A Proposal for an Oahu Internet Ocean Sports Resource

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Project Description

Hawaii is presently facing a decline in tourist arrivals from both the US mainland and Asia. The decline in arrivals cannot be completely attributed to the unstable economic conditions presently afflicting much of the world. Times are certainly not desperate in Hawaii, but our reliance on tourism as the prime mover in our economy makes us vulnerable, and it is important to protect Hawaii's image abroad.

Despite the downturn, Oahu and the neighbor islands have a great deal to offer tourists looking for more than the "Waikiki" experience. One of the problems for these "ecotourists" is the lack of a reliable source of information about outdoor recreation opportunities in Hawaii.

I have an idea for a venture which will attempt to address this problem. My plan is to load data relevant to coastal and aquatic activities into an Arcview database and make the maps I produce available over the web. In particular, I want to create detailed maps of surfing, swimming, and diving locations. I will also include other information regarding ocean sports and events. The maps will be detailed enough to locate small breaks, reefs and access roads which might only be a few feet wide. The other information on the maps might include: what sort of wave can one expect; where is the nearest parking; what ocean conditions can one expect; are there shower and changing facilities; might security be a problem?

The audience for such a web site will initially be those interested in ocean recreation from Hawaii, the mainland, and Asia. The audience will expand as more information is added to the database. Although the shoreline information is the first priority, I plan on eventually including inland hiking trails, parks, and camping sites. Ocean related sporting events, such as canoe paddling, kayak racing, and sailing races could be announced along with any relevant information. The system will include extensive text descriptions of the various locations and events, and might be compared to a traditional travel guide.

I have worked for several years at the Joint Institute for Marine and Atmospheric Research (JIMAR) at the University of Hawaii. One of the systems I have become quite familiar with is the Arcview GIS system from ESRI, Inc.. Arcview is the leading GIS system in use today, and is under active development by ESRI.

One of the extensions produced by ESRI is a component which allows maps produced in Arcview to be served over the Internet. The maps are not static images but fully interactive, and allow zooming, panning, and selection and identification of features on the map. There are at least two possible techniques for producing Internet ready maps, one of which involves the use of a programmatic interface called "MapObjects". MapObjects provides the most flexibility, given that the programmer has some facility with object-oriented programming languages. Having written several mid-sized systems, including an optimizing compiler and a language analysis tool in such object oriented languages as C++ and java, I feel that I should have little difficulty understanding the MapObjects framework.

I emphasize: this is not something I "feel might be possible". I know it can be done, and I know how to do it. Most of the relevant datasets are freely available from state or local authorities. Many are already in my possession. Some will have to be purchased or licensed. I have already engaged in some preliminary discussions to get a feel for the cost for these datasets.

I will try to use University resources (such as the Arcview site license the University has purchased) to develop the initial system. This will be particularly important, since an individually purchased license for the entire Arcview system will be too costly for my initial budget. This system will contain data describing the coastline of Oahu, roads and freeways, and descriptions of

as many surf breaks as I can include. As soon as the system is presentable I will make it available on the Internet, either via a University computer or through a commercial ISP.

Once the basic system is functioning, I will approach local businesses and industries and sell advertising on the site. Local surf shops and restaurants as well as large hotels and resorts might conceivably be interested, since I expect both local ocean enthusiasts and out of state visitors to be attracted to the site.

The timeline I have in mind is :

1-APR-99 to 15-MAY-99
Acquisition of datasets and hardware

16-MAY-99 to 31-JUL-99
Design of the GIS System
1-AUG-99 to 31-AUG-99
General web site design

1-SEP-99 to 30-SEP-99
Debugging and integration

- 1-OCT-99
  System made available

Once the basic system is in place I can also begin working on adding other datasets. I would like to include Oahu trail maps, which can be obtained from digitized topographical maps. I will also continue to add functionality to the ocean information system, including the ability to display real time ocean condition information. I would also like to include a method by which visitors to the site could leave annotations and comments connected to locations on the map.

In time, the system could become a “one stop shopping” nexus of outdoor activity information on Oahu. At that point, the logical next step would be to continue the process for the neighbor islands. Clearly, by this stage the system would be too large for me to manage alone, and I would need to hire local programmers to take over management of some parts of the system.

In this way I hope to establish a long term enterprise, which will continue to expand and improve over time. I see this project as a marriage between my personal interest in ocean sports in Hawaii and cutting edge GIS technology, and I am tremendously exited about the possibilities.

Statement of Purpose

How this project will contribute to the field of technology and promote the entrepreneurial spirit.

I intend to outline below my intentions, and in particular how they relate to the matters of technology and entrepreneurship. I should begin by briefly describing the factors which have motivated me in thinking about the project.

I have found myself torn, somewhat, by two competing forces. On the one hand, I would like to find a well paying job and live a comfortable life. On the other, I have come to truly love this very special place, Hawaii. Without belaboring the point, I have found it more difficult than I would have liked to combine these two goals. It has never seemed to me that there should be any reason why it should be difficult to make a decent living in a high tech field in Hawaii, but the plain fact seems to be that it is. Not impossible, of course, but difficult.

It has occurred to me, many times, that what I would call a "good life" is available to people in my situation in Hawaii, but that it requires a bit more effort to get there than it would if I were living in, say, San Jose. The extra "work" involved in staying here in Hawaii is exactly the work that must accompany entrepreneurship in general. That is, those who wish to stay in the islands may stay, but must make their own way by discovering new uses of technology.

It is my claim that my project attempts to do just this. I am trying to make use of a new technology (interactive GIS systems) in a new way. GIS systems are typically complicated and difficult to use, not necessarily because they are poorly designed but because they are powerful tools, and are often used to describe complex systems. My project attempts to hide the complexity (of which there will admittedly be quite a lot) behind an interface that a non-technical person can use to extract useful information. Luckily for me, much of this complexity hiding, which in itself is an enormously complex job, can be done with the tools supplied by ESRI and other similar companies.

In addition to this, my project will attempt to address local economic issues by giving local businesses another venue for advertisement. Clearly, one web site will not have much of an effect on the economy of a state, but it's possible that it could be part of a larger effort, designed to show aspects of the islands not usually on display in traditional advertising. I plan on marketing the system to both small local businesses (plate lunch and surf shops) and the larger hotels, possibly via the Hawaii Visitors Bureau.

There is another way in which my project and others like it might contribute to the general welfare of Hawaii. It has long been said that Hawaii is well placed to be a hub of some sort in a technological wheel that includes Silicon Valley and Asia. Little has come of this, and Hawaii continues to lose its brightest minds to the mainland. But a few successful high tech ventures might be enough to convince people that Hawaii is indeed a suitable place to do business. There really is no reason why such local businesses couldn't succeed just as well as if they were located in the heart of Silicon Valley. But since there are so few, say, programming jobs, in Hawaii, many talented programmers from here end up moving to the mainland. Hence there is a shortage of good programmers in Hawaii, so businesses are unwilling to set up shop, and the cycle continues.

The system I envision, once it is past its initial stages, will require programmers to enhance it and add functionality. Such opportunities are rare in Hawaii, and I look forward to giving some of the local intelligence a reason for staying home, instead of heading for San Jose immediately upon graduation.

For me, the real win in a project such as this is that I can be personally exited about the subject of the business. Instead of selling myself to a huge mainland firm, writing talking paper

clip applications or creating scrolling text banners extolling the latest brand of potato chips or online stock trading company, I would be working with something for which I have a real passion: the oceans of Hawaii.

Budget

Every effort was made to make this budget as accurate as possible. However, it is likely it will need to be revised, in which case I will follow whatever procedures have been established for making such revisions.

Item	Cost	Notes
Dell Dimension XPS R450 -- Pentium II 450Mhz, 64MB, 8,4GB, 21"	$2,325.00	Or comparable system
ArcView GIS 3.1	$1,195.00	See note A.
Geographic Dataset Licensing	$1,500.00	See note B.
Total	$5,020.00	

Notes:

A. At this time I am working with a local ESRI reseller to determine which product will be most appropriate for this project.

I have been in contact with Ken Schmidt at the City and County of Honolulu. The price listed above will license the public lands dataset for one year. This will allow me to begin work on the