Hometown Websites: Continuous Maintenance of Cross-Border Connections

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ABSTRACT

Information and Communication Technologies (ICT) become particularly relevant in contexts where place-based communities get dispersed and migrants look for ways to keep strong connections to the homeland. This paper presents the case of a website currently being used by migrants and non-migrants of a dispersed community to keep in touch with each other as well as to keep connected with daily life in their hometown. In particular, this work aims to understand the main types of information conveyed as well as temporal patterns of community exchanges as afforded by the website. This work analyses and classifies Guestbook entries, Photos and News notes suggesting that people use the site to reconnect, strengthen their local identity and be part of community life. We found out that user-generated content tend to increase during periods when there are fewer visits to the website. Results presented here are relevant towards understanding the nature and role played by ICTs in maintaining cross-border connections.

Categories and Subject Descriptors

K.4.m. [**Computers and Society**]: Miscellaneous.

General Terms

Design, Human Factors

Keywords

Community informatics, Diasporic Websites, Interactions between online and offline communities.

1. INTRODUCTION

The first decade of the 21st century has been seeing a flourishing of websites with user-generated content (i.e., Web 2.0) such as Facebook, which facilitated the emergence of a myriad of online communities bringing together people with similar interests by transcending space and time. That is, the predominance of physical proximity as a factor for the formation and maintenance of communities has been gradually decreasing [1]. Of particular interest for this study are the communities formed by expatriates who are increasingly using ICTs to maintain their linkages with their home communities not only because of nostalgia but also because of the possibility of an eventual return [2]. Migrants have been able to form and maintain communities through the establishment of successful online spaces, which are not only used

to circulate information but to construct it there by means of online discussion [3].

There are many psycho-sociological theories that might explain migrants' desire to be connected and return to the homeland (for instance see [4]). Nonetheless, in practice, this desire is translated in frequent travel and regular telephone conversations which are still the main form of being in touch with their significant others, close friends and maintaining strong linkages with their communities of origin. Similarly, due to the increasing penetration of ICTs, many migrants also use them to preserve strong connections with the homeland which appears to happen at different levels:

First, using the Internet, migrants keep macro-connections to their home communities i.e., they connect with others from the same ethnic group or same nationality which can help them to obtain a broader perspective on an issue of collective interest. Many of these Internet sites are referred in literature as Diasporic websites since they connect members amongst the Diaspora. Furthermore, due to their nature, many of these websites usually connect people with issues occurring at a wider level such as the construction of their identity or more instrumental issues such as immigration problems [5, 6].

Second, in the particular case of Mexican immigrants in the USA, many of them also use the Internet to maintain local-connections. Due to the proximity of their home country, Mexicans in the USA seem to have little trouble to maintain local identities as many of local diasporic websites we have found, which we refer to hereinafter as Hometown Websites (HW), are mainly supporting village-based connections. These websites connect migrants with communities which we consider as a concept conflating people and places as well as the connections amongst people and the products of all those links (e.g., social events, traditions, community projects). Even more, HWs mainly provide support for the so-called transnational communities which are formed by population of a certain town equally divided across the borders, and still community members consider themselves as part of the same community [7]. HWs enable migrants, return migrants and non-migrants to be connected to the occurrences in their places of origin which happen to be a small or mid-sized bounded community, where people usually know each other or, at least, some of your background (e.g., ancestry). Finally, HWs usually include local information characterizing the community making it unique (e.g., history, traditions, gastronomy) as well as user-generated content.

Despite several previous studies conducted on communities in Diaspora, they have been aimed to understand processes happening at macro-level, thus we know little about the communicative exchanges of migrants at the local level. It is important to understand how migrants are using HWs to connect with daily life

in their hometowns. In doing so, we will be able to support the design of better communication services that can potentially increase their sense of community connectedness and then assess the implications of being connected. This paper presents the case of an HW run by volunteers for the last seven years – SanLuisDeLaPaz.com–. This HW has been used by migrants to be 'tuned in' to the occurrences in their home communities, to reconnect with old friends and to maintain their village-based identity, which is particularly strong in some regions of Mexico [8]. In particular, this work presents the characterization of interpersonal and community exchanges as afforded by the website as well as some valuable insights obtained from interviews conducted with regular users of the website.

2. COMMUNITY CONNECTIONS

Migration is a complex phenomenon with the potential to deeply reshape both sending and receiving societies [9]. Traditional notions of migrants' acculturation and assimilation are being challenged as revolutionary developments in transportation and the emergence of novel communication services have been permeating the ways in which people keep in touch [10]. Indeed, some studies have argued that novel communication services allow migrants to maintain connections with their places of origin in unprecedented ways without an interference whatsoever with the cultural assimilation of the host country. This scenario has been referred to as Transnational Communities [7]. Formally, transnational communities are defined as communities that "incorporate migration (and remittances) cultures into the very adaptive fabric of the social system, such that people live between two worlds" [11] (p. 27). These types of communities are not bounded by national borders but they are integrated, to varying degrees, into the country that receive them, at the same time that they remain connected to the countries they leave behind [7]. Studies establish that transnational communities might be originated due to the spreading of migration through social networks which represent some sort of cross-border interpersonal ties connecting migrants, return migrants, non-migrants through kinship, friendship and attachment to a shared place of origin [7]. Furthermore, some transnational communities usually have high levels of social capital due to the density of their networks [12]. Social capital's key idea is that social networks have value which has been pointed out to play a major role in improving living conditions of members of the community [13] as well as community participation [14].

Nowadays, many expatriates and temporary migrants are still interested in maintaining their linkages with their home communities not only because of nostalgia but also because of the possibility of an eventual return [2]. Research in community attachment suggests that childhood memories [15] or symbolic attachment [16] might be one of the main reasons for keeping those links alive. Whatever the reasons behind, in-person visits and telephone conversations are still the primary ways through which migrants stay in touch with their social networks and maintain strong connections to their communities of origin [17].

With respect to social connections, in the last few decades there has been a gradual, continuous shift towards a different paradigm of social interaction which has been heavily influenced by the recent technological changes [18]. In [18], Wellman devises this evolution of society in terms of the assessment of several categories and dimensions through three main paradigms of social interaction: Groups, Glocalization and Networked Individuals. In the first category, groups, also referred to as "little boxes", communities are considered bounded and interactions occur within the confines of the community: door-to-door. On the other hand, Glocalization

represents a conflation of the global and local where individuals stay in groups but are also gradually getting global. Finally, the networked individualism paradigm refers to people (individually) connected to others based on selected social ties. That is, social networks are constructed egocentrically and not necessarily restricted to a physical place. A simple analogy would be the 'conventional' social networking sites (e.g., Facebook). Many of the categories and dimensions used, however, should be positioned along a continuum for the changes might be taking place to varying degrees in different milieus. This is particularly true in regions where the digital divide is still remarkable and it is within these regions where most of the emigration is originated. These differences in the needs of people have lead, we think, to a variety of Internet sites that provide access to different levels of information:

2.1 Maintaining Macro-Connections

The project we are working on is focused on how migrants use technology to get connected with daily life in their home communities. It has been reported that there are some differences in the way people use the Internet before they relocate, after they have relocated and when migrants have settled in [19]. Generally, research has focused on the stages after relocation [3, 5, 20-23]. Furthermore, most studies of Diasporas using the Internet have been centred on how migrants make use of the Internet at a macro level. That is, connecting with others from the same ethnic group or same nationality (e.g., Indians in the USA: usaindian.net) which can help them to obtain a broader perspective on an issue of collective interest. Most of these websites are referred in literature as Diasporic websites since they connect members amongst the Diaspora. The majority of Diasporic websites, however, are used either for instrumental purposes or for nationwide discussions on topics of common interest such as national politics [3] or less explicit aspects such as the construction of identity [5]. Interestingly, because of their discursive nature, some of these websites influence the way migrants' identities are reconstructed whilst abroad [22]. In that sense, notions of home can be also permeated since home has been also considered as an expression of one's identity [24]. In [18], *Glocalized networks* are considered as communities of shared interest rather than communities of shared kinship or locality (space). Similarly, diasporic websites seem to gather people from different backgrounds with the same interest of retaining their national, social and/or cultural identity.

Drawing on *Networked Individualism*, by [18], it is highly possible that most of the migrants who are on their own living abroad are actually maintaining selected interpersonal ties and getting connected with global aspects of politics, economy and other subjects. In the case of Mexican immigrants in the USA, it has been reported that they keep strong connections to their home country either by watching Mexican TV or placing telephone calls regularly and, those who can, by travelling home at least once a year [25]. In addition, because of different factors, including the immediacy of their home country, most Mexicans have a considerable number of other countrymen living nearby which facilitates the maintenance of their identity.

2.2 Maintaining Local-Connections

At a lesser scale, there are networks aimed at connecting members of a bounded community. These community networks usually provide practical services to support and facilitate local life in towns or neighbourhoods [26-28]. For instance, there are services to send complaints to the city hall about particular issues of the community such as public safety. More often than not, information is circulated using e-mail, newsgroups or online forums. Online discussions

range from the efficiency of the local garbage collection service to collective measures to tackle burglaries. Some instances of these sites might be found in several online directories of local information websites such as villagesonline.com and hometownwebsites.net. A couple of these community networks have been studied extensively in the past and it has been reported that the Internet reinforces real life scenarios i.e., more cohesive societies will find the Internet as an opportunity to reinforce their condition [29]. In the same way, more active citizens find internet as a medium to facilitate their labour. Similarly, there are also governmental websites that provide local information for visitors, government-related information and access to community resources (e.g., utilities payment system). In the case of Mexico, in 2002, municipalities were urged to create municipal websites due to the new Federal Law of Transparency and Access to Government Public Information. This led to an unprecedented presence of Municipal governments' websites, albeit the aim of these governmental websites is vastly different from diasporic websites and community networks.

2.3 Supporting Cross-Border Local-Connections

Transnational communities are global communities and at the same time intensive local. Due to the social intimacy allowed by the physical proximity with the home country, many Mexican immigrants in the USA seem to maintain their identity without too much trouble. We have also noticed that, at least online, the identity and contact maintained by Mexicans is held at the village level rather than national level. To date, we have not found a single website trying to include the entire Mexican community in the USA, not even at the state level, but rather websites about geographically bounded communities as in the "little boxes" paradigm [18]. Even more, the large majority of these websites have hired their own hosting and domain (e.g., Moyahua.com) which might contribute or be the result of their rootedness to their home communities. Holding onto their village-based identity might be a result of the high concentration of Mexicans from the same community of origin at specific areas in the USA (clustering). In this sense, HWs might work as a reunion point where localised topics can be discussed across the borders such as the formation of a committee for church restoration which may not necessarily involve only people living in the hometown thus providing support for the maintenance of transnational connections. Moreover, HWs are a platform for reconnecting with old friends and keeping in touch with daily life in their hometowns. It can be argued that HWs are an alternative, supplementary way of maintaining strong connections to the homeland. In that sense, HWs afford practices, embedded in the content of the website, not easily identified such as manifestation of identity, homesickness and community attachment.

But, HWs are not novelty. For many years, media has reported anecdotal evidence of the existence of HWs in Mexico [30, 31], most of them initiated and sponsored by expatriates who volunteer to do the technical work. Their existence is, to a certain extent, understandable, provided that there are more than 10 million Mexican born people in the USA and the figures can be twice as large if Mexican descent is considered [32]. One of the peculiarities of HWs is that they are mainly aimed to be used by migrants to maintain them informed and connected to daily life in their hometowns. Through HWs, migrants and non-migrants can maintain a sustained flow of *exchanges* to and from the community. These exchanges, however, seem to be characterised by their non-instrumental nature where the action of contacting is more important than the content of communication itself [33].

Motivated by the idea of investigating the online presence of HWs in Mexico, we carried out an exploratory study in 2007 which revealed the online presence of more than a hundred active HWs created with the aim of reconnecting migrants of the town scattered throughout Mexico and the USA [34]. Those websites include different communication services such as news bulletins, text-based tools (e.g., guestbooks, chats, forums), and photo sharing systems. In addition, most of them include local information about the community such as regional dishes, recipes and history. The motivation behind the creation of these websites is still unclear and might vary across different regions, albeit some clues may be obtained from the notions of social capital afforded by social networking sites [35].

3. RESEARCH QUESTIONS

Based on the discussion presented before, we aimed to understand the communication patterns of migrants by characterizing their usage of the HWs. This work was guided by the next questions:

- What is the nature of communication exchanges?
- How do communication exchanges fluctuate over time?
- What kind of content is more attractive for users?

4. METHODS

This study focuses on the analysis of SanLuisdeLaPaz.com, an HW in Mexico. After a preliminary analysis of characteristics, content and apparent level of activity emerging from a previous work [34], we identified this site as worthwhile for further exploration. We established contact with the administrators in March 2007 and proposed them to conduct a study of the use of their site. Through them, we contacted and interviewed twenty migrants living in the USA. Preliminary analysis of these interviews has been conducted. We also contacted and received the support of a Hometown Association (HTA) from San Luis de la Paz in California. Our ongoing research project aims at understanding the role of the website on providing relevant information for people of San Luis de la Paz living away as well as understanding how technologies can enhance the sense of community connectedness and socio-civic participation. This paper describes the first stage of our project that focuses on the analysis of the type of information conveyed through the website over a period of one year.

We used a content analysis technique following methods suggested by [36]. Three main types of content were available at the time of the analysis: News notes section, a Photo sharing section, and a Guestbook. Coding schemes for each source of data were defined from an initial analysis of a sample of items (10-15%). At least two rounds of redefinition and improvement were done for each coding scheme to achieve a good level of robustness before the data were coded. All items (photos, guestbook entries, and news notes) were then codified independently by each author with percentages of agreement of 73.2% (photos), 82.6% (entries) and 83.1% (news notes). Differences were discussed by both coders until agreement was reached. The data were then analysed to obtain correlations, and descriptive and inferential statistics.

5. RESULTS

5.1 The Website of San Luis de la Paz

San Luis de La Paz is a municipality in the State of Guanajuato in central Mexico with a population of 101,370 inhabitants in 2005. According with National Institute of Statistics and Geography in Mexico (INEGI), San Luis de La Paz is considered a municipality with a high degree of migration.
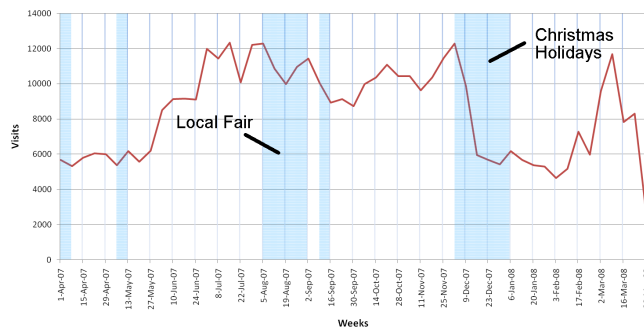
Figure 1. Weekly visits throughout the year (Apr07-Mar08)

Created in 2000, SanLuisdelaPaz.com is a HW that according to their authors is aimed to promote the municipality and place the town closer to those born there but currently living away and nostalgic for their homeland. The site provides a number of information services including general information about the municipality such as history, culture, local handcrafts, local legends, traditions and regional dishes, blog-like comments by the webmasters, video and photo galleries, links to regional newspapers, advertisements from local business, chat room and weather conditions.

SanLuisDeLaPaz.com serves to inform users about current affairs in the municipality through reports of locals. In the same way, people from San Luis de la Paz can contact others through the message board section (guestbook) or the chat system. During our interviews and meetings with the administrators, they proudly commented on how the site has served to reunite friends who had not seen each other for a long time and to find out about the whereabouts of immediate family members.

The owners of the site, who reside in the USA, work closely with their siblings in San Luis de la Paz to maintain a continuous stream of news about San Luis de la Paz. For instance, in 2007, one of the historical buildings in town was hit by a motorist and severely damaged. This event, which was very unlikely to be reported by a state or national online newspaper, was accounted with photos and comments. For some weeks, the photos of the affected building generated several comments. Those away could share the concern of locals about the incident and closely followed the actions of the government to fix the building.

Since 2006, San Luis de la Paz.com has been adding richer media services with different types of audio and video content. Music tracks of local bands are featured with an embedded player. Public events such as parades, shows, or ceremonies are video recorded and published on the site, some of them even broadcasted live (e.g., religious processions in December). Finally, the local radio station has been recently broadcasting their emissions from 14:00 to 23:00 hrs during the weekdays. All those services provide new ways to interact and be aware of daily life in the hometown for those living away.

5.2 Information Content of the Website

Our analysis focused on the following three types of content: News, Guestbook entries (mailbox), and Photos. We analysed the content generated from April, 1st 2007 to March, 31st 2008. We used this timeframe since the service to upload photos was available from that month onwards. Also, the guestbook, temporarily shut down as a result of misuse, was back online in March, 2007. The data were transferred from web server logs to a local database. We developed a software tool to facilitate the codification of content and elaborate

reports. These data were subsequently analysed using standard statistical packages.

Figure 1 shows the average weekly visits during the analysed period. The relatively sustained traffic during the second semester of the year may be following some major events in the community such as the Local Fair (August), Independence Day (September), Christmas (December). The average number of weekly visits is 8,434.26 (SD 2,574.65), with a maximum peak of 12,331 (first week of December) and minimum low of 2,697 (last week of March). According to the administrators, the traffic has been increasing over the years, but it has been at this level for at least a couple of years.

5.3 Characterization of Exchanges

The website of San Luis de la Paz is a transnational platform that serves to connect migrants and non-migrants in many different ways. On the one hand, it works as a moderated, centralised node from which information is broadcasted by a reduced number of volunteers. On the other hand, it also works as an open platform where (moderated) content created by members of the community freely flows outwards and inwards. The website is a place where people can obtain information, reconnect with others, and share part of their life. As mentioned earlier, the type of exchanges and information sharing is illustrated with the analysis of three types of content: guestbook entries, news notes and photos.

5.4 Guestbook Entries

This text-based channel is a typical guestbook adopted and adapted by users of the website as a general communication tool. Messages are usually short and some of them also include emoticons. During the period analysed, a total of 1,019 entries were posted. Table 1, shows the breakdown amongst six common categories of guestbook entries identified through content analysis.

5.4.1 Greetings

These types of messages are aimed to communicate awareness of their presence and to reassure a type of relationship between members of the community. Some of the greetings are directed to specific persons such as acquaintances, family or friends. There are also general messages where they do not include any name in particular but they want to greet a particular neighbourhood, former classmates or migrants of San Luis de la Paz in the USA.

5.4.2 Personal Communication

These kinds of messages are of a *private* nature. Messages are meant to have a specific recipient and a sender. Here, the guestbook is used as a supplement of typical means of communication (e.g., e-mail, IM, chat) and at times as a substitute. Examples of this category are expressions to show love and affection to emotional partners as well as expressions of support to members of the community occasionally.

5.4.3 Community Life

Messages of this category are related to particular events happening in the hometown at a specific time. These messages would not have any sense if sent at any other time of the year. Some are invitations, reports of local events and congratulations. Also, some of these messages are aimed to describe the current conditions in the town (e.g., weather), which may convey certain sense of closeness to those living away. Examples of this category are birthday messages, Mother's Day, Christmas, and detailed narratives of daily life in the hometown (e.g., the community ambiance preceding the local election, the beauty of the full moon during Easter in San Luis de la Paz).

Table 1. Guestbook categories and general statistics.

Categories	# of Entries	%.
Greetings	472	46.3
Personal Communication	184	18.1
Reconnect Social Networks	120	11.8
Community Life	113	11.1
Information Request	83	8.1
Other Information	47	4.6
Total	1019	100

5.4.4 Reconnecting with Social Networks

Many users benefit from the communal nature of the platform to try to reconnect with people from the community. Some of the messages are explicitly aimed to reconnect with family, old friends or classmates they have lost contact with. In the same way, other messages are aimed to get in touch with anyone who wishes to contact them, posting contact information such as their postal address, e-mail or telephone.

5.4.5 Information Request

The purpose of these types of messages is obtaining information about certain issues. They are open questions directed to the community in general or specifically to the webmasters. Examples of these messages include requests, suggestions or simply to ask about certain aspects in the community (e.g., the progress of a community project).

5.4.6 Other Information

This is a general category used to codify messages not suitable for any of the other categories. Some of these messages are self-reflections or expressing ideas, points of view about topics of interest to the community. Also, it includes thoughts or poems. Moreover, some messages are jokes or chains that might be found in email chains. Finally, some messages are classified-like as found in newspapers.

5.5 News Notes

This channel provides one-way communication generated by the webmasters who redact and publish notes about different topics concerning the community. Some of these notes are to report on events occurring in the community. The webmasters post these notes before, during and after events. Depending on the importance of the event, they might decide to publish information in advance (e.g., the programme of the event) which is used a way to promote the event. After the events, retrospective notes are published with a newspaper-like style, informing what happened, when and who was there. Of those events reported, some of the events reported are carried out at a regular basis (e.g., quarterly, yearly) whereas some others are one-off events. During the period analysed, a total of 295 news notes were posted by the webmasters. Table 2, shows the breakdown amongst four categories of news notes identified through content analysis and defined in the following lines.

5.5.1 Socio-Civic Events

These types of news are either social or civic events happening in the community excluding all religious events. The events reported are usually organised by municipal authorities. Examples of Socio-Civic Events are Valentine's Day, Mother's Day, Independence Day, local elections, and occasional football soccer matches.

5.5.2 Religious Events

These types of news are of a religious nature. These events are mainly organised and sponsored by the local parish. Also, this category also includes traditional events that are rooted in the social fabric of the town. Examples of Religious Events are Christmas, Day of the Dead, religious processions and celebrations to venerate local saints.

5.5.3 Informative Note

These notes are created to inform the community about certain facts that happened in town or closer by. Some of these notes are well elaborated, demanding from the webmasters a considerable effort to investigate the topic or interview people. Some others are not directly related to the community but still relevant for them. It seems that some of these notes are aimed to create or increase the local proud of the community as well as the sense of uniqueness of the regional culture i.e., strengthen the local identity. Examples of Informative Notes are description of local historical places, historical information about the community as well as celebrations in the USA such as Thanksgiving.

5.5.4 Other Information

This category includes several kinds of information that are not published very frequently but their content seems to be of certain importance for migrants and non-migrants. Examples of these are notes about the current atmosphere and weather in the homeland, information about private social events (e.g., weddings, parties), information for users (e.g., maintenance of the website), unexpected events (e.g., deceases, accidents, natural disasters) and finally some sponsored advertisements are also published.

5.6 Photos

This type of content provides an opportunity for users to communicate something more than just words. Although people are granted a space to describe the photo, not all of them used it for that purpose. Therefore, our analysis was based on what can be seen on the photo, but whenever we could, we used the photo description provided by authors to understand it better. Using the information provided by users and descriptions, we classified the photos by origin. We found that 71% of them are sent by members of the community living away while 12% by people still living in San Luis. The rest 17% could not be identified. Based on the content analysis, we identified different types of photos:

Figure 2. Some examples of photos uploaded to SanLuisDeLaPaz.com. A youngster posing for for the camera (left); Another young man at work (right).

5.6.1 Local Life

Photos belonging to this category are about local landscapes or simply to show what a typical day in San Luis de la Paz is. Also, some photos are about local events occurring in the community. Examples of this category are photos about the regional fair, a local football tournament, landscapes, streets, and photos showing the progress of certain community projects. These photos can be used to construct a profile of the community.

Table 3. News categories and average reads per category (*x*=mean, *s*=standard deviation)

Category	Reads (*x*, *s*)		N	%
Socio-Civic Events	239.79	179.52	133	45.1
Informative Note	223.76	128.68	45	15.2
Religious Events	200.75	127.10	64	21.7
Other Information	174.74	214.26	53	18.0
Total	**217.19**	**170.73**	**295**	**100**

5.6.2 New Life

These types of photos show the life of those living away from San Luis de la Paz. Photos of this class usually show the daily living, contrasts with local life, travel as well as events and activities carried out by migrants. Examples of these photos are travellers, people with some belongings, people at work or at parties in their new contexts (mainly in the USA).

5.6.3 Relationships

These photos are mainly about friends and family. It also includes photos where the relationships are evident. Also, certainly one of the most popular usages is the self-portrait where people may be showing the community an updated look of themselves. The reasons behind publishing a self-portrait are somewhat unclear.

5.6.4 Other Photos

Photos in this category were allocated here because they were not easily discriminated or they are not directly related to the community (e.g., a photo of their favourite football team).

6. USER INTEREST ON INFORMATION

The content shared (photos, news notes, and guestbook entries) and the types of each can raise different levels of interest for users of the website. One rough way to understand the level of interest is by counting the number of views or reads that a particular item received. We had these data for News and Photos only, the guestbook does not log this type of activity.

Following Table 2, we can see that amongst the four main categories of News, the Socio-Civic Events are the ones that people read more. We found that the difference in the average 'reads' amongst categories approaches a level of significance ($F_{(3,291)}$=1.113, *p*=0.099), albeit a Bonferroni post-hoc analysis revealed no differences amongst the categories.

Following Table 3, we can see that amongst the four main categories of Photos, the ones coded under the Local Life category are viewed more. We found that the differences in the average views amongst categories approaches a level of significance

Table 4. Photo categories and statistics(*x*=mean, *s*=standard deviation)

Category	Views (*x*, *s*)		N	%
Local Life	907.18	368.38	84	8.3
New Life	784.36	675.89	316	31.1
Relationships	769.46	350.56	583	57.4
Other Pictures	738.72	343.49	32	3.2
Total	**784.53**	**478.13**	**1015**	**100.0**

($F_{(3,1011)}$=2.141, *p*=0.093). A Bonferroni post-hoc analysis revealed that the difference between Local Life and Relationships also approaches significance levels (*p*=0.082). The rest, however, presented no differences amongst them.

Again, this is a rough way of trying to understand the interest of users on particular content. Further research is needed to find out more about this particular issue.

7. UNDERSTANDING THE TEMPORAL PATTERNS OF THE EXCHANGES

To facilitate the analysis and visualization of data, we decided to group the information weekly. We focused on date of creation and views of the content. Unfortunately, the number of views for Photos and News notes are accumulated so we were unable to understand when people actually accessed the item. Instead, we computed a weekly average based on the number of views relative to the week of creation.

A priori, we expected that high traffic on the website and creation of content would be correlated. In the same way, we also believed that during certain weeks such as the festivities the creation of content would increase. In general, there was a significant positive correlation between the number of photos and the site traffic (rho=0.305, N=53, p=0.026, two-tailed).

Figure 2 shows the weekly variations of the content creation throughout the year. As it can be seen, the pattern is a bit irregular but still there are clearly some peaks where activity increases. We found that there is a significant positive correlation between the number of Photos uploaded and the number of News published (rho=0.390, N=53, p=0.004, two-tailed). It is still unclear if one influences the other or if there is an additional variable involved such as the time of the year (e.g., holiday season).

Based on the patterns of visits, we classified weeks in high and low traffic weeks. We considered high traffic weeks those with more than 10,000 visits. The analysis of content created on weeks of high vs. low traffic revealed that there is no significant difference in the number of guestbook entries between high and low traffic weeks ($F_{(1,51)}$=0.494, *p*=0.485). Similarly, there is no significant difference in the number of news published between high and low traffic weeks ($F_{(1,51)}$=1.130, *p*=0.293). However we found a significant difference in the number of photos shared between high (avg. 30.98 photos) and low traffic weeks (avg. 57.24 photos), $F_{(1\,51)}$=5.077, *p*=0.029. We can conclude that even that the website as a whole experiences more traffic at certain weeks of the year, this behaviour does not have any effect on content production, with the exception of photos. In practice, this means that during certain times of the year, perhaps during national or local holidays, the number of "lurkers" increase [37].

The analysis of accesses to content created on weeks for high vs.

Table 5. Weekly average of items created per High and Low traffic weeks (*x*=mean, *s*=standard deviation)

Content	Traffic					
	Low N=35		High N=18		Total N=53	
	x	*s*	*x*	*s*	*x*	*s*
Guestbook	20.20	9.81	18.33	7.69	19.57	9.11
News	5.20	3.49	6.28	3.51	5.57	3.50
Pictures	16.91	9.57	23.72	11.94	19.23	10.82

Table 6. Weekly average item views per High and Low traffic weeks (x=mean; s=standard deviation)

		Traffic					
		Low			**High**		
Class		**N**	**x**	**s**	**N**	**x**	**s**
News	Info. Note	32	17.6	15.14	13	8.94	4.52
	Other Info.	42	11	20.31	11	6.78	4.05
	Religious	47	18.4	22.64	17	12.77	12.17
	Soc-Civic	91	16.9	37.12	42	14.89	15.5
Subtotal News		**212**	**16.2**	**28.64**	**83**	**12.45**	**12.78**
Total News		**N=295**	**x=15.12**			**s=25.24**	
Photos	Local Life	47	40.5	21.53	37	30.39	5.06
	New Life	216	60.2	59.44	100	33.94	35.33
	Other Pic.	20	36.8	26	12	24.53	4.84
	Relations.	403	58.7	44.17	180	29.9	21.74
Subtotal Photos		**686**	**57.2**	**48.36**	**329**	**30.98**	**25.36**
Total Photos		**N=1015**	**x=48.73**			**s=44.04**	

low traffic revealed that there is no significant difference in the average number of times a note is read between News published during high and low traffic weeks ($F_{(1,293)}$=1.293, p=0.256). However, we found a significant difference in the number of times a photo is viewed between photos published during high (avg. 30.98 views) and low traffic weeks (avg. 57.2 views) ($F_{(1,1013)}$=85.638, $p<0.0005$).

We decided to take this analysis to the level of types of News and Photos to look for differences in number of views. The analysis of the individual categories of news notes revealed that there was a significant difference in the average number of times an Informative note is read between High and Low traffic weeks (t=2.918, df=41.002, p=0.006, two-tailed). We did not find significant difference for the Other Information (t=0.675, df=51, p=0.503, two-tailed), Religious Events (t=0.975, df=62, p=0.334, two-tailed) and the Socio-Civic Events categories (t=0.339, df=131, p=0.735, two-tailed).

The analysis of the individual categories of Photos revealed that there was a significant difference in the average number of times a photo is viewed between High and Low traffic weeks for all categories: Local Life (t=3.096, df=52.353, p=0.003, two-tailed), New Life (t=4.482, df=295.116, $p<0.005$, two-tailed), Other Photos (t=2.052, df=21.140, p=0.053, two-tailed) and Relationships photos (t=10.523, df=575.877, $p<0.005$, two-tailed)

8. DISCUSSION

The types of content shared in San Luis de la Paz.com are illustrative and confirm some of the previous anecdotal evidence regarding the value of these sites for migrants. People use these sites to reconnect, be part of the community life and participate in establishing direct, peer-to-peer communication. However, we found revealing that about half of the entries of the guestbook correspond to simple greetings which can be understood as a manifestation of continuous presence [33] and expression of interest in the community. In particular, messages that are general greetings directed to the town or a neighbourhood illustrate a type of interaction previously observed in rural radio [38], where traditional
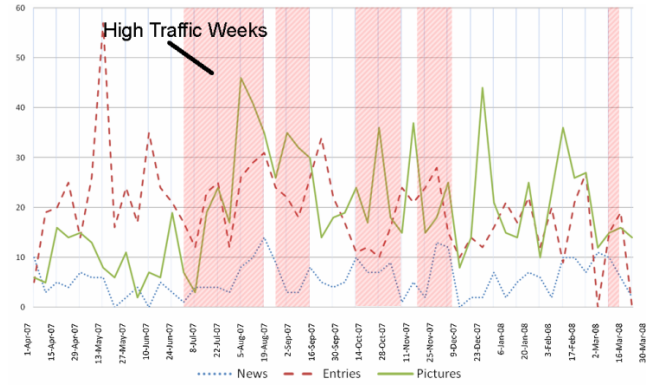

Figure 4. The creation of content throughout the year (Apr07-Mar08)

cultural patterns were slightly modified to absorb new technologies. Also, from the total of messages, five percent (57 messages) were written during the Mother's Day week. Most of them related to the festivity. Finally, twelve per cent of the messages are explicitly aimed to reconnect with others, many of them trying to provide as much information as they can to locate an old friend, classmate, or neighbour, and even posting regularly until they find the person. This is particularly relevant for a scattered community such as San Luis de la Paz since many migrants and non-migrants have lost contact with friends and acquaintances after relocation.

We also found revealing the types of photos people share with others. Most photos present loved ones, particularly newborns, new friends, and new partners. However, most of them are actually self-portraits. We believe that this might reflect their desire to show an updated look. This clearly contrasts with an intuition we had as we expected more photos of the places they moved to. Instead, people share what they have and what they do for fun. In terms of the interest created by particular content on readers, news notes of socio civic events seem to be more accessed as well as photos about the local life in San Luis de la Paz. Interestingly, despite the fewer number of photos about local life, they are actually viewed more.

It is still unclear how having access to this information can turn into more participation in community life, but previous studies in community networks can provide initial clues. In [29], Carroll *et al* reported that, depending on individuals, the Internet can indeed enhance community participation by 'mediating the link between the disposition to be civically active and the actual activity of making the activity easier'. Moreover, Internet services might be much more relevant for long-distance civic participation as migrants are considered to be 'social agents imagining change and progress' [39]. Therefore, understanding how HWs are actually being used can provide some initial clues on their role for enhancing community participation.

The analysis of temporal patterns shows that there are no significant differences in the number of items created during High Traffic periods, excluding photos. In other words, there is a continuous stream of content which remains steady over the year. The activity of the website in December is particularly interesting since there is a clear 'valley'. We believe that is during that time that migrants travel to San Luis de la Paz, thus they do not visit the website regularly. This would also explain fewer visits in January for migrants have just returned to the USA thus having a clear picture of the situation in their hometown.

8.1 The role of HWs

We believe that understanding the role of HWs is fundamental for further studies as well as the design of better communication services. In [19], Hiller and Franz presented three main phases of Internet use associated with the migration experience: pre-migrant, post-migrant and settled migrant. We found out that this website is used mainly during the post-migrant and settled migrant phases as a way to stay connected with the community of origin and maintain old ties.

The large majority of users seemed to be migrants, non-migrants and return migrants originally from San Luis de la Paz which basically provided an appropriate setting for in-group discourse only, thus enabling *Ludovicences* (Gentilic for people from San Luis de la Paz) to make very particular interpretations of the images and information conveyed on the Internet site [40]. Although the site counts with information that could be potentially read by visitors who reached the site by accident such as historical information, we believe that this information is indeed used by members of the community to reinforce their local identity as this has been described previously as a defensive reaction to fast-paced change and globalization [41]. Moreover, this framework allows us to see the situation of San Luis de la Paz as an exposed community where the local identity seem to be endangered by the intrusion of foreign values which, paradoxically, are also conveyed through the website by means of images of the New Life and Self-portraits. This issue was corroborated by some users of the website interviewed who were not totally convinced about some people sharing photos as if 'they were gang members'. During our conversation with users of the website, some other migrants referred to their feelings of belonging to the community when talking about the community projects they were involved in. Other users referred to the uniqueness and the importance of the town in the history of Mexico. This *localistic* discourse was recurrent during the interviews and we believe this is due mainly because of a strong local identity. We therefore think that migrants use the website as one of the strategies to maintain their local identities. When interviewing some of the migrants, they proudly commented that some of the traditions of the town are resembled in California. Interestingly, on the other hand, some migrants also commented that youngsters in San Luis de la Paz are starting to imitate their counterparts in the USA in the way they dress since they think it is *fashionable*. In this way, the website of San Luis de la Paz works as a bidirectional exchange of culture and practices which seem to delineate some aspects of the social life of migrants and non-migrants. Finally, another concern expressed by users of the website is the moral values that are being conveyed by the website since it is a public space and, although privately owned, there seem to be a sense of collective ownership. A few of them referred to some photos of girls very "uncovered" which they said they are off-topic and should be moderated because children also visit the website. Finally, others commented that SanLuisDeLaPaz.com should not be considered as a local dating site to look for a partner.

In her work on Transnational Communities, Levitt reports on how sending communities are gradually being influenced because of 'social remittances' which are the ideas, behaviours, and social capital that flow from the receiving to the sending communities [7]. This is particularly interesting as migrants themselves have to suddenly shift from being in a 'little box' to a more individualistic world such as the one in the developed countries [18], thus there is a clash of social practices between the two worlds that migrants and non-migrants must learn to deal with. In this case, the website works as a conduit through which social remittances flow by means

of imagery. Therefore, the website seems to be a medium through which both the receiving and sending communities merge together to varying degrees.

8.2 The Future of HWs and self-sustainability

It is debatable whether the current services implemented on this HW are a bit rudimentary but certainly users have been able to adopt and adapt any channel of communication available for their own purposes. As more novel services are available for public use (i.e., through APIs) many of these websites will be gradually incorporating novel devices and services. Perhaps in the near future another killer application such as MySpace or Facebook will devise a window of opportunity in this niche incorporating current HWs, making them a lot easier to deploy and providing access to a more variety of devices such as public webcams. There is no doubt that this market niche is huge and still unattended. For instance, during 2006 and 2007, the Bank of Mexico reported that more than US$ 46 billion in remittances were received by Mexican families [42]. We have our reserves regarding the long term maintenance of the HW as it is. Many of these websites are initiated by volunteers who are investing money of their own in the websites. An interesting feature that can possibly make these communities self-sustained would be online payment systems such as PayPal which could facilitate the collective ownership of the websites. Another interesting feature that can possibly increase the sense of ownership over the HW is community-moderated content where users, for instance, are enabled to censure inappropriate content. Such features will enable ordinary users to participate collectively in the creation and maintenance of a HW that effectively reflects the reality of the community.

9. CONCLUSIONS

We presented encouraging results toward understanding the nature of interpersonal and community exchanges for transnational communities. This work shed some light on understanding the usage of relatively simple instruments. Migrants and volunteers in the hometown were using a guestbook and a photo sharing tool to convey community information that cannot currently be obtained by using any other mean.

We also presented several types of information that *Ludovicences* are sharing. On the one hand, News flows out of the community created and published by the administrators. This intrinsically limits amount and type of information to be displayed on the website. On the other hand, migrants managed to adapt the available means of communication to server their needs. Several different types of information were found from which can be highlighted some of the uses of the online tools: to reconnect, to strengthen their local identity, to have some presence in the hometown and to let other know about their current activities. Also, we found that, although complex, temporal patterns of communication exist and very often they are shaped by socio-civic and religious calendars.

Undoubtedly, there are several implications for design that need to be taken into account to better support the conveyance of information about the community and hence to better off the perspective of those absent for months and even years. There are several not-so-new technologies and/or services that could be used to enhance the current HWs. The challenge is designing in accordance with the context. For instance, a public webcam at the main square of the town will be certainly useful. However, there should be people-wise applications on top of the mere basic functionality of electronic devices. This is not an easy task to do. We have seen many examples where despite the novelty or appropriateness of a design, users always find new unexpected uses

[43]. Finally, we believe that is important to include interactions with people that are often left outside conversations because of the digital divide. This could be done by designing some sort of community kiosks where people can access without restrictions.

With no doubt, there are socio-technical implications that need further exploration. More work is needed to fully understand the use of technology in this particular context but an initial thought is that, to some extent, the different services of the website complement each other to sustain a continuous stream of contact with the community. It is still unclear how the services (or channels) actually supplement each other or whether some of the posts or photos are in fact responses to particular events occurring in the town. We will report on these and other issues in future publications.

10. ACKNOWLEDGMENTS

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