COMMUNITY INFORMATICS IN NZ: APPLYING AN AUTOMATED INTERNET DEVELOPMENT TOOL

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ABSTRACT

This paper describes the use of automated web development software to support regional development in Maori areas of North Island New Zealand. The software is the culmination of four years work to establish a methodology to use community based tourism to spur development in rural and underdeveloped areas. Our web-raising methodology and the computer created individual website combine to provide a tool which overcomes the obstacles generally met with when trying to get remote communities to embrace new technology. This paper describes how to generate authentic community websites, unlimited numbers of individual business websites and integrated payment and booking systems, with the minimum of hardware and technical support. This paper describes the successful deployment of the first regional tourism product, a guided trail through indigenous owned community land and the steps used to create this. The authors demonstrate how the software is used in the field, and how the method can be extended to other communities. Community Informatics

What is Community Informatics?

The community informatics movement aims to bring together academics, policy analysts, local and national government agencies and representatives of indigenous communities to establish principles of good development, to compare experiences in order to put a firm scientific underpinning to the many current projects being undertaken. The application of IT to economically disadvantaged groups has a long history, mostly of good intentions leading to failure in practice (Gurstein, 2000).

Community problems require community solutions

The most striking feature of working with communities is the dynamic interaction between individuals. Individuals are free to support or ignore the community or follow their own needs and agendas. They do not need to have any sense of the greater good and can act in their own interests at the expense of others. They can and often do have conflicting views of what is best for the community and often see no reason to come to any consensus.
Discordant community traits are found in formal organisations as well, but the difference is that formal organisations have evolved formal mechanisms for resolving conflicts, and have ways of ensuring that the objectives of the organisation are met. Those that do not are broken up and either extinguished or absorbed into a more successful organisation. Communities often do not have the opportunity to restructure or realign themselves and intractable differences can simmer for centuries. Simple logical approaches derived from corporate experience therefore have only a limited chance of succeeding when transferred to the community situation. Our research aimed to introduce development using IT in innovative ways which would avoid community antagonisms, and build on community strengths.

The project was designed to bring economic development to a remote area of New Zealand, by encouraging tourism through the application of internet technology. This research focuses on the southern end of the East Cape area, centred around Wairoa, extending as far inland as State Highway SH2, and as far north as Morere. In general the area is underdeveloped compared to the rest of New Zealand. The physical infrastructure is rather poor: some roads are unsealed, there is inadequate telephone penetration and access to government services can be difficult. These problems are compounded by long-term unemployment, lack of work opportunities and low education levels. On the other hand, the potential for tourism is high. The area has spectacular scenery, a large conservation estate, empty highways, benign climate and friendly people.

Multilevel requirements

The problem of creating a viable internet presence for a community can be broken down into sub-problems.

a) there is the problem of making the world aware that the community and the area exists.

b) There is the problem of creating a representative authentic and distinctive website for the community as a whole,

c) There is the problem of providing small and marginal tourism operators and potential operators with an individual webpage.

We adopted different approaches to address each of these.

Attract more visitors.

A glance at the map of the region shows that there are huge areas without towns or
obvious visitor attractions, and none of the main roads are on the way to anywhere. Our attraction strategy was therefore to encourage visitors who were already in nearby tourism areas to sample the region by giving them a reason to visit.

The main North Island tourism centres are Rotorua and Taupo, on the borders of Eastland. The project aimed at creating a Maori Heritage trail, from the main highway between Rotorua and Taupo going through extensive forestry estates, then through mountain country to Maori heritage lands, past Lake Waikaremoana and finally through Wairoa to the more established tourism areas at Mahia on the coast. The concept of a 'trail' had many advantages for the project. It had a definite boundary, it could work even if there were few tourism services on the route itself, it attracted independent travellers and it created a distinct product.

**The site map cascade**

The community site consists of four levels. The top level is linked to the main web pages of the adjoining Regional Tourism Authorities. Under this is an Access level designed to offer multiple ways into the next level, the Community Level. The community level opens up the way to the final level, the individual operators.
The cascade of pages starts with a web page map showing the main tourist trails in Eastland. These are shown in different colours, with the Maori Heritage trail prominently shown. The trails are bit mapped graphics such that clicking anywhere on the trail line leads to the Access Level pages. These give details of that trail and its attractions and services. The Access level pages are designed as a way for users to explore the trail in multiple ways depending on their individual needs. The first page is a schematic of the trail showing all the stop-off places as nodes on a line. The potential traveller can click on any node and be taken directly to the next level down, the Community Level. Within the Access level there are other pages which offer different ways of accessing the Community level. One page lists all the activities found along the trail. For example there is horse trekking and kayaking at various points along the trail. Selecting 'Horse Trekking' causes some nodes on the trail schematic to change colour, indicating the locations where that activity takes place. Other standard access pages include a geographic map with clickable hot-spots, accommodation listed by type and an alphabetical list of places of interest. These all map back to the schematic page.

Potential visitors can therefore plan their trip by examining the attractions and activities offered in each of the locations and choose their stops accordingly. For each location there is one Community Level site. The community level site details the attractions, activities and accommodation available in each location. The page content for each of the locality pages was created with the input of the local communities by a process of web-raising (Mason and Milne 2001). This ensured that the locality pages are authentic, unique and reflect the personality of the community. Programming the pages for the top three level pages was relatively straight forward and done by project staff using standard techniques.

The remainder of this paper describes how pages for individual operators can be created automatically by our innovative community software.

**Link existing tourism operators**

In order to get community 'buy-in', our objective was to get one hundred per cent of the existing operators to appear in the Operator Level web pages. The idea was to try to achieve a density of attractions which would create a critical mass capable of showing every visitor that there was something of interest for them, and to show the operators that there was a viable and thriving tourism industry in the area. This meant that we had to be able to create web pages for possibly hundreds of tourism operators. There were a number of issues to resolve: the time and programming effort to create the pages, operators who already had web sites, operators who were already part of some other directory scheme, operators who saw a web presence as a competitive advantage over competitors without a web site, and operators who did not want to be listed beside other operators due to personal animosity. We also had to allow for tourism operators who would be hostile to the idea of a community web site, and those too apathetic to get on board.

The problem of creating web pages for small and marginal operators is further compounded by lack of resources. Most small operators are familiar with the concept of internet business and want to have an internet site. However, they usually have no budget for development and little or no computer skills themselves. This means someone not only has to provide them with a web site free, but also has to commit to keeping that web site up to date indefinitely. This was impractical, so we had to make the software simple enough for an ordinary person to be able to
use it unaided, and having used it, to be comfortable enough to feel confident that they can keep it up to date themselves.

For most operators the research team took pictures of the person and their business with a digital camera and transferred these directly into the web page. The program automatically resizes images to fit the web page template. In other cases the operator already had suitable images which were imported. In every case the business is encouraged to use a photograph of the person themselves, as well as a picture of the business.

The resulting web page has the business name as banner across the top, two columns for text, including one or more photographs. There is also the ability to display the logo of any trade associations the business is in, and space for a slogan describing the business.

The web pages are kept deliberately simple so that every business has exactly the same space and the same relative importance. Businesses that already have their own web sites can add a link to their site.

One of the principles underlying the project is to build-in community based solutions where possible, so the linking of one business to other local businesses is done by offering each operator the option of linking their page to other businesses. This link is not automatic and the business can decline to link to anyone. If a business does choose to link to others then there are several options available. The business can choose to link to everyone in the local area, or only to businesses which are not direct competitors, to selected businesses unilaterally, or to selected businesses, but only if they also link back. This way of linking the pages avoids any disputes among the business community, but reinforces community linkages.

Assist new operators to enter the market

One problem with tourism ventures is that they are easy to get into, but then demand a high level of commitment and service to
maintain, even if patronage is low. Many individuals were interested in starting tourism operations but needed the assurance that there would sufficient demand. This class of operator also tended to be undercapitalised, and have little or no formal business training and no IT skills. Almost none own a computer or have internet access.

The primary assistance to new operators is the provision of a web page and their links to the business community. But they also benefit from the internet business infrastructure component of the project. Many emerging tourism operators, especially in the Maori communities, do not have access to the internet or are not able to devote themselves full time to their new business.

The community software caters to this group of emerging entrepreneurs by allowing the business owner to nominate a proxy, a person or business to act on their behalf, who does have internet access and can respond to enquiries from potential tourists. This means the new operator can enter the market without the overhead of a computer and internet service but still get the benefits of being listed with the business community, and participate in the booking and payment system. The proxy operator agrees to take all incoming enquiries and either answer them or pass them on to the intended business. How this is done is left to the two businesses. This cements the personal relationship between the operators and automatically provides a mentor for the newcomer. In the case where a new business does not know or does not want to nominate another business, non-competitors such as the public Information Centre can act as the proxy. The information centre can also act as a central information hub, taking general questions from the web site about the area which do not involve individual businesses.

CONCLUSION

This software has enabled the researchers to create an integrated community web site for large numbers of individual operators. In practice it has proven to be easy to use, has captured the imagination of the communities involved and has led to requests to be included from communities outside the catchment area.

The software demonstrated at ITiRA in August 2002 is at the end of the first stage of development. It successfully handles the automatic generation of standard web sites for accommodation providers and other types of tourism service providers. The next stage will include a full booking and payments system, and the creation of a itinerary planner capable of handling linked bookings for a personalised visit. We look forward to creating further applications in conjunction with out community partners.

REFERENCES

