The Potential Role of Digital Technologies in the Context of Forced Displacement

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Abstract. In light of the European migrant crisis and considering the growing use of new technologies by humanitarian agencies in their operations, it is important to reflect on the possible social and technological convergence of these phenomena in an attempt to minimize the damages and respond to the needs of refugees. This research focuses on the adoption of new technologies in humanitarian aid, with emphasis on the use of smartphones by refugees who escape the various wars occurring in countries such as Syria or sub-Saharan areas and that are trying to successfully adjust to their host country.

Keywords: Refugees · Infocommunicacional strategies · Mobile apps · Humanitarian aid

1 Introduction

The widespread use of smartphones that has been happening in the last decade and the always increasing development and use of instant messaging and social networking platforms, are essential factors of a digital culture that manifests itself in a set of communication media in the daily life of individuals. This rapid spread of ICT is also changing the approaches and strategies used by organizations and individuals involved in situations of conflict and natural disasters. New technologies enable at-risk communities to quickly and easily send out requests and alerts and share important information with humanitarian aid agents.

Currently, populations affected by disasters or conflict find it easier to access information and many of the information needs that arise during a crisis can increasingly be answered faster thanks in large part to mobile technologies. The development of an humanitarian approach that is more geared towards new technologies is therefore essential and inevitable. New technologies, such as smartphones, SMS, georeferencing, social media and crisis mapping, enable affected communities to access, produce and share useful and actionable information. Consequently, many humanitarian agencies are starting to adopt these instruments in their initiatives, always taking into account the feedback provided by the communities.

This investigation, which is still under development, focuses on the features of some existing technologies used in humanitarian aid, and subsequently, we'll evaluate the combined uses of the various mobile apps and websites aimed at refugees through

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interviews and focus groups with their users. We expect to come to an understanding of the features available in these apps and find out if these are appropriately tailored to the needs of its target audience. To this end, there will have to be an approach not only with refugees, but also with representatives of aid organizations, in order to investigate possible gaps that will allow us to develop a mobile application that takes these opinions into account.

2 Infocommunicacional Strategies to Enhance the Response to Forced Displacement

For this paper, we consider a refugee a person who is forced to leave his or her country of origin due to an armed conflict or persecution. Until they are registered with The UN Refugee Agency (UNHCR), displaced persons are not officially considered as refugees, as such they have no right to protection or assistance from organizations. The lack of safe access to humanitarians and numerous administrative and political factors stand out as the main obstacles to humanitarian support in Syria. The country is considered one of the most dangerous countries in the world for humanitarian or health professionals, and humanitarian facilities are deliberately targets from all groups involved in the conflict (OCHA 2016). It is opportune to use techniques and tools that refugees have access to and give them some agency so that they aren't merely dependent on humanitarian aid.

There are now more portable devices, especifically smartphones, than people (ITU 2016a). This ubiquitous access to these devices and to the internet is generating new ways for affected communities and humanitarians to organize and respond to obstacles and necessities. According to data from ITU (International Telecommunication Union), 80% of the global population uses smartphones e 33% accesses the internet through a handheld device. In a lot of developing and underdeveloped countries, internet access is made almost exclusively through mobile devices. As such, is very likely that communities affected by conflict or natural disasters produce and consume digital content (ITU 2016a).

The fact that refugees have smartphones in their possession has been one of the arguments used to discredit their situation, mistakenly assuming that they do not need help because they have money to purchase these devices. However, as prices of these continue to drop, along with a decline in mobile network subscriptions prices (ITU 2016b), these factors made them accessible to the most underprivileged individuals. The smartphone and the internet have become a vital part of a refugee's daily life. With these, they can access maps, public transport schedules or check social media for tips and real-time information on possible obstacles from other refugees (Plataforma de apoio aos refugiados 2016). Refugees in Syria use YouTube to share images of what is happening and use Skype and WhatsApp to get in touch with family and friends in their home country, to get information and to send requests to the humanitarian community (IFRC 2013). These tools have been instrumental for individuals in Syria to conduct themselves and deal with their problems more efficiently.

The omnipresence of smartphones has also contributed to a propensity of monetary remittances made on these devices, and currently, most of the donations to social causes are made through mobile phones and social media. There has also been an increase of these money transfers to communities in the diaspora, who transfer directly to friends and family in the countries of origin (Loh 2016). Thanks to smartphones, refugees are able to perform this task quickly and in a more efficient way. It is also an approach that has been successful with humanitarian agencies, with some giving out vouchers to be exchange for food and shelter (IFRC 2013).

A study conducted by Internews found that the information that refugees most value are news about their family in the country of origin, how to find work in the host country and information on food and housing (di Giovanni 2013). As for Wall et al. (2015), they learned that the most important information for refugees' day-to-day lives are news about personal contacts in the camps, in Syria and about the Syrian conflict and information on the aid programs available in the camps. The vast majority (63%) prefer to be contacted through mobile phone/SMS, while the rest are divided between preferring face-to-face contact with officials, or looking through the internet, television or newspapers as a means of obtaining information. In both studies, most refugees believe that it would be extremely helpful to receive information about aid services on their mobile phones and that the use of these devices is essential to their daily life. Only 14% of the participants said they did not have access to a mobile phone and 40% of those who do have one, have a smartphone. These are mostly used to make and receive calls and text messages, with instant messaging apps like Whatsapp being the most popular means of communication among all classes of refugees (di Giovanni 2013).

Communities can then more easily communicate and share important information with each other. Whether through this sharing of information or of clothing and food, diasporas and local communities, allied with technologies, are increasingly using a do it yourself approach, somewhat diminishing the humanitarian agencies' role (IFRC 2013). And aid agencies are no longer merely dependent on information shared by other humanitarian organizations and the media, but can also access information generated by the communities themselves. They too are generators of structured and georeferenced digital data in various formats, such as text, image, video and voice thanks to the use of geospatial technologies (IFRC 2013). Georeferencing technology recognizes the geographical position of the individual and this way, he/she will have access to more information about that place or specific elements of it via videos, sounds, texts, infographics, etc. These technologies allow its users to contextually learn the information and also contribute to add new material, suggestions and emotions to this territory (Oliveira and Baldi 2015). And so, this geographic information is no longer merely produced by official institutions and private mapping companies, but are also created by individuals who want to share their data with other users. Due to smartphones and mobile apps that use type of technology, the map as we know becomes a digital and dynamic one, an interface in which its content is shared and social networks are established (Baldi and Oliveira 2013).

Information and communications technology (ICT) create a continuous necessity of upgrade and adaptability of the tools that humanitarian agencies employ in their actions. ICT allowed them to create new registration and support systems that help them

distribute their aid. Institutions, such as UNHCR, started using databases to determine the size and structure of a population. Instruments like this help aid agencies to coordinate their efforts and resources more efficiently. Organizations also use these new technologies to send out alerts, train volunteers, connect and engage with communities at risk and to raise awareness and monetary funds (Loh 2016).

A number of humanitarian organizations are experimenting with these new sources of information, digital technology, data collection and real-time monitoring platforms, such as the American Red Cross' Social Media Digital Operations Center, the first center for humanitarian aid actions based on content from social media. The center uses software (Radian6) to control and analyze social media in real time and allows the Red Cross to do a personalized and specific search to better respond to the needs of its users. And since the software allows up to 25 users, a number too high for the institution to permanently keep up, it followed the example of the DHN and trained volunteers on how to use the software (IFRC 2013). Radian6 is used as a tool to monitor and analyze mentions of a company, brand or keywords made on social media and also allows real-time interaction in the website where the remarks are taking place (Web Analytics World 2012). As such, it is mainly used by companies as a marketing tool, not having been developed with the aim of aiding humanitarians. And given that the humanitarian sector does not represent a financially attractive market for software development companies, they rarely maintain or upgrade humanitarian aid programs. Hence organizations have to resort to open-source software, or in the case of Radian6, costly options (IFRC 2013).

2.1 Crowdmap as Collaborative Intermediation

The vast majority of these aid tools rely on crowdsourced crisis mapping. This instrument consists of a map that encompasses the collection, visualization and analysis of data in real time during a crisis thanks to information acquired by mobile applications or websites, aerial and satellite images, etc. (Meier 2011). Standby Volunteer Task Force (SBTF) is one of the multiple initiatives of professional humanitarian networks that dedicate themselves to humanitarian aid online. The non-profit organization created a crisis map of Libya with content from social media and from the Office for the Coordination of Humanitarian Affairs (OCHA) which provided them with a list of indicators such as people displacement, health, logistics and threats. The map, password protected, allowed volunteers to check, analyze and verify vast quantities of information related to these categories. Later, a public map was also made available, however the information in this was anonymous and only disclosed with a 24 h delay for security reasons (SBTF & OCHA 2011). During a crisis, people need to have fast and easy access to information that its relevant to them and, such information, must be arranged intuitively and offer feasible data. And that's where these live maps come in and quickly facilitate the visualization of what is happening and where, improving the knowledge of the situation in question.

For Jesse Hardman and Jacobo Quintanilla, messages of support and information sharing as a form of assistance are often best delivered by individuals who share a link with both local communities and humanitarian agencies. The authors mention the case of Ramanan Santhirasegaramoorthy, a radio host with a show in Sri Lanka aimed at

people displaced by war. The host provided news and information to individuals about where to find basic resources, how to stay safe, and how to get in touch with humanitarian and government agencies. After learning about the show, Internews trained Santhirasegaramoorthy and his team, teaching them humanitarian principles, how to do disaster coverage, how to work with the government, military and humanitarian organizations and how to connect and interact with listeners in need of help. Currently living in Canada, Santhirasegaramoorthy now hosts a radio show aimed at the Tamil diaspora living in the country. In his new platform, he focuses on issues related to integration, sharing tips on how to adjust to life in Canada and how to deal with the stress of living and working in a Western society (IFRC 2013).

2.2 Networks of Reliability to Filter News Online

This easier access to content creation and sharing allows individuals to self-organize and help others at risk. However, this also prompts for an overwhelming amount of information online that makes it harder for both organizations and individuals to filter it. Hence the importance of initiatives such as the Digital Humanitarian Network (DHN). DHN was designed "to provide an interface between formal, professional humanitarian organizations and informal yet skilled-and-agile volunteer and technical networks" (Digital Humanitarians 2015). The members of this network are diverse, from large corporations to small and medium-sized non-governmental organizations, and each has a multiplicity of skills among them, cartography, social media monitoring, technology development and data analysis. Launched in 2012, DHN has already provided information, imaging, mapping and technical crisis development to organizations such as OCHA and Doctors Without Borders (Digital Humanitarians 2015). One of the interfaces that has been developed is the "Services Advisor" that links refugees to the humanitarian agencies they need most. The interface aims to facilitate the sharing of information about humanitarian services available in Jordan and to enable aid organizations and governments to communicate with each other. Its contents are updated weekly by humanitarians on the ground and can be filtered by type, location and proximity to the service (PeaceGeeks n.d.).

As with traditional media, social media also act as a critical medium in the spreading of information during conflict. However, the vast amount of information available in these makes it difficult to filter the most important and relevant content. As so, it is appropriate to use tools that simplify and verify this research, as a way to accelerate this process. Thus the initiative of the Federal Emergency Management Agency (FEMA) during Hurricane Katrina, that created a "rumor control" site listing all the rumors circulating about the disaster and labeling which ones were true and false. As for Twitter, the social network is the online tool most used to share information during disasters and conflict. This audience preference comes mainly from the hashtags that this social networking site has popularized and that make it easy to categorize, find and participate in conversations on a particular topic (Hashtag Definitions n.d.). During typhoon Pablo, the Philippine Government regularly used its Twitter account to make status updates and created specific hashtags so that people could keep track of the situation (#PabloPH) and also to ask for help (#reliefPH and #rescuePH) (IFRC 2013).

The use of new technologies in humanitarian action offers concrete ways to make aid more efficient, accountable and transparent. However, it is worth noting that in a lot of affected areas, in addition to scarce information, there might be limited mobile network coverage, restricting both the population and humanitarians of access to the internet. Therefore, to reach the highest numbers of individuals possible, there has to be a balance between the use of tradicional media, such as newspapers and radio, and new technologies. Instead of trying to figure out which of these is the most effective, since literacy and digital literacy is going to differ from area to area. Aid humanitarian agencies should keep in mind which information is the most relevant, which channels those individuals use and trust and how they communicate with each other and with other communities (IFRC 2013).

3 Final Considerations

For the purpose of this short paper, we've summarised our listing of the state of the art of the mobile applications for refugees to the three we found more interesting and relevant to the product we're trying to develop. "RefInfo" is a mobile app, available for Android and iOS, intended for refugees arriving in the Netherlands. With this app, the creators hope that refugees are able to find all the information they need in one single place. Its menu consists of: a 'news' section with links to Facebook pages of media and aid institutions; a 'next step', with numerous categories with information regarding legislation, accommodation, how to open a bank account, insurance, SIM cards, integration, among others; an 'about the Netherlands' section about the country, its customs, culture and history; a division dedicated to the learning of Dutch, with multiple YouTube videos and sound clips to learn the language; a section with dutch cartoons aimed at children, mainly for keeping them entertained in the waiting queues; and in 'locations' we find several Embassies and Migration and Foreign Services contacts. All its menus and contents are in English and Arabic.

"Helphelp2" is an app that connects organizations to volunteers who want to help. When opened, the application shows a map of the area where the user is with the places he/she can go to provide help, like making a donation, for example. Each location on the map is identified with the name of the institution, opening hours, distance, address and items they would like to be receive from donors. The vast majority of these data are centered in Germany and the remaining few in Austria.

Also taking advantage of the georeferencing technology, it's the Android app "Refugee Aid". Aimed at refugees and citizens who want to help them, the application works as a service and goods exchange platform, proving information on offers around the area where the user is. When logged in, volunteers can create offers with whatever they would like to provide, like clothes or housing, or a simple invitation for a meal, always stating a contact and location. And the refugees, can put up ads asking for something that they need.

As previously mentioned, this paper is the first step in an ongoing investigation, where the final goal will be to develop a mobile application that can help refugees with their integration in Portugal. In this initial phase, we strived to make an approximation

to the subject of refugees and new technologies by listing pertinent literature and some mobile applications that support refugees. Later on, qualitative data will be collected from refugees and representatives of humanitarian organizations in order to generate an in-depth understanding of the uses, trends and potential of mobile applications in migratory diasporas. In our final product, we hope to comprise not only the invaluable informative nature of apps like "RefInfo", but also the social component present in "Refugee Aid" and "helphelp2" that we believe is vital for better integrating refugees in a context with such different languages and lifestyles than what they were used to (Fig. 1).

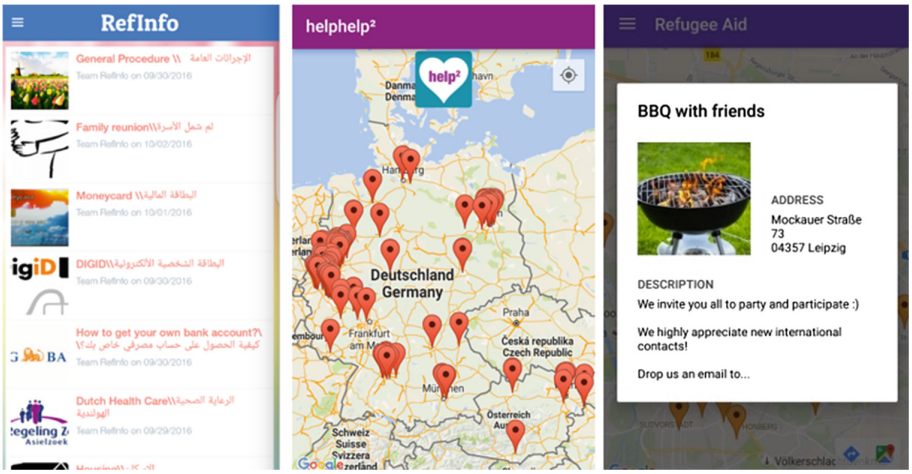

Fig. 1. Screenshots for the apps RefInfo, helphelp2 and Refugee Aid, respectively.

References

Baldi V, Oliveira L (2013) Território hipermediatizado e convergencias multilocalizadas: dialética entre terra e núvens. Experiências de Consumo Contemporâneo, December 2013, pp 28–46. https://doi.org/10.13140/RG.2.1.5077.7128

di Giovanni J (2013) Lost: syrian refugees and the information gap. Internews. http://www.internews.org/research-publications/lost-syrian-refugees-and-information-gap. Accessed 4 Nov 2016

Digital Humanitarian Network (2015) DHN catalogue. http://digitalhumanitarians.com/resource/dhn-catalogue. Accessed 20 Jan 2017

Hashtags. https://www.hashtags.org. Accessed 15 Jan 2017

IFRC (2013) World disasters report: focus on technology and the future of humanitarian action. Int Federation Red Cross Red Crescent Soc. doi:10.1111/j.0361-3666.2005.00327.x

ITU (2016a) ICT facts and figures 2016. Geneva

ITU (2016b) Measuring the information society report. Geneva. ISBN: 978-92-61-21431-9

Loh T (2016) Digitizing refugees: the effect of technology on forced displacement. Gnovis J. http://www.gnovisjournal.org/2016/04/29/digitizing-refugees-the-effect-of-technology-on-forced-displacement/. Accessed 4 Nov 2016

Meier P (2011) iRevolutions. What is crisis mapping? An update on the field and looking ahead. https://irevolutions.org/2011/01/20/what-is-crisis-mapping. Accessed 25 Oct 2016

OCHA (2016) 2017 Humanitarian needs overview. http://hno-syria.org. Accessed 3 Jan 2017
Oliveira L, Baldi V (2015) O potencial educativo do território hipermediatizado_: dos lugares do conhecimento ao conhecimento coproduzido nos lugares. prisma.com 28:65–85. http://revistas.ua.pt/index.php/prismacom/issue/view/257
PeaceGeeks. https://peacegeeks.org/products/services-advisor. Accessed 20 Jan 2017
Plataforma de apoio aos refugiados (2016). Factos e argumentos para desfazer medos e mitos: refugiados. http://www.refugiados.pt/teste. Accessed 20 Jan 2017
Plataforma de Apoio aos Refugiados. Mitos & Medos. http://www.refugiados.pt/a-crise-dos-refugiados/mitos-medos. Accessed 20 Jan 2017
SBTF & OCHA (2011) Libya crisis map deployment. http://www.standbytaskforce.org/2011/09/01/libya-crisis-map-report. Accessed 15 Jan 2017
Wall M, Otis Campbell M, Janbek D (2015) Syrian refugees and information precarity. New Media Soc. doi:10.1177/1461444815591967
Web Analytics World (2012) Radian 6 overview. http://www.webanalyticsworld.net/analytics-measurement-and-management-tools/radian-6-. Accessed 20 Jan 2017