

CO-CREATING ICT SOLUTIONS TO AID MIGRANT INTEGRATION: LESSONS LEARNED FROM THE H2020 MIICT¹ PROJECT

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ABSTRACT

This paper presents the results of the prestigious Horizon 2020 MIICT: ICT-enabled services for migration innovation project. The project was conducted by a multidisciplinary team of technical developers, social scientists, lawyers, practitioners, and migration experts in three pilot countries of Cyprus, Spain, and Italy. The project focused on deepening societal understanding of the factors that impact upon refugee and migrant populations' ability to access key public services and subsequently created an ICT solution to solve these problems. The project deployed a co-creation methodology, which proved essential when designing ICT solutions to aid migrant integration, enabling researchers to involve both the migrants and those assisting them in their migration journeys, namely NGOs and service providers in the study as co-researchers. The researchers, together with the participants co-designed a multilingual, intuitive, inclusive, interactive platform called IMMERSE that catered for the *real* needs of migrants, asylum seekers and refugees. The innovative co-creation methodology deployed empowered migrants to be proactive and independent in their migration journeys and the resulting interactive platform created provides vital access to information and services like health, language, housing, employment, education, and legal assistance in a one-stop-shop design. This paper further highlights the lessons learned from the research, concerning the need for digital training courses to be implemented to overcome the digital divide and the inclusion of extensive legal and ethical protocols in migrant languages, to be integrated into the platform to counteract migrants' fears of digital surveillance and create confidence and wider usage of the ICT platform.

KEYWORDS

Co-creation, IMMERSE Platform, MIICT Project, Migrants, Refugees, Integration

1. INTRODUCTION

Immigration to the EU from non-member countries was 1.9 million in 2020 (Eurostat, 2020). The current refugee crisis in the Ukraine highlights the need for states to harmonise their responses to ensure refugees receive vital assistance.² The problems of integration, discrimination, unemployment, and education are particularly prevalent among migrants, asylum seekers and refugees from different demographic characteristics. Current research shows that migrants experience poverty, discrimination and marginalization whilst living in the EU (Kuschminder, 2018; Patterson & Leurs, 2019; Sawert, 2020). This has been exacerbated by the COVID-19 pandemic (Le Louvier & Hough, 2021).

Technological solutions can prove vital in aiding migrant integration, solving the above-mentioned problems, since migrants rely heavily on technology to aid their migration journeys (Bakewell & Jolivet, 2015; Borkert et al., 2018; Crawley & Hagen-Zanker, 2018; Dekker, & Engbersen; Dekker et al., 2016; Dhoest, 2020; Fiedler, 2019; Gillespie, et al, 2018; Frouws, 2016). ICTs have been proven useful in helping migrants to interact with public administrations or participate in public life (Osorio & Rodríguez, 2014) and can facilitate administrations in achieving the Sustainable Development Goals of leaving no-one behind,³ including migrants.

¹ The MIICT project was funded under the Horizon 2020 scheme. See <https://www.miiict.eu/> for more information

² This is because some states on the frontline like Poland are under great pressure with higher numbers of refugees. <https://data2.unhcr.org/en/situations/ukraine>

³ See IOM & GMDAC Leave no migrant behind, the 2030 agenda and data disaggregation. <https://publications.iom.int/system/files/pdf/Migrants-in-the-SDGs.pdf>

In recent years, there has been a proliferation in the creation of several high-tech tools designed to support refugees' integration in their host States.⁴ However, not all technologies address the ethical and legal problems derived from the misuse of new technologies and the potential breach of basic human rights. Furthermore, many of these have taken a top-down approach, meaning that they often do not fulfil the real needs of migrants, and as a consequence are sometimes not taken up by many users (Dekker et al., 2018) risking becoming digital litter (Benton, 2019).

The MIICT project responds to this gap by using an innovative co-creative methodology to successfully customize the interfaces used to access key public services so that they better address the requirements of migrants and refugees. This human centred, bottom-up grassroots approach is essential in ensuring that the ICT solution caters for the needs of the beneficiaries, including vulnerable groups like LGBTQ+ refugees, unaccompanied minors, and pregnant women, whilst at the same time underlying certain risk factors regarding the uptake amongst certain populations. The innovative co-creative methodology ensures migrants are empowered and aware of their rights, boosting their socio-economic integration into the host country. The MIICT project thus contributes to developing inclusive societies that respond to upcoming challenges by providing migrants with up-to-date information via ICT tools in a cost-effective way, ensuring their integration into the labour market via a job matching tool, thereby leading to the creation of more positive narratives surrounding migration. This helps reduce social inequality and decrease the current xenophobia pervading in many EU states.

2. METHODOLOGY

In the MIICT project a human centred design approach was taken in which the end users were deeply ingrained within the participatory design process throughout three phases of research. The first phase, the *inspiration phase*, focused on identifying the main services essential for migrant integration to the host society, which included status, social integration, health care, housing, employment, language, education and training, transport, and social security. A variety of methods were used, to elicit these challenges, including an extensive literature review, in-depth interviews, online surveys, and co-creation workshops using mind-maps and storyboards in the three pilot locations of Cyprus, Italy, and Spain. The researchers used visual methods to avoid the re-traumatisation of migrants, asylum seekers and refugees, as they have often undergone traumatic journeys. The co-creation workshops were essential as they enabled “marginalised” participants to exercise greater control over the data production and direct the research project itself (Strokosch & Osborne, 2016). Using mind-maps as a research method further enriched the data collection process by breaking down communication obstacles through facilitating the visualisation of key concepts and their related sub-concepts (Mahmud et al, 2011).

The second phase, *ideation phase*, consisted of conducting a series of co-design and co-creation workshops in each of the three pilot locations of Cyprus, Italy, and Spain in order to co-design and co-create solutions to the challenges identified in the *inspiration phase* with the project's stakeholders. Researchers used visual methods once more to enable the participants to design the platform and landing page. Researchers also used a synthesis methodology in this phase to interpret the co-creation data and create personas representing migrant profiles to enable easier engagement with the platform. In keeping with the co-creative and participatory approach of the MIICT project, periodic conjunction points were inserted so that all key stakeholders could provide their feedback to the technical development.

In the final phase, *implementation phase*, two testing phases were undertaken – namely the live prototyping phase which was conducted in each of the three pilot locations for a period of one week and the sustained service delivery testing phase, which lasted six months and was undertaken in-situ in a real-world environment with live data. Each testing per pilot was designed to enable feedback to be incorporated into the next location by the technical team developing the platform in order to enhance the creation of the platform. Feedback was gathered via questionnaires, focus groups and interviews with all stakeholders. The researchers further adopted a Privacy-by-Design approach to ensure full inclusivity and protection.

⁴ Among these, Germany stands out with the introduction of various Apps that accompany refugees and asylum seekers like Welcome App Germany and Integreat and the IOM MIGRAPP is also very successful. <https://www.iom.int/migapp>.

3. RESULTS

3.1 The Immerse Platform

The IMMERSE platform (Integration of Migrants MatchER Service) provides a series of sustained and improved inclusion services that capture the specific socio-cultural, economic, and legal contexts of migrants and foster them to overcome key challenges they encounter when they arrive in the destination country, namely regarding social security, language, transportation, housing, education and training, social integration, healthcare, employment status. The IMMERSE platform also acts as a firewall, reducing the potential for discrimination and bias, via a job matching tool to aid the integration of migrants into the labour market. It is also available in a mobile-friendly version in several languages including English, Italian, Spanish, Greek, Arabic and French. It provides a one-stop-shop solution helping migrants to create their CV and register for jobs and training courses via both transactional and informational services. Its innovative advantage consists in an adaptive “plug in and play” integration framework, that allows for the incorporation of new ICT modules depending on the needs of users, also enabling an easy integration of IMMERSE into existing IT infrastructures. Video tutorials were incorporated to help illiterate users and those with special needs use the platform more easily.

The IMMERSE platform is built using state of the art architecture with different layers including the user interface, application, semantic, data management and security layers (Ntioudis, 2022). The User Interface (UI) is developed to enable stakeholders such as service providers and migrants to interact with the system as well as with each other. Another feature is the IMMERSE domain ontology, a lightweight knowledge representation model in the semantic layer, responsible for the storage and retrieval of the information that is available in the Knowledge Base Repository (KBR). It acts as a *matchmaking* service that dynamically enriches user profiles of migrant users, that have previously registered to the IMMERSE platform, with personalized recommendations for jobs, training courses, houses and volunteering offers that are offered in the platform by service providers. Another innovative feature is the Data management system (DMS) running on the MIICT backend with a twofold responsibility including the central storage of device profiles and the correlation of existing information with newly acquired data from other repositories and sources (for patch and firmware updates as well as manufacturer use documentation).

The platform has been entirely conceived and built using evidence-based research. It is user-friendly giving solutions to reduce cumbersome administrative practices. Through a pathway of customisation, the platform increases migrant’s interest and motivation. It is transparent and easy to operate and navigate, enabling migrants to mark their favourite posts. All legal and ethical protocols have been followed to ensure adherence to the GDPR, thereby safeguarding migrants. An outline of the system architecture is provided in figure 1.

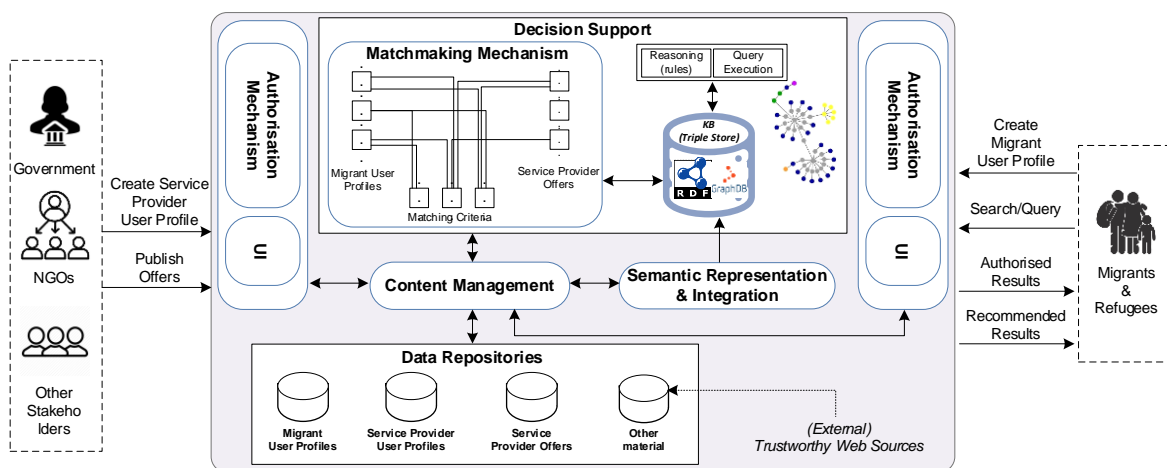


Figure 1. IMMERSE system architecture

3.2 Testing

One crucial, and innovative element of the MIICT project consisted in its live testing of the proposed ICT solution in two phases by all target groups in the three pilot locations to ensure stress testing, and the feasibility of the platform. The first phase, a live prototyping phase consisted of one week to evaluate the functionality of the offered services against the actual users' requirements as well as the performance of the IMMERSE platform. The technical team gathered feedback via questionnaires and were also able to fix any bugs at this stage.

The second testing phase, the sustained service delivery was conducted over a six-month period in a live environment, in each pilot location, testing the utility, desirability, scalability and other important factors pertinent to the success of the platform. Several feedback sessions were conducted with the participants via focus groups and questionnaires resulting in a positive overall view of the platforms' impact in tackling their problems. Over 50% of migrants, reported that just by taking part in the research itself, their confidence in public service providers has improved, thus showing the impact of participatory methods. A further 80% of participants reported being satisfied with the platforms ability to save time and effort in the communication between service providers and migrants. The service providers further pointed out that around 90% of the demands of the migrants to their organisations is related to employment and as such, they consider the job matching tool on the IMMERSE platform to be valuable.

3.3 Lessons Learned

During the research several challenges were raised concerning the successful deployment of the IMMERSE platform with researchers outlining the need to be sensitive to issues of cultural diversity, digital positioning, researcher bias, eurocentrism, and inclusivity. One challenge raised concerns the fact that not all individuals have equal access to technology and usage depends on several factors including, but not exclusive to, age, socio-economic status, and gender, known in the literature as the digital divide (Alam & Imran, 2015; Adam, & Alhassan, 2020). To overcome this hindrance, researchers in the project suggest state run digital training courses for all migrants and service providers, as well as inbuilt courses on the ICT solution itself. This issue is linked to inclusivity, and researchers suggest the added need for the creation of hubs in open spaces, like libraries with free Wi-Fi and devices to ensure migrants can access the ICT solution easily.

Another issue that arose from the research concerned migrants' fears of digital surveillance (Dekker et al., 2016; Gillespie et al., 2018). Some migrants were reluctant to give their personal emails to register on the platform due to their insecure status, and the persecution they had suffered in their countries of origin. To overcome this effective information campaigns, need to run alongside the deployment of any ICT solution, and the inclusion of privacy protocols need to be provided on the platform itself using simple terminology, that is translated into several migrant languages. These should be included on the landing page of the platform to reinforce migrants' sense of trust and confidence in uploading their personal details.⁵ Another challenge is the continued safeguarding of migrants, and any future administrator needs to deploy a privacy by default and by design approach to vet all contacts and links and keep them up to date to protect migrants, demonstrating the need for increased funding in the sustainability period.

4. CONCLUSION

This paper has presented some of the main results from the H2020 MIICT: ICT-enabled public services for migration project. It has evidenced how the co-creation and co-design methodology adopted in the MIICT project was crucial to eliciting the relevant key stakeholder driven requirements for the development of the IMMERSE platform. The MIICT project has designed a one-stop-shop multi-lingual, interactive platform called IMMERSE that aids migrant integration via transactional and informational services. The design is user friendly and intuitive culminating in a mobile friendly version. It enables migrants to get access to employment via a job matching tool, as well as access to education and training courses and offers help with creating a CV.

⁵ Researchers deployed a privacy by design approach and carried out extensive DPIA, Fundamental Risk assessment and ensured all research was carried out in relation to Article 35 of the General Data Protection Regulation (GDPR) - Regulation (EU) 2016/679.

However, the paper highlights that certain challenges surround the deployment of such ICT solutions in real life situations.

Technological innovation does not exist in a vacuum, so whilst co-created ICT solutions go a long way in aiding migrant integration, the deployment of such tools need to be accompanied by several *enabling conditions* for them to have real impact. These include the creation of hubs with free Wi-Fi, built in digital training courses for both service providers and migrants, and the inclusion of legal and ethical protocols in migrant friendly languages to build trust amongst migrants. Continued funding needs to be obtained to ensure the successful administration of the platform for long-term use to enable the administrator to vet all applications and monitor all external links are accurate and trustworthy to ensure migrants' protection.

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