Project Title: Interactive Campus Map
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Summary

The existing campus map web site (http://maps.ucsc.edu) is over ten years old and is based on static images. Average usage exceeds 10,000 unique visits per month and delivers upwards of a 4.5Gb of bandwidth per month to a variety of constituents that includes prospective students and families, the community, and campus affiliates. Until quite recently, many of our service roads were unnamed (http://news.ucsc.edu/2010/10/nameless-streets-ucsc.html). Exacerbating the situation is that the campus is not geo-coded and uses 1156 High St. as its general mailing address. On a campus of over 2,000 acres and 525+ buildings, it is easy to lose your way.

Project Description

Problem Definition
Information Technology Services (ITS) in collaboration with Transportation and Parking Services (TAPS) proposed a project to build the next generation campus map (http://interactivemap.ucsc.edu) that will assist in way-finding, reduce costs associated with maintaining the "old" map, and keep the campus competitive in its web presence. The solution has to be easy to manage and require very few IT resources to secure, maintain and train. Since there wasn't a budget for development, we worked to find capacity and re-prioritized work to create the initial implementation.

Approach
Our project has built the next generation map on the Drupal platform and utilizes several modules to integrate Google maps, data overlays, building and department information. As a platform, this solution can be expanded to distribute access permissions and content maintenance responsibility as needed. The interactive map will also be used as a distribution channel for web services; an example of this is our distribution of emergency blue light phone data to our commercial iPhone developers. We've also paid attention to potential integration with GIS information as the campus buildings become geo-coded which would allow for increased functionality over time.

Our functional stakeholder developed requirements based on wireframes and research that ITS was able to provide. In reviewing other higher education examples of interactive maps, we found a variety of solutions but each required resources beyond

what we could afford. In some cases custom javascript was used, in other cases proprietary software was used. We needed a simple solution.

By aligning our project with an existing Drupal development environment that uses Aegir to provision and manage dev, stage and prod environments we've been able to take advantage of existing equipment and expertise to build out the project. In fact, the whole infrastructure runs on donated, surplussed hardware of the six year old vintage. Our production environment uses a customized distribution of Drupal called Pressflow. The production stack runs in an optimized Drupal environment called Mercury on dedicated dual processor 3Ghz server running Ubuntu with 4Gb RAM.

Success Criteria

The success criteria for this project are measured in a number of ways. We utilize typical web metrics from Google Analytics to measure the number of unique visits which is the primary criterion. User acceptance, ease of use and a searching interface, are secondary measurements and are largely anecdotal. Measuring the benefit of increased web presence and competitiveness is a third criterion for which we are still developing metrics.

In early April 2011, we did a soft launch of the site. In the first 30 days, we've received 3,058 unique visitors. In the same time period, our existing maps site received 45,693 unique visitors. The "old" site did not have a method for searching, although we did take advantage of google indexing. The new site, allows for searching the internal Drupal database. Of the 113 searches conducted in the first month, 106 were met with successful search results. While this is very modest data at present, we expect the entire maps.ucsc.edu load to transfer to the interactive version this summer.

Technology Utilized

Our solution can be adopted and replicated by virtually any group who needs this type of functionality and ease of use with minimal IT support. Requirements include a base Drupal installation and several modules including CCK, Views and OpenLayers. A Google Maps API key must also be obtained, but is not a requirement. The basic workflow involves double clicking a map to place a "point". The point is the latitude/longitude of a particular map item. A view presents this information with one or more points being displayed. As mentioned above, our hardware is borrowed and old; we've optimized the OS and applications layers. We continue to monitor performance and make adjustments as needed.

Beyond developing a technical solution, we've worked to align this project with a wider web presence initiative. We've adapted the campus template to the Drupal implementation and are in fact leveraging this core templating work to serve other

Drupal applications and large sites including the University Library and School of Engineering.

Timeframe of Implementation
The project was researched and prototyped from late 2010 through March 2011. The initial release was in April 2011.

Objective customer satisfaction
Given campus topology and distribution, the new interactive maps site is extremely useful in helping to direct visitors to their destination. The ability for further identify parking is a real added bonus. So great to finally have the campus "on the map."

Nice demo at Town Hall today. And I'm sure you and Susan have considered this idea... whereby students, staff, faculty can be submitting location info via their smartphones (pics, gps, text) to a queue that is then evaluated and entered into the maps database.

Would make a nice game (summer of map fun!)

Very cool.

LiDroid

Peter, that's really cool and useful! Good job!

Of course, now I want to know, how do I get Digital Arts and New Media (which is a program, not a department) in the list? How do I get the Arts Division in the list?

S.

I've been poking around on the dev site. it's very cool.
Andrea

Thank you for sharing this exciting new map/possibility with me. This would be such a valuable tool for us! As the Director of Special Events Office for University Relations at UCSC, I oversee dozens of events for thousands of guests each year. Many are first time visitors to our campus, and we face a constant challenges in guiding and directing these guests around campus. With our rolling hills, forests, bridges, and arroyos, UCSC is a very challenging campus to map or navigate. Add to that the fact that the normal "the ocean is to the west" mentality doesn't hold true in Santa Cruz (where the ocean is to the south of our campus view!), and we have all the criteria needed to ensure that most visitors manage to get lost at least once on their visit to

campus.

We endeavor to assist visitors with custom made maps and directions, but this presents a new set of challenges for us in the form of printing costs or time spent designing web maps, the need to develop a wide variety of maps for directions to a wide variety of locations on campus, etc.

Having an electronic map such as this, based upon the Google Interface that is so well known and widely utilized by our tech savvy constituent base, would be a huge benefit for the campus and our constituency.

Yours,

Jeff