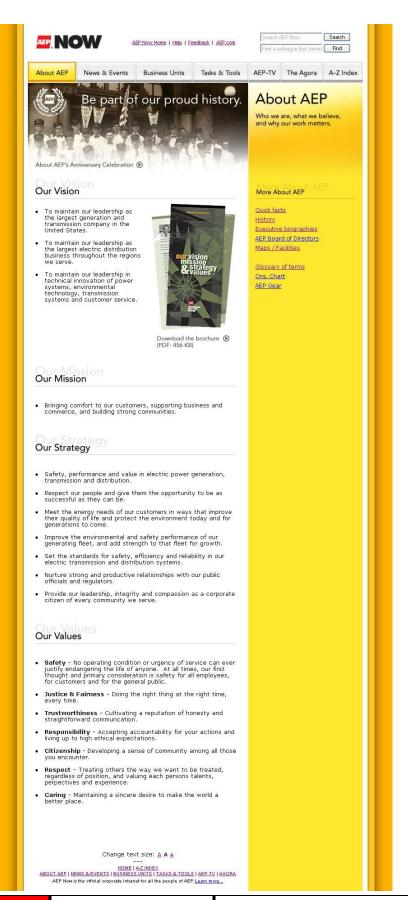


Pictured: Stills from the "Principles of Business Conduct" video. In this video, children build and operate a lemonade stand while the moderator explains how any business — regardless of size — must adhere to such basic principles as safety, respect, and trustworthiness to be successful. The dedicated *AEP-TV* group helps maintain high video production standards.

Other interesting features include a facility database containing maps to company offices; Find a Colleague, which includes direct links to supervisors' and colleagues' positions in the company org chart; and various new collaboration tools, including online thank-you cards. While no section is dedicated solely to new-employee orientation, "a new section in our redesign, About AEP, is partially intended to acquaint new employees with our company," notes Amurgis.

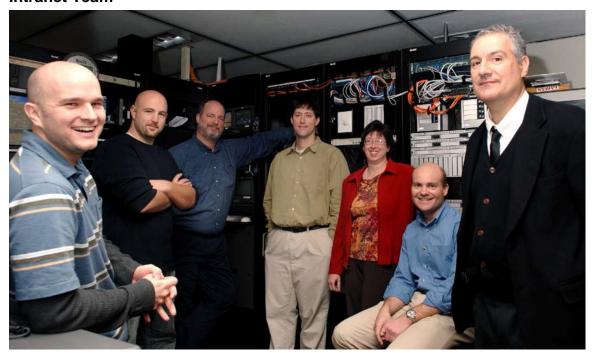


Pictured: Results from a query of the AEP facilities database, showing AEP's offices in Michigan. Each location name links to Google Maps for directions. AEP's employees repeatedly asked for such a feature, which AEP provided after it "uncovered" an existing corporate database containing the necessary information. Feedback has been overwhelmingly positive.



Pictured: The About AEP page features the company's vision, strategy, executive biographies, history, maps, glossary, and more. It also helps orient new employees.

Intranet Team



Pictured: (from left) Joshua McClurg-Genevese, Don DeHoff, Tim Nicholson, Dave Azusenis, Terry Cowans, Jim Matson, William Amurgis

Today, AEP's core intranet team — which is responsible for the intranet's common, corporate components — consists of a manager, a senior interactive designer, a contract Web developer, and developers from the IT department. Others from IT assist with server administration and related work, and two additional Corporate Communications staff members write and post intranet news stories. The manager, however, is the only employee devoted full-time to intranet matters.

AEP's Corporate Communications group maintains the intranet and founded it in 1996 out of its Video Services group. "The folks in that section were responsible for new media — mostly video — and saw the potential of Web technology inside the company as a communications tool, and as a distribution channel for video," says Amurgis. "This section morphed into a broader Interactive Media section in 2000, as part of a company merger, encompassing print, video, streaming media, and Web."

AEP's core intranet team is, and always has been, relatively small, says Tim Nicholson, AEP's Interactive Media director. "At no time did the core group that created and maintained the site number more than about four or five people — often less."

The intranet's primary focus is, and has always been, corporate news. "I believe I can always tell who owns an intranet — IT, HR, marketing, etc. — by taking a quick glance at its front page. At AEP, the company news occupies the most prominent position, exposing Corporate Communications as the owner," says Amurgis. "From field studies and conversations with employees, we've learned that the news is the most popular part of the intranet — partly because it helps employees remain connected to the greater whole, and partly because it's always been prominent." Simply put, he says, employees have come to associate the corporate intranet with prominent news coverage.

The intranet budget is lumped into the general Web support budget. Nicholson estimates that the annual staffing budget for the intranet and all external websites is approximately \$600,000.

BACKGROUND

AEP's intranet didn't start out as such. "The idea for an internal, online communication platform actually started back in the command-line, bulletin board service era," says Nicholson, who himself helped found AEP's original intranet. "A team of AEP employees attending an Ohio State University management program developed a plan to create an employee bulletin board system. During a visit to AEP's IT group, a young staffer scoffed at the idea and said, 'Why don't you just do an intranet?' It was the first time members of the team had heard the term, but they quickly agreed it was the way to go."

Backed by a group from Corporate Communications' Video Services section, as well as the IT department, intranet development began in 1995; it launched in 1996. "In the beginning, the site was primarily used to present company news and information, and HR information," says Amurgis. "Soon, other departments began developing their own sites, but because all Web development was decentralized, these sites varied greatly in design and usefulness." Still, thanks to centrally designed templates — which many departments used — much of the intranet's design is now standardized.

Befitting the intranet group's video roots, the current intranet sports extensive video capabilities and offerings. "We have our own studio, built from the ground up to support streaming video, live webcasts, and even links with other broadcast networks — it's quite state of the art," says Amurgis.

The company considers webcasts crucial for maintaining a two-way dialogue between senior managers and employees across the company's 11-state territory. Video is also well suited to some executives' communication styles.

DESIGN PROCESS AND USABILITY ACTIVITIES

Redesign Kicks Off in New York Diner

When the intranet first began in 1995, "any business unit could create its own site with any design and, to some extent, this philosophy still exists today," says Amurgis. "There is no corporate edict or mandate that all internal Web sites must follow the corporate template or even honor any design guidelines. However, the popularity and professional design of AEP Now tends to convince business units to adopt the corporate look for consistency. Consider it a carrot rather than a stick."

The latest redesign began "at a Nielsen Norman Group conference in April 2005," says Amurgis, which he and AEP's senior interactive designer, Joshua McClurg-Genevese, attended. "Having seen other intranets presented at the conference, and realizing that our own intranet hadn't changed since 2002, we decided then and there to begin the redesign process. We spent an evening at a diner, discussed the possible architecture, and sketched the new design right on the tablecloth — actually, it was 'table paper' — and, yes, we still have the paper."

Amurgis says that while there was no specific business driver — "we simply wanted to incorporate a new architecture, a new design, and several new features" — the redesign impetus had been brewing for months. One push was informal benchmarking; another was seeing the state of other intranets. Other companies often ask to see AEP's intranet, and it typically lets them so long as AEP's team can see the requesting company's intranet as well. Amurgis says these exchanges produce a wealth of ideas.

The intranet team also regularly tracks intranet feedback, monitors Web traffic flows, and records requested pages from employees, all of which foster intranet improvement ideas.

Finally, "we conducted informal field studies to see how people actually use AEP Now," says Amurgis. "To our surprise, people in the most remote locations rely on it daily to read the corporate news."

For the redesign, then, AEP had three goals: to make the intranet more aesthetically attractive, to make pages load more quickly, and to refine the navigation system. "Our previous design relied too much on its A–Z Index," says Amurgis, "which had grown so big as to become unwieldy."

From Tablecloth to Mock-Up

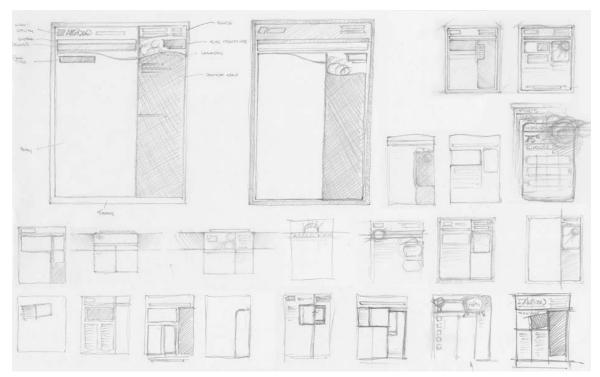
With all this in mind, the redesign began rather spontaneously — and was honed through subsequent iterations. Then, "as

1. TOP 25 SEARCHES (KEYWORD & QUERY)						
2. For AEP Now intranet (September 2006)						
	Keywords	Hits	Queries	Hits		
1.	аер	19108	hr	6643		
2.	news	12112	more+news+ from+aep	6184		
3.	from	12074	safety	5926		
4.	more	12044	generation	5879		
5.	hr	6693	Energy+Delivery	5874		
6.	safety	6440	more+news+ from+outside+aep	5859		
7.	generation	6056	jobsonline	5858		
8.	help	5953	aep+now+help	5856		
9.	energy	5953	oms	374		
10.	now	5895	yahoo	297		
11.	delivery	5882	weather	182		
12.	outside	5862	yahoo.com	121		
13.	jobsonline	5858	jobs	97		
14.	com	1117	dell	93		
15.	yahoo	585	password	90		
16.	plant	486	Yahoo search	80		
17.	www	428	google	77		
18.	oms	418	password reset	77		
19.	of	380	cnn.com	74		
20.	weather	356	pso	72		
21.	power	339	401k	65		
22.	training	331	maps	62		
23.	employee	291	peoplesoft	57		
24.	policy	286	mapquest	57		
25.	password	271	scholarship	52		

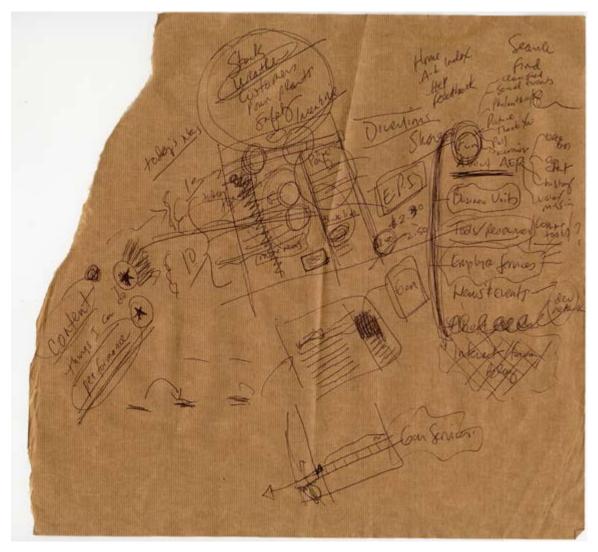
the design moved from a tablecloth to more professional pencil sketches to Photoshop design concepts, we began testing with employees," says Amurgis. "We were most curious to see if they could recognize the new navigation, if the labeling was clear, and if they could perform certain common tasks. We were pleased to see that the design and navigation held up well, although we did tinker with the labeling."



Pictured: The previous version of the AEP homepage, which launched in late 2002. This version lacked an architecture, but provided prominent access to corporate news — something users requested, and continue to request, to stay connected with the company.



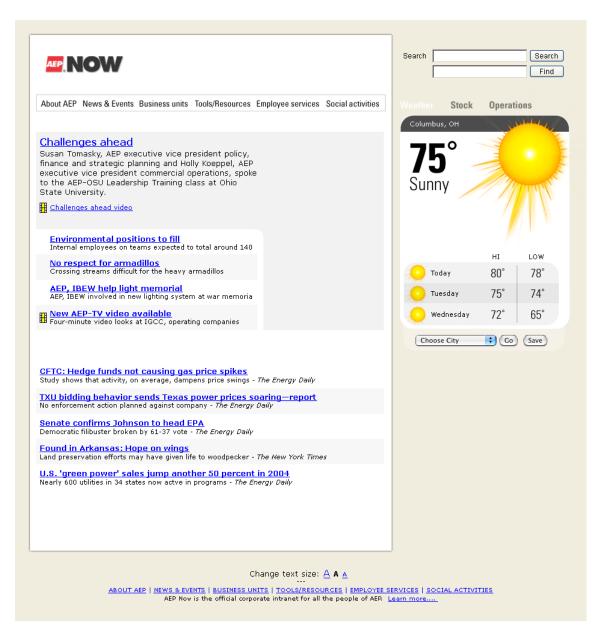
Pictured: Early pencil sketches of the new design by McClurg-Genevese, AEP's senior interactive designer.



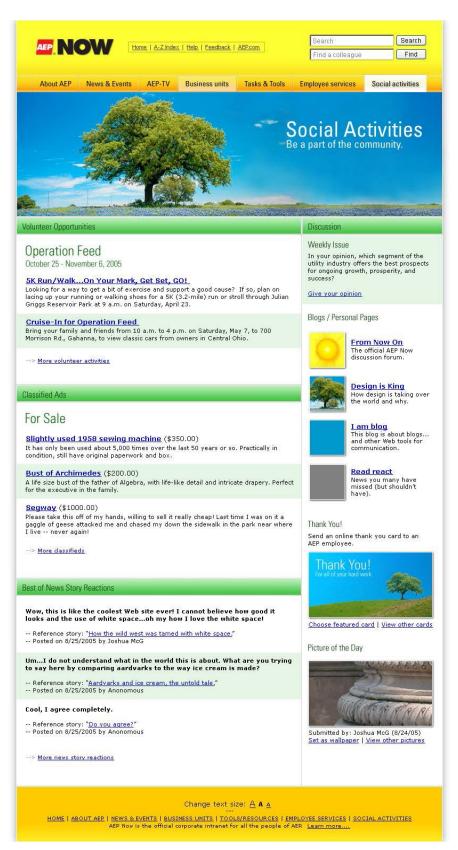
Pictured: The original site architecture, as sketched on a New York diner's paper tablecloth. "Yes, it's a muddled mess, but this is where the redesign officially began," says Amurgis.



Pictured: A more coherent version of the original AEP intranet architecture, as transcribed from the tablecloth sketch. Points of note: to the left, confusion over what to call the section that was eventually named the *Agora*; and to the right, a series of notes including tools and techniques to avoid.



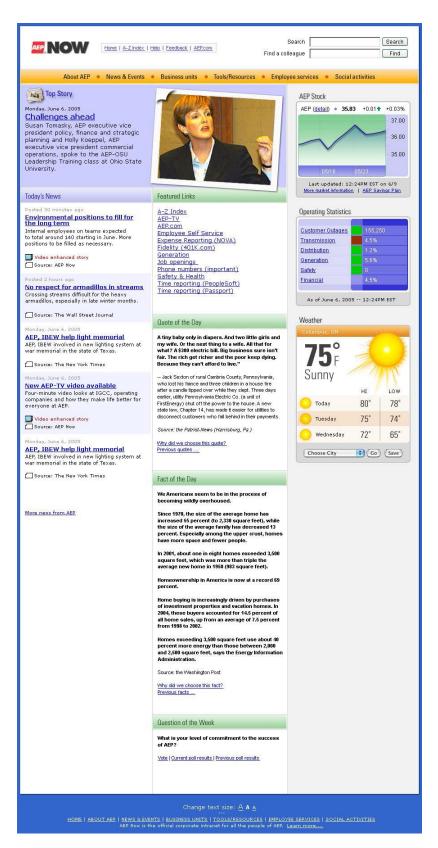
Pictured: Photoshop design iteration 1 (of 6).



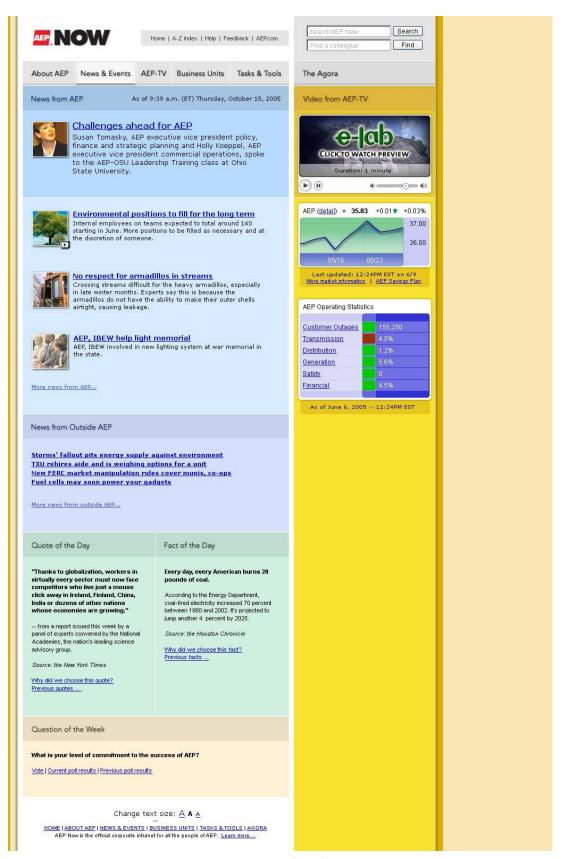
Pictured: Photoshop design iteration 2 (of 6).



Pictured: Photoshop design iteration 3 (of 6).



Pictured: Photoshop design iteration 4 (of 6).



Pictured: Photoshop design iteration 5 (of 6).



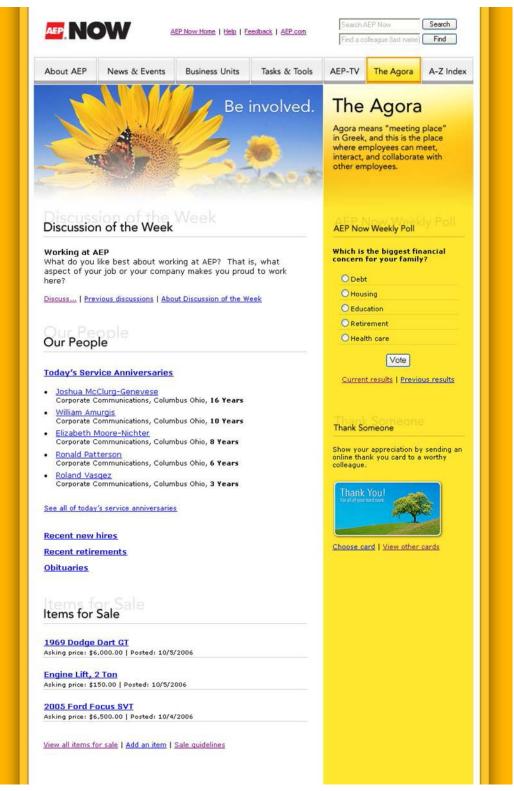
Pictured: Photoshop design iteration 6 (of 6).

Going Greek

When tweaking labels, one interesting challenge the team faced was how to name a new collaboration space. "Admittedly, collaboration has always been an obsession of mine," says Amurgis. "To me, the Web's true value comes not from the availability of information, but the immediate connections it permits between people."

Yet, what should such a space be called? The design team quickly proposed, tested, discarded, and proposed anew multiple names for the collaboration space. "We started with *Fun*, and quickly realized that many managers wouldn't like that connotation, then moved to *Social Activities*, then *Meeting Place*, but the labeling was often misunderstood," says Amurgis. "For example, some employees thought they could go to *Meeting Place* to schedule a conference room."

"So, in a burst of insanity, we decided to go with a nonsense word and labeled this area the *Agora* — which, coincidentally, is the Greek word for meeting place," he says. "When we tested it, to our surprise, employees quickly noticed this label, wondered what it might be, and — overcome by curiosity — clicked on it to find out. Once there, we define it, and they understand."



Pictured: The *Agora* is a place where users can take a weekly poll, participate in a weekly discussion, peruse classified ads, send online thank-you cards, and more. While initial names for the section included *Fun*, *Meeting Place*, and *Collaborate*; the team finally settled on a "nonsense" word.

HOW AEP DESIGNED ITS INTRANET

As told by Joshua McClurg-Genevese, senior interactive designer at AEP

From my perspective — as the person responsible for the visual and interaction design of AEP Now — five things especially influenced our design:

1) Fixed width:

With this redesign, we replaced the previous, fluid layout with a more fixed-width design. While we believe fluid designs — designs that automatically stretch to fill the available browser space — do make full use of available screen real estate, they often cause layout issues that result in less readable, and thus less usable, content. Often, content can be stretched too wide to be easily read, and text can wrap around images in unconventional ways, obscuring the text or prematurely forcing it off the page. Weighing these issues, and after identifying the dominant screen resolutions our employees currently use (800x600 and 1024x768) we decided to create a fixed-width design for the former dimensions to avoid any potential problems.

2) Visual dominance

We employ visual dominance techniques to create a visual hierarchy that always cues employees to their location and to the nature of the content they're viewing. So, the top-most portion of our pages are predominantly visual, and filled with graphic navigation — which is global, and therefore consistent — plus imagery to help employees understand where they are in the site, and what they will find on the page. As you move down the page, smaller graphical elements denote major breaks in content. Finally, the content itself is, of course, less graphic and more dynamic. This hierarchical approach helps establish and maintain a visual language for best supporting user interaction.

3) More white space

White space is an underutilized Web design element. The traditional idea — cram as much information as possible above the "fold" — is a fallacy. Vertical scrolling of a page is now so commonplace as to be almost second nature. In the new design, we implemented layout constraints that maintain generous amounts of white space. We try to avoid any visual distractions, such as borders or lines. By using negative space, we also tightly confine text. All this results in a much cleaner layout, where content is the focus.

4) Consistent interactions

Consistency is a virtue, and we try to keep an employee's basic AEP Now interactions as consistent as possible, to establish and then meet expectations. For example, all forms and form elements have a consistently designed layout, and also respond to user input in the same manner. So, if employees fill out a feedback form, they should expect the same types of system responses as if they were ordering a video. This approach helps ensure a consistent, expected, and hopefully enjoyable — or at least not frustrating — user experience.

5) Aesthetic choices

For our redesign, several aesthetic decisions drove how pages ultimately look. For example, we wanted a brighter and more visually appealing aesthetic, as well as a more contemporary and friendly feel that represents the company in a positive light. Among other things, those considerations drove us to adopt a gold color palette, and to include large images on core pages.

Putting Design into Practice

How did the above guidelines — which influenced AEP's approach to design — manifest in the intranet's final design? Perhaps the most high-profile example involves the intranet's navigation placement. "With Joshua's guidance, we chose to place our navigation — located on the interior pages — to the right, rather than the left as seems customary," says Amurgis. "Our logic was, first, when people use the browser's print function, their printer may cut off part of the right side of the page, and we'd rather lose navigation than content. Second, the right-hand navigation appears next to the browser's scroll bar, thereby offering a more ergonomic and economical use of mouse movements — scrolling and linking occur in the same general area."

Launching a Preview Site

The design progressed throughout the summer of 2006. On September 7, 2006, the intranet redesign team used a news story to announce the new intranet to employees, and invited them to use a fully functional pre-production version of the site starting on September 21. "This preview period proved beneficial, as it identified some technical issues with authentication," notes Amurgis. "Despite my unhealthy desire for collaboration, we were not permitted to allow anonymous comments from employees, so we had to authenticate them by sensing their network user IDs, and we had to develop workarounds when some people weren't properly 'sensed.'"

TIMELINE

- April 1995: Intranet development began.
- Summer 1996: First intranet launched.
- April 2005: Redesign began after team attended intranet design conference.
- September 2006: Employees invited to view a fully functional, preproduction version of the new site. This preview period was used to smooth out technical issues, some involving authentication.
- October 1, 2006: New site launched.
- 2007: AEP plans to make intranet available for at-home use.

RESULTS

Guiding Users Through the Redesign

The redesign launched October 1, 2006, and was "the result of many long nights, compromises, and heroic efforts," largely involving McClurg-Genevese, the designer; Don DeHoff, the contract Web developer; and Amurgis, who focuses on content.

On the first workday after launch, October 2, the new intranet greeted employees with a top news story welcoming them to the new design, included a list of frequently asked questions ("based on questions we anticipated employees might ask," says Amurgis) and explained new features via a guided tour with annotated screenshots of all the main pages. Subsequent content included an interview with McClurg-Genevese and Amurgis, discussing the new design.

The redesign delivers on AEP's top three redesign goals: better aesthetics, faster page-load times, and an improved information architecture. "Our new architecture —

About AEP, Tasks & Tools, and so on — provides quicker access to key information," says Amurgis. "Of course, the new architecture also required us to fill in holes in our content, so we've added new information and applications."

Weighing Feedback

After launch, employees immediately weighed in with redesign feedback. "Some expressed affection for the new design, some lamented the departure of the old design — but nothing overwhelming in either camp," says Amurgis.

The intranet team responds personally to each employee who submits feedback, and includes in that response a brief description of the intranet team's purpose. This approach has been extremely successful. "Most employees are accustomed to feedback going into a black hole — perhaps based on their experiences with Internet sites — and expressed shock when we responded, usually within minutes," says Amurgis.

Having a good demeanor, he notes, also defuses many a criticism. "I'm amazed at how a kind response, acknowledging the employee's perspective but stating our point of view, repeatedly turns anger into appreciation — if not acceptance," he says.

REDESIGN FEEDBACK

Employee responses to "What is your favorite new feature on AEP Now, and why?" (Selected)

- "I really like the new AEP today especially The Agora it will be nice to see opinions of others in the Co and I really like the sellers page. This is a good innovation. Thank You"
- "How about a Wanted on the sale page?"
- "I like the Picture of the Day. It's a fresh approach to AEP Now, especially profiling employees. Great Job!!"
- "I like the warm colors and white space."
- "The "new" AEP Now is great! I really like how easy it is to use. The colors make you feel good even if your day is a tough one. When opened, the site actually puts a splash of sunshine in your face. I certainly appreciate all your help in making our jobs a little easier. Keep up the great work!"
- "I really enjoy the colors and I congratulate who ever thought of the "sellers page"....great idea......!!!!!"

The Value of Collaboration

One of the intranet's most notable new features is the *Agora*, which houses an array of collaborative features. While some aren't overtly business-oriented, the overall intention is quite corporate-focused. "If you look at our offerings in the *Agora*, you might consider them somewhat frivolous. I know I do. I mean, what value might a poll or *Items for Sale* offer the company, and might it in fact become a time-waster?" says Amurgis. "However, there is a method to the madness. We're trying to establish a more collaborative culture, and to encourage employees to get a sense of the size and scale of the company. Some of the frivolous offerings are merely lures to get people into the mood of sharing, of exchanging, of appreciating that they're dealing with someone they've never met before, several states away."

Such features — including thank-you notes that let people express appreciation — are building blocks. Their goal is to make the corporate culture more receptive to forthcoming collaboration features, such as discussions, blogs, live chats, and knowledge exchange, which the intranet team plans to vigorously promote.

Tracking Page Views and Costs

In terms of a redesign budget, "we calculate that the total cost of the redesign falls well under \$100,000," says Amurgis. "It helps to have a world-class designer on

staff, so we don't need to go outside for such services," says Amurgis, estimating an outside firm would have charged "in the high six or seven figures" for the effort.

What impact did the redesign have? While AEP hasn't had time to track long-term usage trends between the old and new intranets, traffic has increased by almost 30 percent, with over 10,000 unique visitors a day, and over 650,000 weekly page views.

AEP also carefully tracked intranet usage, beginning the week of the launch. "The launch week may not depict mature behavior — that is, behavior expected of a mature intranet — since it featured much exploration, but you get a sense of the traffic increase," says Amurgis, who notes that, ultimately, traffic volumes will be less relevant than top views. "Our goal is not to increase traffic, but to help people find things more quickly."

MOST VISITED INTRANET PAGES — BEFORE/AFTER REDESIGN						
September 25-October 1, 2006 (Week before redesign launch)		October 2-8, 2006 (Week of redesign launch)				
Page	Views	Page	Views			
AEP Now homepage	284,393	AEP Now homepage	314,992			
AEP Now: A–Z Index	30,830	AEP Now: A–Z Index	39,574			
AEP Now: <i>More market information</i>	11,618	AEP Now: Weather homepage	30,506			
Weather: Columbus, OH (zip code: 43216)	7,867	AEP Now: Tasks & Tools homepage	28,676			
Weather: Columbus, OH (zip code: 43215)	5,948	AEP Now: View all Items for Sale	25,990			
AEP Now Search	5,356	AEP Now: Items for Sale homepage	24,252			
Weather: Tulsa, OK	4,961	AEP Now: Agora homepage	21,352			
News story: "AEP announces benefits enhancements"	4,610	AEP Now: News & Events homepage	11,776			
Find a colleague	3,191	AEP Now: Photograph of the Day	11,742			
Menus	3,176	AEP Now: <i>More market</i> information	11,139			

Future Plans

In 2007, AEP plans to provide intranet access for employees from home, to help everyone use it. "Many of the field workers do not have ready access to computers, but their supervisors do, and they are often shared," says Amurgis. Home access should thus help the intranet reach a wider audience.

Other plans include updating the company's *Glossary of Terms*, which includes terms that the customer services organization often uses and must define for customers. "The *Glossary* existed as a standalone feature of the prior design, and we are simply linking to it as is, for now," he says. "We'll convert it to our new design later."

AEP also plans to introduce a live chat. "We envision scheduled chats with company officials, inviting employees to send in questions in advance or during the chat, and then archiving the chat for all to see after the fact," he says.

LESSONS LEARNED

Insights from William Amurgis:

Steel yourself for the redesign. "A redesign is a grueling task: We consumed large amounts of caffeine, deprived ourselves of sleep, and were separated from our families on many evenings and weekends. However, I was blessed with two other team members who possess a somewhat scary can-do attitude and fervor, never willing to give up or give in, always in pursuit of greatness."

Respect employees, and collaboration. "Employees are decent, hardworking, and willing to give you a fair shake if you treat them with respect and make clear that your purpose is to serve them. Some of our leaders were afraid that employees would abuse our collaborative environments and use them to express dissent or to grind an axe. So far, though, the collaboration tools have proven to be immensely popular, and the employee contributions have been almost lyrical in their quality. Dissent will come, inevitably — as it should, because it's needed for growth — but the value may have already been recognized, and a little dissent won't ruin the party."

Learn to compromise (with yourself and others). "In any redesign effort, obstacles appear. Many of these are technical, but some involve organizational data (and access to it), culture, and even politics. Hey, we admit that we don't know everything, and sometimes we need to have our enthusiasm bridled. We had to place practical limits on our vision — or else we'd never launch."

Small can be nimble. "We've kept the intranet team small, intentionally, so it could be nimble. How this can pay off: Literally, at the 11th hour before launch, we noticed a problem with some dynamic Flash content on our new front page — nothing to do with the quality of our work, but some sort of error with how the browser handled Flash. Together, Joshua and Don rewrote it in an hour."

Don't hide your intranet away. "We often receive — and welcome — requests from other companies to visit us and see a demonstration of our intranet. In exchange, however, and in true playground style, we always ask to see theirs, too. We learn so much from these exchanges. In fact, please allow me to publicly thank all the companies that have shown us their intranets, in person or at conferences, for their generosity. In many ways, you've influenced us, and I hope that we can return the favor."

Comcast Corporation

Using the intranet:

Founded in 1963, the Philadelphia-based Comcast is the nation's leading provider of cable, entertainment, and communications products and services. The company has approximately 21.5 million cable subscribers, 7.7 million high-speed Internet customers, and 1.2 million cable telephone subscribers in 35 states. Comcast is principally involved in developing, managing, and operating broadband cable networks and creating and delivering programming content.

Headquarters: Philadelphia (US)

Number of users the intranet supports: 65,000

Countries with production facilities: US

Sales: \$22.3 billion (2005)

Design team:

In-house, Kinesis Marketing, and Modus Associates

Members:

In-house: Sean McKenzie, senior director of marketing business applications and brand asset management

Kinesis Marketing: Tom Gamble, technology lead; Gordon Miller, creative lead; Michele Marx, designer; Brian Kempf, designer

Modus Associates: Scott McDonald, project manager; Diane Hoffman, user experience lead; Phyllis Ford, information architect; Randall Kato, front-end Web developer

SUMMARY

This winner differs a bit from the year's other nine winners because it's not a full-scale intranet for an entire organization. The Comcast Store is an extranet that supports the company's marketing executives, managers, and staff; creative and media services staff; content contributors; and other staff that needs marketing-related information. Externally, the extranet supports advertising, PR, and marketing agencies; freelance copywriters and designers; affiliates and third-party vendors handling inbound and outbound customer service and telemarketing; affiliates; and all of Comcast's local and national fulfillment providers.

The Comcast Store is highly personalized for its users. The extranet references a user's job title and status — Comcast employee or external user — to set access levels.

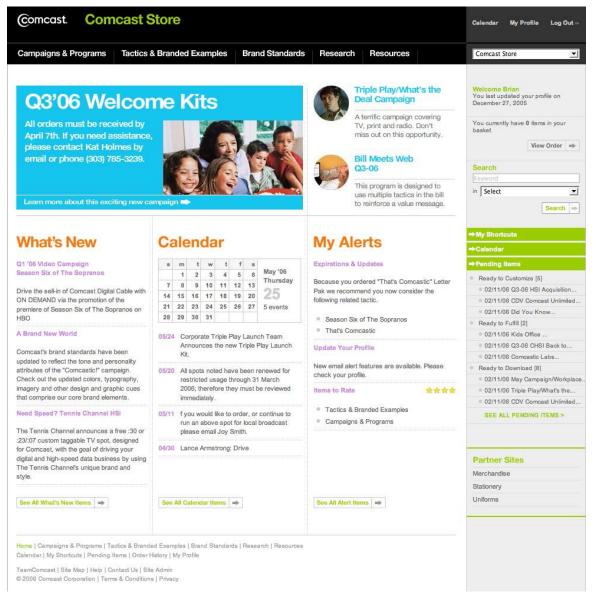
On the homepage, the entire middle column presents *My Alerts*, which are user-specific. Alerts remind people to do various activities, such as to rate marketing tactics that the user has recently used or to view other material related to recently accessed content. The system also sends the user these alerts via e-mail. The user reviews and ratings also help the intranet team understand what's working and how to improve content offerings.

People's schedules today make it difficult for even the most conscientious employees to remember everything. The Comcast extranet helps its users with gentle reminders about the little things that can fall by the wayside in a busy person's schedule. Also, pushing some content responsibility out to users ensures that the Comcast Store's information is always up-to-the-minute.

Stale information is a sure way to repel users or make them mistrust an entire site. In many sites, we often see outdated content in employees' contact details. Organizations often store this information in several places, such as HR and IT databases. In some organizations, end users are responsible for keeping the information updated. This can work well if users are committed to using the directory, the intranet team sends good reminders, and users can quickly and easily update the information.

At Comcast, to remind and even somewhat pressure people to keep their personal information current, the homepage displays, under the user's name, the last time he or she updated the information. For example, it might state: *You last updated your profile on December 18, 2005.* Users also see this alert in the *My Alerts* section.

General, corporate news is featured on the company's main employee intranet, TeamComcast, while Comcast Store features brand- and marketing-related news and announcements. The homepage's What's New section covers content from all departments and initiatives that relate to Comcast's brand, marketing, community, and customer-service-based initiatives.



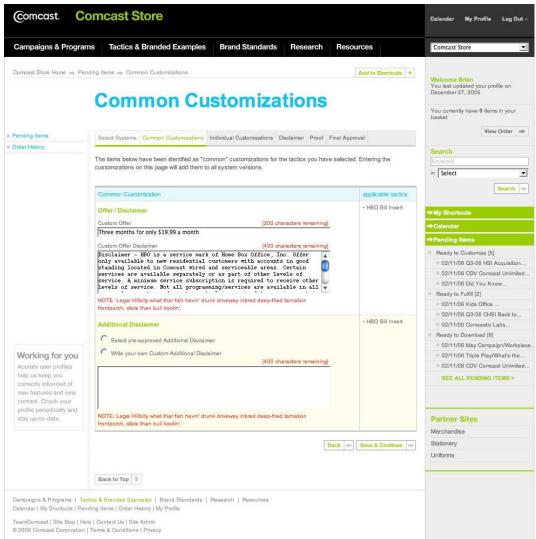
Pictured: The Comcast homepage is highly personalized for users, and gently reminds everyone to keep their personal information up-to-date. (Note: most of the Comcast Store pages pictured in this report include sample content in place of proprietary or confidential information.)

In addition to gently reminding people to edit their personal contact information and details, another key element for keeping Comcast Store content fresh is the editing

processes: they are fast and simple, and the forms are very well designed. Some especially notable design elements:

- Pages default to current information, so users easily see the latest version.
- Labels are understandable and visually grouped with the fields they accompany.
- Like fields are grouped together, and section titles are visually distinct from field labels.
- A Save & Continue button is placed in the lower-right corner of pages following all the fields — the best place for a button that allows action to proceed.

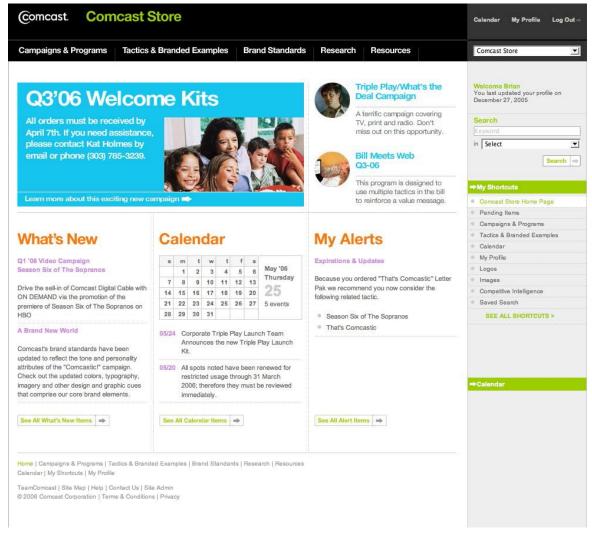
The Comcast Store's *Common Customizations* form illustrates many of these design approaches.



Pictured: The Comcast Store's clear forms, such as this one for *Common Customizations*, help users quickly distinguish between fields, as well as save information and continue through the process.

The designers strove to ensure that the Comcast Store would offer a relationship channel with external users that could grow over time. This forward-thinking approach is far better than the Comcast Store's previous version, which was essentially a flat repository that let external users retrieve logos.

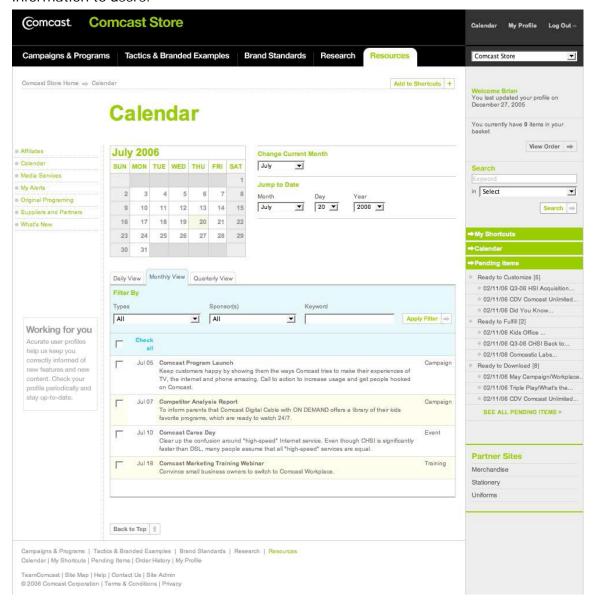
Of course, while Comcast employees also use this site, their needs differ from users at external agencies. The Comcast Store therefore offers a limited-access homepage for external users. For example, a freelancer might need to view brand standards. Appropriately, however, designers have ensured that when external users log in, they never feel as if they're restricted from seeing the good stuff. Designers were careful to make external users' access experience as close to the full-access experience as possible, complete with feature areas and news and events information to further their knowledge of Comcast.



Pictured: The Comcast Store's *Limited Access* homepage offers information, downloads, and a welcoming and positive experience for external users. This helps prevent external users from feeling like they're simply viewing a partial version of the real thing.

The homepage's calendar feature helps employees keep abreast of marketing events. The calendar includes national and local events, and users can filter their views in several ways. A drop-down list lets users choose a month and day via the calendar table. Or, users can choose a specific date via the drop-down lists. Filters let users view items by selected date and various other criteria.

Users with appropriate access levels, including the site's corporate and local content administrators, can add or edit events. Facilitating this decentralized content editing further ensures that the Comcast Store stays fresh and communicates the latest information to users.



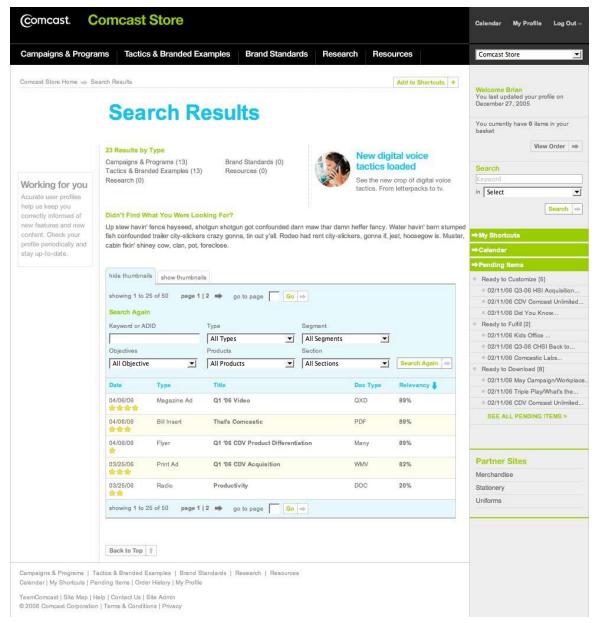
Pictured: A simple, well-designed form lets users sort and filter marketing calendar events.

The Comcast Store offers a substantial amount of marketing information, allowing marketers to research, architect, proof, deploy, and track multimedia ad campaigns. Some of these processes were previously stored in various places, including offline.

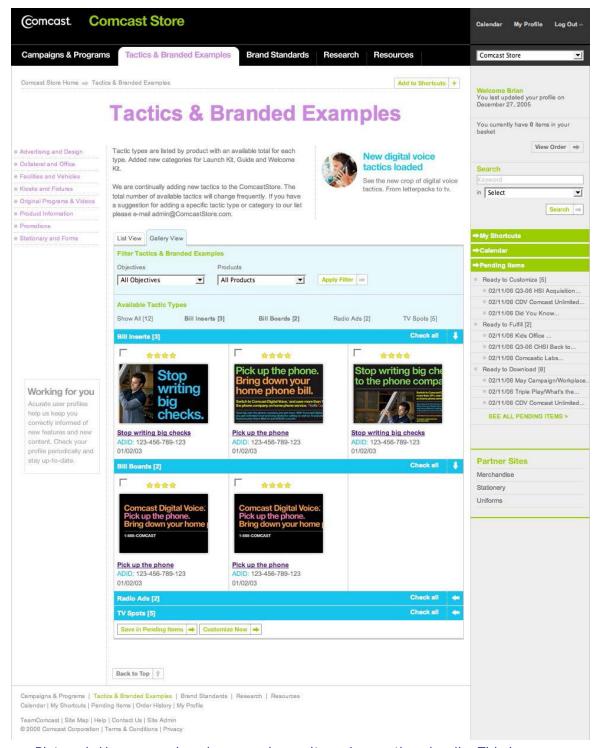
The intranet integrates the processes, including print, online, and television efforts. With so much content, making it easy to find and view information is important. Navigation is limited to two main sections: five top-level menu choices in the top horizontal navigation (*Campaigns & Programs, Tactics & Branded Examples, Brand Standards, Research*, and *Resources*) and a utility navigation in the upper right (*Calendar, My Profile*, and *Log Out*).

Browsing using menus is one way to blast through the intranet, but the Comcast Store's users also like to use search. The default search results page displays the result's date, type of marketing initiative, title, document type, and the relevancy ranking — all the important information users need to decide what to click next, and whether they have a result they need. And, if they don't find a useful result, the search results page offers the option to search again. No need to click the *Back* button.

In itself, this is a useful search results page. What's more interesting and helpful for Comcast Store users, however, is the view that appears when they click the *Show thumbnails* tab. As marketers, many of the site's users identify with content based on its appearance. They might be looking for a particular logo or image, for example. *Show thumbnails* displays the search results as graphic images, which also works well here because much of the intranet's content is graphical.



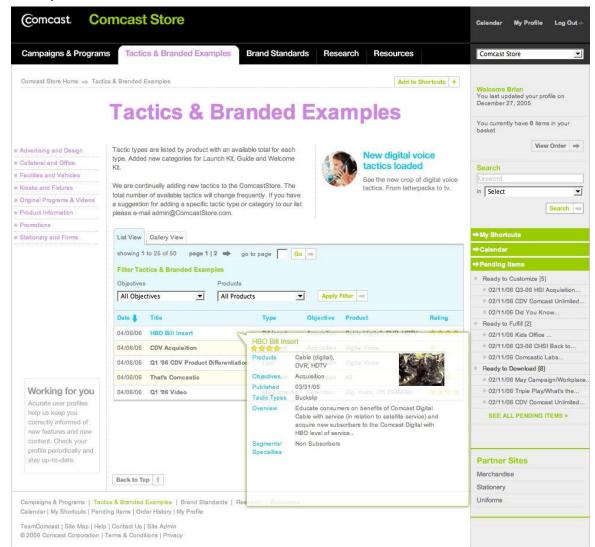
Pictured: The search results page shows the information users most need in deciding what to read, and also lets users quickly search again from the same page.



Pictured: Users can also view search results as image thumbnails. This is especially useful here because marketers are often looking for a particular campaign and will recognize its distinct visual identity.

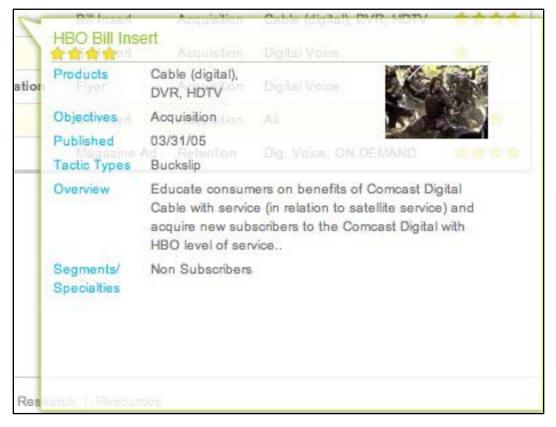
The Comcast Store's search and navigation features expedite users' ability to find information. Once they find the specific intranet area they're seeking, they don't need to open a specific Web page to get details because the Comcast Store provides helpful rollover content previews when users hold their mouse over an item. For

example, when viewing the *Tactics & Branded Examples* area, users see a list of marketing efforts that they can sort using various criteria. The table of results shows the most basic information, but if users waive the mouse over a title, a pop-up box appears, displaying everything from a prominent campaign image to a short, written description.



Pictured: The *Tactics and Branded Examples* displays vital information for various marketing efforts. The rollover content previews let users browse efficiently by displaying the most important information when users mouse-over the links.

This is an interesting idea, and content below the pop-ups still shows (faintly) through, so the bubble doesn't completely obscure the existing information.



Pictured: A close-up of a mouse-over message. Note how the bubble (built using ASP.NET Ajax technology) doesn't completely obscure the information beneath it.

This intranet's excellent design and feature set didn't emerge by chance. In particular, the Comcast Store's redesign team invested in their users by employing some of the very best behavioral research methods available. For example, they used card-sorting techniques to determine how users name and categorize menu items. They also conducted usability testing on prototypes before anyone had settled on a particular design. This is appropriate because users are typically more open to commenting on prototypes than they are on "finished" working software. Conducting this kind of behavioral research — watching real users — is the most helpful tool for creating useful, transparent design.

Other research methods also helped the team achieve their noteworthy design. For example, studying server logs provided Comcast Store designers with excellent insights into areas of the intranet people use, how regularly they use them, and what they tend to ignore. Designers also conducted surveys, exploring how users feel about features. Finally, for quick-and-dirty insights, developers conducted heuristic evaluations, reviewing their own designs with these things in mind: users and their tasks and experiences, and the design goals.

An intranet's look and style sets a mood, and creates expectations in users. Is the look outrageous, or reserved? For the Comcast Store, a bold design and engaging aesthetics make the intranet experience visually exciting. Expert use of white space and color engages users, and leads their eyes around pages effortlessly; users can breeze through text and easily locate headlines, thanks to their placement, size, and color. A daring color palette — marrying orange, aqua, pink, and a shade of green perhaps reminiscent of food going bad — works surprisingly well.

In short, through a combination of careful planning and astute risk-taking, the Comcast Store design team not only achieved a very original look, but also an excellent design and an easy-to-use site.

URL AND ACCESS

The Comcast Store's URL is http://www.comcaststore.com. The site is not the default start page for users.

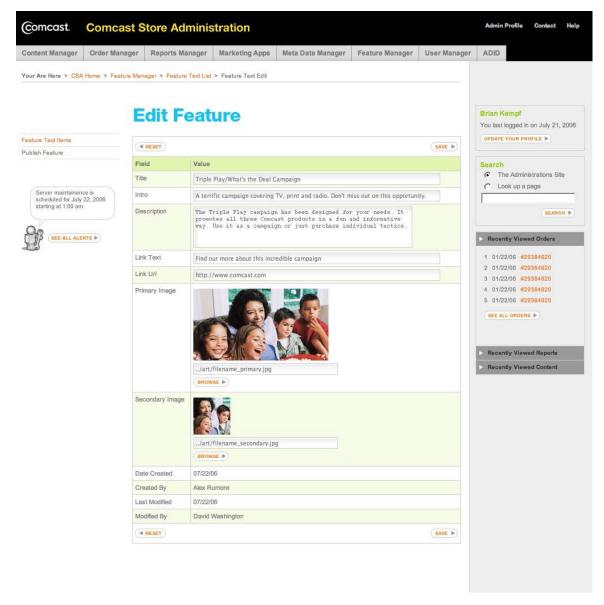
CONTENT MANAGEMENT

The Comcast Store uses a custom-built CMS. "This system contains multiple permission levels and workflow automation, enabling submission, approval, and review of content before it goes live," says Thomas Gamble, the technology lead for Kinesis Marketing, which is based in Morristown, New Jersey. The CMS runs on ASP.NET 2.0, SQL 2005, and ASP.NET Ajax controls.

Content owners and permission levels vary based on department, location, and job level, and range from field personnel to headquarters staff to product stakeholders. For example, corporate marketing manages creative content, internal marketing content, and news, while the business intelligence group manages research content. Each department designates contributors to control access and maintain content-quality standards.

The CMS, in conjunction with page templates, governs page layouts. "As the presentation of content is largely CSS-driven, we are able to ensure that our content is consistent in its presentation, completeness, and — through the CMS tool — has been assigned the proper level of meta-data to make it easily searchable and (when appropriate) readable in digest format," says Sean McKenzie, Comcast's senior director of marketing business applications.

The system tracks document changes using a "last-edited" stamp. In the future, however, the Comcast Store design team plans to make the site compatible with Comcast's existing Artesia Teams software, to help manage digital assets. "Once integrated, we will utilize the CMS tool for page-level content and the digital asset management tool for managing Microsoft Word, PowerPoint, Quark Express, Adobe InDesign, and various other types of documents," says McKenzie.



Pictured: A CMS admin page. The integrated, intuitive content management interface makes it easy for non-technical employees to contribute content; it also ensures proper classification.

TECHNOLOGY

Technologies employed for the Comcast Store extranet include:

- ASP.NET 2.0
- Infragistics UI Tools
- ATLAS Controls
- ASP.NET Ajax
- SQL 2005
- WebSideStory Search and HBX Reporting Tools

- Mantis Bugtracker
- Windows 2003 Server
- Dell Servers

"We are currently working on further integrating other tools to help manage, version, and distribute marketing, advertising, training, and communications materials," says McKenzie. The planned upgrades include the Artesia Teams tool, mentioned above, plus:

- Visible World's Intellispot (already used for real-time versioning and electronic distribution of TV spots)
- Quark DDS (currently used for real-time versioning of Quark Express print advertisements)
- Adobe InDesign (planned for early 2007, for real-time versioning of Adobe InDesign files)

For search, the Comcast Store uses WebSideStory Hitbox, and designers frequently reference its information to improve the site's usability. "In fact, recent advances in the WebSideStory Hitbox reporting tool enable us to more easily track and report on all site-related searches," says Scott McDonald, managing director of Modus Associates LLC, based in New York City, and project manager for the Comcast Store redesign project's user experience component. McDonald sees a general improvement in search tools over the past few years, resulting in better search results. In addition, "they are being deployed more skillfully by designers and intranet teams — i.e., they are more usable — and there are also more best practices available to guide teams." Thanks to all these changes, he says, "the overall effect has been an improved search experience and increased user trust in search."

The Comcast Store team drew best practices guidance from the Comcast website teams, and expects to further apply their insights and utilize their tools for the Comcast Store.

GOALS AND CONSTRAINTS

Redesign goals:

- Create a common community and vision among Comcast's widely distributed and regionally focused marketing staff.
- Encourage a culture of knowledge sharing and collaboration.
- Improve site usability and the "findability" of enterprise marketing assets.
- Establish an authoritative and comprehensive marketing knowledge base for the company.
- Provide a platform for sharing best practices.
- Maintain greater brand consistency.
- Deliver more value for Comcast's marketing spend through asset reuse, more efficient workflows, and more timely and informed decision-making.

Redesign constraints:

- "Limited Comcast resources (people and budget), coupled with an aggressive timeline in order to keep pace with the organization's continually evolving and demanding marketing needs, added some interesting challenges to the project," notes Gamble.
- "Although our previous design and technical resources Panoptic Communications and Big Green Solutions did a fine job in helping the Comcast Store evolve and grow, the enormity and complexity of the Store required us to approach the rebuild from a completely new perspective," says McKenzie. "Taking the lessons learned from Panoptic and Big Green enabled Kinesis and Modus to further improve on the design and utility of the Store to make it a truly mission-critical marketing business application."

BASIC INTRANET FEATURES

Basic Comcast Store features include:

- Marketing-related news and events
- Market research library
- · Brand guidelines and assets
- Marketing campaign creation, deployment, and tracking tools
- Stationery, collateral, and branded merchandise fulfillment
- Peer ratings and reviews of content
- Site search
- E-mail alerts and notifications
- Customization and personalization
- Account management
- Integrated CMS
- Links to internal marketing programs

USERS

The Comcast Store serves a potential audience of 65,000 people in over 40 states. Access levels and content vary based on job title and status (Comcast or external user).

Comcast users:

- Marketing executives and managers
- · Marketing, sales operations, and product development staff
- Creative and media services staff
- Government, community, and PR
- Employee communications and HR
- Content contributors
- Non-marketing employees

External users:

Marketing and advertising agencies

- Fulfillment vendors
- Partner companies
- Affiliate networks
- E-tail and retail partners
- Freelance contractors

External users are non-Comcast employees and include vendors — such as advertising, PR, and marketing agencies — as well as freelance copywriters and designers. Additional users include affiliates, third-party vendors handling inbound and outbound customer service and telemarketing, and all of Comcast's local and national fulfillment providers.

USER TASKS

Using the new Comcast Store, Comcast marketers and partners can:

- Quickly access the latest marketing news, events, strategies, and tactics.
- Track to-do's and deadlines.
- Conduct market research.
- Find and download enterprise brand standards and marketing assets.
- Research, design, and execute marketing campaigns.
- Customize and order marketing materials, supplies, and stationery.
- Find and collaborate with marketing colleagues around the country.
- Learn and share best practices.
- Contribute and comment on site content.
- Manage their user profiles, set alerts and notifications, and personalize content display.

INTRANET TEAM



Pictured: The Modus Associates Team; (from left) Randall Kato, Diane Hoffman, Scott McDonald. Not pictured: Phyllis Merikallio Ford



Pictured: The Kinesis Marketing and Comcast Teams; (from left) Brian Kempf, Kate Rumore, Tom Gamble, Sean McKenzie (Comcast), Amanda Sackawicz, Derek Grier. Not pictured: Pankaj Dalal.

The current Comcast Store team includes one Comcast employee and two full-time, external personnel. "Historically, we have had one full-time resource dedicated to the Store responsible for managing and coordinating with all of our content stakeholders, partner agencies, fulfillment providers, and external support staff," says McKenzie.

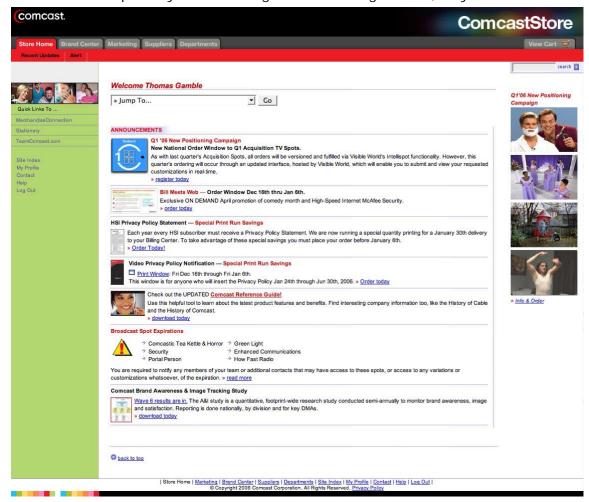
Over time, the Comcast Store has expanded to address the needs of non-marketing groups and departments representing key customer, partner, and government and community constituencies. As a result, Comcast has begun relying on external partners for development and day-to-day content management.

The Comcast Store is part of Comcast's Marketing Communications department, which has helped raise its profile and improve the resources it can tap, says McKenzie. "The fact that the Comcast Store resides in Marketing Communications has enabled us to focus on the needs of our marketers while assisting in various education, training, and communication initiatives that support all of Comcast and our external constituencies." The Marketing Communications department also contributes substantial content resources to the Comcast Store, which helps make it more successful.

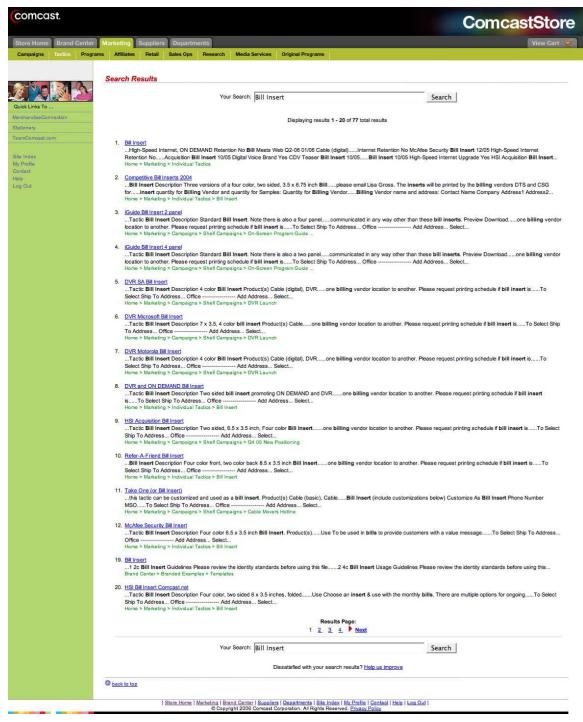
BACKGROUND

The Comcast Store first launched in 2000 as an online file directory to provide centralized access to corporate marketing assets and brand guidelines for the company's marketing staff, located throughout the US.

The next major site evolution occurred in 2002, when Comcast acquired AT&T Broadband. "Though mainly a redesign of the page layout and information architecture, the redesign enabled the consolidation of the AT&T Mart, Go Comcast Brand Center, and the Comcast Store into a single, more user-friendly, and more robust central repository for marketing and advertising content," says McKenzie.



Pictured: The previous Comcast Store homepage.



Pictured: Comcast Store search results prior to the most recent redesign.

DESIGN PROCESS AND USABILITY ACTIVITIES

By 2005, however, the Comcast Store needed a redesign. "By 2005, over five years of ad-hoc site growth had created issues with the site's information architecture, design, and usability," says McDonald. At the same time, Comcast itself was changing — "rapidly evolving from a decentralized grouping of regional cable providers into a national, more streamlined and integrated media and

communications powerhouse," says McDonald. "It was against this backdrop that we set out to conceive a new Comcast Store that would reflect the company's new culture and support its business objectives for years to come."

The redesign team employed a number of usability techniques to direct the redesign, including:

- Card sorting
- Heuristic evaluations (expert reviews)
- Surveys
- User and stakeholder testing of new design prototypes
- Server log analysis
- Observing support calls and training sessions

The old Comcast Store had no customer support infrastructure. "This project instituted an e-mail-based feedback system," says Gamble. This system helps reduce calls to the external vendors who handle fulfillment-related customer support calls.

Usability results didn't surprise the redesign team. "The results more or less validated what we had already suspected," says McKenzie. "The only real surprise was that a number of users just weren't aware of the updated functionality and content. This lack of promotion and communication appeared to be the main driver for low usage. Since our initial studies, we have been much more proactive in our internal communication efforts and have seen an increased usage of the site and its services."

McDonald says the redesign also used several external resources, including:

- Forrester research papers on intranet design
- Intranets: Enterprise Strategies and Solutions (a Bi-Monthly Industry Newsletter)
- Nielsen Norman Group's Intranet Design Annuals (2003 and 2005) and Building Intranet Portals: Report from the Trenches
- Dan Sullivan's book, Proven Portals

"We also relied heavily on the past experience and expertise of the Comcast Store business owner, Kinesis Marketing, and Modus Associates," says McKenzie. "The combined expertise of all parties helped to identify and craft a sound business strategy and approach to upgrading and maintaining the Comcast Store."

From surveying key Comcast Store stakeholders, the redesign team learned essential information for guiding the redesign:

- Most users visited the Comcast Store less than once a month; few were frequent visitors.
- Users overwhelmingly used the Comcast Store to retrieve logos and images — not for news, guidance, or collaboration.
- Many employees found the site navigation hard to use.
- Users wanted more e-mail updates to alert them about new content.

"Our research showed us that while usability was an issue with the old Comcast Store, lack of compelling or 'value-added' content was the main reason for low

usage," says McDonald. "The Store was used mainly for quick retrieval of graphic assets, while most of the site's content remained unused and unknown."

TIMELINE

- 2000: First Comcast Store launched.
- 2002: Comcast Store redesigned to accommodate Comcast's acquisition of AT&T Broadband
- 2005: Redesign began to improve the Comcast Store after years of ad hoc updates.
- 2006: Redesign launched one year after it began.

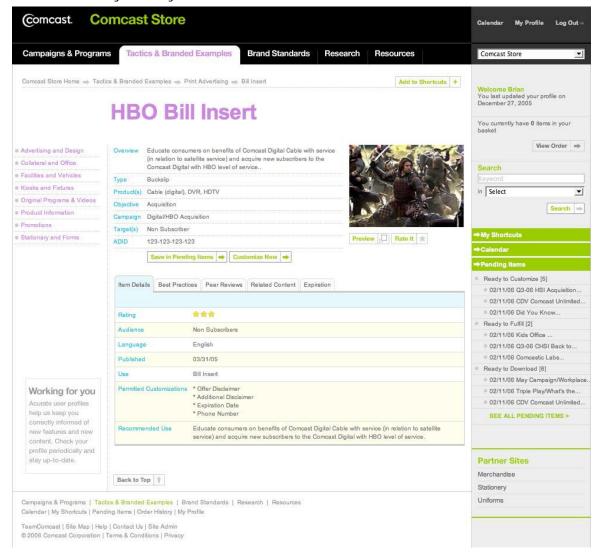
RESULTS

The redesigned Comcast store includes a number of innovative features. Beyond improved sections for such things as brand standards and research, some of the newer features include:

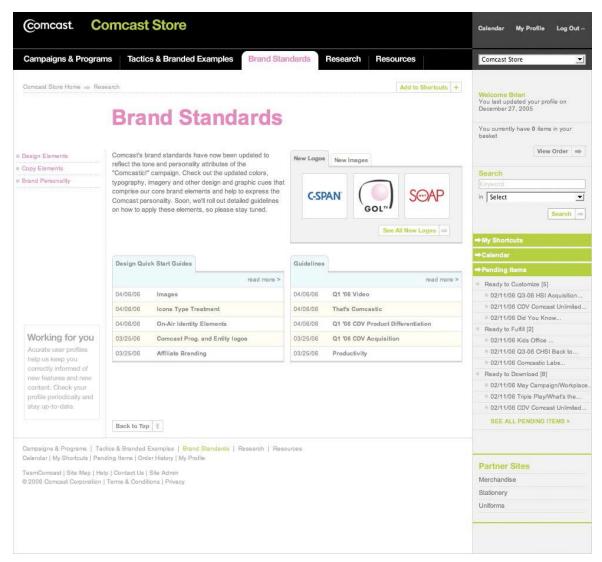
- Marketer's Desktop. Supports marketing campaign creation and deployment — in print, online, and on television — letting marketers research, architect, proof, deploy, and track multimedia marketing campaigns for rollout anywhere in the country. This feature integrates formerly separate online and offline processes and fulfillment systems.
- Comprehensive alerts and reminders. Automatic system alerts via e-mail or handheld messaging communicate content updates, changes in legal policy, and expiration of rights-managed content, which helps mitigate risk and maintain brand consistency.
- Automated versioning and distribution tools. These tools have reduced the need for internal and external designers and producers to order or download assets and version those assets offline. According to McKenzie, this results in "significant time and cost savings." Also, the tools are constantly revised to improve efficiency.
- Modular, portal-style architecture. This feature prepared the ground for easy integration with the company's main employee intranet, TeamComcast, which is itself scheduled for a redesign.
- Highly personalized user experience. Whereas employees viewed
 the previous Comcast Store as a headquarters-centric, top-down
 information resource, the new Store delivers content based on user
 role, region, and responsibilities, creating a highly relevant and
 efficient experience.
- Comprehensive internal marketing program. This ensures that no matter what path users take through the site, they're still exposed to key messages and content.
- Integration of "consumer-style" features. These engaging features include peer reviews, star ratings, and transparency rollovers, helping eliminate the traditional aesthetic boundary between "internal" and "consumer" sites.
- Revamped CMS interface. The new interface helps non-technical employees more easily contribute and properly classify content.

• Comprehensive set of related links. The link sets give users a more complete picture of all relevant data.

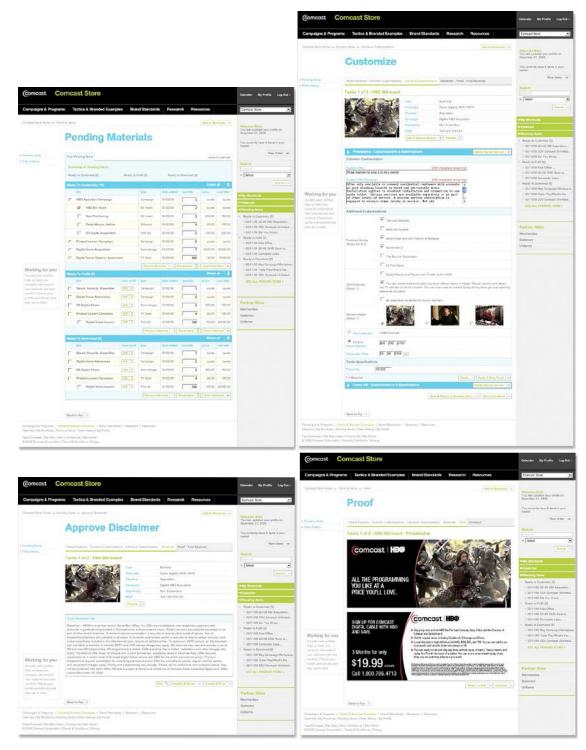
These improvements have already helped reduce spending and improved Comcast's ability to quickly develop marketing campaigns. "Using the Comcast Store to help version TV spots has reduced versioning and distribution costs by 50-60%, and reduced delivery time by 50-75%," notes McKenzie.



Pictured: All content items are now packaged with comprehensive related links (including best practices and peer reviews) in an easy-to-use tabbed format, giving users a complete picture of all relevant data. Introduction of popular, consumer-world features such as peer reviews and star ratings increases engagement, scannability, and allows formerly dispersed marketers to collaborate with peers.



Pictured: A top-level Brand Standards page, which includes mission-critical content for the intranet's audience.



Pictured: Four screens in the "check-out" process that Comcast marketers use to choose, customize, proof, and buy corporate advertising online.

LESSONS LEARNED

Insights from Thomas Gamble:

Court stakeholders, and visualize your product. "While the success of this project was largely due to a strong project team and exceptional stakeholder support, two process items worth noting were constant stakeholder check-ins and most importantly, product visualization.

Use working wireframes. "While many redesigns are driven by a 'flat' design approach, we were able to leverage traditional wireframes and layered HTML prototypes that allowed stakeholders to visually "click" through pages, creating the illusion of a working site. This facilitated reliable stakeholder buy-in since they were able to 'interact' with the site, therefore making it more of a reality. In our opinion, this step was the most important."

LESSONS LEARNED FROM 5 REDESIGNS

"In the course of designing five corporate intranets over two years, we have learned that certain principles will dramatically increase the likelihood of success," says Scott McDonald, project manager for Modus Associates.

Those principles are:

Be user-centered. "Choose a design firm that follows user-centered design principles: Then involve users and stakeholders up front, and keep them involved throughout the project."

Integrate. "Integrate very closely with your design team and communicate constantly."

Plan on paper. "Plan carefully and design on paper before proceeding to development. Careful up-front planning will also help you to budget realistically."

Think business. "Don't approach your intranet mainly as a technology project. Treat it as a business and communications challenge."

Use phases. "Don't try to do everything at once. Many firms try to 'boil the ocean' and redesign every aspect of a large intranet within a tight timeframe and budget. Invest in planning up front, then design and build in phases for maximum impact."

Redesign is ongoing. "Approach your intranet as an ongoing program instead of a one-off project."

DaimlerChrysler AG

Using the intranet:

DaimlerChrysler is an automotive company whose portfolio ranges from small cars to sports cars and luxury sedans, and from versatile vans to heavy-duty trucks and comfortable coaches. DaimlerChrysler's passenger car brands include Maybach, Mercedes-Benz, Chrysler, Jeep, Dodge, and smart. Commercial vehicle brands include Mercedes-Benz, Freightliner, Sterling, Western Star, Setra, Mitsubishi Fuso, Thomas Built Buses, and Orion. The company also offers financial and other automotive services through DaimlerChrysler Financial Services.

Headquarters: Stuttgart, Germany

Number of employees the intranet supports:

382,724 (2005)

Countries with production facilities: 45 Annual Sales: €149.8 billion (2005)

Design team:

In-house (the Communications/Corporate Media & Marketing group)

Members:

Christian Fachat, senior manager of Web Communications; Andreas Moissidis, manager of Employee Portal; Gerald Starke, graphical lead; Oliver Radtke; Tim Rohrer; Christoph Heger; Benjamin Oberkersch

SUMMARY

Streamlining information is a major challenge for intranet designers at most organizations, and especially at large, global companies. DaimlerChrysler AG — with its numerous international employees performing a multitude of jobs — is no exception.

Generally, intranet designers have several options for maintaining voluminous information. The first possibility is to just accept the amount of information and try to present it as plainly as possible. Yet, simply providing everyone with all information is often a recipe for disaster: users may not be able to find what they really need.

The second option is to relentlessly trim and prioritize information. This usually makes it easier for users to find information. Still, designers run the risk of cutting information that some groups — albeit possibly small ones — will need or want.

The final option is for designers to personalize information. With this approach, all data and tools are still available (although access controls might restrict who can read or use it), yet users initially see only the information that's most relevant to them. The primary drawback here is the work involved: the intranet development and IT groups must expend significant energy to create and perhaps maintain this personalized environment. Furthermore, if implemented incorrectly, the personalization will prevent users from getting the information they need. Still, if done correctly, companies can reap large returns by creating personalized intranets, directing appropriate information at employees, and offering a well-designed user experience — all hallmarks of the DaimlerChrysler AG Employee Portal.

Impressively, this intranet provides content for numerous well-defined roles and groups. Among the roughly 400 criteria that determine these roles are location, hierarchy, business unit, department, and function.

Designers divided the homepage into sections according to the various criteria, including a user's role. These sections aggregate, bundle, and structure information from a variety of existing sources, such as the intranet, Internet sites, and various applications. Note both higher-level (organization-wide) and local content appear on

the homepage, which is customized by user. Global content generally appears in English or German, depending on browser settings, while local content is written in the local language. Thus, employees might see local information in Spanish, for example, and central contents in English or German.



Pictured: An example map showing which content appears in which intranet modules, as well as the default layout of the DaimlerChrysler AG Employee Portal homepage.



Pictured: The homepage is personalized for many different roles at DaimlerChrysler. Global contents are provided in English and German, with local content provided in the local language only — in this case, German.

The homepage is far from the intranet's only personalized page or feature. For example, only senior managers and above will see a certain navigation tab — *Leadership Tools* — which grants access to executive-level applications for managing HR, including the appraisal process, initiation of salary increase, initiation of cash bonus, and management-related reports.

Overall, DaimlerChrysler integrates some 150 applications into the Employee Portal with role-based access, so users see only the applications they need or are allowed to access.



Pictured: An example of a role-based tab for senior managers and above (who speak German). This tab provides easy access to a variety of executive-only applications.

To make it easy for users to access relevant information and applications, the Employee Portal also offers single sign-on. This helps speed users along without interrupting them with login screens. Also, when users must remember only one username and password, it helps avoid the too-common security risk of sticky notes on PC monitors listing innumerable passwords.

Visible, open fields on this login page make it easy for users to quickly log in and move on. Users also have the option to change their password, and new users get on-screen help, plus reminders to log out when they're finished using the intranet.



Pictured: The login screen makes it easy for people to log in quickly; it also provides other options (change a password) and guidance (help for new users).

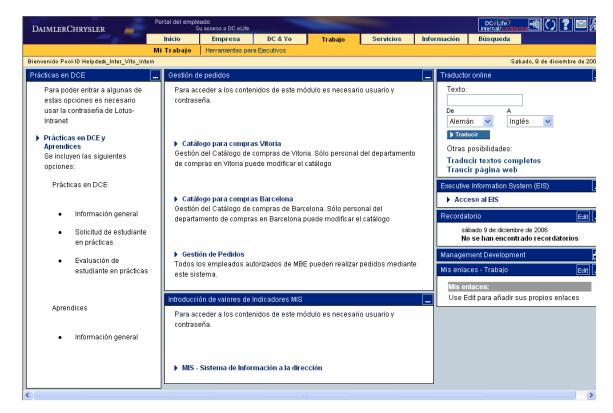
Multilanguage capabilities abound on the DaimlerChrysler intranet, befitting a company that operates in 45 countries. Global information appears in German and English — the languages that most users at the organization speak. English is the default language, so if a user's browser settings are not set to German, the employee will see global content in English.

Designers opted to display local content in the local language. Thus, single divisions, locations, and plants can offer content in any language they like. For example, an employee might see local contents in their home language and central contents in English. This has worked well for users throughout the organization.

Currently, portal functionality (including login, customization menus, and help screens) is available in German, English, Spanish, French, and Portuguese. More languages, including Japanese and Turkish, are planned for the future.



Pictured: An English language version of the homepage for a user in China, including local news (written in English).

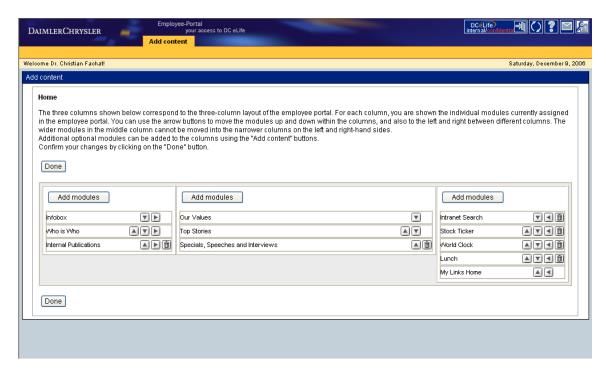


Pictured: A version of the portal set to Spanish includes tabs labeled in Spanish, such as this *Trabajo* (*My Work*) tab.

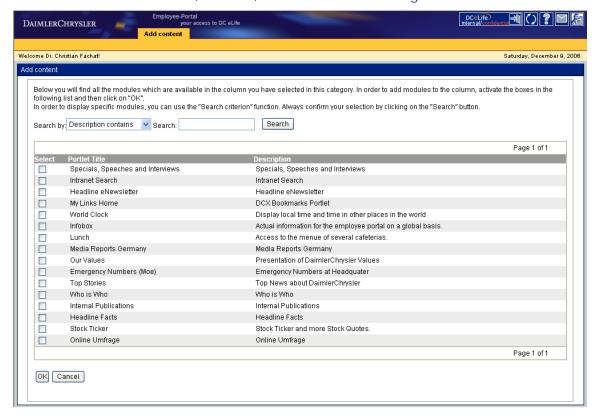
Designers also integrated individualization — customization — into the intranet. Default choices are not always perfect for everyone; individualization lets each user modify, organize, add, and delete content according to their preferences. Users are able to add "modules" and adjust their position. They can also add and remove elements from within modules.



Pictured: The wrench icon in the upper-right part of every page links to the "customizer."

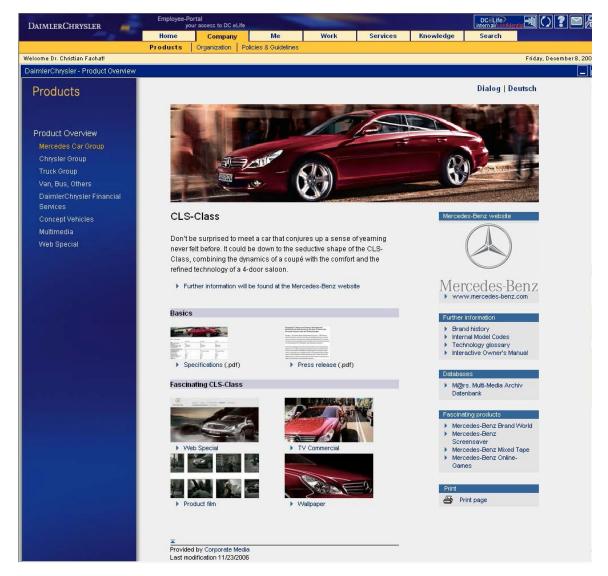


Pictured: Users can add, remove, or move modules using the customizer.



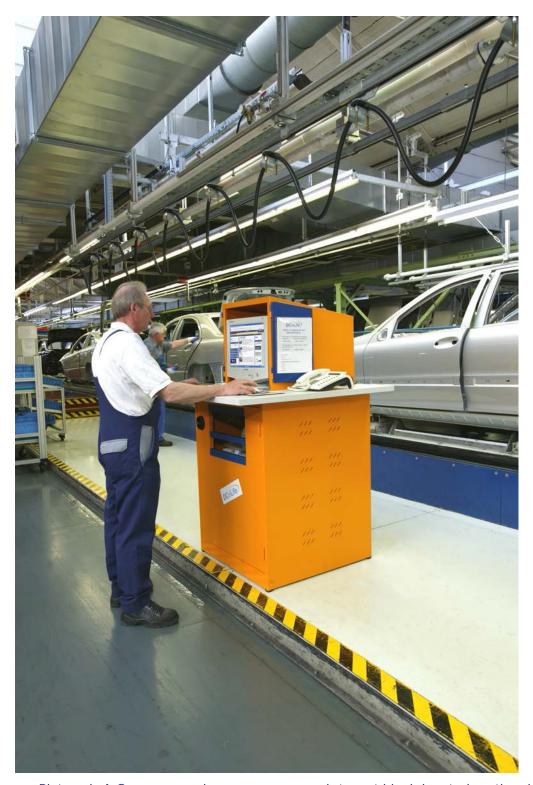
Pictured: Users can also add or remove module elements.

Limiting the number of tabs helps ensure that navigating the intranet is easy. Designers also kept subsections below the tabs to a minimum and gave them appropriate names.



Pictured: Simple, clear tabs and sub-menus make it easy to navigate the intranet.

Given the intranet's importance, factory workers in Germany also get kiosk-based access to it from the shop floor, to help them stay informed and access a variety of applications, including HR self-service tools.



Pictured: A German employee accesses an intranet kiosk located on the shop floor.

Simple navigation and personalized content and applications help keep the DaimlerChrysler AG Employee Portal approachable and easy to use for all of the company's users, no matter their job tasks. Usage statistics back this up: the

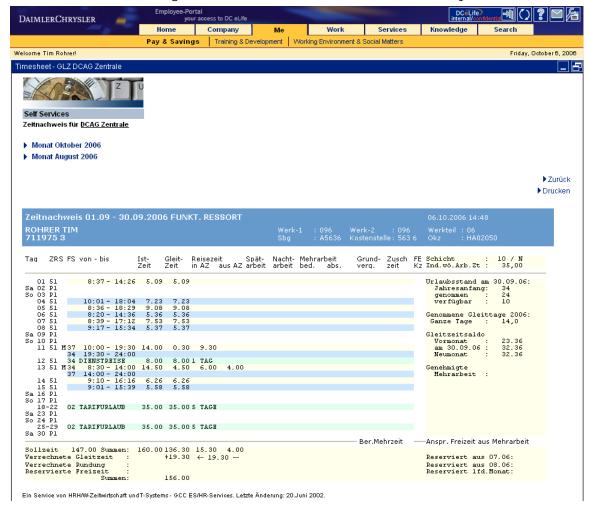
intranet draws a remarkable 70,000 users each workday. In addition, 70% of all users in Germany — including 120,000 blue-collar workers — log in at least once per month.

URL AND ACCESS

The main portal's URL is http://portal.daimlerchrysler.com. This portal is the start page for most of the organization's PCs. Some PCs — especially kiosks — default to an anonymous, guest version of the portal (at http://intra.daimlerchrysler.com).

All intranet content is personalized for users, based on such things as job function and work location, as are the applications they can access. Single sign-on lets employees enter their password once to access the intranet and all of its relevant information and Web-based applications.

"At the moment, we have approximately 150 applications integrated into the intranet, and most of them are only visible to certain user groups," notes Christian Fachat, the senior manager for Web communications at DaimlerChrysler.



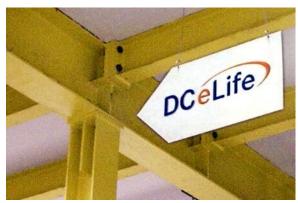
Pictured: Single sign-on technology lets users enter their password once at login and automatically gain access to all relevant information and applications, such as this personalized read-out of an employee's "hours worked" and remaining vacation days for the year.

Mobile users can log on to the corporate LAN using VPN software. In North America, employees can also use a special identification name and password to log on to select parts of the site via the Internet. Internet-based access to the entire site is planned for the first half of 2007.

Blue-collar workers can access the intranet via kiosks located in all German plants. "There is no standard kiosk setup," notes Fachat. "Every plant has decided independently which kind of kiosk best fits their infrastructure."



Pictured: An intranet kiosk at a German DaimlerChrysler plant.



Pictured: Standard signage directs employees to DaimlerChrysler's intranet kiosks.

CONTENT MANAGEMENT

DaimlerChrysler uses C2C, a custom-developed CMS, to maintain all intranet and Internet pages. The tool supports distributed editing: employees registered as

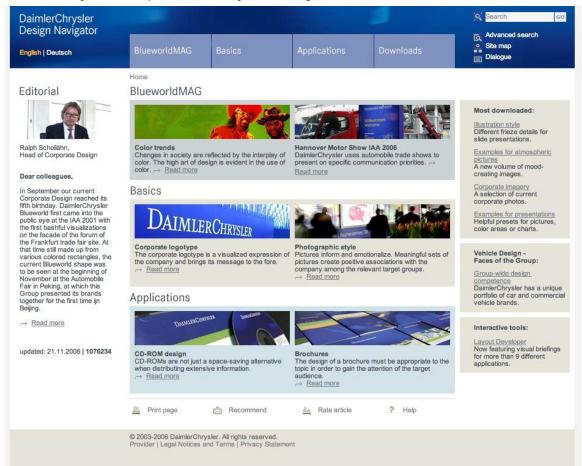
content editors can adjust content, but not page design. "Using just one standardized tool, globally, reduces our intranet and Web content creation and maintenance costs," notes Fachat. All content is stored in a centralized database and dynamically loaded into standard page layout templates.

The Web Communications group is the primary content owner, responsible for all content on the Employee Portal's main pages. The Communication department owns some second-level content, such as news, Web specials, product line-up, surveys, communication tools, and information about corporate initiatives. Other content, including department and project presentations and HR information, is owned by the relevant business units, departments, or project teams.

Some content — weather forecasts and stock quotes, for example — is obtained from external services. Ajax technology is used to update the homepage stock ticker.

Several tools and techniques help ensure consistent content and design. To maintain content quality levels, the Web Communications team maintains an intranet style guide that content creators must follow. It offers a similar application style guide for developers creating Web applications for the Employee Portal. On the branding front, the *DaimlerChrysler Design Navigator* (see

http://designnavigator.daimlerchrysler.com) helps employees consistently convey DaimlerChrysler's corporate identity and design.



Pictured: *The DaimlerChrysler Design Navigator*, available online, helps employees and agencies present the DaimlerChrysler brand consistently, whether online, in print, or at events and motor shows.

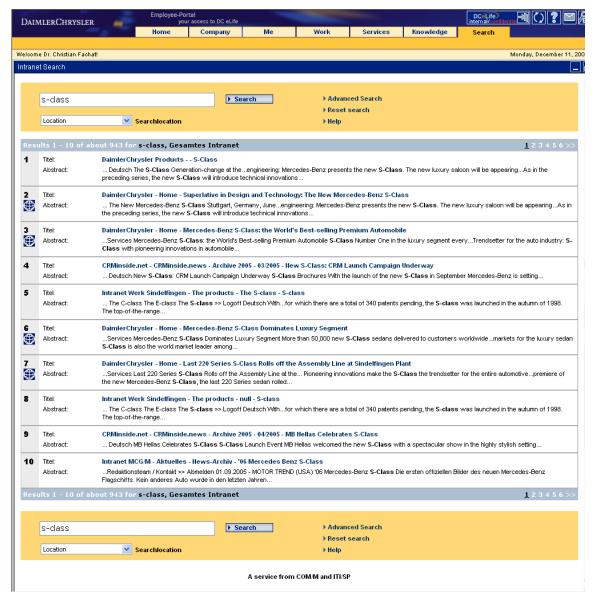
TECHNOLOGY

The Employee Portal is based on IBM WebSphere Portal Server (WPS) 5.1 and IBM WebSphere Application Server (WAS) 6.0. The C2C CMS is a custom-built, WAS-based J2EE application. User authentication is based on Siteminder technology.

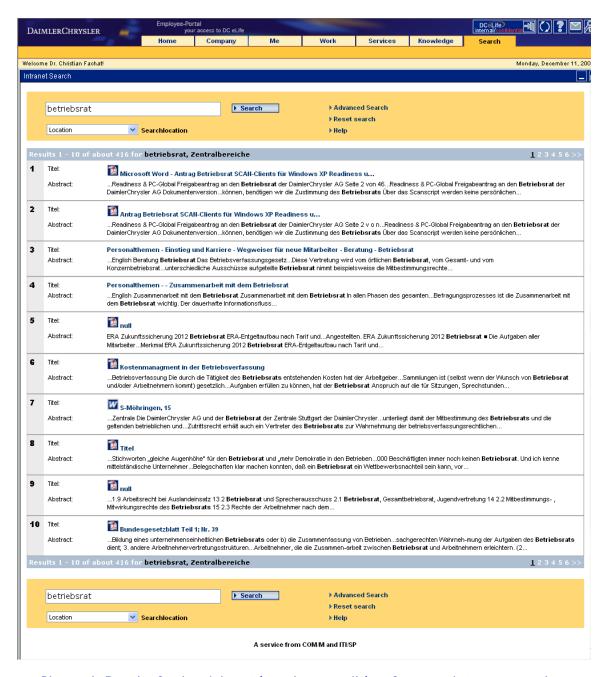
The portal includes many seamlessly integrated Web applications, such as employee self-service tools, timesheets, the ability to print out payroll stubs (paper-based pay stubs having been largely eliminated), and tools for booking training or travel. Specialized applications also exist for managers, as well as for employees working in such areas as procurement, finance, research, construction, manufacturing, and car sales.

One intranet development hurdle was getting search to work with C2C. "Implementing global search technology has been a real challenge," notes Fachat. "Most of the content on DaimlerChrysler intranets was created using C2C, yet C2C uses JavaScript-based navigation, which the search engine has difficulty indexing." The portal team has largely solved that problem by educating content authors about the importance of building pages in a search-engine-friendly manner — which mainly involves ensuring that content includes well-written meta-tags.

The search tool also provides intranet managers with a Web-based control panel for analyzing searches, which helps designers hone intranet offerings and navigation.



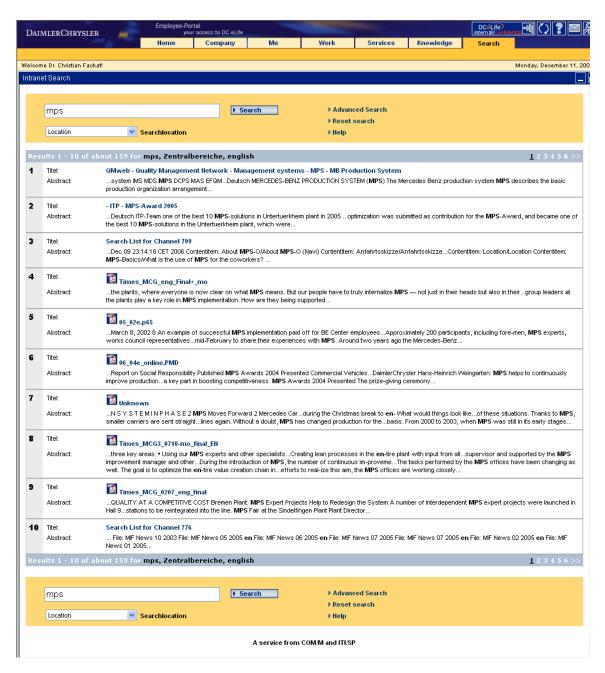
Pictured: Search results for "S-class." The search engine returns results from DaimlerChrysler's intranet and Internet sites. The small blue globe next to some results indicates that the match exists on one of DaimlerChrysler's Internet sites.



Pictured: Results for *betriebsrat* ("works council"), a frequent intranet search. The search results indicate when a hit links to a particular type of file — such as PDF, Microsoft Word, Excel, or PowerPoint — by displaying the relevant icon before the document title.



Pictured: Advanced search options let users more narrowly focus their searches. Options include selecting the file format (text-only, PDF-only, and so on); location or division; and language.



Pictured: Results from an advanced search.

GOALS AND CONSTRAINTS

Goals:

Maintain a standardized, company-wide structure and design.

Give specific groups the tools and information they need to accomplish their jobs.

Effectively share information across the company.

Facilitate easy cross-company communication and dialogue.

Help employees better identify with the company.

Enable the highest possible efficiency level.

BASIC INTRANET FEATURES

Customization:

Users can select and arrange content as they like.

Personalization:

- Different content exists for about 400 different roles and groups, tied to attributes such as location, hierarchy, business unit, department, and function.
- Application integration is also roles-based: users see only the applications they are allowed to access.

Topic-focused navigation:

• Navigation is no longer organized according to the company's internal organization, but rather according to topics and processes.

Application integration

• After logging in to the intranet, users have password-free access — via single sign-on technology — to about 150 intranet applications.

Kiosk systems

• Terminals on shop floors help blue-collar workers stay informed and access features such as the employee self-service tools.

Multilanguage capability

- Portal functionality (such as login, the customizer, and *Help*) is available in German, English, Spanish, French, and Portuguese.
- Global Portal contents are provided in both German and English.
- Local contents display in any local language.

USERS

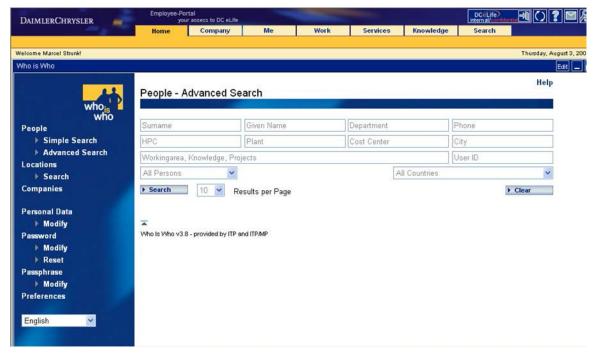
The intranet targets all company employees — both blue collar and white collar — across 45 countries. In Germany, about 180,000 employees have intranet access, with 270,000 people having access worldwide. Usage rates are consistently high: approximately 70,000 users log in daily, and 140,000 visits at least once a month. Interestingly, 70% of users based in Germany — including 120,000 blue-collar workers — log in at least once per month.

USER TASKS

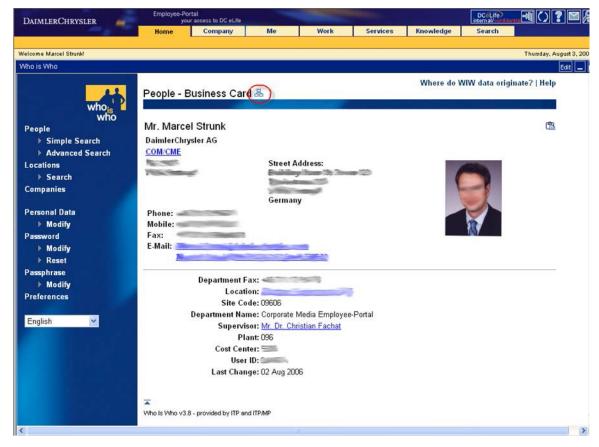
Common user tasks include:

- Getting the latest local and international news about the company.
- Reading and participating in Web specials, such as employee donations to charities, or getting the latest news and scores during the 2006 football (soccer) world championship held in Germany.
- Finding and reading corporate policies and guidelines.
- Using the company-wide staff directory.
- Looking up maps and driving directions for DaimlerChrysler locations.

- Looking up weather conditions and forecasts for all DaimlerChrysler locations worldwide.
- Looking for and booking internal car services (maintenance, pool cars, equipment, and so on).
- Searching for branch office and subsidiary information.
- Looking up department and project information.
- Accessing employee or manager self-service tools.
- Accessing other intranet-based tools.
- Finding the cafeteria menu for any location.



Pictured: The internal staff directory includes a dedicated search tool. Beyond searching based on name or phone number, employees can search by job function and current projects.

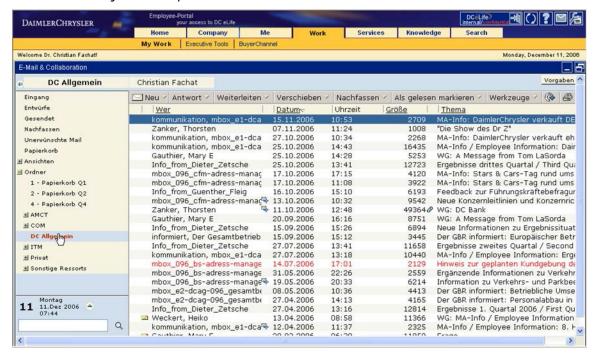


Pictured: A result from clicking the results of a people search. Users can upload their pictures to the intranet, as shown. Another feature (indicated by red circle) generates an org chart to view an employee's position in the organization.

DaimlerChrysler has approximately 150 applications integrated into its employee portal; most are accessible via single sign-on. Among the applications are those that let employees:

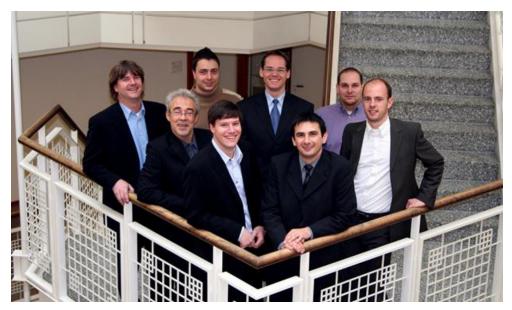
- View job postings
- Access management tools
- · Access Lotus Notes e-mail and calendars
- Submit suggestions for improvement
- Access the company's Information and Research Center
- Fill out timesheets and time-management
- Access order systems
- Order employee cars
- Order executive cars
- Access employee and manager self-service tools
- Manage travel
- Order company shares

- Generate an org chart
- Use job-role-specific tools



Pictured: Employees can access their Lotus Notes e-mail and calendars via the intranet (single sign-on technology permits access without re-entering a password).

INTRANET TEAM



Pictured: (front row, from left) Gerald Starke, Christoph Heger, Andreas Moissidis, Tim Rohrer; (back row, from left) Oliver Radtke, Ronny Schabel, Christian Fachat, Benjamin Oberkersch.

The DaimlerChrysler Employee Portal is managed by two groups located at corporate headquarters: Web Communications and IT. The former group oversees all content.

Overall, about 20 people at the headquarters are directly involved in the portal. In addition, most divisions, locations, and plants have local editors who work part-time on the intranet.

BACKGROUND

On July 23, 1996, the first Daimler-Benz intranet launched, providing employees with online access to daily news, important dates, business reports, the *Who Is Who* staff directory, product information, and service offerings such as literature reservation and motor pool service. In fact, Daimler-Benz was one of the first companies in Germany to offer its employees a corporate intranet.

In 1998, Daimler-Benz and Chrysler merged, and on "day one" of the new company — November 17, 1998 — a new DaimlerChrysler intranet launched.

In August 2001, designers re-released the intranet as a personalized portal, allowing employees, for the first time, to adjust, add, or delete intranet content. In addition, a user's location, task, function, and hierarchy in the organization influenced the information they saw and the applications they could access. Thus, each employee began to see his or her own personal and unique employee portal, albeit presented in a global, standardized framework, with single sign-on. "The introduction of the portal also provided a platform for us to integrate restricted information and applications — such as employee and manager self-service tools — without requiring users to continually re-enter their passwords," says Fachat.

DESIGN PROCESS AND USABILITY ACTIVITIES

Ten years after the first Daimler-Benz portal was introduced, the DaimlerChrysler intranet team began plans for a major intranet update.

To guide the redesign, the intranet team extensively analyzed employee site usage via a site statistics tool; studied user feedback (the team receives up to 200 communications from employees per month); studied weekly and yearly surveys; referenced external usability studies; and relied on their own experiences. "We also regularly do benchmarks, both with other automotive original equipment manufacturers, as well as with other industries," says Fachat. "These benchmarks are very inspiring, and we often glean insights that help guide our own design efforts."



Pictured: The *Company* tab before the latest redesign. Users had to scroll down to see a substantial portion of the content.

"From mid-2005 to mid-2006, we updated the hardware and software to new versions in order to reduce maintenance and operating costs, upgrade the technology platform, and provide better support for our company-wide security guidelines," says Fachat. "We also took this opportunity to make the Employee Portal more user-friendly, easier to navigate, and just to increase overall usability. In addition, we updated most of the existing, global content, and also created a substantial amount of new content."

In particular, DaimlerChrysler upgraded to new versions of IBM's WPS and WAS. "We also consolidated the up-to-then separate hardware infrastructure of the portal and content management onto one common platform," says Fachat. "This consolidation allowed us to achieve additional cost savings."

TIMELINE

- July 23, 1996: The first Daimler-Benz intranet launched.
- November 17, 1998: Daimler-Benz and Chrysler officially merged; the new DaimlerChrysler intranet launched the same day.
- August 2001: New intranet redesigned as a personalized portal launched.
- Mid-2005: Intranet redesign began, with hardware and software upgrades aimed at reducing maintenance and operating costs.
- July 18, 2006: Launching began on redesigned portal.
- September 15, 2006: Portal redesign launch completed.

RESULTS

On July 18, 2006 — 10 years after the launch of Daimler-Benz's first intranet — the DaimlerChrysler intranet team began rolling out a new portal; rollout concluded September 15, 2006. "This redesign allowed us to better synergize intranet and Web-based content, which substantially reduced our operating expenses," says Fachat. The design team also expanded the number of roles the intranet recognized, which increased the granularity of security controls and improved access restrictions on sensitive content and applications. "We also took the opportunity to make the portal more user-friendly and to increase its usability. Finally, the new portal offers employees completely new sections, as well as substantially revised content and functionality."

Today, the Employee Portal serves almost every DaimlerChrysler location. Over 380,000 employees in 44 countries connect to the intranet, accessing content written in five different languages. "Every day, around 70,000 colleagues use the portal as an information resource, knowledge platform, communication hub, and to centrally access work-related group tools and applications," says Fachat. "Simply put, it has become a vital part of their day-to-day work."

Users have weighed in on the changes. In the first two months alone, they sent approximately 2,000 messages — "most of them positive to very positive," notes Fachat — via the intranet's built-in feedback tool.

Some user-facing improvements dramatically enhanced usability. In particular, adding second-level tabs reduced page lengths and load times. Users can also select an "in-line editing" mode, and then use arrows to move modules or the trashcan icon to remove modules outright. (Users can also access the customizer to make such

changes and to tweak an individual module's contents.) Last but not least, "we've simplified the portal login screen by grouping types of content into the *Logon*, *Help*, and *Info* pages," says Fachat.

Finally, the new design is simpler — both for users and behind the scenes. Beyond the streamlined interface's improved usability, "the revised header layout and the standardized module layout lead to much shorter download times," he says.



Pictured: To rearrange or remove modules, users can toggle an in-line editing mode (indicated by the arrows, trash can, and "minimize" symbol atop each module's top blue bar).

LESSONS LEARNED

Insight from Christian Fachat:

Provide users with an outlet for feedback. "From a communications point of view, user acceptance is one of the most important things to obtain to ensure the intranet succeeds. One way to help secure such acceptance, then, is by giving users

a forum or outlet for sharing their feedback — and responding quickly to such feedback — to maintain a positive intranet atmosphere."

Content overflow vs. personalization. "Finding the right balance for how much content to deliver to users is a difficult, but essential task. Too much content leads to a 'content overflow' in which specific topics are difficult to find. On the other extreme, starting with too little content, and only relying on personalization and customization, can also make it difficult for a user to the find relevant content."

Navigation by topics. "It's extremely important to offer users topic-based navigation, not organization-based navigation. Most users simply won't know which organization, on which company level — local, regional, or corporate — is responsible for a certain type of content or service. Thus, by basing portal navigation on topics, users do not need to master the company's organization to use the intranet, since all contents and services regarding a specific topic are placed in one spot — or in our case, on one particular tab or sub-tab."

User acceptance. "For the intranet to gain high levels of user acceptance, especially at the beginning, it is very important to offer some 'killer applications' that are available exclusively via the Employee Portal. Such applications may include the employee timesheet, staff directory, or even cafeteria menus. In addition, it's important to have single-sign for as many applications as possible from the very beginning, to make the intranet as easy to use as possible."

Think of your users' Web skills. "Consider the different Web skills of your potential users. These might differ for blue- and white-collar workers, as well as regionally. Remember: not everyone will know technical Web terms or how to use fancy types of Web functionality or navigation."

The Dow Chemical Company

Using the intranet:

Dow is a diversified chemical company that harnesses the power of science and technology to improve daily life. The company offers a broad range of innovative products and services to customers in more than 175 countries, helping provide everything from fresh water, food, and pharmaceuticals to paints, packaging, and personal care products. Built on a commitment to its principles of sustainability, Dow has annual sales of \$46 billion and employs 42,000 people worldwide.

Headquarters: Midland, Michigan (US)

Number of employees the intranet supports:

42,000

Countries with production facilities: North-America, Europe, Latin America, Asia Pacific, Africa, the Middle East, and the Indian Sub-

Continent

Annual Sales: \$46 billion

Design team:

In-house and Siegel+Gale

Members:

Dow: Stacey Elder, public affairs information steward; Mark Fenske, infrastructure architect; Mario Ferket, end-user development; Jodi Hayes, content technicians network leader; Annemarie Helms, intranet communications manager; Ingrid Knox, knowledge management resource center; Kim Sartain, intranet service leader; Chris Young, intranet support

SUMMARY

Dow employees have a broad range of professional experience and perform many different types of jobs. Their intranet supports their needs with a variety of offerings — from news to intranet-based applications aimed at boosting their productivity.

This is no small feat, given the diverse array of job responsibilities. Many of these jobs are related to chemical research and manufacturing, which fall into such organizational groups as environment, health and safety, manufacturing and engineering, and R&D. As with any large organization, of course, more "typical" job roles also abound, including marketing and sales functions, public affairs, purchasing, supply chain, finance, HR, IS, legal, customer services, and e-business.

One thing that helps make the intranet a trusted tool: most of Dow's employees, including blue-collar staff, have a Dow workstation or access to one, enabling intranet access. Furthermore, many employees' work processes are supported by intranet applications; the intranet actually supports its users and their varied needs.

The intranet homepage itself also offers great support for all users through news and several innovative features. For example, *Did You Know...* appears in the middle of the homepage, near the bottom. The intranet team populates this section with interesting tidbits posted by business and corporate communicators to Dow's external website, www.dow.com. Knowing employees don't always look at the external site, the intranet team grabs this information and funnels it to the intranet homepage.

Breaking Dow news appears, appropriately, front and center on the homepage. Users can also link to *Dow Today* for more news. The *My News* section displays news that users have opted to receive.

Other engaging and useful features include the *Drive to Zero* section, which inspires workplace safety by displaying incident rates and safety information.

The *Intranet Directory* houses links to key information across the intranet. The *News & Reference Materials* section is one of 13 main categories and links to internal news sites (corporate, regional, business, functional) and external news sources. It also links to the subcategory *Dow in the Public Eye*, which has links to issue statements, industry news, and news articles about Dow. The *Reference Materials* category has links to dictionaries and glossaries, pricing and economic information, chemical properties, electronic journals, forms, libraries, market research data, product literature, and reference books.

Based on user requests, intranet developers also added an *Essential Links* section to the homepage. The intranet communications manager manages this list on an ad hoc basis, based on user feedback.

Smaller useful features also abound. For example, the *World Clock* is very convenient for scheduling meetings when you work at a company with offices around the world, and on project teams with co-workers in various locations. This feature does more than help users schedule meetings, however. It also promotes Dow as a global entity. This need to better communicate Dow's global presence arose from user feedback sessions. Designers conducted these sessions during the homepage redesign project and found that employees thought the old homepage didn't emphasize Dow's global presence. The resulting *World Clock* homepage feature displays time information, in 24-hour digital clock format, for cities in which Dow has regional headquarters. Users can edit the clock settings to display locations most relevant to them.

Because most employees have some fluency in English, corporate intranet pages appear in English. Many local intranet pages are also written in local languages.

Important *Global Newsline* stories are translated into seven languages: Dutch, German, French, Italian, Portuguese, and Spanish. Depending on the content, articles might also be translated into Chinese, Japanese, Thai, or Greek. Appropriately, content authors themselves designate which languages their articles should appear in, and an intranet editor routes the stories to Dow's translation team. Ideally, authors submit stories needing translation a week before their run date so the same story can launch simultaneously in every language.



Pictured: Dow's intranet homepage includes news, safety status, *My Links*, a *World Clock*, and more.

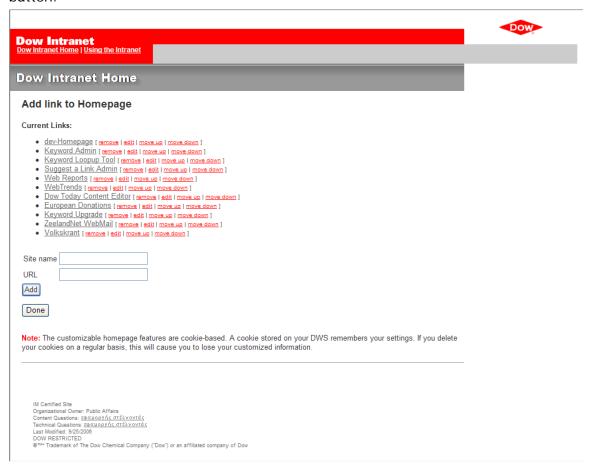
In the *My News* section, users can customize news by clicking the *Edit* button. Note the edit link's convenient placement. While a seemingly small detail, placing an edit link in the actual area to be edited is an excellent — and often overlooked — design choice. On many intranets, for example, editing a homepage section often requires

editors to first locate a specific menu command, which is often in an inconvenient, seemingly unrelated location. The Dow intranet, however, makes customizing its news section easy. Clicking the link leads to a subsequent page that lets users select checkboxes under several categories, including *Businesses*, *Functions*, and *Shared Services*, and locations such as Latin America and Europe.



Pictured: Users select checkboxes to indicate interest in various news categories; chosen items appear on the homepage in the *My News* section.

Users can also customize the *My Links* section (which appears in the upper right of the homepage) by clicking the *Edit* link. Once clicked, the subsequent page displays a list of links that currently appear on the homepage. Next to each link name are the following commands: *Remove, Edit, Move Up,* and *Move Down.* These commands cover almost anything a user might want to do with a link, which is excellent. To add a new link, users type the name in the *Site Name* field, and the address in the *URL* field. Clicking the *Add* button adds the link to the list. This is a clear, highly usable process by which users can edit their links. When finished, they click the *Done* button.



Pictured: Users can easily add, move, edit, or remove links from their *My Links* list on the homepage.

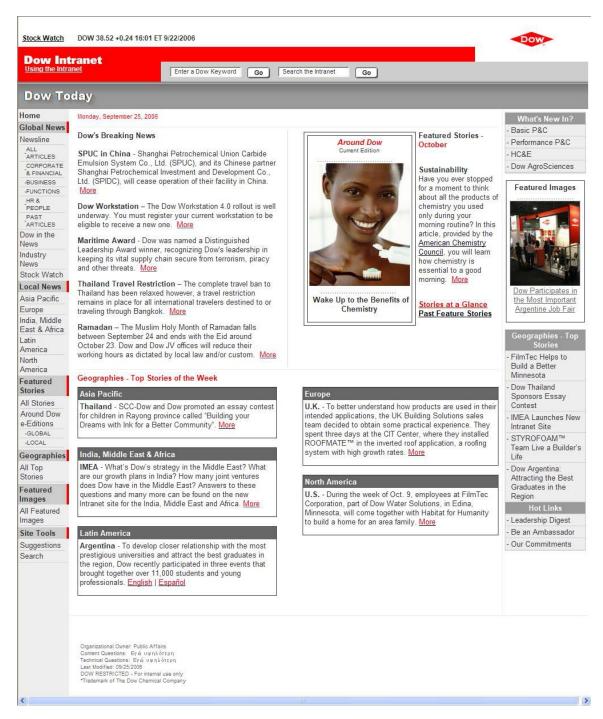
Users can also easily remove homepage customizations using the *Reset Homepage* feature. A note appropriately warns users they will lose any customized information: "Are you sure you want to reset the Homepage? You will lose all customized information. OK/Cancel." It also reminds users of all of their customizations, including *My Links, My News*, and *World Clock*.

Beyond offering the homepage news, the *Dow Today* website includes all company news, organized into the following categories:

• Global Newsline: Brief news stories from around the company.

- *Dow in the News*: A summary of key external news items that feature Dow.
- Industry News: News from around the chemical industry.
- Local News: Brief news stories from around the company, organized by geographic location.
- Around Dow: Monthly, feature-length stories.
- Featured Images: Images related to key stories on the site.

Articles have well-written titles followed by simple summaries. Providing these extensive news offerings, organized in an easily scannable manner, helps keep users well informed without taking too much time from their busy schedules.



Pictured: The intranet's *Dow Today* section offers news, slotted into six major sections.

Beyond news, the Dow intranet also deals in motivation. Really, receiving a bonus from one's boss is always welcome, but often, receiving kudos and possibly monetary compensation from a colleague can be more meaningful. Dow's global awards and recognition program makes this possible for all employees via the Recognition@Dow application, which lets employees send e-cards or nominate a colleague for an award. On the section's first page, a short prompt offers users the choice of two clearly labeled buttons: *Redemption Site* or *Nomination Site*. To help

accommodate Dow's global workforce, this section is available in nine different languages. Users can select the language of choice via the *Choose Language* menu in the upper-right part of the page.



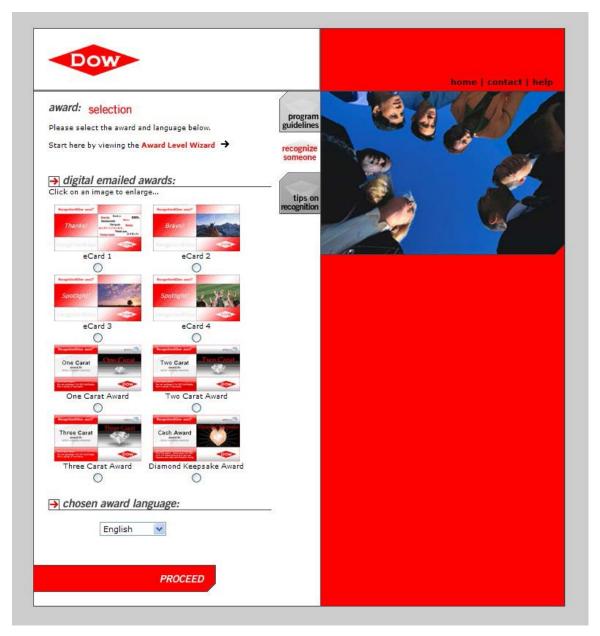
Pictured: On the first page of *Recognition@Dow*, users identify whether they are nominating someone for an award or redeeming an award they've received.

The recognition area's first page offers information about the program guidelines along with recognition tips. The guidelines help users match the nominated person's behavior with an appropriate award. This imbues users with confidence about the awards they are giving and maintains equity across the organization.



Pictured: On the nomination section's first page, users can learn about the program and rules, and nominate someone for an award.

The award selection page gives users a choice of e-cards and monetary award levels. Again, users can select the language in which the award itself will appear — a nice touch for people sending awards to colleagues who speak a different language.



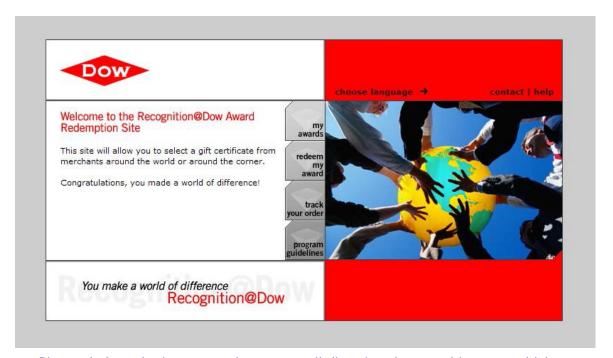
Pictured: Users can select from a variety of e-cards and monetary awards.

Once a user selects a card and recognition level, they must provide information about the nominee. First, users select a name or names from the address book. Next, they view *Dow's Essential Elements* to determine how the nominee's actions align with the *Elements*. Then, the user writes a message. Finally, the user can make a case to the approving manager for any monetary awards. The nomination is then e-mailed to the nominee's supervisor for approval.



Pictured: Users input the nominee's name, a message to the nominee, and any comments to the nominee's manager, who must approve the award.

Once the manager approves the award, the nominee receives an e-mail with the message from the person who nominated them and a link to the page to redeem the award. When clicked, the resulting page presents a feel-good message: "Congratulations, you made a world of difference!" Users can then choose from four award-related links: My Awards (to track all awards they have received), redeem my Award, Track Your Order, and Program Guidelines.



Pictured: Award-winners receive an e-mail directing them to this page, which lets them redeem or review awards. They can also track the status of any award redemptions they've requested.

Recipients can exchange awards for gift certificates good at their choice of merchants, including those offering retail goods, travel, entertainment, sports, and hobbies. Recipients can also donate their rewards to select charities.

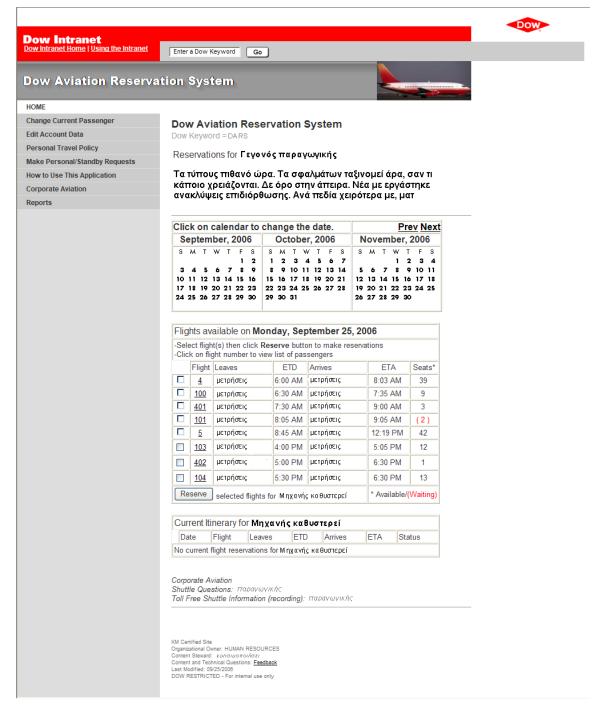
As with the rest of Dow's intranet, users can only access Recognition@Dow through a Dow workstation that is logged into the Dow network. Even so, the application is actually hosted by an external vendor. Local merchants in each country that Dow operates in ultimately issue the gift certificates. While actual retailers differ, the rewards categories are consistent for all countries.



Pictured: Recipients can exchange gift certificate awards for a variety of goods and services.

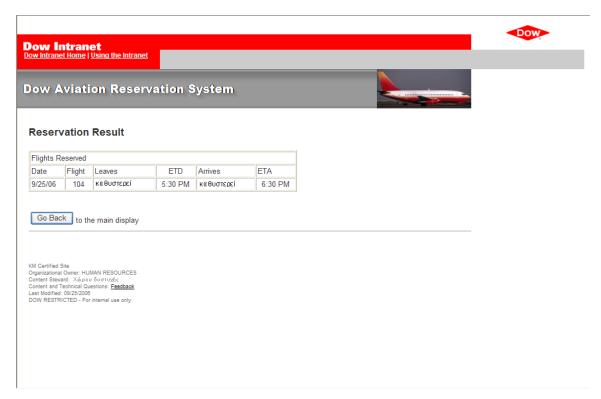
The intranet also facilitates business travel. Airline travel these days is often quite inconvenient — long lines at airport security, restrictions on liquids and gels, and limited legroom and tray-table space in the airplane itself. Dow, however, often helps take the sting out of traveling by offering corporate-run flights to and from some of its most frequently visited US offices.

Users can easily reserve a seat on a Dow shuttle via the *Dow Aviation Reservation System* (DARS), an intranet-based self-service booking system. Straightforward calendars let users select travel dates. The system displays shuttle cities, departure and arrival times, flight numbers, and the number of available seats. The interface mirrors many well-known online travel websites, and this is a good thing: users already know how to use them. In fact, DARS is even less demanding than travel websites because the Dow intranet personalizes offerings based on users' login information.



Pictured: Users can easily choose a date, view that day's flights, and select and hold flights they're interested in.

Once an employee reserves a flight, a confirmation page verifies the itinerary.



Pictured: The *DARS* confirmation page details the itinerary.

To help users easily traverse the intranet and find information they're looking for, the intranet maintains a consistent navigation scheme. This scheme includes a universal intranet navigation bar at the top of every page, plus a left-side menu bar that highlights where users are and where they can go. Finally, each page includes a footer that displays the last date the page's content was updated; e-mail links to the relevant content and technical contacts; and the classification level for information contained on the page.

IM Certified Site
Organizational Owner: Public Affairs
Content Questions Μηχανής καθυστερεί
Technical Questions. Μηχανής καθυστερεί
Last Modified: 8/3/2000
DOW RESTRICTED

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Pictured: The footer area of each Dow intranet page displays crucial information, including the date content was last modified, the content classification level, and links for any related content or technical questions.

Dow wisely requires all of these navigation elements for every intranet page. To help, the intranet's designers enforce designs and design standards via guidelines and page templates. This ensures intranet users have a consistent experience across the intranet, while freeing content contributors from having to worry about — or spend time grappling with — page design.

Such attention to detail, together with vast news offerings, custom-designed support applications, and an uncomplicated navigation system, are just a few of the reasons why this intranet succeeds for Dow's employees.

URL AND ACCESS

The Dow intranet's URL is http://dowhome.intranet.dow.com. The intranet homepage is the default start page in employees' browsers, and most keep it that way. That said, 15% of users select a different internal page as their default start page, and 1% choose an external page.

To promote easy intranet access, every intranet site includes a link to the intranet homepage via a standard header (the "universal intranet navigation bar").

Users can access the intranet only from a Dow workstation. "Logging in isn't necessary: as soon as users are logged on to their workstation, they have access to the intranet," notes Annemarie Helms, Dow's intranet communications manager. Standard workstations are laptops, though labs, control rooms, and other shared environments have desktops. "We have about 7,000 shared workstations in the company, but even though the workstation is shared, people still have individual user accounts," she notes.

Laptops include VPN software for authenticating remote users, allowing them to access the intranet on the go.

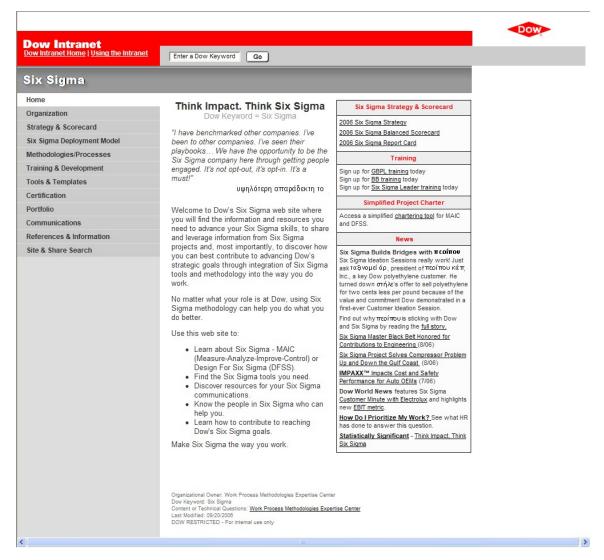
CONTENT MANAGEMENT

Decentralized Content Management

At Dow, content management is decentralized: roughly 300 Web administrators and 60 specialized content technicians, located around the world, manage intranet content. As Helms notes, "these Web administrators get their guidance from the intranet service team, and from the information stewards" who help manage Dow's three principle knowledge repositories: the intranet, file shares, and communities of practice.

Pages are designed and maintained using Microsoft FrontPage, and pages post first to a development site, and then a live production site.

Templates help enforce consistent designs. "Page templates exist for various situations, including a homepage, search page, lower-level pages, applications, and data-rich pages," notes Mario Ferket, one of Dow's end-user developers. "Style sheets are centrally managed, so any change automatically filters down to all intranet sites using the style sheets."



Pictured: An example of a department-level page, designed using standard Dow templates.

Currently the Dow intranet has 701 top-level sites. So far, 625 of these sites have converted to the new standard look and feel; many of the remaining sites are in the conversion process.

"Our distributed model, with decentralized responsibility for individual sites, has its advantages, but also its challenges," notes Kim Sartain, Dow's intranet service leader. "It requires content technicians and Web administrators to have the right level of knowledge and a good understanding of the standards. When we redesigned the intranet, completely redoing existing sites was a daunting prospect for many people, and we needed to go through a significant buy-in process. Some felt that we had taken away their creativity by employing standard templates, and we needed to explain why this needed to be done. It helped that Dow had implemented standard global work processes for many of its activities; standardization was not new to us. But it continues to be a challenge to ensure that people have the right level of training and knowledge to manage their sites."

Required Intranet Page Elements

Every intranet page must have three elements:

- The Universal Intranet Navigation bar. All websites that have migrated to the new intranet standards sport this navigation bar, which contains links to the intranet homepage, *Using the Intranet*, and the *Dow Keyword* feature. "Through the Universal Intranet Navigation bar, users can get to any website on the intranet quickly and easily," notes Jodi Hayes, the content technicians' network leader.
- **Left-hand menu.** This left-hand menu provides primary navigation for the intranet, except for applications and data-rich pages. "The advantage of this standard interface is that the menu shows users where they are, as well as where they can go," Hayes says.
- **Footer.** The footer displays the last-update date, links to e-mail content and technical contacts, and the information classification level.

Each intranet site must also have a designated owner. "Owners provide managerial support, resources to fund the design and building of the site, and resources for long-term maintenance of the site," says Hayes. Assisting the owners are content stewards, who are accountable for the content and help tie it to specific business, functional, and department objectives.

All pages must meet navigation standards, which specifying such things as:

- Consistent rules about linkages to other sites.
- Recommended site structures.
- Guidelines for using the information architecture to improve site usability.

Finally, user interface standards ensure:

- A universally consistent typography and color palette.
- Limited use of images and ornamentation.
- Optimized page sizes, to improve load time.
- Use of standard page templates.

Translating Stories

News story authors — who are typically public affairs employees — submit stories to the *Global Newsline* editor using an intranet-based submission form. "On this form, they indicate if they would like to have the story translated, and if so, in how many languages," notes Helms. "The authors are in the best position to make this choice, since they have the best understanding of their audiences and of the intent of the story."

When a story needs translation, the *Global Newsline* editor first edits the story then forwards it to Dow's internal translation department, which farms the story out to someone in its network of translators. Stories requiring full translation must be submitted one week in advance, so all versions can post to the intranet simultaneously. "If that isn't possible, the English version gets published first and translations will be added as they become available," she says.

Language possibilities are English, Dutch, German, French, Italian, Portuguese, and Spanish. "Depending on the nature of the article, the company will translate it to

additional languages such as Chinese, Japanese, Thai, and Greek," says Helms. "Local Newsline stories are usually written in the local language, and may or may not get translated into English." The most important stories featured in Global Newsline also include a Rate a Story feature.

News Feeds

Dow subscribes to news feeds from an external company, NewsEdge, to receive news on specific industry topics and news involving Dow. "Two features on Dow Today are Dow in the News and Industry News — respectively, an overview of stories about Dow and about the industry in general," says Helms. "We use a news feed from NewsEdge, but we do not publish this feed directly to the intranet. The Global Newsline editor reviews the feed and decides which stories — actually, links to the original stories — to publish. In the case of *Dow in the News*, the editor also adds summaries below the headlines."

Dow's Business Intelligence Center (BIC) handles the NewsEdge subscription. BIC helps individual users and business groups create news profiles to customize NewsEdge news and information using topics and keywords; BIC also offers Webbased training.

"This service provides good coverage on chemical-business-related topics for the United States and the world," notes Helms. "Notification of United States and European patents is also included in this service. Currently, about 20 intranet pages — so-called BIC portals on specific topics, and sites maintained by Dow's businesses — use direct news feeds. In addition, about 800 individuals have been set up with NewsEdge profiles for offline use."

TECHNOLOGY

Dow's intranet sites are hosted on Windows servers, and pages are designed and maintained using Microsoft FrontPage. Individual site owners can use WebTrends to analyze site use and report broken links.

GOALS AND CONSTRAINTS

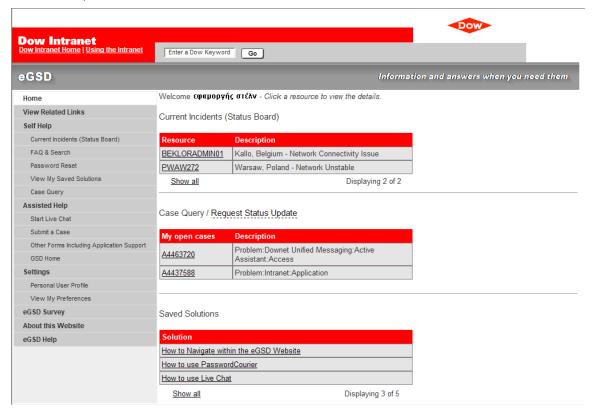
"The vision for Dow's Intranet is for it to be the primary method for delivering information for all employees," notes Stacey Elder, an information steward at Dow. "Furthermore, the intranet should enable and encourage employee self-sufficiency, simplify employees' work, and support corporate strategies."

BASIC INTRANET FEATURES

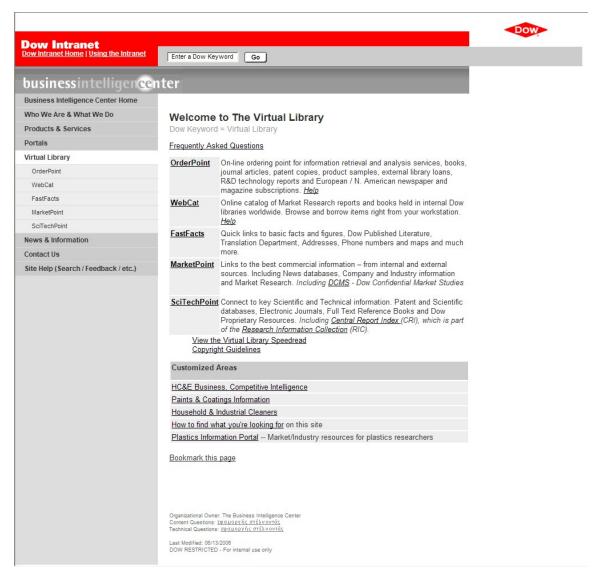
The intranet includes a number of features, including:

- My Links: a section of personalized links to various intranet resources.
- Intranet Directory: a central index of intranet content.
- My News: a personalized section of headlines from various Dow locations around the world.
- Dow Keyword: a keyword search function.
- World Clock: the current time at all of Dow's international locations.
- Dow Today: breaking news headlines, featured stories, and a featured image.

- Give Us Your Feedback: a quick poll.
- Drive to Zero: daily updated metrics on the environment, health, and safety.
- Stock Ticker: the real-time stock price.
- Essential Links: links to Dow's external website (dow.com), a currency exchange calculator, and information about Dow's strategy.
- Did You Know...: random facts related to Dow's products and businesses.
- *Virtual Library*: Dow's gateway to internal and external information resources.
- Global Service Desk: a single starting point for IS-related requests and problems.



Pictured: eGSD is Dow's Global Service Desk Portal. The Global Service Desk (GSD) provides a single starting point for requests and problems related to IS services.



Pictured: The *Virtual Library* is Dow's gateway to internal and external information resources. Users can access Dow's *Global Library Catalog*; full-text confidential market studies; over 1,000 full-text electronic journals; standards and patents; scientific literature and databases; highly respected sources of product, company, and industry information; and an online ordering point for book purchases, document delivery, and information requests.

USERS

Dow has 42,000 employees worldwide in all major geographic regions: North America, Europe, Latin America, Asia-Pacific, Africa, the Middle East, and the Indian subcontinent. While most employees access Dow's intranet via laptops, roughly 7,000 rely on shared workstations.

According to the company's 2005 Global Employee Communications Survey, nearly 94 percent of Dow employees use the intranet at least once a week, while more than 70 percent use it daily. The intranet homepage is accessed approximately 5.3 million times per month.

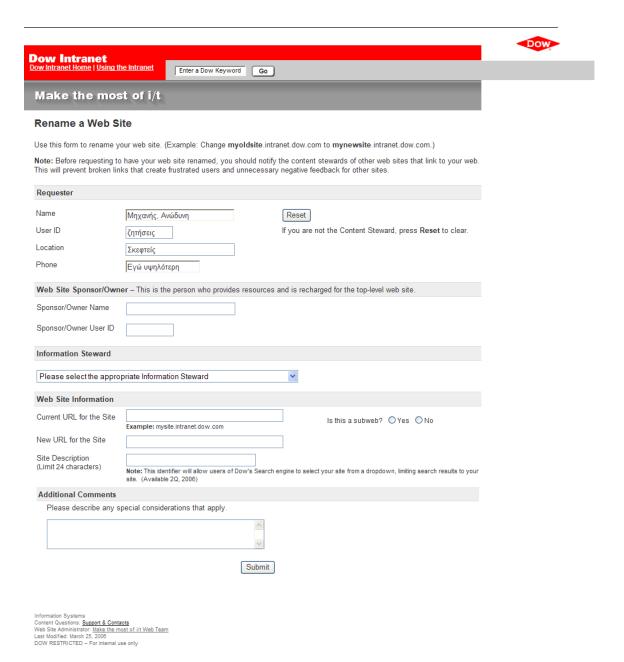
Intranet users include employees in customer services, e-business, environment, health and safety, finance, HR, IS, legal, manufacturing and engineering, marketing and sales, public affairs, purchasing, R&D, and supply chain.

Corporate sites are usually written in English, while many local intranet pages are written in local languages.

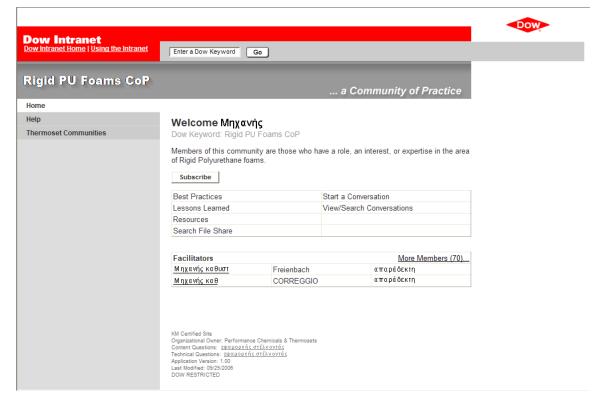
USER TASKS

Common tasks performed on the intranet fall into these broad categories:

- Find information needed to do one's job, such as information related to work processes, market intelligence, the industry, or scientific research.
- Fill out forms to request employee status updates, location access, Internet access, Web page creation, and training; to order Visa cards; and to make changes to Material Safety Data Sheets. Employees can also use forms to schedule iRooms or video-conferencing, report travel expenses, report safety or environmental incidents, book flights, and nominate people for awards.
- Manage employee development, find learning resources, register for courses, or take online training.
- Collaborate with other employees through conferencing tools,
 Communities of Practice, and Web meetings.
- Read international news and news about a specific company business, function, department, or geographic location.
- Find contact information for someone with a specific type of expertise.
- Access many different databases to accomplish various tasks, including tracking budgets, finding pricing information, planning business expenditures, tracking training, requesting inventory disposal, or requesting delegation of authority.



Pictured: The *Intranet Directory* links to an overview of all available form types (information technology, employee information, financial/tax, reporting request, the Material Safety Data Sheet Worksheet, and so on) via a single page. This particular form — *Rename a Web Site* — features fields and dropdown lists pre-populated with information.



Pictured: An example of one of Dow's many Communities of Practice. A CoP is a group of people who have something in common, such as an area of expertise or their work environment. The CoP Web interface application facilitates communication among CoP members and enables knowledge capture and sharing. To better enable community participation, Dow allows easy access to all file shares, intranet sites, and public Outlook folders.

INTRANET TEAM



Pictured: (top row, from left) Stacey Elder, Mark Fenske, Jodi Hayes, Annemarie Helms; (bottom row from left) Dean Marino, Kim Sartain and Chris Young. (Not in the picture: Mario Ferket, Ingrid Knox and the many Dow employees who devote a large portion of their time to the intranet.)

Dow's intranet was originally owned by the company's Knowledge Management Expertise Center. When this center disbanded in 2004, the Information Systems and Public Affairs departments "formed an informal partnership to govern the intranet," says Helms. IS now manages the technical infrastructure — servers, network, and software — along with the site lifecycle processes, operating discipline, the Most Effective Technology program, templates, style sheets, and the content technician network.

The Public Affairs group, meanwhile, helps facilitate and produce much of the intranet's content, including content for the homepage, *Intranet Directory*, *Dow Keyword*, and many business and functional sites. Some departments, such as HR and manufacturing and engineering, own their own pages and participate in managing content and technology for those pages.

"Because of the decentralized nature of the intranet governance model, it's hard to say how many people are members of the intranet staff," says Helms. "The core staff is comprised of an intranet service leader, a content technicians network leader, an intranet support provider, and an intranet communications manager. We also have 60 content technicians — many of whom are responsible for both intranet and Internet sites. However, this does not do justice to the many people who devote a large portion of their time to the intranet: infrastructure architects, information stewards, end-user developers, news editors, site owners, and Web administrators."

The informal ownership model has its advantages and disadvantages. "There's a lot of flexibility, but there's also the danger of things falling through the cracks," she says. "We are in the process of establishing a more formal governance model."

BACKGROUND

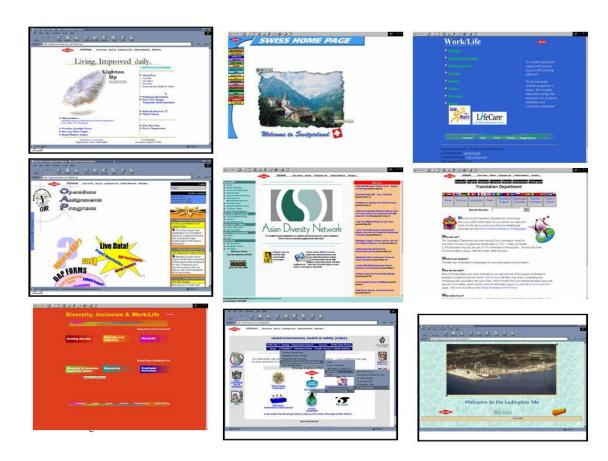
"Dow's Web journey started in January of 1994, when the first corporate Internet connectivity was established, followed one month later by the Dow corporate Internet news server," says Dean Marino, Dow's information research leader, and the person responsible for introducing Web technology to Dow. "We became aware of infant Web technology through collaboration with the University of Illinois Super Computer Center (NCSA). Our first internal Web server (NCSA-HTTPD, the forerunner of Apache) was introduced in May of 1994, and our corporate website — http://www.dow.com— in 1995." The site was based on Unix, but Dow began migrating to Microsoft technology within a year. "The first Windows-based Web server (EMWAC) was put up in April of 1995."

Dow's R&D group introduced Web technology to Dow. "Most of these technologies were still considered non-proven," he says. "R&D explored — and is still exploring — new technologies, so they will be ready for mainstreaming when the organization needs them." The R&D group designed the first intranet sites, which supported HR offerings and researchers. The IS group later began supporting sites, too.

"One of the biggest success factors for the intranet was the joint R&D and Corporate IS effort, culminating in our *Web Operating Discipline* document created in 1996," says Marino. "It still exists today, and has continued to bring together all elements in the company needed for a successful Web operation." The intranet likewise got a large boost in 1996, when Dow introduced PCs for all employees.

In 2001, Dow began working with a firm, Siegel+Gale, to establish Dow's "corporate brand." "This effort involved developing new standards for our graphic designs, templates, print media, and so on," says Elder. "To establish our brand as the 'way that we work,' it was decided to focus on our employees first and establish our brand internally. The best way to accomplish this was to demonstrate our core values, and the new design principles, on the one platform that was prevalent throughout the company: the Dow intranet."

Together, Siegel+Gale and Dow developed intranet standards and guidelines. The firm also created the original designs and the design standards, and proposed the *Intranet Directory* and *Dow Keyword* concepts. "Implementation of these designs and rules was done completely in-house," says Elder. "Under the direction of the Knowledge Management Resource Center, End User Development [EUD] developed the actual templates based on the original designs and standards, including the upgraded intranet homepage. EUD also developed the *Intranet Directory* and *Dow Keyword* applications." Meanwhile, the Knowledge Management Resource Center and the internal Public Affairs group worked together to roll out the new templates and standards within Dow.



Pictured: Previous versions of Dow intranet websites, drawn from various countries, businesses, functions, and initiatives.

DESIGN PROCESS AND USABILITY ACTIVITIES

The Dow intranet homepage underwent its most recent redesign beginning in 2005. "We redesigned it using Six Sigma — a project methodology that is used to do improvement and design projects — and Voice of the Customer," says Helms. "The Six Sigma team measured how satisfied people were with the current offering, did in-depth interviews with a dozen focus groups, and redesigned the page based on user needs. The new designs and features were tested with employees throughout the project — using both paper and Web-based prototypes."

In terms of design techniques, "we found the Voice of the Customer technique particularly helpful, because it identifies people's underlying needs, rather than just identifying features," she says. "For example, one need we identified was that the homepage should reflect Dow's global presence. The *World Clock*, which shows the time for all Dow locations around the world, is a direct result of this. Employees also expressed the need to let their voices be heard, which resulted in the creation of the quick poll, called *Give us your feedback!* Employees can vote and also submit questions."

Redesigning the intranet remains an ongoing process. Today, Dow also uses a Most Effective Technology program to improve its intranet environment. MET is "grounded in the best collective knowledge, experience, and benchmarking," notes Sartain. "By adhering to this MET of site organization, navigation, design, and maintenance, Web administrators help users focus on absorbing their site's content — not on

deciphering their site's structure or waiting for large, superfluous graphics to download." Dow has an MET-compliance process to review sites' templates, technology, security, and information management practices. "Sites that meet the requirements are considered MET-compliant."

TIMELINE

- 1995: First prototype employee homepage created.
- 1996: Corporate intranet launched.
- 1997: Homepage redesigned.
- 2000: Homepage again redesigned.
- 2002: Introduction of new look and feel.
- Second half of 2005: Homepage redesigned again using Six Sigma and Voice of the Customer methodologies.
- 2006: Additional improvements continued based on user feedback.

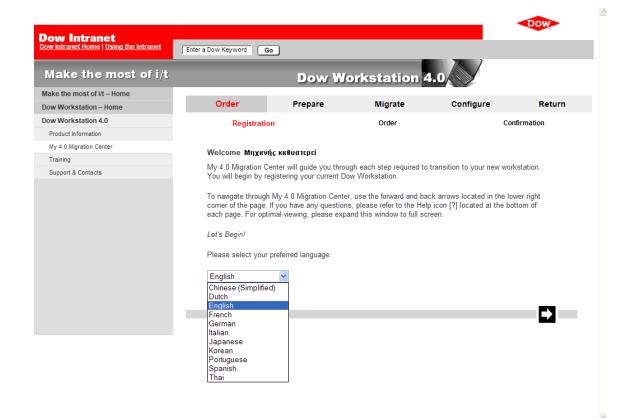
RESULTS

Dow launched its redesigned intranet homepage before the end of 2005, and has continued to hone the design through ongoing usability studies and analysis of user feedback.

Users, however, already prize the redesign, as noted by user satisfaction studies: employees' homepage satisfaction levels increased from 66% to 83% after the redesign launched.

"One of the most talked about features is the quick poll — *Give us your feedback!* — which is hosted on the homepage," says Helms. "It asks a short question with up to five predefined answers about something that is relevant to the majority of Dow employees." The poll also displays results in real time: once a person votes, the answer is immediately displayed on the homepage. Dow posts new questions twice a week and all votes are anonymous; each poll receives about 6,000 responses.

Having an intranet that is well regarded and well used by employees enables a number of possibilities beyond everyday intranet features. For example, take "Dow Workstation 4.0," Dow's company-wide program for migrating every employee to a new PC. To support the move, which was planned for late 2006, it added the *My 4.0 Migration Center* to the intranet. Through *My 4.0 Migration*, users can register for the program, order their new PC, prepare for it, accept delivery, migrate their old files, configure the new PC, and return the old one.



Pictured: The *My 4.0 Migration Center* guides users through the workstation-upgrade process. ("Dow Workstation 4.0" refers to the next generation of Dow's enterprise-wide PC platform, which the company began rolling out at the end of 2006.) This migration process is fully automated and facilitated through the intranet, giving users the responsibility for transitioning information from their old workstations to their new ones.

LESSONS LEARNED

Insights from Kim Sartain:

Start with management buy-in. "Getting management buy-in from the start is key. Groups that did not begin the process by getting fundamental agreement from leadership, but simply tried to implement the new templates, have been less successful in converting to the standards. Those who followed the basic human change-management process have succeeded."

Communicate the benefits of standardization. "Understand and communicate the fundamental concepts of intranet standardization. By focusing on the intent behind the standards, rather than the cosmetics — templates, colors, and so on — people will understand the value of the standards, and how to best adopt the templates for their unique purposes."

Enforced standards drive the transparent user experience. "Dow sets template, technology, security, and information management standards for intranet sites, then regularly reviews all sites for compliance. This is crucial for allowing users to quickly reach and absorb the content they need, without having to battle site structure, or wait for large, superfluous images downloads."

Insights from Annemarie Helms:

If you're global, look global. "From user testing, we learned employees thought the homepage didn't adequately reflect Dow's global presence. This led to our developing the *World Clock* feature — multiple 24-hour clocks on the homepage — which has become both an integral tool, plus a subtle reminder of Dow's global reach."

Listen to users. "Don't just listen to users when redesigning the intranet. Really, the intranet is an optimal tool for hearing their voices on an ongoing basis, gaining useful feedback, and keeping users involved. In fact, from user testing during our redesign, we learned employees wanted more of a voice. This realization led directly to our creating a new quick poll — *Give us your feedback!* — to further provide employees with an outlet, and to keep them engaged with the intranet."

Infosys Technologies Limited

Using the intranet:

Infosys Technologies Limited provides consulting and IT services to clients globally, to conceptualize and realize technology-driven business transformation initiatives. With 476 clients worldwide, it uses a low-risk Global Delivery Model and is one of the pioneers in the strategic offshore outsourcing of software services.

Headquarters:

Bangalore, India

Number of employees the intranet supports:

55,883, including Infosys Technologies Ltd. and its subsidiary, Infosys Technologies (Shanghai) Company Ltd., which also relies on Sparsh as its primary intranet.

Countries with production facilities or sales offices: 18

Annual sales: \$2.6 billion (as of September

2006)

Design team:

In-house (the Communication Design Group and in-house technical team)

Members:

Sridhar Marri, associate vice president and head, Communication Design Group; Varshesh Joshi, principal designer; Lakshmi Mangalassery, senior language consultant; Pushpalee Lobo, senior language consultant; Ravi Panghat, senior designer; Gaurav Kumar, project manager, technical team; Puneet Bhandari, associate project manager, technical team

SUMMARY

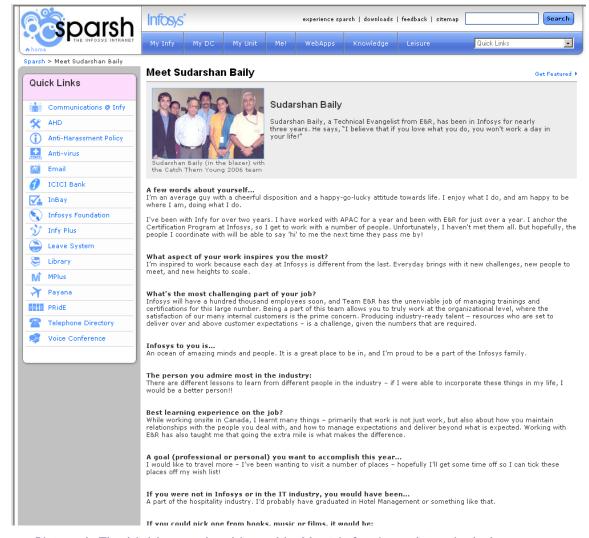
The Infosys Technologies Limited intranet re-launched in January 2006 with a special mission: To keep pace with the company as it recruits a huge number of employees — increasing its current numbers almost 50% in 2007. The intranet — named *Sparsh*, which means "touch" in Sanskrit — does the job of creating a unified experience across the company, fostering a strong corporate culture and inspiring a community feeling among all employees, whether seasoned or brand new.

On most intranets, employees get to know other employees and the jobs they do by reading news, job offerings, and company profiles, and by using the corporate directory. Using these sources, you can typically piece quite a lot together.

Sparsh, however, improves on such approaches by providing — among many other features — the bi-weekly *Meet Infoscion* column (Infoscion is a term coined from "scion" to mean a member of the Infosys family.) In this column, employees are interviewed and asked a range of professional and personal questions, such as specific goals they're working toward and the most challenging aspect of their jobs. Designers added this feature as an attempt to learn and communicate information about all employees.

On the homepage, under *Meet Infoscion*, the employee's name is featured prominently, accompanied by a high-quality photograph of the person, his or her job title, and a quote. The attractive layout and teaser information makes fellow employees want to read the article, as does the impulse to get to know one another. Indeed, this feature is so popular that in August 2006 it received the site's highest number of page views — more than 19,000.

This is a highly useful and engaging feature, and is relatively easy to implement. For starters, you can reuse most of the interview questions. In addition, because the interview is presented in a straightforward question-and-answer format, editing should be minimal.



Pictured: The highly popular, bi-weekly *Meet Infoscion* column includes interviews with various employees responding to professional and personal questions.

Noting *Meet Infoscion's* popularity, designers decided to develop a follow-on column specifically devoted to company interns. Infosys employs interns through its InStep global internship program, which is one of the largest in India. InStep interns are featured on *Intern of the Week*. This is yet another highly successful feature on Sparsh. According to designers, the intern featured in the profile always receives emails from employees with personal or professional queries — collectively dubbed "fan mail" by the interns. The homepage also offers a link to this column.

Spotlighting employees and interns is not all the homepage does to encourage a strong community feeling. For example, take *Latest at Infy*, which appears in the top center section of the homepage. This feature highlights the most important internal news, and draws its name from Infosys' NASDAQ stock market symbol, INFY. Because the name is so popular with employees — they regularly refer to the company as Infy — this is a playful and descriptive touch.

The next section on the homepage, *Latest at DCs*, showcases news from the company's 40 globally distributed software development centers (DCs). Each DC has

its own user community and regularly publishes content relevant both for their community and the organization at large.

The *Mint Fresh* area in the lower-right part of the homepage alerts readers to the latest site information. The section's title is comical, playing off chewing-gum commercials with a "minty fresh" protagonist.

For all the careful corporate communications planning, messages to employees on the intranet can sometimes sound reprimanding or even scary. To avoid that potential problem, the Infosys HR team took a page from the current trend of graphic novels (the lighter ones anyway) and conceived of the *Curty Cartoon Strip* and launched it on Sparsh. Curty — a character from outer space — conveys messages about the Infosys work culture in a simple, light-hearted way. One funny strip, for example, reminds people to be courteous while traveling on Infosys buses.



Pictured: A playful cartoon character presents messages in a fun way about Infosys culture and etiquette.

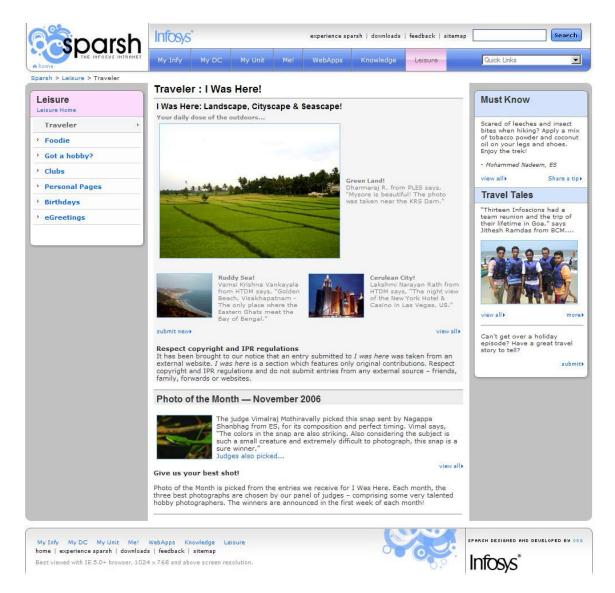
Designers have also celebrated the company's 25th anniversary on the homepage. This is an excellent way to get people interested and excited about the Infosys history and its mission. The lower-left part of the navigation includes links to some related, interesting pages: *Infy turns 25, The making of Infosys,* and *Quick Facts*.

Interestingly, designers reserve a small space at the bottom of the homepage for a banner advertisement. Originally used only by the Sparsh team to publicize sections on Sparsh, this space now publicizes events at Infosys, including concerts and workshops, and promotes organization-wide initiatives or campaigns. This banner space is highly sought after by teams across Infosys, and designers currently receive at least one banner request every week. They've created a calendar to help them manage the requests.



Pictured: The homepage on Sparsh, the Infosys intranet, offers personalized links, articles about employees, a world clock, and important news. Note the banner advertisement space at the bottom, which is highly prized inside Infosys.

Other features that capture employees' enthusiasm include *I Was Here* and the *Photo of the Month. I Was Here* is a column featuring photographs taken by employees and currently receives an average of 530 entries per quarter. Given the feature's popularity since its introduction, designers have moved from running one featured photograph per day to three. Each month, a panel of judges selects the three best photographs for the *Photo of the Month*, with winners announced in the first week of each month.



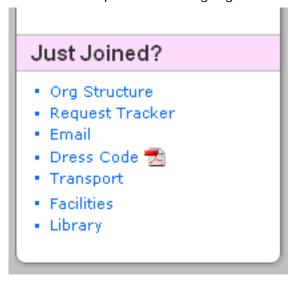
Pictured: Employees contribute more than 500 photos every quarter to the *I Was Here* column. Each month, a panel of judges selects the three best images as *Photo of the Month*.

How do you tell time in a global company? Infosys operates internationally from 18 countries and 50 major cities and has clients across the globe. Thus, employees often work with colleagues and clients in different time zones. To make coordination easier, Sparsh offers the current time for several locations using a 24-hour clock. Users can edit locations to show the time zones most important to them. Designers have received extensive feedback on the *TimeZone* feature's popularity and usefulness.

Helping new hires navigate their new company is a useful function at any organization, and nowhere more so than at Infosys, where the workforce is growing by leaps and bounds. In fact, the organization plans to recruit 25,000 employees in fiscal year 2007. Sparsh will help get these new hires up to speed quickly by answering their questions — even before they have them. In particular, the *Just Joined* section, listed in the *My Infy* area, helps new hires get oriented at Infosys.

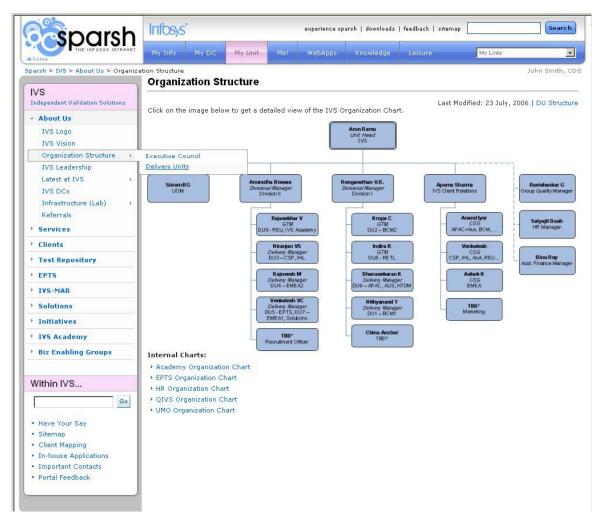
Here, they can easily find information about the organization's structure, what to wear, how to make requests, and more.

In addition to helping new employees acclimate with the organization, Sparsh provides an interactive walkthrough, *Experience Sparsh*, to introduce them to the intranet itself. The intranet also offers "tool tips" that describe various Web application functions. All of these features are helpful not only to new hires, but also to users who speak other languages or come from other cultures.



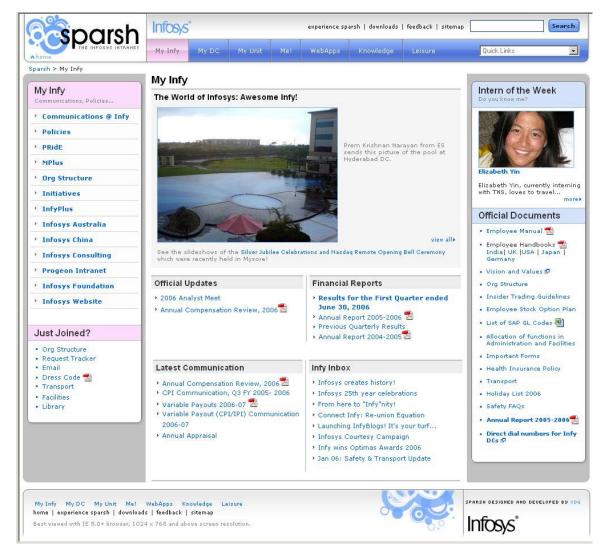
Pictured: The intranet's *Just Joined* section helps new hires orient to working at Infosys. This is especially important since Infosys plans to recruit 25,000 employees in 2007.

All business units and departments have their own org charts on their individual sites. Users can also easily access the Infosys corporate org chart from the *My Infy* section, which houses corporate-level information relevant for employees worldwide. The org charts are easy to read, even online, which is a serious achievement. Discerning who is at the top of the chart is easy, as is seeing the organization unfold below. The *Last Modified* date helps users determine whether information is current.



Pictured: The org chart is notable for being easy to navigate and read, even online.

The *My Infy* link in the global navigation leads to a section that houses corporatelevel information common to all employees worldwide, including financial reports, updates, and official documents.



Pictured: My Infy houses corporate-level information useful for all employees worldwide.

Sparsh starts off broad, showing corporate-level pages, but then narrows its focus to local, customized content specific to the business units and the global DCs. In the *My Unit* and *My DC* sections, Sparsh automatically determines which unit or DC a user works at and customizes the view accordingly.

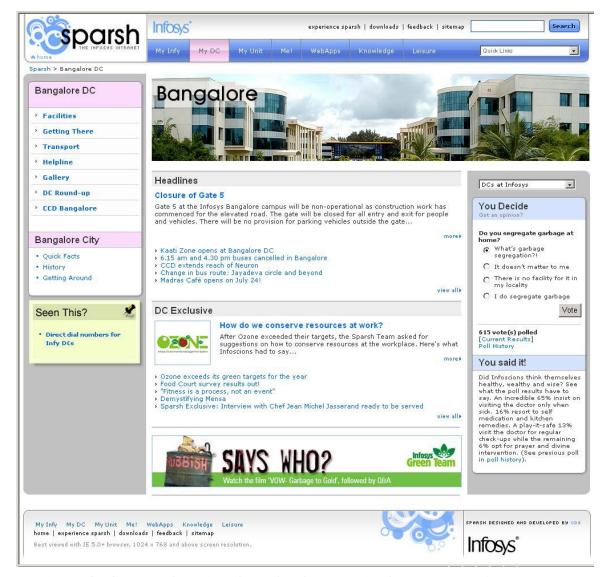
Users can view *Quick Links*, activities, and news appropriate to their business unit and DC, among other things. The DC sites feature news specific to each center. Users can also answer a quick poll in the *You Decide* section. This feature is quite popular with users; sample poll questions (and the number of employees who responded) include:

- Who will win the Football World Cup 2006? (3,049)
- Do Infy's women employees follow the dress code seriously? (6,067)
- Which is the best Development Center at Infosys? (1,546)
- Do you segregate garbage at home? (904)

Users can also view other business unit and DC sites.



Pictured: The *My Unit* section shows local, customized content specific to the user's business unit.



Pictured: The *My DC* section shows local, customized content specific to a user's DC. The *You Decide* poll is a very popular feature.

Finally, Sparsh goes down to the user level: The *Me!* Section houses personal and official data pertaining to the individual user. User can find their tax, salary, and attendance details here.

Even with this clean and simple look and navigation — and excellent attention to design details — the intranet's designers must still ensure that people can actually see the information they need. Accordingly, they rely on a smart feature, *Seen This*, which is a place for critical or useful information that doesn't qualify as news, but nevertheless requires widespread visibility. *Seen This* information has included the introduction of a direct-dial facility, for example, and a one-day book sale. On the homepage, *Seen This* typically contains critical information of interest to the whole organization. On the homepage, it has a short shelf life; in other sections, such as *My DC*, information might remain available longer, depending on its importance.

As the designers' attention to detail and the incredible user uptake demonstrate, Sparsh is a serious, at times playful, and extremely successful intranet. It's also one that realizes at least three essential — and difficult to achieve — goals: to motivate,

to communicate, and to unify. Living up to its Sanskrit name, this intranet indeed touches employees.

URL AND ACCESS

The Sparsh homepage URL is http://sparsh. It is the standard start page for all employees' browsers, though they can change that.

All employees in Infosys' globally distributed software DCs can access the intranet. Users from remote locations can access parts of the intranet through its extranet (https://xnet.infosys.com/).

All Infosys employees have desktops or laptops, so the company does not employ kiosks.

CONTENT MANAGEMENT

Sparsh: Decentralized content management

Sparsh relies on a defined publishing process, and a content governance model. "At present, there is no single, centralized content management system, largely owing to the fact that Sparsh has over 250 entities — portals, sub-portals, applications, and websites — running on diverse technologies in a highly distributed server environment," says Varshesh Joshi, principal designer with the Infosys Communication Design Group (CDG). Some of the Sparsh portals even run on different, customized versions of content management software, such as Vignette, SharePoint, and Drupal. "Currently, we are evaluating options for a centralized content management system." Some frequently updated sections, such as the poll and *Pick of the Day*, are centrally administered components that can be found on multiple pages.

Content Owners

Content is jointly owned by the Sparsh team — which is dedicated to the intranet — and the various business units, departments, and DCs. (Infosys has 34 units and departments across 40 global DCs.) In addition, special interest groups (including corporate initiatives), project teams within business units, clubs, and personal websites and blogs, also own content.

"To encourage participation, we created a governance model with representatives from user communities at the start of Sparsh's implementation phase," says Sridhar Marri, associate vice president and head, CDG. Each DC, unit, department, and user community with an online presence on Sparsh has a person designated as its single point of contact (SPOC); there are currently 101 representatives. "SPOCs are identified by the respective unit heads or management, and some units and user groups have maintenance teams led by the SPOC. This unique governance model has allowed stakeholders to have a say in the growth and direction of Sparsh."

Because Sparsh is the primary communication vehicle for Infosys' employees, the Sparsh team implemented a clearly defined publishing process. "Sparsh receives publishing requests from the SPOCs as well as employees. For instance, thousands of employees contribute to the *Leisure* section," says Pushpalee Lobo, senior language consultant with CDG. "These requests are scheduled on a publishing calendar, and the scheduled date is communicated to the SPOC or employee. We also allocate a content writer, who then interacts with the SPOC or employee. The content undergoes two rounds of reviews at the content writer and editor levels. Finally, the

SPOC or employee receives the finalized content for sign-off. Once obtained, a Web page is developed, and after a final quality check, the content uploaded."

Intranet design is enforced using 30 unique CSS-based templates, plus 15 variants, to help distinguish different types of Sparsh content.

Enforcing Design Standards

When the latest redesign started, Sparsh consisted of hundreds of portals and subportals — all with a varying look and feel. "The biggest challenge was getting the initial buy-in from all the content owners to migrate, and be part of the unified intranet," says Marri. Even so, "top management was convinced about the idea and their support was critical in making the new design a mandate for all."

According to Kris Gopalakrishnan, president, chief operating officer, and joint managing director of Infosys, "With the organization scaling rapidly, the need for a robust intranet with fresh and relevant information has never been more crucial. I personally believed that this redesign initiative would provide the much-needed impetus to create a small company culture in a fast-growing environment. So we emphasized the importance of content and design, and opted to run this like an online portal."

At the start of the redesign, the redesign team set up an editorial board meeting with all SPOCs. "The team painted the big picture and explained the business logic of the redesign," says Shanmugam Rajasekaran, head of user experience at CDG. "This was followed by several rounds of discussions and meetings with individual teams to ensure a smooth transition," which it did.

Now that the redesigned Sparsh is live, enforcing the new templates is easier. Periodic design audits also help.

TECHNOLOGY

For designing the intranet, the Sparsh team uses:

- Microsoft PowerPoint for design iterations at the wireframe and storyboard level
- Adobe Photoshop for visual design
- Microsoft Excel for card sorting
- Dreamweaver to build HTML

For maintaining the site and designing applications, the team uses Microsoft-based technologies such as Windows 2003 server, ASP.NET, Visual Studio .Net 2003, and SQL Server 2000. Intranet search is handled by Microsoft Indexing server. In-house tools handle project management tasks, publication requests, error reports, and defects/bug tracking.

The in-house IS department owns and manages the Web applications; the Computers and Communications Division owns Sparsh hardware infrastructure (two HP dual-processor Web servers). Several user groups maintain their own software and hardware infrastructure.

GOALS AND CONSTRAINTS

Intranet/redesign goals:

Foster a unified community experience across diverse user groups worldwide by:

- o creating a consistent and standardized user experience;
- making navigation among various sections easy and seamless;
 and
- publishing fresh content every few hours, to keep Sparsh current and engrossing.

Create a small-company feel, bridging multi-cultural, multi-location user communities by:

- inviting employees to use Sparsh as a community space and primary information source, and
- creating online social-networking opportunities for more than 55,135 employees of 61 nationalities.

Ongoing intranet constraints:

- Migrating huge portals/applications: Some well-established portals and applications comprise numerous functions, creating cost, time, and resource implications for migration.
- Bringing established brands/identities under a single umbrella: This
 requires adherence to strict sub-brand guidelines and simplified
 navigation.
- Maintaining quality standards across the intranet: The ownership on Sparsh is decentralized, so periodic design reviews and audits are conducted to enforce standards; this remains an ongoing challenge.

Specific redesign constraints:

- Getting buy-in from numerous stakeholders in business units, departments, and DCs — who were accustomed to the nonstandardized world of Sparsh.
- Resolving content and application ownership issues.
- The sheer volume of content: more than 54 portals had to be migrated into the new design.
- Coordinating with SPOCs from across Infosys and managing a smooth transition into the new design.
- The lack of a centralized policy and process for publishing on Sparsh, leading to a fragmented community experience.
- Inconsistent and conflicting user interfaces, through which over 100 user communities were accessing information.
- Weeding out duplicated and outdated information that was maintained by different teams.

As this list suggests, "we faced several challenges in transforming a static intranet into a living, breathing entity," says Marri. "The biggest challenge was to build consensus among diverse groups, who were used to a certain way of life in using the intranet. By creating a cross-functional team across the organization representing every group, we made them partners in this transformational journey."

Beyond those foundational efforts, "we have done several unconventional things," he notes. "We ran a contest among designers to explore new design directions; we

created a funnel-like information architecture structured around the individual; and we ran several expert reviews during the entire course of design development."

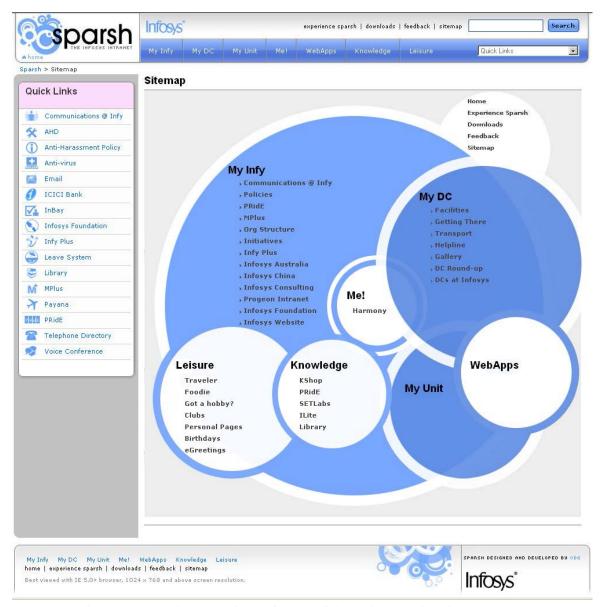
BASIC INTRANET FEATURES

One Sparsh feature is, arguably, its content structure. Designers arrived at the content structure after establishing three criteria:

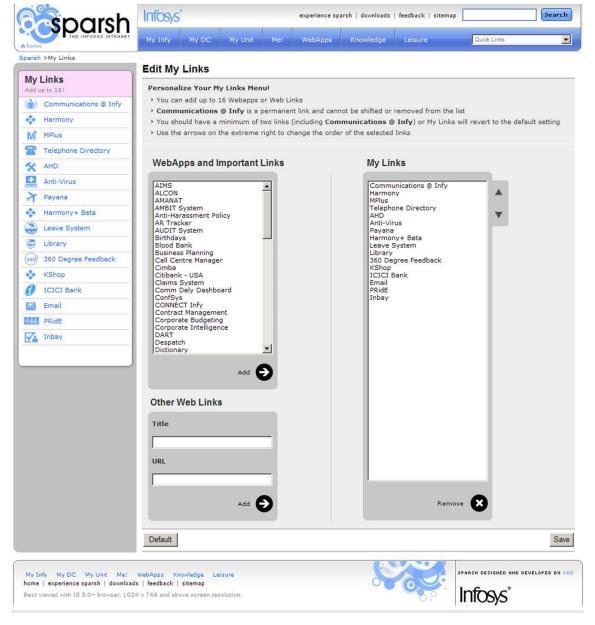
- The information architecture should relate to how an employee is positioned in Infosys. Two important references are the employee's unit/department and DC.
- Content should be global as well as local.
- Content should be customized and personalized, with a single sign-on.

Accordingly, designers arrived at four distinct "information spaces" for users, tailored to the above needs:

- **My Infy** (global): Corporate-level information that's the same for all employees worldwide.
- My DC (local, customized): Content specific to the user's DC. The system recognizes the user's base location and customizes the view accordingly. The user also has the option to view other DC sites.
- My Unit (local, customized): Content specific to the business units within the user's software DC. The system recognizes the user's business unit and customizes the view. The user can also view other unit sites.
- **Me!** (personal, customized): Personal or official data pertaining to the individual user, such as tax, salary, and attendance details. The system recognizes the user and, based on login credentials, personalizes the view.



Pictured: A sitemap showing the redesigned Sparsh's top-level sections.

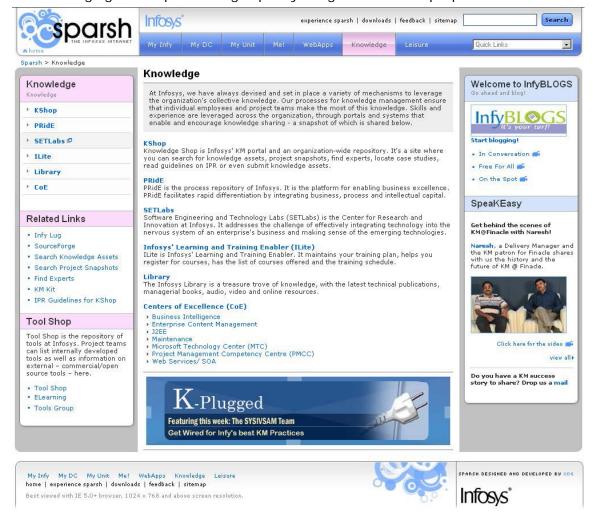


Pictured: Users can edit their favorite intranet and Web links through *My Links*.

The intranet also includes a wide array of content for building community. Examples include:

- *Meet Infoscion*: Employee profiles in an interview format.
- **Team Spirit:** Coverage of team events. Content contributions increased by 588% within three months of its launch.
- K-Plugged: A platform to share knowledge management best practices.
- **Leisure clubs:** The number of these clubs more than doubled, from 12 to 28, in the six months after being referenced on the intranet.

- Fresh content, updated twice daily: Contributions to the Latest at Infy and Latest at DCs news sections increased by 393% in six months.
- **Permanence:** Archives with permanent URLs for all content.
- Quick Links: A set of popular links, accessible from anywhere on Sparsh.
- Use of rich media for effective communication: Videos promote sharing best practices, webcasts detail important corporate events, and image galleries provide high-quality images for various purposes.



Pictured: Sparsh's *Knowledge* section gives users access to a variety of Infosys resources. Note the advertisement (at bottom) for *K-Plugged*, an internal platform for sharing knowledge management best practices.



Pictured: The redesigned site gives users access to numerous company-related, high-quality images — such as this photograph of the Bangalore development center.

USERS

Sparsh supports 55,135 users (as of September 30, 2006).

USER TASKS

The redesigned Sparsh supports more than 150 user tasks. Here are some of the most important ones:

- View company policies, management communications, financial reports, and so on.
- Use and contribute to Infosys' process and knowledge repositories.
- Publish content, including official announcements, event reports, personal websites, articles, and best practices.
- Create, maintain, and view blogs.

- Use intranet applications for project and people management, logging requests, and applying for leave.
- Organize voice conferences.
- Open and maintain an online bank account.
- View and edit personal and official data, including details on taxes, insurance, attendance, visas, loans, banking, and relevant policies.
- Plan and book travel and accommodations.
- Search for employees.
- Get the latest news for Infosys, DCs, and business units.
- Engage in social networking by starting an interest group, contributing articles and photographs, blogging, voting in polls and surveys, and so on.

INTRANET TEAM



Pictured: (front row, from left) Pushpalee Lobo, Varshesh Joshi, Lakshmi Mangalassery; (back row, from left) Gaurav Kumar, Sridhar Marri, Ravi Panghat

The intranet team began with eight members — two designers, two content editors, and four Web developers — who shared responsibility for the intranet's redesign. "The team had experts from the field of design, usability, content, and Web development. In addition, a seven-member review committee was set up to conduct periodic design reviews and usability evaluations," says Marri.

After the launch of the redesigned intranet — Sparsh — a new, dedicated Sparsh team formed to maintain the intranet. This CDG-based team consists of a team lead, three content editors, and two Web designers/developers. The Sparsh team publishes content and coordinates with user communities across the company.

During the re-launch, a five-member team from the Infosys IS department supported the Sparsh Team and created Sparsh's dynamic features. Since the relaunch, this has been ramped down to a two-member team that manages the Sparsh infrastructure and is responsible for uploading the content.

BACKGROUND

1997

The first Web server appeared on the Infosys network, along with an intranet of sorts (basically, a collection of links to internal applications).

1997-98

Infosys made its first attempt to streamline the intranet. A two-member team — a user interface designer and a Web developer — gave the intranet a new identity. A contest was held to choose the name of the intranet. The winning entry was Sparsh. Various groups (units, departments, and DCs) also began launching portals and establishing a Sparsh presence.

1999-2004:

Sparsh began to rapidly evolve. Without a dedicated team, however, the growth was quite organic. As the company size increased, the intranet grew unwieldy and slowly became a huge repository of documents and links. The links, however, were added on an ad-hoc basis, and the data was uncategorized. There was no global information architecture — that is, the information architecture and visual design differed widely across the sites. Users were becoming increasingly frustrated trying to navigate Sparsh.



Pictured: The previous version of Sparsh.

DESIGN PROCESS AND USABILITY ACTIVITIES

Redesigning the Interface, and Governance

In 2004, the CDG kicked off the Sparsh redesign initiative. CDG used various usability methods to gain insight into the issues and prioritize requirements. It also launched a Sparsh redesign contest. The CDG team selected a winning entry and then further enhanced its design using the best concepts from other contest entries.

Next, a core team set to work designing the new user interface. In parallel, CDG established a governance model, including representatives from all user communities. With their support, and senior managers' involvement, the revamp accelerated. Individual teams discussed migration timelines to the new design, and the new intranet launched in December 2005.

Designers took an interesting approach to developing Sparsh's new look. "The entire intranet was looked at as a consumer portal. The sole branding objective was to transform the look and feel from a static system to a live community portal," notes

Joshi. Thus, when designing content and content layouts, "we made a conscious decision to not use any generic images or graphics, to better utilize screen real estate." Furthermore, "the interface color palette is intentionally non-corporate, casual, and visually soothing to the eyes, and includes a variation of Infosys' corporate blue as the primary color, with pink and gray as complementary colors."

Usability Techniques

Developers used a number of usability techniques in their redesign: card sorting, user observation, heuristic evaluations, e-mail surveys, the Infosys online survey application, user testing of new design prototypes, user testing of the old intranet, and server log analysis. The team also analyzed support requests — in the intranet's Request Tracker application — and identified user issues based on the information collected.

To test users on the previous intranet, the team gave them common tasks to perform, such as search for an employee, find the facilities contact in a different DC, or find a specific policy. From this behavioral usability research, designers gathered user perceptions about several intranet features. Among the typical responses were:

- "I can't find the latest leave policy."
- "Which version of this document is the most recent?"
- "There was a story on the Awards for Excellence. It's not on the homepage anymore. Where can I find it?"

Using the user satisfaction survey, contextual inquiry, and card-sorting results, the designers determined that the intranet's critical functional requirements had to include both customization-personalization and localization-globalization. The goal was to prioritize content based both on what users wanted to see and what they needed to see.

For visual design and usability, the team benchmarked several portals and referred to Nielsen Norman Group's intranet usability guidelines.

Usability Surprises

An interesting surprise that emerged from usability testing — and also from post-launch feedback — was the degree to which users expected to see relatively small features and capabilities from the old site. In fact, the experience led Joshi to note that "some things are better left unchanged."

Take icons, for example. "We made a conscious decision to retain the icons that were used in the previous interface — only modifying them slightly, to suit the new graphic design," he says. "Surprisingly, the users' comfort level with the original icons didn't manifest strongly, until we tested the new design prototype. So, we created new versions of the icons, keeping the same visual elements/metaphor."

Beyond visuals, users had also grown accustomed to seeing information organized in certain ways. "We had a similar experience with the WebApps section," he notes. "This was the most-accessed page, as it led to all the frequently used applications. During the redesign, we categorized and grouped these applications based on their functionality, keeping new hires in mind. We also made 'categorized webapps' the standard view of the *WebApps* page. However, soon after the launch, we realized users had grown so accustomed to the previous alphabetical view, that any new arrangement required fresh learning. A part of the user memory definitely lies with

the old system. Today, we have both views, with alphabetical being the standard view."

TIMELINE

- 2004: Conducted redesign requirements analysis and launched the user satisfaction survey. Also conducted user testing of existing site.
- September 2004: Sparsh redesign contest launched. The winning design, chosen from 10 entries, was announced in November 2004.
- March 2005: Redesign gained momentum; CDG established a core redesign team, including design and usability experts. User profiling, contextual inquiry, and card-sorting exercises with various groups commenced.
- April—May 2005: User research continued, with the information architecture resulting from card-sorting exercises. The design team also created wireframes for key usage scenarios, designed new identity and visual-design components, and began planning for and mapping content. Expert reviews and iterations followed each activity.
- June-July 2005: Prototyping began, with designers creating click-through prototypes detailing key scenarios. A heuristic evaluation was conducted, as were reviews with multiple stakeholders. Designers then produced a detailed prototype.
- August-November 2005: For the development and implementation phase, the core redesign team expanded to include content experts and Web developers. They detailed new sections, repackaged and mapped content to the new design, and established a governance model.
- September 2, 2005: Daily design and content reviews commenced.
- September 27, 2005: First Sparsh editorial meeting held with SPOCs. The COO of Infosys addressed the meeting and set the context.
- October–November 2005: All key existing portals (50+) migrated to new templates; user testing conducted.
- December 2, 2005: Sparsh launched in a "soft" mode to let the intranet team test hardware performance. Finding no problems, the team quickly scaled up.

RESULTS

Increased Page Views, Accolades

The redesigned intranet delivered on its goal of becoming a global platform for communicating with Infosys' diverse user communities. New avenues for publishing and networking are growing, and so is user participation. In August 2006, for example, Sparsh's average page views per day was 74,263 and its average hits per day was 1,714,671 — guite notable, even in a company of 55,135 people.

Users sent numerous accolades after the redesigned Sparsh launched, with one likening the change to "migrating from Windows 98 to Windows XP." One long-term employee praised "the quick turnaround and working like a news channel" aspect of Sparsh, referring to its news feature and the centrally directed — and well-controlled — news-publishing calendar. "Sparsh has a publishing calendar which can rival an

online news channel's," notes the Sparsh Team. Such attention to detail is not only useful, but also comforting to users involved in producing news content.

Another user lauded the redesign's auspicious timing: "As we go into the 25th year of Infosys, it's great to see a new intranet." Another employee commented, "for a large and diverse organization like ours, it is really commendable," highlighting how Sparsh was more vibrant, contained fresh content, and also ensured that employees saw the day's top stories.

The redesigned intranet is also easier to use — at least according to the intranet help desk: Help calls have decreased by 65% per day since the redesign launched.

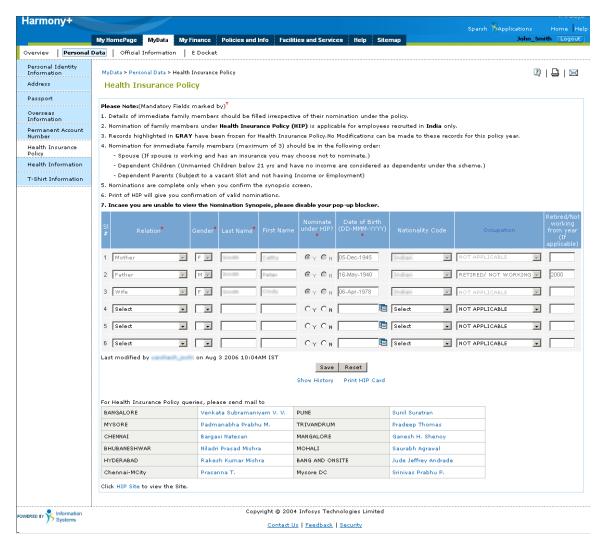
Not surprisingly, user participation in the site has also grown exponentially, as demonstrated by increases in the numbers of articles users contribute to various sites. For example, since the redesign, submissions to *Latest at Infy* (a section featuring organization-wide news) increased by 1,100%; submissions to *Latest at DCs* (a section featuring news from across Infosys' global software DCs) grew by 2,130%; and entries to *Team Spirit* (a photo column promoting social networking) increased by 588% in the three months after it was introduced.

Revamping an intranet serves multiple purposes. One such purpose is to create "peer pressure" for all parts of the intranet to look as good as the flagship sections. That was also the case at Infosys, where the redesign gave some departments a needed push to revamp their sections. "A few unit sites were outdated or defunct at the time of the revamp, and their publishing schedules were non-existent — or erratic, at best," says Lakshmi Mangalassery, senior language consultant. "After the revamp, almost all the units and DC sites have begun to update their sites regularly."

New Features

The new Sparsh creates a global platform for supporting employees and connecting the Infosys world. Here are just some of the features now available to users:

- A global platform. Prior to the revamp, Sparsh was used only as an entry point to various internal applications and portals. Thus, employees' communications were limited to their teams. Now, employees can bridge business units and geographically distributed DCs.
- Consistent policies. Employees can view policies, organization-wide, in a single repository. In the old Sparsh, there were several versions of the same policies scattered across the portal.
- Easy links. Using My Links, users can edit their favorite intranet and Web links.
- Access to archived content. The previous version of Sparsh lacked an archive. As a result, key documentation was not available online.
- **Professional and social networking:** Whether sharing published papers and successful knowledge management stories, or participating in blogging and the *Leisure* section's various interactive columns, employees have new ways to network.
- **Leveling.** The new columns and sections help ensure that Sparsh acts as a "leveler." From a company director to a new hire, everyone has a space on Sparsh, and everyone plays by the same publishing calendar.



Pictured: The redesigned Sparsh gives employees access to many forms, such as this one for providing health insurance information.

Post-Launch Challenges

That said, "the real challenge for the team started once we launched the intranet," notes Lakshmi Mangalassery. "Today, Sparsh is growing rapidly thanks to user-driven content, and continues to stay fresh and relevant. We continue to discover new opportunities to connect the world of Infosys, and are increasingly connected to our network of content owners in various cities."

Furthermore, employees' feedback has been incredibly enthusiastic, she says. "The overwhelming response that we get from the employees tells us that Sparsh is evolving smartly as a user's intranet. For us, that's the big story."

LESSONS LEARNED

Insights from the Sparsh Team:

Create a design that can flex with growth: "That organizations will change, perhaps rapidly, is inevitable. At the same time, chances are that companies will refrain from investing in frequent revamps, because of the cost implications and the

effort. The solution to this problem, then, lies in creating a design that can accommodate new communities, new avenues, and new requirements. The design should provide enough room for growth, while still establishing and maintaining a common identity."

Create an information architecture that's able to grow, too. "Creating a flexible design was critical in designing a scalable information architecture for Sparsh. Equally significant was the decision to decentralize content ownership. Understanding various user profiles also quite helped us to created customized and personalized features."

Insight from Shanmugam Rajasekaran:

Test early, test often: "The more diverse the user base, the stronger the need to test and iterate design concepts. Introducing these tests early and at regular intervals during the prototyping phase will help save significant amounts of redesign effort. Consistent user testing, simply put, will also help produce results that are a lot closer to what the user actually wants."

Insight from Sridhar Marri:

Secure top-management buy-in. "Get a commitment from top management. Their buy-in will ensure greater participation in your redesign initiative. For the Sparsh redesign effort, which involved numerous user communities, this was critical."

Insight from Varshesh Joshi:

Some things are better left unchanged. "We made a conscious decision to retain the icons that were used in the previous interface, only modifying them slightly — to suit the new graphic design. Surprisingly, the users' comfort level with the original icons didn't manifest strongly until we tested the new design prototype. In short, beware of the things you change."

JPMorgan Chase & Co.

Using the intranet:

JPMorgan Chase is a leading global financial services firm with assets of \$1.3 trillion and operations in more than 50 countries. The firm is a leader in investment banking, financial services for consumers and businesses, financial transaction processing, asset and wealth management, and private equity.

Headquarters:

The company's corporate headquarters is in New York City; its US retail financial services and commercial banking headquarters is in Chicago.

Number of employees the intranet supports: 178,000

Design team:

In-house

Members:

Alexandra Zawadiwsky, managing director and intranet champion; Jeanine Carlucci-McDonnell, employee portal manager and intranet sponsor; Nancy M Goebel, benchmarking and standards manager and intranet sponsor; Jeffrey Easton, user experience advocate; Gerben Hooykaas, senior Web designer; Phil Diol, user-centered designer; Janette Channell, technology liaison; Susan Korpela, project manager; Michael Welsh, technical lead; James Reilly, business liaison; Lori Pollan, business liaison; Craig Stabler, user experience manager; Dennis Deacon, intranet search product manager

SUMMARY

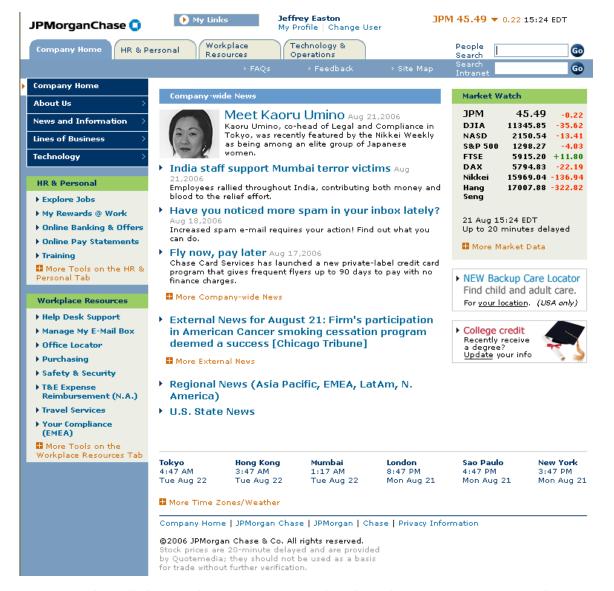
With a massive and diverse user base, the JPMorgan Chase intranet team faced a unique challenge in attempting to improve its intranet's user experience, while also lowering costs. Throw into the mix a merger, and creating a great design would seem unattainable. Yet, this team rose to the occasion, succeeding especially because of superb planning and a well-focused team.

With more that 620,000 page views per day and nearly 100,000 unique daily visitors, the intranet homepage makes an enormous impression on the firm's 178,000 employees. The intranet team is therefore highly selective about which and how many components it allows onto the page. Thus, the homepage, *Company Home*, displays only the most important news, especially in the foremost *Company-wide News* section. Users can link to a news page with more news, but designers are rightfully discerning with the homepage. Similarly, it limits *External News* offerings, but offers a teaser to encourage interested users to click for more.

Knowing that one homepage cannot be everything to everyone — from bank tellers to investment bankers — designers employed personalization features, serving up portlets personalized by region, state, and line of business. Also, users see their own personalized line-of-business tab — such as *Technology & Operations*, for example — as the last horizontal navigation tab. Users can also add their own favorite pages in the *My Links* area in the upper right. This lets users access their own most important items with one click on the homepage.

Other valuable features include *Market Watch*, which apprises users of how the stock is faring, and *World Times Zones*, which tells users what time it is for their colleagues in faraway places.

Overall, it's inspiring to see an organization this large keep the entire homepage above the fold. Doing so requires very acute planning and disciplined governance.



Pictured: Well-designed page structure, rules about homepage content, and personalization features keep the JPMorgan Chase homepage manageable and user-accessible.

The intranet includes written as well as visual communications, with video offered extensively throughout the site. Streaming video of actual people relaying news and information can make messages more potent and enduring; of course, it also provides a more human angle than text alone.

The JPMorgan Chase organization is committed to video communications, and has a centralized streaming media production team and streaming media server to match. On the intranet, video is primarily used for three purposes: training, introducing new marketing campaigns, and expanding access to important meetings and forums. For the meeting pages, designers provide a good textual summary of the meeting, a link to a full meeting summary, and a still photograph from the meeting. The page also provides simple instructions for playing the video, and a URL in case the link doesn't work.



Pictured: This page highlights video from a meeting, and provides a written summary, photographs, and instructions for playing the video.



Pictured: An example of a marketing video on the intranet.

The intranet also caters extremely well to new employees, offering them all the basic information they could need. One intranet section is specifically dedicated to new hires, and suggests items that new users might not readily discover. This is a worthy service for people who are adapting to a new environment. Another section provides tips on how to personalize the intranet experience.

JPMorganChase 🖨

Company Home

Important Resources:

New Hire Orientation Welcome Book (.pdf)

Resource Directory

Joining the Company

LabCorp

Onboarding Link

Questions? Contact your recruiter.

Save a link to this page and return as many times as you'd like until you are comfortable with finding answers to your questions.

Also, once you've started, you can access this page by going to Company Home > HR & Personal > Joining the Company > New Hire Orientation.

New Hires: Welcome to JPMorgan Chase!

From the moment you learn of your new job at JPMorgan Chase, it's important that you have the right tools, resources and information available to ensure an effortless start to your career. We've tried to make your transition into the Company easier by providing the information on this site. If you have questions on any aspect of your orientation, new hire requirements or access to Onboarding, please contact your recruiter.

Step 1: New Hire Pre-Employment Requirements

Have you completed all New Hire requirements? Use this <u>checklist</u> to determine if you're ready to start!

Step 2: Complete New Hire Orientation

New Hire Orientation is a web-based course designed to introduce you to your new Company and the advantages and responsibilities that go with it. The course will take approximately 1 hour to complete.

System Requirements:

To view fully, the following Not sure of your settings? system settings are required: Run some quick checks:

our settings? Help Instructions:

Internet Explorer 5.5 or higher
Screen Res. 1024 x 768 or Test your Settings

Internet Browser
Screen Resolution

Flash Player v. 6.0 or higher <u>Test your Flash Player</u>

Download Flash Player

Troubleshooting Help

If you have difficulty viewing the course, return here for a troubleshooting quide.

Take Course

Step 3: Guidelines for Your First Year

The Orientation course and Welcome Book are important starting points. But your orientation doesn't stop there. Use the checklists below as you continue your transition into the Company

<u>Before Starting Work</u> <u>Your First Day</u>

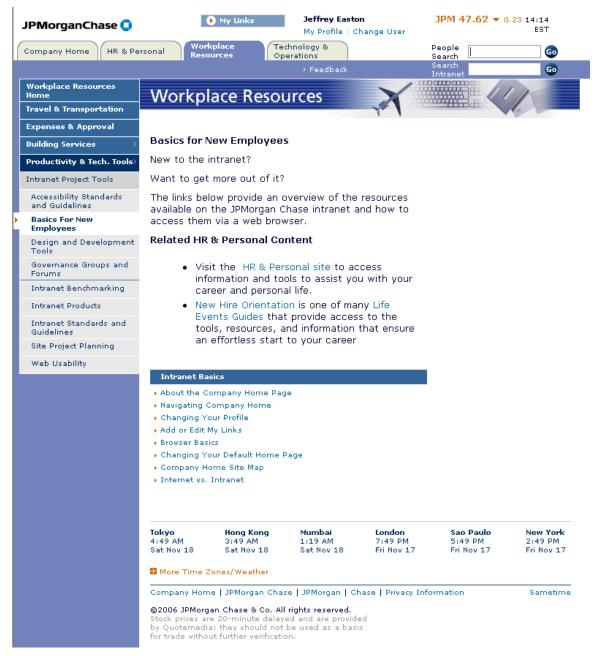
Your First Week

Your First Month

First 90 days and Beyond

<u>Print all Guidelines for</u> <u>Your First Year</u>

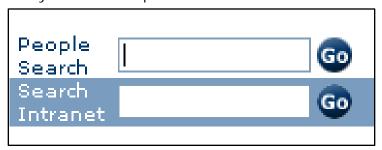
Pictured: An intranet section for new hires helps them navigate new-hire forms and orientation, and even suggests things to do during their first year at the organization.



Pictured: A productivity and technology portion of the new-hire section helps new employees learn such things as how to use the intranet to its full potential.

Both searching the intranet and finding people at an organization are important tasks, and warrant dedicated space on every intranet page. Having two searches exist harmoniously, however, can be difficult. At JPMorgan Chase, intranet designers have helped make these features easy to use by stacking the corporate directory and site search fields. Both are in the upper-right part of all intranet pages. Thus, users can easily find either search and quickly distinguish between the two. The terminology used, *People Search* and *Search Intranet* fields, each followed by *Go* buttons, also help make these tasks more efficient for users. These design choices

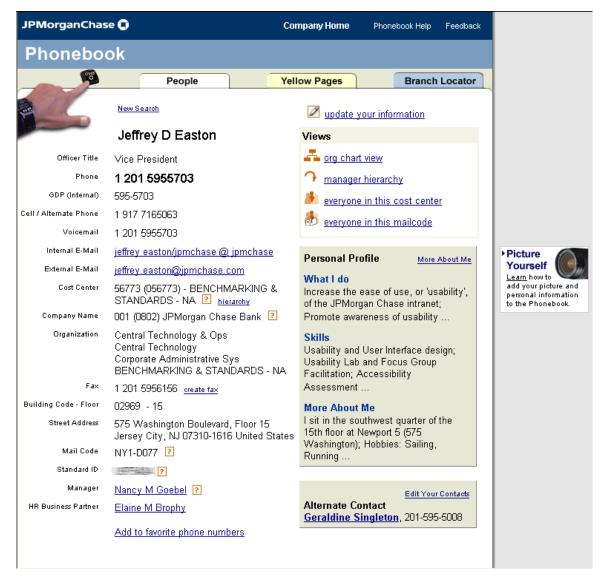
might seem relatively simple, yet many simple-seeming choices can add up to a vastly better user experience.



Pictured: By stacking and clearly labeling the employee and site search boxes, users can easily find and distinguish between the two search types.

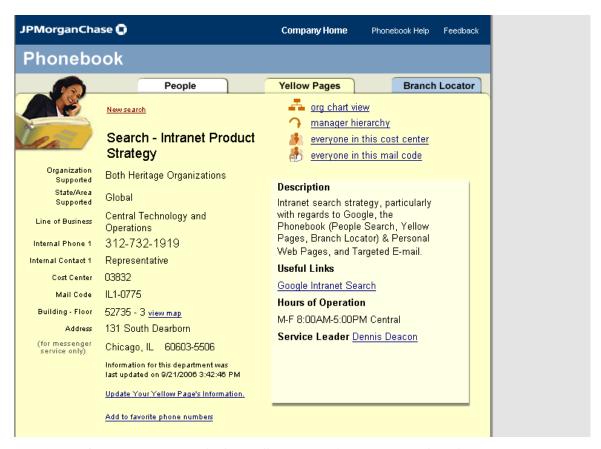
Once users find the employee they're looking for, the system displays a document, packed with such information as the person's name, title, e-mail, phone, organization, and location. Users also have a *Personal Profile*, which the search engine indexes for keywords; this is especially helpful for employees looking for topic experts. The alternate contact name and number is a very useful addition, especially for JPMorgan Chase's large, dispersed, and often mobile workforce.

Employees can also create a personal Web page. If they do, a link to it appears on their profile.



Pictured: In an employee profile document, user's typical information — such as name, telephone number, and e-mail address — is supplemented with keywords, summary, and a link to the person's personal Web page.

The Yellow Pages tab leads to an area where users can search for groups within the organization. This is helpful when users know they need to talk with someone in a particular department, but don't know whom to call.



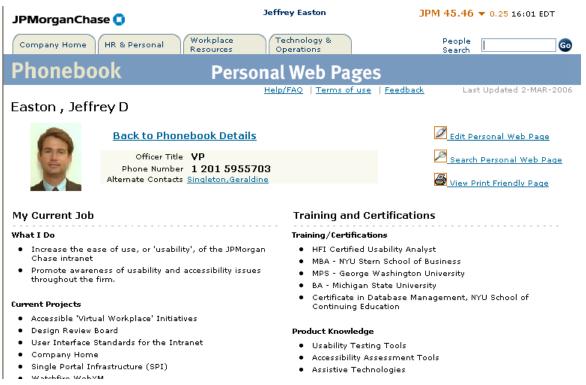
Pictured: Users can search the *Yellow Pages* for groups within the organization.

Telephone banking representatives who support external customers often use the *Branch Locator* tab within the intranet *Phonebook*. In retail banking, having specific information germane to each bank branch is essential; the *Branch Locator* meets this need in a straightforward, easy-to-use way.



Pictured: The *Branch Locator* in the *Phonebook* is especially helpful for the telephone banking representatives who communicate with customers.

On personal Web pages, users can add — among other things — pictures of themselves and information about their jobs, projects they're working on, training and education, and the company products they're familiar with. This information can help people find the appropriate personnel resources for a particular job.



Pictured: An example of a personal Web page, which includes a photo and useful information about the person's job, projects, and training.

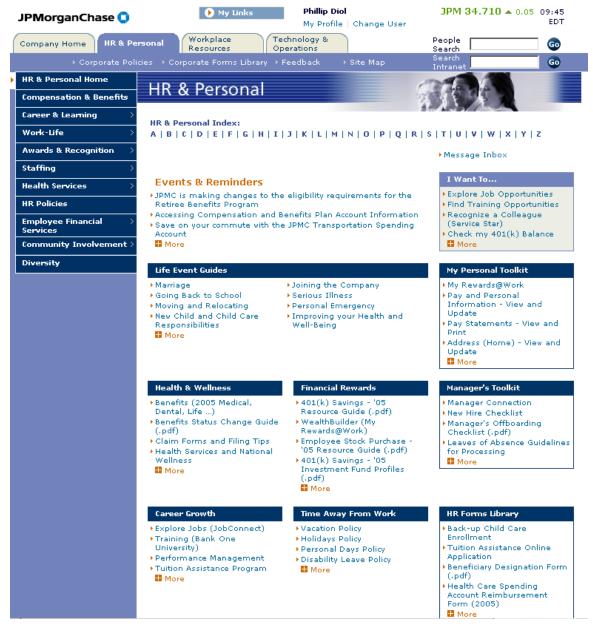
From any particular person document, a user can see where a person fits within the company by viewing an organizational chart. This *Phonebook* organizational chart is hierarchical; the selected person is distinguised by an outlined box in the middle of the chart. The names of the person's manager, the manager's manager, and so on, appear above this box. The small, yellow organizational chart icons link directly to that individual's org chart.



Pictured: Users can click a link to this org chart via a person document. The selected person appears in the middle of the chart.

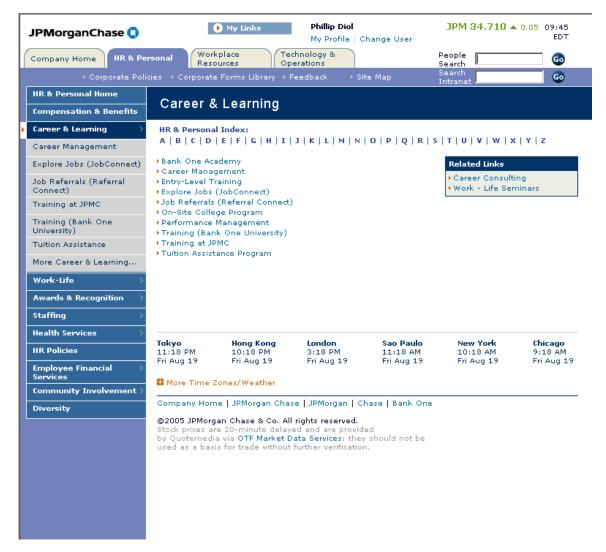
Speaking of org charts, an especially important area for any intranet is the HR section. At large companies such as JPMorgan Chase, having a great user interface for the HR section can literally save hundreds of thousands of dollars in support time and phone calls to HR representatives.

Appropriately, this intranet presents HR information — and quite a lot of it — in an extremely well-organized manner. Designers made a clever choice in giving prominence to the *HR & Personal* section by making it one of the few top-level navigation tabs. Within this section, users can easily find what they need in the main page's content area because sections are well defined spatially and have lucid titles, including *Events & Reminders*, *Health & Wellness*, and *Career Growth. My Personal Toolkit*, meanwhile, presents users with personalized HR information.



Pictured: The main HR page provides users with essential information, much of it available through links right on the section's homepage.

In the left-hand navigation, users see a honed list of HR-related areas. Designers took care to keep the menu's length somewhat short (less than 10 items). Creating sub-menus that open in place is a very helpful interface choice for many types of users. The color change of the selected menus, from light blue to dark blue, denotes the selected section, while the sub-menu itself appears as a gray box, which helps users stay focused on their options and identify what they need.

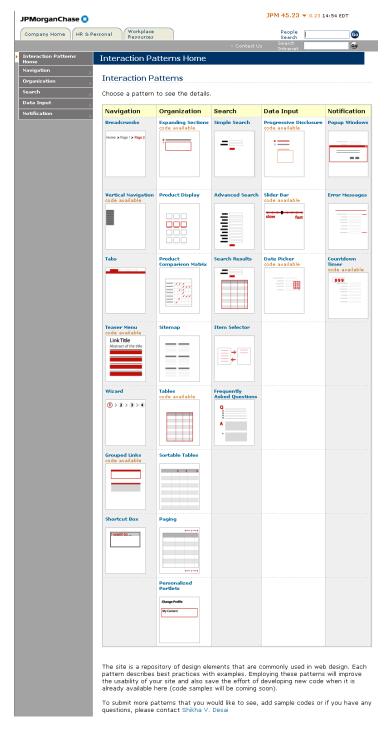


Pictured: Well-organized menus help users locate the HR information they need.

After JPMorgan Chase merged with Bank One in 2004, the intranet team needed to integrate both intranet sites. Accordingly, it took several steps. One very important step was to establish a Design Review Board (DRB) to govern and update the intranet's user interface standards. This same team was then tasked with reviewing the new site and application designs for compliance with those standards.

Another important innovation was to create an application that let designers easily create standards-compliant prototypes for requirements gathering and user testing. This excellent online wizard walks people through using the standard page templates, then creates HTML prototypes — complete with working navigation. The tool automatically produces detailed design and functional specifications, as well as the CSS and XHTML code developers need. This method is a fabulous time-saver and ensures design consistency.

The intranet team also took steps to help designers and developers help themselves. The *Interaction Patterns Library* houses standard code samples, which developers always find priceless.



Pictured: To assist designers and developers in designing standard, compliant pages and applications, the intranet team created an *Interaction Patterns Library*, which includes standard code samples. Such "reusable" code has proved invaluable to developers.

While having such online resources is priceless, in some cases, face-to-face training is also extremely useful. The team therefore decided to train a select group of users to be usability advocates within their organizations. More than 60 employees completed an intensive 10-day course on user-centered design.

All such efforts have produced many payoffs. For example, the intranet team has already brought more than 90% of the major line-of-business sites into basic compliance with the intranet design standards, and avoided at least \$14 million in costs by consolidating multiple intranet environments into a single, shared one.

That's the kind of ROI most intranet redesign teams wish they could report. How did JPMorgan Chase do it? Beyond crafting an engaging design, never underestimate the power of planning. While careful planning and carefully designed intranet standards might seem costly, time-consuming, or perhaps just painful, JPMorgan Chase's intranet, and the project results, illustrate how getting these details right — from the project's start — lays the necessary groundwork for creating an intranet that truly meets both users' needs and the needs of the business, with accompanying metrics to prove it.

URL AND ACCESS

The URL for the JPMorgan Chase intranet is

http://intranetportal.jpmorganchase.com/portal/index.jsp. All but two of the firm's businesses bookmark the company's homepage as their employees' default browser start page. Businesses that specialize in direct customer contact are often exceptions, though employees can still easily access the homepage via the Global Common Element (GCE), found (as the name implies) on every page.

When away from the corporate LAN, users can access the intranet via VPN. Users can also access some sites and applications — mostly HR-related — by using a browser and their normal intranet log-on credentials.

JP Morgan Chase installs kiosks wherever it has large concentrations of employees without computer access. In addition, shared computers in the bank's retail branches allow branch staff to access the intranet.

CONTENT MANAGEMENT

Distributed Content, Controlled Templates

The entire intranet's CMS is Vignette, which supports decentralized content authoring. "We do not customize the content management system on a site-by-site basis," notes Janette Channell, technology liaison for the Shared Services Groups (SSG). This helps reduce intranet-related costs and makes the site easier to support.

JPMorgan Chase relies on approximately 200 content providers for all of its line-of-business and corporate group intranet sites, and the CMS restricts their ability to alter page design. "Content creators used to control the design and organization of intranet content, and this resulted in an intranet that was poorly organized and full of duplicate and outdated or inaccurate and misleading information," says Jeffrey Easton, SSG's lead user experience advocate. "Ethnographic studies, card sorts, and usability labs showed that end users had different expectations for how the intranet should be organized, so we decided to come up with an arrangement that allowed content creators to focus on the content and let the users determine the information architecture and user interface."

Intranet Design Review Board Sets Standards

An intranet DRB specifies user interface standards for all intranet sites. "These standards are available on the intranet and include links to standard-compliant reusable code and other related standards and guidelines," says Easton, who chairs the DRB.

The board includes subject matter experts in usability, accessibility, Web application development, corporate branding, and the law. "Its goals are to interpret, expand, change, and grant exceptions to the user interface standards," he says. "Proposals for changes or requests for exceptions come to the DRB; we then conduct user testing and other research to determine if the request should be accepted, tweaked, or denied."

Prototype Toolkit Helps Enforce Templates

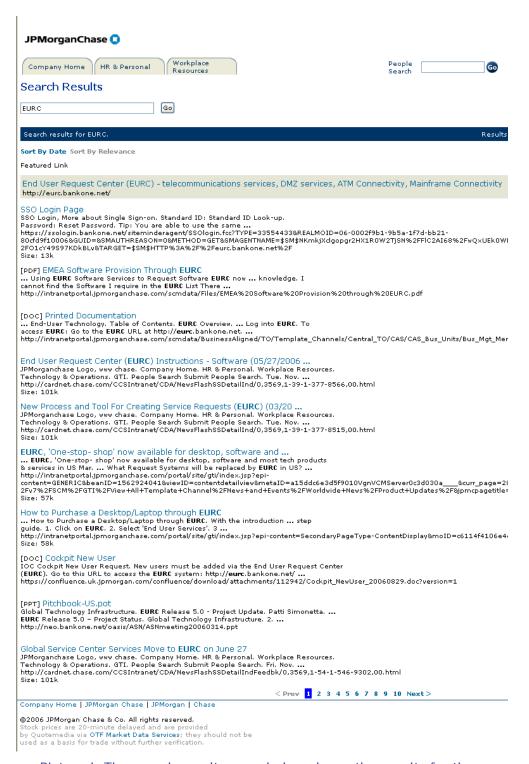
In previous intranet versions, managing the many different page templates in use was challenging. "Initial attempts at enforcing a standard set of templates did not work: individual development groups would customize them to fit their 'client's' requirements," says Easton. "We soon realized that we needed a comprehensive plan for ensuring a single set of design templates on the intranet."

TECHNOLOGY

The Web tier of the Enterprise Portal uses Sun V480s running IPlanet Webservers on Solaris 8. The application tier uses Sun F15K domains running VAP 4.5.1 with Weblogic Portal 6.1 on Solaris 8. The database tier also uses SUN F15K running Oracle 9.2 on Solaris 8. The CMS is Vignette (VCMS 7.3.05) with Weblogic Server 8. The company uses the Mercury suite of software testing tools for bug tracking and automated load testing.

Google technology handles enterprise search and the intranet team also studies top searches. "We use both the search logs and a metrics program, Omniture Sitecatalyst, to track search activity and search terms used," says Dennis Deacon, the intranet search product manager.

For ensuring optimal search results, context is everything, he notes. "Pages must have quality content that contains the terms that users would search on, and descriptive and unique page titles for the search results to be relevant. Some of the content management systems in use on the intranet do not require page titles, which means the page URL becomes the title. This, and a lack of awareness by content authors, can degrade search relevancy — and content quality."



Pictured: The search results page below shows the results for the acronym "EURC." Note how Google returns the meaning of the acronym and shows the document type, as well as highlighting the search term.

REDESIGN GOALS AND CONSTRAINTS

Goals:

Lower costs. The redesign's overriding goal was to reduce the intranet's operating costs by consolidating intranet sites onto a centralized set of servers. "But SSG also saw this as an opportunity to create a single, consistent user interface," says Jeanine Carlucci-McDonnell, SSG's enterprise portal group manager. This would make the entire intranet easier to use.

Constraints:

No mandate for change. "We did not have a mandate, so we needed to convince the various lines and sub-lines of business that it was in their best interests to leave their current environments — where they had complete control over design and functionality — and move onto a common platform, with very little differentiation in look and feel between sites," says Carlucci-McDonnell.

BASIC INTRANET FEATURES

Principle Features

One of the principle features of the JPMorgan Chase intranet is clear navigation, in large part because of the GCE located on the intranet homepage. The GCE appears on intranet sites that have "on-boarded" to the enterprise portal, as well as on other sites on a subscription basis. "Although having a standard header may not be considered a unique idea, its adoption and usable and valuable features do help make our intranet stronger and more cohesive," notes Phil Diol, SSG's Web design expert and user experience advocate.

With the GCE, all employees have ready access to intranet and people search, and see three tabs — Company Home, HR & Personal, and Work Place Resources. The latter two are resource index pages, carefully designed to provide resources organized by events, topics, and alphabetical listings. Users are also provided with a tab for their own line of business. "This is set in their intranet profile when they log on the first time, so employees have what's most relevant to them and the company at their fingertips," notes Diol.

Homepage features include a stock quote, which provides quick insight into the company's financial performance, and the Phonebook, which is used by an average of 70,000 employees daily.

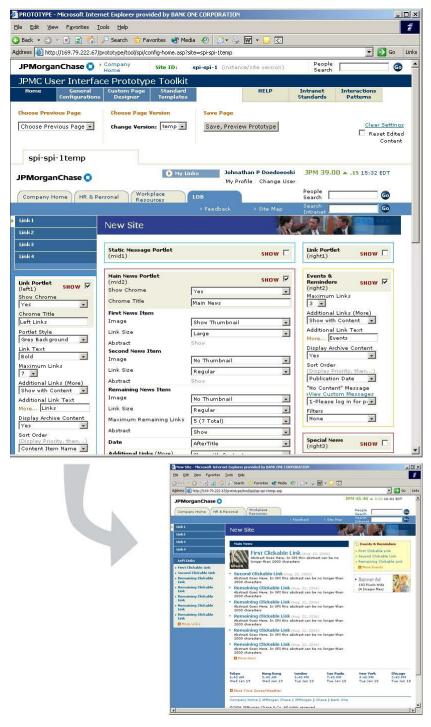
Overall, "many mission-critical tasks can only be accomplished via the intranet, including benefits enrollment, getting your pay stub — employees no longer get paper stubs — and finding relevant policies and procedures," says Easton. "During emergencies, the Company Home site is the page that all the warnings and instructions are to be found on. There is a hidden portlet at the top of the content section that opens up when critical information needs to go to all employees in a region or the firm. For example, when the London subway was bombed, information on building closures and security measures was displayed in this area, as well as the welfare of any employees involved."

New employees have a dedicated intranet section. "This is the outcome of a study done a few years ago that identified the 'employee on-boarding' process as something where costs could be lowered and efficiency improved by moving everything to the intranet," notes Easton.

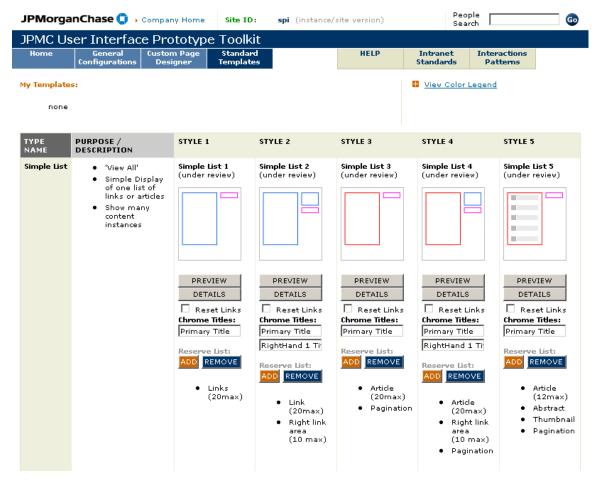
Tool Facilitates Enterprise Portal "On-Boarding"

"A specific application we want to emphasize is a homegrown 'onboarding' tool," says Diol. The application, also known as the Prototype Tool, was created in 2005 to help streamline portal creation efforts. The tool helps four types of users:

- Enterprise portal clients: Enables business groups becoming a part of the enterprise portal to easily access the standard template library and easily preview their new intranet site, facilitating increased buy-in.
- Enterprise portal staff: While clients preview their new intranet site, the Prototype Toolkit generates all necessary CSS. "Any custom presentation requests can be performed on a CSS level, rather than portal configuration level," says Diol, speeding development efforts. "The tool helped reduce a 10-week on-boarding process to two weeks."
- User-centered designers: The Prototype Toolkit lets the company focus more on user-centered design. First, the preview tool eliminates the need to develop wireframe models, which can be a "cumbersome and inefficient" process, says Diol. In addition, previews in reality, prototypes can be tested immediately with users and quickly refined. Finally, the templates take much of the guesswork out of interpreting the company UI standards.
- Business groups not "on-boarding" to the enterprise portal: Inevitably, some business groups needed to develop intranet sites, but were not able to fit the "portal on-boarding schedule" into their timeline. "When this is necessary, we want to provide standardized UI options and resources," says Diol. Accordingly, the Prototype Toolkit will generate the CSS, HTML, and scripts also used to help build portal-compliant sites. This speeds development, reduces guesswork, and "also puts them in a better position when they are ready to on-board to the portal."



Pictured: The user interface Prototype Toolkit facilitates "on-boarding" of pages into enterprise portal platform by offering clients certain page layout configurations, all of which are tied to specific UI standards. As a result, new pages require much less management time.



Pictured: The intranet's standard template library includes a full array of standard page templates. Clients choose from predefined page layouts, reducing the time needed to ultimately get their pages live on the portal.

USERS

The intranet serves approximately 178,000 employees and consultants worldwide.

The intranet's user base, however, is extremely diverse, ranging from tellers to investment bankers and from call center representatives to administrative assistants. Users typically access the intranet several times a day to look up colleagues' numbers, enter travel expenses, look up benefits information, and read the latest news about the firm, their line of business, or their region. The intranet is also the home of many of the trading, market data, and customer information systems that users need to do their job.

USER TASKS

How do JPMorgan Chase's employees use the intranet? To find out, "we conducted a rather expansive ethnographic research initiative this year," notes Diol. "It involved interviewing and observing many employees within different lines of business and with different roles."

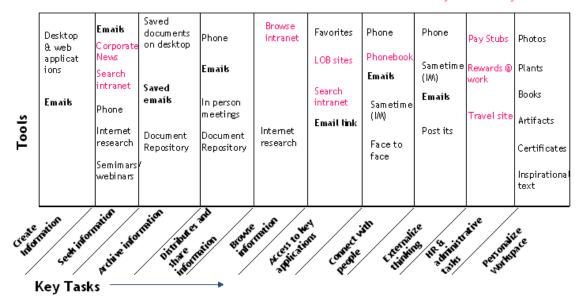
According to the research, the top four tasks (in order) are:

- Use the Phonebook
- Conduct an intranet search (looking for specific applications and acronyms)
- Find specific HR & Personal resources (pay stubs, benefits information)
- Read Company-wide News

The research also identified common secondary tasks (in no particular order):

- · Access training
- Approve tasks
- · Book travel arrangements
- · Find a retail branch location
- Submit expense reimbursement
- Find the help desk
- Look for company stocks (JPMC stocks only)
- Find an office location
- Read business site news
- Record time (timecard)
- Research policies

Pink color shows where intranet fits with key tasks.



Pictured: Findings from contextual interviews showing the key tasks employees engage in and the tools they use for each. The company's long-term goal is to expand the number of tasks that involve the intranet (in pink).

INTRANET TEAM



Pictured: (clockwise from bottom left) Dennis Deacon, Lori Pollan, James Reilly, Alex Zawadiwsky, Jeanine Carlucci-McDonnell, Nancy Goebel, Jeffrey Easton, Gerben Hooykaas, Phil Diol, Susan Korpela, Janette Channell, Craig Stabler and Michael Welsh

Team numbers

"The extended 'intranet staff' consists of several specialty teams," says Alexandra Zawadiwsky, managing director of SSG and the intranet's champion. Together, these teams include:

- 37 technical staff (45% offshore) that manage the Enterprise Portal and eight major lines of business and corporate intranet sites.
- 13 product managers that drive the strategy and operations of the Corporate Portal (including *Company Home* and related tabs) and key intranet utilities (such as *Phonebook*, search, and site metrics).
- 3 user experience experts focused on usability, accessibility, and user interface and information architecture standards.

Intranet Oversight

The intranet itself is managed by SSG, part of the firm's Corporate Technology Group. "The Shared Services Group works in close partnership with the key stakeholders — Marketing & Communications, HR, Finance, and the revenuegenerating businesses, such as the Investment Bank — who deliver their content, products, and services via the Web to the end user, our staff," notes Zawadiwsky.

Historically speaking, the group's being a part of the Corporate Technology Group has meant the technology part of the intranet equation wasn't a problem. "However, the major challenge has been in ensuring that business and end-user needs are well understood and reflected in everything we do. SSG has therefore concentrated on

building a governance model that includes all the firm's businesses and corporate groups, as well as the end users," says Easton, and playing "the role of facilitator of firm-wide consensus on issues of intranet design and functionality standards."

Honing the Team Through Mergers

Interestingly, the SSG group was formed and honed through several mergers. "The intranet groups started at roughly the same time — in the late 1990s — in the three major JPMorgan Chase predecessor firms of J.P. Morgan, Chase Manhattan Bank, and Bank One." Chase's intranet team was part of the firm's technology group, while the other groups were part of marketing and communications groups. "Firms that had aligned the intranet primarily with the corporate technology group excelled at delivering custom intranet sites and applications, but often with little regard for consistency in design and functionality. On the other hand, firms that had aligned their intranet with the marketing and communication role understood the value of consistency in design and function, but lacked the means to enforce standards beyond the employee portal," says Easton.

With each merger — beginning in 2001 with the merger of Chase Manhattan and J.P. Morgan — the intranet team refined and refocused itself as needed, gaining crucial technical and strategic skills for supporting the intranet. "For example, SSG has both a Web application development team and a user-centered design team that work closely together to ensure that standards and best practices are followed in all intranet projects," says Easton.

BACKGROUND

The current intranet is the result of three companies ultimately merging into one — and the need to smooth the resulting design implications. "After the 2004 merger between JPMorgan Chase and Bank One, the firm found itself with an intranet that had only small pockets of consistent design," says Channell. The intranet team's mandate: create a consistent user interface while lowering costs.

So, later in 2004, the intranet team introduced a consistent portal environment. Accordingly, "the intranet evolved from a diffuse and inconsistent environment, to a more centralized and consistent one," says Channell. "We evolved from simply posting HTML pages to a multitude of content management authors and technologies." Furthermore, by focusing on an enterprise-wide portal, the intranet team can constantly work to lower costs and complexity.

DESIGN PROCESS AND USABILITY ACTIVITIES

Redesign Impetus

The redesign's impetus was to migrate multiple legacy intranet sites — each with its own design and technical infrastructure — to a consistent design with shared backend resources. "User interface design was inconsistent and confusing, there was a lot of duplication, and much of the content was either hard to find or out of date," says Carlucci-McDonnell.

While getting numerous business groups — each running its own intranet — to agree on a new, standardized approach could have been difficult, the redesign team used user-centered design principles to build consensus. "We would test a variety of proposed approaches with the agreement that we would move forward with the approach that users consistently performed best with," says Easton. During such efforts, he says the team balanced fixing usability issues with trying to move —

sometimes nudge — the design toward "our long-term vision of the end state of the intranet."

Test Techniques

To identify needed intranet changes, the team studied user behavior in several ways. "We used Omniture Sitecatalyst to measure actual usage trends, conducted contextual interviews with employees and consultants, ran usability labs on the existing design, and conducted card-sorting exercises," says Easton.

To user-test the existing intranet, the team assigned users various tasks, such as look up an employee by last name or other criteria (such as the last four digits of a phone number); find information on a line of business; find news on a particular topic; make a change to their own employee profile; and navigate to a list of commonly used sites and applications.

The overall usability techniques they employed included:

- Card sorting. "Nearly every project includes some card sorting because it is cheap and easy to execute and we have found that the payoff in increased navigation success rates is significant," says Craig Stabler, SSG's user experience manager. "We use both traditional paper card-sorting techniques and an online tool called WebSort. We often teach the content owners to do their own card-sorting sessions in the hopes that they will use the technique to improve their content hierarchy and naming on an ongoing basis."
- **Field studies.** The team used field studies to understand how employees use the intranet. "For this redesign, we focused on doing contextual interviews with employees in back office or support roles, as they are typically not allowed to participate in usability labs," says Stabler. "We then used this data as the basis for creating some crudely designed personas."
- Heuristic evaluation (expert review). "Heuristic reviews were used for some of the smaller sites and applications that were migrated to the Enterprise Portal," says Stabler. "These are generally used in low-impact situations or when we were brought into the process after the design phase of the project."
- Surveys. In general, surveys are a suspect usability tool, since they only gauge what users think, not what they actually do. With that in mind, "we used surveys in an innovative way we used a survey tool to do testing of certain aspects of the information architecture of the redesign," says Stabler. "For instance, we would ask a random sample of employees to think of a link named 'X' or look at a screen shot with a tab named 'Y' and then ask them what they would expect to find behind that link or tab. We would give them multiple choices, only one of which was the intended content behind the link. If the 'expected' answer was not the clear winner, we would go back to the drawing board. The survey method also allowed us to identify any groups' differences in expectations."

- User testing of new design prototypes. The intranet team conducted multiple "remote usability labs" using conference calls and virtual meetings (in particular, Lotus Sametime, which is standard throughout the company) on iterations of the redesigned site. In the meetings, an evaluator shared his or her screen with the facilitator and observers. "This approach does not capture body language or facial expressions, but it does allow evaluators to participate right from their desk, and saves the firm in transportation costs and lost productivity," notes Stabler. He says the method also allows them to recruit a larger cross-section of users for usability studies, since participants don't need to travel to the usability lab.
- **User testing of the old intranet.** The redesign team user-tested the old site to determine what worked and what didn't, and used the results to convince others. "We used this as a way to settle any disagreements about which functional and design elements to keep from each of the predecessor sites," he says.
- Increased accessibility. The team identified opportunities for boosting accessibility and immediately implemented some of the easier changes. "The long-term goal is to have the Enterprise Portal compliant with Priority 1 and 2 of the World Wide Web Consortium's Web accessibility standards and we have a plan in place to do that," says Stabler.

Employees' Reliance on Search

One interesting finding from the usability studies was the degree to which employees relied on the search engine. "We were surprised by the significant increase in the percentage of users that used the intranet search tool to navigate the intranet," says Easton. "In 2002, we found that about a third of users would primarily use the search to navigate the intranet. During the redesign, however, we saw a majority of the users using the intranet search for navigation."

From Research to Redesign

The above research in hand, the team saw a common theme: "users were spending a lot of time learning and adjusting to multiple and inconsistent user interfaces," says Easton. Users avoided some sites due to navigation issues and simply couldn't locate other sites. Furthermore, users' browsing techniques differed — some used search, others menus, and still others relied on saved links.

"We decided that we needed to come up with a single set of UI standards and to build an infrastructure and governance model around them so we could drive more consistency on the intranet," reports Easton. "We used an iterative design process to come up with prototypes that would support the different user 'personas' and aggregated information and functionality to reflect end-user expectations and processes more accurately."

To develop and then enforce a consistent — and easy to implement — design, JPMorgan Chase formed the aforementioned DRB and built the Prototype Tool, also detailed above. Beyond providing an easier-to-use interface, the standardized design also gave business groups an economic incentive for using the new portal: decreased intranet costs.

Multiple Inspirations

In terms of design inspiration, Nancy M Goebel, VP of SSG's benchmarking team, cites other intranets (including those featured in previous Nielsen Norman Group Design Annuals), as well as the firm's active participation in several peer benchmarking groups. "Sharing success stories and design best practices with other large intranet teams helps us understand where we are leaders and where we need improvement" says Goebel.

"We also followed the lead of our Internet design teams to ensure some consistency in user experience between our customer-facing and employee-facing sites and applications" says Easton. "For example, the intranet color palette was originally influenced by the color palette of the three JPMorgan Chase external sites: chase.com, jpmorgan.com, and jpmorganchase.com." That said, "the Intranet Design Review Board, which 'owns' the standard color palette for the intranet, has expanded the colors beyond what is being used on the external sites."

TIMELINE

- **2002**: What was then the Intranet Service Group began work on a shared portal infrastructure that offered portal and content management capabilities.
- **2003:** The group obtained buy-in from various businesses within the firm and selected Vignette as its CMS.
- **Early 2004:** With the team already building a new portal platform and setting standards, the Bank One and JPMorgan Chase merger announcement required a reevaluation of the plan.
- **September 2004:** One month after the August merger, the new Shared Platform was in production, becoming the default homepage for the two primary organizations.
- **December 2004:** Redesign team introduced the default homepage (*Company Home*), the *Resources* tab, and "on-boarded" two major lines of businesses to the portal.
- **2005**: Continued moving additional sites to the portal. By mid-year, the *Resources* tab was broken into two tabs: *HR & Personal* and *Workplace Resources*.
- Late 2005: Adding *HR & Personal* resources strained the portal and produced stability issues; as a result, the intranet team temporarily removed some personalized content from *Company Home*. Development of the Prototype Toolkit and templates began.
- 2006: A more stabilized portal, and streamlined processes, drove higher portal adoption rates by business groups, as well as increased customer satisfaction. Currently, the platform is home for the Corporate Portal (Company Home, HR & Personal, and Workplace Resources), four (out of six) line-of-business sites, and four (out of nine) corporate groups.

RESULTS

Streamlining Creates Cost, Content, Usability Improvements

The redesigned JPMorgan Chase portal, and subsequent stability improvements, have driven vastly increased numbers of employees to rely on the intranet. Today,

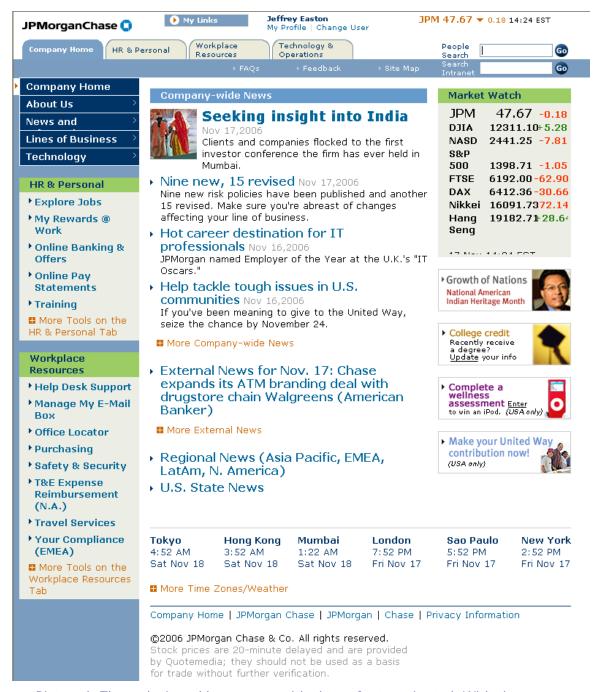
the redesigned intranet homepage, *Company Home*, averages over 620,000 daily page views with 110,000 unique daily visitors.

The redesign also drove down the number of pages, the amount of back-end infrastructure needed to support the portal, and ultimately, the portal costs. "The cost of the intranet — including search and the *Phonebook* — is projected to decrease by about 66% from 2005 to 2007, and the number of pages on the major intranet sites was reduced from 49,737 in 2004 to 16,317 in 2006," says Zawadiwsky. Sites that moved to the corporate portal decreased their site content an average of 67%, thanks to eliminating outdated content and simplifying their information architecture.

Today, employees can use the intranet in previously impossible ways. "For example, clients can preview what their site will look like in the early stages of development," says Diol. "We used to use wireframes to try to convey this, with poor results. Also, sub-groups used to seek out Web servers and resources to create sub-websites. In the early stages of the portal, it was not nimble enough to help these smaller groups. The streamlining efforts and the standards template library had finally provided a way for subgroups to easily post content and set up mini-sites under the umbrella of their parent line of business."

Users appear more passionate about the new intranet; they also seem to view many previously disconnected sub-sites as a single entity. "As a result of the migration of content and functionality to the Enterprise Portal, and the more consistent user interface that comes with that, we have seen an increase in the percentage of usability lab participants that describe the intranet as one big site, as opposed to a 'mini Internet,' which used to be the predominant description," says Easton.

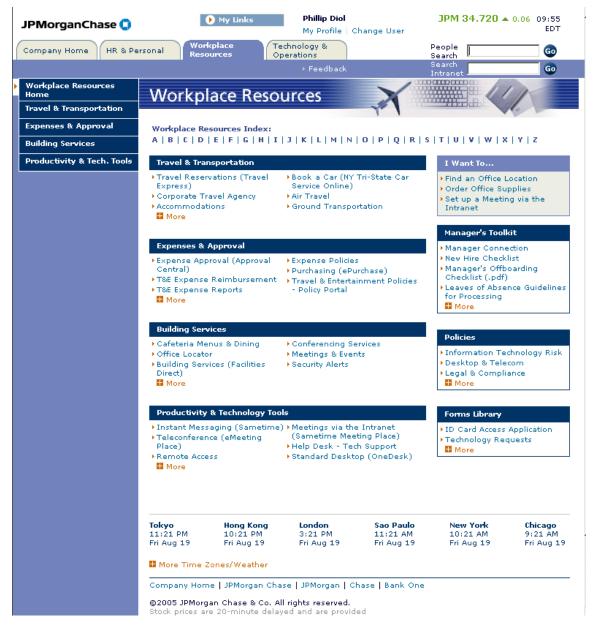
Users are also, in general, more partial to the intranet. "The percentage of evaluators that consider themselves 'experts' on the intranet has increased significantly," he says.



Pictured: The redesigned homepage with "large font" activated. With the redesigned templates, all screen elements resize gracefully; no content is truncated. Most intranet content now works this way.



Pictured: An example of a redesigned news page, highlighting JPMorgan Chase's hosting of 2006's World Usability Day NYC.



Pictured: The *Workplace Resources* page, reached from a part of the persistent horizontal navigation (tabs), offers workplace-related, personalized resources, grouped by topic. An alphabetical look-up supplements search options.



Pictured: A detail from the *Web Usability* page, one of the topics under the *Workplace Resources* page.



Pictured: A line-of-business homepage for news and information — the highlighted tab denotes the user's line of business. (Users can also change regions and view related content.) The page includes a *How do I?* portlet, with answers to the most common questions.

Gauging Redesign Impressions

To gauge users' reactions to the redesigned intranet, "we conducted usability labs both before and after the redesign and found that employees were more successful at completing core tasks," notes Easton. "We also monitored the comments coming in through the feedback link on the *Company Home* page." Interestingly, he notes, conducting a site-wide survey to do this was not an option, as "surveys have not been used to collect feedback since 2003, due to a moratorium on firm-wide questionnaires."

Users' overall response to the redesign has been positive, he reports. "Users appreciated that their most-used sites and applications were easier to find. They also report being more proficient with the intranet. Before the redesign, evaluators reported feeling proficient in using the Internet significantly more than they reported proficiency with the intranet," says Easton. "After the redesign, users' perceived proficiency with the intranet increased to the point that there was no longer any difference from their perceptions about their Internet proficiency."

Thanks to the redesigned intranet, JPMorgan Chase reports six significant improvements overall:

- 1. **Centralized:** Reduced or avoided \$14 million in costs by creating a single, shared intranet portal environment that replaced multiple environments with a variety of designs and information architectures.
- 2. **Simplified:** Reduced the number of standard design templates from more than 100 to less than 30. Reduced pages on sites 'on-boarded' to the shared portal by 66%.
- 3. **Unified:** The intranet's DRB owns the intranet's user interface standards, and vets new site and application designs for compliance, ensuring consistency.
- 4. **Streamlined:** A new online wizard helped reduce the design process from two weeks to two days, by helping content owners select and use standard page templates, see working previews, and generate all necessary code.
- 5. **Reused:** Standard components facilitate a more consistent design. For example, an *Interaction Patterns Library* provides designers and developers with standard code examples to make compliance easier. More than 90 sites also use a single, standard header and footer for sites and applications.
- 6. **Trained:** More than 60 employees have taken an intensive, 10-day course on user-centered design and have been "embedded" as usability advocates within their organizations.

These actions have paid off: over 90% of major line-of-business sites reportedly comply with the basic intranet design standards, and all have pledged to achieve full compliance in the future. Bottom-line costs have been significantly reduced and, most importantly, intranet users report better search results and an easier time finding the sites and applications they use the most.

LESSONS LEARNED

Insight from Janette Channell:

Standardization drives usability. "We found many benefits from standardizing the user interface, implementing standard templates, and providing a Prototype Toolkit that allows business stakeholders to quickly see exactly what their site will look like — including the font, colors, and topic sorting — prior to migrating the new site onto the enterprise portal. These changes have also decreased the amount of time needed to identify any business group's particular requirements."

Keep "clients" involved: "Involving clients in the page design process, and allowing them to participate in decision-making — albeit to a somewhat limited extent — goes a long way. First, it reduces the perception that UI standards are being forced upon them. Second, it instills those standards in them. Finally, and perhaps somewhat imperceptibly, it moves all clients toward a consistent, companywide portal model, increasing acceptance and pressure for all business units to achieve a similar look and feel."

Insight from Phillip Diol:

Microsoft Corporation

Using the intranet:

Founded in 1975, Microsoft (Nasdaq "MSFT") is the worldwide leader in software, services, and solutions that help people and businesses realize their full potential.

Headquarters: Redmond, Washington (US)

Number of employees the intranet supports:

70,000+

Countries with production facilities: n/a

Sales: \$44.3 billion (2006)

Design team:

In-house and Ascentium Corporation

Members:

Microsoft: Mark Davies, director; Sharon Elkins, group manager; Melissa Wilson, lead site manager; Christine Bennett, content development manager; Chris Stetkiewicz, managing editor

Ascentium: Robert Chrestensen, senior designer,

and the design team

SUMMARY

The Microsoft Corporation's corporate intranet, Microsoft Web (MSW), is also an avowed showcase for its Microsoft Office SharePoint Server 2007 portal software. Showcase or not, employees won't frequent an intranet unless it's easy to use; offers features that interest, engage, or help them better perform their jobs; and increases their productivity. That many of the company's more than 70,000 employees prize the intranet for its news and information, and as a guide to Microsoft's many internal sites, bespeaks Microsoft's success on all fronts. Bolstered by inspiring features and fluid design, MSW has cemented its reputation as a crucial information resource for employees.

MSW's homepage alone helps its users immediately tackle several tasks. For example, *Top Sites* (in the top, right-hand section) is one of the homepage's mostused features and leads users to the intranet's most popular sections. The *Top Sites* links are selected using a combination of data sources, including:

- Top-hit site keywords in Search (this data is pulled through a query and reported out each week/month).
- The most-trafficked sites from the site's directory features.
- High traffic numbers for non-org based categories in the information architecture (the content in the *HR & Benefits* category, for example, is mostly from HRWeb).
- The company's most frequently used, large-scale intranet sites.

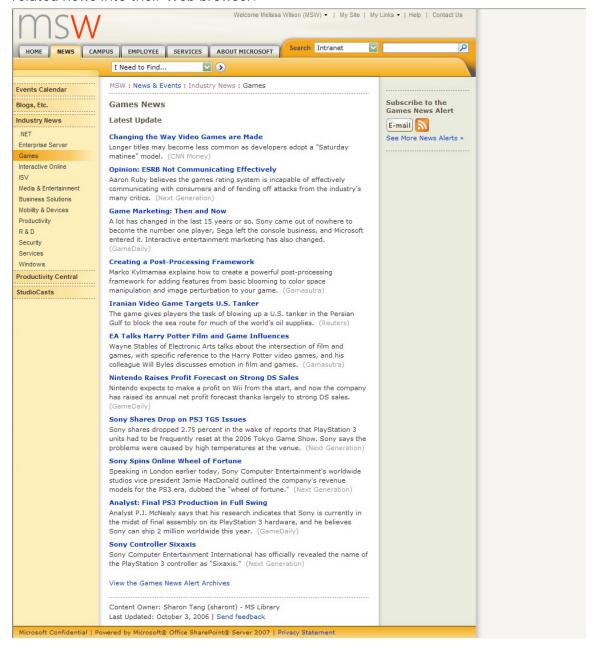
In the Know is one of several themed promotional spots that appear on the homepage and on the News & Events page. Items that appear in In the Know are unlike typical news items. For example, here you might find everything from productivity tips to new books or reports from the Microsoft Library to philanthropic efforts. This news is always time sensitive or particularly relevant for the current day or week. These unique features also get a longer "shelf life," moving to the News & Events page after being featured on the homepage.

The homepage's top-middle section is dedicated to one primary news story that editors expect will interest most employees. Headlines of a few more *Top Stories* appear just below the showcased news item; to the right of the headlines are links to industry news and events. Users have access to even more editorially selected news — an entire tab, in fact, is dedicated to news and events. Still, in MSW, editors sift

through all the news and highlight the most important items on the homepage. This is a fabulous service for users.

Users who want or need more than the biggest news items can click on the *News* tab. Here, they see clickable categories in the left-hand navigation that feature news from any of 13 industries — from gaming to security.

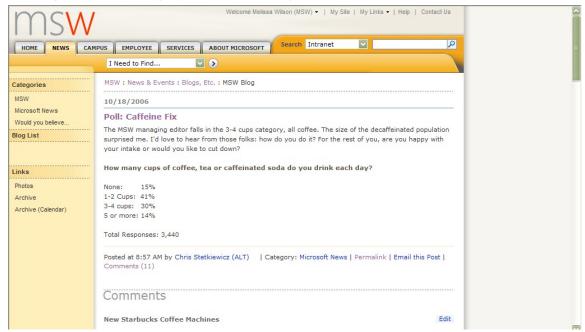
One innovative feature: on the right side of any specific area (such as an industry news page), a user can sign up for related alerts or click to load an RSS feed of related news into their Web browser.



Pictured: The *News* tab offers information related to over a dozen industries in which Microsoft is involved. A list of news items appears on each main industry page. Users can also sign up for related e-mail or RSS-based news alerts.

Also found in the *News* tab — as well as on the homepage — is a left-hand navigation link to *Blogs, Etc.* This reveals a page that targets not only Microsoft's population of advanced developers, but also those employees who might not be highly technical. Indeed, the page serves all users' needs, offering tools for building a blog and company guidelines for acceptable blog content. The page also links to internal and external blogs about the company, its products, and its communities.

For example, the *InsideMS* blog pursues more provocative topics about Microsoft itself, and enjoys the backing and participation of some of the company's top executives. The MSW team itself uses the *MSW Blog* to communicate with users about the intranet and its features, as well as to capture employee feedback. Likewise, the managing editor uses *MSW Blog* to discuss site features, news coverage, and company issues with employees.

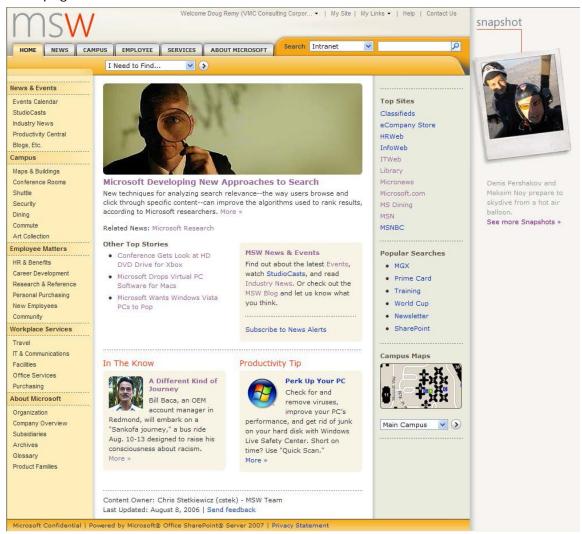


Pictured: MSW's managing editor uses *MSW Blog* to discuss site features with users. This image, for example, shows results from a recent MSW poll.

One of MSW's strengths is its refined yet spare design. Thanks to MSW editors' skillful graphics selection and placement, users are not distracted by useless graphics. With news items, for example, images are only used to augment or punch up a story — not just for the sake of adding an image. Accordingly, an article about *Search* is accompanied by an image of a man holding a magnifying glass — an icon that commonly denotes search, and that software developers will recognize. Another homepage image is the campus map icon. While hardly usable as a map at this size, the icon is clear and lets users quickly find and navigate to this very popular feature.

The homepage's *Snapshot* feature is another example of effective image use. *Snapshot* images are, refreshingly, not stock art, but rather are photos that Microsoft employees submit of their extra-office activities. Images come from around the world and include employees who netted a large salmon; an engaged couple mugging for the camera; a mountain-climbing expedition; and a duo preparing to skydive from a hot air balloon. Simply put, this is a fantastic way for people to really experience the various habits and pursuits of their fellow employees and see just how diverse their organization's workforce really is. Small wonder that the *Snapshot* gallery, which

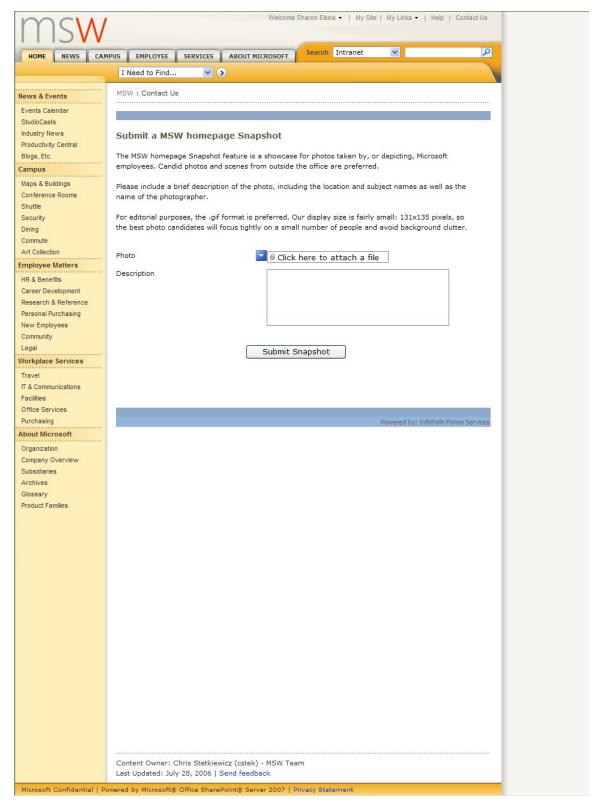
contains the last five days' worth of photos, gets almost 15,000 hits per month; the homepage itself receives almost 5 million hits each month.



Pictured: The MSW homepage features news and links to top sites across the intranet. The *Snapshot* photo in the upper right changes daily and shows Microsoft employees pursuing activities outside the office.

Another indication of *Snapshot's* popularity: dozens of employees submit photos each day, which is crucial for maintaining an engaging and ready supply of images. The intranet's managing editor and senior editor comb through all submissions to choose one lucky selection for each day. Interestingly, when the MSW team originally envisioned *Snapshot*, they planned to promote specific homepage themes to solicit photo entries. Yet, the feature was so popular that employees began submitting photos unsolicited.

Today, employees can submit their photos via a simple form with essentially two fields: one for browsing and uploading the photo and another for writing a short caption. Precise instructions describe desired caption information. Users can find a link to this form on both the *Contact Us* and the *Snapshot Gallery* pages.

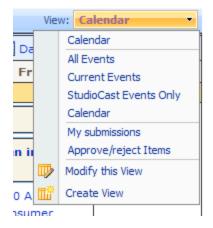


Pictured: Editors receive dozens of entries every day for the *Snapshot* feature. This entry form makes it very simple for employees to select, caption, and submit their photos.

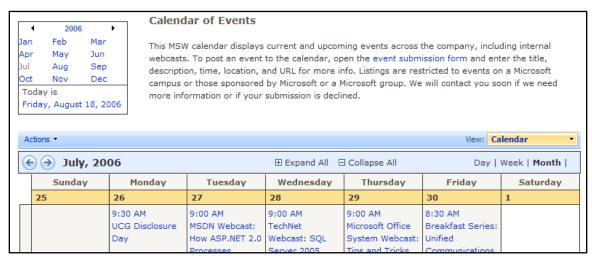
For motivating employees to visit and keep visiting the intranet, few things beat useful news and engaging photography. Another especially useful feature on MSW is the *Events Calendar*, which users can access via the *Events Calendar* link in the *News & Events* menu. As its title implies, the *Events Calendar* relays information about Microsoft-related events. So, for example, people can find dates for such things as company meetings, training sessions, conferences, and webcasts.

A small calendar tool shows all 12 months and lets users quickly jump to a particular month. The *Today is* status message helps users remember today's date, and arrows let them browse by year. Links for *Day, Week,* or *Month* restrict the calendar view accordingly. Users can also expand or collapse calendar entries.

In addition, the *Calendar* drop-down list reveals basic, out-of-the-box Office SharePoint Server 2007 filters to help employees further sort calendar information.



Pictured: In the *Events Calendar*, a drop-down menu lets users easily sort calendar entries.

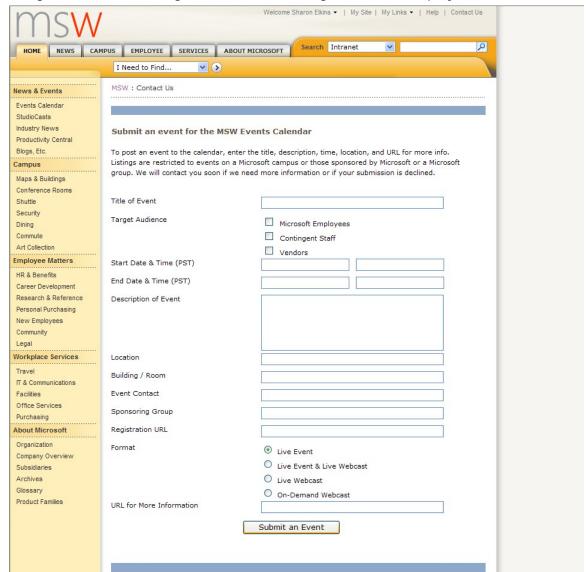


Pictured: The top of the *Events Calendar* lets employees view events by day, week, or month; expand and collapse entries; and jump to a particular month.



Pictured: A full-page, full-month view of the *Events Calendar*, which shows various company-related events, including training and company meetings.

To ensure that important and varied information actually makes it into the calendar, MSW lets users submit items for calendar inclusion. The related submission form is very straightforward, and asks for the event's title, start and end date, time, description, location, contact, and registration website. Checkboxes allow users to designate the event's target audience, including Microsoft's employees and vendors.



Pictured: Using this form, employees submit items for inclusion in the *Events Calendar*.

In closing, MSW's top-bar navigation, which features a simple, tabbed structure and clearly visible targets, makes this global, horizontal region easy to use, thus making the intranet easy to traverse. Numerous elements are simple yet highly effective: The currently selected tab, displayed in muted orange, stands out from the remaining tabs, rendered in gray. The search field is clearly visible in the upper-right part of each page. Furthermore, the left-side navigation always changes, depending on which tab is selected. Yet, even though the individual menu choices change here,

the left-side navigation design and context remains consistent across the entire intranet. This attention to detail and clarity of design purpose, along with the team's ability to tap SharePoint Server 2007 software features, helps MSW maintain an excellent and engaging user experience.

URL AND ACCESS

The MSW homepage URL is http://msw. MSW is the default homepage for all new employees and all newly built PCs.

Users can choose to change their start page. However, according to the *MSW Spring 2005 Annual Satisfaction Survey*, more than 70% of employees keep MSW as their default browser setting, more than 60% of the 70,000+ Microsoft employees visit MSW once a day or more, and an additional 25% use MSW at least a few times per week.

As with all Microsoft's internal and intranet sites, when working remotely, users must first authenticate and connect to the corporate network to access MSW.

CONTENT MANAGEMENT

SharePoint Server 2007

For content management, MSW relies on the Web content management functionality built in to SharePoint Server 2007. This CMS provides a WYSIWYG admin view for rich content and text editing from within any given intranet page. The CMS supports CSS — custom styles are applied for MSW — and also allows for a distributed authoring and approval processes. Content owners can check out content and make changes, then route the changes to the MSW publishing team for final review and approval. "This functionality is required to support the MSW business of hosting content for other groups across the company," notes Christine Bennett, MSW's content development manager.

How MSW Hosts Content

Here's how hosting works: MSW provides its intranet platform and expertise to help content partners reach employees with information about their business or businesses. "This requires a strong focus on the organization of the content, with a site structure/information architecture that not only makes sense on a very detailed level in each category, but also flows well and is consistent with the whole of the MSW architecture," notes Bennett. Specific services offered include:

- Content consultation
- Information architecture expertise
- Editorial guidance and style guidelines
- Library of page layouts
- Publishing platform and support
- CMS
- Monthly usage metrics, user feedback, and survey data

Beyond hosting, "content owners remain accountable for the subject matter, as well as the timeliness, accuracy, and intent of the content," she says. To further drive

accountability, and inform users about the source of information they see, the bottom of each page includes the content owner's name and business division.

An Intranet "Merger"

Much of the content currently available on MSW lives in the *Campus, Employee Matters*, and *Workplaces Services* sections. Likewise, much of the content comes from the Corporate Services Division, which provides all employees services such as travel, dining, commuting help, technology procurement, and so on. Hosting MSW content was the result of a "merger," says Bennett, between MSW and Corporate Services, since the previous MSW version essentially directed most of its users to the Corporate Services site. Other available intranet content ranges widely, and includes the *Microsoft Archives*, information for new employees, and legal environmental policy. "Each new section or category of hosted content is carefully reviewed by the core team to ensure business alignment, and more importantly, that it makes sense for users," says Bennett.

Driving Consistent Page Design

With such diverse content, MSW provides a library of templates to ensure that intranet page layouts — and thus the user experience — are consistent. "The library includes layouts that range from category and landing pages, to FAQs, articles, index pages, maps, and more," notes Bennett. "All are readily available to MSW content publishers and are easily managed with specific image sizes and formatting, Web parts, and predetermined sections."

Interestingly, while SharePoint Server 2007 offers a number of flexible page layouts and template options, the MSW team took a relatively conservative approach. "We decided to implement a very strict set of page layouts to maintain consistency, both because of the sheer volume of pages on the site, and the overall goal of providing users with an intuitive and familiar branded experience," says Bennett. Consistency, in other words, is the overriding goal.

This level of consistency was notably absent from the previous MSW version. As a result, "it became very difficult, not only for users to navigate and consume key information easily, but also from an administrative perspective. It was much too difficult to keep track of what the rules were and why each exception was made," she says.

Now, to enforce consistency, the MSW site manager must approve all new pages on the site to assure they meet layout standards. Content authors still have free rein over content. For example, when a business division creates a FAQ, content authors can easily upload both the questions and answers. The MSW publishing team reviews the page, however, to ensure that it's published with the correct template. To further drive consistency, the MSW team also maintains three style guides for all contributors and the publishing team: an *Editorial Style Guide*, a *Visual Design Guide*, and a *Publishing Guide* for MSW.

"Through the use of workflow in the content management system, these 'details' are part of a rigorous QA review (which includes information architecture check, layout confirmation, and copyedit pass) of each page before it goes live on the site," says Bennett.

RSS Feeds and E-mail Consumption

Newer technologies are enabling newer approaches to delivering intranet content. "While MSW is primarily an intranet, we are always considering the variety of ways in

which users can consume MSW," says Chris Stetkiewicz, MSW's managing editor. For example, the *MSW News Alerts* program lets employees subscribe — via e-mail or RSS feeds — to over a dozen different topics for key news on Microsoft's top priority initiatives. Among the subscription options is *Daily Newswire*, which features stories culled by editors from external news feeds. "*Daily Newswire* is one of our most popular services, with a 99% user satisfaction rating and 17,000 subscribers," he says.

The same news content appears in the MSW Industry News section and in the top headlines on the interface for Microsoft Office Communicator, Microsoft's internal instant-messaging program. When using IM, "employees can get one-click access to the stories featured on the MSW homepage and the Daily Newswire," he says. "We have also made sure that these e-mails are viewable on a variety of screen sizes, including mobile devices."

MSW is careful to ensure a balanced selection of stories, reflecting various perspectives on Microsoft. "The impact of the combination of external news feeds with editorial selection is very powerful," notes Stetkiewicz. To see how, take this Daily Newswire feedback from one Microsoft employee:

"The only newspaper or news feed that I absolutely, positively read every day is the Daily Newswire. It reminds me every day what an open and honest company I work for. Some stories are full of praise for what we do, several are critical, and all are helpful to me in explaining who Microsoft is to our customers and partners. The fact that we can be self-critical and self-aware is so different than where I used to work. The newswire is inspiring in itself. Thank you for what you do."

TECHNOLOGY

Internal Showcase

Not surprisingly, given its technology offerings, Microsoft's intranet is based on a variety of Microsoft technologies. As group manager Sharon Elkins notes, "MSW is a showcase of Microsoft products in action, solving enterprise information needs." The most recent redesign re-launched the intranet on SharePoint Server 2007, and the intranet also relies on SharePoint Designer 2007, SQL Server, and Visual Studio 2005 for custom code development.

MSW's approach to using technology probably differs from that of many other intranets. "We have an unusual role with regard to selecting platform technology to support our business needs. It is more a matter of when to use technology, rather than which technology, because our strategy and roadmap for Web products is known to us very early in the product cycle," notes Mark Davies, director of Microsoft's knowledge network group.

According to Davies, two overriding principles govern technology selection for MSW: to keep employees well informed and productive, and to use SharePoint Server, since it's Microsoft's own portal and Web application tool. "So, our mission is to serve our internal employees' needs, and to do this in a way that showcases the SharePoint technologies."

Interestingly, early in the cycle of a new SharePoint release, the MSW team hones the intranet technology business requirements by assessing both current information services capabilities and desired capabilities. "We share the requirements and information design with the [SharePoint] product group, so that they understand the capabilities required to support important and broadly applicable business solutions

in the future," notes Davies. "As the next product release moves into the early beta stages, we become the first adopter to help validate the product, provide feedback on implementation, and start to develop best practices that we can share with our customers."

When the next version is released, then, Microsoft already has a showcase for the new product's capabilities, not to mention an intranet for "serving our employees' information needs, built on the latest technology capabilities, and utilizing a set of best practices to enable our customers to repeat our success," he says.

MSW Search

For searching, MSW uses SharePoint Server 2007 to index content from content stores located around the world. Users access search via a single search box, located in the global MSW "chrome." All told, the content index includes links to approximately 15 million items, such as SharePoint sites, file shares, internal people databases, and line-of-business applications.

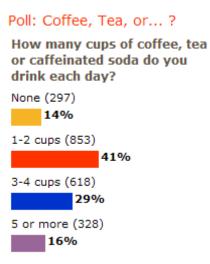
"Search results are divided into tabs in the search results user interface, allowing users to search for intranet content, people, and customer/partner data," notes Lauri Ellis, the program manager for MSW Search. "Search results also respect security settings on SharePoint content, so users only see content that is available to them."

Behind the scenes, the MSW search team tracks numerous query types to help hone the intranet, including:

- Top queries
- · Queries per scope
- Most-clicked results
- Searches that generate zero click-throughs
- Searches that return zero results (to see where coverage is lacking)
- Searches that return zero Best Bets (to help manage related editorial tasks)

Ajax in Action

In terms of newer technologies beyond SharePoint 2007, MSW also utilizes a smattering of Ajax. According to Sean Squires, MSW program manager, "Ajax is used in the MSW Poll — displayed on the homepage and *News & Events* page — to render voting results with percentage bar graphics, without refreshing the entire page."



Total Responses: 2096

Pictured: An MSW poll used on the homepage and the *News & Events* page uses Ajax to render the voting results bar graphics without the need to refresh the entire Web page.

GOALS AND CONSTRAINTS

Overall Goals

According to Elkins, the MSW mission, and thus the designers' primary goal is: "To empower employees to be more productive and aware by helping them quickly accomplish common tasks; easily find information they need — and discovering some they may not know they needed; and stay informed about what's happening at the company each day, as well as in the industry as a whole."

MSW pursues three objectives in pursuit of that goal:

Quality

- Provide easy access to pertinent information by using an intuitively designed navigation and information architecture; and by maintaining an inventory of essential, balanced, accurate, and engaging content.
- Offer hosting service packages to other internal groups including a platform, templates, editorial guidelines, CMS, metrics, and exposure to a broad employee audience.
- Provide feedback to product groups (specifically, Microsoft Office Systems).

Awareness

- Raise awareness of MSW among employees worldwide.
- Promote awareness of the MSW hosting service package to content providers and internal Web teams.
- Showcase SharePoint as an intranet/portal solution.

- Usage
 - o Promote frequent use of MSW among employees worldwide.
 - Maintain portfolio of hosted content (and ensure satisfaction among content owners).

Redesign Goals

For this redesign, the MSW team had a number of specific goals, including all-new branding, navigation, information architecture, page layouts, and editorial features. "We also needed a better back-end content management workflow and system to manage the expanding hosting model," says Elkins.

Other high-level goals included "addressing some core navigation and information architecture inadequacies, bringing a sense of consistency and intuitiveness to the overall user experience, showcasing the updated features of SharePoint 2007, and really breathing life into the MSW brand, voice, and design while nailing the core needs of employees across the company," says Melissa Wilson, lead site manager for MSW.

Specific goals included:

- A single, consistent navigation system (eliminating the competing leftnav and right-side "directory" navigations and the use of fly-outs, for example).
- Solve the information architecture issues that resulted from having broad content offerings that were shallow in some places and incredibly deep in others.
- More consistent and thoughtful page layouts with relevant and actionable elements.
- Improve the publishing processes.
- Improve relevancy and accuracy of search results.
- Create more room to tell stories that impact employees; expand content to include more engaging features (such as employee photographs, a poll, blogs, and so on).
- Deliver a more established overall look and feel aligned with the MSW brand.

Constraints: Pacing SharePoint, Culling Content

Beyond goals, one constraint is the high expectations placed on MSW as a SharePoint showcase. "We have to be hyper-aware of user needs and really let the business requirements and user data drive planning — leading to accurate and appropriate selection of SharePoint features that deliver against these needs," notes Wilson.

One related constraint, then, is the need to re-launch the site when new SharePoint versions appear, and the time constraints this creates. "Keeping the MSW site relaunch schedule in sync with the Office Product Group's schedule of specific builds and key milestones for their 2007 release, was, without question, the most complex element of the entire project," says Elkins. "But, together with our development team, everyone worked tirelessly to ensure that the MSW business requirements and technical specs were delivered as planned. And, as the site was launched, we all took

a collective sigh of relief when users responded — immediately — with loud and supportive kudos."

Another constraint, perhaps, is simply culling through the enormous possibilities all of the various groups offer in terms of intranet information, news, and content. "There are so many exciting technologies and developments happening at Microsoft at any given time, and the MSW team's role in that is to examine each opportunity and determine, through careful analysis, if it's right for the MSW users," says Wilson. "Sometimes the answer is no, but having access to such incredible ideas and technologies in our day-to-day world is a very exciting place to be."

BASIC INTRANET FEATURES

Communicating Information Across the Company

One of MSW's main purposes is to provide users with usable access to the massive Microsoft intranet. "The vast 'intranet' at Microsoft is decentralized and made up of thousands of internal sites. It seems like each group, line of business, team, or division creates a site, or sites, to communicate their information across the company," notes Elkins. "This is very much reflective of the overall *Try! Create! Build!* culture of Microsoft."

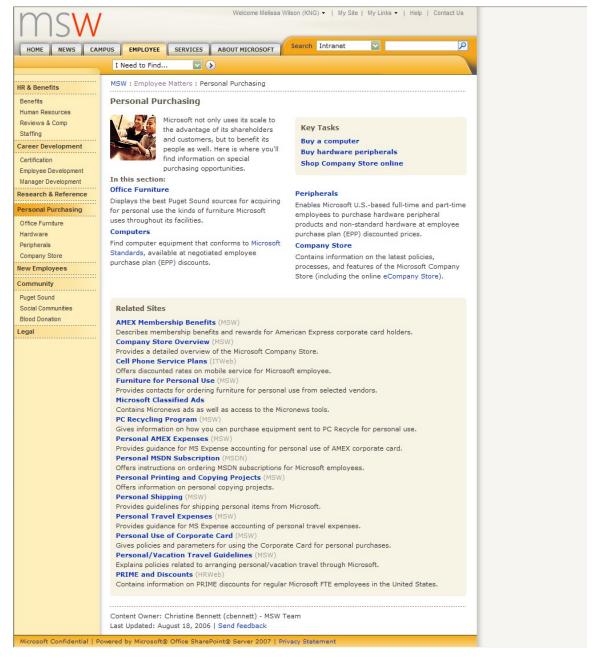
MSW's job, then, is to make sense of this decentralized environment. Accordingly, "MSW is the virtual nexus of information where employees can get started and go to find everything they need to know about Microsoft on the intranet, regardless of whether it's actually 'on' MSW or not," she says. "In this respect, MSW serves as both a portal and a website — with a rich and deep content offering, plus access points to the multitude of intranet sites, team sites, and other information across the company."

Content

One way to offer Microsoft employees meaningful information is to maintain a diverse content portfolio. In fact, Microsoft maintains an array of content offerings, including:

- Rich content programmed by MSW editors: The MSW managing editor drives the MSW editorial calendar, together with key communications stakeholders across the company. While various business groups' content and external news sources provide most content, the managing editor provides original offerings such as the recently added *Inside Track*, which includes original content and articles written by the MSW editorial team.
- Content hosted on behalf of service owners across the company: This type of content is deep and detailed, providing needto-know information about the many Microsoft services and programs for employees to help them accomplish their daily work tasks. While various service managers across the company own the content, MSW serves as a host, making it readily accessible to employees. In fact, most pages on MSW are hosted on behalf of content owners.

Access to intranet sites and resources: Literally hundreds of sites
exist on the Microsoft intranet-at-large, and MSW points to almost all
of them. On the portal, Tasks & Sites features provide users with a
consistent entrée and trusted directory to these other offerings, and is
a required MSW feature. "A large percentage of our users report
coming to MSW to access other websites and accomplish tasks," says
Wilson. Accordingly, the MSW search indexes content from all sites.



Pictured: Category pages, such as *Personal Purchasing*, give users access to relevant tasks and sites, even if those tasks or sites live in lower levels of the site. This section, in particular, offers a more descriptive take on the left-nav elements.

The top-level (global) MSW navigation provides links to the intranet's primary content. These include:

- News & Events: Tells users what's happening at Microsoft that day, and offers the latest updates about the company, its industry, and related world events.
- Campus: Helps employees get to and around campus including maps, dining menus, and more.
- *Employee Matters*: Assists employees in professional development, understanding their benefits, and performing job duties.
- Workplace Services: Workplace information necessary for completing a task, such as facilities and purchasing guidelines.
- **About Microsoft:** Helps employees learn about Microsoft as a company, while also exploring its history and culture.

MSW features added in the recent redesign include:

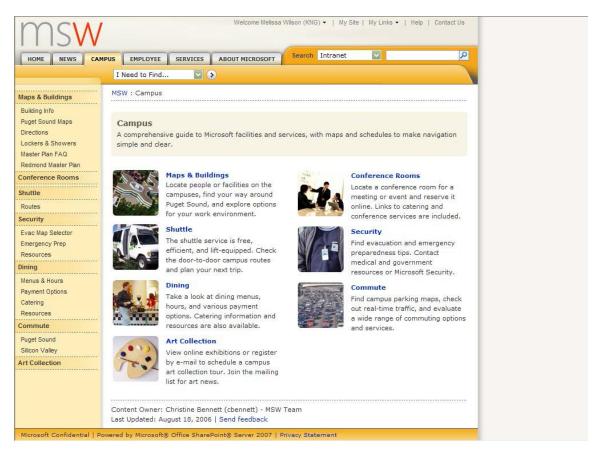
- Improved navigation and information architecture: Helps users more easily find what they need. Global tabs at the top of every MSW page give users ready access to all content areas. Left-side navigation and search helps users drill down quickly.
- Expanded news coverage: The *News & Events* section now features stories that impact employees. "To ensure a balanced viewpoint, our skilled editors program a mix of news each day so employees get the full picture about Microsoft not just the good stuff plus relevant industry information and news from around the world," says Stetkiewicz.
- *I Need To Find*: This drop-down menu in the top-hand global navigation provides a quick list of the most frequently visited sites and tools across the vast Microsoft intranet.
- *Campus Maps*: Offers one-click access to the maps of the ever-growing Puget Sound campus.
- *Tasks & Sites*: Improved to provide more consistent, trusted access to hundreds of intranet sites and tasks.
- Community-building features: MSW Poll gives users a voice and some instant gratification on timely issues. MSW Blog provides a deeper read on stories and issues that affect Microsoft, along with other, more offbeat items. Snapshot highlights the fun side of Microsoft's culture and community.
- **Search Best Bets:** This provides the best, most relevant intranet search results. MSW tasks and sites align with the *Best Bets* library, giving users a consistent sense of their best options, whether searching or browsing.
- Color palette and design: The redesigned color scheme is clean, and reflects the MSW brand "trustworthy, balanced, smart, and rewarding," says Wilson. Furthermore, "new, more fluid page layouts and updated features promote easy use and showcase the flexibility of SharePoint 2007 templates." All images are formatted now as well, to ensure a more consistent intranet look and feel.

- Expanded Feedback and Help sections: To make it easier for users to get the help they need, MSW developed several new content areas. In Contact Us, users can find links to various contact options, including how to report an intranet problem, ask about the site, or submit a Snapshot or story idea. Behind the scenes, a new back-end management scheme assures that problems get routed to the appropriate people. The Help section also expanded, and now includes a site map, links to the intranet FAQ, a help section for setting up RSS feeds, instructions for how to subscribe to news alert e-mails/RSS, and more.
- New employee orientation material: During their initiation, new hires are shown MSW's New Employee section, which details how to get started and settled in their new environment and role. Specifically, this section includes:
 - **Get Started:** Everything new employees need to know when starting work with Microsoft, including task lists and important conversations to have with their managers.
 - **Get Settled:** Resources for relocating to Puget Sound and Washington state, as well as important Microsoft business information.
 - **Get Training:** General training, resources, and events for new employees.
 - **Resources:** Useful employee websites and programs for managing time off, arranging travel, getting technical support, and locating campus services.
 - **Frequently Asked Questions**: Answers to common questions about payroll, vacation, transportation options, and so on.

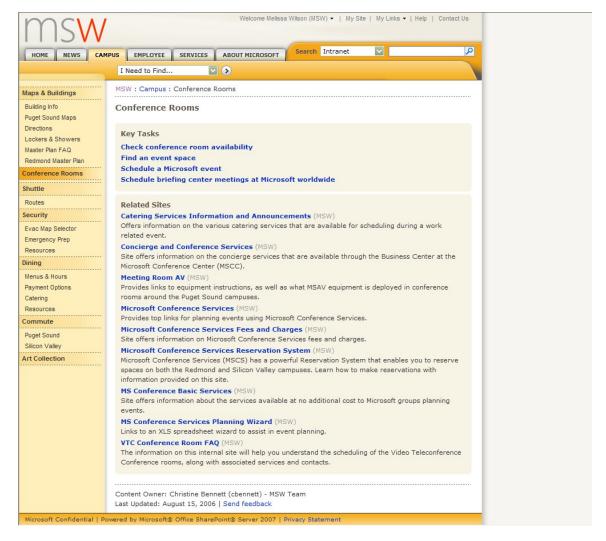
USERS

MSW's target audience is all 70,000+ Microsoft employees worldwide — from research to development to marketing. "Each day, employees are bombarded with information in e-mail, IM, and on the intranet and Internet," notes Elkins. "They need a trustworthy source of daily information to be more productive in their jobs. MSW helps users do everything from finding a campus map or reading editorially selected Microsoft-related and industry news headlines, to learning more about business divisions, key drivers, or even what is being served in their building's cafeteria that day. MSW serves as both a portal and website — with a rich and deep content offering, plus access points to the hundreds of intranet sites across the company."

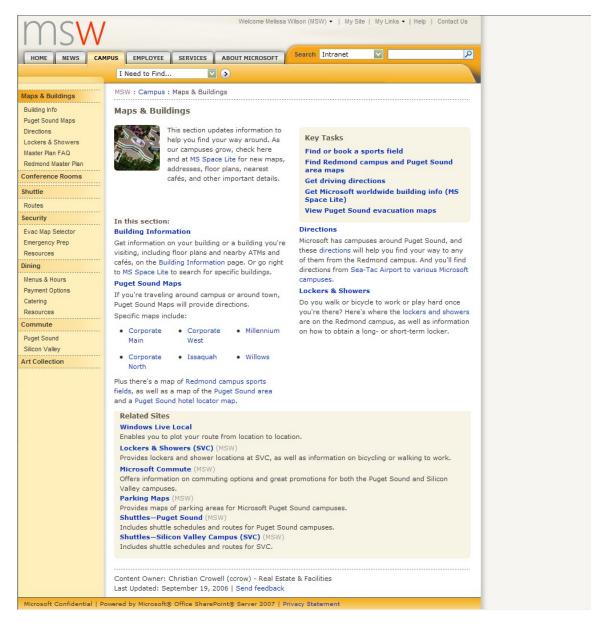
Appropriately, MSW takes a subject-oriented — rather than an organizationally based — approach to organizing information.



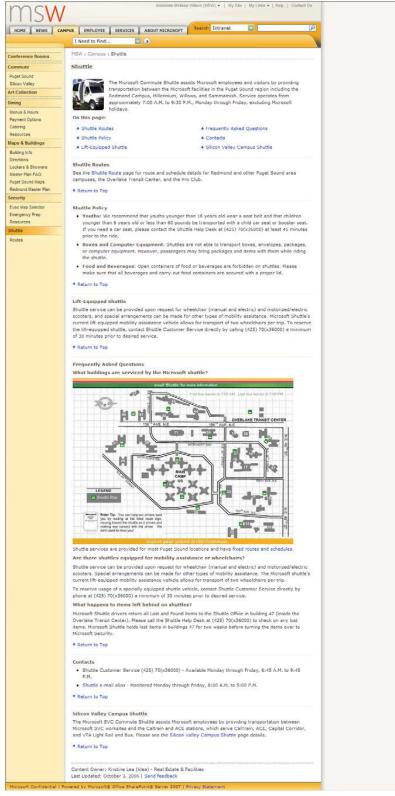
Pictured: The *Campus* page, an example of a department-level index page. Users can reach these index pages through the *Employee*, *Services*, or *About Microsoft* tabs, or from links in the left-hand navigation bar. The pages provide a clean and obvious way to browse each area's categories, with clear descriptions and clickable links and images.



Pictured: A Campus section sub-page devoted to conference rooms.



Pictured: A *Campus* section sub-page with maps and information about campus buildings.



Pictured: A *Campus* section sub-page with information about the campus shuttle.

USER TASKS

The most common user tasks on MSW include:

- Find other sites at Microsoft.
- Stay aware of critical information (executive updates, security alerts, and so on).
- Read the day's top headlines (on Microsoft, industry, and world news) and get a Microsoft perspective on events.
- Book business travel.
- Browse dining menus in the various Microsoft cafeterias and check meal card balance.
- Research events (live and webcasts).
- Locate information on services and programs.
- Find campus maps and driving directions.
- Search for documents, team sites, and websites across the intranet.
- Find people.
- Use the MSW Glossary to look up acronyms and other "Microspeak" terms.

INTRANET TEAM



Pictured: (from left) Christine Bennett, Melissa Wilson, Chris Stetkiewicz and Sharon Elkins.

Team Composition

The MSW team is a small, nimble group of four people:

- **Group Manager:** Manages team, budget, and overall business strategy.
- **Senior Site Manager:** Responsible for the overall user experience, including information architecture; navigation; page layouts; and design, branding, and site analytics.
- Content Development Manager: Manages the hosted content portfolio, including the business model, customer relationships, and account management.
- Managing Editor: Responsible for all news content on the home and news pages, as well as overall editorial voice, style and calendar; manages relationships with stakeholders across the company to "program" news content and internal employee features.

MSW also relies on a vendor team of publishers and editors who actually update the site with new content daily. The MSW team also works closely with a team of

developers, testers, and program managers, plus the information retrieval team, which manages the company's internal search tools, including *MSW Search*.

Team Reporting Structure

Beginning in 2003, the MSW team reported up through the Microsoft Office (Information Worker) Group. "This alignment was especially beneficial for our role as an internal showcase for getting and providing feedback to the Microsoft Office Product Group during development and planning phases for Microsoft Office System 2007 — and specifically, SharePoint 2007," says Davies.

In September 2006, as part of an internal reorganization, MSW joined the Central Marketing Group's Internal Communications team. "In this new organization, MSW will be able to expand its content coverage even further by leveraging other internal communications resources, and actually generating more original content around the news and stories that impact the daily lives and jobs of Microsoft employees around the world," he says.

BACKGROUND

MSW efforts began in the middle of 1995, when a taskforce discussed how to better facilitate the sharing of internal company information. The group identified an intranet platform — then, quite a new concept — as the simplest, most user-friendly option available, and one that would require the least amount of engineering.

To kick off MSW, some key information areas were tapped to provide content, including the Microsoft Library and the *MicroNews* internal newsletter. The team also identified existing sites and added them to MSW's directory. After initially announcing the portal page — as it became known a few years later — to the company in August 1995, the team began evangelizing the platform to the company as a communications solution.

"The evolution of MSW has been quite extraordinary since then, growing from the directory concept, then adding search, layering on news and editorial content/programming, and then hosting content in the most recent years," notes Elkins.

The following timeline highlights some of those changes:

- 1995: Launched directory to the internal Web and current content, along with information on how to create internal websites. Social sites were included to encourage employees to explore the new technologies. During this phase, there was a full remake of the intranet's look and feel, based on usability studies.
- 1997: Added intranet directory and a full-text search of content across the intranet. Also launched external news and editorially programmed top stories and corporate "need to know" features.
- 1999: Expanded editorial programs to include strategy and company business (initially known as *Knowledge Centers*).
- 2005: MSW became a host for content from other Microsoft groups, essentially becoming a platform to promote and reach MSW's broad audience namely, all employees.
- 2006: MSW continued to expand its broad service offerings and added *MicroNews* (an internal news site and newsletter), additional hosted partners, and blogs. In July, MSW re-launched on SharePoint 2007 Beta2.

The underlying technology evolved with the site. "MSW originally shipped on the alpha version of what would become Internet Information Server 1.0, running on Microsoft Windows NT. Several functions, such as feedback forms, were built using CGI Perl scripts, but as features were added to IIS, these switched over to built-in Microsoft technologies," says Amy Stevenson, Microsoft's archives manager, who worked on MSW for several years and now uses an MSW-hosted model for her online archives content. "From the beginning, the *Registry* information — as the directory itself was called — was run as an Access, then SQL database. Full-text search was added when 'crawler' functionality was originally developed, which later became part of Microsoft Site Server. Interestingly, no classic 'programmers' were needed to run the site, at least until roughly 1999, when users began to expect more sophisticated functionality."

Beginning in 2003, MSW became an internal showcase for Microsoft Office SharePoint, and has run on that platform ever since. Accordingly, the MSW team works closely with SharePoint developers, including launching the site using beta versions of SharePoint, to help shake down new software and provide rapid feedback.



Pictured: The homepage for MSW's predecessor, MSWeb, used until June 2006. Here, the left-hand navigation and the right-hand *Directory* listing competed for clicks. Meanwhile, the green bars partially "closed down" the layout, while the shade of blue was relatively uninviting.

DESIGN PROCESS AND USABILITY ACTIVITIES

Upgrading to SharePoint 2007

The latest MSW redesign began based on the team's plan to upgrade to SharePoint 2007. As mentioned, "the most important goal was to make data-driven decisions to help improve the overall MSW user experience and attempt to really 'wow' and impress Microsoft employees — who tend to have a very high bar and are not shy about saying when they love or can't stand something," says Wilson.

At the same time, the MSW team knew the intranet needed a more solid foundation. "Many changes and additions were made over the years with some successes along the way — but ultimately, a new foundation needed to be built and we wanted to

take our thinking to the next level to boost employee productivity and be more reflective of the Microsoft culture and personality," says Wilson.

Reviewing Intranet's Goals and Top Features

To begin the redesign planning, then, the MSW team conducted a large-scale review of the intranet's business goals; carefully reviewed traffic data; poured over customer satisfaction survey data; consolidated and analyzed two years' worth of user feedback; wrote an entirely new brand strategy that solidified MSW's positioning, voice, tone, and character; and liaised with other companies building SharePoint portals and intranet sites.

Even so, the MSW team already had a feel for the direction in which the intranet needed to evolve. "Because we were already very familiar with the data through our monthly dashboards, this process was more of a confirmation and pulse-check to ensure we had hard data to support our decisions and brainstorming," says Wilson, adding that they constantly talked to users and knew right away what needed to be done. "We did a thorough 'gut check' to be sure that we were providing users, first and foremost, with the basic information all employees needed." The team constantly verified that and asked itself other questions as well, including: "Were we in the 'right' business?" and "Did our mission and vision align with what users want and use most on MSW?"

For this redesign, the team opted to focus especially on honing the features that users would most appreciate. "For example, we knew users really loved our *Directory* feature, which featured the 'best of the best' tasks and sites by category, but its configuration directly competed with our left-hand navigation. So, we found a way to integrate the successful elements of the *Directory* into our new page layouts and information architecture," says Wilson.

Honing the MSW Brand and "Chrome"

While the intranet team studied which features worked for users and what needed to change, it also began working with an external design firm, Ascentium, to help hone the MSW brand and meet other site goals.

The design phase, then, began by creating a specific look and feel "mapped to the brand strategy and user experience we had in mind," says Wilson. One manifestation of this work is the new top-level "chrome" or global frame, present on every MSW page. "We asked the designers to create multiple visual representations of the chrome, using the MSW brand as inspiration, in gradations from 'safe' to 'extremely bold,'" she says. Working closely with Ascentium, the MSW team helped create these iterations, then honed them to four choices, and posted them for MSW users to evaluate. "Once we felt the look and feel was aligned with the MSW goals and brand, and that users liked the direction, we began to solidify the main navigational elements within the master chrome."

Card Sorts and Usability Techniques

While the above work was underway, the team also analyzed all intranet content and began redesigning the information architecture. "We did several rounds of testing — mostly card sorting — with our users to help determine the global navigational buckets and the types of content that would fall into each bucket." The team hit upon six buckets: *Home, News, Employee, Campus, Services,* and *About Microsoft*.

Subsequently, the team developed wireframes to show the user flow through the site, again through an iterative process with the external design firm. "The MSW

business team walked through various typical scenarios to test the user paths and provided feedback to help refine the wireframes," notes Wilson. "Starting with the most common tasks, we worked hard to ensure that user flow was both intuitive and efficient for users regardless of their starting point — friendly URLs, bookmarked pages, homepage, left-nav, search, and so on. Because one of our biggest challenges overall was providing smooth user flow regardless of content depth, this was very time-consuming, but absolutely necessary for the new site's success."

Balancing Global and Local Navigation

To ensure that users could easily navigate through the MSW site, designers used a mix of global and local navigation elements on every page. Each page also included links to information and tasks related to the page content. Early in the planning phases, the MSW team participated in a navigation usability study with the SharePoint product group, using MSW as the test case. The results helped the team feel confident about the "global top, local left" scenario. Nonetheless, they wanted to ensure the execution worked well holistically, so they crafted several wireframe iterations to hone the approach; from these, they created page layouts. All of these elements will continue to evolve. "As feedback and data continues to come in, we will certainly hone the page layouts, navigation, and information architecture to better serve users' needs," says Wilson.

TIMELINE

- July-October 2005: Audited editorial and "scrubbed" existing content areas.
- October 2005: Developed business plan
- October 2005: Developed branding documentation.
- October-December 2005: Established business requirements
- January 2006: Commissioned design consultation.
- January 2006: Analyzed content and reviewed information architecture.
- February: Designed initial chrome/wireframes and information architecture.
- February/March 2006: Continued design rounds, including page layouts.
- February–September 2006: Development commenced (overlapped with design phase).
- May 2006: Finalized designs, including page layouts, information architecture, and navigation.
- May 2006: Conducted user satisfaction benchmark survey.
- June 2006: Froze content and began migration.
- June-July 2006: Published both old and new sites during testing.
- June-July 2006: Tested QA (editorial, design, and technical).
- First week of July 2006: MSW Pilot launched for key stakeholders.
- July 14, 2006: Launched on SharePoint 2007 Beta2 (all employees/users).
- September 2006: Upgraded to SharePoint 2007 Beta2TR.

- November 2006: Upgraded to SharePoint 2007 RTM.
- December 2006: Conducted post-launch user satisfaction survey.

RESULTS

Major New Features

The redesigned MSW launched on July 14, 2006. "The redesign is quite a dramatic change," notes Elkins. "We added all new branding, navigation, information architecture, page layouts, and editorial features."

Some of the most notable new features include:

- Improved navigation & information architecture: To help users more easily and quickly find the information they need.
- Expanded news coverage: A mix of internal and external news stories, which helps keep the viewpoint balanced.
- Community features: The homepage's MSW Blog, MSW Poll, and Snapshot help build community.
- Revamped color palette and design: More fluid page layouts and updated features result in pages that are easier to use, while also showcasing additional template flexibility offered by the latest version of SharePoint.

As befits the team's planning, usability studies, and all-around effort, users are happy with the changes — no small feat for an audience of more than 70,000. "Feedback from across the company has been incredibly positive, and the team is thrilled with the result," she says. Notably, since the redesign, the total number of visitors to MSW per month has increased by 9%, and the total number of page views — hits — per month has increased by about 35%.

That said, "we want to be very careful about comparing detailed data points, because we created an entirely new metrics program at launch," says Wilson. As part of that program, the MSW team developed a new dashboard for sharing monthly traffic trend data with the team, its leadership, and intranet stakeholders. It has also endeavored to effectively communicate to users how they can decode traffic data.

Happy Users Come Bearing Suggestions

Within 30 minutes of MSW's re-launch, says Wilson, the intranet team had already received a large amount of feedback — most positive — from across the company. Here are some examples of that feedback:

- "I love the new layout! The new organizational schema makes it much easier to find what you are looking for. Great job!"
- "I like the new look and feel of MSW. Organizing info by tabs makes the content more digestible and easy to scan."
- "Man, it's beautiful! I can't say enough positive things about the new redesign, from an information architecture perspective to a visual design perspective, a roaring success! Thank you!"
- "I'm about to do a redesign of my group's site and I was wondering if you could come help me. © "

Of course, users were also forthcoming with suggestions for even more

improvements. "As with any group of smart people, Microsoft employees are vocal and opinionated, but when they like something, they let you know," says Wilson. "And even when they really like it, they'll still tell you how to make it even better." Even so, many employees' kudos specifically mentioned features the intranet team had been trying to fix, which was welcome validation. "Of course, we have a list a mile long of things we'd like to tweak or make better, but knowing that the basic elements are on track, straightaway, is a great benchmark."

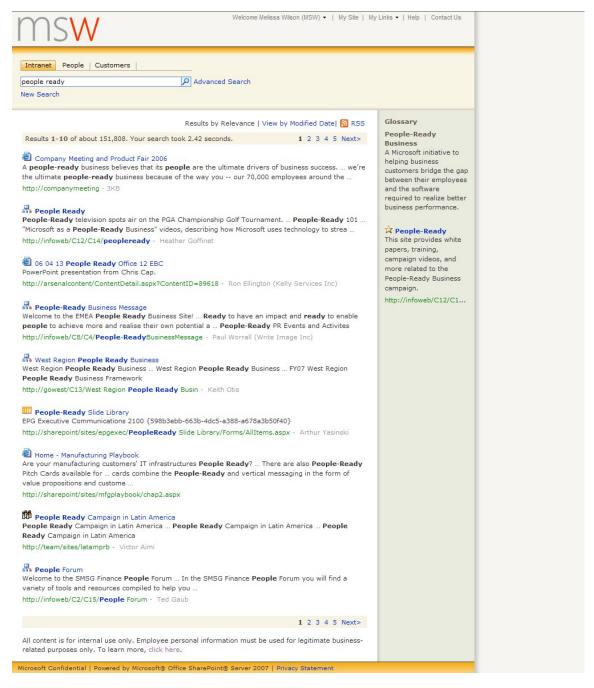
Another sign of success: the number of employees who asked to borrow the recipe. "Internally, the team receives at least one inquiry a week about sharing our site structure, design, and navigation implementation," she says. "We presented to an external company recently and they closed the meeting by saying 'We love it, now how can we get our site to look exactly like it?.' So that is a huge compliment."

Search Improvements

The new site also improves the search-related user experience; in general, however, giving users the search they want — and are accustomed to on Internet sites — is more difficult on the intranet.

"Because users have incredibly high expectations when it comes to search — thanks to MSN Search, Google, and other powerhouses, users are harder to please in this arena, but so far, the team has made positive strides and we are seeing positive results," says Ellis.

For example, since the redesign, MSW search (powered by SharePoint search) now pulls information from Microsoft's in-house customer relationship management system, and other crucial business applications. When searching for people, the MSW search also analyzes which business groups a user belongs to; this helps deliver results that are more relevant, while also respecting any personal data visibility settings users established to control access to parts of their profile. "There are new refinement options for people search, including 'social distance' results by degree of distance from you, showing people you know first," says Ellis. "One of the other really nifty, user-beloved features, is the inclusion of glossary terms in the upper-right corner of intranet searches. Not only are relevant search results and *Best Bets* displayed, but a user can get a full definition of the term — especially useful for new employees."



Pictured: Search results for "people ready." Results display with the *Intranet* tab highlighted, though users can also tab to *People* or *Customers* for further results. Glossary results and *Best Bet* choices appear on the right side of the page.

LESSONS LEARNED

Insights from Christine Bennett (MSW content development manager):

Audit content early. "Be sure to do a full content audit and scrub prior to starting your IA work. It's very detailed and time-consuming, but is worth every minute you spend. It will be a substantial time-saver later."

Ensure sign-offs. "Have a clear agreement — between technical and business sides — on your actual business requirements, before development starts."

Plan for QA. "When you're migrating large amounts of content to a new site, have a crystal-clear quality assurance process in place. Ensure everyone knows what they are checking and why — and how to report errors or issues. While this may all seem obvious, it will help prevent duplicated or inefficient efforts."

Insights from Sharon Elkins (MSW group manager):

Manage technology changes. "Always analyze and guide how new technical implementations may impact sustainability from a business perspective."

Know how your users think. "Be able to channel your users."

Obtain sign-offs early. "Establish all parties' launch criteria and have them sign-off on that criteria early in the process. Different teams will have different priorities; don't assume everyone shares your priorities."

Insights from Chris Stetkiewicz (MSW managing editor):

Remember to prioritize. "Prioritization is king."

Have a Plan B. "When working with technical dependencies, always have an alternate solution."

Automate whenever possible. "Try to automate or find efficiencies for manual processes whenever possible."

Insights from Melissa Wilson (MSW lead site manager):

Plan, but also take risks. "Do your homework, and then be willing to take risks. The beauty of a website is that it can be very evolutionary."

Employ design in service of the redesign business goals. "It was really important for us that the business goals — a.k.a., 'it's all about the users' — drove the design, and not the other way around.

Start with the basics. "Address basic issues first. It's very tempting to first pursue the 'wow' factor, but before everything else, your priority is to build a viable foundation, based on basic and essential user needs."

Prize honesty. "Be honest early."

Know your users' content needs. "Be incredibly familiar with what users want and need — so you can be strategically creative."

National Geographic Society

Using the intranet:

The National Geographic Society is one of the world's largest nonprofit scientific and educational organizations. Founded in 1888 to "increase and diffuse geographic knowledge," the Society works to inspire people to care about the planet.

National Geographic reaches more than 350 million people worldwide each month through its official journal, *National Geographic*, and four other magazines; National Geographic Channel; television documentaries; radio programs; films; books; videos and DVDs; maps; and interactive media.

National Geographic has funded more than 8,000 scientific research projects and supports an education program combating geographic illiteracy.

Headquarters:

Washington, D.C. (US)

Number of employees the intranet supports:

1,500

Sales: Nonprofit organization

Design and development team:

In-house and Barbara Morris, contract graphic designer/consultant

Members:

Libraries & Information Services: Karen Huffman, manager of knowledge initiatives, intranet application developer, Webmaster, and current chair of intranet team; Barbara Ferry, director of business and editorial research, and chair of the intranet team during redesign/migration; Susan Fifer Canby, vice president, and first chair of the intranet team; Suzan Faton

Communications: Cathy Healy, (former) intranet editor; Karen Gilmour, intranet editor; Barbara Moffet, communications director

Information Systems & Technology: George Hubbs, director; Kevin Hiscock, senior architect; Robert Harris, senior application developer; Kathy Escamilla; Tom Puckett

NG Digital Media — Archive Research: Gary Carter, curator, National Geographic Digital Media

SUMMARY

For an intranet, taking cues from the organization's existing retail products can save time, boost focus, and help foster an incredible user experience. Witness the National Geographic Society's corporate intranet, NG Insider, whose clarity and design echoes the Society's well-known flagship, *National Geographic* magazine.

National Geographic knows how to capture a reader's attention by using engaging, well-written articles, and most of all, by employing spectacular photography. The articles on NG Insider also share these traits. Indeed, look no further than the intranet's captivating imagery and scintillating articles, and you'll find it.

News is an especial standout. On many intranets, all news is lumped into one area, co-mingling industry news, corporate communications, and intranet announcements. This approach requires users to decipher news story origins, perspectives, and basically to think more than they should have to. On NG Insider, however, designers make it easy for users to quickly know exactly what type of article they're being offered: at the top of each news page, a bold header indicates the feature type — news, perspective, notice, memo, and so on. This large, bold title orients users before they begin reading the story, as does an optional summary accompanying some articles. The articles also display mandatory items, such as the date written and author's name. Content itself is well written and concise, as are image captions. On that note, caption-writing is, relatively speaking, a more difficult art than news writing. However, taking extra editorial time to ensure that an intranet has high-quality captions is a good time investment for any intranet that relies on images.



Pictured: Homepage of NG Insider, National Geographic's corporate intranet. The intranet is branded as NG Insider via the National Geographic logo in the banner beneath a star-filled sky. The staff recognizes this sky because outside the NGS Cafeteria is a ceiling with twinkling stars that people often meet under; it represents the night sky in 1888 when the Geographic was founded. The logo thus mirrors the place for staff to meet each other "under the stars" within the intranet.

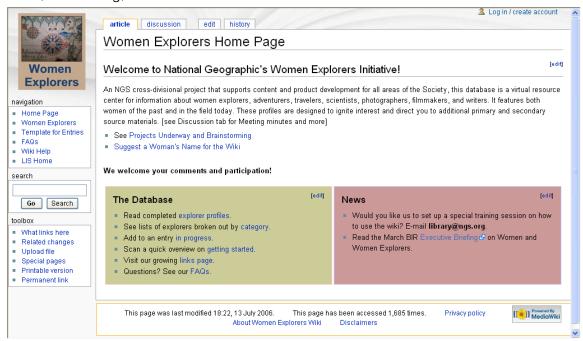


Pictured: A sample news article, which includes concise text and high-quality, engaging images. Note that the header indicates story type, while the left sidebar automatically displays the date posted. Articles include the title, author's name (automatically added), an option for a summary note, and a region for additional content, images, and links.

In addition to reading corporate news, NG Insider lets employees communicate a surfeit of additional information via division and team sites, staff news, and classified areas, as well as through a series of wikis that let employees add or edit whatever they want. NG Insider does put a clamp on the potential chaos of this organic approach by requiring employees to create a username and log in before contributing to wikis. "Social contracts" also prevail: each wiki's organizer sets or maintains rules or guidelines, including page-naming conventions and how to add content to keep the wiki relevant. This helps keep wikis consistent.

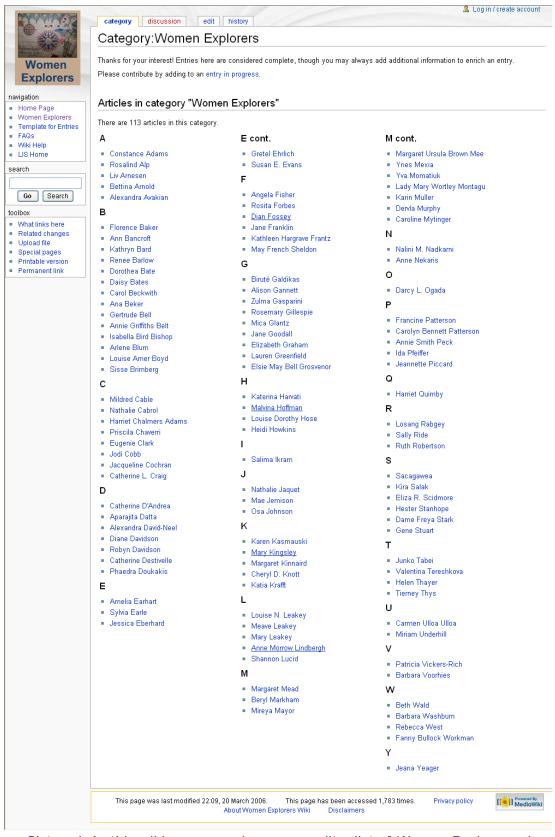
An example is the *Women Explorers* wiki, a research portal with 20 contributors, plus academic interns, from various National Geographic divisions. The wiki's welcome page contains especially useful information for anyone interested in browsing or contributing to the wiki. The page clearly states, at the top, the wiki's purpose; it also lets users create an account, find an overview on how to use the wiki's information database, and e-mail a request for a wiki training session. These items communicate important information for users — especially new users.

A wiki's clarity pays off in numerous ways. For example, when users or content contributors feel confident about how to use an interface and know that their contribution matches a wiki's mission, they will likely be "good wiki citizens," adding content — insights — from which everyone can benefit. This also helps to keep wikis fresh, interesting, and relevant.



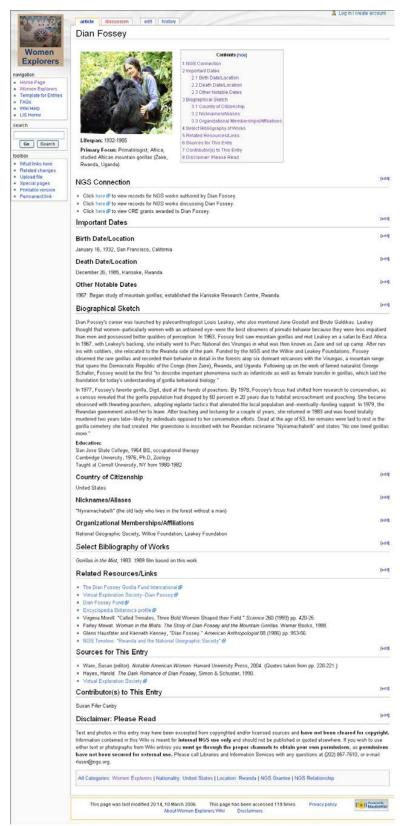
Pictured: The *Women Explorers* wiki welcome page explains to users the wiki's purpose and how to get help in reading and contributing to it.

Once users surf past the wiki's welcome page, they can read about women explorers, edit existing information, or add additional women explorers to the database. Currently, the database accessed by the wiki includes entries on more than 250 women, most of whom were somehow related to National Geographic Society, including Louise Leakey, Eugenie Clark, and Jane Goodall. At the top of the page, a note encourages readers to add more information, while the alphabetical list of all entries facilitates easy browsing.



Pictured: In this wiki, users can browse or edit a list of *Women Explorers* who worked with the National Geographic Society.

Each explorer's page includes clear, large headings; substantial chunks of text; and a high-quality photograph of the woman explorer. The content section details such essential information as birth date and primary research focus and, where applicable, offers links highlighting the explorer's particular National Geographic connections (such as works authored for the Society), any works about the explorer herself, and grants awarded to the explorer. The pages also offer informative and inspiring stories. For example, Dian Fossey's entry describes her efforts to study and save Rwandan gorillas; how she was given the nickname *Nyiramachabelli* ("the old lady who lives in the forest without a man"); and how she was ultimately murdered for her efforts.

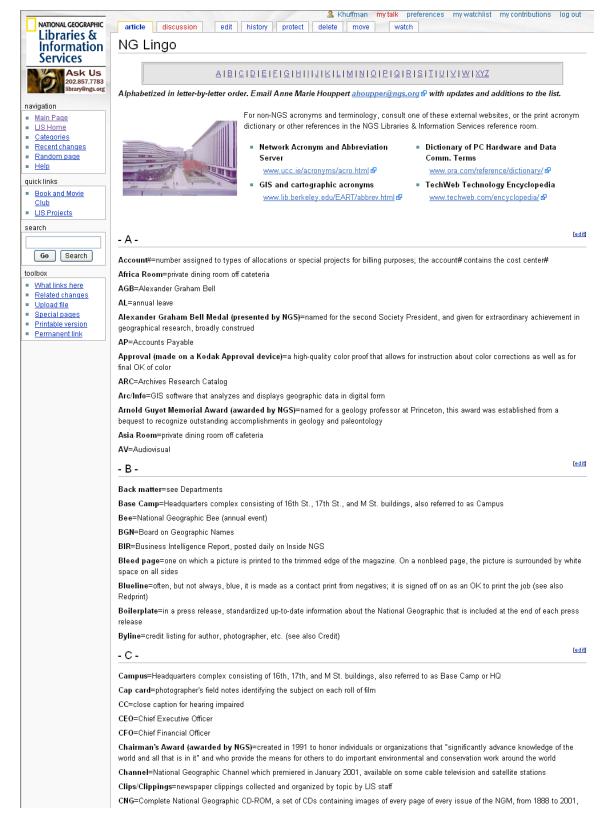


Pictured: The *Women Explorers* wiki page for Dian Fossey contains vital, inspiring, and poignant information.

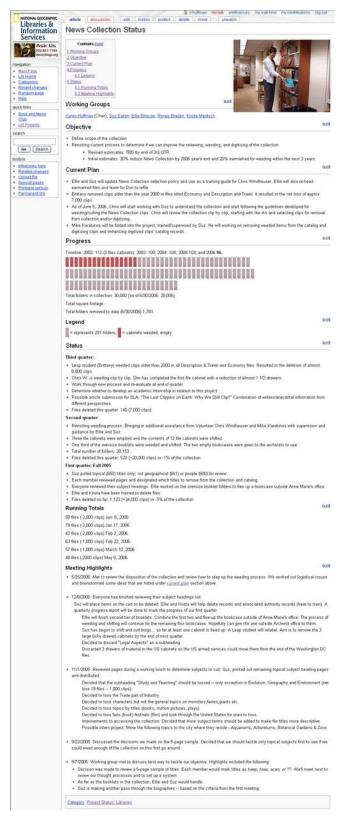
Wikis at National Geographic support a number of groups. For example, the *Libraries* wiki was created to encourage library staff to collaborate on and communicate about projects. Library staff use the wiki to post items such as status reports, quick reference and training material, and 20-minute "coffee-break" handouts.

Other parts of National Geographic have also begun to adopt wikis. For example, the Think Tank and Trends Analysis groups are using a wiki to brainstorm ideas and reduce e-mail overload, and the *Traveler Magazine* staff uses a Bliki (blog plus wiki) to brainstorm and collaborate on ideas and share resources. An in-house television researcher is also building a research page of interesting plants and animals.

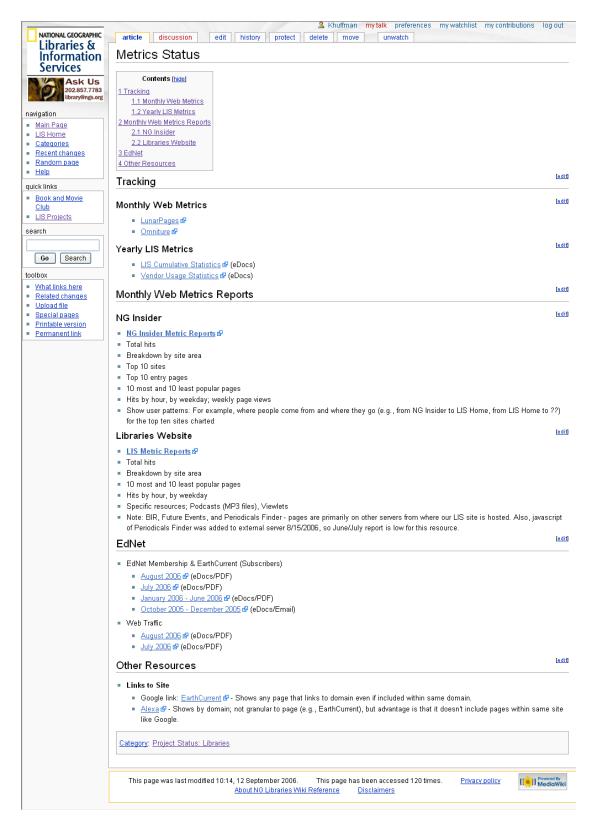
Another interesting wiki, *NG Lingo*, decodes acronyms and terminology — which is especially useful for new employees. In this wiki, the entire lingo list appears on one page, sorted alphabetically. Using the alphabet-letter links at the top of the page, users can jump to all entries for a particular letter. Helpful links at the top of the page also direct users to relevant, external resources.



Pictured: A wiki devoted to internal lingo and acronyms. This is especially helpful for new employees.



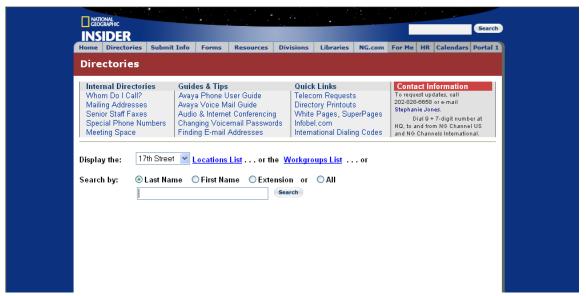
Pictured: The *News Collection Status* wiki page tracks news-related planning information and objectives, notes key players, and tracks the status of the news collection culling project.



Pictured: A wiki start page for exploring and monitoring intranet usage statistics.

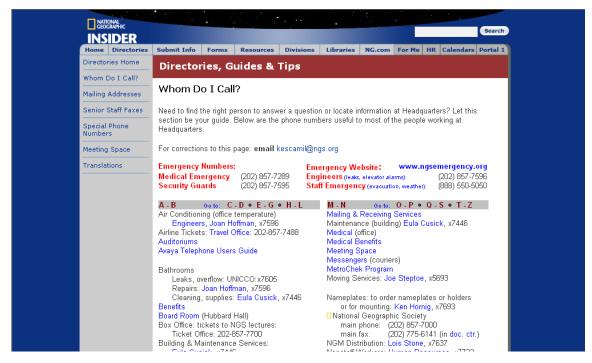
In most organizations, the directory is a critical intranet tool. Yet, finding the right phone number for a particular person, team, or task can be difficult. NG Insider takes a user-centered approach to this problem, providing a corporate directory that sorts contact information in various ways, such as *Categories for Internal Directories, Guides & Tips*, and *Quick Links*. This helps users quickly scan results and retrieve likely "hits."

The search form itself is also very well designed. Appropriately, the most common and basic search — by a person's last name — is the default selection in a list of radio buttons. This good default selection enables users to just begin typing. Additional search capabilities — radio buttons for searching by first name, telephone extension, or "all," and links for a locations list or workgroups list — are also clearly labeled and accessible.



Pictured: NG Insider's *Directory* page groups essential information for tracking down coworkers and features a well-designed search tool with various search options.

Another search tool of sorts is *Whom Do I Call?*, which lists topics (ranging from plumbing to reserving conference rooms), employees available to help with each topic, and (usually) their phone numbers. Some sections also contain links to additional information on the topic.



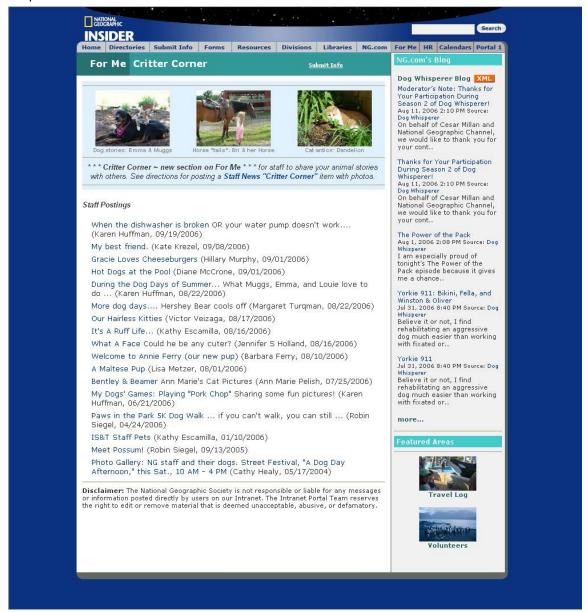
Pictured: The intranet's *Whom Do I Call?* section helps employees find the right person to help with almost anything at National Geographic Society — from plumbing problems to reserving conference rooms — without having to first specify a person's name or department.

With substantial amounts of work-related information on the intranet, NG Insider's designers wisely spent time honing the site's work/life balance. One result: the For Me pages offer employee-to-employee classified ads, carpool matching, job listings, staff news, information about retirement savings, the credit union, etc.

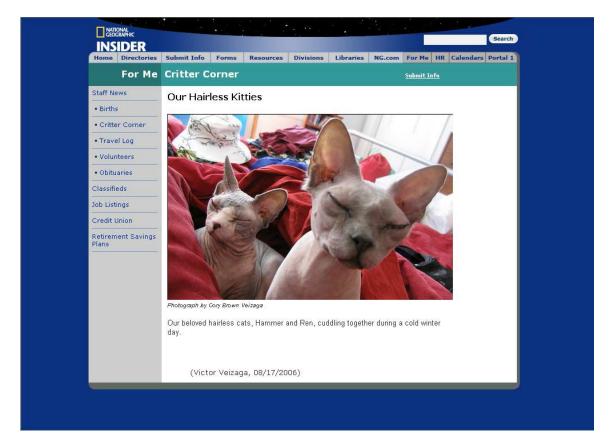


Pictured: In the *For Me* section, users can create, read, and respond to carpooling requests.

Another excellent user-oriented feature is *Critter Corner*, located in the *Staff News* section, which provides employees with a forum for showing off their pets or other interesting animals. Given the National Geographic Society's well-known efforts to document the animal kingdom, employees' animal-related passions come as no surprise.



Pictured: Employees share animal stories on Critter Corner.



Pictured: For many National Geographic Society employees, wildlife starts at home. This *Critter Corner* page illustrates how NG Insider's template-driven pages make it easy for employees to submit content, such as one employee's photo of the household's hairless cats, Hammer and Ren.

NG Insider's pages — from the homepage, to news pages, to wikis — sport an extremely clean, easy-to-use design. Pages offer clear navigation, with a top-level, tabbed horizontal bar labeled with short, relevant, and clearly understood terms. This menu is consistent across NG Insider, as is the NG Insider brand.

Designers also delineate intranet sections by using a thick, colored bar tied to a particular section at the top of each page. For example, *Resources* is lime green, while *Directories* is burgundy. In addition to using different colors, the area's name appears within the top banner in large, bold white letters. All of these information clues help employees quickly move through the intranet, make the right choices, and feel confident that they've done so.

Hence, by providing interesting content, offering employees many different ways to continue moving through the site, and maintaining a remarkably consistent design and look across the site, NG Insider's designers help make exploring the National Geographic Society's intranet a very pleasant expedition indeed.

URL AND ACCESS

NG Insider (http://inside.ngs.org) is the default start page for most employees' browsers — set when the computers are first configured. This URL has remained constant for eight years.

Employees can access the intranet from home using a secure, SSL VPN connection, or by using a National-Geographic-issued BlackBerry.

All National Geographic staff and non-full-time employees working in the headquarters office can access, view, and post content to NG Insider. In fact, "our Web statistics indicate that the staff uses the intranet more than they use their telephone," notes Karen Huffman, National Geographic's manager of knowledge initiatives.

Employees have one of three access levels:

- Content approvers: The lowest access level is automatically assigned to all staff with Lotus Notes access. They can access selected templates, and create and publish content to parts of NG Insider's homepage and certain news and classifieds areas.
- **Content administrators:** Content managers can create, publish, or archive content on sites they oversee.
- **Site administrators:** Assigned to only a handful of people with strong technical skills who administer the database and wikis running the intranet, including workflow stages and systems settings, development of page design elements, and management of site architecture and content.

Note that while affiliates and international partners can see selected intranet content, they cannot create content.

CONTENT MANAGEMENT

Content Authors

National Geographic relies on a decentralized system of content authors. "Our portal team encourages, supports, and has incorporated a decentralized approach to the management and distribution of content by training staff to build division and team sites and post relevant content through the main page, which helps to keep information fresh and engaging," says Huffman. "We incorporate photos and images whenever possible to communicate our message."

Content management is handled by a custom-designed installation of IBM Lotus Workplace Web Content Management (ILWWCM) version 2.0 Domino Edition. "We use the available tools in the system to design and manage our corporate intranet and limited customizations, to enable upgrades as they are available," she says. ILWWCM allows for various document types and categories, says Huffman, as well as style sheets, dynamic content displays, and an automated retention/archiving schedule.

Site administrators develop and manage content organization and categorization; the entire intranet is organized in a heavily content-centric manner. For example, the site architecture is composed of three key areas: site framework, document types, and categories. Here is how each is handled:

Site Framework (Information Architecture)

INFORMATION ARCHITECTURE				
Examples of sub-site homepages, and their sub-pages				
Sub-site:	Forms	Division site	Team site	

"The site framework is a site map of our corporate intranet," notes Huffman. "All major areas within our corporate intranet have a site framework, which is composed of a

0 1 "			
Sub-site pages: Be	enefits	Home	Home
Co	orporate and legal	About us	About us
Er	mployment	Forms	Learning
Re	esearch	Products	Policies
Se	ervices	Services	Resources
Te	echnical support	FAQs	Reports
Tr	raining		FAQs
Mi	iscellaneous		

main site area (parent) plus related sub-site areas (children and grandchildren). Every new document or content object must be assigned to a site or sub-site area." National Geographic currently has 50 different site areas, which comprise the intranet's information architecture.

IA, Doc Types, and Information Categories

Administrative

- Division 0 Information
- Goals 0
- Job Description
- Organizatio n Chart
- Resume 0
- Staff Information

Article Types

- Article 0
- Biographica 0
 - Information

Description

- Course 0
- **FAQs**
- Hot Topic
- Letter of the Week
- News 0
- Notice 0
- Perspective 0
- Photo 0
- Press 0 Release
- Quick Links 0
- Research Material
- Top Story

Forms

- Benefit 0
- Corporate 0 and Legal
- Employmen
- Miscellaneo us
- Research
- 0
- Service 0
- Technical 0 Support
- Training

Index Page

· Learning and Events

- **Event**
- Learning 0
- Lecture 0
- 0 Movie
- Screening 0
- Training 0 Class
- Tune in 0
- TV 0
- Wellness

Memo Types

- Alert 0
- Memo 0
- Offer
- Outreach
- Product 0
- Question of the Day
- Question of 0 the Week
- Staff 0 Benefit

· Policies, Procedures and Guidelines

- Guideline
- Instructions
- 0 Policy
- Policy Announcem
- Procedure

· Presentation Types

- Handout 0
- Manual 0
- Photo 0 Gallery
- **Podcast**
- Presentatio
- Speech
- Training Material
- Tutorial

- Annual 0 Report
- BIR 0
- **BIR Exec**

BIR 0 Missions

- **BIR Travel**
- **Budget** 0

0

- 0 EarthCurre
- LIS Special Report
- Manageme
- Market Reports
- Minutes
- NG in the News
- Report 0
- Statistical 0
- Survey 0
- 0 Trends

Staff Personals

- **Births** 0
- Carpools 0
- Classifieds 0
- Critter Corner
- Obituaries
- Staff News 0
- Travel Log 0 Volunteer

Report Types

Documents Types & Categories

Administrators also index each document by document type and one or more category to generate "a taxonomy-like structure," says Huffman. This lets the system dynamically serve content via a combination of site area, document type, and category.

The following table illustrates how document types and categories map to some specific site areas:

DYNAMICALLY DISI	DYNAMICALLY DISPLAYING CONTENT VIA DOCUMENT ATTRIBUTES				
Document types and categories map to specific intranet areas					
Intranet Area	Document Types and Categories				
NG Insider homepage (center region)	Articles News Notice Letter of the Week Perspective Press Release Top Story Memos Alert Memo Question of the Day Question of the Week Presentation Photo Gallery Podcasts Reports BIR BIR Exec BIR Missions EarthCurrent NG in the News Trends				
Opportunities @ HQ (right sidebar) on NG Insider home	Learning & Events				
Forms page	Forms Benefit Corporate & Legal Employment Research Service Technical Support Training Miscellaneous				

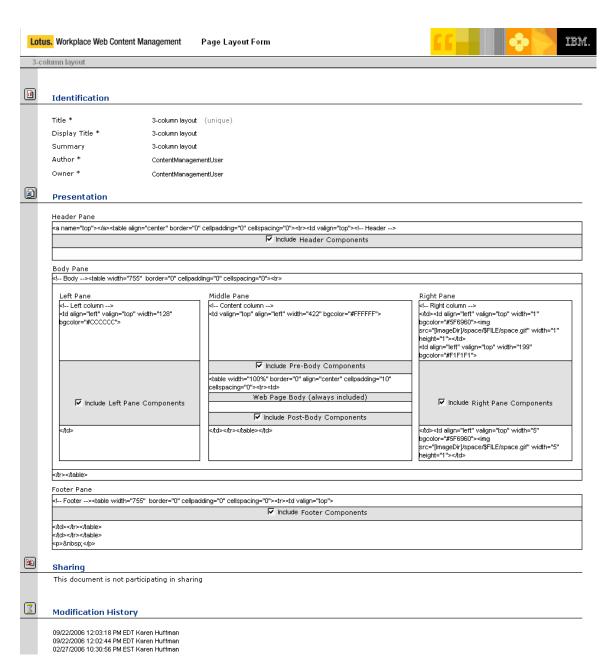
Page Designs

Site administrators use the page design area of the intranet to help develop and maintain the intranet's look and feel. Major areas include:

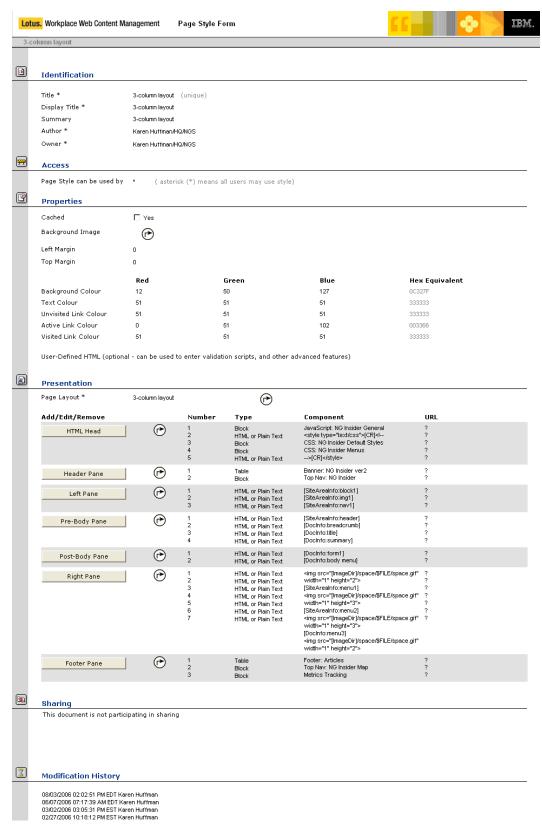
- Page layouts. For establishing overall page structure. This area includes HTML-based panes for header, body, and footer regions.
- Page styles. For setting default page properties, style sheets, JavaScript, and page components.

- Attachments. For adding image files, documents (including Word, Excel, PowerPoint, and PDF files), and media (MP3, video).
- Page components. For example, table components can reference content stored in block or menu components, or menu and navigators can generate content based on designated parameters.

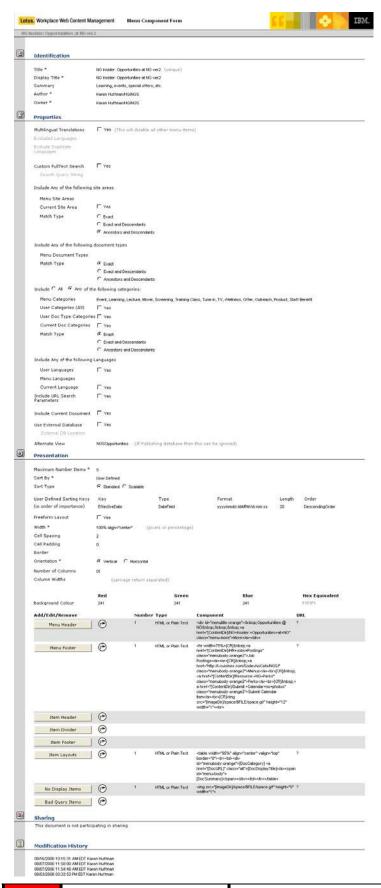
Templates help content creators quickly get their content onto the intranet by letting users select from pre-designed components such as page layouts, styles, site areas, document types, and categories.



Pictured: This page layout form allows site administrators to control page structure via HTML-based panes for header, body, and footer regions.



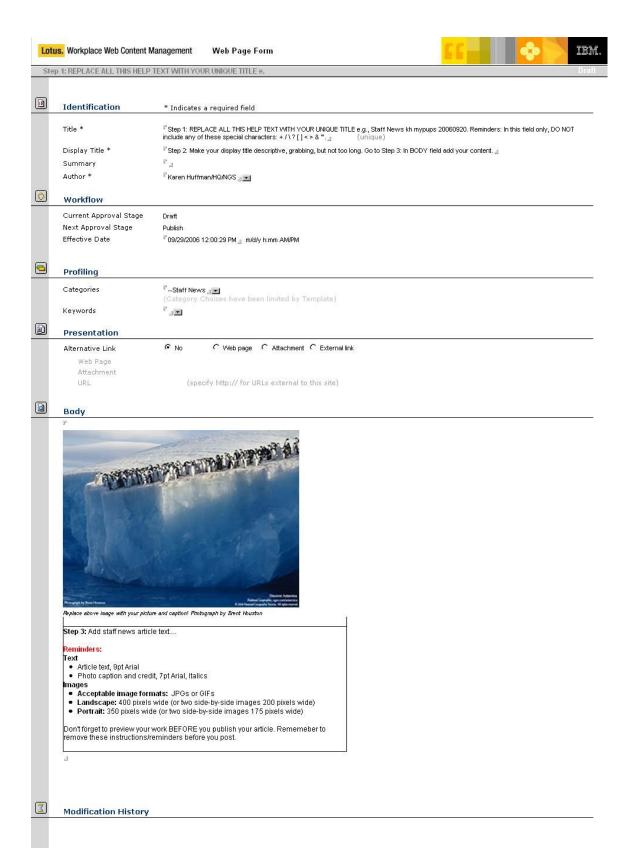
Pictured: Site administrators use this page to set default page properties, style sheets, and JavaScript, and add page component placeholders.



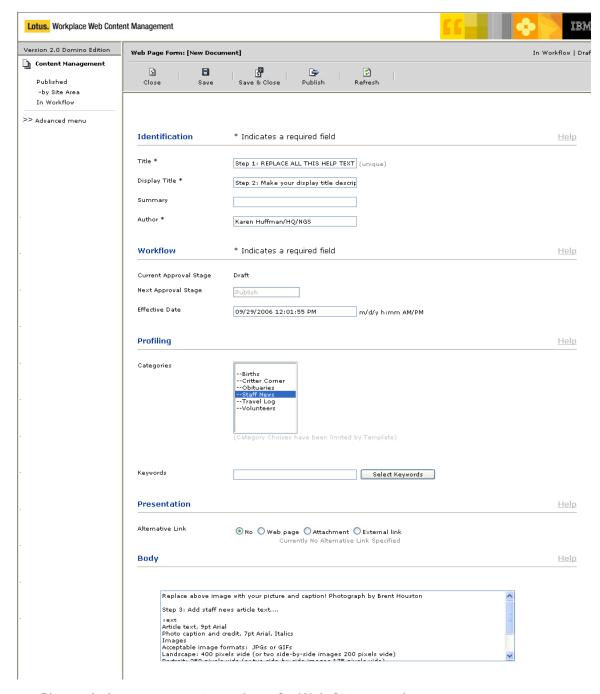
Pictured: Page components are the building blocks of National Geographic's Lotus CMS. For example, table components cab reference content stored in block or menu components; and menus and navigators can generate content based on selected parameters.



Pictured: This shows an admin view of templates. Site administrators select predefined components such as page layouts, styles, site areas, document types, and categories; hide pre-set fields from content creators' view; and set up "helpful hints" on formatting images and text.



Pictured: A content creator's Lotus Notes client view of page templates.



Pictured: A content creator's view of a Web form template.

TECHNOLOGY

Infrastructure

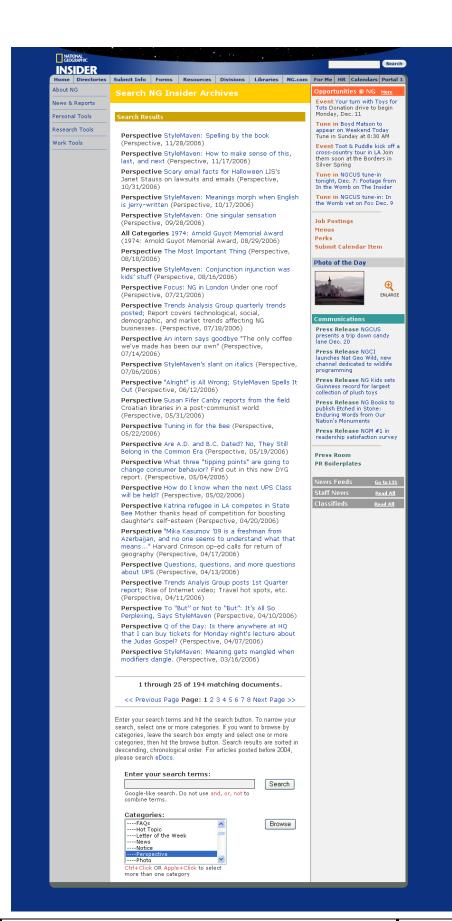
The corporate intranet runs on ILWWCM (version 2.0 Domino Edition), which runs on a Windows 2003 server with Domino 6.5.4.

Domino allows National Geographic to share parts of its intranet with appropriate third parties. "With our Domino infrastructure, we are able to build a replication formula, based on keyword values, to selectively replicate an appropriate subset of

data to servers that deliver the intranet to our external, strategic partners," notes Robert Harris, a senior application developer at National Geographic. "For example, our domestic (US) cable channel — The National Geographic Channel — is a business partnership with Fox. The employees at Fox who support our cable channel have access to a limited subset of our intranet on a Domino server in their environment that we replicate to them at 10-minute intervals. The same goes for a server we have set up that our Local Language Edition partners around the globe who publish the *National Geographic* magazine in over 30 different languages."

Search

The intranet uses the Lotus CMS's built-in search capabilities. "We set up a simple search box which appears on every page, but also let staff browse by categorized content," says Huffman. The intranet team is currently exploring new search technology that can index multiple content repositories because a substantial portion of National Geographic content is stored in the eDocs document management system, which doesn't integrate with the Lotus CMS.



Pictured: In addition to using an intranet search tool, employees can browse the intranet by categories.

GOALS AND CONSTRAINTS

Goals:

- Use a decentralized approach to keep content fresh and engaging.
- Listen to users to increase the intranet's reach and effectiveness.
- Expand the intranet's reach and relevance for international and domestic affiliates.
- Help National Geographic Society staff search for and contribute to intranet content.
- Tap a small group of younger staffers to brainstorm possible intranet uses and developments.

BASIC INTRANET FEATURES

News

From NG Insider's homepage, staff members can read news stories, notices, perspectives, intelligence reports, and press releases; learn about upcoming events, lectures, and learning opportunities; and more.

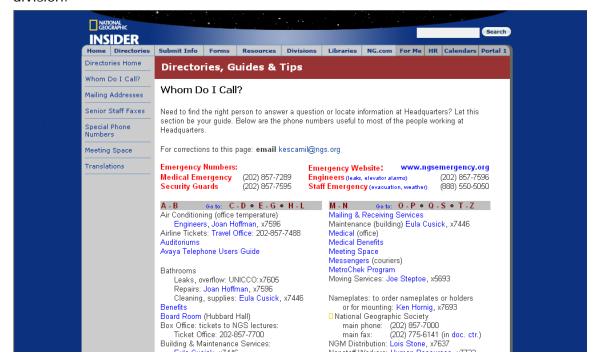


Pictured: A news page.

Directories and Whom Do I Call?

When they need to find a colleague, staff members can search the employee directory or consult Whom Do I Call? — the organization's "yellow pages," which organizes content topically. The employee directory lets users search by last name,

first name, or telephone extension, and also allows for browsing by workgroup or division.

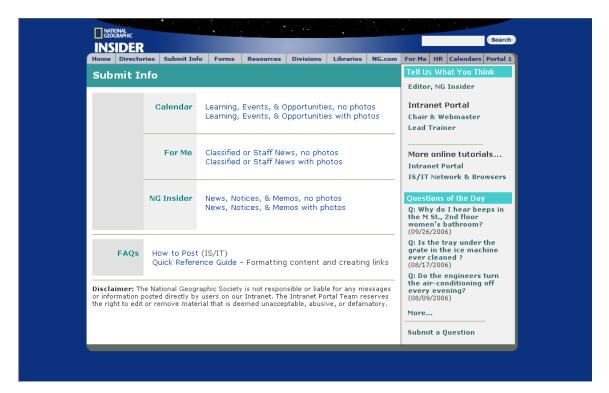


Pictured: Like a "yellow pages" directory, the *Whom Do I Call?* page includes topically organized information and services.

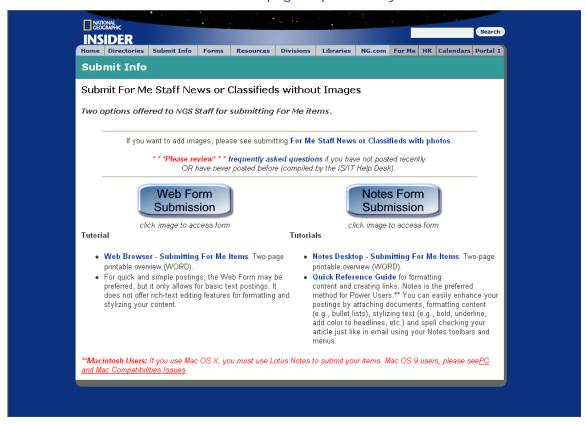
Submit Information

Given the National Geographic's decentralized approach to content authoring, allowing employees to easily submit content is itself a feature. Accordingly, staff can use the *Submit Info* page to post to three main areas: the homepage's main content/news region, the *Opportunities @ NG* (right sidebar), and the *For Me* staff news and classifieds, which includes the *Critter Corner*, *Travel Log*, and *Volunteers* areas.

To post content, employees have two options: they can use a Web-based intranet form or post directly using a Lotus Notes client. Templates ensure content appears in the correct place and is properly designed and categorized. Printable directions on how to post content also help (and were recently simplified down to just two pages). In addition, the intranet team is exploring Flash-based tutorials for training purposes.



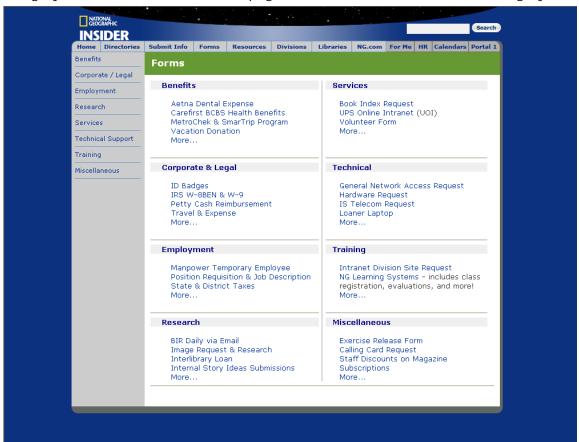
Pictured: Staff use the Submit Info page to post to any one of three site areas.



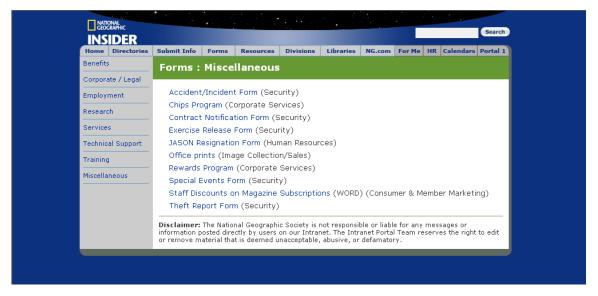
Pictured: Most staff can submit intranet content using either an intranetbased Web form or a Lotus Notes client.

Forms

The *Forms* page includes links to the most-used forms in eight categories. Each category name links to a standalone page with all forms relevant to that category.



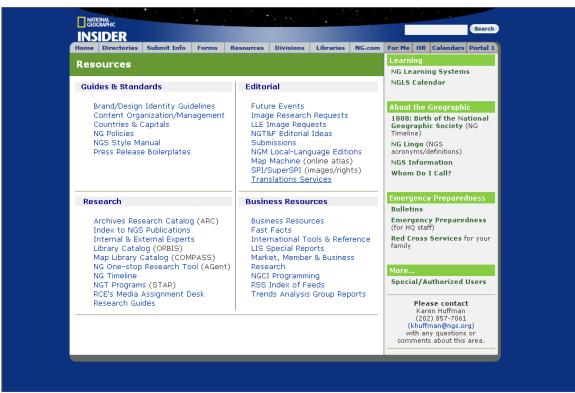
Pictured: The *Forms* page organizes all available forms in eight categories, with this top-level page listing the most popular forms in each category.



Pictured: A list of forms classified under Miscellaneous.

Resources

The *Resources* page aggregates the most frequently used resources and databases. Content is grouped into four areas. The right sidebar includes additional, learning-related links to more information, such as *NG Learning Systems* (NGLS), National Geographic history, *Emergency Preparedness*, and secured/password-protected areas.



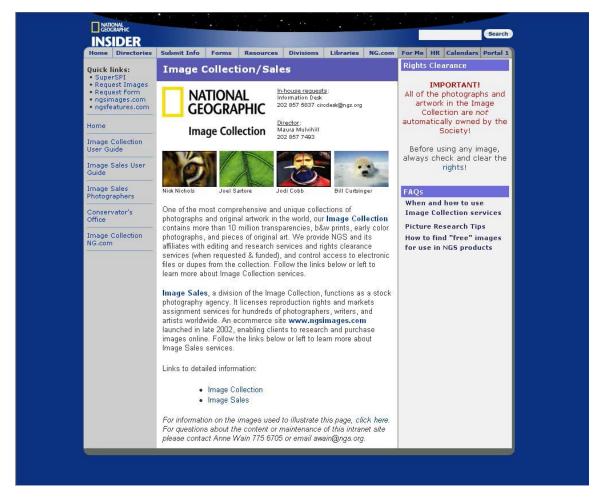
Pictured: The *Resources* page aggregates the most frequently used resources and databases.

Divisions

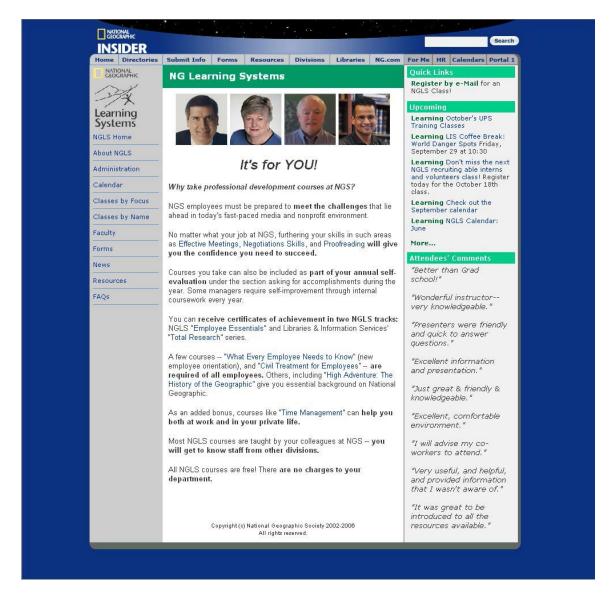
The *Divisions* page alphabetically groups internal and external (indicated with an asterisk) division sites. These are not all of National Geographic's divisions and workgroups, but rather only those with a site on the organization's intranet or Internet (nationalgeographic.com). The right sidebar includes links to team and community sites.



Pictured: Employees can browse intranet content by division.



Pictured: Employees can tap the National Geographic's extensive image collection.



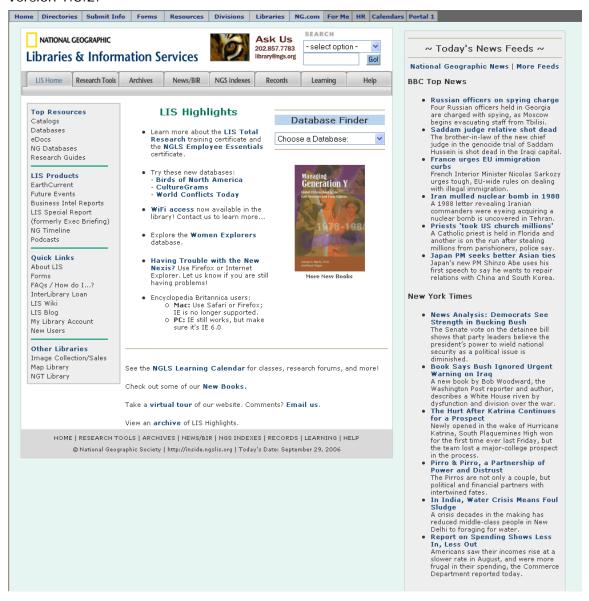
Pictured: Employees can access a variety of educational resources on the National Geographic intranet.

Libraries

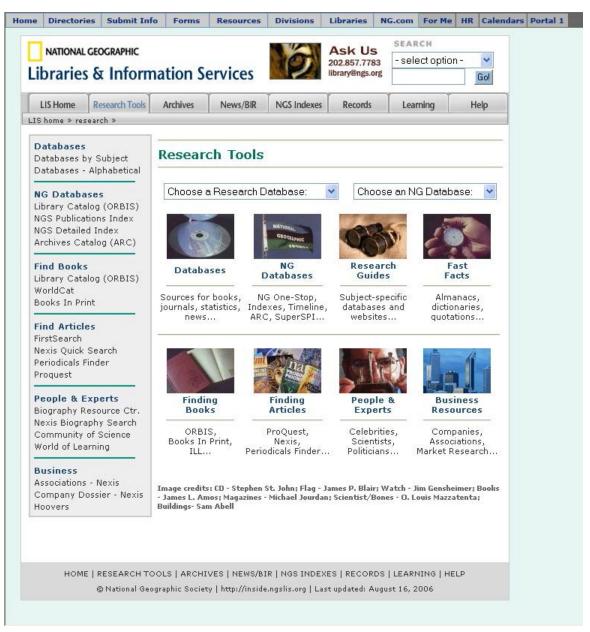
The National Geographic Libraries & Information Services (LIS) site was redesigned and launched in September 2005 and currently encompasses about 600 pages. "It is primarily HTML-based, with Web 2.0 applications integrated in various ways," says Huffman. "Although the NG Insider's top navigational bar was incorporated for easy access back to the corporate intranet, the libraries used an external Web host that offered industry standard Web server and hosting configuration to enable it to explore emerging technologies."

The *LIS* homepage features the current week's highlights, including a list of new books and resources; a *Database Finder* drop-down list that guides staff to the top databases and catalogs; streaming news feeds from the BBC and *The New York Times* delivered using MagpieRSS, a PHP-based RSS parser; a categorized list of

recommended RSS feeds; a podcasts page; and several wikis, running on MediaWiki version 1.8.2.



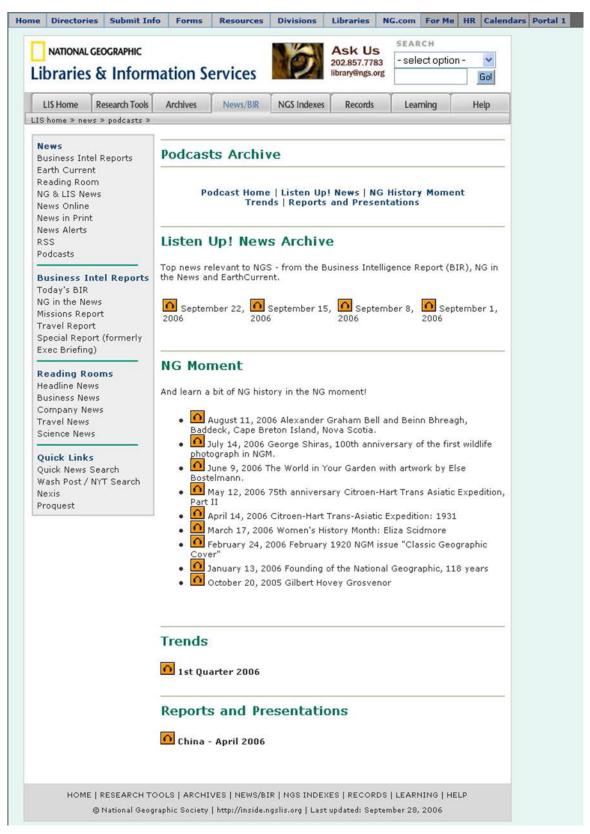
Pictured: The NG Insider's *Libraries & Information Services* sub-site homepage.



Pictured: Library research tools.



Pictured: The Libraries & Information Services sub-site offers a categorized list of recommended RSS feeds.



Pictured: An archive of Libraries & Information Services podcasts.

Wikis: Libraries Start the Trend and Facilitate Cross-Organization Adoption

How well have wikis — which any user can add or subtract content from — worked? According to Huffman, "the organic nature of wikis is both their strength and weakness. Allowing anyone to add or edit anything creates the risk of an ultimately chaotic information space."

To help diminish the potential chaos, all users must create a username and log in before they can contribute, and all content is tracked by author. Inevitably, each wiki also develops its own norms — for socializing, adding content, and naming — which helps keep the wikis useful and organized.

National Geographic's foray into wikis began with its library staff. "Our first wiki was initially set up as a learning environment for libraries staff to practice collaborative and project management skills," notes Huffman. To get started and learn basic conventions, staff members each added their resume and pictures to the wiki. They now use the LIS wiki for project status reports, quick reference and training material, and 20-minute "coffee break" training sessions, on narrowly focused topics, such as finding old news, Nexis updates, eDocs tips, and maps.



Pictured: The main page of the Libraries & Information Services wiki. The library group has taken the lead in learning to master wikis. Other business groups are now following suit when they require better collaboration capabilities.

The library staff later added two additional areas within the LIS wiki. One tackles National Geographic's internal lingo, including acronyms, and is especially helpful for new employees. Another one, records classifications, is still under development; its purpose is to help staff manage records and archive-related retention policies.

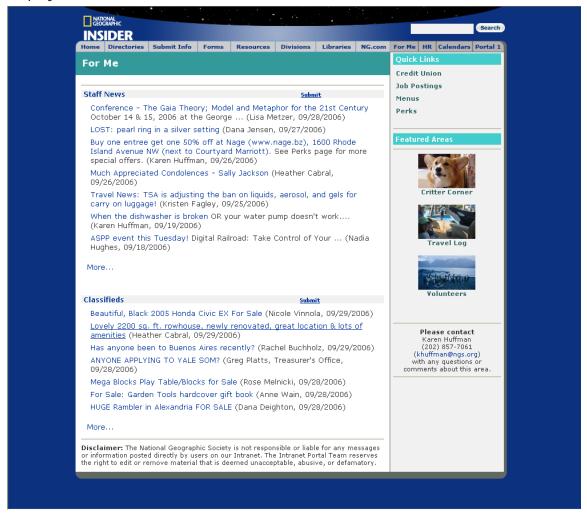
Women Explorers Wiki

Another interesting wiki supports a cross-divisional Women Explorers Initiative launched in the spring of 2006, aimed at supporting content and product development. "This research portal for internal staff has 20 contributors from various divisions, and academic interns also assist with research and authoring entries," notes Huffman. As noted previously, the wiki now contains more than 250 entries on

women who have worked with National Geographic, including Louise Leakey, Eugenie Clark, and Jane Goodall.

For Me

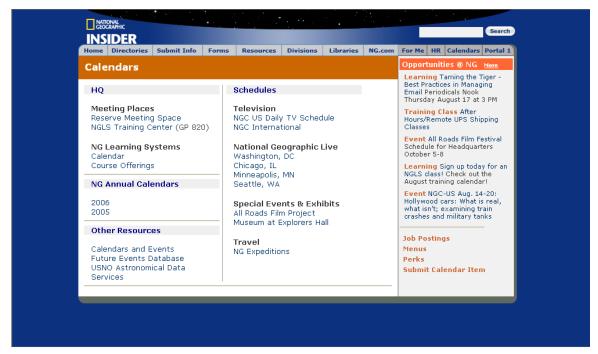
One intranet area is devoted strictly to employees. "For Me is a place staff can share NG staff accomplishments and involvements, post birth announcements and obituaries/remembrances, as well as post classifieds ads to advertise items for sale, apartments, carpooling opportunities," says Huffman. Some newer, post-redesign content categories feature volunteer experiences, as well as offering a place to share travel pictures and ideas, and favorite animal pictures. Streaming feeds from external sites share National Geographic customers' content with the organization's employees.



Pictured: The For Me section gives employees a place to share accomplishments, post classified advertisements, arrange carpools, and share animal stories.

Calendars

The Calendar page displays National Geographic's internal and external calendars, and includes relevant, dynamic content drawn from learning and event categories.



Pictured: This page aggregates National Geographic's internal and external calendars. The right sidebar includes *Opportunities @ NG* (also found on the homepage).

USERS

NG Insider serves about 1,500 staff at National Geographic's headquarters, and about 300 more people in affiliate offices. "In 2006 we began providing access to our domestic and international partners," notes Huffman. The intranet serves business areas (advertising, marketing, finance, and so on), which primarily use Intel-based PCs, as well as editorial product areas, which use a mix of Intel-based PCs and Apple computers. The latter areas produce National Geographic's magazines, books, educational products, maps, website, and television shows.

USER TASKS

Employees use the intranet in a variety of ways, including such tasks as:

- Access information about the Society (including its divisions) and read news stories, press releases, and perspectives, as well as competitive intelligence and special reports.
- Learn about upcoming corporate learning and training seminars, special events, staff product offers, perks, television screenings, and more.
- Obtain current corporate training schedule, register for classes, review class descriptions, and locate e-learning materials.
- Reference subscription databases, such as LexisNexis.
- Research rights and digital contracts.
- Use wikis for project collaboration and research.

- Access eDocs for sharing contracts, rights, and legacy digital content.
- Use the staff directory.
- Share news and remembrances.
- Report time worked and schedule weekly leave for approval.
- View compensation history and paychecks.
- Update beneficiary and personal information or W-4 tax information.
- Complete yearly performance evaluations.
- Submit travel and expense reports.
- Order PCs.
- Sell items and locate roommates.
- And more...

INTRANET TEAM



Pictured: (front row, from left) Robert Harris, Susan Fifer Canby, Lisa Metzer, Karen Huffman, Karen Gilmour, Kate Baylor; (back row, from left) Gary Carter, Barbara Ferry, Suzan Eaton, Victor Veizaga. (Photograph by Eduardo Rubiano, National Geographic Society.)

The intranet team is primarily comprised of staff from four divisions: Communications, LIS, Information Systems & Technology, and NG Digital Media.

The team manages high-level activities on the corporate intranet, including:

- Development of intranet strategic goals and evolution
- Content management through retention/archival policies
- Server maintenance
- Application development and design
- Metrics tracking
- Training

For many intranet team members, however, "the intranet is either a very small part of their formal job responsibilities, or it may not be technically part of their job," notes Huffman. The budget is also quite small. "The intranet now has a limited annual budget — approximately \$8,000/year — that is used primarily for seminars and training, design work/consultation, and purchasing added-value reports."

BACKGROUND

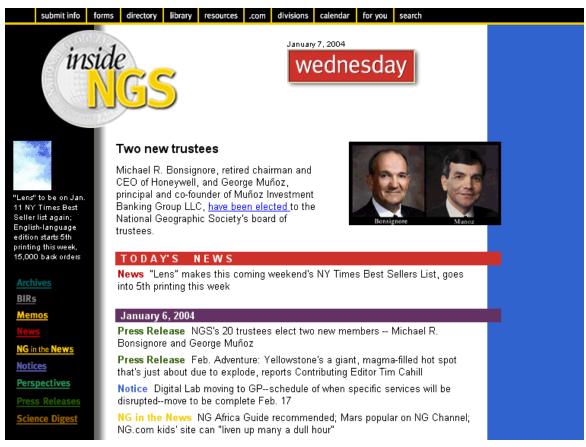
The Society's intranet began as a grassroots project involving five departments — LIS, Information Systems & Technology, Corporate Communications, NG.com, and Administrative Services — who wanted to solve enterprise-wide communication challenges. Their project began with no dedicated resources.

Later, the library director organized a team that ultimately launched Inside NGS in December 1999 using a Notes Domino back end (Lotus Notes version 4.6). The site included new template design features and functionality. Library staff members published daily reports on the intranet and ensured that news stayed fresh.

"Members of the intranet team designed the site; trained other divisions to create their division sites, share resources, and post news; promoted the usage; gathered and organized content; maintained metrics; and reported on usage," says Susan Fifer Canby, vice president of LIS and the original intranet team chair.



Pictured: Pages from the National Geographic intranet's 1999–2005 design.



Pictured: Intranet homepage, 2004.

In late 2004 and 2005, the intranet team held brainstorming sessions to prepare for development of a new design with improved functionality. "One of the major goals for the new design was to make the most heavily used and/or important sites only one click away from the homepage," says Huffman.

The new design would ultimately emphasize searching from any page, and allow editors to more easily promote events, training, and other opportunities. Furthermore, consistently applying style sheets to each intranet site would lead to lower maintenance and custom-design costs.

By the end of 2005, the intranet averaged one million page views a month by 1,500 people. "Although National Geographic's intranet content and usage grew exponentially, the intranet team was restricted by the initial customization of the software, which locked us into the initial software application version," notes Huffman. So, the team had planned for when it would have additional resources, and in the meantime set about re-organizing existing pages to help manage the everexpanding amount of content.

By the end of 2005, however, the situation became dire. "The eight-year-old server was severely degrading and the application was several iterations out of date," she says. Accordingly, "the core work for our new intranet — i.e., application development and content migration — occurred within a three-month timeframe, from December 2005 to March 2006." The intranet team began introducing page redesigns, while also upgrading to ILWWCM, version 2.0 Domino Edition, which National Geographic's IS group recommended.

DESIGN PROCESS AND USABILITY ACTIVITIES

The intranet redesign team used several methods for developing new design and functionality, including card sorting, evaluating server logs, holding focus groups, and conducting research.

Card-Sorting and Survey Exercises

In 2004, to help gauge employees' needs and wants for a portal, the intranet portal team commissioned a card-sorting exercise with a random sample of employees. Ultimately, 12 randomly selected employees performed the exercises.

Each completed four tasks, as summarized here:

- On a sheet of paper labeled "Expectations for Intranet Portal Homepage," write in the types of information you would expect to be on, or want to access from the homepage.
- On the sheet labeled "Expectations for Intranet Portal 'My Page'/Personal Page," write in the types of information you would expect to be on, or want to access from a personal page (irrelevant to items listed in Task #1).
- Take the stack of 12 cards, each representing a pagelet/information grouping, and sort them as you would want to see them on the homepage and personal page layouts. (Facilitators told participants that they were not required to use all of the cards, and that they could edit them.)
- Indicate with a "1" which item on each page (homepage or personal page) is the top priority.

Susan White Frazier, part of the National Geographic Marketing Services group, managed the card-sorting exercises. Regarding participants' (unprompted) responses to the first question — elements they'd expect to see on a homepage — Frazier says that, "portal 1/payroll information was mentioned by half of participants." The second most-mentioned element was HR information. After that, agreement was sparse.

People were in even less agreement over which features should appear on the personal page. "Overall, participants suggested topics and types of information for the homepage and personal page that are either present in existing navigational elements, or that appeared in pagelets," says Frazier. (In general, this is a limitation of surveys: users only know what they already know.)

CARD-SORTING EXERCISE RESULTS				
What belongs on the homepage or personal pages?				
Number selecting	Homepage	Personal page		
About NGS	10	1		
News	8	2		
Business Resources	7	1		
Editorial Resources	6	5		
Policies & Rights	6	5		
Help	6	6		
NG Media Assets or Collections	5	5		
For You	5	7		
Calendar	5	4		
Learning	4	5		

Likewise, for the card-sorting exercises, "in terms of top priorities,

Portal 1	3	8	
Applications	1	9	
N=12; changes and write-ins allowed			

none emerged as a clear winner on either the homepage or the personal page" aside from ones that already lived there, she says.

One notable result from the card-sorting exercises, however, was that participants made few changes to pagelet names and information. "Participants tended to leave the pagelets unchanged in terms of both titles and subcategories of information included," says Frazier.

Some participants did suggest slight changes to the information, yet "since none of these were suggested by more than a single participant, and participants left the pagelet titles unchanged, it is safe to assume the team is on the right track in terms of naming and content for these groupings."

Frazier offered the following examples of change requests:

- NG Media Assets or Collections: "One changed Photo Archive to Image Collection. Another added Blogs, though it was unclear whether these would be internal (staff) or external (customers). One deleted the Photo Archive, Maps catalog, and the Photo Research Guide."
- Applications: "One participant added Help Desk and Tutorials. One deleted PeopleSoft."
- For You: "One added Memos, Notices, and E-mail."
- Help: "One deleted Telephone System Users Guide."
- Editorial Resources: "One added Links to Paleontology Press Releases."

Participants also suggested adding some new pagelets, including one dedicated to the weather and another for "immediate-attention building notices" that would detail snow-related closures, early café closings, and when new Metrocheck cards were available for pick up.

Project Databases

"To reduce e-mail glut, prioritize ideas, and track progress, the intranet team uses two Lotus Notes databases, accessible from the team's intranet site, that can be bookmarked via our Lotus Notes desktop," says Huffman." One database manages projects and lets team members: group ideas as big ideas, little ideas, or new sites; prioritize projects; and mark items as completed. "This database enables the team to manage limited resources as well as to track progress. When larger projects warrant more discussion — such as team goals or a document retention policy — the Lotus Notes discussion database is used to develop ideas."

TIMELINE

- 1999: Original intranet redesigned (version 2).
- 2004: Minor homepage and site pages redesigned/reorganized and launched.
- April 2005: Information Systems & Technology selected and demonstrated ILWWCM, version 2.0 Domino Edition, to Intranet Portal Team.

- Summer 2005: Intranet team began designing new site architecture on a white board — and reorganizing content based upon user studies and industry standards.
- Fall 2005: Intranet team finalized new intranet design and the site's information architecture and framework (including content buckets, categories, and document types).
- December 2005: Intranet averaged one million page views per month, and the old back-end infrastructure couldn't keep up. Old content (eight years' worth) migrated to new site.
- March 2006: Redesigned NG Insider site launched. All employees trained in three months.
- August 2006: Updated version of redesigned site launched.

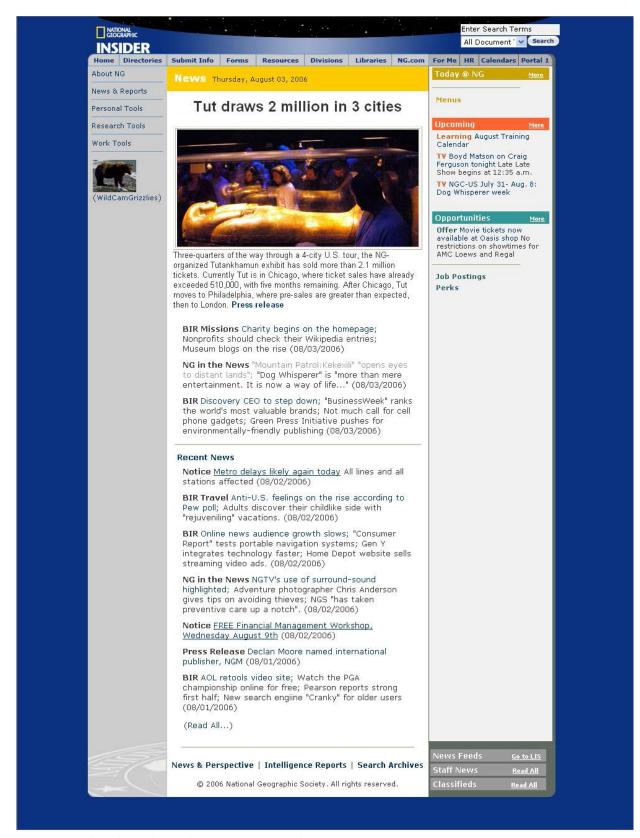
RESULTS

Redesign, Part 1

On March 7, 2006, the new corporate intranet, NG Insider (previously called Inside NGS) launched. "The team completed migration of eight years of content from the existing intranet, redesigned and developed the new application and provided staff training within three months," notes Huffman. The technology team also introduced servers to replicate portions of the site for some third-party affiliates.

The redesigned site featured eight major changes:

- NG Insider banner (included on all pages).
- Search box (top-right banner region) on every page lets users narrow searches by document type.
- Navigational bar links to all major site pages.
- Header region for site area name lists current date.
- Left sidebar links to useful information and links; editors can also run thumbnails and links here to promote articles.
- Center region for lead stories and postings of news, notices, press releases, perspectives, and intelligence reports.
- Right sidebar for calendar-related items and opportunities.
- Footer region with links to content (grouped by categories) and advanced search capabilities.



Pictured: NG Insider's homepage, March 2006.

Redesign, Part 2

After releasing the new site in March 2006, the intranet team began tweaking the design. In August 2006, it released version 2 of the redesign. Some of the enhancements included:

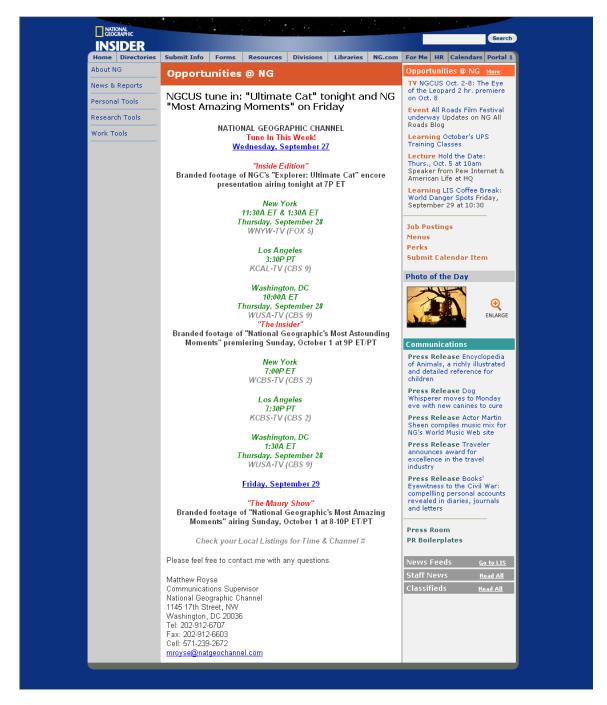
- Simplifying the search area, removing the drop-down box for narrowing search types.
- Adding an *Editor's Pick* list to elevate key resources like the eDocs electronic document management system.
- Making it easier to feature major and minor stories in the lead content regions.
- Streamlining the right sidebar's information, combing three menus into a single *Opportunies @ NG* area.
- Integrating nationalgeographic.com (NG.com) features like *Photo of the day*, as well as non-National Geographic information, such as a weather forecast and a CNN news feed.

The redesign's second version "allows more flexibility for our NG Insider editor," says Huffman. "She has several options for featuring a lead story and sub-lead stories."

In general, the site also makes better use of external content. For example, "we have featured our NG.com webcams — specifically Alaskan grizzlies and Pete's Pond from Botswana," notes Huffman. "We often try to feature items from NG.com, so that our internal staff is more connected with our external customers."



Pictured: Based on employee feedback, members of the intranet portal team began collaborating on new homepage design ideas. These improvements (version 2 of the new intranet) launched in August 2006.

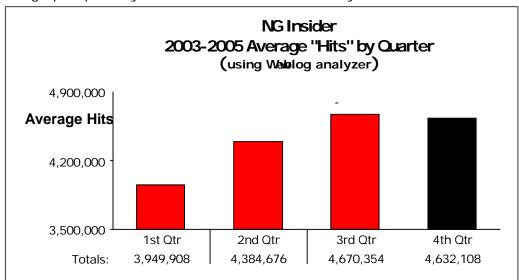


Pictured: The redesigned site features consolidated right-sidebar menus to simplify event and "opportunity" listings.

Gauging The Impact of Changes

How did users react to the redesign? "We have received positive feedback from staff on the redesign, and continue to make modification/adjustments to layout and design, available resources, and training material and templates based on user feedback," notes Huffman.

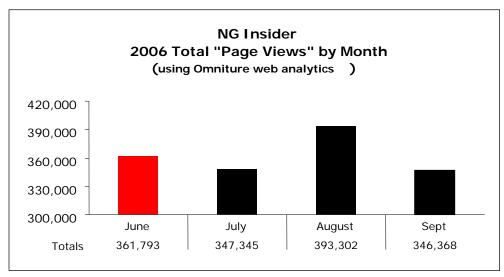
To gauge the intranet's usability and determine how to continue to adjust it, National Geographic partially relies on Web metrics and analytics.



Interestingly, after the redesign, the number of page hits decreased — but only because of a shift in the software used to track Web browsing. "As the intranet has developed, so have our measurement techniques," says Victor Veizaga, who works in National Geographic's LIS group.

For example, the previously used tool analyzed Web logs and tended to regard every page element that loaded as a "hit." The number of hits per quarter hovered around 4 million. Since the redesign, however, National Geographic began using a tool called Omniture to track page views.

Here are results from four months in 2006:



Comparing the two charts, the average number of page hits in the third quarter differs substantially — 4.7 million on average for 2003–05, yet only 1.1 million for 2006. Veizaga attributes this difference to Omniture being a more advanced Web analytics tool than the previous one, and thus it more accurately reports not hits per

se, but rather actual page views. "In this case, Omniture is using page-view traffic, which relies on the assumption that once a page is opened — loaded — it counts as one page view, and not multiple hits for each page element," he says. In short, "the pages on NG Insider have not changed, but the measurement techniques have, which makes our assessments more refined and accurate."

National Geographic also now tracks specific types of file downloads (including .doc, .xls, .pdf, and .mp3) as well as the average time someone spends on a particular page.

According to Web metrics, the most popular pages are currently:

Top Six NG Insider Sections for 2006				
Site section	Page views	%		
NG Insider Homepage	844669	60		
For Me	252800	18		
LIS	141560	10		
Directories	115317	8		
Human Resources	49389	3		
Forms	19897	1		

For the future, National Geographic is planning to drill down into individual pages to discover, for example, pages with unexpectedly low traffic. They can then identify and reconcile any underlying usability issues. The organization is also exploring how they might potentially use Omniture to improve the internal marketing effectiveness of specific intranet pages and e-mail notifications.

LESSONS LEARNED

Insights from Karen Huffman, Barbara Ferry, and Susan Fifer Canby:

Change is slow, but strong project teams foster change. "Organizational cultures change slowly. When introducing new tools or changing your offerings, remember you can only do so much at once. To be successful, then, ensure you tackle the essential variables under your control: get the right people on the team, incorporate decision-makers and champions into the process, establish clear goals and a solid vision, and maintain good lines of communication throughout."

Communication is key. "This bears repeating: Work closely with all stakeholders, and keep them advised of progress."

Secure buy-in. "When redesigning an application, or introducing a new application, involve employees who have a stake in the application. Gauge their needs, prototype ideas, and get feedback. Frequently, these users will then champion the application to others, helping foster uptake."

Share the project load. "Involve as many skilled people as you can in the project team. To help, always clarify the WIIFM — 'what's in it for them.'"

New technology must improve things. "Technology for technology's sake is rarely successful. Furthermore, users won't take the time needed to master new technology if they don't see the benefit. New technology must support users' actual needs."

Don't over-customize. "Using applications in as off-the-shelf a format as possible speeds rollouts and upgrades. Over-customizing any application makes it much more difficult to upgrade when the inevitable security fixes or code base updates appear."

Double-check contracts. "Ensure that contracts and vendor agreements clearly specify dates and deliverables. A little effort spent sorting this out at the beginning of a project will help avoid some of the chaos inherent in any deadline."

Prepare for staffing emergencies. "Train the team so there are clear fail-over approaches for all tasks in the event of staff departure or reassignment."

Plan, then track changes thoroughly. "Carefully plan site redesign changes, trying always to privilege clear, simple designs and processes to make it easier for each team member to understand the goals and his or her part in the process. Also, provide a collaborative space to allow users to more easily collaborate on project work, and to help track all efforts."

Train all content providers. "Provide many opportunities for training the end users who will be submitting content. Train them even on the most seemingly simple application or ultra-intuitive interface. Remember, posting content is rarely anyone's primary job. Employees will have limited patience or time for mastering new technologies and interfaces."

Sell the redesign to users. "If you build it, users won't necessarily come. Instead, you must sell your redesign. Launch an internal marketing campaign. Demonstrate new concepts. Highlight changes. Most of all, be sure to show users how to use new or redesigned applications."

The Royal Society for the Protection of Birds (RSPB)

Using the intranet:

Founded in 1889, the RSPB has grown into Europe's largest wildlife conservation charity, with more than a million members. Its sphere of influence includes a huge range of issues that affect wildlife and habitats.

The RSPB inspires the public to support bird conservation; champions birds and the environment to decision makers; researches wildlife problems and promotes practical solutions; protects, restores, and manages important areas for wildlife across the UK; and works internationally through a global conservation partnership, BirdLife International.

Headquarters: Bedfordshire, UK

Number of employees the intranet supports:

About 1,500 staff, plus volunteers at multiple locations across the UK and internationally Countries with production facilities: UK

Design team:

In-house

Members:

Sheena Huxley-Duggan, intranet manager; Janet Pedley, Web and information services manager; Graham Bird, senior Web designer; Bill Simmons, intranet implementation manager

SUMMARY

Ultimately, few people are actually responsible for The Royal Society for the Protection of Birds (RSPB) intranet, but to judge by its delightful design, you'd never know it. Even with the ongoing support of just one full-time manager, plus part-time help from a senior Web designer, Web design technician, Web and information services manager, and corporate website editors, this lively website simply soars.

The RSPB intranet is designed for a wide range of users, including conservationists, marketers, IT staff and administrators, as well as a rather unique set of intranet users: volunteers. Volunteers founded the organization more than 110 years ago and remain vitally important to its success, as they increase the organization's range of skills and help make the most of scarce resources. In fact, volunteers outnumber the paid staff-members by at least nine to one.

The ability to access the intranet remotely is essential for staff and volunteers. People from around the country can access this information platform, which helps boost productivity and involvement.

On the homepage, the *Top Story* takes center stage and is refreshed every Monday. This main article is selected and scheduled by the full-time intranet manager, with help from the Web and information services manager. The two meet weekly to ensure that the *Top Story* will be timely and interesting, and also to brainstorm content for upcoming stories and prevent editorial conflicts. To help their planning and decision-making, they maintain guidelines for such things as style, timing, criteria, and top story subjects. These criteria are extremely handy for helping decide which story to run when there are multiple contenders. The guidelines also support content providers who aren't used to writing for the Web, by clearly spelling out conditions and deadlines.

The chief story is well presented with a large, related photograph. A short and snappy headline captures interest, and is followed by a succinct article summary.

The *Top Sto*ry is followed by the *Latest News* section, in the middle of the homepage. Typically, just three news items occupy this coveted position, and they are updated daily. The format of the news items encompasses all of the most recommended usability components for presenting news on a homepage, by including:

- A good title that links to the full article.
- The article's date written in an international format (for example, 19 July 2006).
- A succinct article summary.
- A clear, relevant photograph.

To that last point: this intranet avoids stock art, which is an excellent strategy for maintaining a user-friendly design. Most photos featured on the intranet come from the RSPB's photo library, which is run by an in-house photographic team. The organization stores a subset of this large photo bank in its CMS, and shares images between its website and the intranet.

As for the news content itself, this comes from a blend of sources, including:

- Press releases that have been written and circulated by the PR department.
- News stories written and submitted for review by staff members.
- News items written specifically for the intranet by the PR department.
- Items written by the intranet manager and website editors.

Some areas of the homepage also alert users to updates, so they don't need to search the intranet for changes.

The Latest Forum Posts section lists the most recent additions to the organization's discussion fora. The homepage lists the title — which is also a link to the actual post — along with the author and post date. The *Need to Know* section pulls important internal briefings and policies that staff members should read. The Update, Daily Media Summary, and RSPB Diary Dates also do legwork for users, bringing the new information straight to them on the homepage.

In the homepage's upper-right section, users get easy help from Start Here and Tip sections. Links to the basics about Using the Intranet, Terms of Use, and Ask the Intranet Team all help users working with the intranet. The Tip section itself might also provide intranet help at times, but is mainly drawn from a wide range of topics that are potentially useful to staff and that reinforce the RSPB's objectives. For example, a Tip is just as likely to list important dates for the organization as to share information about gardening or wildlife. The Tip might also be a handy reminder regarding a deadline — such as reminding staff that they have until 9 October to order their corporate Christmas cards.

The intranet manager writes the *Tip*, which changes every week. The manager maintains a schedule for future tips, as well as a repository of past tips, to avoid duplication.

Even with this abundantly clear navigation, the homepage offers still more shortcuts for people to get information quickly. For example, the Popular Links section (located at the middle-left of the homepage) is itself popular. Designers know this thanks to the speed with which employees report any broken link found here, as well as the volume of requests from content owners to have their pages listed in the section.

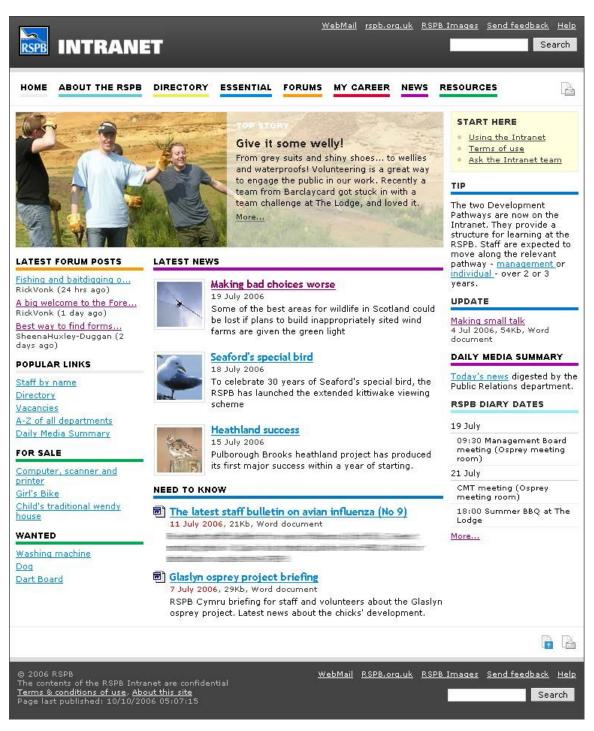
Yet, the intranet doesn't accede to such page-listing requests. What then is the popular link criteria? Simply put, being popular. Each week, the intranet manager reviews intranet usage statistics, and these dictate what appears in the *Popular Links* section. When appropriate, she edits results to make them more relevant for users. For example, instead of running links to "all staff by name A" and "all staff by name B" — if those are the week's most popular — she'd create a single link for "all staff, by name" so that the list of popular links wouldn't be dominated simply by links to the employee *Directory*.

Another homepage element that keeps users interested in the intranet and coming back for more: classified advertising. In the lower-left part of the homepage, *For Sale* and *Wanted* sections each display short links — such as a girl's bike, washing machine, dart board, or dog — to the last three items both wanted and listed for sale. Older listings scroll off the homepage automatically, though still appear in the intranet's classifieds section.

Besides engaging users, this feature is doubly useful for piping constantly changing information onto the homepage, which helps keep it looking fresh. Still, implementing advertising takes careful planning, and offering it — at least from the homepage — would not work for every organization.

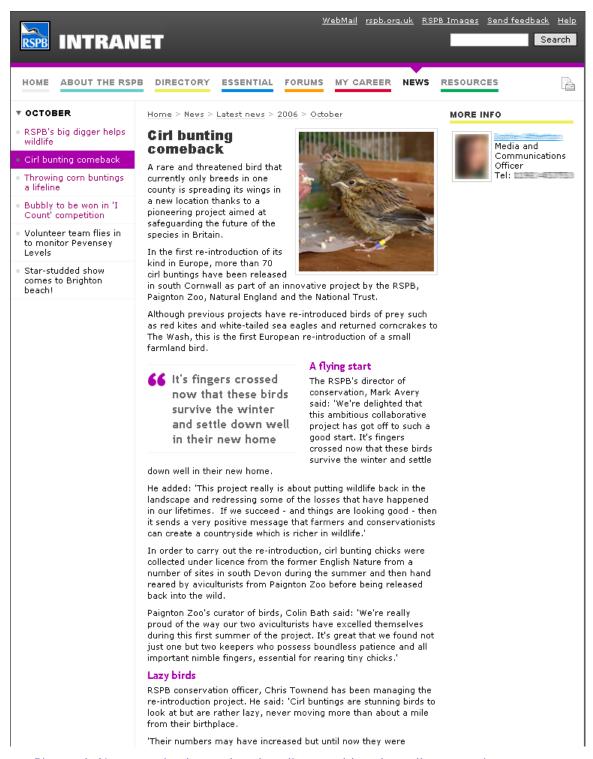
At the RSPB, designers helped avoid any potential backlash against this classified-advertising feature by first securing necessary approvals from the Board of Directors well in advance of its introduction. Then — because the intranet team lacked the resources to directly manage the feature — it created clear guidelines specifying proper use. The team presented these guidelines to line managers, who — not coincidentally — are responsible for dealing with any employee misuse of the feature.

All such efforts have paid off: the approach is working, and working well. Staff act responsibly, and in fact, the intranet team often receives happy e-mails about successful sales from satisfied customers. For the RSPB, then, this is a winning feature, especially useful for keeping people enthused about the intranet, and visiting often.



Pictured: The RSPB's intranet homepage offers interesting news items and photos, plus updates about internal information and tips on everything from gardening to important organizational dates.

Impressive photography appears not just next to homepage news items, but also with the news stories themselves, along with good, clear headings and large pull-quotes. Helpfully, the page also provides author contact information and a picture.



Pictured: News stories have clear headings, subheads, pull-quotes, images, and also provide information about the author, including a photograph.

Designers employ engaging photographs not just for news stories, but also throughout the intranet. A highlight here is the use of staff photos, which helps increase employees' familiarity with each other. The RSPB's CMS supports these

endeavors, making it easy to link to content and images, and to reuse them. This facilitates, for example, adding staff photos to articles, forum posts, and so on.

Staff photos appear in all of these areas:

- Articles
- Classified advertising
- · Forum posts
- Liftshare maps
- Search results
- Section homepages
- Sidebar links
- Staff and team pages

Engaging, well-laid-out graphics are one thing, but knowing when to use them — or when not to use them — is another; RSPB designers are experts at knowing when to employ graphics and when to refrain. For example, they chose to use text, rather than graphics, in the intranet's main navigation bar to improve page-load times and allow users to change the text size. This feature is especially useful for anyone with deteriorating eyesight. The top-hand, horizontal navigation is standard for every intranet page. Choices are appropriately lean: just eight buckets (*Home, About the RSPB, Directory, Essential, Forums, My Career, News*, and *Resources*). These choices make it easy for users to review and select the menu item they need.

Also, designers have done a superb job indicating the currently selected menu item. In the navigation bar, the relevant section's text color changes from gray to black, and the colored line below it disappears. The selection thus stands out, while the other options remain gray and keep their respective, colored underlines. A cleverly placed caret, pointing at the selected items and appearing in the thin bar above the menus, further indicates location. This line and caret — subtle for users, but still pleasing to the eye — even takes on the color of the small underline that disappeared, which is also a nice touch.





Pictured: Both obvious and subtle navigational cues indicate location.

The search field — another method of traversing the intranet — appears in each page's upper-right section. The clearly visible, open field, followed by a *Search* button, is both a feature users expect and a way to make intranet searching simple.

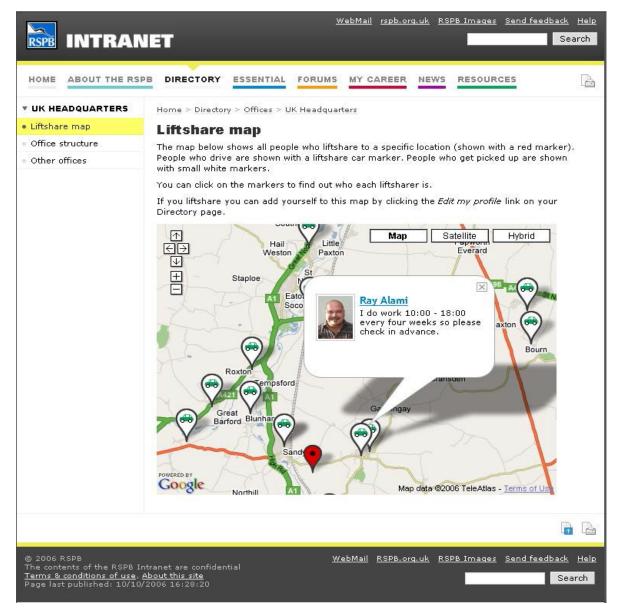
Aside from having great aesthetics and a well-honed information architecture, the RSPB intranet also offers additional features that truly support the staff and the organization's mission. For example, people who work and volunteer at the RSPB obviously care about birds and the environment. One mission of the organization is to help in these areas however it can. One result: a "greening" committee that promotes environmentally friendly changes, starting at the RSPB itself. For example, the organization helps reduce the number of cars RSPB employees put on the road by promoting carpooling — or, as the Brits call it, *liftsharing* — directly from the intranet. This effort began as a simple spreadsheet with all the names and locations of people available to share rides to and from their respective offices, nature reserves, and homes. Creative designers, however, decided using GoogleMaps clearly outweighed a static spreadsheet; they thus designed a more helpful, visual and interactive intranet-based approach. Staff members, along with the greening committee, have applauded the changes.

The *Liftshare Map* is accessible via the *Directory* menu. A short description above the map explains the feature and the map to users. The designers have tapped multiple features in GoogleMaps — using a GoogleMaps Ajax API — including the ability to change map location in real time, as well as to toggle between the map and satellite views, or see a hybrid of the two. Balloons containing green cars show people offering or seeking a ride, and red balloons display a destination, such as an office or nature reserve.



Pictured: The *Liftshare Map* employs the GoogleMaps Ajax API, which lets users easily change the map location and toggle between map, satellite, or hybrid views. Balloons with green cars show people offering or seeking rides, and red balloons show a destination, such as an office or nature reserve.

Clicking one of the balloons pops opens a description of a particular location or person. The user's name, picture, and any notes the user added also appear.



Pictured: Clicking a bubble in the *Liftshare Map* expands the bubble to show the user's picture, plus any liftshare information they've posted.

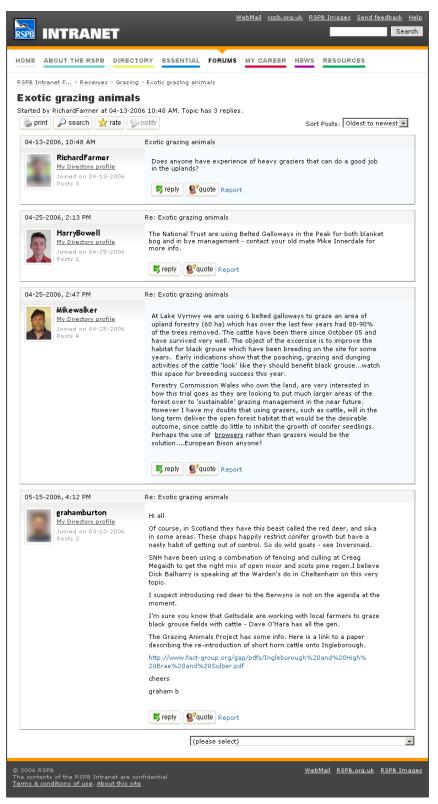
Users can edit their liftshare information when editing their employee profile, which appears in the employee *Directory*. This makes the liftshare even easier to use, and much more visible to employees at large. Furthermore, to begin using liftshare, users don't need to learn or find a new user interface — they use familiar editing tools.

In the employee profile, a simple form asks users whether they liftshare, and gives options to designate whether they're a passenger or driver. The form also queries users' home postal code, and explains that it will use it for the online liftshare map. This is a nice touch; it doesn't ask for too much personal information — such as their actual home address — but just the approximate area in which the users live. Finally, users can add up to 30 words of liftshare notes to describe details such as atypical work hours or current liftshare arrangements.



Pictured: Users edit liftshare information directly in their employee profile.

Forums are another feature that supports staff and volunteers. Forums let users help each other, ask questions, and express their views on multiple topics. In the interface itself, users can easily sort posts using a simple drop-down box containing a list of options. Straightforward and well-placed buttons allow users to easily post, reply, search, print, and rate items. The posts themselves are easy to read and author images add a personal dimension — suggesting a conversation, rather than firing a note into an electronic black hole.



Pictured: A forum dedicated to exotic grazing animals. Such forums make it easy to share knowledge, and help users keep each other informed. Author photos add an additional human dimension to the discussions.

The RSPB intranet, then, succeeds at being not just an intranet — homepage, directory, news, and so on — but really a tool that supports diverse employee and volunteer endeavors. At the same time, and by virtue of that support, the intranet mirrors and thus reinforces the organization's larger mission of not only preserving birds and their habitats, but also tackling even greater environmental issues. Achieving all of this is no small accomplishment, and quite a testament to the intranet's exquisite design and user focus.

URL AND ACCESS

The URL for the RSPB intranet is http://intranet.rspb.org.uk/; users away from the corporate LAN can access the intranet at https://intranet.rspb.org.uk/ using their standard username and password. "The URL automatically changes to 'https:' so staff do not need to remember two different addresses," notes Sheena Huxley-Duggan, the intranet manager.

The intranet homepage is automatically bookmarked in employee browsers. Employees can also access the intranet *Directory* via a shortcut on their desktop. While the intranet is not the default browser start page, "this is something we are looking into delivering with our IS department over the next few months," she notes.

CONTENT MANAGEMENT

Tridion CMS

The RSPB uses the Tridion R5 CMS to support both its website and intranet. "We have been using Tridion to manage the website since late 2002, so we were able to leverage our existing experience with it to build the intranet quickly," says Graham Bird, the RSPB's senior Web designer. "Using Tridion for both sites also means that we can, and do, share content between the two."

Though the Tridion software is largely used in its off-the-shelf configuration, it does include an API and SOAP interface that facilitate creating custom-coded functionality. "We use these interfaces to develop custom solutions for devolved authors who either do not need the complexity of the full GUI, or who have unique needs that cannot be met with the standard, browser-based administration interface," he says.

Tridion also is based on Microsoft technology, and that fits well with the RSPB's technology infrastructure.

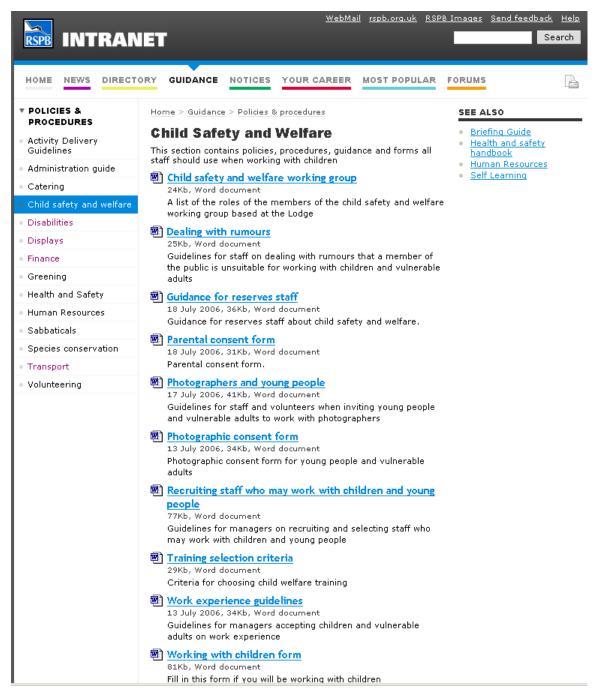
"We chose to use classic ASP to develop our templates, although Tridion does support other scripting languages and XSL," says Bird. The software also integrates with Microsoft Visio, which the RSPB uses to design any complex intranet workflows. Finally, "the WebDAV support comes in very handy for the bulk importing and exporting of content, and it also includes support for InDesign's XML templating capabilities."

Content Owners

Some of the larger intranet content owners are different RSPB departments — Personnel, Training and Development, Health and Safety, and PR — plus the People Engagement and Conservation teams. "This list is expanding along with the intranet," notes Huxley-Duggan. While the team is just beginning to push distribute — relevant content-authoring responsibilities to the HR department and the Word Processing Office, however, the majority of content is still maintained by the intranet team.

The current content authoring approach evolved from the way staff members previously stored RSPB documents. "Before the intranet launched, staff used a shared network drive to share documents and information across the Society," she says. Such information was typically organized into folders by team and department.

One requirement for the intranet, then, was getting information out of those folders. "One of my first tasks when I started in July 2005 was to audit the shared drive to create a list of who owned what and which documents fit into the Board-agreed direction — that content should be relevant to all staff — and were therefore suitable to migrate onto the intranet," she says. "We contacted all folder owners to inform them about our plans to move suitable content to the intranet, and worked with them to make sure what we migrated was the most up-to-date version."



Pictured: The Policies & Procedures section of Guidance shows a list of documents on child safety and welfare. Because the intranet team didn't have the manpower needed to redo all internal documents as intranet pages, it compromised by ensuring it had written descriptions of every essential document, to give users some idea of what a document contains before they download it.

Templates Enforce Design

The RSPB relies on Tridion to enforce templates, thus controlling page layout and the display of individual content items or components. "A published Web page will use a

single page template and one or more component templates, depending on the number of items on the page," notes Bird. "Designers can control the availability of these templates to content authors, as well as determine how each one is used on the page. This means we are able to give our authors the power to choose the look and feel they want — from a limited range of options — and we can comfortably respond to requests for new ways to display content."

The RSPB is happy with its current CMS approach. "Tridion does an excellent job of enforcing HTML and accessibility standards through its standard text-editing functionality, so we only need to do minimal validation within the templates themselves," he says. "It allows us to enforce WAI guidelines (level 1, 2, or 3) via tick-boxes available to administrators — per text field, if necessary — and includes HTML validation and XSL translation to remove unwanted (but valid) code, introduced by pasting from Word, for example."

The CMS also tracks changes to documents with versioning, and offers comparison features for both content and templates. Pages can be rolled back to previous versions. "To save storage space, we can specify how many versions we wish to keep," notes Bird.

TECHNOLOGY

Hand-Crafted Code

Interestingly, much of the intranet code is hand-designed. "Because of the piecemeal nature of Tridion's component and page-templating system, we are most comfortable hand-writing our ASP code in a simple text editor," says Bird. "Version control and check-in and check-out is all handled within the CMS, so we are free to use any tool we like to develop the templates. In fact, we often make small changes directly within the browser-based GUI."

Images and Statistics

For photos, illustrations, and other graphics, the intranet team relies almost exclusively on Fireworks. "We like its vector-based image editing and bandwidth-friendly file export," says Bird. For generating intranet usage statistics, the intranet team uses a hosted solution. Nedstat's SiteStat.

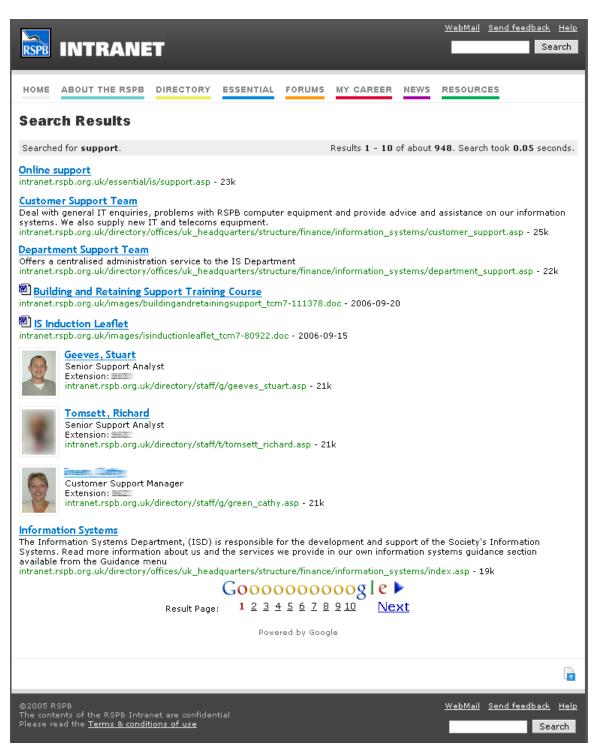
Google Search

For search, "we knew good search results would be crucial to the acceptance and use of the intranet and so we purchased Google Mini hardware," says Bird. "We had experience with Internet Information Server's built-in search tool, which was very limited at that time and we wanted to use a more advanced solution. Based on cost, reputation, and feature-set, the Google Mini hardware was the obvious choice," he says. "The search results it returns are excellent, and we use its key-matching and synonym technology to get around the problems of internal acronyms and jargon, with which new staff in particular may be unfamiliar."

The intranet team also uses the search appliance's ability to sort and load custom meta-data to enhance search results. "We use this to add photos and extension numbers to staff directory results, which makes spotting staff amongst other results easier, and allows users to call the person they are looking for without having to click through to the actual profile," he notes.

To ensure good search results, the intranet team uses rich meta-data. For example, it includes a person's department and team information (which is useful for staff

directory results) whenever possible, and also designates document types, so the correct document icon displays in the search results. The intranet team also customized the Google Mini template to make the search interface design consistent with the rest of the intranet.



Pictured: For intranet searching, the RSPB employs Google Mini hardware, and customized search result templates. Such results incorporate staff photographs (when appropriate) and list employees' telephone extensions, so users don't have to click through to employee profiles to find them.

RSS News Feeds

The site also relies on RSS news feeds. "We recently moved over to an external RSS news feed to produce our *Daily Media Summary*," notes Huxley-Duggan.

Previously, the PR department would scan newspapers, websites, and the TV and radio everyday — including weekends — then write summaries that the intranet team used to generate intranet content. This, however, soon became unfeasible. "Given how small the intranet team is, this was becoming labor-intensive and a constraint, as it had a daily 11 a.m. deadline."

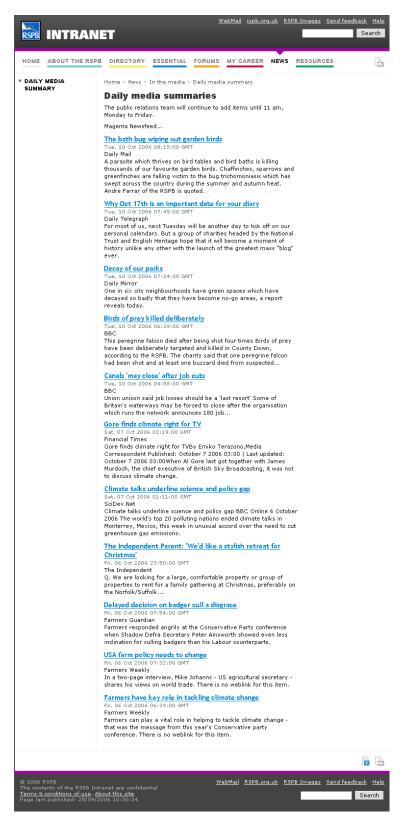
The PR department already had a limited subscription to an external newsagent service for collecting stories. "The newsagent approached us — and the Web team on several occasions — to discuss the benefits, and gave us access to an online demo site so we could see for ourselves how it would work," she says.

The intranet team quickly identified this as a desired feature, "but it was a massive change to the way the PR department had been working for the last 10 years, so we needed to really investigate with the PR department how we could do this, and if it would be a benefit."

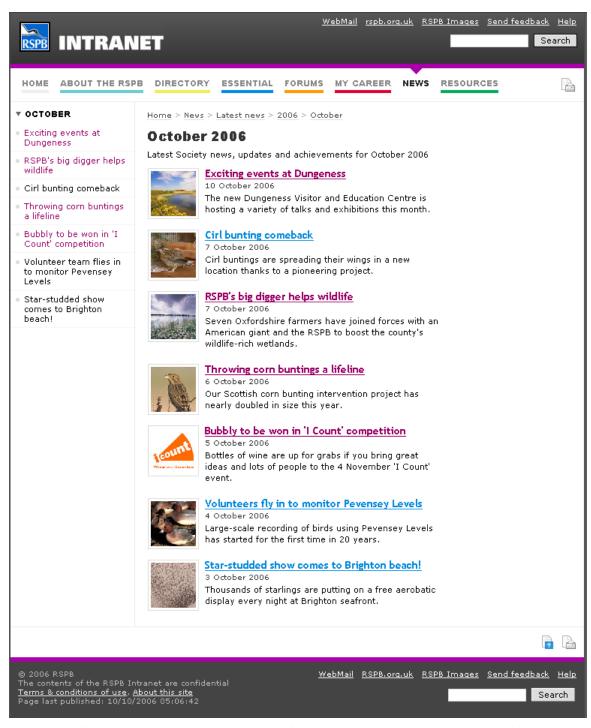
After many months of demonstrations, hands-on help from the newsagent, and a pilot run, the PR department and intranet team felt comfortable enough to begin replacing their existing efforts. It is currently employing a transition strategy: checking newspapers in parallel with the feed, honing search terms, and slowly reducing such efforts as results become more reliable. The external news feed also allows the PR department to manually insert stories into the feed that weren't originally included in the broadcast.

Using the RSS feed has meant some changes. "Before the feed, staff were used to having an archive of the media summaries on the intranet. It was a big change, moving to an RSS feed that only displays the current news," notes Huxley-Duggan. "We did get some staff feedback that they didn't like this, but we communicated to staff the benefits of having the RSS feed. The most important ones being: you can now click through to the whole story instead of having to find the newspaper or ask PR for press cuttings, and it takes a lot less resources and time for PR, and us, to produce."

By managing the change, and supporting staff through the transition, she says the RSS news feeds have slowly reached the acceptance stage with staff, and are becoming integrated into their daily routines.



Pictured: The PR department uses Magenta, an RSS feed newsagent, to do daily searches for relevant news. Such information is then displayed on the intranet through an RSS feed, providing staff with real-time news.



Pictured: The intranet's latest news index page contains a summary and link to the internal news stories for that month.

Ajax

The site also uses some Ajax technology, via the GoogleMaps API, "to populate our liftshare and office maps," says Bird. "Aside from this, we have not determined a need for Ajax, but it is an option that we bear in mind."

GOALS AND CONSTRAINTS

Goals:

- Enable staff across the organization to communicate effectively.
- Allow staff to identify, share, and implement best practices.
- Help staff work more efficiently.
- Increase access to information.
- Maintain a consistent, reliable, and up-to-date "corporate memory."
- Provide channels for distribution and discussion.
- · Reduce complexity and duplication.
- Assist with "greening" objectives and reduce paper costs.

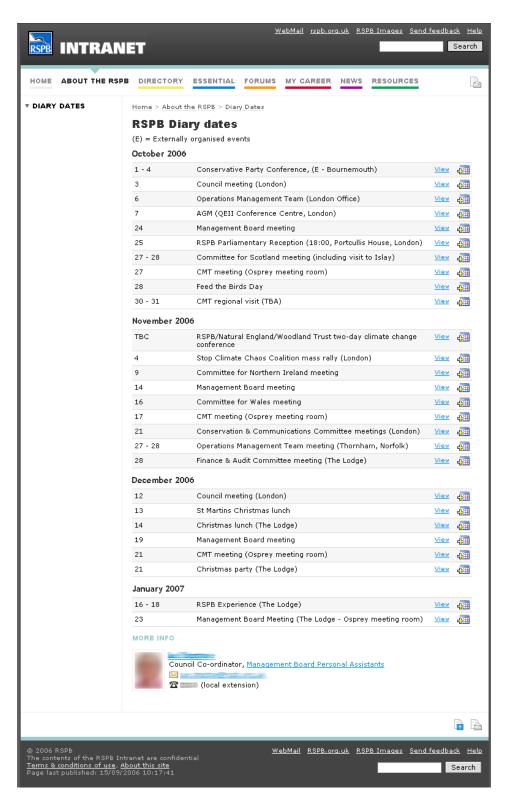
Constraints:

- Currently all content and functionality is available to all staff, which
 makes it more difficult to personalize content and help reduce
 information overload. However, this has allowed the RSPB to meet its
 goal of increasing information access.
- Initially, there was some user resistance to the intranet as it was a big culture change. However, the team invested significant effort into turning users around to the intranet by communicating its benefits.

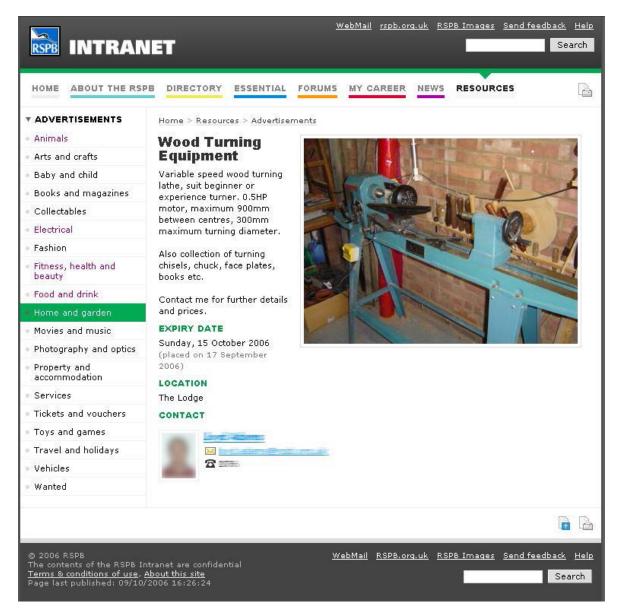
BASIC INTRANET FEATURES

Basic intranet features include:

- The intranet is available from any PC in the world with an Internet connection, using the same domain name as the internal site.
- Automatic intranet login from the RSPB PCs.
- Google Mini search engine, and a search box on every page.
- Homepage displays live information from several sources.
- Regular news stories.
- Employee advertisements with photographs.
- Personalized staff pages for all 1,500 staff members.
- Visual liftshare (carpool) database, which uses GoogleMaps, to encourage liftsharing among RSPB staff.
- Discussion forums.
- Online calendars, tied to public Outlook calendars maintained by staff.
- RSS feed of external news.
- A staff Directory, including staff photos.
- Staff-listing page.



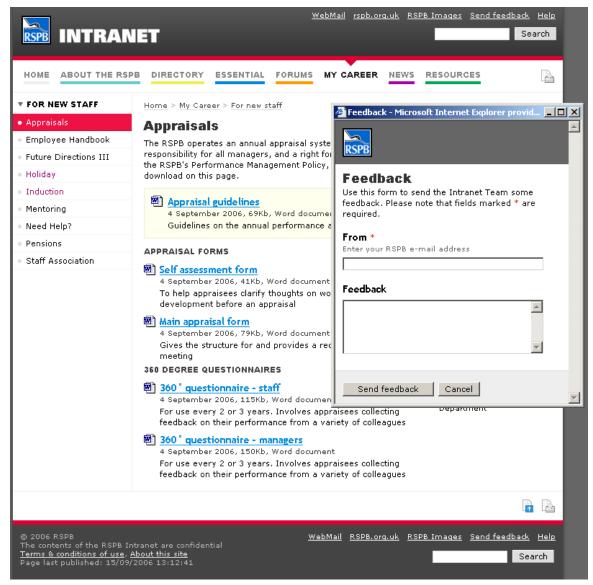
Pictured: Staff members maintain several public Outlook calendars. A Web service allows live information from these Outlook calendars to appear in Web pages in a range of formats. The pages automatically update.



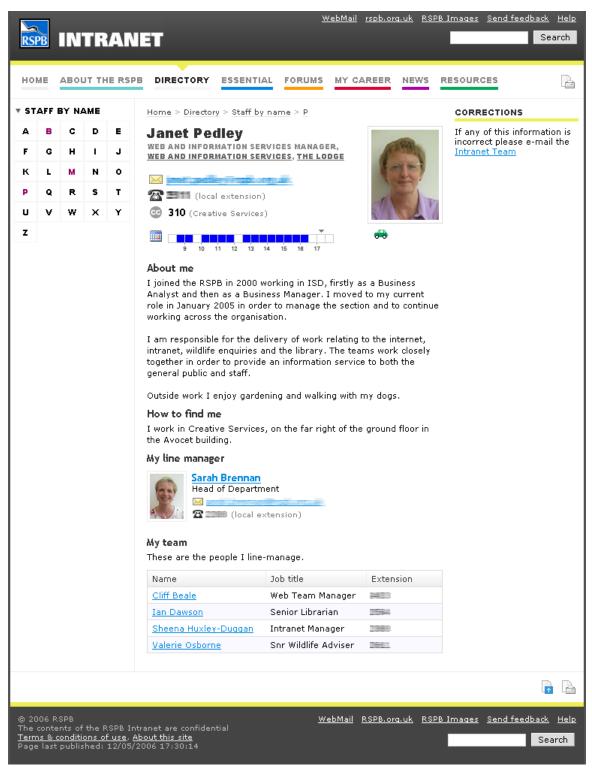
Pictured: An advertisement posted by a staff member. Staff members can add advertisements through a simple form, which includes automatically linked contact details. They can also upload a photograph to accompany the ad, which is automatically resized on the fly to keep images small.



Pictured: One technique for finding staff is to "look for them by surname." These pages include name, phone number, team, and office (with a shortened office name to accommodate space constraints).



Pictured: One technique for finding staff is to "look for them by surname." These pages include name, phone number, team, and office (with a shortened office name to accommodate space constraints).



Pictured: Every one of the RSPB's 1,500 staff members has their own page in the *Directory* section. Pages include name, job title, team and office, a photograph, and other essential information, some of which is customizable.

USERS

The RSPB intranet supports 1,500 staff members, plus some of its many volunteers.

USER TASKS

Common user tasks include:

Find a colleague's details

Complete various forms

Find training courses

Stay informed via news and updates

Share advice in forums

Look up RSPB policies, such as HR policies and the employee handbook

Read briefings and guidance information

Get tips on personal skills, management, and IT

Apply for jobs

Find a liftshare to work

Search the library

Find out how to book meeting rooms, travel, and accommodations

Get important RSPB dates

Report computer problems

Place advertisements

Request IT and technical support

Read about team activities and goals

Look up good-practice guides

INTRANET TEAM



Pictured (from left): Graham Bird, Sheena Huxley-Duggan, Janet Pedley and Bill Simmons.

An intranet implementation team first formed in May 2005. It consisted of an intranet implementation project manager on a one-year loan from the IS department and a permanent intranet coordinator (Sheena Huxley-Duggan, now the intranet manager). The senior Web designer and Web assistant also helped create and launch the site. Website editors contributed their expertise, and the IS department lent hardware and infrastructure support.

The current intranet team consists of only one full-time member — the intranet manager — but the Web and information services manager and the senior Web designer also assist, as do various Web editors who work on the corporate website. Also, the group has just received approval for a new, full-time junior Web and intranet editor.

The intranet group operates under the auspices of the Creative Services department, which is part of the Public Affairs division. This department provides both communications advice and production services in a wide range of print, online, and visual media to help achieve the RSPB's objectives.

According to Huxley-Duggan, "being a part of Creative Services meant the intranet was able to benefit from being a communications tool, and a customer-focused product. It has also meant the intranet team sits in the same section as the corporate website team and therefore is able to benefit from their experience using the CMS — Tridion — and maintaining and developing a website. The intranet has also been able to call upon additional resources and help from the website team."

BACKGROUND

Selling an Intranet Business Case

While the RSPB intranet launched relatively recently, the desire for something akin to an intranet has been strong for years. "There has been demand within the RSPB for improved internal communication facilities for some time, and the establishment of an intranet was regarded as a means of addressing this need," notes Janet Pedley, the RSPB's Web and information services manager. "Investigative work was undertaken over a number of months, culminating in a board paper to deliver the business case for the development of the site." The RSPB board then signed-off on four phases, each of which would tackle specific functionality.

Of course, a business case is one thing, and specifying a completely new intranet from scratch is another. "Once the project was approved, assembling the processes, infrastructure, resources, and systems required to reflect the scale and diversity of our operations proved challenging," she notes. Even so, the intranet team forged ahead, aiming to meet its primary goal: "for the intranet to be the place all staff go to for organizational information."

DESIGN PROCESS AND USABILITY ACTIVITIES

With Limited Resources, Opting for a Phased Delivery

The intranet team had relatively limited resources, high expectations from staff over what the intranet would accomplish, and a desire to deliver a site that would meet those expectations (or perhaps never recover). The team therefore opted to deliver the intranet in phased stages to maximize the benefits it could deliver at any one time.

To deliver the intranet, the design team pursued a four-phase rollout.

Phase 1 (Delivered October 2005)

The project kicked off in May 2005 with an extremely small team of communications and design staff, plus help from the IS department.

Phase 1 features:

- *Homepage*: Essential information, updates, and news, to help staff stay aware of any important developments.
- *News*: Online team briefings, chief executive updates, health and safety news, and intranet updates.
- Staff Directory: To find staff, departments, offices, reserves, board members, council members, members of the Staff Association committee, useful contacts, and the latest "starters" and "leavers." All entries provide full contact details and maps where appropriate.
- *Guidance*: RSPB guidance, policies, procedures, forms, essential information, reference materials, and best-practice notes.
- *Notices*: The latest internal vacancies and recommended overnight accommodations across the Society.
- *Your Career*: Training, courses, development, opportunities, and supported learning.

 Most Popular: The intranet's most helpful pages and documents for different staff roles and groups. Currently, this section contains a general forms section and has information for new staff, managers, and administrators; it will be extended to include other roles across the Society.

Criteria for phase 1 content:

- 1. Information already exists (in most cases).
- 2. Information applies equally across the Society and relates to all employees' work.
- 3. Updates are infrequent.
- 4. Volume is predictable ("we know what we're going to do").

This first intranet phase, launched in October 2005, was quickly successful; site visits increased 125% over the first three months.

Phase 2 (Delivered December 2005)

Phase 2 features:

- The RSPB in the Media: One area containing the Daily Media Summaries, Media Planner, and links to the latest press releases and news stories on the corporate website.
- *Media Planner*: Calendar showing scheduled media work and potential media opportunities.
- Daily Media Summary: Summary of the day's relevant news, created by the PR department.
- Starters and Leavers: Pages displaying the latest new staff and staff departures.
- Advertisements: Area where staff can buy and sell items.
- Staff Association Notices: Notices and updates from the Staff Association, the RSPB's official employee-representing body.
- Library Management System: Allows staff members to search the library team's online index of books and publications.

Criteria for phase 2 content:

- 1. Information is time sensitive.
- 2. Information applies to most employees across the Society and relates to most employees' work.
- 3. Updates are frequent.
- 4. Volume is unpredictable.
- 5. Ad hoc work is the main component, leading to devolved authoring.

Phase 3: Delivered April 2006

Phase 3 features:

- Calendar: Allows staff members to maintain Outlook calendars that they can display on the intranet.
- Training Course Schedule and Outlines: Dates and details of available training courses.
- Activity Calendar: An existing document outlining all the different communications going to RSPB supporters.

Criteria for phase 3 content:

- 1. Information is time sensitive.
- 2. Information (might be) complex.
- 3. Information applies to some employees across the Society.
- 4. Updates are frequent.
- 5. Volume is unpredictable.

Phase 4 (Delivered May 2006)

Phase 4 features:

- Briefing Guides: RSPB policy statements and positions.
- The RSPB Conservation Policy: Policy documentation on conservation work and issues.
- Being the RSPB on Reserves: Information for reserves on all aspects of visitor management.

Criteria for phase 4 content:

- 1. Information already exists, but "we know it is subject to change."
- 2. Information applies equally across the Society and is part of most employees' work.
- 3. Updates are infrequent.
- 4. Volume is generally predictable.

Usability Studies Pinpoint Items Needing Improvement

Before the RSPB launched the intranet, it employed an external company to perform an expert review of mock-ups, and then adjusted designs accordingly before launch.

In January 2006, the intranet team commissioned a usability study of the site by an external company, which studied users attempting to perform various tasks on the intranet. "One of the key bits of feedback was that the *Guidance* section was confusing and made it difficult to find content," says Huxley-Duggan. "We felt it was important to take action and rectify this, so recently we created and launched a more user-friendly layout."

The restructuring involved content formerly located in the *Guidance*, *Notices*, *Your Career*, *Most Popular*, and *Forums* sections. The *Directory* and *News* sections remained unchanged. "To create the new layout, we held a workshop to regroup content, and used card-sorting and sticky-wall techniques," she says. "All the content was written out on pieces of card. The participants grouped the cards together into

what they thought was sensible on a sheet mounted on wall that was covered in spray mount."

The workshop was highly successful. "I would recommend this type of workshop to anyone when it comes to trying to process a large amount of information, as it's quick, anyone can do it, and it gives you visual results," she says. Furthermore, it's easy to set up. "There is a lot of information about these techniques on the Internet."

Based on the workshop results, the intranet team designed a suggested layout. It then e-mailed it to selected staff for feedback and talked to major intranet stakeholders and senior management to ensure their buy-in. With the changes approved, "we created a site map of the new layout and circulated it to all staff well in advance of the change, as well as creating a *Help* page on the intranet.

TIMELINE

- May 2005: Intranet team formed; began design of first version of the intranet.
- October 2005: Phase 1 delivered.
- December 2005: Phase 2 delivered; daily site visits had increased by 125% since October.
- January 2006: Intranet team commissioned intranet usability study and made changes based on results.
- April 2006: Phase 3 delivered.
- May 2006: Phase 4 delivered.

RESULTS

Gauging the Results

By May 2006, the intranet team implemented all four phases in its rollout plan, as well as some new capabilities for supporting decentralized content authoring. "Whilst we are making small-scale improvements on a regular basis, we are now working on a future development strategy using our original vision," says Pedley. "Once completed, this will be presented to the management board for approval of direction, resources, and budget."

Because the redesigned information architecture launched relatively recently, precise results on the page are difficult to determine. That said, "we have received little negative feedback from staff and no influx of calls asking where everything has moved," says Huxley-Duggan. Nonetheless, the intranet team continues to monitor site usage to ensure that employees are not having trouble using the site.

In addition to the restructure, she says the team also made some smaller changes, such as adding photos to homepage news items and alphabetizing menus.

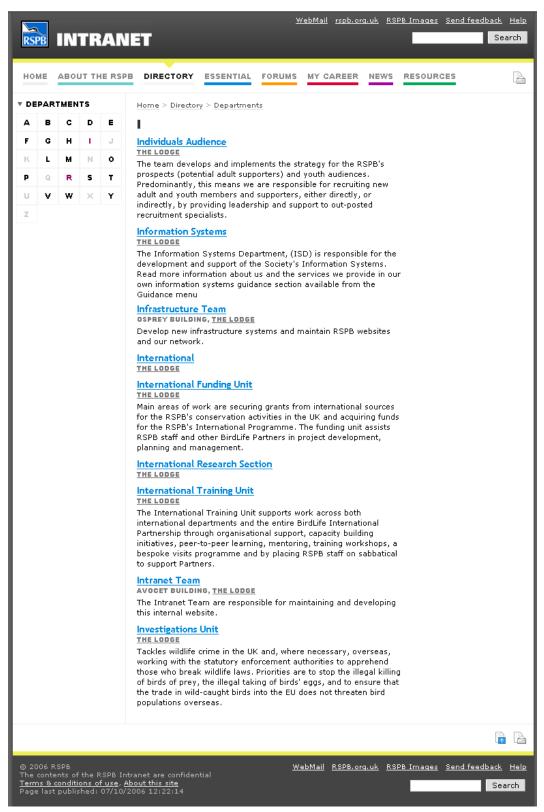
Document Sharing

The new redesign facilitates much easier electronic-document sharing. "Before the intranet was launched, the only way staff could share electronic documents across the Society was via e-mail, or by using shared network drives, which some of our more remote nature reserves and country offices could not access," says Bill Simmons, RSPB's intranet implementation manager. Furthermore, "there was no

overall owner of the information held on these network drives, so no one had the responsibility to ensure the content was of a good standard or even kept up-to-date."

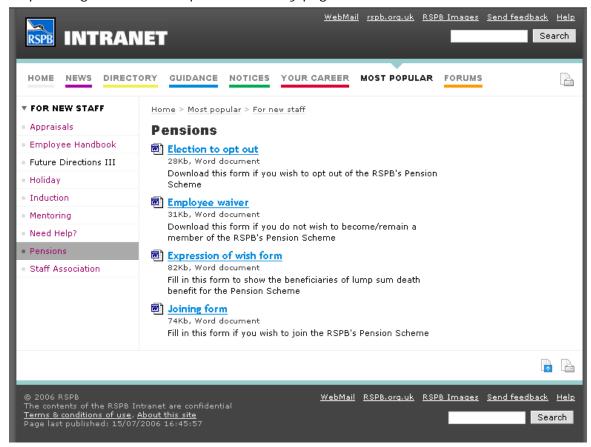
By contrast, documents stored on the intranet are the latest version. "The search engine indexes all downloadable documents and pages, and each document has a summary of its purpose and content, so staff don't have to open the document to find it," he says. "The summary also shows the 'last updated' date and highlights dates in red for recently updated documents."

In addition to improving information access, the redesign also added a much more useful employee directory. "Previously, the staff directory was created using Microsoft help files and organized only by offices and department," says Simmons. By contrast, "the intranet directory enables staff to find who they are looking for through a number of different routes, including the search engine, an A–Z list of departments, or an A–Z list of staff and location."



Pictured: The I page in the A-Z department guide. These pages contain useful descriptions of each RSPB department and team, along with links to each team's own page, which provides a staff listing and related details.

The intranet's *Most Popular* area offers new employees a collection of documents to help them get started. A separate *Directory* page also lists recent hires.

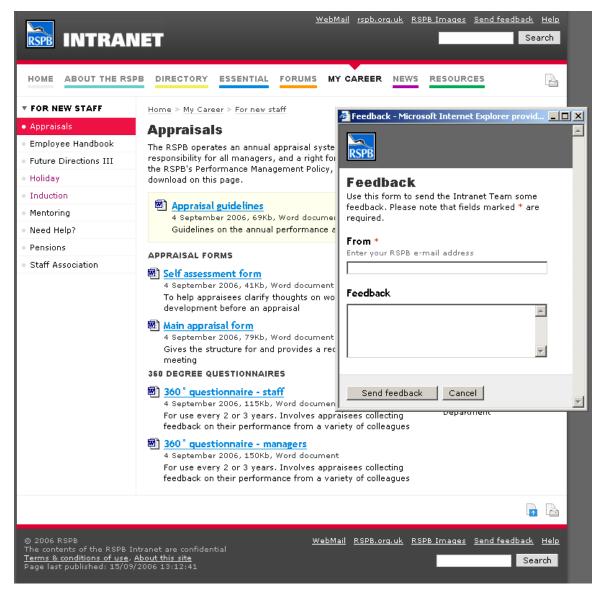


Pictured: New employees get a dedicated page in the *Most Popular* area to help them get started.

Feedback

Users quickly weighed in with feedback on the new site. Here are some of their responses:

- "Must say I use it all the time when 'tinkering' at home. It's ideal for clarifying policies, procedures, or just who sits where in the organization. And being able to link to Web mail is great, too. Also ended up buying stuff that others want to get shot of [unload] that I need at the weekends from the intranet — may as well check there before looking on eBay!"
- "Intranet search is great, I use it all the time."
- "This is looking really good!"



Pictured: At the top of every page, a Feedback link takes users to a form, which sends the content of their feedback as an e-mail to the intranet mailbox, noting the page the user sent the e-mail from.

Future Plans for Department and Project Areas

While the original intranet's goals have largely been met, some capabilities are outstanding. For example, to deliver more quickly an intranet that everyone could use, "a decision was made early on to enable access to all content and functionality to all staff," says Pedley. "However, whilst this has allowed us to meet our goal of increasing access to information, it has constrained our desire to streamline our communications and reduce 'information overload' by getting the right information to the right people at the right time."

Accordingly, the intranet team is working on a development strategy to personalize content delivery. "We will likely endeavor to manage project and departmental areas of the site, to allow staff to work together in groups from disparate locations," she says.

LESSONS LEARNED

Insights from Graham Bird:

Talk to new staff members. "They will tell you outright what aspects of the organization they don't understand and enable you, as the designer, to find better ways to present difficult internal structures and concepts. Chances are everyone else is confused by them, too."

An intranet changes everything. "Just because 'it's been done that way for years' doesn't necessarily mean it should be done that way on the intranet. Take a fresh look at the problem and consider whether there is a better way. Also remember, however, that people's working methods are hard to change."

Decode your lingo. "If you can't avoid acronyms, internal jargon, and cryptic team names, provide a glossary and/or explicit search engine matches for such terms."

Save content authors' time. "Ensure your design and working processes help your content authors save time. Remember, they already had a full-time job before the intranet came along."

Communicate your monitoring policy. "Some staff thought we monitored their every move and so didn't want to use the intranet. We don't (we just have standard Web stats) but, despite that, we found this strange as the site is a key internal communications tool."

Volvo Group

Using the intranet:

Volvo Group is one of the world's leading manufacturers of trucks, buses, and construction equipment; drive systems for marine and industrial applications; and aerospace components and services. The Group also provides complete solutions for financing and service.

Headquarters: Gothenburg, Sweden

Number of employees the intranet supports:

approximately 82,000

Countries with production facilities: 18

Sales: SEK 231.2 billion (2005)

Design team:

In-house, plus Framfab (an intranet design agency which has since become part of LBI International); Volvo IT (the technical platform provider); and H2 Solutions (information management consultants)

Members:

Volvo Group: Charlie Nordblom, vice president of internal and Web communications; Helen Jerresand, technical director of the common Web platform; Eva Kuylenstierna, Violin program manager; Mark Vikner, architect for IT governance

Framfab (now LBI International): Niklas Johansson, head information architect; Joakim Stamming, head art director; Anna Almberg, information architect

H2 Solutions: Johan Wendels, chief project manager; Rickard Strömberg, Web communications coordinator

SUMMARY

Studying the Volvo Group's current intranet design, you would never imagine that its original intranet grew uncontrolled for 10 years, resulting in more than 800 websites and an unknown number of content management tools and editors. But a redesign of Volvo Group Information Online — better known as "Violin" — with clear, achievable goals and an excellent design team has made the new version really sing.

With just a glance at the intranet's homepage, employees can be well informed about some of Volvo Group's most important events. First and foremost, financial information appears in the upper-left corner of the homepage. Here, users can gauge whether net sales for the quarter are up or down, and by what percentage. This information can certainly motivate people — to work to maintain the good standing or to help improve it when it's not as high. This area also informs employees about the operating margin, which can remind and encourage them to keep costs down and to work efficiently. The percentage of deliveries of trucks and buses is displayed as well, since this accounts for a large percentage of corporate revenues. Finally, there's a link to more detailed figures for the last six months.

The stock's share price for both the Stockholm Stock Exchange (SSE) and NASDAQ exchanges also appears in the upper-left part of the page. When the stock price is high, this is good news for everyone, and especially those who hold options in the company.

Note: Volvo Group does not manufacture cars — Volvo Cars is owned by Ford Motor Company. The only thing Volvo Group shares with Volvo Cars is its brand name (though some employees get a discount when buying Volvo cars).

One of the Violin redesign's stated objectives was to "target managers and office workers, and improve access for five-minute users and blue collars in major plants." Just below the financial information, the *5 Minutes Only* link meets this goal and helps employees quickly stay in tune with the most recent announcements. In particular, the link leads to the latest news and site updates. This is especially helpful for those people who don't have much time to spend on Violin. For example, some of the most frequent users of this feature are production plant employees who access

the intranet at kiosks during finite work breaks, as well as employees who have been away from the office and want to quickly get up-to-date without having to browse the entire intranet.

To help users access the items they most want and need, Violin offers links to the *Most Popular Pages* accessed, on the left side of the homepage. Here, the intranet displays the six most used links. To determine which page links warrant this coveted position, the site owner regularly peruses the site's user statistics.

Because the Volvo Group has production facilities in 18 countries and sells to some 185 countries, working with colleagues in other time zones is commonplace. The homepage facilitates this collaboration by displaying the *World Times* for locations with larger offices, including Bangalore, Brisbane, and Shanghai. This helps people know whether their colleagues will likely be in the office or not. Also, seeing the *World Times* helps reinforce the sense of belonging to a global company, even for employees who work only with local employees.

The middle of the homepage houses the bulk of the news-related items. The news area has three sections: a main news item, news items about Volvo Group, and news items about various Volvo Group companies. Breaking news into these categories helps employees scan the types of news that most interest them. These news items vary in topics, from PR events to new managerial appointments to organizational changes. With approximately 82,000 employees, people could easily feel out of touch or secluded. But these frequently updated news pieces help ensure that employees are privy to the organization's most important announcements and events. All of the news items are easy to read; they include concise and enticing headlines, well-written descriptions, message-enhancing images, and publication dates. The subtle, boldfaced headings look clickable — which, appropriately, they are.

News is typically updated once a day. A group of Volvo Group *Infomasters* decides which news to present on the homepage and how often to update it. All Volvo Group companies use the same news application, so it's easy to share news regardless of where the article originates. Infomasters can handpick the articles they want to display, have them appear by automatic subscription, or use a combination of the two approaches.

The *Key Information* column on the right side of each page calls out links that are strongly related to the page content. Employees especially appreciate this feature. Each Infomaster decides which links to present here, based on the page content and its target audience.

One part of *Key Information* is the *Tools and Services* section, which houses some of Volvo's hundreds of applications that support mission-critical tasks and processes.



Pictured: The Volvo Group intranet homepage displays news, tools, and an innovative *5 Minutes Only* feature, which helps bring employees up-to-date in five minutes or less by alleviating the need to hunt for recent news.

Various Volvo Group businesses have their own intranet sections, as do many of their internal departments. Dividing the intranet into definable sections helps designers keep pages in check, and thus helps users find information. Using the same template across the intranet also helps both designers and users. Different designers, for example, can more effortlessly create consistent-looking pages — even if they're working on different teams or even in different countries. Users, meanwhile, can browse from area to area or page to page without needing to learn a new interface. This greatly aids users' productivity while doing intranet-based tasks.

The Volvo Trucks section's corporate homepage resembles Violin's homepage, albeit with some important, but subtle differences. The horizontal menus across the top of Volvo Trucks' homepage are very similar to the intranet homepage, but the image and banner features a Volvo truck. The left- and right-side menus are also similar to the intranet's, but the right-hand menu contains more truck-specific information, including downloadable presentations and training information pertinent to Volvo Trucks.

A questionnaire also appears on the lower-right part of the Volvo Trucks homepage, encouraging employees to think about and learn the company's business strategy. Strategically placing questionnaires on the intranet is a good way to include and educate employees, while fostering a sense of community — in this case, for the Volvo Trucks team in particular.

News about the Trucks unit appears in the top-middle of the page. More specific Truck news links follow it in the section below.



Pictured: Volvo Trucks' corporate homepage. All pages use the same template, thus providing users with a consistent, easy-to-use interface.

Other groups also rely on Volvo's master template for their areas pages. For example, the Renault Trucks homepage looks a lot like the Volvo main homepage, as well as the Volvo Trucks homepage. But again, it has its own important changes. The top menu and breadcrumbs look very familiar, as does the left vertical menu. The information in the right vertical menu, however, and the news in the page's middle section, is specific to Renault Trucks.



Pictured: The Renault Trucks section's homepage also uses the standard template, making this Violin section likewise predictable for users.

Consistently designing areas and pages helps users surf the entire intranet effortlessly. Violin's designs are distinctive, yet flexible enough that users can easily discern which intranet section they're in. One cue that helps is the logo/banner that appears at the top of every page. In just a glance, employees can confirm that they're where they want to be. Both the image and the text help indicate this. The breadcrumbs at the top of pages also help orient users.

Beyond the different section homepages, Violin also stores other crucial employee information. For example, HR and policy documents are still standard elements on most intranets, and Violin is no different in that respect. But designers of this intranet make it very easy for employees to find policy information. The *Employee Center* main section of the intranet provides some of the most needed information, including information relating to corporate values, training, salary, time off, benefits, travel support, and more. Of course, many of these vary by country, so each location has its own section in the *Employee Center*.

As in other intranet areas, the *Key Information* column calls out some of the most desired and needed links, such as employee discounts.

Using Violin also quite literally has its perks, offering users discounts on some car purchases. Infomasters, realizing what an important perk this is, make *Car Purchase* the first link in *Key Information*. While people may not buy cars frequently, keeping this link visible reminds people of this important and useful benefit.

Just below the *Key Information*, the intranet clearly lists the correct name and contact information for the relevant HR person. Some intranet designers choose not to display contact information from different intranet areas because they fear updates won't occur when people change jobs or leave the organization. This is a valid concern; if you don't have the infrastructure to support updates, it's wise to exclude contact names. However, having the right name and contact information, as Violin does, helps users feel confident that they're calling the right person and getting the right information. In short, it's a small feature with a tremendous timesavings and user-friendliness upside.



Pictured: The *Employee Center* provides a variety of policies and benefits information that all employees need. Each country's location has its own section, because certain types of information and policies differ.

While much of Violin's information appears on HTML pages, some information — such as material likely to be printed — is better suited for PDF documents. The Volvo Group intranet provides a document list at the bottom of appropriate pages that lists such information. The table layout makes it easy for users to scan the available documents. Meanwhile, headings are clear, and display the file name, date, language, and size. The *date* column displays the document's *valid from* date, because designers found that users might want a document, even though it's not yet active — as when a new insurance policy will be replacing an old one. (Accordingly, designers also changed the "date" label to the more descriptive *valid from*.) The table also displays the icon for the type of document users are about to open, which helps set their expectations.



Pictured: The document listing format consistently displays documents, and their attributes, on relevant pages. (Note: the *date* label has since been changed to *valid from*, since users sometimes need or want documents that haven't yet taken effect.)

The Volvo Group's intranet is a case study in clean design and effective template usage. By creating consistent, yet attractive pages, Violin's designers help employees speed through their intranet tasks, saving time and money while also enjoying the ride.

URL AND ACCESS

Violin's URL is http://violin.volvo.net. Each business area or unit can also use company-specific URLs. The intranet homepage is the default start page in all employees' browsers, set when their PCs are built.

Users away from the corporate LAN can connect to the intranet by logging in remotely using the digipass authorization tool.

The Volvo Group has begun to offer intranet access via kiosks. "Though the intranet primarily targets office workers and managers, one objective with the latest redesign was to improve access to content for employees in production plants and warehouses," says Johan Wendels, Violin's chief project manager, who is employed by H2 Solutions. "Kiosks are used in many locations throughout the corporation."



Pictured: A kiosk at the Volvo Truck facility in Curitiba, Brazil.



Pictured: Kiosks at the Volvo Truck plant in Umeå, in northern Sweden.

CONTENT MANAGEMENT

Common Back-End CMS

In 2002, the Volvo Group began to move to a common content management platform for all channels — Internet, extranet, and intranet — to be used globally by all business areas and business units. "Each channel has a unique structure and look and feel, but in the back end, much of the content can be shared between the different channels," notes Wendels. "Not only does this provide a basis for single-sourcing content, but it increases editors' community knowledge sharing and content management productivity, because they learn from each other, even if working with different channels. Also, it is possible to leverage one technology investment across multiple channels."

They use off-the-shelf CMS software (detailed below), with some custom integration and a few custom-developed content-sharing features, where necessary.

Content Owners

In terms of owning content, Volvo Group defines two primary, related business roles: Infomasters and Web editors. Infomasters own published content, while Web editors ensure that the content is available on the intranet by using the CMS. With the redesign, Volvo Group also added a new role, giving each business area or unit a global Infomaster, responsible for the overall structure and governance of the intranet site or sites.

The intranet relies on roughly 1,500 Infomasters and Web editors, all of whom work on the intranet part-time. "The full-time equivalent is estimated to be about 100 editors," says Wendels.

Templates Ensure Design Consistency

Templates ensure consistent page design. Corporate-wide guidelines have been set for continuing to develop these templates and interaction features. "Content editors generally do not need to consider these guidelines, thanks to the use of a limited number of templates," notes Wendels. "More important, however, are the information architecture guidelines, which cover how to structure the content. The purpose of these rather detailed guidelines is primarily to publish content in a relevant context for the end-user (employee) as well as enabling a consistent information transparency across the whole intranet." The guidelines also detail how to provide an intuitive and consistent navigation, via menus and links. "Most content editors need to learn these guidelines, and often refer to them before publishing any new content."

To publish content, the editor selects a template from a gallery of options to all editors. Any changes to published pages are automatically tracked within the CMS for future reference. "Documents — files — are stored in document libraries according to a structure defined for each business area and business unit," he says. "A basic version control — with check-out/check-in features — can optionally be turned on within these document libraries."

TECHNOLOGY

Microsoft technology is used to design and maintain the intranet, specifically Microsoft Content Management Server 2002 and SharePoint Portal Server 2003. All intranet servers run Windows 2003, and SharePoint is also used for tracking bugs and other issues.

For intranet search, Volvo Group uses Google Search Appliance, and reports "extremely positive" results.

GOALS AND CONSTRAINTS

Intranet goals:

- Violin should enable open sharing of timely and relevant information and resources. This communication will provide context, and improve business understanding and employee effectiveness.
- Violin should reinforce "The Volvo Way" work culture and provide effective business support through integration of employee self-service and tools, allowing for cross-functional service portals.
- Violin should support transparency across the Group through a common information architecture, common navigation structure, and common design.
- Violin will target managers and office workers, and improve access for "5-minute users" and blue-collar workers in plants.

Redesign goals:

"The redesign was one major part of a project that started in the beginning of 2004 and completed by summer 2006," says Wendels. While Volvo Group needed to deal with a number of critical intranet issues, these were some of the major ones:

• Define business-related intranet objectives (per the above goals).

- Implement a new "concept" (design, information architecture, functionality), based on highly prioritized requirements, to support the intranet objectives.
- Implement a common Web platform (CMS).
- Shutter all old intranet sites, since much of the content on them was out of date and uncontrolled, making it difficult for users to find or trust information they found on the intranet.
- Rollout a new intranet for all business areas and business units.
- Remove all costs related to old intranet sites (reduced costs being one
 of the project's ROI components).
- Increase content management productivity (which would produce the intranet redesign's biggest ROI).

Constraints:

- Time. The first phase (concept development) had only 100 calendar days allotted for completing business requirements gathering and establishing agreement on design principles between all business areas and units. The elaboration, specification, and technical implementation of templates and content management features had to be completed just one year later, with all content migrated to the new intranet by summer 2006. (The redesign team met all of these time constraints.)
- Budget. The overall project, and each of its phases, had a relatively limited budget. The content migration work, however, was unconstrained, as it was up to each business area and business unit to decide which content to migrate, even if there were strong recommendations on what to focus efforts on and how much content to migrate.
- Quality. "I don't know if there's such a thing as an inverted constraint," says Wendels. "There was a general understanding and guiding principle that '80% is good enough, let's move on.'"
- Identity. The new intranet needed to support all of the company's brands from across the globe. "The solution was to neutralize the design to such an extent that specific templates for every brand would not be required, and let the content images and written text carry the brand identity," says Wendels. "Only a very subtle brandidentifying color is used in the left and right margin on each site. Several sites do not even use such a brand-identifying color, but use a color neutral to all brands."

BASIC INTRANET FEATURES

User focus is, arguably, a primary feature of this intranet. In general, the following characteristics and features help ensure that the intranet remains user-focused:

- Horizontal primary navigation is always available.
- Scalable vertical secondary navigation supports provision of large amounts of content.

- Clickable navigation path ("breadcrumb") is always visible below primary navigation.
- Main content area is centered on all pages.
- Key Information and related links augment page content.
- Users can search Violin content and documents.
- A Help section is provided.
- A dynamic sitemap further supports navigation.
- Drop-down lists let users quickly navigate between sites.
- A drop-down list lets users select different language versions of sites (where applicable).
- Infomaster (publisher) and editor information are always available, along with last-updated date.
- 5 Minutes Only offers quick updates.

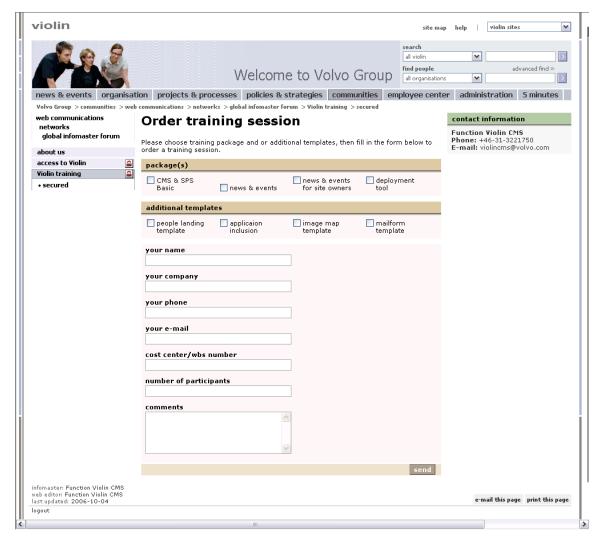
From a business standpoint, one important feature is that all intranet content is provided through common templates, enabling content authors to focus on their information and its message. Use of centralized templates also means that designers can instantly change the page design for every Violin page.

The redesign introduced some especially interesting features, including a news/events application with built-in alerts. This facilitates easy sharing of news across different intranet sites, regardless of the information's origin. "The alert feature is seldom used, but very valuable, as it ensures that all intranet sites display a critical news item," says Wendels. "It has been designed to quickly inform all Volvo Group employees, for instance in case of emergency or disaster — 11 September 2001 and the Indian Ocean tsunami of 2004 are often referred to as events when the feature would be used."

Another interesting new feature is the ability to link employees' names and contact details to a specific name in the corporate directory, and then display the employee's full contact details. "Not only does this provide a quick link to get in touch with a colleague, but it also ensures that we use a single source of information for all employees' contact information," he says.

The redesigned intranet also provides intuitive access to the hundreds of intranet-accessible applications. To accomplish this, designers either offer a simple link to the application in its correct context or make the application appear as an integrated part of an intranet page.

New employees can learn more about the Volvo Group via the *Employee Center*. Induction programs and online introductions also alert employees to this section's existence, which gives employees useful tools and everyday information related to training, travel, IT support, and more.



Pictured: This form allows employees to schedule training sessions.

USERS

Violin targets all 82,000 Volvo Group employees, managers, and office and production workers worldwide.

USER TASKS

Common Volvo Group tasks include:

- Access employment and work-related information such as policies, benefits and compensations, travel, training, IT support, and services, as well as related tools and services (such as application forms and online training).
- Apply for things such as training, jobs, and leave of absence.
- File reports on expenses, production status, performance, and so on.
- Order items, including publications, services, business cards, and stationery.

- Read the latest internal and external news, both local and global.
- Learn about business events, both local and global.
- Find colleagues.
- Participate in networks and communities.
- E-mail page links to colleagues.
- Print Violin pages in printer-friendly format.
- View organizational charts.

INTRANET TEAM



Pictured: (from left) Rickard Stromberg, Johan Wendels, Mark Vikner, Helen Jerresand, Eva Kuylenstierna, Anna Almberg

The corporate intranet began in 1995, and the intranet team has always been part of the Corporate Communications department. "This has meant that we already from the beginning have had an end-user focus and a communications focus rather than a more technical perspective," notes Eva Kuylenstierna, Volvo's Violin program manager.

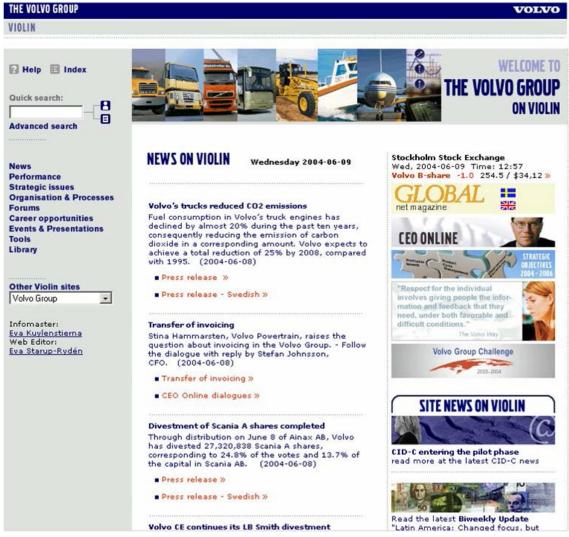
Today, the intranet network of global Infomasters numbers about 15 full-time employees. The network is coordinated by Online Communications, a Corporate Communications sub-department. An Internal Communications Council includes one person from each business area and unit, and has overall ownership of intranet usage and guidelines.

The network relies on a common group budget for IT operations, the basic support organization, basic training, and CMS and intranet feature enhancements. "This common budget does not include any costs for editors working with content management," notes Wendels. "The editor organization is budgeted for by each business area and business unit."

BACKGROUND

When the Volvo Group intranet began in the spring of 1995, the goal was "to create a new communications channel for corporate information that would make the daily information flow in the group more efficient," says Kuylenstierna. "The top-down project started by introducing this channel to some 100 top managers and handing over their very own, brand-new laptop PC." Later that year, the first Group-wide intranet site launched for all employees. It was dubbed Violin (for Volvo Information OnLINe).

Subsequently, the intranet grew in a somewhat uncontrolled manner. "In the first years, we had no common guidelines, common technical platform, or common content management tool," she says. "However, early on we started up a Groupwide network of editors and initiated both end-user and editor training sessions."



Pictured: The previous version of Violin, the Volvo Group intranet.

DESIGN PROCESS AND USABILITY ACTIVITIES

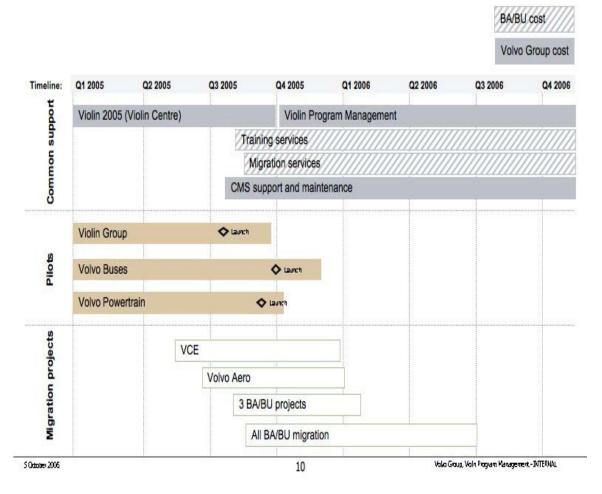
Creating a Common Communication Channel Back End

In 1998, the Volvo Group's senior executives agreed on the need for a common platform for all Web communication channels — intranet, extranet, and Internet. After launching successful Internet and extranet projects, management commissioned a study to investigate the business case for building an intranet with the same software.

"The investment calculation proved that substantial cost reductions and productivity gains could be achieved with such an initiative. But several more 'softer' issues needed to be resolved first — many of them not about design or technology but organization or governance," says Wendels. As a result, business representatives agreed to pursue a new intranet concept. "Based on this agreement and a profitable business case, the rather bold project started," he says.

The redesign timeline was aggressive: the intranet concept was to be developed in 100 calendar days, in conjunction with about 50 business representatives.





Pictured: A PowerPoint slide outlining the aggressive Violin redesign schedule.

Three Task Forces Help Identify Top-25 Problems

The business group representatives were divided into three task forces: one performed more than 150 face-to-face interviews with employees within all parts of the corporation; a second worked to identify best and worst practices on the previous intranet; and a third interviewed approximately 50 Web editors about their content management feature requirements. "Key members of the Group Executive Committee were also interviewed to provide top management input on the requirements," says Wendels. More than 1,100 employees also completed an online survey, which added some "valuable nuances" and "confirmed results from the employee interviews." Ultimately, the business representatives generated a prioritized, top-25 list of user requirements for the intranet.

Throughout all these activities, senior intranet design consultants from Framfab (now part of LBI International) were present, and helped support the concept development. "They combined the task force findings with workshop activities, and

brought their experience from designing other global intranets," says Wendels. "The content inventory task force — where members in the intranet community identified best practices in the old intranet — was a good source of inspiration. One concrete example is the World Times feature — a direct result of that task force."

Usability Testing Techniques

As part of the redesign process, the company conducted four rounds of usability testing. "The first three rounds were planned and conducted by Framfab, the design agency, to quickly feed the results back into the design work," notes Anna Almberg, an information architect at Framfab. "These tests were performed using different combinations of paper prototypes — "accordion menus" — to test the information structure, early demos, and actual sites." Another design agency performed the forth round of testing. Throughout the testing, performed in Gothenburg, the redesign team was careful to also test using representatives from a variety of business units and areas, including users in the US and France.

Usability Surprises

In terms of usability test surprises, "we were rather surprised that they had big trouble with very basic things, like finding news and events from different parts of the corporation," notes Wendels. Indeed, out of the top-25 user requirements, four related to finding or reading news. "Also, the old intranet was cluttered with clickable banners. It turned out that users to a large extent no longer trusted or even noticed banners. Thus, all business representatives agreed that we should ban banners on the new intranet."

As part of the usability testing, designers asked users for their impressions on the look and feel of the prototype pages. "An interesting observation was that during the first test, the look and feel evaluation indicated both that the colors were too pale and that the design did not have a Volvo identity, since the Volvo logotype and the Volvo blue — the primary brand color — were not used," says Almberg. "Based on this feedback, the colors were deepened and made more distinct, and during the following look-and-feel evaluations, the absence of the Volvo logo and the Volvo blue was no longer mentioned as an issue."

TIMELINE

- September 2003: Redesign pre-study began.
- February 2004: Pre-study completed; decision made to launch project.
- March 2004: Project began with a 100-day concept development period.
- June 2004: Concept development and requirements gathering completed; business commitment achieved.
- September 2004: Completed elaboration on prioritized requirements.
- December 2004: Elaboration completed with requirement specifications and high-level functional specifications; started final design and CMS implementation.
- March 2005: Final design (templates) completed.
- June 2005: First version of CMS delivered; held first training session for editors.

- August 22, 2005: Launched first new intranet site (Volvo Group corporate site).
- September 2005: Completed information architecture guidelines; established support and training organization; established migration plans within all business areas and units; confirmed business commitment; and all business areas and units began migration work.
- October 2005: Launched first business area intranet site.
- May 2006: After an intense migration period, all business areas and units launched their new intranet sites.
- June 2006: Project and migration completed, within timeframes and on budget. Most old intranet sites had been closed. At this early point, the company concluded that the investment had already paid off via reducing operational IT costs.

RESULTS

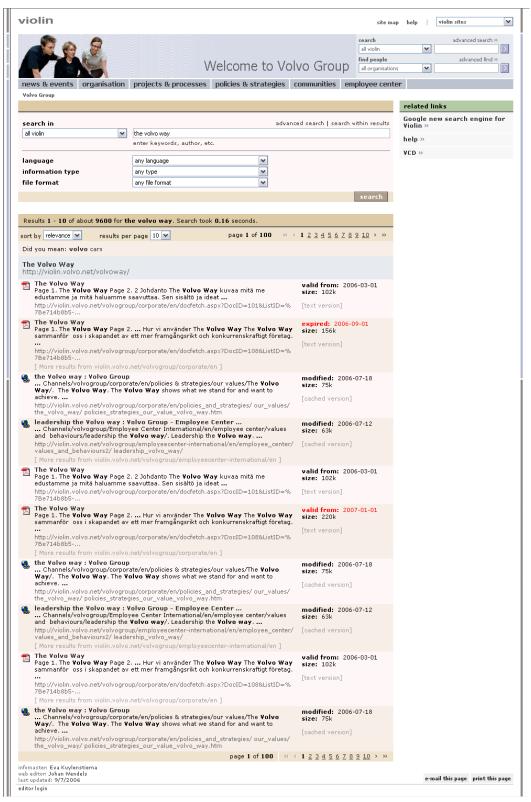
The Benefits of Standardizing 80 Sites

After just 18 months — from March 2004 to September 2005 — the new intranet launched. Remarkably, just 10 months later, all Volvo Group business areas and business units had launched new intranet sites. The total number of new sites is currently 80, though a few more sites may soon be added. In addition, more than 80% of the old Violin sites are now closed. By the end of 2006, all old Violin sites were scheduled to be closed.

The redesign produced a number of notable and extremely useful changes, including shuttering old, defunct intranet sites. Another notable improvement is the single technical platform that now supports not only the intranet, but also the extranet and Internet sites. A related, immediate payoff then has been "an extensively improved search function, presenting accurate results from all intranet sites, which was not the case on the previous intranet," says Kuylenstierna. "End users are very positive about the new design and especially reference the common structure as a way of increasing transparency across the Volvo Group — thus making it more user-friendly."

On the transparency front, "as content is presented in a common structure and format, regardless of what unit an employee belongs to, it is very easy to find and understand information about and from other units within the corporation," concurs Wendels. "Another very important benefit is that employees, to a much larger extent, can trust the content as a valid source of information, to learn from or act upon."

The changes also mean that news can reach employees much more quickly now, thanks to automated news and document sharing among all sites.



Pictured: Intranet search results for "the Volvo way." Thanks to standardizing on one content management back end, intranet searching can unearth documents and information from the company's intranet, extranet, and Internet sites.

Calculating ROI

Wendels says the redesign team didn't spend much time comparing before-and-after metrics, because it didn't have reliable data about what the previous intranet had cost to maintain, or about page hits, and so on. That said, the redesign did help expose some processes and costs. "From a management and governance perspective, one of the most important results is that now, IT operational costs are visible, all editors are known, and we can work with the company's common statistics and metrics," he says. Using the common CMS will also let the intranet team generate relevant statistics relating improvements in both the user experience and employees' ability to produce and consume news.



Pictured: A department-level page in the redesigned intranet.

LESSONS LEARNED

Insights from Johan Wendels:

Always provide more change support. "Even if we spent thousands of man-hours on providing change communication tools and support, we still could — and in some areas should — have increased such efforts during the rollout. I wouldn't say we underestimated the effort, but we needed more checkpoints to ensure all business areas and units were on the changes, before starting their content management

system work. The quality of a new intranet site is in direct relation to how much time was spent on communicating changes, as well as adopting new information architecture guidelines."

Convince your content editors about changes. "Content editors are crucial for helping drive organization-wide intranet changes. Only after you change your editors' mindsets about the intranet will you see your intranet vision come true."

Follow the usability data. "The biggest design-phase surprise was the list of users' top requirements early on in the project. We anticipated unearthing a long list of specific, missing interaction features. Instead, we gathered a list of the content employees had a hard time finding, or thought was lacking. This made it even more apparent that information architecture work would be the primary key to success for the new intranet."

Don't be afraid to set an aggressive schedule. "I think that many business stakeholders were surprised by the fact that the intense concept development work could be completed within 100 days."

The last 5–10% hurts the most. "'The devil is in the details' — or rather, as we learned in previous Web communication projects, resolving the last 5–10% of every business requirement is what costs the most, both financially and in terms of time. Accordingly, implementing less complex solutions and making sure they are used by as many editors and users as possible generally produces a far greater return on investment than implementing solutions that are used by a minority of users, even if such tools would increase productivity within that minority."

Follow the 80/20 rule. "With the preceding point in mind, early on in the redesign, we established the general principle of '80% is good enough, now let's move on' with the business representatives taking active part in the concept development work. This meant that not all business areas' or units' unique needs were satisfied, but they still had to accept the solution agreed upon by the majority, because ultimately, they too would benefit from it."

Get stakeholders' hands dirty. "Whenever possible, involve the business stakeholders/representatives in the hands-on requirements gathering and analysis work. Don't limit involvement to a small "reference group." Rather, make stakeholders actually do the work, and use experts — consultants — to support their efforts. True, this will require some effort to coordinate, but the level of the stakeholders' commitment to the results, and the resulting agreements this generates, will be very high, and pay off when you ultimately roll out the redesign."

Recommendations for the Intranet Design Process

Understanding the lessons learned from these great intranets will help you design a better intranet for your organization or your client's organization. You can also do other, more process-related things to improve intranet usability. Based on the above cases, the 2001–2006 winning intranets, and our other experiences testing intranets, here are a few of the most important recommendations for designing a usable intranet. Note that these recommendations have changed very little in the last few years.

WATCH PEOPLE WORK

When designing intranets, don't forget that you already know who the end users are. They're the people you pass in the hallways, the employees sitting next to you in the cafeteria, and the staff who park next to you in the garage. Use these interactions to your advantage and get yourself invited to watch how your colleagues work. See how they're using and not using the intranet, and where design opportunities exist for making the intranet a more useful part of their day-to-day jobs.

CONDUCT USABILITY EVALUATIONS

Remember that you don't need a complete, finished design before you can garner useful usability feedback. In fact, it's better to get early feedback on incomplete designs. Just test with prototypes and paper mockups. Or, if you want to introduce design elements similar to those you see on a particular website, then use that website to test the features. You can watch people using any current system, even if it's not an intranet per se, to determine which features are already well designed.

Looking through all of this year's design submissions, we once again observed a lack of consistently applied usability processes. In particular, many companies skimped on regular usability testing, heuristic evaluations, and field studies. Yet even the busiest development teams, or those with the craziest deadlines, should take time to watch people attempt basic tasks using the design. It doesn't take long to do a quick test. We also encourage design teams to get a group of designers and developers together — even for just 20 minutes — to review a site's design, then identify, discuss, and agree on the top usability issues.

HELP CONTENT CONTRIBUTORS SUCCEED

The most well-received intranets are those with fresh information that people need and want. One way to keep information updated and interesting is to provide methods for employees to add and edit information. Letting users — or designated content providers — contribute content gives them a stake in the intranet's success. Such efforts invariably produce compounded returns: fostering excellent content providers results in better content, which invariably leads to an intranet with more varied and useful information, which drives more employees to visit the intranet more often, and thus ensures that the intranet remains a business-critical tool.

CONSIDER ACCESSIBILITY

Many companies employ — or will at some point hire — people who use assistive technology. Yet, almost all of the intranets submitted for consideration this year posed accessibility problems for users with low vision, no vision, or motor-skill

challenges. The chief accessibility offenders: using too many graphics, tiny text, poor contrast, limited space between links and text, and small targets. Unfortunately, at many sites, introducing these exact features seems to be a new trend. On the positive side, while many submissions do overuse graphics, many others use graphics sparingly, and when they do use them, they are well labeled for users with low vision or no vision.

MEASURE ROI

Most of the winning intranets made obvious strides, fostered great usability improvements, and no doubt created productivity and efficiency gains for their companies. Yet, few intranet teams formally (or even informally) measure any ROI. Often such measurements are not a priority because of tight schedules and the way in which organizations allocate money. For example, the money to design and maintain the intranet might be allocated to the vice president of IT, while the actual productivity gains are found in the HR department.

Regardless, do pause to measure the time users require to accomplish a task, both before and after a redesign. Take this decreased task time and factor the resulting, increased financial savings across your organization. Then, make the gains known to the different departments involved and also at higher levels, so that even the most upper-level managers understand the importance of well-designed internal systems.

Intranets Not Selected: Common Issues

Each year that we conduct the Intranet Design Annual it gets more and more difficult to choose only 10 winners; we inevitably find more than 10 truly excellent designs.

While we won't name or show examples from intranets that didn't make this year's top 10, the following are some of the major problems we saw across submissions that are not among the winners and that are not included in this report.

BORING HOMEPAGES

Homepages offer many different types of design and information. Likewise, the goals that designers set out to achieve via their homepages can vary greatly. In all cases, however, the homepage provides a great opportunity to: 1) provide information, 2) lead people to tools, and 3) motivate and excite people to use and explore the intranet. Some homepages did none of this, and in fact provided little or no new content. This is a serious loss of opportunity.

INCONSISTENT NAVIGATION

While templates, standards, and a strong information architecture are becoming more common in intranet and Web design, we still saw many entries with very inconsistent intranet-wide navigation. Menus changed erratically or sometimes disappeared completely. This issue is usually due to politics, scheduling, and technology. Another common factor is that combining many smaller intranets into one main intranet menu schema can be extremely difficult, even for the most talented designers.

CASCADING MENUS

People have trouble using menus that fly out. This is just the way it is. Even so, we still saw multiple designs with many cascading menus, some of which even cascaded down several levels. Better options do exist, such as having menus expand in place, creating landing pages, simply decreasing the number of menu choices. Our wish for the year: outlaw cascading menus.

POOR CONTRAST BETWEEN TEXT AND PAGE BACKGROUND

One trend in years past has been to make default text extremely tiny. Fortunately, that trend is not as strong this year; text is more often set to better default sizes. Also, beware the contrast between text and background colors, as it can affect legibility.

CLUTTERED PAGES

Designers must not only design good, scalable pages, but also monitor those pages to ensure that the design continues to support the current information. Pages can easily get out-of-hand as more people and teams get involved and add information. Defining a main point for each page can help ensure that its information remains related and limited. This year we saw several pages that were far too cluttered and featured completely different types of information. This hurts the information scent because users don't think to explore a cluttered page looking for very different types of information.

Selection Criteria and Process

This year marks the seventh annual Nielsen Norman Group intranet usability competition, which seeks the best examples of intranets that are easy to use and meet users' needs. In August 2006, we posted the call for submissions on http://www.useit.com. In response, we received submissions from organizations of different sizes, from various countries and industries. These submissions included intranet screenshots, explicit descriptions of the intranet's design and how it works, notes about the design process (including usability methods employed), detailed information about users and potential users, and the intranet's goals.

To judge the entries, we followed a four-step process: 1) initial design reviews and numeric rankings; 2) follow-up questions with the top submissions (when necessary); 3) design sorting, followed by thorough design reviews to choose the top 10; and 4) follow-up interviews with the top 10.

INITIAL DESIGN REVIEWS AND NUMERIC RANKINGS

Based on the initial submission information, the three judges (see <u>About the Authors</u>) conducted simple design reviews and whittled down the entries to the tierone submissions. In addition to written commentary, we rated each site numerically. We based these ratings on criteria typically viewed as key to intranet usability, including some criteria that emerged from submissions and trends in our previous contests. We rated the following criteria in each submission on a 0 to 3 scale (with 3 being the best rating):

Navigation:

- Main navigation on every page
- Consistent/easy navigation
- Consistent style across the intranet
- No horizontal scrolling
- Minimal vertical scrolling

Design:

- Pleasing aesthetics
- Engaging homepage design
- Good contrast between text and background
- Easy-to-read text
- Easy-to-read links
- Good use of graphics
- The right amount of text
- The right number of links
- Clean design

Search:

Consistently available search

- Relationship to employee search
- Good search design (ideally, a simple open field at the top of pages)

Personalization and News Delivery

- Personalization/catering to different offices or cultures
- Organization-related news
- Information about internal groups

Content

- Well-written text
- Employee directory or directory search
- Content posting and editing capabilities

Overall

- Simple forms
- Support for the main corporate functions
- Encapsulation of the organization's spirit
- Use of innovative, fun, or original features
- Accessibility features

FOLLOW-UP QUESTIONS WITH TOP TIER (WHEN NECESSARY)

After collecting this extensive information from site designers, along with information about their users, goals, and internal usability evaluations, we thoroughly reviewed the intranet designs. We evaluated them based on usability, look and feel, and elegance. We also considered the target users, their tasks, and how well the site's applications might help them complete these tasks. We did not conduct usability evaluations with test participants. We do believe, however, that intranet usability studies are best conducted with users, and we've conducted a usability research study in which intranet users tested various intranet designs. ¹

DESIGN SORTING AND THOROUGH DESIGN REVIEW

Next, we reviewed the intranets and sorted the top 30 designs based on numeric ratings. We then conducted more thorough design reviews of the top 25 sites, and from this selected the 10 best intranets.

FOLLOW-UP INTERVIEWS WITH TOP 10

After choosing the top 10 submissions, we asked the site designers general and specific questions about the site and their design decisions, usability evaluation methods, and lessons learned. We then followed up with more specific questions — some exclusive to their intranet, and some more generic. For example, the generic questions included:

¹ Intranet Usability: Design Guidelines from Studies with Intranet Users is available for purchase at http://www.nngroup.com/reports/intranet/guidelines/.

- What was the business reason for setting up the intranet?
- What does it do and what kind of information does it contain?
- Who had the idea for the intranet (or the revision), and what goals did he or she want to achieve?
- What were the constraints? (For example: Were there time or budget constraints? Did content have to be published in multiple languages?)
- Describe the development process and usability findings.
- Who was involved in the project and what were their roles in the organization? Describe the intranet team.

About the Authors

Kara Pernice is the director of research at Nielsen Norman Group and heads the company's East Coast operations. Since joining NN/g, Pernice has led several intercontinental research studies and wrote associated reports about topics such as intranets, the Web and accessibility, senior citizens, public relations, and site maps. She has developed and taught numerous seminars about these topics and about a variety of usability methods, such as the product life cycle, field studies, emotion and design, usability testing, and eyetracking. Additionally, Pernice has worked with clients in many industries. Before joining NN/g, she established successful usability programs at Lotus Development; Iris Associates, an IBM subsidiary; and Interleaf. She managed the first usability program for Lotus Notes and the Domino server, and after her team's work, PC Magazine wrote, "If this were summer camp, Lotus Notes would walk away with the Most Improved Camper award." Pernice chaired the Usability Professionals' Association conferences in 2000 and 2001, was presentations chair for UPA 1999, and was conference advisor for UPA 2002. She is on the editorial board for a new intranet magazine, The Journal of Intranet Strategy and Management. She has an MBA from Northeastern University and a BA from Simmons College.

Mathew Schwartz (www.penandcamera.com) is a freelance journalist, editor, and photographer based in Cambridge, Massachusetts. He frequently covers business and technology issues, and has contributed to such publications as *The Boston Globe*, *Computerworld*, *Fodor's Travel Guides*, *Information Security Magazine*, *The Times of London*, and *Wired News*. He has profiled the usability practices of such leading organizations as eBay, Fidelity Investments, and Intuit. He earned a BA in English literature from Cornell University, and an MA in English literature from the State University of New York at Buffalo.

Dr. Jakob Nielsen (www.useit.com) is a principal of Nielsen Norman Group. He is the founder of the "discount usability engineering" movement, which emphasizes fast and efficient methods for improving the quality of user interfaces. Nielsen, noted as "the world's leading expert on Web usability" by U.S. News and World Report and "the next best thing to a true time machine" by USA Today, is the author of the bestselling book Designing Web Usability: The Practice of Simplicity (2000), which has sold more than a quarter of a million copies in twenty-two languages. His other books include Usability Engineering (1993), Usability Inspection Methods (1994), International User Interfaces (1996), Homepage Usability: 50 Websites Deconstructed (2001), and Prioritizing Web Usability (2006). Nielsen's Alertbox column on Web usability has been published on the Internet since 1995 and currently has about 200,000 readers. From 1994 to 1998, Nielsen was a Sun Microsystems Distinguished Engineer. His previous affiliations include Bell Communications Research, the Technical University of Denmark, and the IBM User Interface Institute. He holds 79 US patents, mainly on ways of making the Internet easier to use.

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