NET AND JET

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The Internet use, travel and social networks of Chinese Canadian entrepreneurs

How does the connectivity afforded by new communication and transportation technologies affect entrepreneurs' geographic and social closeness to each other? Using qualitative and quantitative evidence we analyse how Chinese Canadian entrepreneurs combine the Internet and airplane travel in their business activities. Our results show that the use of new communication and transportation technologies are positively related to the creation and maintenance of 'glocalized' networks, a function of both local embeddedness and global outreach. We find that online interaction cannot replace face-to-face interaction; travel abroad is crucial for adding a human touch to glocalized networks. Moreover, while technologies help to liberate communication from being local, Internet use and travel have limited impact on the ethnic diversity of the entrepreneurs' social networks.

Introduction

Many have wondered if the proliferation of new communication and technologies loosen the constraints of spatial and social closeness on networks. Historically, people have been more likely to interact with those who are geographically and socially close. Geographic proximity increases the opportunity of forming social ties as costs of communication, transportation, and coordination tend to grow with geographic distance. Wellman (2002) has used the term 'little box' (after Reynolds' 1962 song) to describe homogenous, densely knit groups within geographic boundaries. Members of little-box type networks tend to be constrained geographically, socially, and cognitively.

As new communication and transportation technologies have made it easier for social networks to transcend geographic boundaries, 'glocalized' networks – with both intensive local embeddedness and far-flung global connections – have emerged. Does this mean that the effect of distance is now 'dead' – or at least trivialized, as some commentators have declared (Cairncross 1997; Ong & Nonini 1997)? Do new technologies help bridge social distance by affording access to more diverse milieus?

We use evidence from our study of Chinese Canadian immigrant entrepreneurs to examine the interrelationship of technological connectivity and social connectivity across geographic and social boundaries. We examine how Internet use (*net*) and travel abroad (*jet*) affect the geographic distribution and ethnic diversity of entrepreneurs' networks. Both migration and entrepreneurship are risky processes that depend on and create social networks. Moreover, many immigrant entrepreneurs have taken advantage of the distance-compressing and time-zone spanning properties of new communication and transportation technologies to extend their business transnationally (Chen 2006). The current public fascination with information and communication technologies is best understood in conjunction with transportation technologies, in this case, long-distance airplanes. Communication and transportation do not belong to separate realities. They are intertwined.

Our data come from our transnational immigrant entrepreneurship (TIE) Study. We have used a mixed methods design to collect data through participant observation, in-depth interviews, and a random sample survey. Our findings have both theoretical and practical implications.

First, notwithstanding net and jet, geographic and social distance still matter to networks and their production of social capital. While some networks are glocalized and ethnically diverse, most remain dominated by local and co-ethnic ties.

Second, the use of new communication and transportation technologies is positively related to larger networks, both locally and globally. However, the Internet cannot overcome all barriers imposed by geographic distance. Overseas travel is crucial for adding a human touch to glocalized networks.

Third, while geographic proximity has become less crucial to communication as net and jet help to liberate sociability from bounded locality, they have limited impact on the ethnic diversity of entrepreneurs' networks.

State of knowledge

Scholarly discussion of spatiality and networks can be dated back to Simmel (1908), who argued that spatiality was both the condition for, and the symbolic representation of, social interaction. Most network ties tend to be socially homogeneous and spatially close. The sheer ecological opportunity for network building often depends on geographic proximity. People are more likely to form

ties if they share foci such as schools, the workplace, or voluntary organizations where social activities are organized (Feld 1982). Thus, neighbours are more likely to become friends (Festinger *et al.* 1963). Workers communicate more frequently with colleagues who live near-by (Baker 1984; Quan-Haase & Wellman 2006). Most strategic business relationships are local for the importance of timeliness and face-to-face contact (Saxenian 1994).

However, not all social ties are locality bound. Geographically dispersed networks have carried information, knowledge, resources, and people for millennia (Bender 1978). In pre-Internet times, a chain of network contacts could sometimes transfer information over sizable geographic distances (Milgram 1967). This led to the over-stated notion that we live in a small world of six degrees of separation. In 'Community without Propinquity', Webber (1963) posited that community could be maintained at a distance on the basis of professions or organizations, and Mok *et al.* (2007) found much contact in pre-Internet times with distant friends and relatives.

Compared with membership in local associations, membership in geographically dispersed associations that transcend geographic distance is associated with higher levels of social capital (Lin 2001). Networks with global ties are one of the most important factors that affect corporate internationalization (Rialp-Criado *et al.* 2002). While highlighting the importance of geographic proximity to firms' investment decisions, Sorenson and Stuart (2001, p. 1584) also found that social networks 'provide the mechanism for the erosion of geographic and industrial boundaries'.

Homophily is a powerful network law. Individuals tend to form ties with those who share similar attributes, both ascribed (e.g. class, gender, and ethnicity) or achieved (e.g. education, occupation, or martial status). Ethnicity can compose a deep network divide and co-ethnic ties often dominate individuals' networks (McPherson *et al.* 2001). Shared roots and routes – the place of origin, language, coded cultural knowledge, and immigration experience – have historically provided the basis for connection and interaction among ethnic members. The lack of socio-economic resources valued by mainstream society and racial discrimination encourage ethnic members to strengthen co-ethnic networks that may help them to circumvent structural disadvantages (Lin 2000). Nonetheless, networks can transcend ethnic boundaries. Those who have more education and higher socio-economic status tend to have more ties to members of other ethnicities (Marsden 1987).

The Internet and glocalized networks

Meaningful relations can be maintained online between in-person encounters, providing social capital (Haythornthwaite & Wellman 2002; Katz & Rice 2002). Internet use is positively related to the sense of community (Quan-Haase *et al.* 2002). A meta-analysis of 16 surveys conducted between 1995

and 2003 shows a positive relation between Internet use and contact with friends over time (Shklovski *et al.* 2006). Recent research also identifies a positive relation between Internet use and network size. In the USA at least, email users have larger networks than non-users (Boase 2006; Zhao 2006; Wang & Wellman 2009).

Perhaps the most revolutionary effect of the Internet and other new communication and transportation technologies is that they make it easier, cheaper, and faster for information and interaction to transcend geographic boundaries. The Internet is the latest chapter in a historical process of liberating sociability from locality. Research in international entrepreneurship has shown that the Internet enhances entrepreneurial firms' capability of screening and connecting with potential partners in the target market (Arenius *et al.* 2005). New technologies also help movers to maintain their networks over long distances. For example, recent Canadian movers with Internet access have more contacts within and beyond their neighbourhood than those without (Hampton & Wellman 1999). Moreover, Internet access helped these recent movers to build communication and social capital with network contacts at a distance (Hampton 2001). Other research has shown how migrants from Newfoundland to Alberta used the Internet to make new contacts, maintain old contacts, and find lost contacts (Hiller & Franz 2004). New communication technologies facilitate international migrants to build transnational communities (Panagakos & Horst 2006). Affording easy access to sounds and images from the home country, new communication technologies enable immigrants to have stronger and richer connection with their home countries or with their global diasporic communities (Miller & Slater 2000; Panagakos 2003). Thus, it is expected that

   H1: Internet use is positively related to both local and global connections.

Jet and glocalized networks

Social networks are conditioned by geographic distance even in the Internet age. People still make connections within local settings defined by geographic, organizational, or ethnic boundaries. Comparing the relation of geographic distance and the frequency of contact in the pre-Internet 1970s and the post-Internet 2000s, Mok *et al.* (2009) found that the frequency of face-to-face and phone contact remained sensitive to geographic distance. Foci, social and physical gathering places are still the primary socio-spatial contexts around which people make connections. Analysing millions of emails exchanged among students, faculty, and staff in a university over a year, Kossinets and Watts (2006) showed that people who did not share foci were unlikely to form ties with one another. Studying high-tech entrepreneurs in the Silicon Valley in the 2000s, Yoo found that two-thirds of entrepreneurs' contacts were located in

Silicon Valley. She concluded that 'despite the advances in communication technologies, the networks are surprisingly domestic' (Yoo 2003, p. 182).

One reason that geographic distance remains salient to networks is that online interaction supplements, but does not substitute for, face-to-face interaction. Compared to face-to-face interaction, computer-mediated communication lacks social cues, and some forms (such as instant messaging) only afford a narrow time window of synchronous interaction for people in different time zones (Gibson & Gibbs 2006). As long as advances in communication technologies cannot fully convey all the richness of in-person experience, local interaction continues to be preferred.

Trust, tacit knowledge, and high-value contacts are not easily obtained online. To build trust, business people travel long distances to hold meetings. Firms require virtual teams to schedule 'face time' for the 'human moment' because they believe that in-person meetings ease the development of trust among geographically dispersed team members (Dimitrova *et al.* 2007; Hallowell 1999). Immigrants often travel long distances to keep social and business contacts. For example, more than one-third of the respondents in a survey of Asian and European immigrants in Vancouver travelled to the home country at least once a year (Hiebert & Ley 2003). Thus,

> *H2:* Travel abroad is positively related to high levels of global connections but unrelated to local connections.

Net, jet, and ethnic diversity

While net and jet may afford communications beyond geographic proximity, do they foster access to more diverse milieus and help people cross social distance? There is little empirical research and no consensus in the existing literature. Some studies speculate that the Internet allows people to meet people of more diverse ethnic and cultural backgrounds online (see the review in Wellman and Gulia (1999)). Other studies argue that the Internet may not necessarily increase ethnic diversity of users' networks because people may feel more comfortable surfing the web in a language and culture with which they are familiar. A new kind of homophily may emerge as people now have greater opportunity to find like-minded people on the web (McPherson *et al.* 2001). For example, Korean and Chinese immigrants to America mostly make friends on the Internet with co-ethnics (Matei & Ball-Rokeach 2002). International students set up co-ethnic online groups in the host country to search and provide social support that facilitates their socio-cultural adjustment (Ye 2006). There have been even fewer studies on travel and social distance. As a heuristic, we venture the following:

> *H3:* Internet use and travel abroad will be associated with more diverse social networks.

Data and methods

Data for our TIE study were collected 2002–2006 in Canada and China via participant observation, in-depth interviews, and a random sample survey. We conducted 34 participant observations at a variety of business and community events in Toronto and Beijing. Events included business seminars, workshops, and trade fairs organized by firms, business associations, and government at various levels.

Using purposive sampling, we interviewed 67 entrepreneurs and experts in Toronto and Beijing, selected through multiple sources including business associations, government agencies, media, networking events, business directories, and snowball referrals. The interviews ranged from one to four hours, with an average of two hours. Our survey of Chinese Canadian entrepreneurs in Toronto collected information on their networks, their use of new communication and transportation technologies, and their socio-economic and business characteristics. The survey sample was randomly drawn from business directories issued by government agencies. Overall, 308 questionnaires were completed face-to-face in 2005/2006 with a response rate of 53 per cent. Using the position generator and the name generator, this TIE survey systematically measured the size, composition, and diversity of immigrant entrepreneurs' networks (Table 1).

Dependent variables: measuring glocalized and ethnically diverse networks

Many entrepreneurs' networks contain 'a core of close and long-term personal relations and a periphery of weaker ties assembled on a more haphazard basis' (Staber & Aldrich 1995, p. 463). Different methods can capture different scope of networks. For instance, the position generator is good at measuring respondents' overall social capital through locating their positions in the occupational structure (Erickson 2004; Lin & Erickson 2008). It measures the respondent's *broad network* by asking whether she knows someone on a first name basis in a variety of occupations. By comparison, the name generator technique provides a content-specific picture of respondents' *core networks* (Van der Gaag 2005). It covers the small core of people's networks for it often places an artificial limit on the number of names to be generated and comes up with dense, kin-centered networks as such strong ties tend to come first to the respondent's mind (Marsden 1987).

The TIE survey is one of the few surveys that have used both the position generator and the name generator, allowing us to compare the broad network captured by the former and the core network captured by the latter. We use both techniques here to measure the size, composition, and diversity of entrepreneurs' networks across both geographic and ethnic boundaries in multiple layers: within and beyond the ethnic community in the host country, in the home country, and in other countries.

TABLE 1 Descriptive statistics of dependent and independent variables.

variable	mean	standard deviation	min	max	n
Position generator					
Glocalization					
Local ties (ties in the host country)	10.71	4.57	0	18	308
Global ties (ties in the home country)	5.55	5.62	0	18	308
Percentage of global ties	0.27	0.21	0	0.83	308
Ethnic diversity					
Percentage of white ties (in the host country)	0.30	0.27	0	1	308
Embedded resources ('Good Social Capital')					
Local (in the host country)	8.60	3.63	0	14	308
Global (in the home country)	4.57	4.61	0	14	308
Name generator					
Glocalization					
Local ties (ties in the host country)	4.39	1.99	0	10	288
Global ties (ties in the home country)	0.36	0.74	0	5	288
Percentage of global ties	0.08	0.17	0	1	288
Ethnic diversity					
Percentage of white ties (in the host country)	0.17	0.24	0	1	289
Embedded resources					
Average occupational prestige	52.45	8.45	13	73	285
Average education	3.51	0.73	1.67	6	282
Technology use					
Internet use					
Internet user	0.84	0.36	0	1	308
Years of Internet use	7.91	5.06	0	24	308
Variety of Internet activities	4.26	3.19	0	10	308
Travel abroad	0.53	0.93	0	3	308
Control variables					
Female	0.21	0.41	0	1	308
Partnered	0.87	0.33	0	1	308
Length of residence	22.95	11.23	1	53	308
Square root of length	4.63	1.24	1	7.28	308
Education (graduate as reference group)					
High school or less	0.25	0.43	0	1	308
University	0.59	0.49	0	1	308
Young firms	0.21	0.41	0	1	308

(Continued)

TABLE 1   Continued.

variable	mean	standard deviation	min	max	n
Industry (service as reference group)					
Manufacturing	0.11	0.31	0	1	308
Wholesale	0.15	0.36	0	1	308
Retail	0.34	0.48	0	1	308

Using the position generator, the TIE survey asked respondents whether they personally knew someone in each of 18 occupations: government official; community association leader; professor; venture capitalist; bank loan officer; lawyer; accountant; IT engineer or computer programmer; journalist; sales or marketing manager; human resources manager; entrepreneur; schoolteacher; physician; truck driver; electrician; waiter or waitress; and police officers. The 18 occupations were selected because of their relevance to entrepreneurship and whether they jointly reflected the overall occupational hierarchy. To capture the geographic distribution of entrepreneurs' networks, respondents were asked to indicate whether they personally knew someone in these 18 occupations in Canada and their home countries. A follow-up question also probed the ethnicity of each network contact if the respondent indicated that she knew someone in one of the 18 occupations in Canada.

The name generator maps the respondent's access and mobilization of resources for entrepreneurship. First, we asked the respondent to list up to three team members if the firm was founded by a team. Second, we asked the respondent to list eight 'resource providers', that is, network contacts who provided each of the following resources: introduction to useful business contacts; information or advice; training; financial assistance; physical resources (use of land, building, equipment, etc.); business services (legal, accounting, clerical assistance, etc.); personal services (household help, childcare, etc.); and discussing important matters. These questions were adapted from the Panel Study of Entrepreneurial Dynamics (Gartner *et al.* 2004) and the 'important matters' name generator used in the US General Social Survey (GSS) (Marsden 1987). The respondent was also asked to list one additional person who was particularly helpful to her business but was not mentioned as one of the three team members or the eight resource providers.

Overall, the name generator in the TIE survey can generate up to 12 network contacts. Thus, the network size measured by the name generator in the TIE survey is larger than that in some existing studies based on the GSS name generator that asked respondents to nominate up to only five contacts (Marsden 1987; McPherson *et al.* 2006). Name interpretation questions gathered information about socio-demographic characteristics of each

network contact (including gender, ethnicity, education, occupation, geographic location, etc.) and about the relationship of respondents with each of their network contacts (including the relational basis of the tie and their frequency of interaction).

Two sets of network variables are the dependent variables: glocalization and ethnic diversity. *Glocalization*, the geographic distribution of immigrant entrepreneurs' networks, takes into account their simultaneous linkages in both the host and home countries. We measure glocalization through the absolute number and the proportion of global ties, which are defined as ties located outside of the host country including both the home country or a third country. Accordingly, local ties are defined as ties located within the host country, namely Canada. While most ties are local, global ties account for a non-trivial part of entrepreneurs' networks. Global ties comprise 27 per cent of contacts in the broad network (as measured by the position generator) and 8 per cent of contacts in the core network (as measured by the name generator).

Ethnic diversity is measured by the proportion of white ties in entrepreneurs' networks. In the broad networks measured by the position generator, 30 per cent of the ties are with whites. By contrast, the core network measured by the name generator is even less ethnically diverse as only 17 per cent of the ties are with whites.

Thus, both geographic and ethnic diversity are greater in the broad networks than in the core networks.

Independent variables

The key independent variables are related to Internet use and travel abroad. *Internet use* is measured by three variables: whether the respondent is an Internet user, the years of Internet use, and the variety of Internet activities engaged in. *Internet user* is a dichotomous variable coded as 1 if the entrepreneur uses the Internet and 0 if not. The years of Internet use indicates the number of the years that respondent had been using the Internet. More than 80 per cent of Chinese immigrant entrepreneurs use the Internet and have been doing so for an average of nearly eight years.

The *variety of Internet activities* measures the diversity of Internet use by summing the 13 kinds of activities that the respondent conducts online: communication; online banking; finding information about leisure activities; finding information about entrepreneurship or business events; finding information about community events; buying products or services; downloading or uploading files; being entertained and releasing tension; announcing business-related information or events; market or selling products or services; maintaining a personal or business website; participating in online discussion groups; and meeting new people for social purposes. On average, Chinese immigrant entrepreneurs carry out four of these kinds of activities on the Internet.

The interview data also show that the need for communication and coordination of business activities leads to a high rate of Internet use. Chinese

immigrant entrepreneurs tend to be early adopters and intensive users, doing a variety of tasks. As Interviewee Mr Zhen told us: 'The Internet has become an integral part of our daily operation, such as communication with clients, analysing data, financial activities, or transferring data' (all names are pseudonyms).

Travel abroad is measured by the frequency of business travel abroad in the last twelve months. As the amount of travel straggles upwards, we recoded it into four categories: zero, once a year, twice a year, and three or more times a year. On average, entrepreneurs travel once every two years. A considerable proportion of immigrant entrepreneurs regularly travel between the host and home countries. Some travel abroad a few times a year. Others travel less frequently but stay longer because 'staying a couple of days just doesn't work' (Elton). The CEO of a travel firm has witnessed 'big changes in the Chinese [immigrant] business community in the last thirty years'. One change especially relevant to her industry has been the increase of business travellers: 'many, including myself, are taking advantage that we are Chinese, to develop business in trade, finance, or technology between the two sides of the Pacific. Besides those who do business in Asia, many are active locally and have business in the US or Europe. They travel all over the world to attend trade fairs and conferences' (Sabrina).

Control variables

We control for owner and firm characteristics. *Owner characteristics* include gender, marital status, immigration experience, and human capital. *Immigration experience* is measured by the years of residence in the host country. As network variables often have a non-linear relation with time, we include the square root of the *length of residence*. Age is excluded due to a strong correlation with the length of residence. Human capital is classified in three categories: high school or less, college and university, and postgraduate.

Firm characteristics indicate if a firm is a new venture and in which industry sector. We follow existing studies and use six years as the cut-off point for new ventures (McDougall *et al.* 2003). Industry sectors are classified into manufacturing, wholesale, retail, and service. In analyses not presented here, the years of industry-specific work experience, having citizenship of the host country, and firm size measured by the annual revenue are also controlled. These variables do not have significant relations with the dependent variables (Chen 2007).

Results

Taking advantage of our mixed methods, we first draw on the survey data to analyse the relation of Internet use, travel abroad, and the geographic and ethnic pattern of Chinese immigrant entrepreneurs' networks. We then draw on the qualitative data, especially the in-depth interviews with entrepreneurs, to triangulate with findings based on the survey data.

In our statistical analysis, we follow Shklovski *et al.* (2004) and conduct two sets of analysis on the relation of technology use and network characteristics. In the analysis presented below, non-Internet users are given zero values for all Internet variables. In analysis not presented here, non-Internet users are excluded from the analysis. The results of the two sets of analysis are similar. As the network variables do not follow a normal distribution, we used robust regressions or negative binomial models.

Glocalization

Tables 2 and 3 report regression results of glocalized networks measured by the position and the name generator, respectively. We examine three dimensions of glocalized networks: the number of local ties, the number of global ties, and the proportion of global ties.

Local ties. The number of local ties both in the broad networks measured by the position generator and in the core networks measured by the name generator increases with the variety of Internet activities. The more diverse the activities that entrepreneurs conduct online, the more the local ties they have. The frequency of business travel abroad increases the number of local ties in the broad networks (as measured by the position generator) but has no significant relation to that in the core networks (as measured by the name generator).

Global ties. The frequency of business travel abroad contributes to global outreach measured by both the position generator and the name generator. The more frequently entrepreneurs travel abroad, the more global ties they have in both their broad and their core networks. By contrast, a greater variety of Internet use contributes to the global outreach of entrepreneurs' broad networks but not to the outreach of their core networks.

> *H1* and *H2* are supported: net and jet are positively related to glocalized networks.

- The more diverse the activities entrepreneurs conduct online, the more the local and global ties in their broad networks.
- The more frequently the entrepreneurs travel abroad, the more the local and global ties in their broad networks.
- The variety of Internet activities is positively related to the number of local ties in core networks, but not to the number of global ties.
- Frequent travel abroad is positively related to the number and proportion of global ties in core networks but not to that of local ties.

TABLE 2   Robust regression results of glocalized networks measured by the position generator.

	number of local ties			number of global ties			percentage of global ties		
	coefficient	standard error	p > |t|	coefficient	standard error	p > |t|	coefficient	standard error	p > |t|
Female	−0.66	0.63		−1.01	0.71		−0.02	0.03	
Partnered	1.60	0.76	**	1.34	0.86		0.04	0.03	
Length of residence	−0.15	0.15		−0.15	0.17		−0.01	0.01	
Square root of length	1.64	1.36		−0.43	1.54		0.01	0.06	
Education (graduate as reference group)									
High school or less	−0.57	0.91		−0.73	1.03		0.01	0.04	
University	0.46	0.72		−0.50	0.81		0.00	0.03	
Young firms	−1.53	0.73	**	−1.05	0.82		−0.03	0.03	
Industry (service as reference group)									
Manufacturing	−1.06	0.86		−1.17	0.97		0.00	0.04	
Wholesale	0.15	0.79		0.50	0.90		0.00	0.03	
Retail	−0.27	0.61		−0.51	0.69		−0.01	0.03	
Use Internet	1.31	1.01		−1.72	1.15		−0.07	0.04	
Years of Internet use	0.02	0.07		0.08	0.08		0.00	0.00	
Variety of Internet activities	0.45	0.10	***	0.48	0.12	***	0.01	0.00	*
Travel	0.58	0.30	****	1.01	0.34	**	0.03	0.01	*
_cons	2.30	3.30		8.87	3.73	*	0.44	0.15	**
Adjusted R^2	0.20			0.30			0.27		

Note: $N = 308$.

*$P < 0.05$.   **$P < 0.01$.   ***$P < 0.001$.   ****$P < 0.1$.

TABLE 3 Regression results of glocalized networks measured by the name generator.

	number of local ties[a]			number of global ties[b]			percentage of global ties[b]		
	coefficient	standard error	p > |t|	coefficient	standard error	p > |t|	coefficient	standard error	p > |t|
Female	−0.34	0.31		−0.43	0.60		−0.31	0.38	
Partnered	0.66	0.36	****	−0.32	0.57		−0.26	0.32	
Length of residence	−0.03	0.07		−0.30	0.16	****	−0.18	0.08	*
Square root of length	0.30	0.65		2.44	1.58		1.53	0.78	*
Education (graduate as reference group)									
High school or less	0.83	0.44	****	−0.08	0.77		−0.72	0.48	
University	1.26	0.35	***	−0.45	0.66		−0.96	0.43	*
Young firms	−0.04	0.34		−0.78	0.87		−0.05	0.52	
Industry (service as reference group)									
Manufacturing	0.31	0.41		0.37	0.62		0.92	0.37	*
Wholesale	0.01	0.38		1.28	0.73	****	0.50	0.38	
Retail	0.08	0.30		−0.07	0.49		0.13	0.35	
Use Internet	−0.02	0.48		0.61	0.86		0.58	0.44	
Years of Internet use	−0.01	0.04		−0.09	0.06		−0.05	0.03	
Variety of Internet activities	0.18	0.05	***	0.06	0.08		−0.01	0.05	
Travel	−0.12	0.14		1.16	0.48	*	0.48	0.12	***
_cons	1.45	1.59		−5.25	3.85		−5.32	1.84	**
Adjusted R^2	0.07			0.13			0.15		

Note: $N = 288$.

[a]Robust regression. [b]Generalized linear model. *$P < 0.05$. **$P < 0.01$. ***$P < 0.001$. ****$P < 0.1$.

Ethnic diversity

The extent of Internet use is not related to one indicator of diversity: the proportion of ties with whites (Table 4). The only exception is that the years of Internet use is positively related to the share of white ties in the core networks. The frequency of business travel abroad has no positive impact on the ethnic diversity of entrepreneurs' broad networks. Moreover, it has a marginally significant negative relation with the share of whites in the core networks: many trips abroad decrease the ethnic diversity of the core networks.

In short, *H3* is not supported: there is no positive relationship between net and jet with diversity. Indeed, more travel may impede ethnic diversity.

TABLE 4   Robust regression results of ethnic diversity.

	percentage of white ties (measured by the position generator)			percentage of white ties (measured by the name generator)		
	coefficient	standard error	p > |t|	coefficient	standard error	p > |t|
Female	−0.02	0.04		−0.02	0.02	
Partnered	0.06	0.04		0.11	0.03	***
Length of residence	0.02	0.01	**	0.00	0.01	
Square root length	−0.12	0.08		0.05	0.05	
Education (graduate as reference group)						
High school or less	−0.12	0.05	*	−0.04	0.04	
University	−0.06	0.04		0.04	0.03	
Young firms	0.01	0.04		0.00	0.03	
Industry (service as reference group)						
Manufacturing	−0.01	0.05		0.08	0.03	*
Wholesale	0.00	0.05		0.01	0.03	
Retail	0.00	0.04		−0.01	0.02	
Use Internet	0.04	0.06		−0.03	0.04	
Years of Internet use	0.00	0.00		0.01	0.00	*
Variety of Internet activities	0.01	0.01		0.00	0.00	
Travel	0.01	0.02		−0.02	0.01	****
_cons	0.23	0.19		−0.23	0.13	****
Adjusted R^2	0.19			0.18		
N	308			289		

*$P < 0.05$. **$P < 0.01$. ***$P < 0.001$. ****$P < 0.1$.

Evidence from the qualitative data

The survey results show that Internet use facilitates both local engagement and global outreach. These results are supported by findings from our fieldwork that Internet use plays a critical role in building and maintaining glocalized networks. On the one hand, the Internet is instrumental for maintaining existing ties in the home country. As an entrepreneur points out, 'even when we are not physically there, we are virtually there' (Taylor). On the other hand, the Internet enables entrepreneurs to create new ties with people who have shared interests outside their immediate physical world and thus tap into previously unattainable resources. This is especially important when entrepreneurs seek business part-ners or funding capital. As Taylor tells it:

> I search for partners on the Internet . . . I found four of my joint venture partners on the Internet and the other half were recommended by friends . . . I send emails to people who I have never met before. I cannot imagine how I would do business without the Internet.

Moreover, people use the Internet to find lost contacts. BML, founder of an Internet telephony business, provides an account of getting reconnected with an old contact in the new country:

> I posted a message on China Smile [a Toronto-based website with an entre-preneurs' forum] asking if there was anyone providing Internet telephony service to China. Three hours later, the post was answered. A guy left his telephone number and invited me to phone him. I called. Guess what? He was one of my clients when I worked for Siemens China six years ago. . .. I cannot stop thinking that there are so many crouching tigers and hidden dragons in Toronto's Chinese community. And you can reach them through the Internet.

Nonetheless, glocalized networks cannot be maintained only through online interactions. Frequent business travel abroad is essential for the glocalization of both the broad and core networks. First, the entrepreneurs travel regularly between China and Canada to build trust, improve communication, and check out potential collaborators first met online. As Taylor says:

> People ask me how I can trust someone who I have never met in person. Online contact is just the first step. You will have a lot communication through email. Yet, the most critical step is that you sit down together face-to-face. Then you must travel to China, meet him in person, and listen to his idea.

Second, building and maintaining connections with high-value contacts is more effective through in-person meetings. Social ties with government officials are considered a valuable source of competitive advantage, and Chinese entrepreneurs dedicate a great deal of resources to developing such connections (Peng & Luo 2000). 'You must hook up with officials and state firms', Russell told us.

Chinese immigrant entrepreneurs often participate in Overseas Chinese delegations where they are invited by the Chinese governments 'to meet high-level people you otherwise only see on TV or in newspapers' (Diana). These delegations are well accommodated: met by high-level officials in the central and local governments, profiled in national and local media, and officially introduced to local Chinese firms and entrepreneurs. The trips are packed with dining, drinking, and entertaining with officials, business partners, clients, and friends. To keep their networks warm, entrepreneurs endure many rounds of banquets and karaoke: 'I spend about 90 per cent of the time on dining and wining. In China, it is all about pulling guanxi' – networking to build up social capital (Russell).

Third, it is not easy to get tacit knowledge and fine-grained information online. Trust and obligations embedded in strong ties encourage sharing of tacit knowledge and fine-grained information (Uzzi 1996). Such strong ties require face-to-face interaction. For instance, market research often involves trips to the home country or a third country. Stella did intensive market research on the Internet when she needed to find new suppliers. However, she found that 'what you find on the Internet, in particular in China, is often trading companies'. As she is a trader herself, she is 'not that inspired to deal with other trading companies' because she doesn't want to 'have an additional middleman'. So:

> In June 2004, we left for China to research what business we could do. Before I left for China, I did a market analysis. I selected a few directions ... I stayed two weeks in China and met about 20 people ranging from government officials to business owners ... many of them were my friends or business contacts. I met with high-level officials in the National Committee of Development and Reform, the Ministry of Commerce, and the Ministry of Metallurgy. I met directors in imports and exports firms, insurance companies, and mining firms. As your contacts are high level, they know very well the policy and the overall trend of the development. You learn a lot from chatting with them.

Conclusions

Our research has contributed to the rather thin empirical literature on the potentials, limitations, and pitfalls of new communication technologies in building and maintaining social networks across geographic and social boundaries. We find

that the world is neither the little boxes of Reynolds' (1962) nightmare, the global village that McLuhan and Power (1989) imagined, nor the hyperconnected flatland of Friedman's (2005) dreams.

1. The sum of net *and* jet is more than the parts in helping immigrant entrepreneurs to cultivate glocalized networks. The survey data show that Internet use and travel abroad are instrumental in maintaining both local and global ties. The interview data show that the Internet makes it easy to keep existing contacts and forge new ties with people of shared interests outside of one's local world. Concomitantly, travel abroad affords face-to-face interaction with long-distance contacts to develop trust and gain valuable information and resources. Facilitating the global flow of knowledge, capital, and people, new technologies have changed many aspects of production, consumption, and communication (Castells 2000). Technological advancements have democratized participation in border-crossing social, political, and economic activities that used to be the privilege of elite. For networks, if it once was the case that 'geography blended with time equals density' (Brodsky, cited by Bates 1995), new communication and transportation technologies have partially liberated networks from the constraints of geographic distance.

2. Distance has not died as a constraint on contact, even for transnational entrepreneurs. Geographic and social distance each remains important, even in the age of net and jet. While many ties are global, local ties within the Canadian host country predominate in these immigrant entrepreneurs' broad and core networks. Similarly, while many entrepreneurs are able to build connections across ethnic boundaries, co-ethnic ties dominate most entrepreneurs' broad and core networks. The Internet alone is not sufficient for cultivating glocalized networks, as new technologies still cannot overcome all communication barriers imposed by time and space. Face-to-face interaction remains indispensable and overseas travel is crucial for adding a human touch to glocalized networks. Air miles are a good indicator of network miles: more travel is associated with larger networks abroad. Although the causality is somewhat reciprocal, the interviews tell us that it is travel that produces larger networks rather than larger networks inducing more travel.

3. Although communication and transportation technologies help entrepreneurs to overcome geographic distance, they have little impact on bridging the ethnic boundaries of their networks, especially their broad networks. There are two exceptions: (1) Internet use positively contributes to the ethnic diversity of entrepreneurs' core networks; (2) frequent travel abroad is negatively related to the ethnic diversity of entrepreneurs' core networks. Too much overseas travel takes away time and energy that can be put into developing strong connections to the wider society in the host country.

4. The relationship of net and jet to social networks is contingent on the scope of networks. The entrepreneurs use communication and transportation

technologies differently in their broad and core networks to build and maintain contacts. For the broad networks, both net and jet contribute to network glocalization but have no significant impact on ethnic diversity. For the core networks, the relation of technology use and networks becomes more complex. Internet use is instrumental in building local, ethnically diverse ties in the core networks but does not contribute to the global outreach of the core networks. It is jet that is the key, and not Internet: frequent business travel abroad is necessary for making global ties but limits the ethnic diversity of the core networks.

5. By analysing the position generator and the name generator simultaneously, this paper makes a methodological contribution. Our findings show that it is worthwhile to use both techniques as they each capture different aspects of networks.

6. We are limited by our cross-sectional research design. Scholars have taken it as an once-in-a-lifetime natural experiment to understand the impact of new technologies. Yet, as time goes by, the relationship between Internet use and social action has become increasingly reciprocal. Thus, while net and jet facilitate the formation of glocalized networks, it is equally plausible that glocalized networks demand Internet use and travel abroad.

Further thoughts

Given the increasingly reciprocal relation between networks and technologies, longitudinal data would provide a better handle on the issue of casual order. Future research could also delve into how technological connectivity transforms social connectivity in the general population. Immigrants may have more global connections than the native-born, and entrepreneurs may have more global connections than non-entrepreneurs.

   Yet, glocalization is not an exclusive feature of migrant or entrepreneurial networks. People's relationships more frequently stretch across distances as net and jet reduce the costs of communication and transportation. One-third of Americans' network contacts are located beyond a one-hour drive (Boase 2006). One-third of the contacts of Silicon Valley entrepreneurs are located outside of Silicon Valley, and many are located abroad: especially in China, India, and Europe (Yoo 2003; see also Takhteyev's (2009) article in this issue about Brazilian programmers). To advance their causes, a growing number of social entrepreneurs – ranging from activists, scholars, criminals, to terrorists – are building glocalized networks based on shared interests and identity. We suspect that net and jet is helping many to get beyond Merton's (1957) conjecture a generation ago that people function either as boundary-crossing 'cosmopolitans' or as encapsulated 'locals'. Now, many may be 'glocal': locally based but globally connected.

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