

Horizon Scanning Report: ICT and Migration

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1. Introduction

For a long time international migration meant disconnection with the homeland and the state of 'uprootedness'. It is due to the fact that moving abroad was related to the loss of majority of social contacts. The process of communication (if possible at all) with those who were left behind was slow. In their famous study Thomas and Znaniecky (1918) analyse communication of Polish migrants with their friends and families. They describe situations when it takes month for a letter to arrive. Since the beginning of 20th century the development of the new information and communication technology (ICT) has changed dramatically the pace and character of interaction within transnational populations. New ICT such as mobile phone allow instant communication via calls, text messages and email. Vertovec (2004) argues that cheap international calls play the function of 'social glue' binding migrants to their families and friends creating constant involvement in their life. In the Informational Age the speed of communication has changed dramatically everyday life of millions people living across the world (Castells, 2000; Wellman, 2001). The Internet from a closed net used by a small group of scientists has developed into globally spanning web that allowed not only easy consumption, but also effective production of media content.

More recently the invention of social networking software flagged the phenomenon of 'Web 2.0' (O'Reilly, 2005). Since then social media become one of the most popular channels of communication. These revolutionary changes have particular importance for migrants who are dispersed from their original locations, but usually remain connected through transnational social networks (Mahler & Pessar, 2001). There are a number of studies (Hiller & Franz, 2004; Parham, 2004, 2005; Van den Bos & Nell, 2006; Ros, González, Marín, & Sow, 2007; Diminescu, 2008; Komito & Bates, 2009) that address the impact of ICT on the processes of migration. Despite the fact that

the importance of ICT is widely acknowledged in the studies on migration contemporary social science still seeks to embed theoretically their convergence into the framework of 'network society' (Borkert, Cingolani, & Premazzi, 2009). Furthermore, constant development of ICT requires permanent empirical updates and creation of effective research techniques of data collection. Nevertheless theoretical and methodological foundations of ICT-related studies of migration always depend on cultural and social features of sending and receiving societies, aims and objectives of particular research, available human, economic and time resources it is possible to identify converging tendencies in this area of sociological knowledge. This literature review seeks to identify these converging points and on this basis to classify contemporary studies on migration and ICT. Moreover, it is aimed to identify limitations of the current research and to suggest new directions and methods of investigation. Arguably this area of social science is related to a wider debate on the Informational Age. As such, it is necessary to point out the main theoretical foundations of this concept.

2. The Informational Age: Theoretical Foundations

Information Age or 'network society' (Castells, 2000) nowadays can be considered a meta-narrative within all areas of social science. In his famous study Castells (2000) demonstrates that new ICT has largely integrated national economies around the world and made information the most valuable resource. Castells argues that contemporary world is transformed in the 'space of flows' where 'flows' are digital channels by which information is shared. The processes of information exchange became 'material organization of time-sharing practices' that have important material and symbolic meaning (Castells, 2000: 442). The development of ICT also brings new forms of democracy and governance. Here new technology is seen as capable of promoting of Human Rights and democratic governance. Having opportunity to interact on a global scale advocacy groups, civic organizations and diasporas become much more empowered (Norris, 2001). Moreover, Norris (2001) points out that new ICT facilitates creation of *communities of choice* that replace communities based on geographical proximity. 'Compression' of time and space by the new means of communication results in creation of global cultures that unite people sharing sense of belonging and identity across continents (Appadurai, 1996). The interplay between these diverse processes is fundamental for the study of 'network society' (Castells, 2000).

These global changes are crucial for people who reside outside of their country of origin. Appadurai (1996) proposes the concept 'mediascapes' as reflecting complexity and multidimensionality of global culture. He also addresses this concept to production of cultural symbols in the world created by new media. This world provides migrants with opportunity to follow cultural scripts of 'imagined life' (Appadurai, 1996). Stemming from the broad theorisations on Information Age and 'network society' there are several well-developed branches of ICT-related approaches in the studies on migration.

The main branches of studies of migration and ICT emerged in early 1980s. Most of them were not originally focused on migrations and ICT, but created theoretical and empirical foundations for later research: theories of globalization, social networks, diaspora and transnationalism. There is one idea that unites all these groups of approaches – the importance of interconnection between various social actors. Based on the macro-sociological perspective the studies on *globalization* (Appadurai, 1996; Featherstone, 1990; Robertson, 1992; Sassen, 1999) investigated growing interconnectedness

of various forms of capital, global divisions of centres and peripheries, 'north' and 'south'. In these approaches migration and ICT are seen as crucial factors of these global divisions.

Network analysis (Chua, Madej, & Wellman, 2011; M. S. Granovetter, 1973; M. Granovetter, 1983; Quan-Haase & Wellman, 2004; Wellman, 2001; Wellman et al., 1996) provided theoretical foundation for understanding of migration processes and ICT use within micro-sociological perspective. Moreover, social networks nowadays are seen as a crucial resource that initiates the processes of migration. Also utilization of social networks (online and offline) is defined as an important factor of adaptation in the host society. Arguably social network analysis undermined explanation of migration exclusively by 'push' and 'pull' factors.

The third group of approaches is built around the concepts of '*nomadism*', '*diaspora*' and '*transnationalism*'. Initially the concept 'nomadism' was proposed by Deleuze and Guattari (1987) where nomadic way of life refers existence outside organizational state and its static boundaries. The authors characterize the life of nomad as something 'in-between' (Deleuze and Guattari, 1987: 380). Furthermore, this state leads to inability to develop a sense of belonging to any political or ethnic group and nomad 'imagery' is based on 'sedenterisation' and 'journeys'. However, accepting the idea of universal 'mobility' (Urry, 2000) this group of approaches does not set a clear distinction between international migration and other forms of 'nomadism'.

In contrast, studies on diasporas have pointed out the importance of collective 'imagination' and sense of belonging (Brah, 1996; Cohen, 1997; Safran, 1991; Vertovec & Cohen, 1999). Contemporary studies on diasporas (Georgiou, Bailey, & Harindranath, 2007; Karim & Karim, 2003; Mallapragada, 2000; Parham, 2005) argue that new ICT allowed various dispersed communities to reproduce themselves, reinforce group solidarity and sense of belonging. Here ethnic and cultural identity is seen as having a fundamental role in the processes of migration and group solidarity.

The studies on transnationalism are focused on the processes of sustaining of social relationships across national borders. Here migrant activities are seen as not being embedded in some local context, but as 'floating' in transnational social space. In this group of approaches ICT seen as a crucial factor for these transnational spaces to emerge (Alinejad, 2011; Georgiou et al., 2007; Georgiou, 2006; Van den Bos & Nell, 2006; Vertovec & Cohen, 1999; Vertovec, 2004). These studies try to answer the question of how migrants construct and manage their lives while been embedded into more than one society. Another important question these studies try to answer is on identity construction processes as international migrants combine identifications with the country of origin and host country. Vertovec (2004) sees transnational migrants as a link between two or more countries. This 'in-betweenness' of international migrants results in the changes of social, cultural, economic and political spheres. For instance, international remittances affect economies of host and sending county.

A separate group of approaches in ICT-related studies on migration is based on the analysis of *media communications*. These studies are predominantly focused on the effects of media, audiences, representation of ethnic minorities in host societies, and ethnic minority media. In terms of the effects of media the focus of research is usually on shifts and changes of identity as the result of media consumption. This group of studies illustrates the processes of reinforcement of national identifications and the processes of their reproduction. In relation to ICT like the Internet this group of studies is generally polarised between two perspectives. The first portrays Internet as an ultimate tool of social inclusion of migrant populations into fabric of the host countries. In the second

perspective the impact of the Internet is portrayed as negative due to the fact that it allows migrants to maintain their ethnic or national identity and, as such, increases differentiation between migrant populations and representatives of the host society.

The studies on media audiences are primarily focused on the impact of ethnic cultures of migrant communities on the features of media and consumption modalities. Here appropriation of various types of ICT is explained by particular cultural features of migrant community (Liebes & Katz, 1997). The studies of audiences are criticised (Hamel, 2009) as presenting 'ethnic audiences' as stable social entities that are not affected by the processes of hybridisation. A separate branch of media studies is dedicated to representation of ethnic minorities in the media of the host country (Gabriel, 1998). The mode of analysis depends on the general strategy of particular state of assimilation (France) or multiculturalism (previously UK and Germany) of ethnic minorities. This group of approaches also encompasses the analysis of construction of media image of particular ethnic group. Finally, media consumption is studied in relation to the effects of this type of consumption on the everyday lives of migrants (Silverstone, Haddon, In Silverstone, & Mansell, 1996). This group of studies has predominantly merged with the studies of transnationalism (Georgiou & Silverstone, 2006). Furthermore, there is a noticeable shift from previous dichotomisation of social inclusion and assimilation on the one hand and 'ghettoisation' and segregation on the other. In contrast to the early studies contemporary ones show the processes of hybridisation of migrants identities and construction of bridging and bonding social networks as the result of media use (Peeters & D' Haenens, 2005). However, all of these approaches draw on the general understanding of the mechanisms of international migration.

3. Understanding Migration

Previous research framework based on the understanding of migration as the interplay between 'push' and 'pull' factors has been generally rejected as limited and mechanistic. As pointed out by Brah (1996: 178): 'curiosity, wishes to get knowledge of different ways of living, as desire to pursue opportunities that might improve personal life chances, are some factors that remain in the heart of impetus behind these migrations (both documented and undocumented'. As the new paradigm that is focused on the explanation of how transnational networks of international migrants are created and utilised transnationalism is widely accepted nowadays. Transnationalism as an approach in migration studies encompasses various aspects of international migration such as personal and institutional links, professional membership, civic and economic involvements, sense of belonging and identification etc. However, established migrant communities and their transnational activities often defined as 'diasporism' rather than 'transnationalism' (Morawska, 2011: 1030). Ambrosini (2008) proposes the concept of 'circulatory transnationalism' as the one reflecting the growing role of transnational connectivity. This type of transnationalism is based on the physical mobility, but on the mobility of knowledge that with the usage of ICT allows creation of 'electronic transnational space'. Other forms of transnationalism that were pointed out by Ambrosini are: 'mercantile transnationalism' that refers to commodities and economic gains, and 'symbolic transnationalism' that is reflects the processes of cultural production and consumption resulting in reproduction of ethnic, religious, national etc. identities.

The analysis of contemporary literature on transnationalism allows suggesting that while theorisation on transnational networks and migration is popular and represented by numerous publications (Georgiou, 2006; Gielis, 2009; Portes, 2001, 2003), but there is a lack of empirical

research providing a clear framing of transnational networks and alliances. As such, contemporary sociological knowledge left a space for development of multi-local approaches that would provide visualisation and explanation of transnational networks.

The analysis of transnational social networks is usually seen as defined as the central aspect of investigation of international migration (Cohen, 2008; Massey, 1998; Tilly, 2010; Vertovec & Cohen, 1999). In contemporary sociological literature migrants are seen as not objects of macro-processes, but as active subjects who make own decisions to move to a particular country (Favell, Brettell, & Hollifield, 2008). Here social linkages play a crucial role and existence of established migrants may stimulate the move of the new ones. This process is reflected by the concept of 'chain migration' (MacDonald & MacDonald, 1964). Social capital generated in these social networks may become the main reason why migration takes place. According to Massey (1998), who calls this phenomenon 'cumulative causation' when migration alters the whole social and economic context where decisions to migrate are made.

The central idea of the network approach in the studies of migration is that information constitutes the core of this social process. Furthermore, this information is circulated through social networks that predominantly consisting from 'strong ties' (Granovetter, 1973) of kinship, friendship, and belonging to a particular community. These ties are thought to connect migrants and non-migrants (Massey, 1998). Faist (2000) supports this idea arguing that the role of traditional social networks is still important and shapes migration flows.

However, it is argued that the importance of traditional dense social networks is decreasing in the modern society (Wellman, Gulia, Smith, & Kollock, 1999: 96). These 'strong ties' are predominantly replaced by frequently changing 'weak ties'. The latter, as pointed out by Granovetter (1973), allow gathering of the new information – crucial activity for any migration process. Arguably, ICT in general and the Internet in particular provide a fundamentally new and more efficient environment for these 'weak ties' to emerge. As such, for the processes of international migration the features of the new ICT become increasing important.

4. Studying Digital Networks and Migration

It is argued (Castles & Miller, 2009) that we live in 'the age of migration'. Recent studies of migration (Tilly, 2010) demonstrate the growing number of agency-orientated approaches where additional social categories are added to the classical combination of 'push' and 'pull' factors. Castles and Miller (2009) point out that contemporary migration has global nature. While been one of the central elements of globalization migration it reinforces idealised images of Western countries in developing ones. Furthermore, new ICT allows dissemination of information about job opportunities migration strategies and along with other factors may 'trigger' migration processes.

Along with the growing scale of irregular and illegal migration contemporary sociological research cannot avoid the importance of informal social networks that provide migration processes with 'self-sustainability' (Massey, 1998). These informal networks heavily depend on communication. As such, the role of information and communication technology in the creation and sustaining of these transnational networks has demonstrated steadily increasing importance (Hamel, 2009). The interconnectedness of migration and ICT goes across several lines. First, the focus of sociological analysis of the usage of ICT among migrant populations is always related to the triad sending country

– host country – migrant community. Therefore, the studies of ICT and migration either focus on one of the elements of this triad or encompass all three.

Second, studies of ICT and migration can be classified on the basis of migratory experience (Hiller & Franz, 2004). Here the usage of ICT within migrant populations fit into three distinctive groups: pre-migratory use by those who have not migrated yet and use ICT in order to collect information about the destination, establish contacts, find jobs, etc.; use of ICT by recent migrants – where it may relate to the processes of adaptation in the host society; and, usage of ICT by established migrants whose migratory experience exceeds five years. The latter category also may include second and third-generation migrants. Third, the studies of ICT and migration can be classified on the basis of methodological principles employed in investigation. ICT allow creation of ‘online public spheres’ and ‘virtual arenas’ where migrants can establish online communities. As such, the studies on ICT and migration may focus on online dimension of ICT use and employ exclusively online research methods. However, it is not always the case as Internet-related phenomenon can be studied ‘from offline’ (Hine, 2005). Here such techniques as interviews, observations, focus groups etc. are employed. Finally, investigation of ICT and migration can be based on the combination of online and offline research techniques. However, the understanding of the actual role of ICT in the processes of migration significantly varies across studies.

5. ICT and Migration

It is generally acknowledged that ICT plays an important role on all stages of migration. Wood and King (2001) point out that news, films and advertisement are among the most important sources of information for people considering migration. Hamel (2009) extends this argument pointing out that new ICT may create the image of wealth and prosperity of developed countries in developing countries. This information can be crucial in terms of making the final decision to migrate. As (Schapendonk & Van Moppes, 2007) illustrate in their study modern ICT have a significant impact on the formation of a very positive, even ‘idealised’ image of Europe in Senegal. Simultaneously modern ICT allow creation of negative image of migrants in Europe (Wood and King, 2001). The findings of these studies support the idea by Appadurai (1996) that modern ICT have a significant impact on the ways of how social reality is ‘imagined’ by various social groups.

The concept ‘interconnection’ is crucial for understanding of ‘network society’ (Castells, 2000) as it grasps the processes of communication between people irrespectively to their physical location. Arguably new ICT are crucial for these processes of communication. Castells (2000) argues that interconnectedness changes the nature of international migration. According to UN Population Division (2012) there are between 185 and 195 international migrants in the world. The report illustrates that international migration affects every country on the planet. Despite these high numbers of international migrants there is a lack of institutionalised international management of migratory processes reflecting the realities of the ‘network society’. As the result these processes are predominantly determined by connections between various agents of international migration. As such, ICT affects patterns and character of international migration as it determines the main features of informational flows and transnational networks. As Lee, Monge, Bar, & Matei (2007) point out in some countries the cost of international calls has fallen tenfold. They argue that growing numbers of international migrants lead to increasing competition in the sphere of telecommunication services and substantially affects the industry as whole. Previously Stephen Vertovec (2004) analysed how the reduction of cost of communication has changes extensiveness, velocity and intensity of

international flows of information. Similarly Panagakos and Horst (2006: 155) point out that such technology as mobile phones made expectations of migrants more realistic and informed. They argue that the scale of the use of this type of ICT in some developing countries has reached the level of developed ones. As such, ICT affects not only migrant populations living abroad, but also the countries they come from.

However, migration processes are still directly related to sovereignty and contemporary governments try to obtain the maximum control of these processes (Castles & Miller, 2009). Massey & Capoferro (2004) point out possible tensions these attempts can make. First, policies that support emigration in the sending countries contradict regulations of immigrations in host countries creating further polarisation between North and South. Second, declared goals of immigration policies of developed countries rarely achieve declared goals and usually result in unexpected outcomes. Third, free movement of capital and goods is in dissonance with growing restrictions of migration.

Castles and Miller (2009) argue that the channels of international migration have widened over the last decades. As the result migration became a possible option for growing number of people. Moreover, this also made populations of migrants are increasingly heterogeneous putting additional pressures on the governments of receiving countries. Migration also can be seen as a risk-diversification strategy (Massey & Capoferro, 2004; Massey, 1998). When the state cannot provide adequate level of social security migration is a common response. Massey (1998) argues that decision to migrate is based not only on pursuit of economic gains, but also related to avoidance of various risks. Therefore, in situation when economic differences between the country of origin and receiving country are not significant other factors related to risks may be crucial. Moreover, different types of ICT are used on every particular stage of migration and closely related to the features of migratory experience.

6. Migratory Experience and ICT

In their study on different stages of migration Hiller & Franz (2004) demonstrate that types of the ICT used depend on the several phases of migration. Pre-migratory phase refers to the usage of ICT in order to initiate migration. Here the main characteristics of ICT adoption are determined by several groups of factors. First, it determined by social and economic features of the sending country. More specifically this group of factors refers to the level of development of infrastructure and adoption of new technology. Second, political regime of sending country refers to the main characteristics of political organization. For instance, authoritarian regimes may control the Internet. Third, the culture of the sending society may have either positive or negative effects on the degree of adoption of a particular society. Fourth, personal skills and abilities reflect the fourth group of factors.

With respect to the host country, pre-migratory phase provides those who are going to migrate with two opportunities. First, future migrants can establish contacts with representatives of their country and/or ethnicity. These contacts can be classified as 'weak ties' (Granovetter, 1973). Also ICT can help to reinforce and utilize 'strong' ties such as friends and family. These transnational migration networks can be defined as 'sets of interpersonal ties that link migrants, former migrants, and non-migrants in origin and destination areas through the bonds of kinship, friendship, and shared community origin' (Massey 1988: 384). These relationships within social networks allow reducing of risks related to migration. Here social networking sites, international calls (Vertovec, 2004), email, etc. allow development and strengthening of transnational social networks. Second group of

opportunities is related to instrumental usage of ICT. When the decision to migrate is made ICT allow more efficient realisation of this. New technologies and applications allow buying tickets, finding accommodation and new job. However, the latter can be related to 'weak' and 'strong' ties that are mentioned above. Nevertheless the large body of literature suggests the growing importance of ICT for international migration it is possible to argue that in case of illegal and irregular migration the role of ICT is not so significant.

For post-migrants ICT provides new opportunities in terms of social inclusion into the host society. In other words, it allows creation of 'bridging' social networks between migrants and various social institutions of the host society. Due to the fact that Western societies while been the most attractive destinations of international migration rely on ICT the skills to use the technology become one of the main factors of effective social integration of migrants. For instance ICT provide migrants with official information, advice, and support. Therefore, the processes of social adaptation depend on ICT skills. In turn low skills of ICT usage can result in social exclusion. As such, digital literacy of migrants can be defined as a crucial factor for social adaptation and social inclusion to the host society. Moreover, ICT is crucial for migrants in terms of development and maintenance of collective identities and sense of belonging.

7. ICT and Migrants' Identities

The impact of ICT is quite commonly described as 'Westernization of the world' producing increasingly 'hybrid' cultures where 'we all migrants' (Pieterse, 2009: 25). However, there is also an opposite point of view (Elkins, 1997) according to which ICT allows reinforcement cultural identities of migrant populations producing heterogeneous cultural clusters. Another distinct group of approaches is inspired by the ideas of Portes (2001) that due to the developments of technology migrants can live simultaneously in two worlds of the host and receiving countries. However, most of research accepts the idea of hybridisation of migrant identities (Hall, 1990). The majority of studies on migrants' identities and ICT employ the concept of diaspora as reflecting the form of consciousness, social form, and mode of cultural production (Vertovec, 1997).

Diasporas are often portrayed as populations on the 'cutting edge' of technological progress (Karim & Karim, 2003) due to specificity of their position. Such ICT as satellite television allows diasporic subjects to be object of cultural production that takes place in Bollywood, Middle East etc. As such ICT usually defined as contributing to cultural sustainability of migrant communities. Therefore, migrants can develop sense of belonging to their ethnic or national community without actual physical contacts (Ogan & Cagiltay, 2006) allowing 'feeling of home away from home' (Tsagarousianou, 2004). Furthermore, ICT allows migrants to follow their cultural traditions, establish new social contacts with co-ethnics, to 're-invent' their religious 'roots', and to consume a wide range of material and non-material products coming from their country of origin (Karim & Karim, 2003). However, this connection with the culture of the homeland produces 'hybrid' and changed 'imaginings' of it as information about the homeland is transformed by digital medium (Wood & King, 2001). Aksoy and Robins (2001: 7) describe this fact as the emergence of 'transnational imagined communities'.

Arguably the concept of 'imagined community' coined by Benedict Anderson (2006) is widely used in the contemporary literature on ICT and migration (Chavez, 1994; Ojo, 2005; Tsaliki, 1995). However, as it is pointed out by Van den Bos & Nell (2006) degree and mode of ICT use for creation of 'imaginings' and sense of belonging varies not only within different migrant populations, but also

within different generations of migrants. While for the first-generation migrants ICT is primarily used for reinforcement of existing social networks, for the second-generation migrants technology is used for 're-discovering' of cultural 'roots'. Moreover, this group of migrants tend to create new communities based on the similarity of origin, experiences and high literacy of ICT use. The latter is crucial not only for the sense of cultural and national belonging, but also for more intimate social relationships.

7. ICT and Familial Relations of Migrants

Different types of ICTs are used by migrants depending on stage of migration, life situation and instrumental goals. Wilding (2006) points out that ICT play increasingly important role for transnational families as it allows new dimension of 'intimacy'. Moreover, the use of ICT in familial social relationships is dynamic in nature as it changes over time and it is also different across cultural groups as the concept 'family' itself is culturally relativist. For obvious reasons utilisation of ICT by transnational families depends on technological progress and in pre-1990s communication by regular mail was the dominant form of familial 'intimacy' (Wilding, 2006). While before Internet cafes and public phones did not offer enough privacy (Panagakos & Horst, 2006), personal mobile phones provide migrants with an opportunity to be constantly involved in the life of their families privately (Vertovec, 2004).

These new opportunities are in sharp contrast with the transnational familial relationships described by Thomas and Znaniecki (1918) when exchange of letters required weeks of waiting. Nowadays international call services introduce the whole new mode of familial relationships for international migrants. This mode sometimes even called a 'miracle' of technology (Wilding, 2006). The study by Panagakos & Horst (2006: 149) suggests that ICT allows parents who are overseas to provide their children who stay in the country of origin with support and 'academic and emotional growth'. Similar effects of ICT are described by Tall (2004) who also points out that investments of migrants allow the development of infrastructure of the rural communities in Senegal.

Notably telephone communication described in the study by Vertovec (2004) becomes replaced by videoconferencing (Benitez, 2006). Here the ability to share visual data instantly makes the celebration of various familial possible irrespectively to the actual location of the family members. Benitez (2006) argues that these opportunities provided by ICT are crucial for the social relationships in transnational families. As such, the possibility of not only voice, but also of visual communication provides additional opportunities for intimacy (Panagakos & Horst, 2006). Arguably ICT can be utilised by migrants not only in private and intimate social relationships, but also for the purposes of political engagement and empowerment.

8. ICT and Political Empowerment

Another important consequence of convergence of the development of ICT and international migration is political empowerment of various migrant communities. This convergence is even seen as a profoundly new social project (Rogers & Singhal, 2003). In relation to this Van Den Bos and Nell (2006: 209) point out that 'Diaspora websites that are extensions of print media are directly or indirectly connected to political movements in exile'. Addressing the cases of Iranian and Turkish-Kurdish migrants in the Netherlands the authors underline the importance of territoriality in channelling Internet activity and development of social networks. Furthermore, Bernal (2006) in the analysis of Eritrean diaspora illustrates how national government uses the potential of the diaspora

that resides outside the country. At the time of war with Ethiopia online social networks of the diaspora allowed mobilisation and financial support of the sending countries. Moreover, ICT allowed involvement in the creation of new constitution, reinforcement of national identity and community, representation of the country to the outside world (Bernal, 2006).

Arguably diasporas with their ability of ICT utilisation are important agents of the progress and development of the countries of origin (De Hass, 2006). Important aspect of such political participation of international migrants is that online environment provides 'virtual arenas' and new 'public spheres' that are safe for the expression of opinions challenging oppressive and dangerous political systems. Therefore, ICT gives an opportunity to broaden access to more diverse informational resources and reinforces freedom of expression (Allison, 2002). However, modern technology also creates digital divides in political participation when more advanced groups within migrant communities may silence less advanced ones. The example of this digital divide provided in the study by Levitt (2008). It is demonstrated that ICT creates additional divides that go along territorial and economic lines within migrant communities. As such, new opportunities provided by ICT cannot be seen only in a positive light.

Moreover, such valuable feature of ICT as provision of new public sphere for various migrant communities is quite commonly opposed and restricted by national governments. Censorship and limitation of access to the online content created by migrant communities and diasporas are the most common forms of this (Hamel, 2009). Beside with banning certain diasporic sites some countries like Malaysia, Thailand, and Singapore impose numerous restrictions on satellite television (Warf, 2007). Despite this resistance ICT is usually seen as an important tool for political mobilisation of migrant communities and democratisation of the sending societies (Bernal, 2006; De Hass, 2006; Hamel, 2009; Parham, 2004). The efforts by some national governments to control new social dimensions created by ICT are embedded into a broader social phenomenon of social control.

10. ICT and Social Control

Beside with providing new opportunities for international migrants ICT also allows more efficient social controls. Databases like Schengen Information System (SIS) host the data about international migrants across all EU states. ICT also allowed developing advanced monitoring systems that ease regulation of entry and exit in many countries. Crossing border nowadays is related to scanning of fingerprints, various barcodes and electronic chips. According to IOM (2005) modern border controls require extensive investments and for them efficient exchange of information between states became a necessity. However, centralised databases may be seen as a threat to privacy. After 9/11 increasingly important role of ICT in preventing terrorist attacks inevitably imposes additional regulations on the processes of international migration. Such goal as the creation of the global database of facial scans by Interpol is a good example of this (Bowcott, 2008). Moreover, ICT eases collaboration of national authorities and, as such, the processes of migration can be effectively regulated not only by border agencies of the host, but also by sending countries.

Fear of terrorism and additional controls created with the help of ICT may lead to constant surveillance of international migrants whose newsgroups, blogs, and even personal mail can be monitored (Panagakos & Horst, 2006). Beside with the new opportunities of social control of migrant populations ICT also can be utilised by extremist groups. Hamel (2009) makes an example of terrorist attacks in Mumbai when GPS technology, satellite telephones, and the Internet were used. Moreover, ICT allows broadcasting various media content to migrant communities. This content can

reinforce religious belonging (Richman, 2005) and this strategy is in line with the one by Al-Qaeda with regular messages of its leaders. Therefore ICT also can facilitate the processes of negative empowerment like in the case of Islamic fundamentalism. These facts allow arguing that additional controls imposed with the usage of ICT by national governments are opposed by various extremist groups, human traffickers, and irregular migrants who also seek to utilise the advantages of technology.

Having highlighted the main areas of research on ICT and migration, it is possible to point out the main directions of the future studies.

11. New Areas for Analysis

Arguably technology always affected migration as means of transportation and their technical features determined physical dislocation. However, the role of technology nowadays is ever high (Castles & Miller, 2009). This is due to the fact that more and more aspects of social life depend on technological means. In the host country the use of technology and particularly ICT is a need. Information about jobs, international money transfers and keeping in touch with friends and family are not possible without ICT.

The analysis of contemporary literature on ICT and migration points out that quite common prejudices among researchers that international migrants represent less literate in terms of ICT use social group should be abandoned. Recent studies (Codagnone & Kluzer, 2011) point out that migrant communities are usually more advanced in terms of ICT use than the population of the host country. Another restricting factor for the research on migration and ICT is the division between disciplinary fields of social and computer sciences. The lack of cooperation of these two fields leads to one-sided investigations when important aspects of this social phenomenon related to technological means of communication are overlooked.

Furthermore, ICT and migration studies are characterised by the critics of 'methodological nationalism' (Wimmer & Schiller, 2003) when nations are seen as the main foundations for the analysis of the processes of migrations. However, some authors (Georgiou et al., 2007) advocate the usage national framework for the analysis of migrations and the new media. Therefore, it is possible to argue that clear theoretical lens for the analysis on ICT and migration on the one hand and national belonging and identity are yet to be developed.

Resting on the analysis of the literature on ICT and migration it is possible to point out the following areas that have been marginally explored.

1. ICT and social inclusion of migrant populations. This area is related to the investigation of utilisation of ICT by national governments in order to widen opportunities of migrant populations for social inclusion. While some studies (Codagnone & Kluzer, 2011) focus on separate indicators of social inclusion related to the new ICT (such as broadband access, digital literacy, the role of ICT in acquaintance with public services, etc.) more detailed and systematic studies of this area do not exist yet.
2. Another important area that is under researched is related to the investigation of ICT, migration, and e-democracy. In other words, this area is related to the exploration of the impact of migrant populations on the political processes both in the host and sending countries. The analysis of the current state of art in the studies on ICT and migration points out that the majority of studies are focused exclusively on the investigation of the

relationships between migrant populations and the country of origin overlooking political processes in the host country. Furthermore, there is a lack of studies on the actual outcomes of the utilisation of ICT by migrant populations and political empowerment.

3. Next area is related to the investigation of the digital literacy among migrants. This area is connected to previous one, but encompasses a wider scope of social problems. First, migration processes are usually related to social downgrading of migrants. Thus, the investigation of the potential of ICT in terms of redeveloping and transforming various forms of capital (economic, cultural, social) for the improvement of social statuses and vertical social mobility is important area for further research. Second, digital literacy may be seen as a crucial factor for the development and maintenance of social networks among migrant populations. Here the scope of research may encompass relationships between digital literacy and cultural or ethnic identity, familial ties, education and employment, features and mode of social relationships in the host country etc.
4. Finally, ICT and migration research is embedded into a wider methodological debate. Here the main priority is the development of effective research instruments that would allow in-depth investigation. The majority of studies are either based on offline investigation of migration and the Internet (Kang, 2009) or draw exclusively on online data (Androutsopoulos, 2006; Parham, 2005). However, it is argued (Orgad, 2009) that the combination of online and offline data provide additional insights into the phenomenon under study. Therefore, the development, testing, and constant updates of the methodological principles of ICT and migration research constitute another crucial area that requires additional scholarly attention.

11. Concluding Remarks

In this literature review on international migration and ICT the main directions of the current theory and research were identified. To summarise all above, it is necessary to outline several points. First, the convergence of the processes of migration and ICT use are embedded into wider global change of globalization. Second, the study of social networks of international migration seems to be the most fruitful approach that allows overcoming previous mechanical explanations by 'push' and 'pull' factors. Third, contemporary theories on transnationalism and diaspora provide theoretical foundations for migration and ICT research. However, rapid development of technology and changing patterns of international migration require constant empirical updates. Moreover, these updates allow testing of theoretical claims expanding our understanding of the realities of the 'network society'.

Importantly modern ICT cannot be seen as a universal 'panacea' for the social problems related to international migration. While it is evident that ICT play an important role in the processes of migration it does not necessarily lead to more informed decisions and social inclusion. It is argued that digital divide and creation of the negative images of migrant populations are the problems of the Informational Age.

One of the major challenges is operationalization of the main concepts of this area of social science. Moreover, research methodology that can be applied in ICT-related research on migration needs further development. It is evident that current studies employ either online or offline research techniques. Moreover, there is a lack of methodological foundations that allow coherent combination of data collection techniques. Such area as the research of the impact of social

networking software on international migration is not developed yet. New communication technologies are 'new' due to the fact that they are subjected to a constant development, redefinition and change constantly creating new challenges to social and computer sciences.

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