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# DIGITAL HUMANITARIANISM: HOW TECH ENTREPRENEURS ARE SUPPORTING REFUGEE INTEGRATION

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By Meghan Benton and Alex Glennie

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## Executive Summary

The 2015–16 period has seen an explosion of social and technological innovation to address the European refugee crisis. The breakneck speed and volume of these new ideas reflect the unique selling point of the tech industry: its ability to move quickly and collaborate across borders. But the sheer number of new tools and initiatives cropping up in Europe and further afield is also cause for concern. Techfugees—a platform where many of these innovations have been organized, including through numerous hackathons—is now encouraging would-be innovators to support the tech needs of existing humanitarian organizations, in lieu of developing yet another new solution.

As the tech element of civil society matures, many initiatives are becoming more established. Tech innovations now cover the entire asylum process, from predeparture (e.g., route planning) to transit and emergency response (e.g., Wi-Fi access and family reunification) to arrival (e.g., interpretation, housing, mental health, and banking) to longer-term integration (e.g., training, employment, and social cohesion). The best-established initiatives to support refugee integration can be grouped under three general aims:

- **Helping newcomers navigate local services.** A number of new apps consolidate and translate information about local services, simplify legal information, or meet demand for specific services (e.g., health care) in a culturally appropriate way. Though these tools have helped newcomers save time and connect with valuable services early, they are not without drawbacks. Many apps exist in duplicate or fail to reach their intended audiences. Unless updated on a continuous basis, online tools are useless. Perhaps most importantly, they put a Band-Aid on a deeper sore: government services are not well coordinated or user-friendly. It is arguably more critical to make government websites mobile accessible, multilingual, and responsive to user needs than it is to create a third-party app.
- **Getting newcomers into work or training.** Innovations with this aim include distance-learning programs, intensive courses in coding, and employment-matching platforms. The best designed initiatives blend online provision with mainstream education programs—for instance, by creating packages of existing courses for asylum seekers that they can then convert into credit toward a traditional university program once they get protection status. Coding programs are also promising because of the access they afford: digital economy jobs can be performed remotely and often have looser language requirements. Because such programs are designed mainly for high-skilled refugees, it is an open question whether they can be expanded and scaled.
- **Providing access to community-based housing and services.** Digital platforms match people who are willing to offer specific goods and services with refugees who need these resources. House sharing, for example, can reduce pressure on the housing market while involving ordinary families in the integration process. This in turn gives them a stake in integration outcomes. But on current platforms, the matching and vetting process remains cumbersome and labor intensive, reducing the potential for scale. If governments offered subsidies to people willing to open their spare rooms to refugees, these platforms would stand a better chance of realizing their promise as facilitators of an alternative, community-led approach to refugee reception.

Despite the sheer volume of innovation in the last 12 months, three areas of possible impact have received surprisingly little attention. First, technology has great potential to address some of the challenges associated with multilingual classrooms, allowing new arrivals to learn alongside their peers instead of being channeled into remedial classes. Second, alternative ways to assess expertise and competence (e.g., micro-credentialing, in which digital “badges” provide an online imprint of competence) are increasingly attracting attention as a means to help groups with nontraditional career pathways, including veterans, but the implications of such tools for refugees have not yet been explored. Finally, access to credit is a major barrier to migrant entrepreneurship, and new innovations in the alternative finance world (such as peer-to-peer lending and crowdfunding) could help capitalize on community energies to support refugees while



creating high-quality career paths. Tech and social entrepreneurs could consider investing more energy in these three areas of particular promise.

Currently, policy levers for supporting innovations in refugee integration fall into a number of categories. An emerging trend among governments, the private sector, and civil society is the use of “challenge prizes.” Open competitions to solve a particular challenge offer support for shortlisted individuals or teams to develop their ideas and, potentially, win a substantial amount of funding. While such competitions tap into a large pool of good ideas, they risk contributing to the “pilot and crash” phenomenon, by which new programs keep being introduced but then cannot find the long-term financial support they need. Follow-up funding and incubation support can help the most promising innovations reach the next level. Governments can also redirect some of the huge public procurement budgets at their disposal to serve refugee integration outcomes, for instance, by helping social entrepreneurs win public contracts and by commissioning services based on particular outcomes (instead of the means by which they should be delivered).

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*Follow-up funding and incubation support can help the most promising innovations reach the next level.*

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To capitalize on the tech industry’s efforts, policymakers should signal more clearly what problems need solving. They might also consider helping tech entrepreneurs measure the impact of their innovations by providing requisite funding and training. It is also critical that stakeholders in the integration process speak with social and digital entrepreneurs routinely to help guide tech innovations toward current needs and to introduce new thinking and ideas into traditional integration policies. Policymakers might consider convening regular meetings of “unusual suspects,” such as young tech entrepreneurs, policy experts, refugee support groups, and refugees themselves. Finally, policymakers with responsibility for asylum and integration should attend to the problems that tech and social entrepreneurs identify, even if the solutions are not forthcoming: deepening collective understanding of the complex challenges of refugee integration is the first step toward meeting them.

## I. Introduction

In many European countries, public interest in the refugee crisis was galvanized by the widely disseminated image of three-year-old Alan Kurdi.<sup>1</sup> Outpourings of sympathy and outrage, especially on social media, urged London’s tech community into action. Within a month, Mike Butcher, editor-at-large of the popular website TechCrunch, had set up a “Techfugees” conference and hackathon, and recruited some prominent tech leaders to support him. Techfugees hackathons and events have now spread to New York, Beirut, Paris, Melbourne, San Francisco, and beyond. The result is a global network of tech entrepreneurs.

The new tech branch of civil society differs from traditional civil society. The speed and creativity of the tools developed in late 2015 and early 2016 reflect a world where things move fast and people network and collaborate across continents. Through the Techfugees digital Slack platform (a Facebook-style messaging board meant to encourage collaboration across distance), social entrepreneurs and tech companies doing pro bono work, share ideas and contacts, and even code with one another. In a policy area often stifled by a lack of coordination and conflicting priorities among different actors, the new

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<sup>1</sup> Alan Kurdi was a Syrian boy whose body washed ashore on a Turkish beach in August 2015 after the boat transporting his family from Turkey to Greece capsized.



tech civil society's ability to generate, share, and spread good ideas is a welcome change. Moreover, the movement is actively trying to include refugees in designing and delivering services: many coding schools encourage their refugee graduates to return as teachers,<sup>2</sup> while Techfugees encourages the project teams they support to include refugees.<sup>3</sup>

But the movement, perhaps in large part because it is so new, is plagued by challenges of funding, organization, and duplication. In many cases, several versions of the same initiative now exist.<sup>4</sup> While this might not be a problem for traditional civil-society initiatives, such as employment support, it is a problem when your business idea is to create the default “one-stop app” for navigating city services. Even efforts to draw together the best examples are themselves proliferating: several entrepreneurs lay claim to being *the* organization consolidating efforts.

The speed of the tech response has outpaced policy debate, and any collaboration has been sporadic. Thus, many digital efforts are poorly connected with traditional, offline services or with mainstream policy. At best, this means that critical lessons are not being shared across the two worlds. At worst, new developments might entrench inequalities—by making tools that only serve the highly educated and digitally proficient—or cause more harm than good, by giving vulnerable groups misleading information. The fluctuations of start-up culture also pose a problem if vulnerable groups come to rely on an app or website that disappears overnight.

This report seeks to address some of these issues, by first mapping and categorizing several types of emerging tools before considering how policymakers responsible for refugee integration might play a more active role in supporting the most promising (bearing in mind the risk of government involvement *stifling* innovation). It focuses, specifically, on the initiatives and innovations that have proliferated in the destination countries of Europe, and to a lesser extent, North America in response to the 2014–15 influx of migrants and asylum seekers crossing the Mediterranean. The implications for tech entrepreneurs and policymakers are then considered, before the report concludes by recommending how countries receiving large numbers of refugees might capitalize on these emerging trends.<sup>5</sup>

## II. Technology and the Refugee Crisis

Technology is transforming every stage of the refugee's journey, from the decision to leave home to the process of settling into a new home. According to some estimates, three-quarters of refugees and migrants have a smartphone.<sup>6</sup> With Global Positioning System (GPS) on smartphones sometimes acting

2 For instance, a coding school for refugees, ReBootKamp, in Lebanon is trying to create a virtuous circle where graduates of the program return as teachers; among other things, this reduces the need for interpreters. See Mike Butcher, editor-at-large of TechCrunch, interview with Hugh Bosely, founder, ReBootKamp, February 3, 2016, [www.youtube.com/watch?v=cSm4y0RUt5g](http://www.youtube.com/watch?v=cSm4y0RUt5g).

3 Author interview with Josephine Goube, cofounder of Migreat and chief operating officer of Techfugees, London, April 29, 2016.

4 For an excellent discussion of this challenge, see Ben Mason, “The Refugee Tech Crisis,” *Stanford Social Innovation Review*, March 29, 2016, [http://ssir.org/articles/entry/the\\_refugee\\_tech\\_crisis](http://ssir.org/articles/entry/the_refugee_tech_crisis).

5 A number of reports have been written about digital innovation to support refugees in transit. See, for example, Linda Raftree, Katie Appel, and Anika Ganness, *Modern Mobility: The Role of ICTs in Child and Youth Migration* (Washington, DC: Plan International USA, 2013), [www.planusa.org/docs/modern\\_mobility.pdf](http://www.planusa.org/docs/modern_mobility.pdf).

6 A number of recent media stories have highlighted high levels of smartphone use in refugees (see, for example, Alexander Dziadosz, “Lebanese Camps for Syrians Witness the Rise of the Connected Refugee,” *Financial Times*, October 6, 2016, [www.ft.com/content/3948e37e-5287-11e6-9664-e0bdc13c3bef](http://www.ft.com/content/3948e37e-5287-11e6-9664-e0bdc13c3bef)). However, it is important to remember that smartphone coverage is not universal: a recent study finds considerable diversity in technology use among refugees; the use of smartphones in particular is highly gendered. See Marie Gillespie et al., *Mapping Refugee Media Journeys: Smartphones and Social Media Networks* (Milton Keynes: Open University, 2016), [www.open.ac.uk/ccig/sites/www.open.ac.uk/ccig/files/Mapping%20Refugee%20Media%20Journeys%2016%20May%20FIN%20MG\\_0.pdf](http://www.open.ac.uk/ccig/sites/www.open.ac.uk/ccig/files/Mapping%20Refugee%20Media%20Journeys%2016%20May%20FIN%20MG_0.pdf).

as a literal lifeline, it is no surprise that refugees have described phones and power banks as “even more important than food.”<sup>7</sup> Meanwhile, communication apps such as WhatsApp and Viber are routinely used to share up-to-date information about routes, reducing the asymmetry between smugglers and migrants.<sup>8</sup>

Table 1 lists several recent innovations across the asylum process. It includes bespoke technologies and new developments as well as existing technologies (such as WhatsApp and Google Translate) that are being used in new ways to support refugees’ needs.

**Table 1. Examples of Tech Innovations across the Asylum Process**

Asylum Phase	Type of Need	Examples of Innovative Technological Solutions
Predeparture	Route planning	<a href="#">InfoAid</a> is an app for refugees planning to travel through southeast Europe. It offers updates on conditions at borders along the Balkan route, weather reports, transport information, and security advice, among other topics.
Transit and emergency response	Safety	Cross-platform mobile communication apps (such as <a href="#">WhatsApp</a> and <a href="#">Viber</a> ) are being used by refugees as secure ways to share advice and support about travel routes, borders, and safety issues.
	Travel	Smartphones connected to Geographic Information System (GIS) and Global Positioning System (GPS) software help refugees plan journeys and send accurate distress signals.
	Infrastructure	<a href="#">MeshPoint</a> is a device designed to withstand extreme conditions and provide reliable Internet access for up to 150 simultaneous users. It can be carried in a backpack.
	Family reunification	<a href="#">Trace the Face</a> , maintained by the International Committee of the Red Cross (ICRC), allows people to post photos of themselves and search for loved ones (by narrowing down images by criteria).
	Volunteering	<a href="#">Krocket</a> is an online crowdmapping tool for coordinating the distribution of humanitarian aid. <a href="#">GoVolunteer</a> helps people identify volunteer opportunities.
	Identity and processing	<a href="#">IrisGuard</a> is an iris-scanning system being used by the United Nations High Commissioner for Refugees (UNHCR) as an alternative to more traditional identity-verification processes to identify and register Syrian refugees and help channel direct financial assistance to them.

7 Many smartphones provide the option to tap into both the Global Positioning System (GPS) and Geographic Information System (GIS). Crucially, GPS software can be used without data or Wi-Fi access, making it an important lifeline. For a discussion of how these tools are being used, see Megan Specia, “WhatsApp Offers Lifeline for Syrian Refugees on Journey across Europe,” Mashable, July 3, 2015, <http://mashable.com/2015/07/03/syrians-europe-whatsapp-refugees/#hpyqZ0na1sqz>. A powerful video by BBC Media Action illustrates how refugees use their phones. See BBC Media in Action, “Your Phone is now a Refugee’s Phone,” YouTube, July 18, 2016, [www.youtube.com/watch?v=m1BLsySgsHM](http://www.youtube.com/watch?v=m1BLsySgsHM).

8 See Aliyyah Ahad and Meghan Benton, “Humanitarian Innovation: Lasting Solutions to Big Challenges?” Social Innovation Europe (SIE), November 17, 2015, [www.siceurope.eu/sic-themes/migration/humanitarian-innovation-lasting-solutions-big-challenges](http://www.siceurope.eu/sic-themes/migration/humanitarian-innovation-lasting-solutions-big-challenges).





Table 1. Examples of Tech Innovations across the Asylum Process (continued)

Initial arrival and orientation	<b>Navigating services</b>	There are several types of apps, both established and new, that are being used to translate information and otherwise help refugees access services. These include: <ul style="list-style-type: none"> <li>o “One-stop apps” for local services and information (<a href="#">Ankommen App</a>, <a href="#">Mobilearn</a>).</li> <li>o Apps to help people identify or use medical services (<a href="#">Hababy</a> for pregnant mothers).</li> <li>o Apps to help navigate bureaucracy, such as <a href="#">Bureaucrazy</a> in Germany (expected at the beginning of 2017) and <a href="#">Gherbtna</a> in Turkey.</li> </ul>
	<b>Translation and Interpretation</b>	<a href="#">Google Translate</a> and <a href="#">Babelfish</a> translate text or images of text and Web pages. <a href="#">Nowall</a> is an SMS-based tool to help newcomers understand essential forms and procedures.
	<b>Housing and goods</b>	<a href="#">Refugees Welcome</a> and <a href="#">CALM</a> match newcomers with people offering spare rooms; <a href="#">Ankommen</a> is a platform for donating furniture, while <a href="#">GeeCycle</a> is for smartphones and laptops.
	<b>Health and mental health</b>	X2AI’s <a href="#">Karim</a> is an artificial intelligence (AI) mental health “chatbot” and was adapted from “Tess,” an AI shown to relieve stress in veterans. Karim conducts personalized text-message conversations in Arabic.
	<b>Banking and finance</b>	<a href="#">MONI</a> is a card that allows people without bank accounts to receive government subsidies or work income.
		<a href="#">Online platforms and money transfer systems</a> are increasingly being used to distribute humanitarian cash assistance directly (and electronically) to refugees. Peer-to-peer transfer platforms such as <a href="#">TransferWise</a> reduce the cost of remittances.
Settling and flourishing	<b>Qualification recognition</b>	Microcredentialing (e.g., LinkedIn recommendations and badges) provides an alternative way to demonstrate and assess qualifications and experience.
	<b>Language learning</b>	<a href="#">WhatsGerman</a> is a service delivered via WhatsApp that provides free basic language instruction for new arrivals in Germany.
	<b>Finding work</b>	<a href="#">Workeer</a> is an online jobs platform developed in Germany that seeks to match refugees looking for jobs with employers willing to hire them. <a href="#">RefugeesWork</a> is a platform for freelance programmers.
	<b>Retraining and upskilling (px)</b>	<a href="#">Kiron</a> designs online training programs for displaced people, which they can convert into credit toward full university programs once they have received protection. Intensive coding schools for refugees such as <a href="#">ReDI School</a> offer networking, mentoring, and distance learning.
	<b>Entrepreneurship and financing</b>	Peer-to-peer lending platforms, such as <a href="#">Prosper</a> , and crowdfunding platforms, such as <a href="#">Kickstarter</a> , can provide alternative sources of financing for entrepreneurs unable to access credit through traditional sources.
	<b>Children’s education</b>	Transcription classroom software such as <a href="#">Ai-Media</a> can help language learners keep up with their peers in mainstream classrooms.
Long-term integration	<b>Community cohesion</b>	<a href="#">SINGA</a> brings together communities for storytelling events (SINGA’s Living Room), language practice (SINGA Sprache), and mentoring.
	<b>Sustainable housing solutions</b>	<a href="#">Home4Refugees</a> is a new platform that aims to connect refugees looking for rental opportunities with refugee-friendly landlords and homeowners.

Source: Authors’ compilation of various sources. For a full list, see the appendix.



### III. Promising Innovations to Support Refugee Integration

Technological efforts to ease refugees' lives are nascent, but, as Table 1 indicates, they are proliferating rapidly.

Three of the most developed innovations relevant to refugee integration include:

- digital tools to help newcomers navigate local services;
- skills training and employment matching, especially for prized digital economy jobs; and
- digital platforms that employ principles of the “sharing economy” to connect newcomers and volunteers.

#### A. Support in Navigating Local Services

Over the past year, numerous multilingual digital platforms and smartphone apps have been launched to help newcomers navigate asylum systems and local services in host countries.<sup>9</sup> Understanding government laws, permits, and services can be difficult for natives, yet alone newcomers—especially where information is only provided in the host-country language. Although several receiving countries now offer key information in at least two languages, many do not. For example, Germany, a destination for many Arabic speakers, still does not routinely offer information in Arabic.<sup>10</sup>

These kinds of apps tend to have one of three aims:

- **Serve as one-stop shops.** Many new apps seek to function as a one-stop shop for people to learn about and access integration services. For instance, Integreat is designed for use by migrants in their first 14 days after arrival in Germany, and operates in Stadt Augsburg, Bad Tölz, Landkreis Garmersheim, and Kissing.<sup>11</sup> Its strengths include being able to function offline and to connect people with Wi-Fi hotspots (since many new arrivals lack smartphone data plans). Similarly, the Welcome App, which started as “Welcome to Dresden,” was recently rolled out across Germany.<sup>12</sup>
- **Simplify legal systems.** The website Migreat was designed to function as a “Skyscanner” for migration, helping people search for migration or asylum options in multiple countries (see

9 This report focuses on platforms created by social entrepreneurs and tech companies. That said, there are some good examples created by governments. Neustart (“fresh start”), run by the German Labor Ministry, provides information in English about the asylum process, learning German, gaining recognition for foreign professional qualifications, and the German labor market and workers’ rights. The “Recognition in Germany” website guides visitors through the steps toward getting foreign credentials and degrees recognized, and provides contact information for the bodies in charge of recognizing qualifications in different sectors and professions. The Ankommen App offers information in English, Arabic, French, German, and Persian for newcomers in their first few weeks in Germany. See the Federal Ministry of Labor and Social Affairs (BMAS), “Fresh Start for Asylum Seekers in Germany,” accessed June 14, 2016, [www.bmas.de/EN/Our-Topics/Fresh-start-in-germany/fresh-start-in-germany.html](http://www.bmas.de/EN/Our-Topics/Fresh-start-in-germany/fresh-start-in-germany.html); Ankommen App, “Ankommen: The Guide for Your First Weeks in Germany,” accessed June 14, 2016, [www.ankommenapp.de](http://www.ankommenapp.de); Anerkennung in Deutschland, “Recognition in Germany,” accessed June 14, 2016, [www.erkennung-in-deutschland.de/html/en/index.php](http://www.erkennung-in-deutschland.de/html/en/index.php).

10 This is changing in Germany, although slowly. The “Recognition in Germany” website is available in Arabic. But most government websites do not offer information in Arabic, including that of the Federal Office for Migration and Refugees (which offers information in German, English, Turkish, and Russian).

11 Integreat, “Integreat,” accessed October 17, 2016, <http://integreat-app.de/en/>.

12 Welcome App, “Welcome App Germany,” Google Play, September 28, 2016, [https://play.google.com/store/apps/details?id=de.welcome\\_app\\_concept.welcome2germany](https://play.google.com/store/apps/details?id=de.welcome_app_concept.welcome2germany).



case study in Box 1). In Turkey, Gherbtana (an Arabic word for the loneliness of foreign exile) and Alfanus (“lantern”) seek to plug gaps in Arabic-language information on Turkey’s legal system.<sup>13</sup>

- **Ease access to specific services.** In the United Kingdom, for example, there are apps to assist pregnant women (e.g., Hababy), to help people register with a doctor (e.g., GP for Me), and to connect with the National Health Service (e.g., My NHS). Rapidly connecting new arrivals with health services has been of particular interest given the risk—and public perception—that large numbers of new arrivals can put pressure on health services. Helping people get health insurance or register with a doctor can mitigate pressure on emergency rooms. A new app supported by NHS focuses on peer-to-peer support and community dialogue (see Box 2).

### Box 1. The Case of Migreat, the “Skyscanner” for Migration

Migreat was a popular digital platform pitched as a “Skyscanner” for migration. It provided a user-friendly interface that consolidated and simplified the migration and asylum rules of multiple countries. It also connected newcomers to rolling information on events and opportunities organized by fellow nationals.

The selling point of the platform was that it was obsessively updated: a team of legal experts ensured the legal information reflected up-to-the-minute changes across all the countries listed, and community managers on the ground maintained the social media content. At the end of 2015, Migreat had 2 million visitors a month. However, the platform folded in February 2016 because of funding problems. The website still exists (in part because its founders hope to revive the platform), but the content is not being updated, creating the risk that vulnerable groups are relying on outdated information.

Source: Author interview with Josephine Goube, cofounder of Migreat and chief operating officer of Techfugees, London, April 29, 2016.

The rationale for helping migrants use local services is clear: connecting them with valuable services early will promote the successful labor market integration of those who stay.<sup>14</sup> Other potential benefits include strengthened community relations and public confidence in migration systems since knowing where to find services can prevent vulnerable groups from concentrating in emergency rooms or town halls.

However, the many new apps and platforms have not yet delivered on their promise. The main challenge is their sheer number—there are too many “one-stop shops.”<sup>15</sup> And even if one app succeeded in becoming the default tool, vulnerable groups would be left in the lurch if it lost funding or faced technical problems. This is not mere speculation; as described in Box 1, one of the most successful apps to help migrants understand complex legal rules and asylum systems (Migreat) ceased to operate in February 2016.

The second challenge is for apps to reach their intended audience and interact with mainstream services. Governments could play a role in putting the best apps forward, but the effects of a government

13 For example, a recent article observes that although Turkey has spent \$10 billion on refugees, including on Arabic-language brochures to distribute in camps, there is no Arabic-language website. See David Lepska, “Refugees and the Technology of Exile,” *The Wilson Quarterly*, Spring 2016, <http://wilsonquarterly.com/quarterly/looking-back-moving-forward/refugees-and-the-technology-of-exile/>.

14 For a full discussion of the case for early intervention, see Maria Vincenza Desiderio, *Integrating Refugees into Host Country Labor Markets: Challenges and Policy Options* (Washington, DC: Migration Policy Institute, 2016), [www.migrationpolicy.org/research/integrating-refugees-host-country-labor-markets-challenges-and-policy-options](http://www.migrationpolicy.org/research/integrating-refugees-host-country-labor-markets-challenges-and-policy-options).

15 One author made the case for a one-stop app back in September 2014. See Tanvi Misra, “Attention Cities Looking to Engage Immigrants: Don’t Dismiss the Smartphone,” CityLab, September 16, 2014, [www.citylab.com/cityfixer/2014/09/attention-cities-looking-to-engage-immigrants-dont-dismiss-the-smartphone/380229](http://www.citylab.com/cityfixer/2014/09/attention-cities-looking-to-engage-immigrants-dont-dismiss-the-smartphone/380229).



stamp of approval may be mixed. While such a stamp may offer quality control, many refugees distrust governments and prefer to get their information from peer-recommended sources.<sup>16</sup>

These challenges have not gone unnoticed, and the tech community is trying to overcome the problem of duplication. For instance, the Techfugees team is promoting *quality over quantity* through good practice standards (e.g., protecting identity, enhancing security, and employing user-centered design). The team is also encouraging developers to support nongovernmental organizations (NGOs), such as the United Nations High Commissioner for Refugees (UNHCR), with their development needs rather than put out new third-party apps (which may not be attuned to the needs of refugees or agencies on the ground). Moreover, the new generation of digital tools are downscaling their ambitions—and hoping to gain trust—by focusing on user-generated content (see Box 2).

### **Box 2. New2ukhealth: A Peer-to-Peer Health Services Platform**

While many in the first wave of digital tools sought to be a default solution, new platforms are working more closely with users and setting more realistic aims.

A new web app to help migrants and refugees get information on health services in the United Kingdom will launch before the end of 2016. Unlike smartphone apps, which suffer from problems of access, New2ukhealth will be a web app featuring mostly user-generated content. About 10 percent of the content will be pulled from the National Health Service (NHS) Choices and NHS 111 (official websites for health services in the United Kingdom) and translated into several languages (Arabic, Lithuanian, Mandarin, Polish, Punjabi, Romanian, and Urdu). The rest of the content will be generated by migrants and refugees themselves through a series of questions and answers, and moderated to ensure relevance and accuracy.

The strengths of this approach include its emphasis on research. As described by its founder, Raj Adgopul, the platform was designed “after talking to service users, not by a group of professionals sitting in an office.” The basics of the web app were created at an NHS hackathon. Trials of the platform will be carried out in Kent and Birmingham, whose authorities have agreed to publicize the app and to ask clinical professionals to do the same. The founder enjoys close links to the NHS—he has served as a Specialist Community Public Health Nurse—and is himself a migrant. He has also sought the participation of private companies, civil-society organizations, and volunteers. The New2ukhealth platform is adapted from the community site of a mobile phone company, which offered it for free. Doctors of the World has also offered volunteers.

Source: Author phone interview with Raj Adgopul, founder of New2UKhealth, September 6, 2016.

Despite this progress, creating an app to help newcomers navigate services may be putting a Band-Aid on a much deeper problem: government services are not well coordinated or intuitive for users. The popularity of Migreat, for instance, reflected the lack of consistent information across immigration websites. Likewise, newcomers struggling to identify relevant services may be discouraged by confusing (and possibly untranslated) information on websites or the poor referrals of officials they come into contact with. Although many governments are working to improve the structure and design of their websites in efforts to shift a larger portion of transactions online, few have systematically considered how accessible online services are for newcomers.<sup>17</sup>

<sup>16</sup> Gillespie et al., *Mapping Refugee Media Journeys*.

<sup>17</sup> For instance, a forthcoming study on refugees’ use of communications in Berlin found that many rely on their peers because they are accessible, not because they are trustworthy, and that many newcomers would prefer an authoritative form of official information communicated in culturally and linguistically appropriate ways. It also found that refugees prefer to use channels they are accustomed to, such as WhatsApp and Facebook, instead of downloading a new app. See Aliyyah Ahad, *Refugee Communications for the Public and Humanitarian Sectors* (London: WPP, forthcoming).



In sum, apps to help newcomers navigate services are a great idea, but few have attained a quorum of users or reached the level of quality required to radically alter the way newcomers interact with services.

## B. Innovations to Get Newcomers into Work or Training

Given the urgency of finding sustainable ways for refugees to support themselves and their families, a variety of technological platforms are emerging to help them develop new skills or use existing ones. Some of the most promising focus on asylum seekers still in reception centers, so that the often-lengthy process of applying for asylum does not cause their skills to atrophy and increase their time out of the labor market.<sup>18</sup>

These innovations range from simple language-learning apps to full educational programs that combine online and offline support. They emphasize two elements in particular. First, the opportunity to learn or work remotely makes them especially promising for displaced people and new arrivals, or where language and other training programs are oversubscribed. Some (more controversially) allow people to circumvent national laws that bar asylum seekers from local labor markets by connecting them to online freelancing platforms and out-of-country business opportunities. Second, they emphasize skills valued in the digital economy, a sector seeing huge growth in Europe. As such, these programs are forward thinking: they are preparing people for the jobs that will be around in 2020, rather than the skills shortages that exist now.

### I. Distance Learning and Online Universities

Massive open online courses (MOOCs), such as those offered by Coursera and edX, have been around for a few years. So far, these programs have not had the transformative impact on the higher education market that some might have hoped for, in part because of the challenge of translating this learning into credentials that employers value.<sup>19</sup> High dropout rates have also attracted criticism—although it is an open question whether this denotes “failure” since, for many people, these programs provide an opportunity to try out a new field or area of expertise.

In this context, social entrepreneurs seek to help refugees design career pathways based on existing, free online courses—while overcoming some of the traditional limitations of MOOCs. In Germany, Kiron Open Higher Education<sup>20</sup> connects asylum seekers whose applications are still being processed with online courses. Kiron’s partner universities have agreed to count these as these credits once individuals are granted protection and can enroll in their programs. Another approach is that of Work4Good: tailored packages for individuals in the Middle East and North Africa (MENA) that draw on MOOCs to prepare for the digital economy.<sup>21</sup>

Efforts by MOOCs to expand access may also support refugee integration. Recent adaptations seek to make MOOCs available offline or to ensure that content is mobile accessible (e.g., University of the People).<sup>22</sup> While not explicitly aimed at refugees, these adaptations are likely to benefit anyone who has limited Internet and relies on mobile devices. Meanwhile, Coursera has begun to offer financial aid and tailored advice to refugees and those who support them.<sup>23</sup>

18 For a broader discussion of the additional barriers asylum seekers and refugees face relative to other groups of migrants, see Desiderio, *Integrating Refugees into Host Country Labor Markets*.

19 See, for example, Kevin Carey, “Here’s What Will Truly Change Higher Education: Online Degrees That Are Seen as Official,” *New York Times*, March 5, 2015, [www.nytimes.com/2015/03/08/upshot/true-reform-in-higher-education-when-online-degrees-are-seen-as-official.html](http://www.nytimes.com/2015/03/08/upshot/true-reform-in-higher-education-when-online-degrees-are-seen-as-official.html).

20 Kiron Open Higher Education, “About,” accessed October 17, 2016, <https://kiron.ngo/about>.

21 Author phone interview with Adrienne Yandell, founder, Work4Good, April 14, 2016.

22 See, for example, University of the People, “About University of the People,” accessed October 17, 2016, [www.uopeople.edu/about/](http://www.uopeople.edu/about/).

23 Coursera, “Coursera for Refugees,” accessed October 17, 2016, <https://refugees.coursera.org/>.





## 2. Intensive Coding Programs

Programs that teach refugees how to code are especially popular (see Box 3). These programs build on the success of intensive coding “bootcamps” that, according to a recent report, increase participant salaries by 38 percent on average.<sup>24</sup>

Aside from the fact that the digital economy is seeing growth across Europe,<sup>25</sup> the rationale for adapting these programs to refugees is that the skills involved tend to be acquired independently, rather than collaboratively, and are therefore amenable to distance learning (including in reception centers). Moreover, the jobs that they qualify people for can be performed remotely (e.g., through online freelancing platforms) or in English-speaking companies.

Most such programs combine online study with offline support (e.g., mentors) in part to overcome some of the usual challenges associated with MOOCs and online study (e.g., high drop-out rates).

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*Programs that teach refugees how to code are especially popular.*

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These programs are designed for high-skilled refugees, who comprise a small minority of new arrivals. This raises an important question: are they genuinely meeting the challenge of refugee labor market integration or simply providing new opportunities for people who would have easily found other routes to success? In particular, these programs have demanding requirements for:

- **Personal motivation.** Completing these programs successfully requires a great deal of personal resilience and self-motivation, so they tend to be best suited to people who already have a considerable level of education and know how to learn independently.
- **Digital access and proficiency.** Most of these tools rely on Internet access—although some MOOC providers have been investing in making their services mobile accessible in recent years. However, access to the Internet is only a small aspect of digital exclusion, which can manifest itself in a number of ways, including when people who routinely use the Internet and smartphones for social media do not know how to look for a job or pay a bill online.
- **English proficiency.** Many higher education courses and coding schools require English-language proficiency at an intermediate or advanced level. While this undoubtedly improves access for many refugees—who would otherwise have to spend time learning the host-country language before addressing other skill requirements—it still means that these programs serve only a small (and most often educated) minority.

Nonetheless, these programs show particular promise, given the job prospects of successful students: the European tech industry is estimated to see 756,000 unfilled vacancies by 2020.<sup>26</sup> It remains an open question whether new initiatives will succeed in getting refugees into these jobs, and whether they can be expanded and scaled.

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24 Liz Eggleston, “2015 Course Report Alumni Outcomes & Demographics Study,” Course Report, October 26, 2015, [www.coursereport.com/reports/2015-coding-bootcamp-job-placement-demographics-report](http://www.coursereport.com/reports/2015-coding-bootcamp-job-placement-demographics-report).

25 See EurActiv, “Two Fifths of Europeans Are Digitally Illiterate,” EurActiv, June 10, 2016, [www.euractiv.com/section/social-europe-jobs/news/commission-wants-europeans-to-be-better-at-using-technology](http://www.euractiv.com/section/social-europe-jobs/news/commission-wants-europeans-to-be-better-at-using-technology).

26 Ibid.



### Box 3. Digital Economy Programs for Refugees

A host of programs to support refugee access to coding and other digital economy jobs have emerged in recent years. These include:

**The ReDI School of Digital Integration** in Berlin offers basic and advanced coding classes, talks from prominent tech leaders and experts, mentoring and networking events, laptops and coworking space, and support in setting up a GitHub portfolio.

**Refugees on Rails**, currently operating in Berlin, Munich, and Cologne, donates laptops to refugees and links them with resources on programming and mentors, who include both information technology (IT) students and professionals.

**HackYourFuture** in the Netherlands is a six-month web development program that combines online classes with weekend meet-ups in Amsterdam, company visits, master classes, and networking events.

**ReBootKamp** is operating in Jordan's Zataari camp. It offers a 19-week intensive training program in coding and aspires to eventually become self-sustaining, with graduates returning as trainers.

**Kiron Open Higher Education** serves as an "open university" for asylum seekers, independent of their legal status. Participants take two years of online classes, which can be followed by one year of study at a partner university that recognizes Kiron's credits. The platform had received 15,000 applications as of fall 2015.

**University of the People** is offering tuition-free, accredited online degrees to Syrian refugees in computer science and business administration. Founded in 2009 by an educational entrepreneur, it offers both associate's and bachelor's degrees in computer science, health science, and business administration, as well as an MBA program.

While these programs differ in design, size, and scope, a common thread is the support of a volunteer-based community of mentors and coaches. They also tend to be collaborative and to use open-source technology.

Sources: ReDI School of Digital Integration, "Welcome to a World of Co-Creation," accessed October 17, 2016, [www.redi-school.org/about-us](http://www.redi-school.org/about-us); HackYourFuture, "Refugee Code School in Amsterdam," accessed October 17, 2016, [www.hackyourfuture.net](http://www.hackyourfuture.net); Refugees on Rails, "Enable Learning, Empower Refugees," accessed October 17, 2016, <http://refugeesonrails.org>; ReBootKamp, "RBK," accessed October 17, 2016, <http://rbk.org>; Kiron Open Higher Education, "About," accessed October 17, 2016, <https://kiron.ngo/about>; University of the People, "About University of the People," accessed October 17, 2016, [www.uopeople.edu/about/](http://www.uopeople.edu/about/).

### 3. Employment-Matching Platforms

Most jobs in destination countries are found through social networks. This puts newcomers relying on public employment services at a disadvantage—especially when, as in most countries, only a minority of skilled vacancies are listed.<sup>27</sup> New online platforms act as "matchmakers," bringing together talented refugees and employers. For instance, the German platform Worker helps connect refugee jobseekers with "refugee-friendly" employers. In countries where asylum seekers are allowed to work, some

<sup>27</sup> For a broader discussion of the limitations of public employment services to serve the needs of newly arrived migrants, see Meghan Benton et al., *Aiming Higher: Policies to Get Immigrants into Middle-Skilled Work in Europe* (Washington, DC: Migration Policy Institute, 2014), [www.migrationpolicy.org/research/aiming-higher-policies-get-immigrants-middle-skilled-work-europe](http://www.migrationpolicy.org/research/aiming-higher-policies-get-immigrants-middle-skilled-work-europe).



employment agencies are trying to make it possible for people with tech skills to work while they are still in reception centers.<sup>28</sup>

However, early access to innovative training will not solve the structural challenges that asylum seekers face in many countries. For example, most are barred from labor markets while they wait—months, years—for their applications to be reviewed. Although several countries have loosened their requirements in recent years, in part because of revised EU rules on the reception of asylum seekers agreed to by Member States in 2013, considerable legal barriers to labor markets remain.<sup>29</sup>

More controversially, some tech entrepreneurs are trying to circumvent laws against working. For instance, a group of students in the Netherlands has found a loophole: asylum seekers may register for an Estonian e-residency (open to any nonresident with only a minimal administrative charge and some identity documents). They can then run a business in the Netherlands while being registered in Estonia.<sup>30</sup> In addition to helping people become self-sufficient, this move theoretically prevents them from working in the informal economy and helps capture taxes. However, this approach reveals a potential tension between the tech community and government responses to refugee integration, as governments try to balance (1) ensuring swift access for refugees to the labor market and (2) preventing the creation of a pull factor for additional refugees or incentives to misuse the asylum system.

In sum, technology has the potential to make learning vastly cheaper and available at a massive scale, and there are considerable opportunities to put the energy of asylum seekers to good use while they are still in reception centers or waiting for their applications to be processed (and are not yet entitled to the full suite of labor market integration programs). To fully realize their potential, new tech innovations will need to consider ways to allow low- and medium-skilled newcomers—as well as the highly skilled—to quickly address skills gaps and identify opportunities. These innovations will also need to be better integrated into mainstream asylum reception processes so that advisors in employment offices, reception centers, and other agencies all know how to identify useful tools and direct refugees to them.

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*There are considerable opportunities to put the energy of asylum seekers to good use while they are still in reception centers.*

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### C. Community-Based Housing and Services

Housing and welcoming newcomers is a third area of focus that has seen a lot of innovation and a mobilization of community resources. New digital platforms bypass slow, bureaucratic systems by bringing together ordinary people who are willing to directly offer services with the people who need them. Like “sharing economy” businesses, such as Uber and Airbnb, these platforms enable people to unlock the value of their belongings, except here participants are motivated by humanitarian obligation instead of financial gain.

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<sup>28</sup> Such efforts have been discussed, for example, on the Techfugees Slack platform.

<sup>29</sup> See Desiderio, *Integrating Refugees into Host Country Labor Markets*. For instance, although asylum seekers are now entitled to work after three months in Germany (with certain restrictions), most are still subject to the priority test, which requires employers to ensure that no German or EU citizen can do the job before giving it to an asylum seeker. A recent German law, passed in July 2016, suspended this test for three years, but only in regions with low unemployment. For more information on this law and German labor market integration initiatives, see Victoria Rietig, *Moving Beyond Crisis: Germany's New Approaches to Integrating Refugees into the Labor Market* (Washington, DC: Migration Policy Institute, 2016), [www.migrationpolicy.org/research/moving-beyond-crisis-germany-new-approaches-integrating-refugees-labor-market](http://www.migrationpolicy.org/research/moving-beyond-crisis-germany-new-approaches-integrating-refugees-labor-market).

<sup>30</sup> The Working Refugees, “The Working Refugee,” accessed June 20, 2016, <http://theworkingrefugees.com/>.





The most famous example is Refugees Welcome, which has now spread to 20 countries, including Canada, the Netherlands, Poland, Portugal, and Spain. Through Refugees Welcome Germany, people have moved into 352 homes; hundreds more have been matched in countries such as Austria, Greece, Poland, Spain, the Netherlands, Portugal, and Italy. One of the key achievements of Refugees Welcome Germany is that it compensates people for offering their spare rooms, and most of this compensation is now reimbursed by local authorities.<sup>31</sup> A similar program is CALM (*comme a la maison*, “just like home”) in France,<sup>32</sup> which matches poorly housed or homeless refugees with families willing to open their homes.

Other “sharing economy” programs include Ankommen, where people offer their furniture and household goods,<sup>33</sup> and GeeCycle, where users donate used smartphones.<sup>34</sup>

The case for involving communities in service delivery is clear. Many countries are facing huge challenges finding adequate housing for newcomers. Refugees may find themselves in overcrowded, poor-quality housing or in peripheral communities disconnected from urban economic centers and the best employment and education opportunities.<sup>35</sup> Staying with families who can provide guidance and information could help newcomers get a head start on their labor market and social integration.

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### *The case for involving communities in service delivery is clear.*

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Moreover, the strength of sharing models is that they harness community energy and promote *coproduction* (involving local people in the design and delivery of local services), thus giving communities a greater stake in social outcomes. Though they serve different groups, some examples already exist of home sharing initiatives that bring together people in need of “light touch” care (such as elderly people who live independently, but need assistance with shopping or cleaning) who have spare rooms and people in need of housing who are willing to offer such care (such as single mothers).<sup>36</sup> As many destination countries face a housing supply crisis alongside the challenges of an aging population, these initiatives are thought to deliver a “double win.” If such innovations could be scaled, the results might be tremendous, both in terms of reducing pressure on a housing market and offering refugees higher quality, well-located accommodations.

But while Refugees Welcome and other sharing platforms are promising models, their impact remains small, especially in comparison to the scale of the refugee crisis (see Box 4). Most rely on a time-consuming, manual matching process; digital platforms are used only to recruit people, rather than to automate the hard work of matching newcomers and families (e.g., according to their skills or preferences). As a result, they remain costly and labor intensive.

If they are to be effectively sustained and scaled, these platforms will need to be better supported by the public sector. To realize the promise of an alternative, community-led approach to refugee reception, governments will need to be less risk averse, cut red tape, and work constructively with social enterprises.

31 Refugees Welcome, “Factsheet: Statistics 2014-2016” (unpublished fact sheet, August 2016). From January to August 2016, 60 percent of rent was reimbursed, compared to less than half from the start of the project in November 2014.

32 SINGA, “CALM – Comme À La Maison,” accessed October 17, 2016, <https://singa.fr/la-communaute/calm-comme-a-la-maison>.

33 The Ankommen website is available in 15 languages. See Ankommen, “How it Works,” accessed October 14, 2016, <https://ankommen.eu/en>.

34 GeeCycle, “How Does GeeCycle Work?” accessed October 14, 2016, [www.geecycle.org/why-geecycle](http://www.geecycle.org/why-geecycle).

35 See Desiderio, *Integrating Refugees into Host Country Labor Markets*.

36 For instance, Homeshare in the United Kingdom brings together elderly people with spare rooms and people in need of housing. In place of rent, the tenant helps out around the house by cooking meals or running errands. Homeshare is thought to reduce isolation among elderly participants (a major health indicator), demands on the statutory care system, and housing pressures. See SharedLivesPlus, “What is Homeshare?” accessed June 14, 2016, <http://sharedlivesplus.org.uk/about-shared-lives-plus/home-share>.



#### **Box 4. Refugees Welcome: Blueprint for a Community-Led Approach to Refugee Integration?**

At the heart of the so-called sharing economy are digital platforms that match people willing to offer services with those who need them. The most famous examples—Airbnb and Uber—allow people to monetize their resources: their spare rooms and personal vehicles. Recent years have seen rising interest in how digital platforms can unlock the energy of communities and volunteers by connecting their offers of goods and services with people who need them.

But, thus far, few of these platforms have found a way to automate the matching process. Instead, they are labor- and time-intensive. For example, as the Refugees Welcome team worked hard to meet the expectations of volunteers (many of whom specified a preference for housing women and Syrian refugees), they had to match people carefully. Moreover, their reliance on government officials to process applications slowed progress.

At the height of public interest in the refugee crisis in September 2015, Refugees Welcome Germany had more registrations, donations, and media requests than it could handle. “It was chaos,” said one of the founders, Mareike Geiling. With many public agencies in emergency mode, it was difficult to get decisions or rent reimbursement from job centers and social workers, and the platform often had to cover the first few months of rent or delay a match from happening. Managers hired a larger team—only to find that public interest had shrunk dramatically, leaving them to adjust their business model once again.

“What would it take to scale? We don’t want to scale,” said one of the founders. “It wouldn’t be possible to match thousands of people, because you have to focus on every single case.” Instead, the team is prioritizing finessing its operation for smaller numbers, including by writing manuals for employers and improving the way it handles interactions with official bureaucracy.

While Refugees Welcome is a highly promising model, there is a ceiling on how large the operation can become while being delivered by a social enterprise. It will require much more work—and potentially a new model of house sharing, with greater buy-in from governments—to provide a genuine alternative to state-provided housing.

*Source: Author phone interview with Mareike Geiling, co-founder, Refugees Welcome, August 23, 2016.*

## **IV. Where Are the Gaps? Lessons for Tech Entrepreneurs**

As described above, some areas are attracting much attention—too much, in cases of duplicate efforts. Other, promising areas—supporting newly arrived refugees in schools, changing the way that employers assess qualifications, and providing support to refugee entrepreneurs—seem to be receiving too little.

### **A. Education and Multilingual Classrooms**

In many countries, language learners are taken out of mainstream classes while they catch up. In theory, this approach provides them with intensive language learning that would take much longer in mainstream



classes. But in practice students who are separated often fail to catch up with their peers.<sup>37</sup> This problem has taken on new urgency in Europe given the large numbers of newly arrived unaccompanied minors.

Here, new educational technologies could be a huge help. For instance, the “flipped classroom” is a model where teachers make videos available for learners to watch online in their own time. The theory is that this is a better use of classroom time and teacher-student interactions: children can absorb one-way content on their own and at their own speed (as video lectures can be sped up, slowed down, or repeated), reserving classroom time for personal support and group exercises.<sup>38</sup> This model shows special promise for language learners who could slow down or replay lectures instead of missing the material presented in class. However, most flipped-classroom learning platforms have not been explicitly designed for language learners and could be improved further by, for instance, adding translation software.

Another promising innovation is captioning software like Ai-Media, which broadcasts a transcript of the teacher’s words across a classroom screen in real time.<sup>39</sup> This transcript can also be downloaded, so students who missed it the first time are less likely to fall behind. A pilot study found that teachers were able to improve their teaching style using this innovation, while children used transcripts of their teachers’ lessons to review key points and instructions.<sup>40</sup> Again, little is known about whether such a tool could be adapted to help language learners.

As yet, the education technology and integration spheres have not systematically shared lessons, but tech entrepreneurs could help bridge the gap. For example, what tools could help teachers better communicate with newly arrived students and better understand the needs of their rapidly changing classrooms? What technologies could help language learners catch up with their peers? And how could sharing economy principles such as peer-to-peer support be utilized in classrooms?

## B. Credential Recognition

The second area that has seen insufficient innovation is the streamlining of credential recognition. As is well known, immigrants often face challenges getting their prior qualifications and experience recognized, either formally (in order to participate in further study or access regulated professions) or informally (by employers). In particular, migrants whose qualifications do not easily map to those of the host country or who were forced to leave home before completing their education (as is the case for many young asylum seekers) are not well served by traditional systems for recognizing qualifications. Added to this, refugees may have lost their documents in transit or may be unable to contact former employers or schools to get these verified.

Official recognition systems have improved considerably in recent years. The Netherlands, for example, is experimenting with Accreditation of Prior Learning (APL) techniques, which seek to holistically assess a person’s background. Another emerging innovation is the Prototyping Transfer program in Germany, which combines expert panels, competency tests, and workplace practice sessions for newcomers who lack formal documentation.<sup>41</sup>

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37 Some regions and schools are trying to adapt educational pathways, curricula, and timetables so that they work for everyone, not just traditional learners. This approach is sometimes known as “mainstreaming”: examples include extending the school day in Denmark or abolishing early tracking in Germany. See Elizabeth Collett and Milica Petrovic, *The Future of Immigrant Integration in Europe: Mainstreaming Approaches for Inclusion* (Washington, DC: Migration Policy Institute, 2014), [www.migrationpolicy.org/research/future-immigrant-integration-europe-mainstreaming-approaches-inclusion](http://www.migrationpolicy.org/research/future-immigrant-integration-europe-mainstreaming-approaches-inclusion).

38 A Nesta report describes the conditions under which flipped classrooms work best. See Suzanne Straw, Oliver Quinlan, Jennie Harland, and Matthew Walker, *Flipped Learning: Research Report* (London: Nesta, 2015), [www.nesta.org.uk/sites/default/files/flipped\\_learning\\_-\\_research\\_report\\_0.pdf](http://www.nesta.org.uk/sites/default/files/flipped_learning_-_research_report_0.pdf).

39 Ai-Media, “Products,” accessed October 17, 2016, [www.ai-media.tv/products/](http://www.ai-media.tv/products/).

40 Oliver Quinlan, “Innovation in Education: Research Updates,” Nesta, April 3, 2014, [www.nesta.org.uk/blog/innovation-education-research-updates](http://www.nesta.org.uk/blog/innovation-education-research-updates).

41 For an overview of the different models, see Desiderio, *Integrating Refugees into Host Country Labor Markets*.



While these innovations are promising, they are extremely costly. It is doubtful that they can be scaled to account for the large numbers of new arrivals already in destination countries or waiting for resettlement. They also take little account of debates about the ongoing relevance of formal qualifications,<sup>42</sup> and how digital technologies might provide easier and more consistent ways for employers or educational institutions to evaluate competence:

- **Evaluating online presence.** In the tech industry, employers increasingly look *beyond* qualifications for evidence of what candidates can actually do. For instance, they might look at the code that applicants have uploaded to GitHub (the code repository), or see whether they have answered any questions on Stack Overflow (a question-and-answer site for programmers) or Kaggle (a data science challenge site).<sup>43</sup> This raises the question of whether investment in credential recognition is worthwhile in industries that increasingly look toward Internet presence and other ways of displaying know-how.
- **Digital badges.** Digital badges, or microcredentials, offer an alternative way for employers to assess the capabilities of people who have not followed traditional education pathways. For instance, the U.S.-based Badges for Vets program has sought to create a prior learning credentialing system for veterans, who often face challenges transferring their skills and experience to the mainstream labor market.<sup>44</sup> Also, a number of U.S. cities have brought together employers and other stakeholders to use badges to credit youth developing soft skills.<sup>45</sup> And the Mozilla Foundation offers custom “open badges” for any organization, including universities, to issue in recognition of specific skills and knowledge.<sup>46</sup>

The digital world is changing the way employers evaluate potential employees. It might be time to reconsider how competence is assessed in an increasingly globalized world.

### C. Entrepreneurship and Financing

Finally, migrant entrepreneurship has been a major focus of policy at both the EU and Member State levels in recent years, but has attracted less attention in the tech community.<sup>47</sup> Especially for those who lack the appropriate skills (including language proficiency) or credentials for host-country jobs, entrepreneurship can be a fast track to self-sufficiency or a platform on which to build the host-country work experience necessary for future employment, if so desired.

There are a number of innovative models in this field. Start-up classes in Berlin provide asylum seekers with legal and practical information in both German and Arabic about setting up a business. Through “Incubators for Immigrants,” in the Netherlands, local entrepreneurs offer training, counseling, mentoring, and legal and regulatory assistance to asylum seekers and refugees.<sup>48</sup>

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42 According to Beth Novack, former deputy chief technology officer in the Obama administration, the Internet is changing the way we define expertise, as platforms like Amazon and LinkedIn capture more varied forms of knowledge such as skills, experience, and interests, and increasingly offer alternative forms of certification. See Beth Novack, *Smart Citizens, Smart State: The Technologies of Expertise and the Future of Governing* (Cambridge, MA: Harvard University Press, 2015).

43 Reportedly, the chief executive officer (CEO) of the tech company Zappos claims he “hasn’t looked at a resume in years.” Cited in Novack, *Smart Citizens, Smart State*.

44 Shayne Spaulding and Martha Johnson, *Realizing Employment Goals for Youth through Digital Badges* (Washington, DC: Urban Institute, 2016), [www.urban.org/sites/default/files/alfresco/publication-pdfs/2000772-Realizing-Employment-Goals-for-Youth-through-Digital-Badges-Lessons-and-Opportunities-from-Workforce-Development.pdf](http://www.urban.org/sites/default/files/alfresco/publication-pdfs/2000772-Realizing-Employment-Goals-for-Youth-through-Digital-Badges-Lessons-and-Opportunities-from-Workforce-Development.pdf); Badges for Vets, “About Us,” accessed October 17, 2016, <https://badgesforvets.org/about-us.html>.

45 Spaulding and Johnson, *Realizing Employment Goals*.

46 Mozilla, “Open Badges,” accessed October 14, 2016, <http://openbadges.org/>.

47 For instance, only one of the posts on the Techfugees Slack platform concerned entrepreneurship as of October 18, 2016.

48 Desiderio, *Integrating Refugees into Host Country Labor Markets*.



As yet, however, few initiatives (governmental or nongovernmental) have addressed one of the preeminent challenges faced by new arrivals: access to credit. The difficulties faced by refugees seeking to open a bank account (usually resulting from a lack of recognition of their identity documents) are well documented.<sup>49</sup> Alternative sources of financing, such as crowdfunding and peer-to-peer lending, could help link newly arrived refugees with financing opportunities. For example, GiveDirectly—a not-for-profit organization backed by Google and GiveWell that facilitates unconditional cash transfers to the poorest citizens in Kenya and Uganda via mobile technologies—is reportedly interested in developing new models that would enable direct cash payments to refugees to help them rebuild their lives.<sup>50</sup> This is an area that could benefit from greater innovation on the part of the tech community.

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*So far, policymakers have engaged with the explosion of “digital humanitarianism” in a fairly ad hoc way.*

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## V. Where Are the Opportunities? Lessons for Policymakers

So far, policymakers have engaged with the explosion of “digital humanitarianism” in a fairly ad hoc way. This lacuna is partly because of the speed with which new ideas are being developed and tested. The Techfugees community alone boasts more than 15,000 members in 27 countries around the world, and this is likely an underestimate of the number of individuals or organizations working to develop digital solutions to the integration challenges faced by refugees. While many of the new tools and services being developed show promise, there is still very little evidence of the impact they might have on their intended beneficiaries, and of which are more or less likely to “succeed” in the medium to long term. Moreover, the objectives of tech innovations and government policy are not always aligned, as demonstrated by digital apps and platforms that make it easier for people to understand migration laws that may be intentionally opaque as a deterrence measure, or innovations that seek to circumvent national restrictions on who is permitted to work.

Some governments have been more proactive than others. For example, in June 2016 the State Department announced a partnership with UNHCR and a call to action for the U.S. private sector, including numerous big players in the tech world, such as Coursera, Airbnb, LinkedIn, and TripAdvisor.<sup>51</sup> In Europe, relations between “Big Tech” and governments have historically been more strained, which could perhaps account for the more limited collaboration there on

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49 Peter Walker, “Refugees Unable to Open UK Bank Accounts Facing Debt and Destitution,” *The Guardian*, January 6, 2016, [www.theguardian.com/world/2016/jan/06/refugees-unable-to-open-uk-bank-accounts-facing-debt-and-destitution](http://www.theguardian.com/world/2016/jan/06/refugees-unable-to-open-uk-bank-accounts-facing-debt-and-destitution).

50 Michael Faye, “What is GiveDirectly Planning to Do in 2016? What Are Future Plans?” Quora, December 19, 2015, [www.quora.com/What-is-GiveDirectly-planning-to-do-in-2016-What-are-future-plans](http://www.quora.com/What-is-GiveDirectly-planning-to-do-in-2016-What-are-future-plans). At present, cash transfers account for 6 percent of total humanitarian aid, despite a large and growing body of research demonstrating the effectiveness of giving recipients direct control over how they allocate the capital and other resources they have access to. See Overseas Development Institute and the Center for Global Development, *Doing Cash Differently: How Cash Transfers Can Transform Humanitarian Aid* (London: Overseas Development Institute, 2015), [www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9828.pdf](http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9828.pdf).

51 The White House, “Fact Sheet: White House Launches a Call to Action for Private Sector Engagement on the Global Refugee Crisis” (news release, June 30, 2016), [www.whitehouse.gov/the-press-office/2016/06/30/fact-sheet-white-house-launches-call-action-private-sector-engagement](http://www.whitehouse.gov/the-press-office/2016/06/30/fact-sheet-white-house-launches-call-action-private-sector-engagement). Many of these companies were behind the recent private sector pledges around the United Nations General Assembly Summit for Refugees and migrants (with 51 companies pledging more than \$650 million—although much of this was the commitment of financier and philanthropist, George Soros). See Demetrios G. Papademetriou and Susan Fratzke, “Global Refugee Summits Offer Reasons for Both Disappointment and Hope” (commentary, Migration Policy Institute, September 2016), [www.migrationpolicy.org/news/global-refugee-summits-offer-reasons-both-disappointment-and-hope](http://www.migrationpolicy.org/news/global-refugee-summits-offer-reasons-both-disappointment-and-hope).





refugee integration.<sup>52</sup> Instead, it has fallen to start-ups to begin to develop new solutions. The German government has been more engaged with this “Small Tech” community. In May 2016, the German Federal Ministry for Economic Cooperation and Development (BMZ) hosted a conference, ICT4Refugees, presenting the results of a commissioned study on how digitalization could help to tackle the refugee crisis.<sup>53</sup>

But the lack of government support also reflects a lack of concerted thinking about how and where policy could help to support and scale promising digital innovations, open up space for the development of new innovations to fill current gaps, and better connect new online services and more traditional offline services designed to support refugee integration.

A number of policy levers show promise for encouraging innovation in support of refugees’ integration.

### A. Challenge Prizes—Stimulating New Ideas

The most obvious way a government can support the development of new digital innovations is through direct financing. Not all new innovations need funding, since many have forged strong partnerships with businesses. For instance, Kiron Open Higher Education is funded by German and Swiss foundations and businesses, including the BMW Foundation, the Schoepflin Foundation, and Google. And many of the best ideas have come from hackathons and competitions that have had strong private-sector support. However, the government could potentially play a more active role here, for example, by funding innovators to help get promising ideas off the ground.

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*Many of the best ideas have come from hackathons and competitions that have had strong private-sector support.*

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An emerging trend in government support for innovation is the use of “challenge prizes”—competitions for good ideas in a particular policy area, which generally offer finalists small rewards to develop their ideas further and possibly win a larger, final sum.<sup>54</sup> Examples include the European Commission’s DG Growth Social Innovation Prize, an annual challenge prize that in 2016 focused on the question of refugee integration. Some of the ideas proposed by finalists in this competition include a digital voucher and ID system for refugees that stores their information and can be used to help them access services; a network designed to offer safe housing to lesbian, gay, bisexual and transgender (LGBT) refugees; and a “train the trainer” program to give young refugees the skills to train younger peers in coding skills.<sup>55</sup>

Similarly, in Sweden, the government innovation agency Vinnova ran a challenge competition in 2015 that asked participants to propose and test innovative ways of increasing the safety of the

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52 For example, Facebook was ordered by the German protection agency to stop collecting data, and the European Union upgraded its data protection laws in 2015 to stop data mining by companies like Facebook and Google. See Samuel Gibbs, “Germany Orders Facebook to Stop Collecting WhatsApp User Data,” *The Guardian*, September 27, 2016, [www.theguardian.com/technology/2016/sep/27/germany-orders-facebook-stop-collecting-whatsapp-phone-numbers-user-data](http://www.theguardian.com/technology/2016/sep/27/germany-orders-facebook-stop-collecting-whatsapp-phone-numbers-user-data).

53 Federal Ministry for Economic Cooperation and Development (BMZ), “Development Meets Developers: Study Shows Refugees’ Technology Usage Behavior for the First Time” (press release, May 31, 2016), [www.bmz.de/en/press/aktuelleMeldungen/2016/mai/160531\\_pm\\_048\\_Development-meets-developers-Study-shows-refugees-technology-usage\\_behaviour-for-the-first-time/index.html](http://www.bmz.de/en/press/aktuelleMeldungen/2016/mai/160531_pm_048_Development-meets-developers-Study-shows-refugees-technology-usage_behaviour-for-the-first-time/index.html).

54 For more on this methodology, see Nesta, “Challenge Prize Centre,” accessed June 14, 2016, [www.nesta.org.uk/challenge-prize-centre](http://www.nesta.org.uk/challenge-prize-centre).

55 For more on the finalists of this challenge, see European Commission, “Overview of the Ten 2016 Semi-Finalists” (list of finalists, European Social Innovation Competition, 2016), <http://ec.europa.eu/DocsRoom/documents/18887>.



transit process and supporting the integration of new arrivals.<sup>56</sup> And the 2016 “What Design Can Do” challenge, cosponsored by UNHCR and the Ikea Foundation, looked for “game-changing ideas for accommodating, connecting, integrating, and helping the personal development of refugees.”<sup>57</sup>

Challenge prizes are widely thought to bring in new ideas from outside traditional policy circles. They are also criticized for contributing to the “pilot and crash” phenomenon: a large number of good ideas have a good trial run but then lack the long-term financial support needed to sustain themselves. Moreover, the terms are usually defined broadly to attract a large number of submissions. This is better for generating new ideas than solving specific challenges.

## **B. Follow-On Funding and Incubation—Supporting and Scaling What Works**

Governments can also offer matched or follow-on funding to help develop promising innovations that show evidence of impact and a route to scale, such as those that emerge from crowdfunded projects. For example, a not-for-profit organization in the United States recently ran a campaign to raise money to develop an incubator scheme for refugee-supporting organizations.<sup>58</sup> Enough financing was raised to run a pilot scheme in Malaysia, combining more traditional offline forms of incubator support—including training on project management and fundraising skills—with innovative text-messaging tools developed with the support of Facebook to help refugee organizations (and refugees themselves) communicate with their networks.

Currently, many initiatives are crowdfunded. The clear advantage of this is that large numbers of people are effectively engaged in supporting refugees. But the risk of the money running out makes it difficult to invest in long-term plans. A recent report on crowdfunding concluded that there is more scope for large funders and investors—such as governments—to get involved in successful crowdfunding campaigns to help the transition from start-up to sustainable organization.<sup>59</sup>

Governments can also offer direct incubation and acceleration support themselves. An example of this is the UK-Lebanon Tech Hub (UKLTH)—jointly funded by the UK Foreign Office and the Banque du Liban—which gives intensive assistance to Lebanese tech start-ups in the form of mentoring, training, business development, and access to international markets.<sup>60</sup> While the UKLTH is not specifically focused on companies that develop digital solutions for refugee integration issues, a similar model could be envisaged in this space, potentially focused on some of the areas where more sustained innovation efforts are required.

## **C. Innovative Models of Procurement—Helping Innovators Win Government Contracts**

In theory, there is huge potential to use public procurement to generate new ideas and save money. For instance, Kiron Open Higher Education estimates its cost per person served is 1,200 euros (this may be closer to 2,200 euros if mentoring, psychological counseling, and a help desk for study-related questions are factored in). The challenge for commissioners is to find ways to open up government contracts to innovative providers without sacrificing quality control.

56 Vinnova, “Innovation för säkrare migration och etablering av nyanlända,” updated September 22, 2015, [www.vinnova.se/sv/Ansoka-och-rapportera/Utlysningar/Effekta/Innovation-for-sakrارة-migration-och-etablering-av-nyanlanda/](http://www.vinnova.se/sv/Ansoka-och-rapportera/Utlysningar/Effekta/Innovation-for-sakrارة-migration-och-etablering-av-nyanlanda/).

57 Ikea Foundation, “What Design Can Do, UNHCR and IKEA Foundation Launch Global Design Challenge Focusing on Refugees,” updated February 19, 2016, [www.ikeafoundation.org/pressrelease/g/](http://www.ikeafoundation.org/pressrelease/g/).

58 Urban Refugees, “Incubator,” accessed June 14, 2016, <http://urban-refugees.org/incubator/>.

59 Jonathan Bone and Peter Baeck, *Crowdfunding Good Causes: Opportunities and Challenges for Charities, Community Groups and Social Entrepreneurs* (London: Nesta, 2016), [www.nesta.org.uk/sites/default/files/crowdfunding\\_good\\_causes-2016.pdf](http://www.nesta.org.uk/sites/default/files/crowdfunding_good_causes-2016.pdf).

60 UK Lebanon Tech Hub, “What We Do,” accessed June 14, 2016, [www.uklehub.com](http://www.uklehub.com).



There are a number of different ways that procurement can be used to stimulate innovation or address a particular social challenge:

- **Precommercial procurement.** Most government procurement follows a rigid process: commissioners decide exactly what goods or services are needed and then publicize invitations for tenders, by which time only the usual suspects are likely to bid. Precommercial procurement, on the other hand, seeks to engage the market prior to the tender being finalized to see what is possible. This brings in new ideas and a larger constituency of bidders, including smaller, more innovative companies. For instance, Barcelona recently publicized the top six problems it wanted fixed and provided the best ideas with incubator support and the opportunity to win government contracts. This approach is similar to challenge prizes (described above), but avoids the “pilot and crash” problem since it provides a pathway to win city contracts instead of finite pots of money.<sup>61</sup>
- **Outcomes-based commissioning.** A similar approach involves commissioning providers to fulfill a certain goal, without specifying the means. For instance, the Swedish government used the “payment by results” approach in its introduction guide system for newly arrived refugees, where part of the payment is attached to refugees’ employment outcomes.<sup>62</sup> However, the program was canceled following difficulties in getting the incentive structure right: because new arrivals face difficulties entering work, many guides were signing up as many people as possible for the minimum monthly payment instead of investing in people to try to get the higher payments attached to them finding sustained work.<sup>63</sup> This example illustrates the challenge of defining appropriate outcomes in a field such as refugee integration, where it takes a great deal of time to achieve the most measurable outcome (employment), and a number of the many factors that influence these outcomes are likely to be outside the control of providers. To work, outcomes-based commissioning for integration programs needs to define success broadly and attend to long-term impacts.
- **Social procurement.** Many cities have social procurement practices, that is, they prioritize certain types of providers in their allocation of contracts, usually those that are small, provide local jobs and training opportunities, or are committed to ethical practices. When evaluating tenders for public contracts, some cities assign greater value to local businesses that will hire ethnic minorities; few procurement policies explicitly focus on refugees.<sup>64</sup> One way to adapt this model to refugee integration would be to give preference to companies who are doing pro bono work with refugees.
- **Personal budgets.** A final approach to innovative procurement is to give people a budget that they can decide how to spend. In the United Kingdom, people who are eligible for social care (because they are elderly or have a disability) are allocated a budget to meet their basic needs. A similar model is France’s *compte personnel de formation*, or personal training account, where workers are entitled to a certain amount of training per year that they accrue even if they change jobs. Clearly, this model could not be directly applied to refugees—while many have a clear idea of what services they need, many know too little about the services on offer and could be vulnerable to exploitation if left to make their own integration decisions. But giving refugees the freedom to work with innovative tech companies or to start a business instead of following bureaucratic government programs could create “fast tracks” for those who would benefit from them.

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61 Christopher Swope, “How Barcelona and Philadelphia Are Turning Procurement Upside Down,” *Citiscopes*, July 17, 2014, <http://citiscopes.org/story/2014/how-barcelona-and-philadelphia-are-turning-procurement-upside-down>.

62 Introduction guides act as mentors and help newcomers navigate complex systems and services.

63 For a discussion of the relative strength of the Swedish approach versus the UK approach (where the Work Program pays employment providers only if they get people into sustained work), see Benton et al., *Aiming Higher*.

64 For instance, EUROCITIES has organized a number of events around procurement as a tool for promoting social inclusion and labor market integration. See EUROCITIES, “Procurement,” accessed October 17, 2016, [www.eurocities.eu/eurocities/issues/procurement-issue](http://www.eurocities.eu/eurocities/issues/procurement-issue).





In many countries, the question of outsourcing is deeply political and reflects disagreement over whether the government or private sector is the most appropriate vehicle for delivering services. Recent innovations to support refugee integration show that this characterization may be overly black and white: many nominally private-sector companies are doing pro bono work for refugees, while others are pioneering radically cheaper ways of delivering services by engaging volunteers or using technology. As governments consider how to design and commission cost-effective integration services that deliver more promising results, procurement—and other ways of effectively engaging private and civil-society groups—should be at the forefront of their discussions.

#### D. *Information Sharing and Convening—Creating New Partnerships for Change*

The scale of the refugee crisis means that no single type of actor—governments, humanitarian organizations, tech entrepreneurs, civil-society groups, or refugees themselves—has a complete overview of the situation, or the ability to develop innovative solutions to the complex set of problems associated with refugee integration on their own. More effective public-private partnerships are required to tackle these challenges. Governments can help to facilitate this in a number of ways:

- **Information sharing.** The proliferation of digital tools to support refugee integration makes it increasingly difficult to keep track of the different services on offer, and to guarantee that they are providing high-quality and up-to-date information for their intended beneficiaries. Indeed, one of the criticisms of some of the new apps that are acting as a “one-stop shop” for information is that they are not updated frequently enough and that the content they contain can be found easily elsewhere.<sup>65</sup> This is an area where the government could do more to support the efforts of the tech community, particularly in terms of working with developers to ensure that relevant data (for example, those that provide information about local services available to refugees) are fed through to apps or other online tools.
- **Convening partnerships between “unusual suspects.”** The rapid growth of the Techfugees community and the explosion of volunteer support demonstrate how much energy and enthusiasm there is to develop new solutions for the integration challenges facing refugees. However, unless these efforts are more closely aligned with the development of policy, there is a risk that this enthusiasm will wane. Governments could do more to build sustainable partnerships here, using their convening power to bring together “unusual suspects” working in this space—including tech entrepreneurs, policy experts, and refugees. While these kinds of partnerships bring their own challenges, they are often the most effective driver of change, as other movements—such as those working on climate change or development aid—have found.<sup>66</sup>

## VI. Conclusions and Recommendations

The 2015-16 period has seen tremendous innovation around the refugee crisis. The new digital tools being developed are impressive for their speed and creativity. But there has also been a huge amount of duplication and wasted energy. As the nascent tech element of civil society makes efforts to consolidate and self-regulate, governments could do more to bring together NGOs, community organizations, and tech companies in order to maintain the momentum, to better integrate innovation with mainstream services, and to ensure that the most promising ideas can scale.

<sup>65</sup> Lepeska, “Refugees and the Technology of Exile.”

<sup>66</sup> Rajiv Joshi and Keith Tuffley, “Unusual Partnership for Unusual Times,” Huffington Post, September 24, 2015, [www.huffingtonpost.com/rajiv-joshi/unusual-partnership-for-unusual-times\\_b\\_8164502.html](http://www.huffingtonpost.com/rajiv-joshi/unusual-partnership-for-unusual-times_b_8164502.html).



Many such ideas are untested, and—it goes without saying—small in scale. It is an open question whether any of the initiatives mentioned in this report will radically change the way that countries receive and integrate refugees. And do tech solutions, by default, benefit only those high-skilled people who would have succeeded even in their absence?

These and other questions aside, the new “digital humanitarianism” is more than the sum of its parts. Whatever happens to the innovations described in this report, the tech response to the refugee crisis reflects a fundamental shift in integration governance: toward a response that is extremely fast and highly reactive; that involves a larger constituency of actors, many of whom are no longer representing “civil society” or “employers” but who wear multiple hats and cooperate across borders; and where ideas spread in real time.

To best take advantage of the tech response to integration challenges, governments might consider the following steps:

- ***Signal more clearly what problems need to be solved.*** The proliferation of apps to help newcomers identify public services shows that tech entrepreneurs may need to be pointed toward the most critical challenges. Policymakers at all levels of government might consider posting open challenges for tech solutions to both refugee integration in general and to specific, related problems, such as housing, community cohesion, or employment. Steering entrepreneurs toward specific problems may also involve making data sets freely available for download, both in raw and user-friendly form.
- ***Make it possible for innovative companies to win public contracts.*** Good solutions are meaningless if not sustained. Government procurement could be used to first generate, then nurture, good ideas and, eventually, to support small, young, innovative businesses in delivering goods and services. Where possible, contracts for integration services should be outcome based, to urge providers toward efficiency and experimentation.
- ***Encourage entrepreneurs to measure their impact.*** Many small-scale programs lack the resources to undertake proper assessments—and the results of any assessments are likely skewed by selection bias (because participants tend to be more motivated or better qualified to begin with). Governments could provide small pots of funding to encourage entrepreneurs to effectively measure their impact, as well as training in the process. Results would, in turn, give governments greater insight into what works and help them improve and adapt offline and mainstream integration services.
- ***Bring together people from different worlds.*** The main risk of the new digital humanitarianism is that it fizzles out or wastes valuable energy, with limited impact. Governments could encourage engaged entrepreneurs and volunteers to use their energy to address priority challenges, at the same time as introducing fresh ideas into integration policy, which is often a closed world hampered by stale thinking. Policymakers should consider convening meetings of “unusual suspects”—such as young tech entrepreneurs, policy experts, and refugees—to improve collective understanding of what is feasible, legal, and has the greatest potential to improve refugees’ lives.

Not all the innovations outlined in this report will be game-changers, but they may be worthwhile developments even so if they lead to further innovations or highlight particular challenges. Some innovations put their finger on a problem: and to clearly identify and articulate the precise nature of a challenge to refugee integration is an important objective in itself.



## Appendix

The following is a complete list of sources used to compile the overview of initiatives in Table 1.

Initiative, App, or Program Name	Source
<b>Ai-Media</b>	Ai-Media, "Products," accessed October 17, 2016, <a href="http://www.ai-media.tv/products">www.ai-media.tv/products</a> .
<b>Ankommen</b>	Ankommen, "How it Works," accessed October 14, 2016, <a href="https://ankommen.eu/en">https://ankommen.eu/en</a> .
<b>Ankommen App</b>	Ankommen App, "Ankommen: The Guide for Your First Weeks in Germany," accessed June 14, 2016, <a href="http://www.ankommenapp.de">www.ankommenapp.de</a> .
<b>Babelfish</b>	Babelfish, "About," accessed October 17, 2016, <a href="http://www.babelfish.com/about-us/">www.babelfish.com/about-us/</a> .
<b>Bureaucrazy</b>	Bureaucrazy, "Bureaucrazy," Facebook, accessed October 17, 2016, <a href="http://www.facebook.com/Bureaucrazy.de">www.facebook.com/Bureaucrazy.de</a> .
<b>CALM</b>	SINGA, "CALM – Comme À La Maison," accessed October 17, 2016, <a href="https://singa.fr/la-communaute/calm-comme-a-la-maison">https://singa.fr/la-communaute/calm-comme-a-la-maison</a> .
<b>GeeCycle</b>	GeeCycle, "How Does GeeCycle Work?" accessed October 14, 2016, <a href="http://www.geecycle.org/why-geecycle">www.geecycle.org/why-geecycle</a> .
<b>Gherbtna</b>	Gherbtna, "Gherbtna," accessed October 17, 2016, <a href="http://8rbtna.com/">http://8rbtna.com/</a> .
<b>Google Translate</b>	Google Translate, "Google Translate," accessed October 17, 2016, <a href="http://translate.google.com/about/intl/en_ALL/">http://translate.google.com/about/intl/en_ALL/</a> .
<b>GoVolunteer</b>	GoVolunteer, "About Us," accessed October 17, 2016, <a href="https://govolunteer.com/about">https://govolunteer.com/about</a> .
<b>Hababy</b>	Hababy, "Hababy: A Web App for Prenatal and Postnatal Care for Refugee Women," accessed October 17, 2016, <a href="http://www.alessandrocrimi.com/hababy/">www.alessandrocrimi.com/hababy/</a> .
<b>Home4Refugees</b>	Home4Refugees, "Home4Refugees," accessed October 17, 2016, <a href="http://www.home4refugees.org">www.home4refugees.org</a> .
<b>InfoAid</b>	InfoAid, "InfoAid – Information for refugees on the Balkan Route," Apps for Refugees, accessed October 17, 2016, <a href="http://appsforrefugees.com/infoaid">http://appsforrefugees.com/infoaid</a> .
<b>IrisGuard</b>	Justin Lee, "UNHCR, IrisGuard Launch EyeCloud to Assist Refugees with Biometric Banking," Biometric Update, January 20, 2016, <a href="http://www.biometricupdate.com/201601/unhcr-irisguard-launch-eyecloud-to-assist-refugees-with-biometric-banking">www.biometricupdate.com/201601/unhcr-irisguard-launch-eyecloud-to-assist-refugees-with-biometric-banking</a> .
<b>Karim</b>	Olivia Solon, "Karim the AI Delivers Psychological Support to Syrian Refugees," <i>The Guardian</i> , March 22, 2016, <a href="http://www.theguardian.com/technology/2016/mar/22/karim-the-ai-delivers-psychological-support-to-syrian-refugees">www.theguardian.com/technology/2016/mar/22/karim-the-ai-delivers-psychological-support-to-syrian-refugees</a> .
<b>Kickstarter</b>	Kickstarter, "Kickstarter," accessed October 17, 2016, <a href="http://www.kickstarter.com">www.kickstarter.com</a> .



<b>Kiron</b>	Kiron Open Higher Education, “About,” accessed October 17, 2016, <a href="https://kiron.ngo/about">https://kiron.ngo/about</a> .
<b>Kricket</b>	Kricket, “Cowd-Mapping Aid,” accessed October 17, 2016, <a href="http://www.kricket.co/">www.kricket.co/</a> .
<b>MeshPoint</b>	MeshPoint, “Relief WiFi Hotspot for Disaster and Outdoor Areas,” accessed October 17, 2016, <a href="http://www.meshpoint.me">www.meshpoint.me</a> .
<b>Mobilearn</b>	Mobilearn, “Mobilearn,” accessed October 17, 2016, <a href="https://se.mobilearn.com/en">https://se.mobilearn.com/en</a> .
<b>MONI</b>	MONI, “MONI is Smart, So You Don’t Have to Be,” accessed October 17, 2016, <a href="https://moni.com/moni/">https://moni.com/moni/</a> .
<b>Nowall</b>	Alice Piterova, “Translation through Text: How Nowall Can Help Refugees Overcome the Language Barrier,” Techfugees, October 1, 2016, <a href="https://techfugees.com/news/translation-through-text-how-nowall-can-help-refugees-overcome-the-language-barrier/">https://techfugees.com/news/translation-through-text-how-nowall-can-help-refugees-overcome-the-language-barrier/</a> .
<b>Online Platforms and Money Transfer Systems</b>	Elizabeth Blunt, “Cash Transfers: Progress Made but Challenges Remain,” The Cash Learning Partnership (CaLP), accessed October 17, 2016, <a href="http://www.cashlearning.org/news-and-events/news-and-events/post/107-cash-transfers-progress-made-but-challenges-remain">www.cashlearning.org/news-and-events/news-and-events/post/107-cash-transfers-progress-made-but-challenges-remain</a> .
<b>Prosper</b>	Prosper, “Loans Made Simple,” accessed October 17, 2016, <a href="http://www.prosper.com">www.prosper.com</a> .
<b>ReDI School</b>	ReDI School of Digital Integration, “Welcome to a World of Co-Creation,” accessed October 17, 2016, <a href="http://www.redi-school.org/about-us">www.redi-school.org/about-us</a> .
<b>Refugees Welcome</b>	Refugees Welcome, “Refugees Welcome,” accessed October 17, 2016, <a href="http://www.refugees-welcome.net">www.refugees-welcome.net</a> .
<b>RefugeesWork</b>	RefugeesWork, “Are You a Newcomer?” accessed October 17, 2016, <a href="http://www.refugeeswork.com/en/info">www.refugeeswork.com/en/info</a> .
<b>SINGA</b>	SINGA, “Welcome to SINGA Deutschland,” accessed October 17, 2016, <a href="http://singa-deutschland.com/en/">http://singa-deutschland.com/en/</a> .
<b>Trace the Face</b>	International Committee of the Red Cross (ICRC), “Trace the Face: People Looking for Missing Migrants in Europe,” ICRC, August 27, 2015, <a href="http://www.icrc.org/en/document/trace-face-people-looking-missing-migrants-europe">www.icrc.org/en/document/trace-face-people-looking-missing-migrants-europe</a> .
<b>TransferWise</b>	TransferWise, “TransferWise,” accessed October 17, 2016, <a href="https://transferwise.com/us/">https://transferwise.com/us/</a> .
<b>Viber</b>	Viber, “About,” accessed October 17, 2016, <a href="http://www.viber.com/en/about">www.viber.com/en/about</a> .
<b>WhatsApp</b>	Megan Specia, “WhatsApp Offers Lifeline for Syrian Refugees on Journey across Europe” Mashable, July 3, 2015, <a href="http://mashable.com/2015/07/03/syrians-europe-whatsapp-refugees/">http://mashable.com/2015/07/03/syrians-europe-whatsapp-refugees/</a> .
<b>WhatsGerman</b>	WhatsGerman, “WhatsGerman,” accessed October 17, 2016, <a href="http://www.whatsgerman.de/whats_app_sprachkurs_eng.html">www.whatsgerman.de/whats_app_sprachkurs_eng.html</a> .
<b>Workeer</b>	Workeer, “Die erste Jobbörse für Geflüchtete und Arbeitgeber, die ihnen Chancen eröffnen wollen,” accessed October 17, 2016, <a href="https://workeer.de/">https://workeer.de/</a> .



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Dr. Benton received her PhD in political science from University College London in 2010. Her PhD research—on citizenship and the rights of noncitizens—was published in high-ranking social and political philosophy journals. She also holds a master's degree in legal and political theory (with distinction) from University College London, and a bachelor's degree in philosophy and literature from Warwick University.



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