Keeping Strong Connections to the Homeland via Web-based Tools: The Case of Mexican Migrant Communities in the United States

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Introduction

Migration is a worldwide phenomenon with strong implications for societies, national economies and cultural development. Countries such as US, Canada, United Kingdom, and Australia are typical areas of immigration. Movement of people, mainly from underdeveloped to developed regions, has been increasing continuously since almost the mid of the twentieth century (Castles and Miller 2003). People migrate for numerous reasons such as labor search, political asylum, permanent settlement and education.

The particular context addressed in this work is the migratory flow from Mexico to the US, which has been identified as one of the most dynamic in terms of remittances and transnational effects. For many years, Mexican immigration into the USA has been very visible in regions such as Southern California, Texas or Chicago, but has been lately increasing in non-traditional settlements such as the State of Iowa and New York City (Durand, Massey et al., 2005). Clearly, these movements have effects for both the receiving and sending regions, but also impact the migrant, as an individual, and their social networks. As a result of physical distance migrants usually look for closeness to prevail by keeping in touch regularly with their family and home communities. For many years, conventional post and phone calls were the main form of contact for them. Nevertheless, the availability of new Information and Communication Technologies (ICTs), and the Internet in particular, has facilitated the creation of community websites that provide information and opportunities for migrants to get in touch with people in their hometowns.

This paper offers an analysis of web sites from Mexican communities designed specifically with the aim of contacting other people from the same community of origin living away (mainly in the USA). Our investigation aimed to reveal the actual presence of those Mexican community web sites on the Internet as well as to provide an initial characterization of the type of support they provide for members of the community living abroad. Our findings provide a departure point to discuss how new forms of interactions, by using different technologies, can potentially increase migrants' sense of connection and facilitate their engagement in the life of their home communities.

These web sites add a dimension of information which can hardly be reached by contacting solely family members. Our own experiences as migrants from small towns suggested that certainly our

primary contact with Mexico was via our own families, but it was through these web sites that we could be connected to the quotidian life of our home communities. More important, we knew our experience was not unique: we were aware that an undefined number of community web sites have been serving to connect Mexican immigrants in the USA with their families and home communities. For many years, the press has been reporting anecdotal evidence about the value of these web sites as bridges for those living abroad. Interestingly, in contrast to nationwide web sites, here we are talking about, and interested in, a social phenomenon at the level of small villages and municipalities where social networks are smaller but the impact of the Internet and implications of communication can be much stronger.

This paper is organized as follows. In the next section we discuss the nature of scattered communities[1] within the context of the Mexico to USA migration, and describe the magnitude of the phenomenon in this particular context. Next, we discuss the importance of the role of ICT as the bridge to connect migrants and their communities, and analyze some cases of diasporic communities adopting ICT as a way to get closer to their families, hometowns and identity. We present then the analysis of four web sites from Mexican communities identifying their main functional characteristics and from there we identify four main needs these web sites provide for people. This paper concludes with a discussion of results and points to implications of our results and future work in this area.

The nature and effects of Mexican scattered communities

Migration is a complex phenomenon reshaping societies and economies around the world. During the last century, the migration of primarily working-class Mexicans to the USA was considerable. This relocation of people is often faced by regions with fewer opportunities in terms of well-remunerated jobs, education or living conditions. According to the National Council of Population Mexico (CONAPO), there are more than 10 million Mexican born people residing in the USA (CONAPO, 2005). These massive movements of people are referred in contemporary literature as communities in Diaspora meaning people living away from their homeland. In the particular case of Mexicans living abroad, according to Rinderle (2005), they are considered a Diaspora since they have experienced: 1) a history of physical displacement, 2) cultural dislocation and hybridity, 3) yearning for homeland, 4) structural displacement and a complex structural relationship between nation-state and diaspora, 5) alienation from host land, and 6) a collective identity defined by the relationship between homeland and host land.

Leaving aside the debate about the conditions creating this social phenomenon, it is a fact that these migratory flows have brought to the USA revitalization of the workforce and enrichment of their culture (Grey and Woodrick, 2005). In the same way, the sending communities experience deep social and economical transformations; many local economies depend highly on remittances sent for family consumption as well as community projects (e.g., church restoration) partially sponsored by Hometown Associations (HTA) abroad.

Migration can potentially have a major impact on individuals leaving home since they are likely to experience nostalgic feelings (e.g., homesickness), which can obstruct their adaptation to their new 'home' (Fisher, 1989; van Tilburg, 1997). In the same way, Mexican families, traditionally very attached, are affected by long periods of separation that in some cases result on children being left alone and emotionally fragile or even can lead to permanent family disintegration (Salgado de Snyder, 1993). Similarly, communities experience challenges such depopulation. This issue is more notable in rural communities where population scarcely grows or even decreases due to the migration of one or more of the family members (CONAPO, 2006b).

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1 By diasporic community we mean the people living abroad from the same community of origin; by scattered community we mean people from community of origin spread throughout Mexico and abroad.

Mexican immigrants in the USA are well identified for the role they play in the economical survival of their communities of origin. According to the Bank of Mexico, the central bank, in 2006 and 2007 Mexicans sent remittances over US$46 billion (BANXICO, 2006), which are mainly for family consumption and can be considered a very effective development strategy since the money goes straight to those who need it the most (García-Zamora, 2005). In the same way, Hometown Associations (HTA), formed in the USA by Mexican migrants from the same community of origin, are becoming well organized entities with economical and political influence on their hometowns. They mainly focus on collective projects for their communities such as charitable assistance and town beautification (Orozco and Welle, 2005).

The Mexican diasporic communities can also be described as transnational communities which are "characterized by the incorporation of migration (and remittances) cultures into the very adaptive fabric of the social system, such that people live between two worlds: North America and 'home' communities in Mexico" (Conway and Cohen, 1998). The main challenge for these migrants is that they are often living dual realities: on the one hand dealing with daily concerns in their new 'homes', such as work-related issues, healthcare, driver license, school for their children and even problems such as alienation or discrimination, and, on the other hand, distress because of regional and nationwide problems in Mexico that can potentially affect their family and their communities. This often results in migrants traveling frequently to their places of origin, calling regularly to their family and friends and a constant desire of knowing what is going on in their hometowns. Thus, there is a need to keep strong connections with the homeland.

Maintaining ties with their homeland: the role of ICTs

As a result of physical distance, family members look for closeness to prevail by habitually keeping in touch. For many years, conventional post and phone calls were the main form of contact for most migrants. Nevertheless, these patterns are changing gradually mainly due to the proliferation of computers with internet access even in remote locations. According to the Mexican Association of Internet, by April, 2007, 22.7 million people had internet access from which 55% of them access from home (AMIPCI, 2007). This increased penetration has been in part possible because of computer equipment becoming more affordable through credit plans and government initiatives to promote the access to the Internet from community centers (Salazar, 2004). On the other hand, although no specific studies have been conducted, reports published in 2000 indicated that after Asians, Hispanics were just second on adopting home computer with internet access in the USA (Walsh, 2000). However, there figures are still lower than other subgroups in the USA such as Whites and African-Americans (Fox and Livingston, 2007). Based on these figures and the fact that computer equipment and internet access are cheaper in the USA, we can argue that it is becoming more feasible for any immigrant to keep in touch with their families in Mexico by sending e-mails or chatting with them online.

The availability of ICTs has also facilitated the creation of community web sites that provide local information and opportunities to communicate for those migrants living away. For some years, newspapers and other media have been reporting about the phenomenon highlighting the role that these web sites are playing on keeping families and communities united (Gonzalez-Mendez, 2002). It could be argued that the presence of these web sites can increase their sense of connection and reassure their sense of attachment to their home communities as well as facilitate their social, political and economical involvement in local affairs. However, beyond anecdotal evidence, we are not aware of any study analyzing in deep these kinds of migrant community web sites with regards to the services provided for those living abroad.

Background: Dispersed Communities using ICT

As people migrate, the need to communicate and keep up to date about things happening back home arises. This section provides an overview of previous research conducted with the aim to study the role played by ICTs in the lives of diasporic communities. One of these cases upon which the Internet has served to connect dispersed communities is reported in a recent ethnographic study conducted by Bernal about the usage of Dehai.org, a public cyber space, by the Eritrean Diaspora (Bernal, 2005). Dehai was initiated by the Eritrean Diaspora living in the USA with the aim to create a public space for debate and express their opinions about the conflict between Eritrea and Ethiopia (1998-2000). Dehai.org was composed mainly by message boards and newsletters, which empowered ordinary Eritreans in the discussions of national issues. Bernal found that through online discussions, Eritreans in diaspora were able to keep in touch with other Eritreans in their same condition, keep themselves up-to-date about Eritrea affairs and, finally, to create a transnational Eritrean public sphere that extended beyond cyberspace. Bernal concluded that, by means of ICTs, Eritreans were able to create a community with a sense of belonging and identity hardly reached by any other public space in Eritrea (Bernal, 2005).

Another case of Diasporas being connected by ICTs is the case of the Trinidadian diaspora. Miller and Slater conducted an ethnographic study about the usage of Internet by Trinidadians to find out how they made themselves at home by transforming the communication mediums available (Miller and Slater, 2000). The research consisted of an in-situ study in Trinidad as well as interviews with Trinidadians in Diaspora with the aim of understand and experience what it means to be a Trinidadian. Surveys and interviews were also conducted to characterize the use and penetration of Internet in Trinidad. The study focused mainly in four topics: business, kinship, consumption and identity. Their results indicate that Internet can lead to a reinforcement of the sense of identity and uniqueness of a particular culture. Finally, their study also concludes that, in the case of Trinidadians living in Diaspora, the Internet has remarkably strengthened the nuclear family allowing closer relationships between parents and children as well as among siblings.

A third related case is that of the Canadian migrants from Newfoundland who maintained ties with their homeland and others in diaspora through ICTs (Hiller and Franz, 2004). Although the work of Hiller and Franz presents the case of internal migration in Canada, their findings can serve to highlight some of the aspects that are relevant for international migration. In particular, they contrast how ICTs serve different needs at different points of the migrant experience. They described the role of ICTs in the three main phases in the migration process: pre-migrant, post-migrants and settled-migrant. During the pre-migrant phase, because the migrant has not yet moved, ICTs play an instrumental role, serving the purposes of being informed about the characteristics of the foreign place. The post-migrant phase is when the migrant has been away from their homeland for less than five years. During this phase, ICTs serve to facilitate home contact and establish contact with other migrants. Finally, during the settled migrant phase, five or more years, they found that ICTs seem to serve the need of preserving the identity, and reviving aspects of the home culture. At this stage migrants are trying to rediscover their connection with their communities and their roots.

These three cases are examples of how technology has been used to facilitate the better identification and attachment to their communities and maintenance of family relationships for those living abroad. However, when compared to the situation of the Mexican immigrants in the USA these Diasporas clearly differ in some fundamental characteristics. Particularly, in contrast to the Mexican context, Eritrea was a nation in conflict and that could strongly influence the consolidation of Dehai.org as a public space for debate and news gathering. Furthermore, both the Trinidadian and Eritrean studies illustrate cases where the focus is on the whole country rather than small communities. Undoubtedly, Mexican immigrants in the USA have a particular interest in their home country as a whole but we believe that those concerns might be even stronger for the local communities where their families,

friends and acquaintances reside. The study of the community from Newfoundland Canada is perhaps the one reflecting more the need to reconnect with the land at the community level. It is at this level where we argue people are more likely to become full active in political, social and economical terms.

Studying Mexican Community Web Sites

This section presents the data collection methods and analysis techniques used to explore the presence of web sites devoted to support and connect migrants from Mexican municipalities with high levels of migration to the USA.

Research Methodology

Our study was motivated by the following research questions:

1. What is the real presence on Internet of Mexican communities from municipalities with (very) high migration rate?

2. What kind of functionality and information services characterizes the web sites of Mexican diasporic communities?

3. What are the main services provided and needs supported by Mexican diasporic community web sites?

In order to solve the questions above, we began by identifying the Mexican municipalities with high or very high migration index. With the aim to understand migratory flows, the National Council of Population in Mexico (CONAPO), computed an index to classify states and municipalities into five classes—very high, high, middle, low, very low— that indicate the degree of migration based on four indicators: households receiving remittances, households with migrants who left the country within the last 5 years, households with migrants who left and returned within the last 5 years and, finally, households with returning members who migrated before 1995. According with this index, 472 out of 2,433 municipalities in Mexico have very high or high degree of migration (CONAPO, 2006a).

The 472 municipalities emerging from this selection were similar in many aspects. Not surprisingly, they are located in states with higher migration index which tend to be southern states (e.g., Guerrero, Michoacan) or the ones from the Mexican Bajio (Jalisco, Guanajuato, Zacatecas). In the same way, they tend to be small communities with an average of 3,838 households (s.d. 4,354).

Departing from that initial universe of 472 municipalities we conducted a search on the Internet using Google as the search engine. We used the name of the municipality (e.g., "Atotonilco", "San Juan de los Lagos", "Tequisquiapan") as the keyword for our search. Our purpose was to identify the municipalities with online presence i.e., hometown web site. Using a manual process, after each search request we analyzed the first 30 results provided by the engine. We then visited each search result that seemed to be from a diasporic community web site. We focused on the first 30 results as we realized after a few trials that the web sites generally appeared within the first 12 results if the domain name was registered with the actual name of the municipality or the site was in public spaces (e.g., MSN Groups, Yahoo Groups). By analyzing the first 30 results we considered that the search results would be highly confident. Although many results were related to governmental web sites, they presented information that was not aiming to support diasporic communities (e.g., mayor's resume, social programs, government plant, finances). Our criteria was that a valid diasporic community web site was one for which the main purpose was to connect those living away with others in their home communities and vice versa. The information provided by the webmasters, the contents posted, or the type of services offered were clear indicators of the purpose of the web site and this certainly helped to identify them. The data were collected and validated by both authors during the summer of 2006.

Once we identified the diasporic web sites we proceeded to analyze each of them in order to classify their main functional characteristics. After checking out some web sites we defined a preliminary set of possible services. This set was refined until all web sites were analyzed and the set contained the common functions supported by all of them.

The results presented in this paper focus on a sample of four of those web sites. These web sites were selected because they represented good examples of the characteristics observed i.e., they included a variety of services and seemed to be very active web sites. Two of the web sites were from the state of Zacatecas (the Mexican state with the highest migration index), one from Guerrero and one from Michoacan. None of these sites are from the town of origin of the authors. We identify and discuss here the main functional needs supported by these four web sites, and within this frame of reference, we identify the limitations of current technologies and opportunities for new forms of diasporic web sites.

Results

The general result of our search for Mexican diasporic web sites is that almost 20% (94) of the municipalities with high and very high migration index have web sites serving such purposes. We found a total of 114 web sites since some of these municipalities have more than one site. Most of these web sites (71%) count with their own domain name which is generally the name of the municipality and they are running on private servers (paid by their webmasters) whereas there are others running on public spaces such as MSN spaces or Yahoo groups. Following comments or descriptions posted by webmaster (e.g., 'About us' section), we found out that although most sites are alive due to the participation of a vast number of members of the community they were initiated by a few people (one or two) with technical knowledge to operate the site. The following sections describe the functionality provided by these sites, the main audiences that they serve as well as illustrative examples of the characteristics of four of these web sites.

Functionality provided by diasporic community web sites

We found that the sites provide a very varied functionality which included among other services picture sharing, general information such as regional history, live video feeds, local TV & radio broadcasting, regional cuisine and currency exchange. An analysis of the functionality provided by the 114 web sites resulted on a set of services listed in Table 1.

Table 1. Categories and services provided by web sites

Service provided by the web site	% of sites providing this service
Historical info	62
Static picture gallery (maintained by webmaster)	51
Message Boards	49
Guestbook	44
Chat Rooms	43
Advertisements about local businesses	35
Dynamic picture gallery (maintained by users)	32

Municipality Pictures	31
Editorial comments	28
Local news	27
Polls	24
Municipality Videos	18
Local weather	16
Controlled access	16
Radio Station	15
Classified	14
Community e-mail	11
Calendar	10
Fast messages	10
Cuisine	7
Games	6
E-mail lists	5
Birthday announcements	4
Interviews	3
SMS sent and displayed in the main page	3
Live video cameras	2
Postcards	2
Presentations about the municipality	1
TV Station	1
Currency exchange rates	1
Genealogy	1

Departing from the idea that these sites aim to represent their community on the Internet, a significant proportion of them include sections with local history, and geographical location. Similarly, many sites emphasize the communication aspects providing services ranging from guest books, to chat tools, and message boards. Furthermore, picture content is another important component, either with functionality to share pictures or just centrally posted by the webmaster.

The functionality provided can be grouped into five main groups: communication tools, media sharing, reference archives, local and current information, and trading. Table 2 shows the percentages

of sites offering these services based on this classification. The communication tool category includes the message boards, guestbook, and chat rooms. The media sharing category covers picture galleries, videos and presentations. The local and current information includes live cameras, links to radio and TV stations, local news, and weather. The reference archives include historical information, genealogy, and interviews. Finally, the trading category encompasses, advertisements, classified, and currency exchange rate info.

Table 2. Grouping of services provided by web sites

Main functionality provided by the web site	% of sites providing this service
Communication tools	92.5
Media sharing	89.4
Reference archives	76.6
Local and current information	69.1
Trading	38.3

As Table 2 shows, most web sites count with information about the municipality, its origins, history and local celebrities. This is due mainly to the aim of presenting their community to the rest of the world which is a characteristic shared also by many other 'presence' web sites. However, beyond this aim the web sites serve a communicative forum. Either by providing a guestbook, a message board, chat, or e-mail services, the sites provide a place for people of the community to reconnect, reunite and find out about the whereabouts of old friends and families. On many of these forums we noticed messages that had the clear purpose of reestablishing social ties. Even guestbooks, typically used to leave notes for the webmasters, were being used by people to post messages requesting to be contacted, to obtain information about a person or family that they have not seen for a long time.

Table 3. Characteristics of the four municipalities

Municipality	Tarandacuao	Arcelia	Juchipila	Moyahua
State	Guanajuato	Guerrero	Zacatecas	Zacatecas
Population	10,252	31,401	11,603	4,600
Occupied Households	2,437	7,056	3,314	1,293
TV penetration	94.2 %	78.8 %	95.2 %	91.1 %
Computer penetration	7.67 %	8.16%	16.54%	7.35%
Education (years)	6.46	6.60	6.73	5.61
Migration rate	High	High	Very High	High

Although for many web sites the creation of content (e.g., pictures, videos) is carried out by a single author (or a few), an important percentage of sites (32%) gives users the chance to upload their own content. Many sites moderate the content before publishing but even so this model is more open and the adoption may result in different dynamics with regards to sharing experiences. Thus, posting media content from the community does not rely only on administrators (or other staff members) but also on migrants themselves by posting pictures or videos from their own new homes and localities.

Finally, some aspects of the life of these communities are reflected through some of these services. Some web sites provide videos of local festivities, parades or pilgrim's walks. A few of them are also

giving access to live cameras so people can be even closer to quotidian aspects of community life. Furthermore, people may access to information such as the local weather or links to local radio stations that can make feel them even closer to the community.

Four instances of diasporic community web sites

From the 114 web sites, we present here a more detailed analysis of four of them which serve to illustrate how people are using these web sites to maintain a certain degree of awareness and engagement on events occurring in their communities of origin. Table 3 shows some demographics of the municipalities we focused on. Most of the municipalities are rather small with an average of 13,600 inhabitants approximately. Their access to technology is low but still within the national average. More fundamentally, all of them experience high or very high emigration.

The web site of Tarandacuao (http://www.mitaranda.com)

Tarandacuao is a municipality in the central State of Guanajuato with limited agriculture industry and commerce. This municipality is classified by CONAPO as a municipality with a high migration rate (CONAPO, 2006a).

Fig 1. Screenshot of the web site of Tarancuao, Guanajuato**.**

MiTaranda.com (Figure 1) is a community web site that emphasizes on informing users about local affairs. Notes with local news are regularly posted including pictures. The site features interviews with local personalities and offers links to municipal, state and national government services. The web site does not use any server-side scripting to dynamically produce web pages. It is rather centrally administrated and manually updated by the webmaster which makes it less dynamic. Pictures posted are generally from people living away and feature social events (e.g., weddings), parties or holiday vacations of members of the community. The site counts with a chat service provided by an external site. Information about services in the community (e.g., house painters) is also posted.

*The web site of Arcelia (*http://www.arcelia.net*)*

Arcelia is a municipality in the southeastern state of Guerrero. Arcelia has been classified by

CONAPO as a high migration index municipality (CONAPO, 2006a).

Arcelia.net provides several services for visitors such as general information about the municipality. This service classifies the information presented into four different categories: General Information, Economic Production, Culture and Miscellaneous section. The general section includes information about the history and location of the municipality within the national context. The main roads from which the municipality can be reached are also mentioned as well as map of them. Finally, it is also presented a little depiction of the municipality and a brief description of the local government. The section called Economic Production refers to the main productive and commercial activities carried out in the region such as agriculture, animal raising, mining, trade and the industry of the "huarache" (the woven leather sandals typically seen in Mexico). The third section called Culture is about Traveling places within the municipality, local gastronomy and handcrafts, traditional regional dances, local festivities and finally the local theater billboard. The last section called Miscellaneous presents some of the outstanding people from town residing either in the town or in other cities.

Fig 2. Screenshot of the web site of Arcelia, Guerrero

Also, there are other services which enable users to obtain information about current occurrences in their community. For instance, we could identify the Chat, Message Board, Pictures being uploaded by users and a News service. The chat is a synchronous tool that allows members of the community to be in touch not only with others within the municipaly but also those living away from Arcelia. The message board, on other hand, is an asynchronous tool that allows visitors to write a short message and emoticons[2]. This service is mainly used to broadcast short 'Hi' messages or quick enquiries to all users such this one *"Someone from Arcelia who can give me some information about Mrs. Natividad Flores Santos, please send any reply to address something@yahoo.com"*. Finally, the News service is intended to maintain the awareness of visitors about events part of the life in Arcelia such as the Mexican Revolution parade, a bike race and the commemoration of the Mexican Independence. These events are barely once a year, but there are other kinds of events posted such as weekend parties.

With regards to the audience of the web site, it seems that a lot of people access it every day taking into account the number of pictures and short messages posted. Although the web site has been

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2 Symbols to convey emotional content in a message. More info: http://en.wikipedia.org/wiki/Emoticon

visited 642,555 since October 2002, the numbers could be a little bit unreliable because the visitor tracking company increases the number of visits every time the page is refreshed, which means that every click on the web site increases the hit counter.

The web site of Juchipila (http://www.juchipila.com)

Juchipila is located in the state of Zacatecas in central Mexico. According to INEGI, in 2005 the population of Juchipila was 11,603, the occupied households were 3,314 and the computer penetration rate was around 16.5%(INEGI, 2005). This municipality is classified as a very high migration rate according to CONAPO (CONAPO, 2006a).

The web site of Juchipila has two main sections: one for local information about history, towns in the municipality, local festivities and regional legends; the other section is the dynamic part of the site which comprises the guestbook, the gallery, chat and directory of users. The main page also presents information about the current weather conditions in Juchipila and a simple poll which is usually about local politics.

One of the most used services is the guestbook, which is typically used to broadcast messages to the whole community and also as a one-to-one communication channel. Indeed, it is also used to say 'Hi' to family and friends as it is illustrated by the following message posted by a member of the community living in Chicago, Illinois *"I'd like to greet my whole family from Juchipila, Zac... Lopez and Perez after my father Santiago Lopez and my mother Julia Perez. Finally, I will be able to visit them next July 2007. We'll be there for a XV years party, the Lopez annual gathering and my brother's wedding Jorge Lopez... Greetings to all of you and many kisses and hugs!"*. The guestbook is one of the most used services as well as the photo gallery which supports a more explicit form of communication with people sharing pictures about events such as family gatherings.

Regarding the usage, there were not visible statistics of this web site. However, the numbers of the pictures and messages posted illustrate the level of activity. The gallery has 2,357 pictures, the guestbook has 2,008 entries and, finally, the directory has 2,371 entries.

Fig 3. Screenshot of the web site of Juchipila, Zacatecas

The web site of Moyahua (http://www.moyahua.com)

The municipality of Moyahua is located in the central state of Zacatecas. The population of Moyahua was 4,600 in 2005, the number of occupied households was 1,293 and the computer penetration

rate was 7.35% according to the INEGI (INEGI, 2005). This municipality has been classified as one with a high migration rate (CONAPO, 2006a).

Fig 4. Screenshot of the web site of Moyahua, Zacatecas

The web site of Moyahua counts with several sections: the News section which comprises of several subsections similar to those found in a typical newspaper: local news, events, interviews, weather and sports. However, all these sections are related to local affairs only. There are other two sections called History and Culture which provide historical information, information about outstanding people from the community as well as local festivities. Also, the video and picture gallery are grouped by custom albums posted by the webmaster. Finally there is a section called Community which comprises the chat, forums, user directory, local trade, local schools, bars and other communities in the vicinity.

According to the web site, the most frequently visited sections are: chat, forum, guestbook and comments to the webmaster. The forum has 2,233 messages; the guestbook has 4,252 entries; there are 4,566 pictures in the gallery. According to the web site, there have been 14,352 visitors since November, 2003.

Services Provided and Needs Supported by the Web Sites

After the analysis of the web sites and classifying the particular services they provided to their users we conducted further analysis to characterize the services according to their more general aim and whom they were addressed to. We found that some of the services were there to support a particular need of those living away as well as those who are left behind in the home communities. This section presents the classification of those services according to whom they are directed to and the sort of needs they are supporting.

Services provided by the web sites

The services identified in these four community web sites could be grouped into three categories:

- Services to unite the community

These services are enabled to contribute to the content of the web site but at the same time they are used for users to express themselves and used mainly as a channel of communication. These services are mainly used to maintain certain bonds with the people of the community. It includes a gamut of

services such as the forums, dynamic galleries, message boards and guestbooks.

Also, these kinds of services allow users living abroad to be aware of the local affairs occurring in their hometown. Moreover, some of them use these services to get those daily goings-on that fully characterize the community life. Likewise, local users use these services to find out where or what are doing their old friends no longer living in the community. In general, these kinds of services are often the most popular sections of the web site.

- Services to project the community

These services are used to inform about general information about the municipality. This kind of service attempts to present the characteristics and peculiarities of the municipality and it mainly emphasizes things such as regional culture, produce and cuisine as well as handcraft produced in the municipality. Moreover, it can also include typical music from that region of the country as well as traditional dances and local festivities. In general, these services are meant to be useful for first-time visitors.

- Services to get a vivid picture of the community

These services can make users experience to a great extent the quotidian life of the community. Most of the web sites present the current weather conditions in the town which is not comparable to being there but this information can help the user to obtain a picture of what is like to be there at the moment of accessing the site. Another service provided by other sites is local radio streaming which can also help the user to feel as if s/he were home just by closing their eyes and listen to the radio. Finally, a couple of sites have enabled live video cameras on public sites which can be controlled by users thus they can indeed watch who is there and what is going on at that precise moment. These services can be very valuable for living-away users because they can actually 'live' those little things that hardly would be seen on TV or by a typical phone call.

Needs supported by diasporic community web sites

The analysis of some of the comments, messages and other content from some of the identified web sites pointed to some fundamental needs supported by diasporic Mexican community web sites which are next described.

The need to express belonging to their community

We found that some web sites serve as an instrument to express a form of connection and attachment to the community, providing evidence to others about a sense of belonging. These expressions were usually made by users when first 'discovering' the community web site as they sent comments to the webmaster showing their joy. In fact, some of the entries analyzed revealed that members living away found the site as valuable and likely to yield sentiments of gladness and joy. Users usually make use of the available input tools to convey this kind of sentiments. Such tools can be found in almost every diasporic web site in Mexico: guestbook, message boards, picture gallery maintained by users, quick messages displayed in the main page and SMS service to post short messages from the mobile phone.

The need to connect with daily life

Members of the community need a communication channel where they can obtain the *breaking* news from their communities. In some sites users make use of the guestbook or photo sharing service as channels of communication. We also found that tools where users can contribute on the enrichment

of the content (e.g., photo sharing service) served two main purposes: 1) to connect those living away with the quotidian aspects of their communities and 2) to connect those living in the home community with the realities experienced by the migrants in their new contexts. Local people usually used this kind of tools to show local festivities, quotidian activities, parties and gatherings, whereas living-away people used it to keep their family and friend up-to-date about family events taking place in their new 'homes' such as promenades, birthday parties and work and school activities. Tools supporting this need we can find interviews to local people, weather conditions, picture sharing, local radio and TV stations, live video streaming and user's comments of any kind.

The need to contribute and participate

We believe that in general, the web sites stimulate the social participation of people living away on collective projects (e.g., restoration of public areas or buildings). It is then important to provide the means for members to collaborate. This is usually done by e-mailing ideas to the webmaster. However, we believe that exist other alternatives that could be explored such as the popular Wikis, which are user-editable web pages.

Discussion

Much has been said about the characterization of the web sites, the services they provide as well as the need they support. However, one thing that should be noticed is the level of presence that these web sites have as a whole upon the national context of municipalities experiencing migration. We found that almost 20% (94) of Mexican municipalities with high and very high migration index have web sites serving such purposes. This represents an important proportion and serves to illustrate the role played by ICTs within the Mexico-USA migratory phenomenon. Communities are actively using the Internet to connect people away. Longitudinal studies would be required to measure changes over time and the effects that new technologies can have on people setting up community sites more easily and at lower cost.

Our results indicate that when we talk about the online presence of communities of migrants, we are talking about relatively small communities, where people are more likely to know each other either directly or indirectly. This can result on more cohesive communities, more united, and with stronger sense of identity which might be a reason to explain the high proportion (71%) of web sites that have a domain name with the name of the municipality as opposed to using a generic one or public server such as Yahoo Groups.

The analysis of the functionality offered by diasporic community web sites makes clear that the services provided reflect a closer perspective of community life. We found that through these web sites people can (1) communicate with people living in the community or away of it, (2) share media such as pictures and videos, (3) consult reference and historic information about the community, and (4) get local and current information. Confirming what other previous studies have found (Miller and Slater, 2000; Bernal, 2005), we found evidence that users of these web sites search the way to maintain their former social networks as well as to keep themselves up-to-date about occurrences in their home communities. We can also see that these web sites can awake and strengthen the sense of belonging and attachment to their communities such in those cases presented from Trinidad & Tobago and Eritrea (Miller and Slater, 2000; Bernal, 2005). However, in contrast to those studies, we can see that such phenomenon also occurs at the level of municipalities and takes a more local flavor as users are likely to know each other and have much more in common. This closeness among the users can explain the level of intense level activity that most of these sites experience in spite the small size of their communities.

We also found that diasporic web sites provide three main types of services and satisfy three main

needs. The main services are: 1) services to unite the community, 2) to project the community and, finally, 3) services to get a vivid picture of the life of the community. In the particular case of Trinidadians in diaspora, Miller and Slater (2000) found that internet help to strengthen the family ties. However, in the case of these Mexican web sites of small communities the reinforcement was more at the community level. Regarding the needs supported, we also found three: a) the need to express adherence to the community, b) the need to be connected to the quotidian experiences and c) the need to contribute and participate. As pointed out by Bernal (2005), the online tools used by Eritreans in Diaspora served to create information by means of discussion of national affairs as well as to feel part of a community they were no longer part at least physically.

Finally, it is clear that most of these web sites are meant to be used from the desktop. It would be interesting to observe the role of mobile technologies and public displays on providing members of the community the opportunity for new forms of interaction, connectedness and immediate access to occurrences in the community as they happen. Project such as the Urban Screens presented by Struppek (2006) or the recent revealed concrete-made screens by Innovation Labs (Innovation-Labs, 2006) can serve as departure points to understand the effects that such technologies can have on connecting migrants to their communities of origin.

Conclusions

The increase of migration has caused many communities to get dispersed and the members of families spread all over various cities or even separated by borders. The need of communication gets accentuated when people move away from the people they care about. We presented an analysis of web sites from Mexican diasporic communities living in the USA aimed to quantify the presence of communities on the Internet with higher levels of migration. We also aimed to characterize the support these sites provide for living-away members of the communities. Some services were identified to support particular needs of those living away such as expressing adherence to the community, connecting with the quotidian experience and taking an active role in the life of the community. Moreover, some services can be identified as primarily serving the purposes of uniting people from the community projecting it to the external world and allowing those away to get a vivid picture of the life of the community as well as witnessing things as they happen.

Further work is needed to fully characterize the whole universe of diasporic web sites in Mexico which in fact is an evolving panorama since new web sites emerge every day as well as the services they provide. Although this work presents the results only from municipalities with high and very migration index these results could differ if municipalities with lower levels of migration are taken into account or even the inclusion of web sites not only at municipal level but also at community level.

We believe that the gradual incorporation of different novel technologies can help migrants to better experience the dual realities they are going through by increasing their awareness and sense of connection to their communities of origin by means of augmenting their communicative repertoire. However, to consolidate a better understanding of how this can be achieved, more work is required to study the long term effects that interacting with communication technologies has on the individuals and their communities. Our future efforts will be oriented toward studying these effects while experimenting with different forms of novel social mediating technologies.

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