

# ICTs and Migration: The Mapping of an Emerging Area of Research

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*Abstract: This article aims to paint a picture of migration and information and communication technologies (ICTs), from both a scientific and social perspective. We first outline the relevance of this area of research by pointing out that technology is necessary for the integration of migrants in two respects: 1) as an inherent aspect of Western society, technology plays a vital role not only in the social integration of migrants, but also in their professional and language integration; 2) as an integration tool, technology represents an important means for migrants to access a range of services and, in turn, opportunities for empowerment within the host society. A characterization chart of formal and informal devices using ICTs in relation to migration is used to illustrate current social trends addressing this issue. We then describe the different scientific fields and concepts related to migration and ICTs. We conclude by proposing some promising avenues for future research on migration and ICTs.*

*Keywords: ICTs, Migrants, Mobility, Interconnection*

## INTRODUCTION

The topic of information and communications technologies (ICTs) and migration is a recent area of research (see Codagnone & Kluzer, 2011). It has, however, generated increased interest over the past few years (Borkert, Cingolani & Premazzi, 2009, p. 1), from both a social and scientific perspective, thereby leading us to consider it as an emerging area of research. Firmly multidisciplinary, it combines a diverse mix of expertise, leading to multiple approaches and a variety of purposes.

The objective of this article is to portray ICTs and migration from different perspectives, although in a partial way: 1) firstly, the social level, where the various types of ICT tools intended for migrants will be outlined, using a characterization chart; 2) secondly, the scientific level, where the multidisciplinary aspect of this area of research will be highlighted. We will present the main concepts and research topics related to it.

## Methodology: Literature Review

We drew our portrait of ICTs and migration from a literature review based on the methodology proposed by Gall, Borg & Gall (2005). Thus, we began by formulating a research question on which to base the literature review: what is/are the role(s) of ICTs in regards to migration? We then determined key words to target relevant documents. The following key words were retained: ICTs; technology; Web + migration; immigration; migrants; immigrants; host society.

We searched for combinations of these key words in general online databases (e.g., Google, Google Scholar) and specialized Web sites (e.g., “State of the Art” section from the ICTs-Migrations research group site<sup>1</sup>). As the search proceeded, we made an initial selection of documents based on the abstracts to ensure relevance to the research question. From these documents, we

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<sup>1</sup> <http://ticmigrations.fr/fr/etat-de-lart>

selected secondary sources (e.g., Borkert & al., 2009; Codagnone & Kluzer, 2011) to broaden our overview of the topic, as recommended by Gall & al. (2005). We then selected primary source documents according to the relevance and quality of content with respect to our research question. We ended up with 23 main documents. The portrait drawn from these documents is presented below.

## **Social Dimension: Cartography of ICT Tools Intended for Migrants**

In order to understand how ICTs and migration represent a promising area of research, we will start by demonstrating its social relevance. We will then outline various ICT migration devices using a characterization chart.

### ***Social Relevance of ICTs for Migration***

The area of ICTs and migration can be addressed at different levels, from a broad or focused perspective. It is possible, for instance, to distinguish between migrant and immigrant, the former referring to the concept of mobility, while the latter refers to sedentarization in a society other than the society of origin. “Unlike the immigrant, who comes to stay, the migrant is usually thought of as someone in transit, who comes to work, travels across our territories and cities, and who goes back home or leaves for somewhere else” (Diminescu, 2008, p. 556). Nonetheless, in our opinion, these are two sides of the same coin: that of a migrant taken as a whole, whose path can include both mobility and sedentarization. Thus, we agree with Diminescu (2008) for whom “the generic divide between migrant, foreigner, immigrant and nomad, and even sedentary, tends to blur” (p. 567). This gives way to a continuum whose degree of variation is individual mobility (more or less important in terms of frequency and space). From this perspective, we will not distinguish here between a migrant and an immigrant, as we consider them as one and the same, spanning the “low mobility–high mobility” continuum.

In this article, we will specifically address migration in relation to ICTs, which can mainly be used by migrants for two purposes: “bonding”, or the use of ICTs to stay in contact with the society of origin, and “bridging”, which, conversely, consists of using ICTs to integrate into the host society (Borkert & al., 2009). These two uses of ICTs in relation to migration are not mutually exclusive. They are rather cumulative among migrants’ technological practices (Codagnone & Kluzer, 2011, p. 19), as migrants are likely to use ICTs both to stay in contact with their family (bonding) as well as to search for information about their host country, such as its healthcare system (bridging).

Within the bridging component, ICTs could be considered as playing a dual role in migrants’ integration, as they could be both an object as well as a means to integration. As an object of integration, mastering ICTs is a prerequisite for migrants if they wish to fully integrate and actively participate in their host society (Codagnone & Kluzer, 2011). In other words, since technologies are omnipresent in Western societies, the successful integration of migrants requires that their technological integration is as important as the social, political, and economic integration traditionally reported in scientific literature. In general, ICTs as an object of integration emphasizes the importance of having access to ICTs and being digitally literate. Digital literacy can be considered the basic technical, cognitive, social, and cultural competencies necessary to the use of ICTs within a given society<sup>2</sup>. In opposition, the lack of access, more importantly the lack of appropriation of technologies by migrants, could be a potential factor contributing to exclusion (Codagnone & Kluzer, 2011).

<sup>2</sup> For a more precise definition of digital literacy, see the conceptual framework suggested by Eshet-Alkalai (2004). This author distinguishes five types of literacy: “photo-visual literacy”; “reproduction literacy”; “branching literacy”; “information literacy”; and “socio-emotional literacy.”

In addition to being an object of integration, technologies also represent a means to integration in the host society, as they provide migrants access to information, services, and opportunities (Kluzer, Haché & Codagnone, 2008), such as:

- Official information (e.g. government websites about different political, economic, and social aspects) or informal information (e.g. networking websites);
- Empowerment<sup>3</sup>, when migrants use ICTs to gain a voice and visibility, or to establish a dialogue with the host society (e.g. ethnic community websites);
- Different services, in particular related to employment (e.g. job searching websites) or to education.

Figure 1 summarizes the dual relevance of ICTs in relation to migration: on one hand, they provide a way to maintain contact with the society of origin (bonding); on the other hand, they are a means supporting the migrants' integration (bridging). Within the bridging aspect, ICTs can play two roles: 1) as an object of integration, that is something migrants need to integrate similarly to their linguistic, social, and economic integration; 2) as a means to integration, that is a tool facilitating access to information and services necessary for migrants.

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<sup>3</sup> The concept of empowerment was initially studied in relation to minorities at risk of exclusion, such as women, ethnic minorities, and people living with a handicap or an illness (Conger et Kanungo, 1988). Therefore, it is well established in the migration area of research and seems more and more applied to the state of migrant women (see, for example, Gosh, 2009; Moujoud, 2008; Connelly, Roberts et Zheng, 2010). However, the link between ICTs as a means to empowerment and migration does not seem to have been conceptualized anywhere other than in the literature referred to in this article.

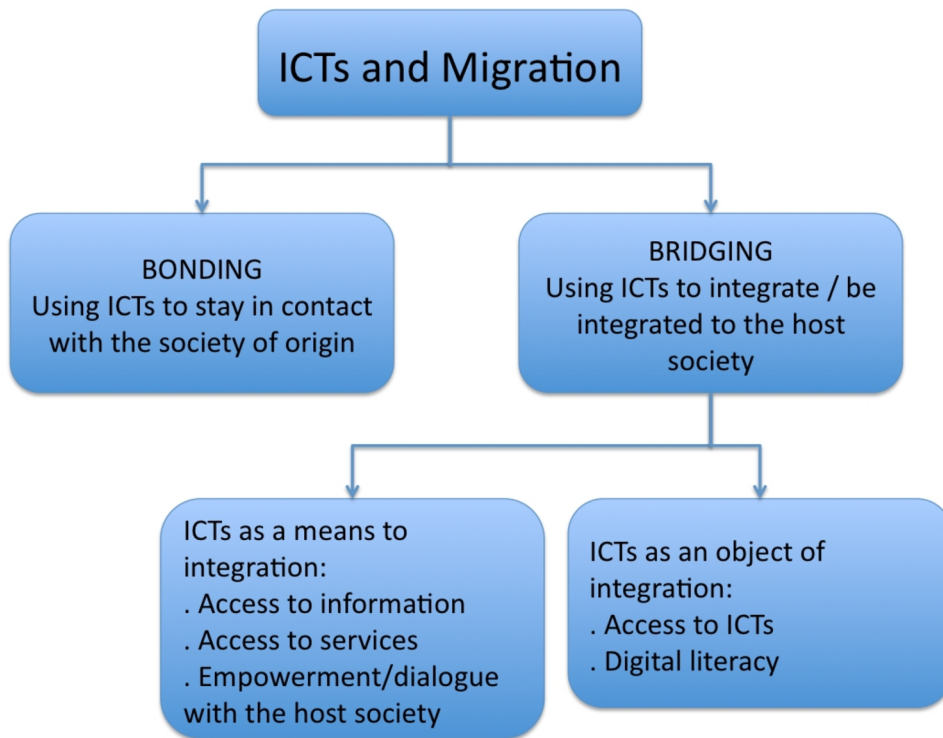


Figure 1: ICTs’ Relevance for Migration

This distinction between ICTs as a means to integration and ICTs as an object of integration determines the role of ICT devices. Therefore, it allows us to distinguish between devices that target technological knowledge acquisition (ICTs as an object of integration) or other types of knowledge or competencies acquired through the use of ICTs (ICTs as a means to integration). For example, a digital literacy course provided by a community group and intended for migrants addresses ICTs as an integration object. The end goal in such an ICT device is to develop migrants’ technological competencies in order to increase their autonomy and foster greater participation within their host society. In contrast, using Google Map to locate the closest medical clinic, its hours of operation and rates illustrates ICTs’ role as a means to migrants’ integration. Keeping in mind the dual role that ICTs play in migration, we can now develop a characterization chart of ICT migration devices, which will allow us to outline concrete Canadian examples.

**Characterization Chart of ICT Devices for Migration**

The characterization chart outlined below (see Table I) is inspired from various criteria found in the literature review. In particular, we based it on the work of Kluzer & al. (2008) and Haché (2009), who studied ICT migration tools in Europe, in order to develop a potential categorization. Of the criteria suggested by these authors, we retained those that were generic enough and rejected or merged those that were too specific to be applicable to all ICT migration devices (for example, “Training for Media Empowerment,” that we merged into “Empowerment” and “Basic Digital Literacy Training”, that we merged into “ICTs as an Object of Integration”, see Table I). We also added some new criteria (e.g. “Tools”; “Area”; “Scope”; “Stakeholders”) in

order to refine our characterization chart. We then ended up with Table I, where a total of eight criteria are outlined in the left column, and defined as per various values comprised in each criterion (see the right columns):

**Table I: Characterization Chart of ICT Devices for Migration**

Criteria	Values for each Criterion			
<b>Role</b>	ICTs as an object of integration		ICTs as a means to integration	
<b>Nature</b>	Formal initiative, from Government, top-down		Informal initiative, community associations, bottom-up	
<b>Tools</b>	Information tools		Communication tools	
<b>Area</b>	Social	Economic		Political
<b>Stakeholders</b>	Local	National		International
<b>Scope</b>	Local	National		International
<b>Target</b>	For immigration services	For immigrants only		For groups at risk of exclusion (senior citizens, women, socio-economically disadvantaged people, immigrants)
<b>Aim</b>	E-inclusion aim	Educational aim	Access to services and information aim	Empowerment/ dialogue with host society aim

We can take two examples of ICT migration devices, to put this chart to the test. We intentionally selected websites that had opposite aims, in order to give a general idea of the variety of ICT migration devices. The first example is an administrative information website and the second, a network from a Montreal ethnic community. We will look at how each tool is categorized using the criteria from the characterization chart.

### **Administrative Information Website**

The administrative website we selected aims to provide future and newly arrived immigrants in Ontario with some reliable information about life in this province<sup>4</sup>.

*Role:* In this case, ICTs are a means to integration for immigrants, as the website's objective is to facilitate their settlement in Ontario by providing information on different themes, which are organized by tabs (e.g. housing, employment, health, education, etc.);

*Nature:* This is a top-down, formal initiative, initiated by public administration. The website is funded by Citizenship and Immigration Canada and the Government of Ontario.

*Tools:* Both types of tools are used. In fact, the website is predominantly informative, but an access to an electronic forum and a "Discussions" rubric adds a communicative component<sup>5</sup> between website users.

<sup>4</sup> For ethical reasons, this website's name shall not be mentioned in this article.

<sup>5</sup> At the time of writing this article, it is not possible to evaluate the level of participation of the Web site electronic forum as it is undergoing maintenance.

*Area:* Although the organizations funding this website are political institutions (Citizenship and Immigration Canada and the Government of Ontario), the website seems to touch upon all three areas referenced in the characterization chart: social (e.g. “Housing”, “Health”, “Education”, “Daily Life” tabs), political (e.g. “Immigration & Citizenship”, “Legal Services” tabs) and economic (e.g. “Employment” tab).

*Stakeholders:* The stakeholders are primarily local, as this is an initiative of the province of Ontario.

*Scope:* The scope of this initiative seems local, insofar as it applies specifically to the province of Ontario. However, some information, such as how to obtain Canadian citizenship or Canadian immigration laws, is applied to the country as a whole.

*Target:* The website is obviously intended exclusively for immigrants settling in Ontario. This is explicit both in the mandate of the website and in the formulation of the questions that are used to organize its content. For example, the information relevant to English courses are introduced by questions formulated in the first person singular, such as: “How do I enrol in LINC<sup>6</sup> classes?” or “How can I improve my English conversation skills?”, taking the immigrants’ enunciative point of view.

*Aim:* The main aim is giving immigrants access to services and information.

### ***Network from a Montreal Ethnic Community***

The network selected involves Montreal’s Chinese community, and consists of a Facebook group of 295 users<sup>7</sup>.

*Role:* Once more, ICTs represent a means to integration, insofar as they provide access to a social network.

*Nature:* In contrast to the previous website, this network is an informal initiative based on ethnic origin (China).

*Tools:* The tools involved are essentially communicative, as they include the bulletin board and electronic forum integrated to Facebook groups. However, it could be argued that the interactional functionalities of this tool are diverted to more informative uses. In fact, the announcements posted on the bulletin board all have a promotional or commercial aim that does not relate in any way to the establishment and maintenance of social relationships. If we limit ourselves to the four first announcements from the Facebook group page, the first refers to an advertisement for access to Chinese-language television stations. The second one is a job offer. The third promotes Chinese universities through study grants. By targeting the Chinese immigrant community, it can be taken as evidence of a boomerang effect of the North American “brain drain,” whose objective is to bring Chinese immigrants “home”, in order to have the country of origin benefit from academic training acquired abroad. This is defined by Nedelcu (2009) as “positive externalities and their direct contribution to the country of origin’s development” (free translation, p. 157). Finally, the last message is about a professional placement service, specifically intended for Chinese immigrants living in Montreal. In all four cases, the goal is to inform more than communicate. Another argument in favor of this interpretation is the absence

<sup>6</sup> Language Instruction for Newcomers to Canada.

<sup>7</sup> For ethical reasons, this network’s name shall not be mentioned in this article.

or lack of interactional dynamics. As a matter of fact, of all messages posted on the bulletin board as of July 2011, only one generates reactions through the use of the “Like” function on Facebook. However, there are no comments exchanged between group members. The frequency of interactions is also revealing, with approximately one or two postings per month. The electronic forum follows the same trend: from a total of ten discussion threads (since September 2007), nine have one to three replies. The last one has twelve replies, generated from three different users. The interactional dynamic is therefore rather limited, which seems to confirm the informational predominance of this Facebook group, even with the interactional tools used.

*Area:* The area involved here is essentially economic, which is visible through the content of messages posted on the bulletin board (see the “Tools” section above). Contrary to what we could expect from a social network, the social area is non-existent.

*Stakeholders:* The stakeholders are apparently international. When reviewing the four first messages of the Facebook group page, it seems that users based in Montreal posted the second and fourth ones, while the first and third ones rather seem to be initiatives of China-based users.

*Scope:* The scope here is local, inasmuch as it covers the Montreal (Quebec, Canada) geographical area.

*Target:* Immigrants are the only individuals targeted by this tool. In fact, there is a three-way delimitation of the target: firstly, through geographical area (Montreal); secondly, by status (immigrant); and thirdly, by ethnic origin (Chinese).

*Aim:* As shown by the derivation of interactional functionalities to informational uses (see “Tools” section above), the main aim of this ethnic community network appears to be providing access to services and information. Contrary to the previous website, the services and information proposed here are generated by the Chinese community, which therefore participates in its own development. From this perspective, it is possible to deduce that the aim of providing services and information is combined with a second aim, which relates more to the Montreal Chinese community’s empowerment.

The characterization of these two ICT devices (administrative information website and Montreal ethnic community networking site) aimed at testing the grid presented in Table I. Although it will need to be validated at a larger scale, this table seems to provide an interesting analytical framework, taking into account the variety of ICT migration devices. In relation to this, let’s note that the values within each criterion are not mutually exclusive, but should rather be considered in terms of predominance. This does not seem surprising, and to a certain extent, is necessary in order to represent the high complexity of ICT migration devices.

### **Scientific Dimension: Overview of Concepts Related to ICTs and Migration**

After having addressed the social aspects of ICTs and migration by focusing on the ICT devices currently in use, we can now take a look at how these devices are viewed from a conceptual standpoint.

From a conceptual perspective, ICT devices related to migration are associated with multiple concepts since this area of research is remarkably multidisciplinary. The majority of disciplines that tackle with this issue are those that have traditionally been investigating migration, namely sociology, demography, geography. The inclusion of ICTs in the area of research on migration has generated interest from other disciplines such as information sciences and communication

(Codagnone & Kluzer, 2011). As a result, it is possible to find a great variety of concepts and specialized vocabulary. Rather than presenting an objective and comprehensive review of these terms, we will focus on the most widespread and helpful terms encountered in our review of the literature. According to Borkert & al.'s (2009) state-of-the-art article, these terms are: diaspora, transnationalism, network, and e-inclusion.

The concept of diaspora can be defined as “the condition of a geographically dispersed people who had settled in different political organizations, but who maintains, in spite of this dispersion, some form of unity and solidarity” (Schnapper, 1999, p. 225). In its original form, the unity and solidarity found in diasporas were generally built upon shared knowledge related to historical, cultural, religious, or even mythological references. The Jewish diaspora is a notable example; it has largely contributed to the definition of this concept (Médam, 1993). This early conception of the diaspora still continues today. However, it has since been generalized to all ethnic minorities from developing countries who have immigrated to developed countries (Schnapper, 2001, p. 227). This concept has also been associated with certain functions, for instance, that of transnational commercial and intellectual interaction, which would contribute to the development of both the country of origin and the diaspora. The concept of diaspora predates the widespread use of ICTs. However, the latter have largely contributed to the development and preservation of diasporas. This explains why this concept is so frequently mentioned in literature related to ICTs and migration (see, for example, Borkert & al., 2009; Diminescu, 2008; Nedelcu, 2009).

Transnationalism, on the other hand, can be defined as “sustained, cross-border, relationships, patterns of exchange, affiliations and social formation spanning nation-states” (Vertovec, 2009, p. 2). More precisely, in the context of migration, transnationalism refers to the practices, actions, and organizations that link migrants to their country of origin (Vertovec, 2009, p. 13). Like diasporas, transnational contacts have always existed. Nevertheless, ICTs have by and large contributed to renewing, diversifying, and intensifying these connections. This can be seen in the new evolutions identified by Vertovec (2009, p. 15–16) concerning transnationalism, where ICTs are predominant. Levitt's (2001) typology of transnationalism speaks for itself. It portrays three types of transnationalism: a) individuals who travel frequently to regular places; b) individuals who settle in a host country but mobilize the resources and individuals from their country of origin; c) finally, individuals who stayed behind in the home country, but who are affected by the individuals and resources set up in foreign countries. Aside from point a, it is possible to say that the other types (b and c) are now generally achieved through ICTs. In other words, the ways in which resources and individuals are mobilized (b) and affected (c) from a transnational standpoint now seem to be mediated through ICTs. This is exemplified in Nedelcu's (2009) study on the Romanian transnational network [www.ad-astra.ro](http://www.ad-astra.ro).

The concept of network not only takes into account migrants themselves, but also the dynamic relationships that they maintain within a larger whole (the network). It starts from the premise that it is the interaction between individuals, and not the individuals on their own, nor their personal attributes, that motivates their choice of behaviour. Strictly speaking, a network is made of a set of nodes that are interconnected by links. These links are constantly renewed through daily transactions made by individuals who are part of this network (Marin & Wellman, 2011). Studies on migratory movements from a network perspective have listed different connections (Poros, 2011): interpersonal connections, for instance the relationships with family, friends, friends of friends, etc.; organizational connections, such as relationships with colleagues, employers, etc.; mixed connections which are based on both interpersonal and organizational connections which would take place, for example, in a family business; finally the absence of connections, which happens in a minority of cases where the migrant, often seen as a pioneer,



migrates without the support of a network. Like the concepts of diaspora and transnationalism, the concept of network does not, in itself, require a technological component. However, it is quite obvious that ICTs have considerably affected it by providing a flexible mediator for social relationships which allows individuals to overcome the spatiotemporal constraints that had previously limited them (Ros, 2010). This phenomenon has allowed these relationships to take on different forms and occur more frequently.

The concept of e-inclusion is somewhat different from the previous three in that it has specifically been created, from the point of view of host societies, in response to the massive influx of technologies in the 1990s. It therefore inherently includes a technological dimension. This concept has been widely used, notably since it has been “consecrated” in the Riga Declaration (2006)<sup>8</sup>. The latter is usually used as a guideline to define this term. The Declaration describes e-inclusion from two different perspectives: “‘e-inclusion’ means both inclusive ICT and the use of ICT to achieve wider inclusion objectives” (Riga Declaration, 2006, p. 1). Defined as such, e-inclusion’s main purpose is to enable everyone to participate in the information society and to reduce as much as possible the digital divide within a population (in this case, Europe); on the other hand, they use ICTs to remedy other forms of exclusion and improve different social, political, and economic aspects (Riga Declaration, 2006, p. 1). In order to reach these objectives, the European document sets out by recognizing the importance of ICTs in European society and points out the inequalities in terms of access and uses. It then targets 22 priorities that were grouped in six categories: “active ageing”, “geographical digital divide”, “accessibility”, “digital literacy and competences”, “cultural diversity” and “inclusive eGovernment.” Migrants are specifically targeted in category 4 “Improve digital literacy and competencies” (p. 4, see priority 20) and 5 “Promote cultural diversity in relation to inclusion by improving the possibilities for economic and social participation and integration, creativity and entrepreneurship” (p. 4, see priority 24). The Declaration then presents recommendations to the European Commission. The concept of e-inclusion is substantial. It brings together several other concepts that are associated, although not exclusively, to the integration of immigrants to the host country, for example: digital literacy, participation (social, political and economic), digital divide, etc.

The concepts we have presented (diaspora, transnationalism, network, e-inclusion) all underscore the importance of the interconnections that are necessary and inherent to migration and to the information society in general (Castells, 2011). Defined as “people, goods, capitals and ideas which are not in spatial proximity, but take up one single social space” (Borkert & al., 2009, p. 4), interconnections seem to represent the main contribution of ICTs to migration: “interconnection can be used as the basis for a new look at immigration” (Ros, 2010, p. 21). The relationship between interconnections and migration, however, is not new. For Held (1999), for example, migration has always been a preferred way to create interconnections between geographically distant locations. ICTs do not represent a necessary condition for migrants to create interconnections. They have, however, largely contributed to the diversification and the intensification of interconnections to such an extent that it is now a central attribute of migration in our day and age (Ros, 2010).

On this topic, acknowledging that interconnections are one of the main characteristics of migrants these days has created profound changes in our conception of the image of migrants, a position that has been put forth by Diminescu (2005). Starting from the idea that the migrant has often been perceived as an individual who has been uprooted and has had to overcome a series of breaks, this author presents a new contrasting image which is that of a connected in-

<sup>8</sup> Available at [http://ec.europa.eu/information\\_society/events/ict\\_riga\\_2006/doc/declaration\\_riga.pdf](http://ec.europa.eu/information_society/events/ict_riga_2006/doc/declaration_riga.pdf)

dividual (the “connected migrant”) that is part of a continuum. This new assessment of the migrant’s image as seen from an ICT perspective allows us to develop an “inclusive cosmopolitan point of view ‘both here and there’, rather than an exclusive vision based on ‘neither... or’” (free translation, Nedelcu, 2009, p. 171). This comes in contrast with the perspective where the migrant was seen as lacking, torn between two realities and never really belonging to either one. This recent evolution in the conceptualization of the migrant due to the influence of ICTs points towards a major shift in the field of migration, with ICTs now playing a pivotal role.

## Conclusion

To conclude, we will first present a quick overview of the main points that have been addressed in this article.

The objective of this text was to map out the field of ICTs and migration. We did not intend to present a thorough depiction of this research area; rather we wanted to give an overview of the current trends. Our aim was to delineate a social and scientific “territory”, like a geographer would. Because this field of research has only recently started to generate interest, we set off by demonstrating its relevance. This led us to present its purpose (bridging and bonding) and its roles (an object of integration and a means to integration) (see Figure 1). We then discussed this field of research from a social standpoint, by presenting a characterization chart of ICT devices (see Table I). We then put it to the test by analyzing two devices that we deliberately chose because of their inherent differences. We have come to the conclusion that, although it still needs to be validated at a larger scale, this characterization chart can help us assess the role and the contribution of ICTs to the field of migration. After presenting the social aspects of this issue, we then focused on the scientific aspects. First, we presented the concepts that appeared as the most widespread and helpful to deal with the topic of ICTs and migration. These concepts are: diaspora, transnationalism, network and e-inclusion. Each of these concepts seems to present interconnection offered by ICTs as the most important asset that it brings to migration. This interconnection is also seen as an essential attribute of the migrant himself in this day and age, which brings us to see him as an interconnected individual that is part of a continuum of mobility, consistent with Diminescu (2005). Finally, this overview of the scientific dimension of ICTs for migration allows us to formulate future avenues of research.

A first avenue, initiated by Kluzer & al. (2008), could touch upon the characterization of ICT devices and the analysis of their positive and negative impacts on migrants. As a matter of fact, since migrants and host societies use ICTs for different end goals, a variety of ICT devices are generated. Once analyzed, they can contribute to a better understanding of the role and contribution of ICTs within the migration topic. This first research perspective could be combined with a second one, which would consist of taking a closer look at the factors (age, ethnic background, education, integration stage, etc.) motivating migrants’ use of various ICT devices. It is likely that not all migrants do use ICT devices equally. It would be interesting to examine how and why various factors interact with the ICT devices previously analyzed, using ethnic, socio-demographic, academic, and technological factors as a basis. Another research avenue could consist of analyzing the behaviour of migrants towards ICTs. The goal would be to gain a better understanding, through a comprehensive approach, of the hurdles, motivations and representations associated by migrants to the use of ICT devices, in relation to their previous use in their homeland. Along with the above-mentioned usage and behavior analysis, a study of consequences would represent another research avenue to consider. Ultimately, the question would be to determine the impact and conditions of ICT devices on mobility, integration and migrant participation, as a complement to other non-technological resources, such as community organizations or religious institutions. Lastly, in order to maximize the progress of knowledge

in the field of ICTs, these additional research avenues would benefit from being included in international comparative analyses, as some European countries have already done.

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