



# Refugee Tech

the hype, and what  
happened next

betterplace lab

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This analysis would not have been possible without the support and brilliance of Maryam Ahmed. She used her data wizardry to transfigure our data into visual insights (and colourful charts) all while patiently explaining the finer points of data cleaning and lemmatization.

Matt Mahmoudi at the University of Cambridge also helped us in assembling and updating our data, and in refining our research questions.

This analysis draws on knowledge and data compiled over the past three years, and hence on the work of Akram Alfawakheeri, Nora Hauptmann, Mona Niebuhr, Janina Poemmerl, Lavinia Schwedersky and Julia Weber.

## Preface: Put your data where your mouth is

For over three years I, together with my colleagues at betterplace lab, have been researching and chronicling digital projects for refugee and migrant integration. During and after the so-called “refugee crisis” in Europe in 2015-16, this was an unusually dynamic area of digital social innovation (DSI). For this reason, trying to understand how this particular DSI community developed during and after this seismic event could give us insights into the dynamics and evolution of DSI more broadly.

Over time, I have developed my own opinions and interpretations about how this field is developing and why. Sometimes I’m invited to dispense these opinions in front of rooms full of people. But where does this “expertise” come from? How does it form? What’s it based on?

The single most important source has been, in a word, conversations. My colleagues and I have conducted well over 100 hours of interviews with DSI projects working in this area, as well as related actors – NGOs, local government, newcomers themselves. And besides this formal setting, there are the scores of serendipitous conversations at events, and the panel discussions at conferences. What accumulates is a diffuse felt sense of what's going on: who is working in this area; what they're thinking about; how optimistic people seem; how all of this differs from a few months ago.

This report is, in part, an attempt to take that accumulated set of ideas and hunches, and measure them against hard facts. Below we visualise information which didn't require any conversations to gather – in fact almost all the data we have assembled for this research is publicly available one way or another. Where does analysis of this kind of quantified data – shorn of the fuzziness of context, or the subtle biases of the interviewer – confirm and compliment what we've learned quantitatively? Or where might it challenge it?

In what follows, these two levels will be presented alongside one another: a visualisation of data on DSI for migration and integration, and a commentary on the graphs, giving explanatory context and highlighting how the findings compare with our experiences.

Hence, as well as illuminating this field of DSI from two directions, I hope this report also provides interest on a meta-level, comparing two different ways of acquiring knowledge.

You can find a detailed account of data analysis methodology in the appendix, and we will also make all our data available online. Critical readers are encouraged to test, challenge and build on our work!

Ben Mason

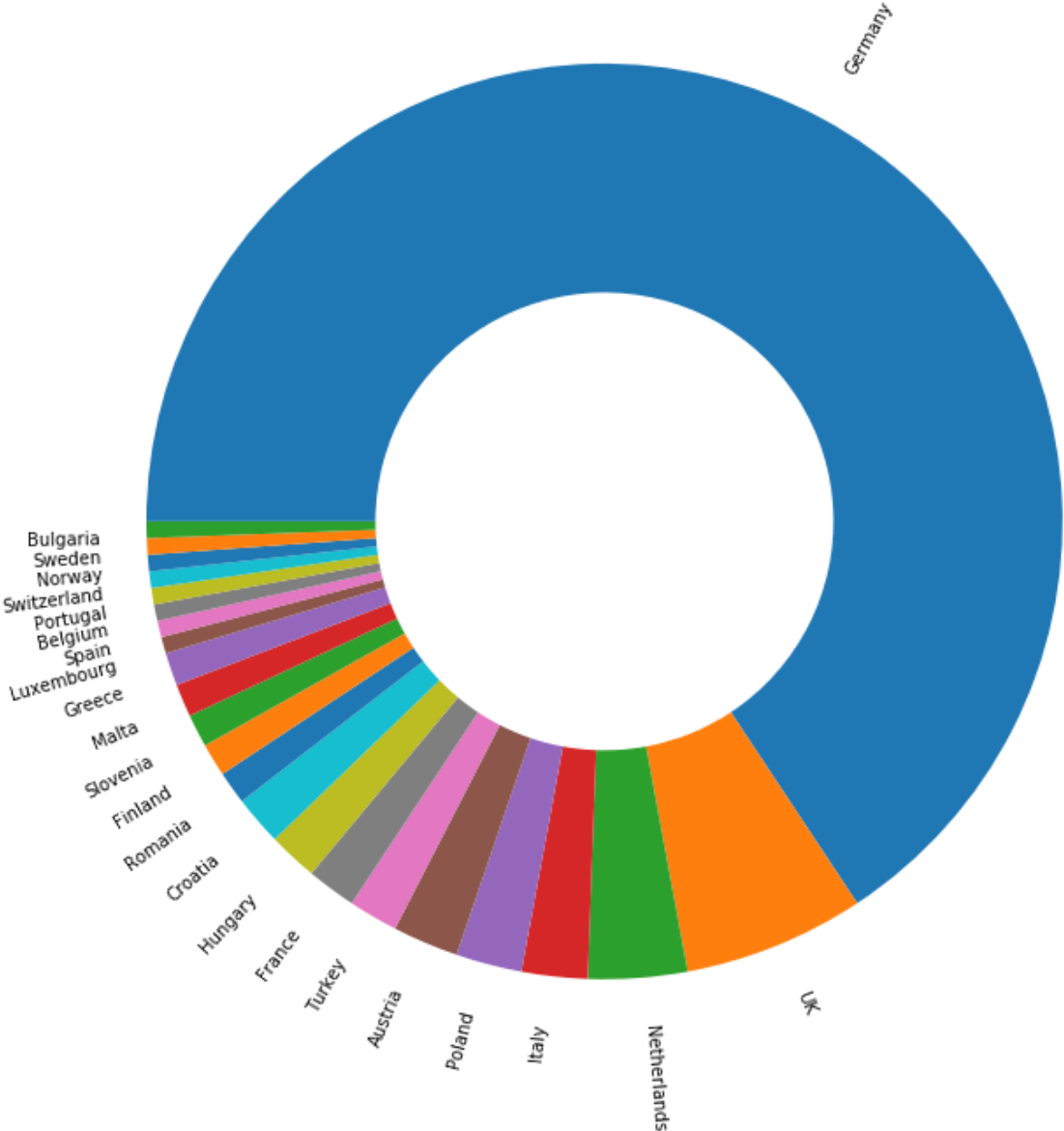
# PART I. HOW THIS DSI CLUSTER EMERGED AND DEVELOPED

## A. Geographical concentration (and notes on selection bias)

Our dataset for this analysis was our database of DSI projects in this space. In 2015 we started compiling projects in a Google-Doc which we made publicly accessible (it still is, at: [bit.ly/refugee-tech](https://bit.ly/refugee-tech)). Since then we have expanded it by adding new projects when we came across them. In the first months of 2019, we updated our data, checking on activity. We were only partially systematic in this: we periodically carried out keyword-searches through search engines and tracked online media for reports of new projects, and scanned conference agendas. In an iterative approach, the keywords changed over the years, as the discourse and focus shifted, always including refugees/ migration/ newcomers/ integration and then different areas such as shelter/ orientation/ education/ job market; but in many cases we also discovered projects through our networks or unplanned encounters.

Which brings us to one of the most immediately striking features of the data, namely the disproportionate concentration of projects in Germany, relative to other European countries.

Chart 1: Distribution of all projects by country



It is appropriate to ask at this stage to what extent this reflects the reality of the situation, and to what extent it reflects a bias in our data collection. After all, we are based in Berlin, our networks are most concentrated in Germany, and most of the conferences and meetups we attend are also here. So, for a mixture of circumstantial



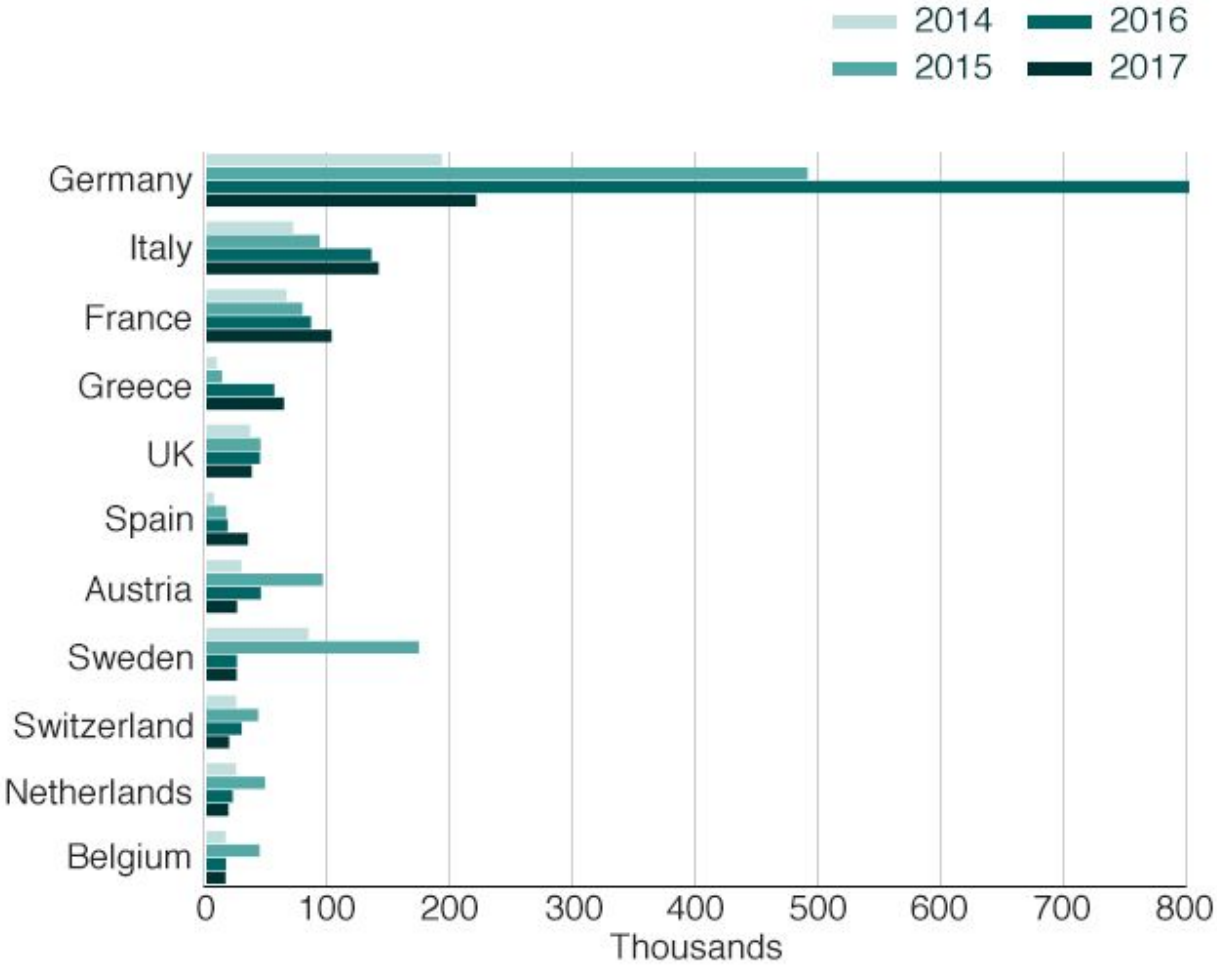
(and linguistic) reasons, we're more likely to get wind of a new project that sets up in Berlin than one in Barcelona or Budapest.

Inevitably, it's some mixture of both. We argue that selection bias only accounts in modest part for what chart 1 shows, and that this is indeed a phenomenon that's heavily focussed in Germany.

Although it's not feasible to totally eliminate this bias, we have made progress in mitigating it. Because most of our earlier research on this topic was funded by the German Federal Interior Ministry, its scope was explicitly limited to German projects. So we were happy about the opportunity, through the DSI4EU project, to expand to a Europe-wide focus and we were able to profit from our consortium partners tipping us off about projects in their countries.

To put this into a broader context, although the influx of refugees into Europe in 2015-16 captured public and political attention across Europe, it's also undoubtable that Germany had a unique role. During the summer of 2015, when the numbers of displaced people arriving into Europe were extremely high, Germany unilaterally (and controversially) adopted a policy of offering asylum to those fleeing the civil war in Syria. This was famously encapsulated in a speech by Chancellor Angela Merkel in August 2015 in which she declared to her compatriots "[Wir schaffen das](#)" ("We can do this"). The following months saw a precipitous increase in arrivals, peaking in October of that year – a month that saw over 200,000 refugee arrivals into Germany. In total over 1.5 million asylum applications were made in Germany between 2015 and 2018. Chart 2, [created by the BBC](#), shows how dramatically this exceeds other European countries. (NB. In many cases, there is a time-lag of several months between arrival and registering an asylum application; hence although arrivals peaked in 2015, applications peaked in 2016.)

Chart 2: Number of asylum applications by country



Source: Eurostat

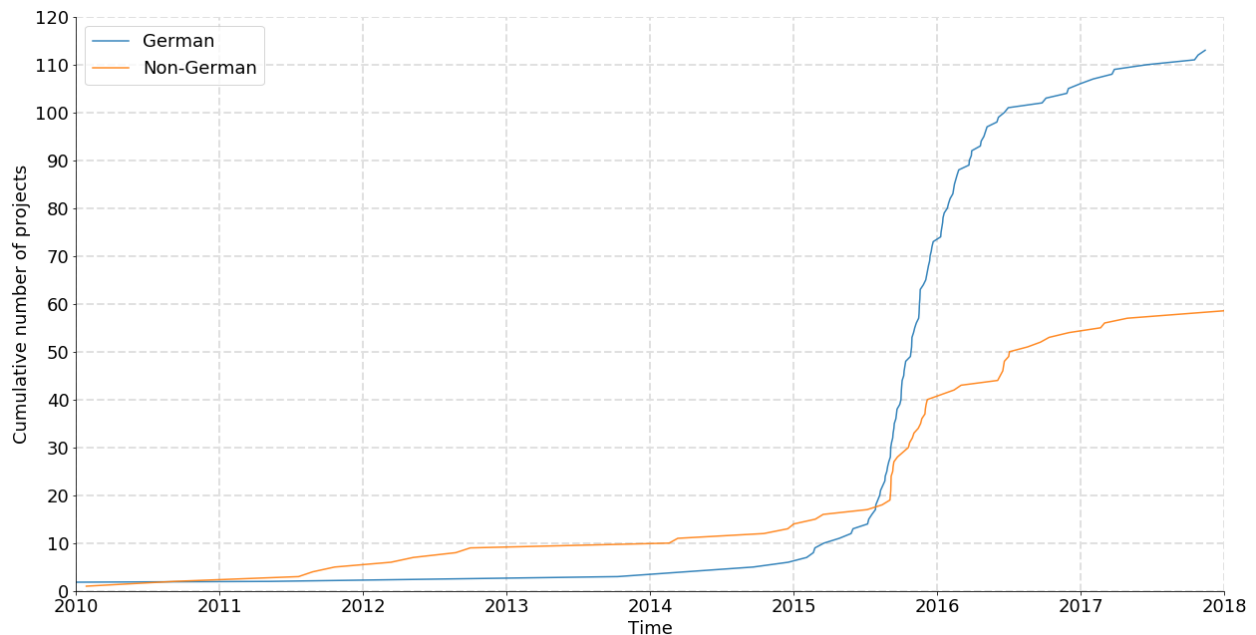


In response, and spurred on by Chancellor Merkel’s appeal and pervasive media coverage, there was an extraordinary mobilisation of civil society. Many thousands of German citizens volunteered, for instance, greeting new arrivals in train stations with food and blankets, or supervising at emergency accommodation sites. In other words, since Germany experienced a larger surge of civic engagement than other countries, it makes intuitive sense that DSI would also disproportionately blossom

here – DSI after all is a specific form of engagement among the technologically oriented.

Nonetheless, as chart 3 suggests, in terms of development over time, the German projects were broadly in line with those in other countries. The proliferation of projects during a short period, while also clearly visible among the projects from other countries, is even more pronounced among the German initiatives – and it's to this that we now turn.

Chart 3: Cumulative number of projects over time



## B. Rapid rise

Perhaps you're wondering at this stage whether this heavy emphasis on the events of 2015-16 is justified. Forced displacement pre-dates 2015, as does DSI. But it was evident even at the time that the burst of DSI activity during this short period from summer 2015 was extraordinary. Existing networks were being activated, which is to

say groups that were already established turned their collective attention to the issue of refugees, holding events and hackathons for example.

We know from subsequent interviews that most project founders had no previous experience working on issues of migration and integration. Indeed, many also had no experience of DSI of any kind, but were motivated to act by the perceived urgency of the situation.

The upshot of this major mobilisation is shown vividly in chart 3. If anything, the sense we had in late-2015 into the beginning of 2016 that something big was afoot still *underestimated* the scale of what was happening. With hindsight, the data shows how rapidly new projects were being launched: averaging several each week, coming close to a new project each *day*.

However, this explosion phase was rather short-lived. By the middle of 2016, the number of new projects launching had flattened off considerably. This corresponds with a dimming of public and media attention to the issue, and a decrease in the number of arrivals – due in part to an agreement made between Turkey and the EU in March 2016 to reduce the numbers arriving into Europe.

## C. Gradual decline

What happened next? From my observations and conversations, I had developed a rough narrative.

During this initial “explosion” phase, everybody was working manically to get their project ideas off the ground (although plenty didn’t manage to). By around March 2016 we entered a “consolidation” phase, which was marked not only by fewer new projects but also by people having the time to take stock, maybe try to build partnerships or else join forces with a similar initiative. Around summer 2017, my sense was that the going got tough. Lots of projects struggled unsuccessfully to get

funding and make themselves sustainable. The mood in the community was of disillusionment and disappointment. We might call this the “dejection” phase.

That was the broad story I told various audiences, including at a DSI community event we held in Berlin in August 2018. Now let’s examine how well it holds up against the data in chart 4.

Chart 4: Number of active projects over time



The green line shows (like chart 3) the cumulative number of projects as they launched. The pink line shows how many of those projects are still *active* at any given time. (How we ascertained activity/inactivity is described in the appendix.)

Parts of my narrative hold up quite well. We see that even during the height of the “explosion phase”, the gap between the two lines begins to widen. That means that a considerable number of young projects became inactive quickly – before they ever got off the ground, in other words – even while scores of other new projects were still springing up around them.

What comes next deviates from my narrative. The addition of new projects continues for longer than I believed, and new projects were still being added quite steadily throughout 2016, only flattening out in 2017. Looking at the pink line, we do see a “consolidation” of sorts: the number of active projects becomes quite flat – but this is deceptive. Where I thought there was broad stability in 2016, in fact there was considerable churn: 46 new projects launched and 32 projects became inactive.

As for the “dejection”, which I proposed started in mid-2017, this doesn’t seem to be obviously borne out by the data. Although the number of new projects has flattened out by this stage, projects are also not dying off at a rapid rate. So my remarks at the event in August 2018 about what a tough 12 months it had been were perhaps a little pessimistic. Or perhaps grimly prescient, since that seems to coincide with the decline suddenly getting steeper.

It’s surprising (and cheering) that the collective mood of “dejection” which I had witnessed was only partially a reflection of reality. Perhaps a part of it was not *how many* projects had called it a day, but *which* ones (something not captured in the chart). This included some larger and better-known projects such as [clarat](#) and [metacollect](#). Perhaps it was also a feeling among some projects that the writing was on the wall, even if they hadn’t actually pulled the plug yet – and this would explain the subsequent decline.

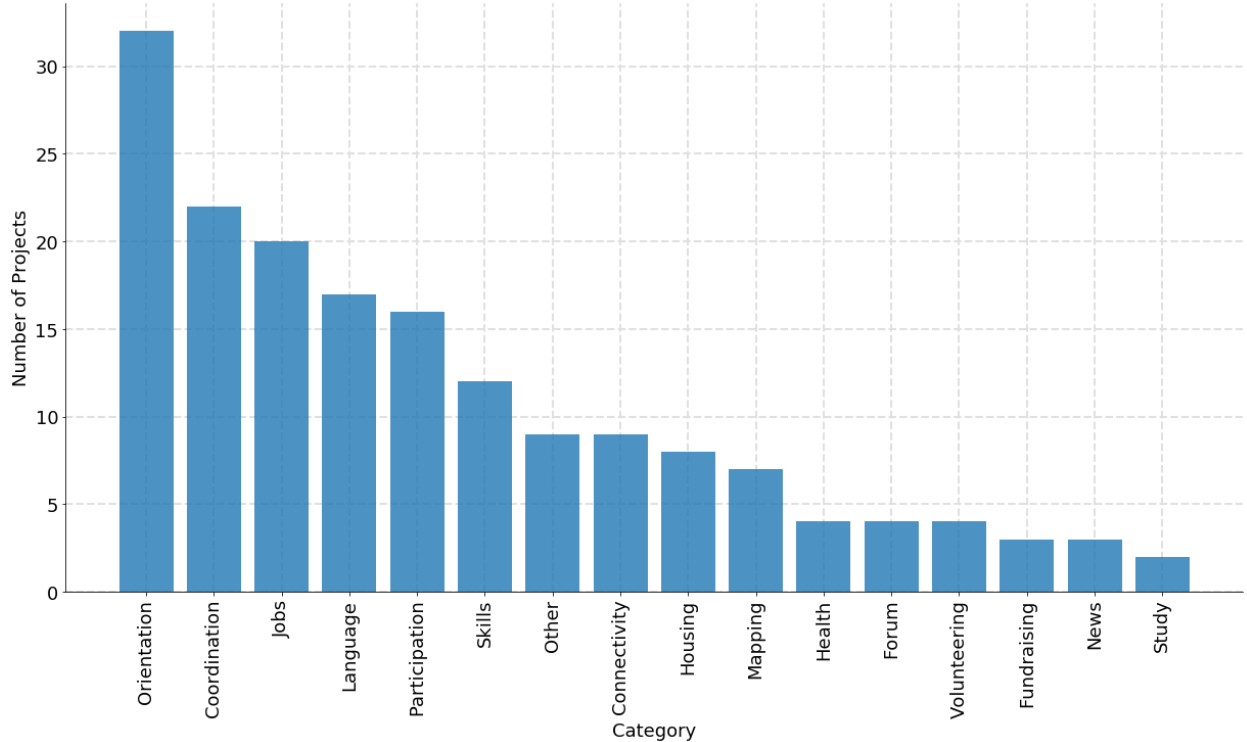
What the data doesn’t tell us is how the death of a project happens. Maybe the team realises that it’s not working or attracting users as they’d hoped; maybe they can’t get funding and gradually get worn down working for free – whatever the cause, how long do people hang on, making the odd minor update or writing the odd Facebook-post, before finally stopping altogether? Does this vary a lot between projects, or different types of projects? These are questions which could only be answered through interviews with inactive projects.

# PART II: SUCCESS FACTORS AND LESSONS LEARNED

## D. What sort of projects were created – and when?

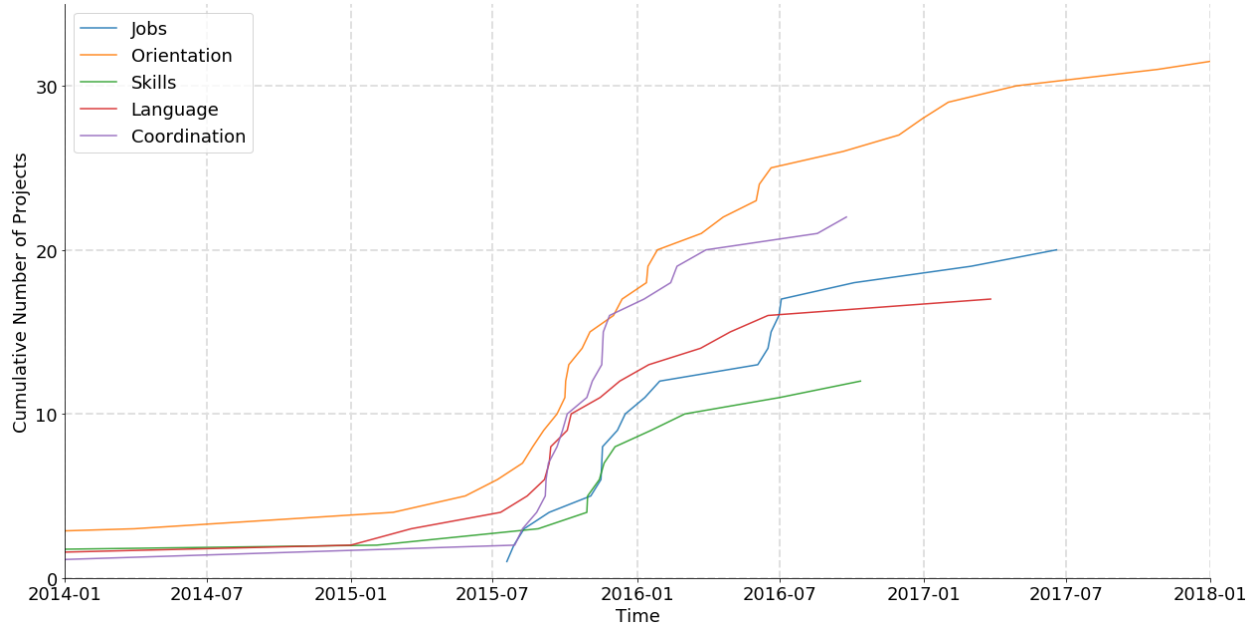
We sorted the projects into 16 categories, based on the aspect of migrant integration they were aiming to address. (See appendix for a short definition of each category, and their grouping into four higher-level categories; note that some projects fall into more than one category.)

Chart 5: Distribution of projects by category



The most commonly occurring types were orientation (advice and resources for newcomers) and coordination (of volunteers and donations of clothes etc.). This chimes with anecdotal evidence that many of the project founders did not have prior experience of migration and integration, and, in the urgency of the moment, settled on that which was most visible (i.e. the chaos of thousands of willing volunteers, but a lack of coordinating structures) and that which is intuitively helpful (giving newcomers information about the cities and societies they have arrived into).

Chart 6: Cumulative number of projects over time in selected categories



If we look at how these five categories develop over time, we see that the sharp rise in orientation projects precedes the rise in other categories, getting underway in the first half of 2015. There are various possible explanations for this. Since this precedes the peak of media and public attention to the topic, it suggests that some of the early orientation projects may have been created by people with a prior engagement with migration. On a more pragmatic level, orientation projects tend to



be technically less demanding than, for example, a platform to coordinate volunteers or to list job vacancies. The complexity of an orientation project is relatively low both in terms of software development (a static website, rather than an interactive platform) and in terms of not needing other partners and stakeholders (such as employers). All this means that the time between having the idea for a project and getting it online is likely to be shorter for orientation projects than other categories.

The trajectories of the different categories also partly reflect the changing circumstances on the ground. The challenges facing newcomers do not remain constant. During the first days and weeks in an arrival country, their needs may be limited to the basics of survival: ensuring shelter and the most essential information. Over time, especially if official processes are functioning well, the focus is likely to shift to longer-term dimensions of social inclusion, such as language, education and employment.

## E. What sort of projects survived – and why?

This changing context is the most important issue when we consider the survival and longevity of projects. Where a project became inactive, was it due to *internal* factors – such as running out of funding or motivation, or just poor execution – or was it a reaction to *external* circumstances that meant the project was no longer relevant?

How the different project categories have fared is shown in the two charts below. Chart 7 shows what proportion of projects in each category were still active by 2019; chart 8 shows what proportion were “short” (were active for less than 12 months following their launch) vs “long” (lasted for more than 12 months).

Chart 7: Active and inactive projects by category

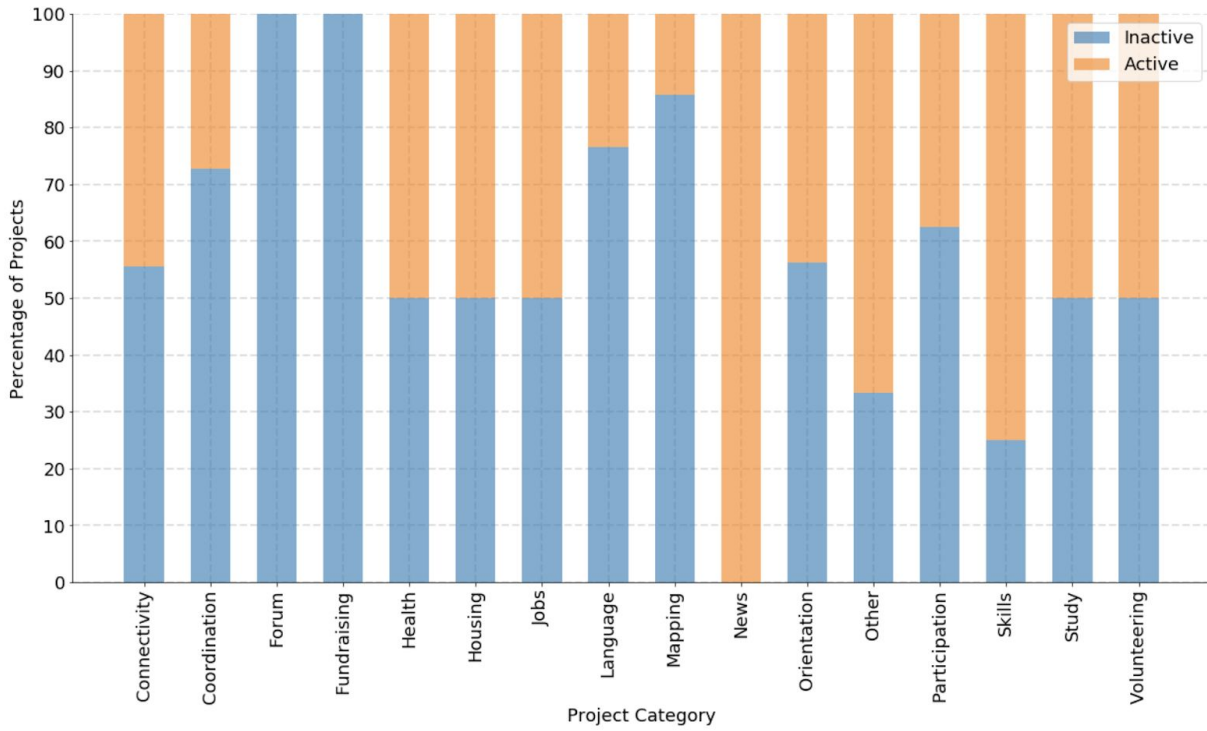
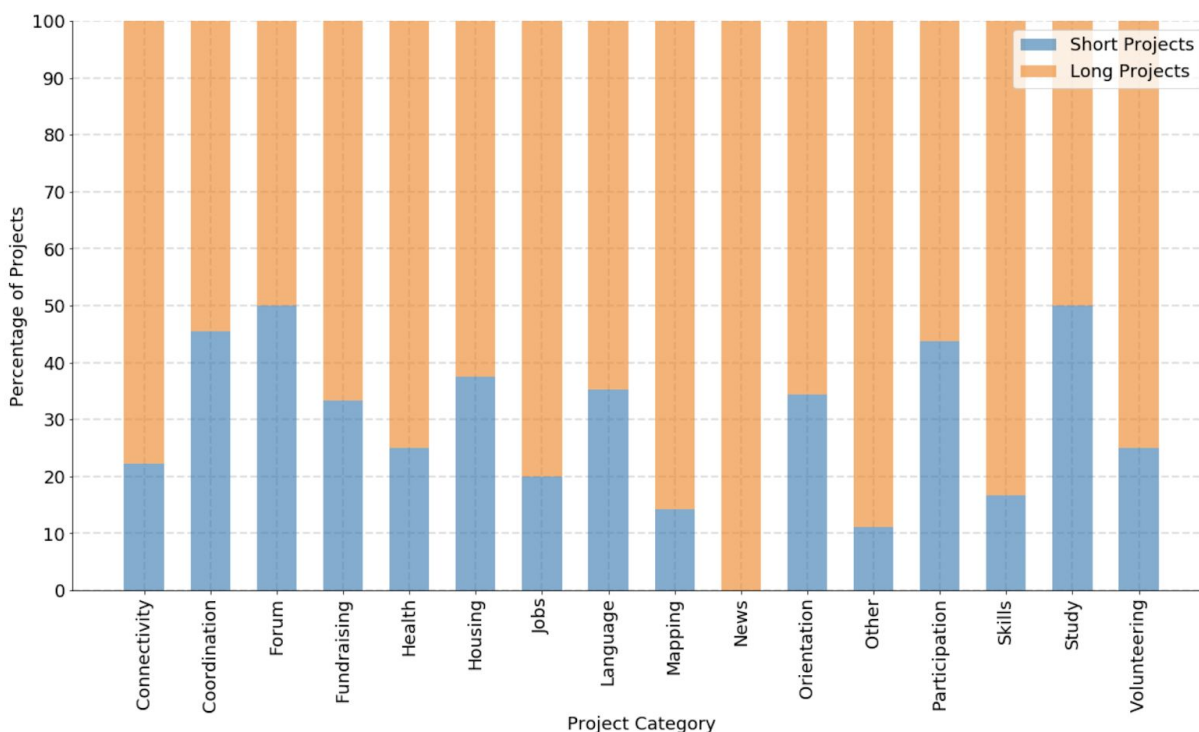


Chart 8: Short and long lasting projects by category



The category of Coordination is an instance of being influenced by changing circumstances. As noted above, these were created in response to an acute situation while arrivals were very high, where thousands of people wanted to volunteer their time and donate clothing and other supplies, but there was no adequate infrastructure to manage this. As arrivals decreased, so did pressure on the system, and this emergency of coordination subsided. Hence it no surprise to see that many such projects emerged early (chart 6), and that many soon became inactive (charts 7 and 8). This does not necessarily mean that they failed, or did not have a significant impact during a critical period.

The data supports the idea of a transition as outlined above from short-term to longer-term integration challenges. Whereas the majority of coordination and orientation projects are now inactive, the longer-term categories of health, housing, jobs and skills show a higher proportion of long and still-active projects.

I would argue that language is an area that remains relevant and important, even to migrants several years after arrival, but that the demand for a digital service is met through the existing available language-learning apps and products. Language learning for refugees and newcomers is not significantly different to anybody else trying to acquire a new language, so a tailored product makes little sense. I would argue this is what underlies the high activity rates in this *newcomer-specific* language category above.

Similar remarks apply to the fundraising category. NGOs working with migrants and refugees still depend on donations, but the small number of *specific* fundraising platforms created to capitalise on a moment of extraordinary public interest have served their purpose, and today online donations to refugee organisations are made through established and general platforms.

The mapping category has an unusual profile in the data and warrants examination. These projects were also created out of an impulse to make order where there was chaos. At the moment when the system was under severe strain, the public sector, small and large NGOs and spontaneously formed grassroots groups all mobilised and were trying to help. It was highly decentralised and pretty chaotic – people didn't know what others were doing, there was no good overview. The mapping projects wanted to change that by creating a database (often plotted on a literal map) of which organisations were providing which services to newcomers.

There's something culturally revealing in this. A few decades ago, people would have found it obvious and unremarkable that in a fast-moving situation involving lots of people, nobody had perfect information. But in the age of big data, and smartphones and companies tracking our every move and click, the lack of such useful information, comprehensive and in real-time, starts to feel perverse and intolerable.

But there were two big flaws with this idea. Firstly, unlike the location tracking of a smartphone for example, there was no way to automate the collection of this data. Even clarat, which employed a sizeable team to manually collect, input and update

data, were in the end overwhelmed by the scale of the task. Secondly, there does not seem to have been any clear use-case. While the idea of such an overview might intuitively seem highly useful, it's not obvious who would have used it and what for. As chart 7 shows, most of these mapping projects have now been discontinued – but chart 8 shows that most persevered in their attempts for some time before eventually conceding.

Another striking factor in projects' longevity is when they were founded. Specifically, of the projects which existed before 2015, 65% of them are still active in 2019. This compares with just 39% of projects started during or after the “explosion” of 2015-16. As noted above, this is in part because some of those newer projects were responding to a specific need which passed with time. But it also indicates that on average, the flood of new projects were less well organised or less well attuned to the reality of the situation than the old guard.

## F. Which technologies did projects work with?

In this DSI community there is some – but not enough – discussion about how newcomers actually use technology. The importance of this shouldn't be underestimated. If projects don't know their users well enough and build products that go beyond their technological habits or abilities, the projects are unlikely to attract a lot of users.

It is hard to find authoritative data on tech usage within refugee and migrant communities. We have done some research here, but due to the small sample size it can only be considered anecdotal. [Mary Gillespie of the Open University](#) has also investigated the question. Though largely anecdotal, the picture here seems fairly clear to those who have considered the question. In short: smartphone use is very widespread, much more so than computers. And newcomers overwhelmingly use these smartphones to communicate via WhatsApp (and other messengers) and to use Facebook. Independently browsing the web is an activity of quite a small minority of this population. This has led us to a conclusion which [we were](#)

[advocating to the DSI community as early as 2016](#), namely that Facebook was by far the most important channel to reach potential users – and that just building a website and expecting users to find it was badly misguided.

We tracked projects' activity based on three possible technologies which they might use. These were: having their own website, developing an app, and maintaining a Facebook presence.

Chart 9: Frequency of different platform types as a proportion of all projects

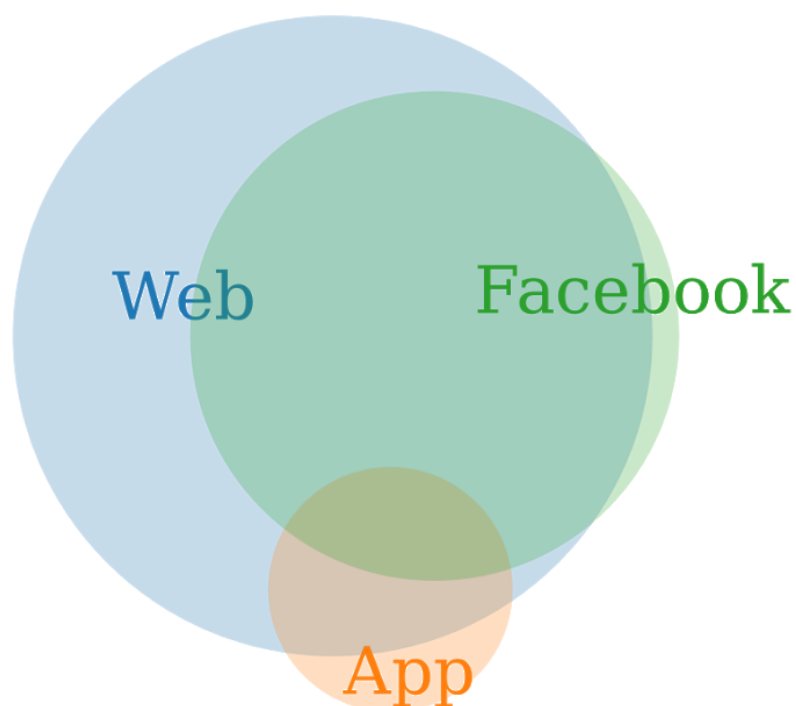


Chart 9 shows the proportion of projects that used these three technologies in various combinations. We can see that 95% of projects had a website, and of these a little over half also had a Facebook presence.

Chart 10: Active and inactive projects by platform type

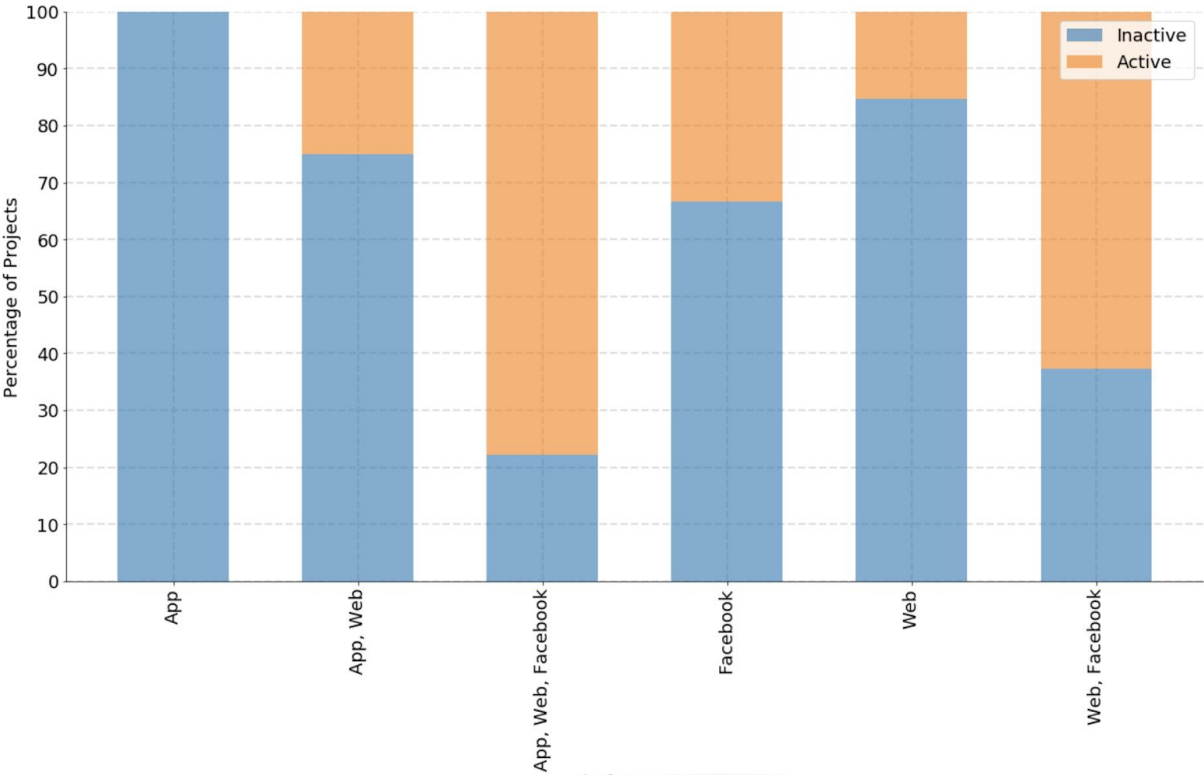
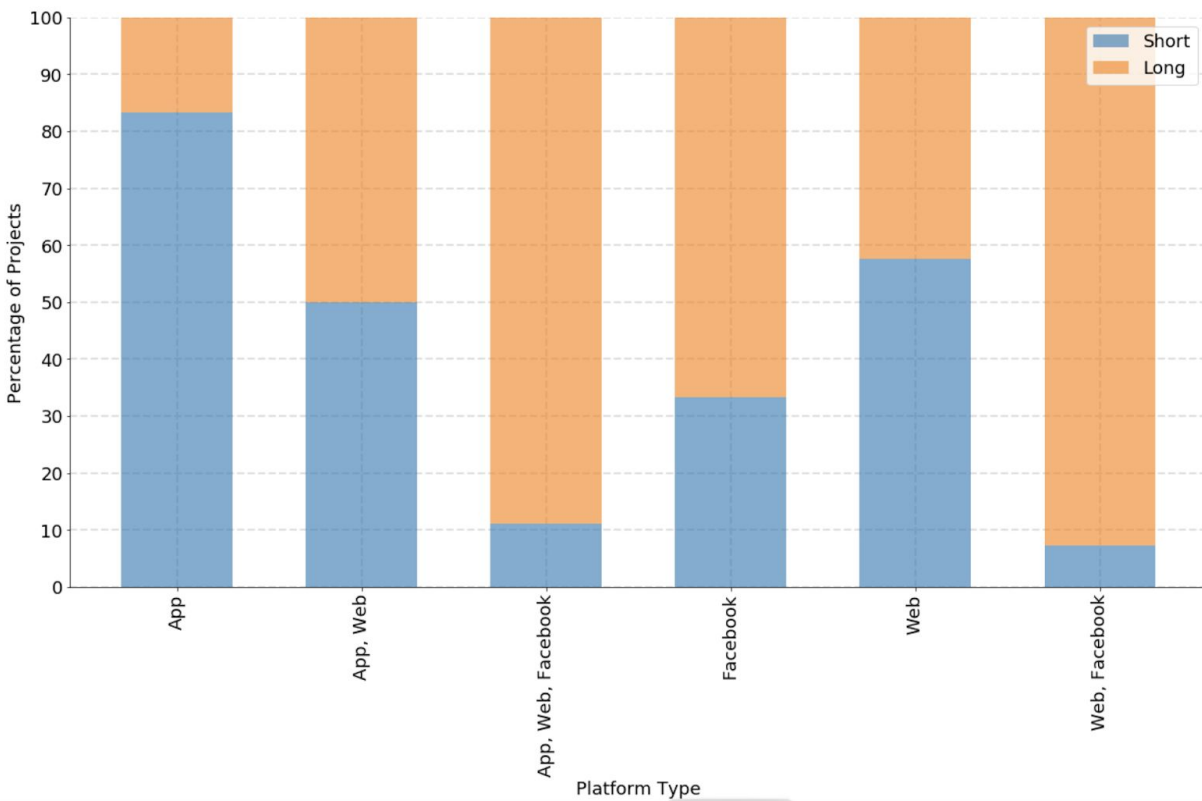


Chart 11: Short and long lasting projects by platform type



If we examine how many of the projects are still active (chart 10) and how many lasted longer than a year (chart 11), there is clear support for our argument: websites which also had a Facebook presence fared far better than websites without one.

Those projects with only an app (3% of the total) performed especially poorly, but if they combined it with a website and a Facebook page, the story changes.

What we see clearly is a correlation between using *multiple* technologies rather than one, and the probability of a project succeeding (or at least surviving). Naturally, we need to be careful about inferring causation here. It's not clear that this multi-platforming was the main *cause* of their longevity – probably the level of resource a project has is a more salient factor, and those with more resources are



able to build a better product *and* are able to invest in maintaining multiple presences.

## PART III: DISCOURSE WITHIN THE DSI COMMUNITY

### G. Topic Modelling

We wanted with this analysis to capture not only the hard facts about this field of DSI, in terms of how many projects were created, and what happened to them. We also wanted to understand some of the human and social dynamics which gave rise to those outcomes. To this end, we have attempted here to use the tools of data analysis to shine a light on what members of this DSI community were discussing among themselves.

The data we used here came from various conferences that have been held in recent years to discuss this area of DSI. By analysing the language of the conferences' programmes and the short abstracts about the various sessions, what can we learn about the subjects under discussion? We used information about:

1. The "Global Summits" organised in Paris in 2017 and 2018 by Techfugees, the most important international network in this DSI cluster;
2. The "Social Innovation for Refugee Inclusion" series organised in Brüssels in 2016, 2018 and 2019 by Migration Policy Institute (while not limited to *digital* innovation, this is present within a broader understanding of innovation);
3. The "ICT4Refugees" conference organised by betterplace lab and and Kiron in Berlin in 2016.

We had hoped also to include the two "Digitale Flüchtlingsgipfel" conferences held in Berlin, but because of the workshop-based format of the conference programmes, these turned out to be unsuitable for such analysis.

The technique we used is called “topic modelling”, and works by identifying distinct sub-topics within the overarching field of tech for migrant inclusion, and assessing the relative emphasis placed on these sub-topics. There is a crucial difference between this approach and, for example, the sorting of projects into different categories as shown in charts 7 and 8 above. That was a set of categories we devised ourselves. Topic modelling, by contrast, doesn’t impose a set of sub-topics but rather lets them emerge from the data. It tends to work better with longer snippets of text, but worked reasonably well in this case despite many of the samples consisting of a few sentences or less.

A detailed technical description of how this is achieved is contained in the appendix. A brief layman’s version goes like this. You take the input text (i.e. the abstracts from the conference agendas) and by stripping away words without relevant content (such as “and”, “the”, “because”), you can reduce each abstract to a condensed set of essential words. By comparing these, the algorithms look for patterns, creating clusters of words that frequently occur together, showing the existence of a cohesive topic or a related set of ideas.

Below are the 10 topics that this algorithmic approach generated. On the right are the words and phrases that define the topics, on the left are shorthand labels that we gave them. One additional topic, ‘education and employment’ was manually defined; this topic was not picked up by the algorithm but was clearly present as a theme in the data.

social inclusion, governments	social, technology, inclusion, social inclusion, integration, government
innovation and entrepreneurship	refugee, innovation, refugee displace, entrepreneurship, displace, europe
big data, access rights, privacy	data, information, privacy, displace, security, standard
private sector partnerships	private, sector, private sector, inclusion, refugee inclusion, partnership

housing	housing, housing refugee, home, share, refugee, crisis
blockchain and algorithms	blockchain refugee, blockchain, refugee, algorithm, gainful, financial
communities, welcoming	community, rural, rural community, urban, welcome, city
other	tech, refugee tech, eco refugee, eco, design, workshop
refugee camps	camp, refugee camp, present, refugee, innovator, meet
climate change	climate, change, migration, people, climate migration, kind

## H. Differences between conferences

The analysis gives a sense of the different flavours of the conferences. The Techfugees and Social Innovation for Refugee Inclusion (SI4RI) conferences attract different constituencies, with some overlap, and we see some reflection of this in the modelling. As in earlier sections, I'm able to compare this with my subjective experience, having attended these conferences.

Charts 12-14 show the proportion of abstracts from the respective conferences that were labelled with each topic (each abstract was labelled with only one topic).

Chart 12: Techfugees

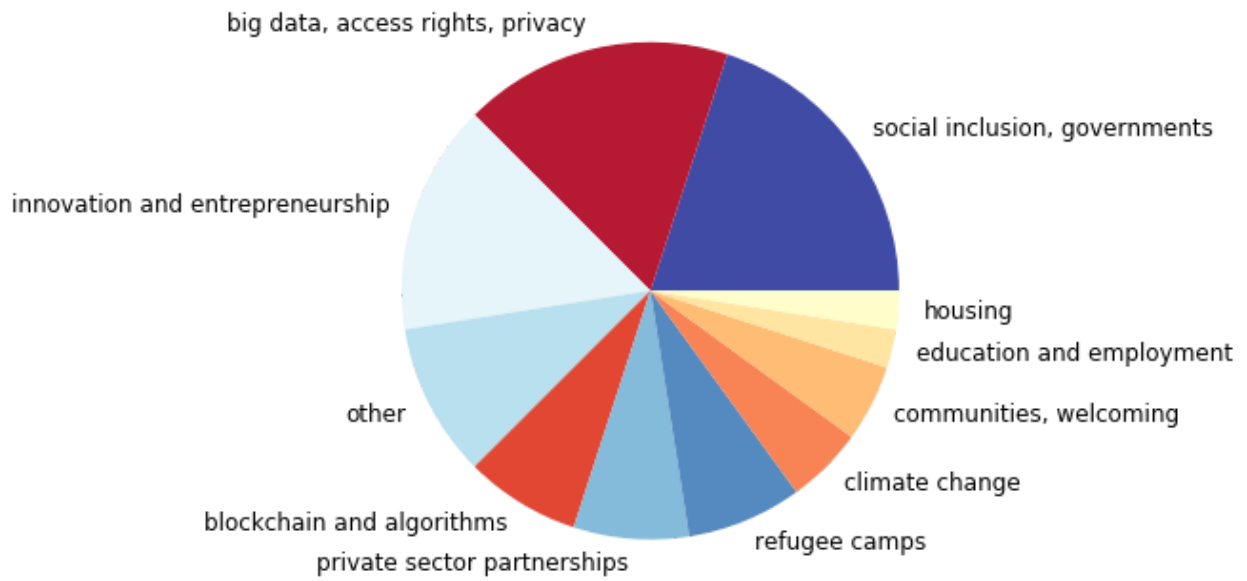
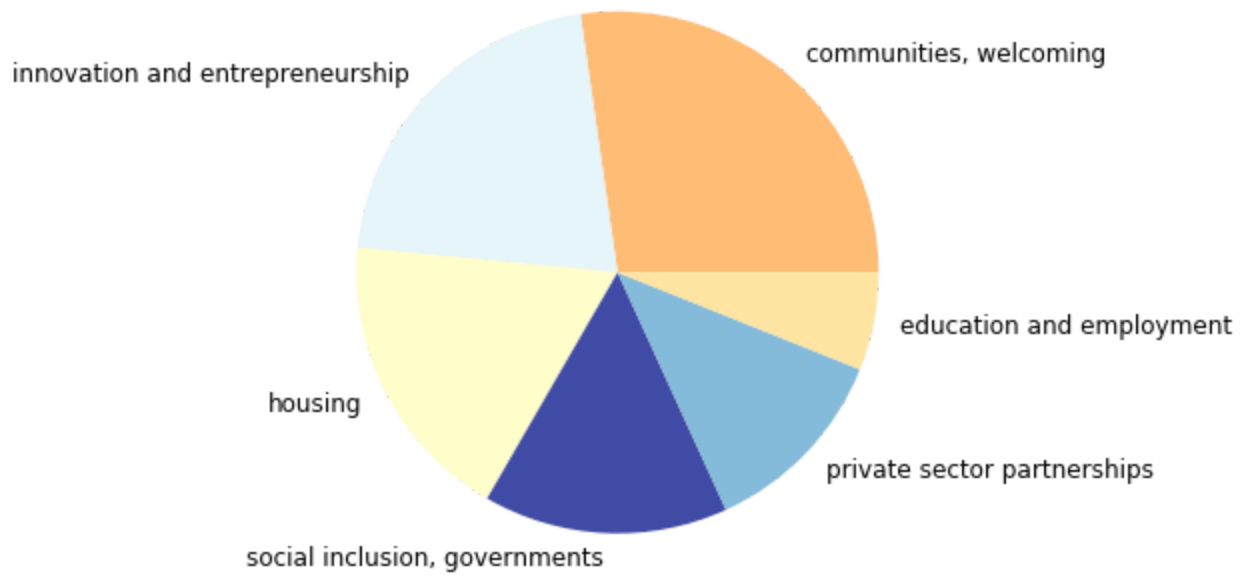


Chart 13: SI4RI

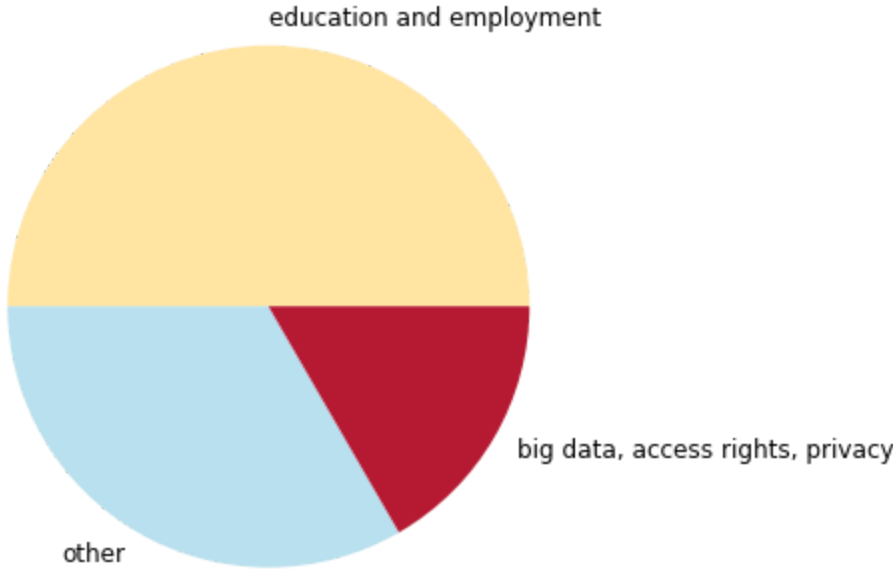


The Techfugees network is made up largely of people who have founded DSI projects. Many of the people there have a background in tech – indeed the founder of Techfugees and the conference host is Mike Butcher, a very well-known and respected figure in the world of tech startups. As such, the overall level of IT expertise is quite high, and this is reflected in the presence of more technically detailed and demanding topics such as data privacy and blockchain.

By contrast, the SI4RI conference series is attended by a mixture of NGOs and policymakers, alongside the DSI projects. As such, the discussions there are often framed not in terms of technological questions but rather specific policy areas such as education or housing (which was the guiding theme of the 2019 gathering).

The ICT4Refugees conference was a one-off, and so we are looking at less data.

Chart 14: ICT4Refugees



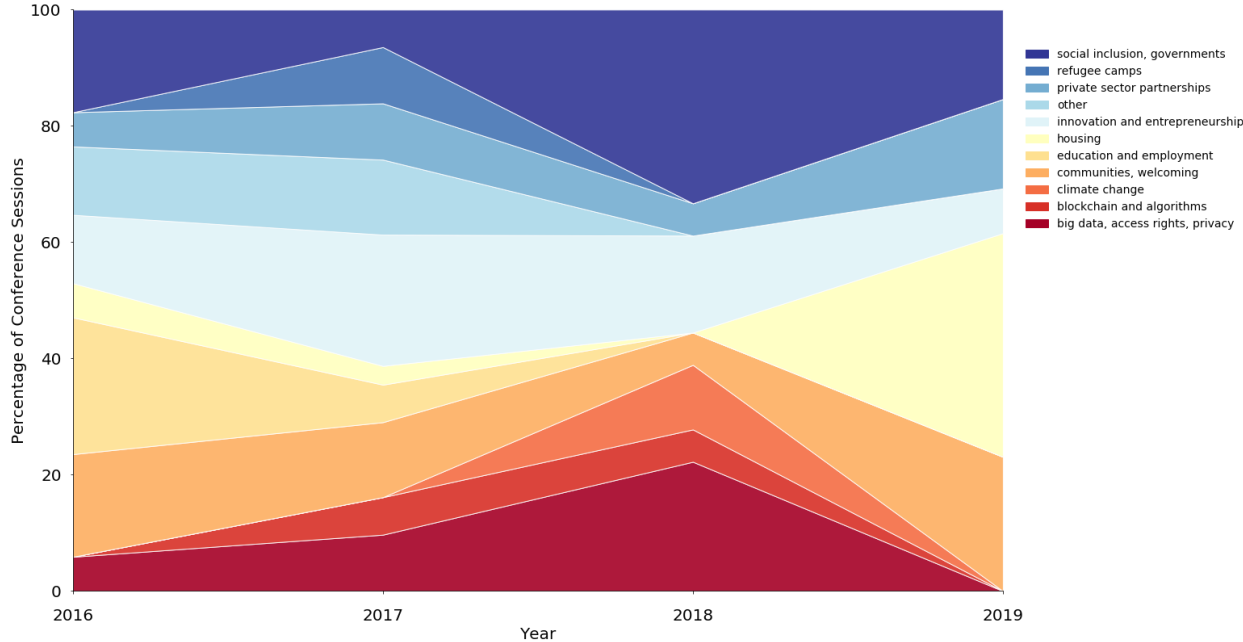
Perhaps the most significant factor to highlight is *when* the conference took place. In May 2016, it was one of the first large conferences in this space and was held just

as the “explosion” phase of frantic activity was beginning to settle. For that reason, it arguably contributed to *creating* a sense of community and a shared language and set of reference points. Perhaps for this reason, the discussion topics, at least as they appeared on the programme beforehand, are rather broad and generic.

## I. The evolving discourse

Plotting the development of the topics over time presents a complicated picture, but we may be able to discern some patterns.

Chart 15: Key themes at refugee tech conferences over time



The profile of 2019 should be interpreted with care, because at the time of writing we only have data for one conference this year, and the organising committee set a focus on housing, explaining the big expansion in that topic.

If we look only at the years 2016-18, there are some features of the data which could be seen as reflecting the shift described in earlier sections from short-term to longer-term dimensions of integration. For example, as refugees get access to conventional housing, use of emergency and provisional accommodation has become less common, and it is no surprise that the topic of “refugee camps” has faded. The two topics which grew significantly in 2018 – data/privacy and the role of government – could be seen as longer-term concerns, that are important to address now that the sense of emergency has dissipated.

## PART IV: CONCLUSION

The area of migration and integration is unique among DSI clusters in being defined by a clear inflection point – namely, the tumultuous events of 2015-16. The data analysis and visualisation we have presented here illuminates the extraordinary scale and speed of the DSI response, and the way in which it is still playing-out, more than three years on.

What happens when such a wave of engagement is triggered, including the mobilisation of many people with no prior history of such work, should interest all those who want to understand the development and dynamics of DSI. The experience of this community could contain lessons for future urgent situations requiring rapid civic action, be they related to migration or something else.

Our analysis shows that a sizeable proportion of the projects that sprang up did not manage to sustain themselves, and in many cases never truly got off the ground. How we react to this fact depends partly on disposition: is it a testament to an admirable spirit of innovation and experimentation which is not afraid of trying something that doesn't work out? Or does it prove that people with good intentions but a lack of deep understanding of the complexity they are trying to deal with are ultimately of limited help? There is some truth to both sides.

But this analysis also helps us see a little deeper than such overarching judgements. We can see how a portion of the churn in projects is in reaction to changing circumstances, and a transition from short-term to longer-term integration priorities. At the same time, we have grounds to suspect that a lot of projects didn't have an especially deep understanding of their users – otherwise more of them would have taken to Facebook to try and reach them.

The sense of despondency and pessimism which I'd sensed within the DSI community turned out to be only partly supported by the data. Viewed in full



context, a rate of 42% of all projects still active in 2019 to me seems high, and a cause for encouragement. Admittedly, we still seem to be in a period of steady decline, and it's possible that the "natural equilibrium" level of activity for this niche of DSI is considerably lower than we see today. But with regard to migration in the twenty-first century, the only thing we can be certain about is our own uncertainty. For various reasons, it's entirely possible that we will be confronted with major displacement and movement of people, and we will be challenged to find good answers. We can hope that the lessons that this community of innovators has learned, and are still learning, might stand us in slightly better stead.

The code used to produce these charts is available at:

<http://www.github.com/datamimi/betterplace>