

Tech for Good:
The possibilities and limits of using digital
instruments in international development
projects of non-governmental organisations

2019



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Foreword

The technical possibilities for social networking and the dissemination of information have seen explosive growth in recent years. More and more tasks that used to be performed by humans are now being delegated to digital systems. Undoubtedly, this digital transformation offers many opportunities – but at the same time, the speed of change can be dizzying and also comes with new risks.

The digital transformation has already changed development cooperation and humanitarian aid in many ways. The internet has the potential to improve the living conditions of countless people through improved access to knowledge and new opportunities for political and economic participation. Non-governmental organisations (NGOs) are already seizing this opportunity, and projects in the fields of education, nutrition, health and many others have benefited from the use of digital technologies.

Based on practical examples, this publication aims to illustrate how to successfully incorporate digital tools. As such, the approaches and instruments presented here are explicitly meant to be emulated and further developed.

However, digitalisation is about more than mere technical innovation. As non-governmental organisations, our task is also to face up to the central political challenge of ensuring that digitalisation is fair. After all, those who are already doing well economically and politically also have the best chances to take advantage of digitalisation. This so-called digital divide often affects women and rural pop-

ulations in particular, whose access to digital services is significantly worse. Groups that are marginalised for ethnic or other reasons are also often excluded from access to digital infrastructures, which may either be poorly developed or lacking entirely. In addition, the digital economy is also affected by phenomena that create problems in other areas: the monopolistic position of multinational corporations, inadequate legal frameworks for companies and the pursuit of maximum profits at the expense of people and the environment – not to mention Orwellian nightmares of total control and surveillance.

New technologies can make an important contribution toward meeting development goals. However, they can also hinder development or even entail negative consequences for people on the ground. Addressing and managing digital change is therefore an increasingly important development policy task for non-governmental organisations.

We would like to encourage you to use the opportunities presented by digital change in your work and to get involved in the relevant political discussions in order to make globalisation fairer and more public-interest driven.

I very much hope that you will enjoy reading this report!

Bernd Bornhorst
Chairman

OTHER VENRO PUBLICATIONS:

NRO-Report (2018): [➤ Unbequeme Partner? Von Konfrontation bis Kooperation: Strategien von NRO gegenüber Unternehmen.](#)

Insight (2018): [➤ Good intentions are not good enough: How we take into account undesirable effects with “Do No Harm”.](#)

Handreichung (2017): [➤ Was macht Capacity Development von NRO erfolgreich?](#)

Einblicke (2017): [➤ Adaptive Management – Erkennen, Anpassen, Verbessern](#)

Introduction

During the 1990s, development organisations first started to take an interest in the use of digital technologies. Under the keyword ICT4D (short for “information and communication technologies for development”), the initial focus was on imparting basic knowledge and occasionally on the implementation of infrastructure solutions, such as setting up telecentres in remote regions. However, the impressive success of the M-Pesa mobile payment system in Kenya starting in 2007, and especially the rapid spread of the Arab Spring in 2011, highlighted the enormous potential of digital technologies and global networking. For the first time ever, social media such as *Twitter* and *Facebook* proved to be key factors in dramatic socio-political changes. Mobile phones, which were then becoming increasingly widespread, proved to be an important tool in this process. This led to renewed interest on the part of bilateral and multilateral donors in digitalisation.

The rapid suppression of the Arab Spring, which had inspired so much hope for reform, was not the only indication that the spread of innovative forms of communication does not in itself lead to fairer or sustainable development – let alone the emergence of more democratic structures. While technological innovations can indeed be used to support and improve development cooperation projects, there has also been a growing awareness over the past decade that the success of digital technologies largely depends on how well they are adapted to local conditions. The introduction of digital technologies does not automatically reduce existing inequalities – for example between the sexes, between North and South, or within individual countries; on the contrary, it may even exacerbate these inequalities. A study by the *World Wide Web Foundation* has shown, for example, that in urban areas of the global South, women living in poverty use the internet considerably less frequently than men (or are less able to do so). The same is true of mobile phones, which men are more likely to own than women.

We should therefore take these experiences and insights into account when we acknowledge the fact that digital technologies are now ubiquitous in more and more parts of the world. Although the *United Nations’ 2030 Agenda for Sustainable Development* does not address this issue in detail, since 2015 (when the Sustainable Development Goals were first adopted) there have been a number of attempts to harness the power of digital technologies to achieve the UN’s goals.

Many donor organisations have created tools to promote digital development projects. These include in-house innovation centres (e.g. the *United States Agency for International Development – USAID*) and dedicated funding instruments (e.g. the *Swedish International Development Cooperation Agency – SIDA*). In 2017, the *German Federal Ministry for Economic Cooperation and Development (BMZ)* adopted a 📌 “digital agenda”,¹ with five strategic goals:

1. Harnessing digital innovation
2. Reinforcing democratic processes
3. Helping displaced persons
4. Creating future-proof jobs
5. Safeguarding human rights and ensuring participation

Digitalisation processes in NGOs can be particularly successful if they provide added value for achieving specific project and organisational goals – for example through increased effectiveness or by enabling the development of new approaches for solving existing problems. For many NGOs, the debate about the use of digital technologies also has business development implications. Last but not least, digitalisation also has the potential to improve the public perception of development cooperation and to reach new donor groups and partners. At the same time, digitalisation also forces NGOs to reflect on the necessary technical expertise, data protection, IT security and the appropriate political frameworks. We need to seize the opportunities and possibilities offered by digital technologies without losing sight of their risks and limitations. To do so, NGOs and their partners must have sufficient funding, know-how and the necessary capacities at their disposal.

1 http://www.bmz.de/de/mediathek/publikationen/reihen/infobroschueren_flyer/infobroschueren/Materialie312_Digitale_Agenda.pdf

Five effects of the digital transformation on NGOs:


(1) Projects:

Development projects can potentially be improved by incorporating digital technologies. Adding digital components can improve the efficiency, usability, security, fit, reach, reporting, or transparency of a project. The ability to analyse large data sets improves project selection and design.

(2) Within organisations:

For NGOs, the digital transformation means greater institutional pressures to adapt. In addition to capacity-building, they also need to gain and harness the required knowledge and experience. At the management level, NGOs face the challenge of creating favourable framework conditions for innovation and for scaling up the use of proven digital approaches in their organisations. The development and implementation of targeted strategies may also require the topic to be institutionally embedded within each organisation.

(3) Changes in the fields of activity:

The transformative character of digitalisation is comparable to that of the industrial revolution. According to the  World Bank,² up to two-thirds of jobs in developing countries may be replaced by automation. At the same time, digitalisation facilitates broad access to knowledge

and new services and creates new jobs and opportunities for participation. This affects all areas of employment, including sectors that have traditionally been the focus of development cooperation, such as education, agriculture and health. For NGOs, new fields of activity are emerging, including issues relating to digital citizenship and access to information technologies.

(4) Promoting the necessary frameworks:

There is a growing need for development NGOs to promote policy conditions that are conducive to the use of digital technologies. In order to tap the full potential of digital technologies for development projects, appropriate frameworks first need to be put in place – in the global North (e.g. adequate funding instruments, access to information) as well as in the South (e.g. comprehensive infrastructures, non-discriminatory access, strong partners).

(5) New actors:

Actors that have hitherto received little attention are becoming more relevant for NGOs. Companies such as mobile phone providers, start-ups or social media platforms have access to data, infrastructures and knowledge that are becoming increasingly interesting for NGOs. This makes it possible to forge new links between NGOs, businesses and academia.

2 <http://www.worldbank.org/en/publication/wdr2016>

Seven trends at the intersection of digitalisation and development cooperation

(1) Decentralisation:

It is becoming increasingly easier to provide location-independent digital services, and developing countries are no exception. NGOs can give a voice to marginalised groups who either have no or only poor access to digital services. The spread of new communication technologies makes it easier for NGOs to contact partners and exchange information and it enables decentralised planning and coordination structures.

(2) Datafication:

Ever larger volumes of data are being generated, collected and networked. Such large amounts of data can also be used for the common good. In some cases, they can make it easier to analyse social problems and their underlying causes. To do so, however, NGOs and their partners will need the necessary tools.

(3) The quantification of development cooperation:

NGOs are increasingly asked to make information immediately available, particularly as regards the use of funds, the progress of projects and the impacts achieved. New digital instruments can help to meet these expectations. At the same time, NGOs must ensure that the costs do not outweigh the benefits and that the safety of their partners will not be compromised.

(4) Private-sector influence:

Companies are driving the digital transformation. Start-ups and tech companies can act as partners in the development and scaling up of innovative solutions. However, major corporations use their ample financial resources to pursue their own agendas, which is why it often makes sense for NGOs to act as critical observers.

(5) Restrictions on digital citizenship:

In the digital arena, censorship, intimidation, manipulation and false information are on the rise. In order to protect projects, their beneficiaries and the civic space, it is becoming increasingly important for NGOs and their partners to monitor these negative developments and to develop counter-strategies.

(6) Increasing demands on data protection:

As ever more data are being generated and networked, the protection of personal data and the right to informational self-determination are becoming increasingly important. This applies not only to European NGOs and their local partners, but also to companies and governments. NGOs and their partners increasingly need to take this into account in their operational processes in order to find common solutions to today's data protection issues.

(7) Net neutrality is in danger:

The preferential treatment or discrimination of individual internet services in terms of speed or cost poses a global threat to a free internet. NGOs can play an important role in the defence of net neutrality.

CHAPTER 1

Recent developments

While some digital technologies, such as smartphones, have become a very tangible and visible part of our everyday lives, we are far less aware of other changes. But if we reflect on the way we do banking, buy plane tickets or find our way through foreign cities and countries, we quickly realise how much has changed in the last twenty or even ten years. These radical changes affect not only the way we do things, but also our expectations about how they should be and at what speed they should happen. Traditions, practices and norms are constantly adapting to this widespread use of digital technology. This also has implications for development cooperation.

Further reading on the topic:

The CONCORD publication “Development is Going Digital” examines how digitalisation is transforming companies, cities, agriculture, energy systems and governments and how NGOs can harness the potential of digitalisation.

↘ https://concordeurope.org/wp-content/uploads/2018/10/CONCORD_FOND_DevelopmentGoingDigital_Report_2018.pdf

Needless to say, it is not the spread of digital technology alone that triggers change. These complex transformation processes arise from the combination of different factors.

At the intersection of digitalisation and development cooperation, seven trends can be identified that are particularly relevant for NGOs.³

1.1 Decentralisation

The use of digital technologies reinforces the trend towards decentralisation in development cooperation. Thanks to better, cheaper and more easily accessible technologies (above all internet-enabled phones), data can be collected locally without much effort and then evaluated in real time – either in the closest city or on another continent. As a result, project management, fundraising, and international and local expertise increasingly come together irrespective of location. Below is a brief overview of projects that illustrate the many different possibilities:

- The app ↘ *Antura and the Letters*⁴ provides children at a refugee camp in Jordan with playful learning materials. It aims to improve the reading and writing skills of Syrian refugee children and to enhance their psychological well-being. The organisations behind the app – a consortium consisting of *Video Games without Borders*, *the Cologne Game Lab* at the Technical University of Cologne and the Lebanese games developer *Wixel Studios* – are not permanently on site themselves but are creating a lasting service for their target group.
- ↘ In schools in rural Argentina,⁵ pupils now simply follow their teachers’ instructions on screen – the teachers themselves are based in the nearest city, but their instructions are transmitted via video link to the laptops of thousands of Argentine pupils. The aim is to facilitate continuous instruction even in remote areas.
- The ↘ *U-Report*⁶ project enables young people in almost 50 countries to take part in political discussions via text message or social media. The system has over five million users worldwide, and in emergency situations, for example after an earthquake, it provides them with vital information.
- The *Ilajnafsy* project, which will be presented in more detail on the following pages, enables women from

3 Methodology of the study: The results and examples presented here come from interviews as well as from a comprehensive literature and internet search conducted by the authors in 2018.

4 <http://www.antura.org/>

5 <https://www.youtube.com/watch?v=Xo5xrFwKMDY>

6 <https://ureport.in/>



The “Antura and the Letters” app being tested in Lebanon © Imaad Manzar

Arabic-speaking countries to receive psychological support via email and Skype to process negative experiences and alleviate post-traumatic symptoms. Psychologists from Germany and Egypt are thus working together to support women who live thousands of kilometres away across various Arab countries.

- With the so-called blockchain technology, data becomes more tamper-proof and can also be managed remotely from multiple locations at the same time. ↘ There have been initial experiments⁷ to use this technology to manage real estate and combat corruption, for example by the non-profit start-up ↘ BitLand⁸ in Ghana (for more information about blockchains, see p. 27).

As a result of this technology trend, the demands placed on NGOs and their local partners are changing, as is their potential reach. Digital communication channels are also

changing the way NGOs from the global North and South – and the beneficiaries of their activities – communicate and interact with each other. While the detachment of communications and information exchange from direct encounters can save enormous costs, it is important to note that screen- and telephone-based contacts cannot completely replace personal interaction: It is not easy to build and maintain relationships based on mutual trust purely by digital means.

This trend also raises the issue of equitable access to the internet and to digital services. After all, about half the world’s population does not have access to the internet. Groups that are already socially and/or economically marginalised are particularly affected. The more the services provided by companies, governments and NGOs move into the digital arena, the more important it becomes for NGOs to give a voice to people who have limited or no access to such services.

7 <https://www.ictworks.org/eight-practical-blockchain-use-cases/#.W3wjWqLxDaU>

8 <http://www.bitland.world>



Middle East:
Misereor and the Berlin “Überleben” centre

ILAJNAFSY

Online-based therapy options that can be accessed remotely

Persistent crises, recurring physical and psychological violence as well as general uncertainty burden the lives of many people in countries such as Syria, Lebanon or Iraq. In addition to stress, many people suffer from symptoms of post-traumatic stress disorders triggered by traumatic experiences such as fleeing their homes, violent attacks and the death of relatives. At the same time, this crisis-ridden region lacks adequate structures for psychological and social care.

To address these issues, the Berlin “Überleben” (“survival”) centre (formerly the Berlin Centre for Torture Victims) launched a pilot project for internet-based psychological and social interventions in 2007, based on a successful model from the Netherlands (*Interapy*). The internet-based psychological and social care programme *Ilajnafsy* was developed in cooperation with *Caritas Alexandria* and the aid organisation *Misereor*.

At *Ilajnafsy.com*, people seeking help can register to receive virtual support: after briefly describing their situation, they are offered a diagnostic interview via *Skype* with trained *Caritas* staff. All therapy-related contact takes place via a data-protected web portal. In the following, the psychological support/therapy is individually coordinated and conducted via email and *Skype* calls. On average, the initial treatment for depression lasts about five weeks, based on

a scientifically tested model. In addition, *Ilajnafsy* is also supported by two Berlin-based psychology professors.

Since people fleeing conflict mostly rely on their mobile phones, *Ilajnafsy* has also developed an app. This not only allows for greater discretion, but also provides users with a streamlined version of *Ilajnafsy* that enables them to assess their own emotional states and to identify symptoms of depression.

The project also highlighted the importance of robust IT security and data protection. Whereas initially, the team responded to these issues in a merely reactive manner, a full-time IT expert has now been hired to focus on prevention. Among other things, this person is responsible for the implementation of regular security updates, which are absolutely essential.

To date, *Ilajnafsy* has treated several thousand people, and since the service launched, a number of supporting studies have also been carried out. These studies and a separate evaluation have shown a significant reduction in depression-related symptoms. Since 2016, 13,586 requests have been registered on the *Ilajnafsy* platform, mostly from women, and 80 per cent of patients stated that they would recommend *Ilajnafsy*.

Another similar service offered by the “Überleben” centre is the app [ALMHAR](#)⁹. It provides help to people suffering from depression or post-traumatic stress (refugees in particular), and can be downloaded free of charge on Android phones in English, Arabic and Farsi.

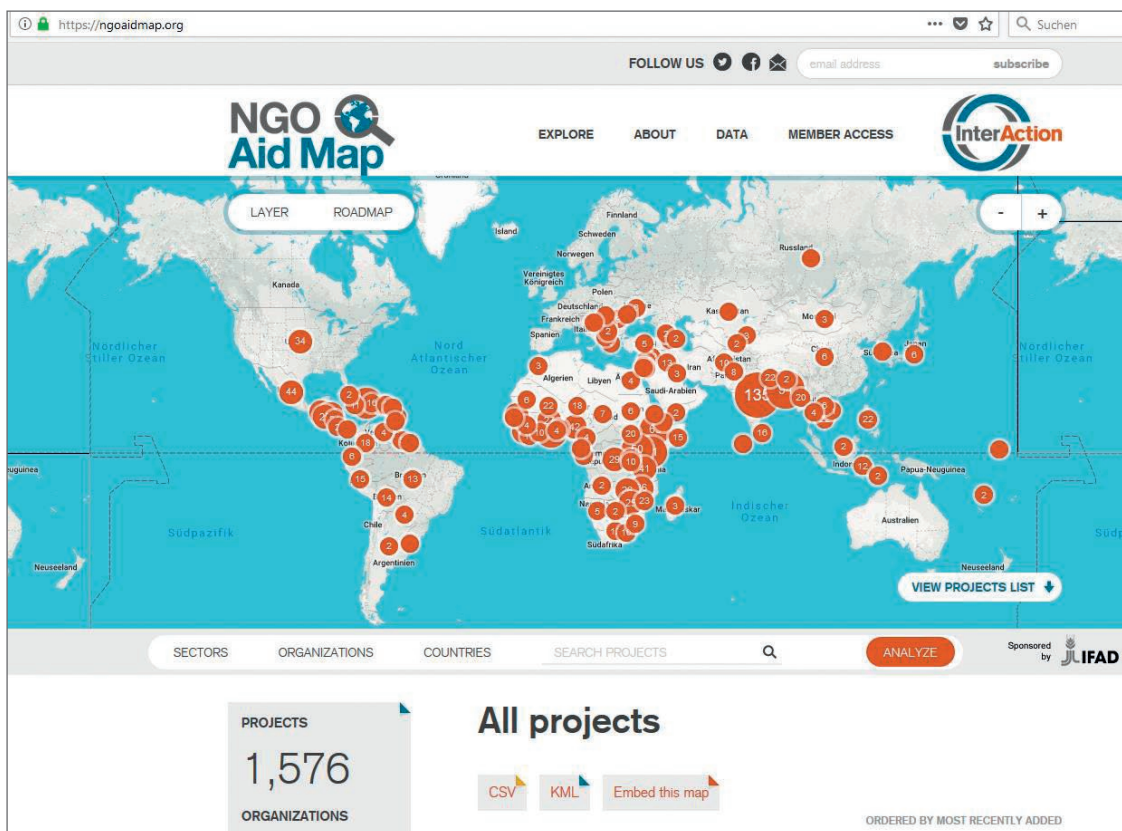
1.2 Datafication

Experts use the term datafication to describe the growing volumes of data and the increased demand for these data. Almost all digital tools used today collect, process and link data. Many of these data are generated without our knowledge – for example, when we make phone calls, browse the internet or allow programs access to our GPS location. The collection and commercialisation of such data is the foundation of the digital economy. While most of these data are still being generated in the developed world, the volume of data is growing wherever digital technologies are used.

Known as “Big Data”, these large amounts of information are the source of many of the innovations that have

fundamentally changed our lives. They only generate their true value once they are analysed and relevant findings for humans or machines can be extracted. This is done with the help of algorithms that can recognise correlations in large amounts of data and then make predictions accordingly – also known as machine learning. Based on such data analytics, navigation devices can calculate the best possible route and music streaming services predict the musical taste of each user. In addition, the analysis of Big Data also promises solutions for today’s biggest social challenges. The following example is a case in point: *IBM*’s question-answering system *Watson* [probably saved a Japanese woman’s](#)

9 <http://almhar.org/>



Based on IATI data, the “NGO Aid Map” provides an overview of the global projects of American NGOs © InterAction

life¹⁰ in the space 10 minutes, after comparing her symptoms with 20 million academic publications on cancer research, which pointed to a rare type of leukaemia.

With expectations for the use of Big Data running high, it is no surprise that development cooperation experts also have high hopes for the technology. The UN report [“A World that Counts: Mobilising the Data Revolution for Sustainable Development”](#)¹¹ has even called for a data revolution to counter the lack (or insufficient use of) data in sustainable development. In addition to improvements in existing statistical systems, this data revolution is also explicitly about the use of new sources, such as crowd-sourced data, to supplement statistics – in other words, data collected by citizens themselves.

Large donor organisations such as the *Bill and Melinda Gates Foundation*, *USAID*, *DFID*, *UNICEF* and the *World Bank* provide extensive funding for research into new ways of using Big Data. The UN organisation [Global Pulse](#)¹² is exclusively dedicated to this topic. New applica-

tions make it possible to recognise data patterns that could hardly be deciphered with the naked eye, and in a fraction of the time. The NGO [Data2X](#)¹³ tries to uncover evidence of gender inequalities in certain developing countries based on anonymous data, for example from credit card transactions and mobile phone use.

Using aggregated data to automate processes speeds up decision-making and increases efficiency. In agriculture, for example, it is possible to make precise forecasts for individual areas by evaluating and combining different sets of data: weather forecasts, satellite photos and sensor-transmitted humidity and temperature measurements of air and soil. This enables farmers to optimise the cultivation of individual plots and thereby to improve their harvests.

Digital methods also offer new opportunities in the field of education. If students work on a task with the help of an electronic application, for example, the latter can automatically analyse their level of knowledge through continuous evaluation and thereby provide a tailor-made

10 <http://www.businessinsider.com/how-ibm-watson-helped-cure-a-womans-cancer-2016-12>

11 <http://www.undatarevolution.org/report/>

12 <https://www.unglobalpulse.org/>

13 <https://data2x.org/resource-center/big-data-and-the-wellbeing-of-women-and-girls/>

learning experience that adapts to the learning pace of each individual student.

So far, most Big Data applications cannot yet be used extensively in the global South owing to the low level of internet penetration. For this reason, the focus has so far been on mobile communications data. Analysing anonymous mobile data provides detailed information on people's connections, credit balances and locations. After the 2009 earthquake in Haiti, the NGO *Flowminder* analysed mobile phone data to better understand the movement patterns of the local population after the disaster in order to curb the spread of cholera. *UNICEF* carried out similar analyses in the wake of Africa's Ebola crisis: Together with the airline booking company *Amadeus* and mobile operators based in West Africa, the organisation tried to determine how and where the virus spread. However, access to such data for purposes of the common good is often difficult, as they are generally collected for commercial reasons. This therefore makes it necessary to cooperate with private-sector actors (see also trend no. 4).

Since more and more phenomena can be mapped by means of data, there is a growing demand to make information as quantifiable as possible – ideally in real time. Objects, individuals, groups, countries – everything is being transformed into data. However, this is often based on the questionable assumption that the large volumes of data and the analytical apparatus behind them are neutral, and that they provide an objective image of highly complex phenomena from a distance, in the manner of a vivid on-screen simulation.

However, things are not quite that simple. Datafication is by no means a panacea, and the results are often not as accurate as they initially seem. Who or what is being captured or not depends on a wide range of factors. The data volumes themselves are of limited informative value because statistics can be influenced, or rather distorted, by countless individual factors. To obtain representative statistics, such distortions, so-called biases, must therefore be excluded. If we rely exclusively on the results produced by algorithms, we may overlook important information. This is particularly true in the context of development cooperation, which devotes special attention to marginalised and underrepresented groups. Context-specific information and local knowledge therefore not only continue to be important – in fact, their importance for the analysis of data is likely to grow.

In addition, this brave new world of data challenges the right to privacy in sometimes frightening ways (see also trend no. 6). China's so-called social credit system, which aims to collect and analyse data on citizens' economic and social behaviour, is one such example. This system relies on various public and private databases, including data from

large national IT companies on purchasing behaviours, dating preferences, leisure activities, movement patterns and social interactions. Based on this information, the system assesses the creditworthiness, potential delinquency and the social and political behaviour of citizens.

The programme is currently being tested in a number of regions. As early as 2020, these social credit scores might determine, for example, if Chinese citizens will be banned from travelling by air or rail, denied access to private schools or have their internet access restricted. Positive scores can be attained through commitment to the Communist Party and law-abiding behaviour. Points may be deducted for traffic offences, administrative offences, criminal offences, critical statements on the internet, religious activities or excessive levels of debt.

It remains to be seen whether this system, which is reminiscent of George Orwell's nightmare vision of total surveillance, will actually be used for comprehensive social control. Nevertheless, it gives rise to fears that other authoritarian regimes will resort to similar systems in the future to cement their power.

1.3 The quantification of development cooperation

Closely linked to datafication are the demands for greater transparency and quantification in development cooperation. In a world in which a package can be tracked at the click of a button, there is a growing lack of understanding if no up-to-date information is available about project deployments and their progress. In accordance with today's technical possibilities, individual and institutional donors want to be able to track, more frequently and with detailed figures, how their resources are used and to what effects, preferably in real time.

Open data are:

- Easily retrievable as a whole (e.g. constantly available online)
- Freely accessible
- Re-usable
- Universally available
- Machine-readable
- Compatible

After the *High Level Forum on Aid Effectiveness* in Busan in 2011, the [↗ International Aid Transparency Initiative \(IATI\)](https://www.aidtransparency.net/)¹⁴ was launched at state level to make development cooperation data openly available on the internet. The aim is to make it possible to reconstruct the flow of funds more quickly and easily: from whom, to which country, to which sector and to which projects. However, some NGOs have warned against possible unintended consequences. On the one hand, because new forms of digital reporting represent an additional administrative burden for NGOs that should not be underestimated. On the other hand, there are fears that maximum transparency of financial and project data could put partner organisations in countries with repressive governments at risk (see Trend 5).

Nevertheless, there is growing pressure on development cooperation actors to achieve greater transparency regarding their use of funds, and in real time wherever possible, in line with the new technical possibilities. This usually goes hand in hand with the demand to provide more reporting on impacts. NGOs can meet these expectations by using new digital instruments for monitoring and evaluation (M&E). Such applications make it possible to view project information at the click of a button and to compare aggregated data on their efficiency and effectiveness.

A growing number of commercial providers such as *DELTA*, *ActivityInfo* or *Toladata* are trying to meet the increased demand for such services on the part of NGOs. Each NGO will have to carefully examine whether it can cover the associated costs through efficiency gains. In addition, there is the question of whether successes can always be represented numerically and whether the additional effort is justified.

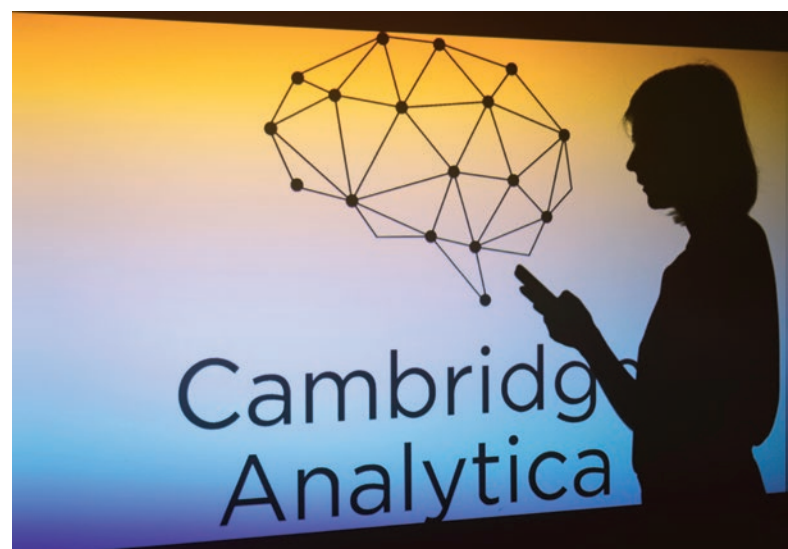
Seven years after the introduction of the *IATI standard*, supporters of digital transparency have still not been able to make a convincing case for their necessity. So far, there are only a few examples where people in the South were actually able to benefit from the use of data. What is needed are bridge builders on the ground who will actively integrate local populations into the way the data are used. As statistical tools in the hands of donor countries, IATI and open data have so far fallen far short of their potential. Nevertheless, it is expected that the quantification of development cooperation will continue in line with the growing degree of digitalisation.

1.4 The growing influence of the private sector

As digitalisation advances, the points of contact between NGOs and enterprises will also proliferate – both in cooperative and confrontational ways. Many tech companies and start-ups possess knowledge that could be of great benefit to development NGOs. Over the past decade, more than 120 technical innovation centres such as *iHubs* und *MakerSpaces* have emerged in Africa alone ([↗ www.afrilabs.com](http://www.afrilabs.com)), where entrepreneurs are working on new technological services. At many of these locations, people are also intensively pursuing digital solutions for development policy challenges. Targeted cooperation between NGOs and emerging tech companies can be mutually beneficial when it comes to the development or scaling up of technological innovations.

The digital transformation is also increasing the scope of action of large corporations – especially that of a handful of players from the US and Asia, in whose hands more and more financial resources, knowledge and immense troves of data are concentrated. A number of companies that are struggling in the saturated markets of Europe and North America see their future in Asia and Africa, with their large populations of young people. And apart from growing their core business, *Google*, *Facebook*, *Microsoft* and *Samsung* are also investing in infrastructure and capacity development on these two continents.

NGOs can critically monitor this process and work to ensure that the opening up of these markets not only serves the companies' bottom lines, but also contributes to fairer and more sustainable development. The spread of *Face-*



Cambridge Analytica not only played a role in the US elections, but also worked for leaders and candidates from across Latin America and Africa.

© Alexandra Popova/Shutterstock.com

14 <https://www.aidtransparency.net/>

book in Myanmar, for example, has been heavily criticised by numerous activists because the company did too little to dampen hate messages. It was therefore held partly responsible for the bloody expulsion of the Rohingya.

The role of multinational corporations is also controversial wherever their activities are aimed at establishing monopolies. One such example are the *Cisco Networking Academies*. Cisco provides free hardware training for IT administrators at more than 10,000 of these academies around the world, many of which are integrated into local public universities. This enables Cisco to open up new markets and set up a pipeline of suitably qualified personnel at the same time. On the one hand, the company thus offers people training opportunities that improve their prospects on the labour market. On the other hand, this puts competitors at a disadvantage, despite the fact that they frequently offer cheaper hardware and software as well as more flexible open source solutions.

Moreover, it is not always clear who is actually behind the technology investments in developing countries. Google, for example, installed fibre optic cables in Uganda through its African infrastructure company *CSquared* rather than under its own name. Governments as well as multilateral and bilateral donors are often grateful for such initiatives. What makes them problematic, however, is that these companies largely insist on laying down their own rules during implementation. Many a government, driven by the pressure of international competition and the speed of innovation, is struggling to set up and implement suitable regulatory frameworks for the expanding tech industry. In addition, large corporations often exploit their dominant position to exert considerable pressure on governments to change or even disregard existing national rules in their favour.

While the international media speculated about the influence of the data analytics firm *Cambridge Analytica* on the American elections, it went almost unnoticed that the company also worked for various leaders and candidates from Latin America and Africa. Among them was Uhuru Kenyatta, who was re-elected as president of Kenya in 2017. In the meantime, *Cambridge Analytica* has filed for bankruptcy, and its actual influence on the election results remains unclear. However, it is likely that the company and others like it – such as *Emerdata*, founded by former *Cambridge Analytica* executives – will continue to try to make money by analysing data for political and commercial purposes. In the future, fundamental democratic principles and the right to informational self-determination will therefore be increasingly put to the test.

1.5 Restrictions on digital citizenship

The internet makes it possible for hundreds of millions of people to access information and to organise themselves more quickly and effectively. As a result, digitalisation is also changing the way governments are held accountable. Since the Arab Spring, a growing number of regimes have regarded this as a threat to their power. Autocrats are increasingly trying to restrict access to unpopular information in the digital arena, through censorship and manipulation, and even by deliberately disseminating false information. According to the annual [Freedom on the Net](#)¹⁵ survey published by the US NGO *Freedom House*, in 2016 two-thirds of all internet users lived in countries where criticism of the government, the military or ruling families was subject to censorship. In 38 countries, people were arrested for social media activities.

#KeepItOn campaign

Working together with 199 other organisations, the NGO [AccessNow](#)¹⁶ has led a campaign with the title *#KeepItOn*. With a view to combating censorship and systematic isolation, the campaign records large-scale internet outages worldwide. From January to April 2017, the Anglophone population in Cameroon experienced a complete shutdown of the internet as a result of anti-government protests. Among other things, activists used the *#BringBackOurInternet* hashtag of the *#KeepItOn* campaign to exchange information on current developments and possible actions and to put pressure on the government and on internet providers. Social media channels remained blocked even after the internet shutdown came to an end. The NGOs *Access Now* and *Internet Sans Frontières* have filed a lawsuit against the government of Cameroon over the shutdown, arguing that it violated freedom of expression and the UN Social Pact.

Since Edward Snowden's revelations in 2013, much more evidence has come to light showing how governments systematically use digital technologies for surveillance. Increasing restrictions on the scope of action of civil society (also known as *shrinking spaces*) have become a huge challenge for NGOs. In Mexico, local civil society organisations and the Canadian NGO *Citizen Lab* were able to prove that the government had placed surveillance software on the phones of numerous human rights activists and law-

15 <https://freedomhouse.org/report/freedom-net/freedom-net-2016>

16 <https://www.accessnow.org/keepiton/>



On the occasion of Democracy Day, VENRO members call attention to shrinking spaces. © VENRO

yers. And in Egypt, the government used the dating platform *Grindr* to track down and arrest homosexuals.

The number of internet shutdowns is growing each year. In 2016, there were 75 government interventions of this type, 11 of them in Africa. By 2018, this number had grown to 188 in total. According to NGOs like *Access Now*, the purpose of many of these shutdowns, such as those in Togo and Cameroon in 2017 or in the Democratic Republic of the Congo in January 2019, is to prevent protests. Such authoritarian interventions curtail the right of citizens and organised civil society to access information, as well as their freedom of assembly and expression. Development cooperation projects may also be partially or even completely paralysed by such shutdowns.

It is therefore increasingly important for NGOs and their partners to understand how digital technologies are being used in the environments in which they operate, both by the groups being targeted, but also by repressive actors. It is equally important to determine the legal situation on the ground. With such context-specific knowledge, NGOs can make informed decisions about secure communication channels, protection measures for sensitive data and how to respond to digital rights violations.

As the following example shows, the right use of communication technologies makes it possible to preserve spaces for free expression of opinion, even in the context of extensive restrictions. Moreover, thanks to digital channels, activists driven into exile are no longer cut off from their compatriots, and with the right digital tools, they can even engage in journalistic activities. Providing such opportunities, as well as protecting platforms and authors against attacks, can be important support functions of NGOs in order to counteract restrictions on civic space.



Azerbaijan:
Meydan TV

MEYDAN TV

The opportunities and risks of using social media for independent reporting

In Azerbaijan, around 7 million people use the internet, which is equivalent to around 75% of the population¹⁷ – at first glance, a high rate compared to other parts of the world. At second glance, however, it becomes clear that internet use is subject to tight state control and that access to many sites is blocked.

Meydan TV is a non-profit organisation that sees itself as a platform for independent reporting from and about Azerbaijan – without government interference. The project began in 2013 as an independent television station, but the signal was quickly jammed by the government. The team behind *Meydan TV* then launched a website and several social media channels. In Azerbaijan, access to the website *Meydan.tv* was blocked by the government in May 2017. Since then, however, the page has been “mirrored”: its contents are stored on other servers and are offered under different URLs, so that with some skill, they can still be accessed from inside the country. The reporting is done by local journalists on the ground as well as by Azerbaijanis living in exile and the diaspora. Apart from the website, *Meydan TV*'s most important channels are its *Facebook* page, which has 514,000 followers – or about one third of all *Facebook* users¹⁸ in Azerbaijan – and its YouTube channel with 155,000 subscribers.

Unlike the *Meydan TV* website, the government has a much harder time blocking the social media sites. To do so, it needs the cooperation of the sites' operators. All the

government can do to prevent access to the sites is to block the relevant social networks entirely. But this risk is too high even for Azerbaijan's authoritarian regime – shutting down these popular services would certainly lead to massive popular protests.

Consequently, *Meydan TV*'s social media accounts are under close scrutiny: the government checks the content for the slightest violations and immediately reports these to the sites' operators, contributions and authors are vilified in comments and access to the accounts is regularly under attack. The *Facebook* page has already been successfully hacked and deleted, as a result of which a large amount of content and many subscribers were lost. It is reasonable to assume that these attacks were perpetrated by parties close to the government. So far, *Meydan TV* managed to restore access each time, but only after several months.

Meydan TV thus relies on a strong presence in all popular social media channels in order to ensure continued visibility and accessibility even when individual accounts are blocked. The experience of recent years has also shown that in order to avoid such attacks or at least make them more difficult, *Meydan TV* needs clear and binding data protection guidelines that all employees must follow. This includes, for example, a precise overview of who has access to which pages, the selection of secure passwords and regular changes to log-in details. Since social media channels are not archives, all data also need to be secured outside the social network. Otherwise, the content is often lost in the event of a successful attack, even after the account has been recovered.

17 <https://www.cia.gov/library/publications/the-world-factbook/fields/2153.html>

18 <https://www.internetworldstats.com/asia.htm#az>

EXCURSUS: The EU's General Data Protection Regulation (GDPR)

The General Data Protection Regulation (GDPR) governs the handling of data in all EU member states and has been in force since May 2018. The GDPR has harmonised data protection across Europe, making it easier to process data across national borders. At the same time, the GDPR aims to strengthen the right to informational self-determination. In principle, individuals should be able to decide for themselves which personal data they want to make available and to whom. Data protection rules therefore always protect the person to whom the data relates.

However, these data protection laws do not apply to all data, but only to the processing and use of personal data. This includes all data that can be unambiguously attributed to a specific person, as well as data that makes it easy to establish a connection to a particular person (such as license plates). In addition, certain types of **sensitive personal data** are even more strictly protected, namely information related to ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic and biometric data, health, sexual activity or gender orientation.

Data protection is governed by the principle that all use of personal data is prohibited unless expressly authorised. In other words, the processing of personal data is in principle prohibited, except in the event of an authorisation which justifies an exception. There are two possible grounds for such an exception: firstly, if a law specifically permits the processing of data, and secondly, if the data subject consents to such processing.

The principle of **informed consent** lies at the heart of the GDPR. When using a service, consumers consent to the use of their data for a specific purpose. This also relates to other principles such as the **principle of purpose limitation**. The purpose of a processing operation must therefore be clearly defined in advance. If consumers give their consent, this consent will only apply to the specified purpose. At the same time, the **principle of data minimisation** stipulates that personal data should only be collected, processed and used to the extent that is absolutely necessary. Furthermore, all use of personal data is governed by the right to transparency and the right to information and access. On the one hand, consumers should at all times be able to check what data have been stored about them, and by whom. On the other hand, companies must be able to provide information on processes such as automated decisions

and the creation and use of personal profiles (“profiling”). In addition, certain principles are intended to give consumers more control, such as the so-called **right to be forgotten** and the right to take data with them when changing providers (“**data portability**”). As further protective measures, the GDPR requires so-called “**data protection impact assessments**” for the handling of sensitive data as well as “**data protection by design**”, which means that data protection should already be taken into account during the planning and development of IT systems.

Probably one of the most far-reaching changes compared to previous data protection laws are the significantly higher penalties, which can reach up to four per cent of a company’s annual turnover. It is therefore no surprise that the GDPR has caused quite a stir, even beyond Europe. This is because all companies that process data from European citizens must comply with these rules, regardless of their place of business. The GDPR has thus become a benchmark for strong data protection, and its impact is being felt well beyond the EU. For development cooperation actors, it is therefore a good idea to act in accordance with the principles of the GDPR wherever they operate and to build up capacities for strong data protection practices among local partners.

At the same time, however, not all aspects of the GDPR are viewed positively by international NGOs. The right to be forgotten, for example, under which consumers have the right for any information that can be found about them on the internet to be deleted, triggered a heated debate in Latin America. Some NGOs fear that current and former rulers might abuse this principle to make unpleasant information disappear. In addition, the implementation of some of the provisions of the GDPR comes with an enormous administrative burden – a major challenge for NGOs funded by donations. The practical interpretation of the regulation is still subject to considerable variations and misunderstandings, as reports of blacked-out children’s photos and anonymous doorbell signs show. However, the growing number of court rulings and official instructions for how to interpret the GDPR will probably gradually reduce this margin for interpretation and lead to more uniform application of the regulation.

More information about the GDPR is available at:
➤ <https://gdprexplained.eu/>

1.6 Increasing demands on data protection

Since the introduction of the EU's General Data Protection Regulation, data protection has become increasingly important for NGOs. With the more widespread use of digital technologies, NGOs are also contributing to the growth in data generation and collection. The fact that only a few countries in the global South have appropriate legal frameworks for data protection in place poses a special challenge in this regard. Where such laws exist, they are often not being implemented, but there is also a lack of technical know-how. In Africa, for example, [only 14 countries currently have data protection laws in place](#),¹⁹ nine of which have no regulatory authority to enforce them.

This makes it all the more important for NGOs to have internal guidelines that reliably safeguard data and control how they are processed. However, in the context of development cooperation, the implementation of data protection mechanisms is associated with some difficulties. Take the example of informed consent, which is one of the central instruments in European data protection. According to this principle, consumers consent to the use of their data for a specific purpose when using a service. From a legal point of view, consumers thus allow processors exceptional access to their data, because without their explicit consent the use of that data would, in most cases, be illegal. In Europe, consumer protection advocates also regularly criticise the principle of informed consent, as consumers only very rarely understand what actually happens to their data. In the context of development cooperation, which usually does not involve the use of applications for purposes of leisure, but rather to access essential services and resources or to participate in specific programmes, it is even less likely that users will refuse their consent. The dependencies and power imbalances between data subjects and data collectors should not be underestimated. In this age of digitalisation, there are thus still many open questions with regard to data protection that development cooperation and humanitarian aid actors must continue to address.

1.7 Net neutrality is in danger

According to the principle of net neutrality, all data on the internet must be treated equally. It is not permissible to discriminate against specific users, content, websites and applications or to charge different costs for their transmission. In a neutral web, internet providers may not, for example, block, slow down or charge for any content. Net neutrality is therefore considered a prerequisite for an open and free internet. However, this principle is currently under attack around the globe. This is also the case in industrialised countries because some providers, such as streaming services, are trying to get preferential treatment for their online content, which they could then market as a premium service.

In the context of development cooperation, net neutrality faces a different kind of attack. In this context, it is under threat above all due to the proliferation of so-called zero-rating services, which offer users a greatly reduced version of the internet free of charge – as is the case with *Facebook's Free Basics*. *Facebook* argues that this makes it possible to connect people who otherwise would have no access to the internet.

Free Basics has come under fire

The criticism of *Facebook's Free Basics* focuses primarily on four points:

- A lack of linguistic diversity: in the Philippines, for example, the application is only available in one language.
- A lack of local content: most of the content comes from US and UK organisations.
- *Free Basics* applications collect user data on a large scale, including beyond the use of the app itself.
- *Free Basics* violates the principles of net neutrality.

The NGO *Global Voices* has published a qualitative study on *Free Basics*, which also outlines additional issues.

[➤ https://advox.globalvoices.org/2017/07/27/can-facebook-connect-the-next-billion/](https://advox.globalvoices.org/2017/07/27/can-facebook-connect-the-next-billion/)

19 https://af.reuters.com/article/idAFKCN1HB1VC-OZATP?utm_source=34553&utm_medium=partner

However, the study “Free Basics in Real Life” has criticised the fact that only content selected by *Facebook* is made available. Consequently, this lean version of the internet only serves the market interests of *Facebook*, enabling it to collect data from new users, who are, in turn, denied access to a free and open internet. The authors of the study fear that *Facebook* will cement its dominant role in the public sphere of the countries concerned. To give but one example: in Myanmar, after the introduction of *Free Basics*, “Facebook”

is frequently used as a synonym for “internet”. In India, by contrast, a civil society organisation has successfully campaigned against the introduction of zero-rating products.

In some countries, however, NGOs have managed to conclude agreements with *Facebook* to incorporate their applications into *Free Basics*, for instance the South African educational application *Fundza*. Nevertheless, critics of such agreements argue that in the end *Facebook* will probably be the main beneficiary of any such deals.

CHAPTER 2

Digital Instruments: from low tech to high tech

In the following, we will illustrate the available digital instruments and their potential applications based on concrete examples from VENRO members and other organisations. But first, we need to clarify what is meant by the umbrella term “digital technologies”.

The field of digital technologies ranges from radio to modern tablets and largely invisible data acquisition and processing to drones and 3D printers. Basically, these are technologies with (sometimes limited) network functionality that enable data collection and information exchange. They can be used by different actors, i.e. by NGOs in the global North, by their partners in the global South and by local populations themselves. Especially in areas where other forms of infrastructure are lacking, digital technologies offer new approaches for reaching target groups and project improvement.

In the context of development cooperation, digitalisation does not always have to be about the latest technologies. On the contrary, established or widespread technologies, such as the use of text messaging services, often have a greater potential impact than the latest technological tools. In fact, for the purposes of communication, data transfer, information management, data analytics, visualisation, mapping or machine learning, old and new technologies often work well together. In the framework of this publication, we have therefore deliberately opted for a detailed examination of low-tech, medium-tech and high-tech solutions. By low-tech solutions we mean digital instruments that do not require any network functionality/connection to the internet. Medium-tech instruments are based on largely established technologies that require at least a temporary connection to the internet. High-tech instruments include

new technologies, complex combinations of different technologies and newly developed proprietary solutions.

The following table offers a classification of instruments, from low tech to high tech.

Classification	Instruments
Low tech	Radio
	TV
	Computers
	Text messages
	Mobile phones
	Feature phones
	Smartphones
	Tablets
	Satellites, GPS
	Geographic information systems (GIS)
	Social networks
	Bots
	Crowdsourcing
	Cloud computing
	3D printers
	Drones
	Mesh networks
Blockchain	
Artificial intelligence	
Speech recognition	
Virtual reality	
High tech	Augmented reality (3D visualisation)...

2.1 Low-tech: radio and text messaging

For a long time, it was assumed that innovations always emerge in places where the latest technologies are available, and that they will then be applied in other regions provided that local conditions are appropriate. However, new technological developments do not always originate in areas with advanced infrastructure. In countries of the global South, for example, solutions are being developed on the basis of technologies that may already be considered obsolete in Europe, such as radio, text messaging or television.

Over the past decade, first-generation mobile phone technology (the GSM standard) and simple mobile phones have shown the greatest potential – especially in Africa. Many countries have invested in the cost-effective expansion of mobile communications and thus skipped the development of expensive landline networks, which are increasingly less relevant today. In Africa, mobile networks often do not replace any existing landline services but hold out a far greater promise: in many regions, they represent the first fully functional infrastructure. Another major advantage of low-tech solutions is that they are cheap, with low barriers to widespread use. This is another reason why mobile communications continue to offer enormous potential for innovation in Africa.



The NGO Data2X tries to highlight gender inequalities in developing countries using anonymous data, for example from credit card transactions and mobile phone use.

© Adam Cohn/Data2X



Kenya:
Safaricom and Vodafone

M-PESA – THE SHOOTING STAR OF LOW-TECH INNOVATION

One of the best examples for what can be achieved with simple first-generation mobile phones is Kenya's *M-Pesa* mobile payment system. In 2007, the Kenyan mobile operator Safaricom launched *M-Pesa* – “mobile money” – in a partnership project with Vodafone. Initially, *M-Pesa* was meant to be used by microcredit institutions to transfer money to customers in the form of mobile phone credit. However, right from the start, users began to use the service to send money to each other. *M-Pesa* thus turned into a countrywide infrastructure for domestic transactions. One month after its launch, the service had 20,000 active users. Ten years later, in 2017, this number had grown to 26 million users,²⁰ or more than a third of the Kenyan population, who had gained access to money transfer services thanks to *M-Pesa*.



M-Pesa enables bank transactions via mobile phone.

© Rosenfeld Media

20 <http://www.techweez.com/2017/05/10/safaricom-fy-2017-data-m-pesa/>

In the meantime, there are numerous competing services from other providers. Mobile payment has now become ubiquitous in Kenya and in many other parts of the world. This success is particularly remarkable because it is based on a low-tech solution that is also available to people with very limited financial resources.

Much like a prepaid SIM card, phone credit can be topped up and then used for payment. All that is required is the *M-Pesa* number of the person to whom the money is being sent. In addition, it is also possible to pay for a bottle of water at a kiosk or to settle an electricity bill. Since payments are sent via text message, the transactions neither require a modern telephone nor sophisticated reading and writing skills. Credit can be topped up at one of the more than 130,000 *M-Pesa* agents. They are generally located at kiosks that can be found all over the country, and which have access to the central *M-Pesa* infrastructure.

For people on the ground, mobile payment systems reduce the cost of transactions exponentially. Where in the

past, people had to go to their utility to pay their electricity bills, they can now simply pay by mobile phone from their homes. Similarly, people who work in cities can now transfer money to their relatives in distant villages. Mobile payments are quickly processed and also reduce the risk of robberies, as it is no longer necessary to carry large sums of cash. For example, pupils carrying their school fees for the year on their first day of school is now a thing of the past. But the social impact is much greater than that. *M-Pesa* has become a catalyst for economic and social development in Kenya. According to a 2016 [study by MIT and Georgetown University](#),²¹ 194,000 families – or 2 per cent of Kenyan households – have already worked their way out of extreme poverty thanks to *M-Pesa* since the service first launched in 2008. In addition, *M-Pesa* has also enabled a number of follow-up innovations. Many development cooperation organisations also benefit from this infrastructure and use it to implement their projects.

Training via text messaging

There are numerous NGO projects that rely on the low-tech infrastructure of mobile phone communications. One example is the [Leap Health Worker](#)²² project of the Kenyan NGO *AMREF*. This text message-based training scheme for health professionals has already trained 3,000 workers in Kenya. The mLearning (mobile learning) component complements an initial face-to-face training and enables health workers to ask questions and receive further training via text message. Participants receive health information via text and sound messages in English or Swahili, for example regarding the symptoms of dengue fever or how the disease is transmitted. Participants can test and consolidate their knowledge through quizzes and exercises and enter into discussions with their peers via chat groups. The *AMREF* project started in 2013 as a public-private partnership between the digital companies *Accenture*, *M-Pesa Foundation* and *Safaricom*, together with *Vodafone* and the Kenyan government.

One limitation on the use of text message-based solutions is the potential cost for users. In this regard, NGOs usually rely on the goodwill of mobile operators, who must be brought on board as project partners to convince them to waive the cost of text messaging.

However, the bigger the project, the less likely providers will be to bear these costs. The price of sending text messages can then quickly turn into an insurmountable hurdle for users. When designing a project, these costs should therefore be considered right from the start. This is especially true if bidirectional communications are planned and participants will not only be contacted via text message but will also need to respond. They are unlikely to be willing or able to pay for the cost of the messages themselves. And if the people being targeted assume that they will have to bear the costs themselves, they may quickly be deterred.

Although mobile phones have now reached many parts of the world, around 34 per cent of the world's population have no access to a mobile phone signal. This is particularly true in rural areas, but also in regions that are difficult to reach or sparsely populated. For commercial providers, it often does not pay to install antennas in such areas. In this case, text message or mobile phone-based applications are not an applicable solution. Text-based applications are equally unsuitable in communities with high levels of illiteracy. In principle, however, digital approaches can also be useful in such cases, as successful radio-based initiatives show.

21 <http://news.mit.edu/2016/mobile-money-kenyans-out-poverty-1208>

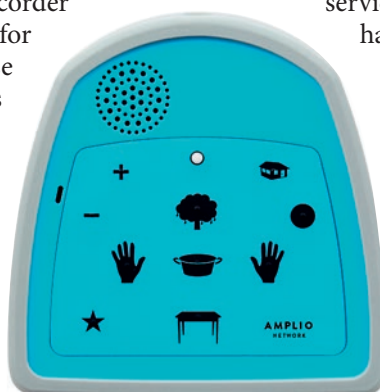
22 <http://www.leaphealthmobile.com/>



Mobile phones without internet access are a particularly widespread means of communication. © Patrayut/Shutterstock.com

Radio-based solutions

In Ghana, the  Talking Book Program²³ launched by the US NGO *Literacy Bridge* combines Ghana's tradition of storytelling with modern technology to provide agricultural training and promote public health. A rugged audio recorder (see picture) has been specifically developed for the programme and functions as an easy-to-use audio library. Pre-recorded content provides practical information to improve the quality of life in rural and underserved communities in Ghana, and the programme has now also been launched in Kenya, Rwanda and Uganda. An integrated feature in the device allows listeners to participate themselves by recording content and providing user feedback.



To date, the *Talking Book Program* has reached more than 400,000 people in rural Africa. A trial with 1,000 participants and a control group showed that users of the service are 50 per cent more likely to wash their hands with soap and use mosquito nets than non-users. The programme has been running for 10 years already and is funded by *CARE International*, among others. *Literacy Bridge* also offers an affiliate programme that offers the necessary hardware and capacity building to suitable interested organisations in other countries.

23 <https://www.amplio-network.org/>

Digital interaction via low-tech devices

How do marginalised people use their mobile phones?

In 2017, South African researchers published the ethnographic study ↘ “*Izolo: Mobile Diaries of the Less Connected*”,²⁴ which analysed the mobile phone usage behaviour of the country’s poorest and least connected people. In the manner of a diary, the subjects of the study revealed their everyday coping strategies in order to get as much out of their mobile phones as possible.

As these examples show, low-tech solutions can be used to convey easy-to-use knowledge, even if to date this usually only works in one direction. In the meantime, however, more and more projects are being launched that also facilitate interaction. In such cases, phone users are able to reply to text messages, for example. As part of the *Prospera Digital* project in Mexico, for example, pregnant women covered by the public *Prospera* benefit programme receive pregnancy-related health information as well as reminders about regular check-ups. The open source platform operating in the background relies on a so-called personalised bot (see explanation below). Upon registration, the participants send a message stating their current week of pregnancy, and the platform then informs them when their next check-up is due. On the day after a planned doctor’s appointment, participants receive a message asking them if they have kept it or not, and the participants can also respond. If they did not keep the appointment, the platform will send another reminder a few weeks later. In general, however, the possibilities for interaction are limited. A low-tech service of this kind will therefore only be effective as a complement to projects that continue to rely on analogue measures (see the example of the Kenyan NGO *AMREF* above).

EXCURSUS: What is a bot?

Tailor-made communication via chat robots

Bots, short for “robots”, are computer programs that enable automated communication. Via *Facebook*, for example, it is very easy to program so-called chatbots that communicate interactively with users. More than 300,000 chatbots are now active on *Facebook Messenger*. Most have been developed by companies to handle part of their interaction with customers, but more and more charitable projects also rely on this form of communication to convey tailor-made information.

For example, ↘ the *Tarjimly*²⁵ service uses a chatbot to connect refugees with volunteer translators. Meanwhile, the open source platform *RapidPro*, sponsored by *UNICEF*, simplifies the use of chatbots. It utilises the advanced features of bots to reach marginalised groups via mobile-phone text messaging. *RapidPro* is used, for example, in the aforementioned *U-Report* and *Prospera Digital* services and is also available to other organisations. The platform integrates the use of *Facebook*, *Twitter* and text messaging.

Despite major advances in the programming of bots, it remains a challenge to design interactions between users and bots that produce a noticeable added informational value compared to websites or newsletters. In addition, culture and age play an important role when it comes to the target group’s acceptance of bots.

²⁴ <http://www.makingallvoicescount.org/publication/izolo-mobile-diaries-less-connected/>

²⁵ <https://www.tarjim.ly/en>

2.2 Medium-tech: internet and feature phones

More and more projects now involve the use of smartphones and tablets for connection to online applications or social networks. Compared to conventional phones, this offers obvious advantages: content is no longer limited to a few characters and text, the internet connection makes it possible to regularly update the materials, and applications can be used to present targeted multimedia content.

The widespread use of social networks also makes it easier to organise groups and disseminate information. Social media allows more people to make their voices heard and express their opinions about projects or developments that affect them. In addition, civil society actors can also communicate directly about events and activities. One such example is the platform *Ushahidi* (“testimony” in Swahili), which was created during a period of political unrest in Kenya in 2008. The platform enables users to report incidents or their need for financial support (crowdsourcing). In addition to simple text messages, it is also possible to send emails, *Twitter* messages or pictures via the platform.

On the one hand, such means of communication benefit the local project beneficiaries, who receive new and better services – such as real-time market data or telemedicine services in remote regions. On the other hand, NGOs also benefit because these new technologies enable them to manage and monitor their projects more efficiently.

Tech Made in Ghana – Farmerline

The Ghanaian software developer Farmerline²⁶ gained regional recognition for its mAgriculture solution: Farmerline sends small farmers in Ghana text or voice messages with tips and tricks for increasing yields and harvests. Farmerline is available in 12 languages and already boasted 200,000 users in 2017.

In the course of its cooperation with the German NGO Welthungerhilfe, the company has now grown to almost 30 employees and has considerably expanded its range of services.

Although smartphones and tablets offer much more advanced application possibilities than the above-mentioned low-tech solutions, limitations nevertheless apply. While feature phones, which are particularly prevalent in Africa, come with an internet connection, their functions are much more limited than those of a smartphone.

26 <https://farmerline.co/>



Many development cooperation projects benefit from online interactions
© Riccardo Mayer/Shutterstock.com

EXCURSUS: What are feature phones?

Feature phones are mobile phones that offer some advanced functions such as a camera, radio receiver and internet connection. While they are more powerful than first-generation mobile phones (also known as “dumb-phones”), their performance cannot be compared to that of a smartphone. As a rule, feature phones do not have a touch screen and are not based on any of the common operating systems, so that only a few applications are available. However, the browser version of *Facebook* can be accessed from feature phones, whose battery life is also much longer than that of smartphones. Companies such as *Nokia*, *Samsung* and *LG* sell feature phones, which are particularly popular in the global South due to their lower costs. Despite the fact that smartphone usage is on the rise worldwide, in 2017 feature phones still dominated in Africa, with a market share of 61 percent, compared to 39 percent for smartphones.

Connecting to the internet continues to be a major challenge in many developing countries. In many areas, data transmission is slow and expensive. Data-intensive applications or video transmissions can therefore not be implemented unless a public internet connection is available.

Despite these limitations, smartphone-based services offer completely new opportunities, as demonstrated by the *Welthungerhilfe's Tracing and Mapping System (TMS)* in Sierra Leone:



Sierra Leone:
Welthungerhilfe

THE “TMS” TRACING TOOL

The cocoa produced by small farmers in Sierra Leone usually passes through the hands of many intermediaries before reaching international markets. Due in part to the opaque pricing policies of these agents, the farmers themselves often only receive a fraction of the profits. Another problem is the lack of certification, which restricts their market access. Welthungerhilfe is trying to tackle these challenges by providing small farmers and local cocoa traders with better access to global markets. The aim is to increase the incomes of 30,000 farmers by certifying the local cocoa traders, agents and the cocoa itself. The project thus seeks to create sustainable trade relations between farmers and traders. At the same time, there is growing pressure in Europe to make product origins more traceable.

Digital certification of local actors

One element of the project is a *tracing and mapping system (TMS)* that digitally records farmers, farms and cocoa production. The application, which is available as a web-based and a mobile version, was developed by the Ghanaian software company [Farmerline](#).²⁷ While Welthungerhilfe was the driving force behind the TMS, the system was developed in close cooperation with three local trading partners who use it independently of the project. The *TMS* has achieved three goals: Firstly, it was used to determine the number of active farmers for the first time. Secondly, the cocoa fields were digitally recorded, and their size and location confirmed. And thirdly, the supply chain has become transparent. Trading companies now receive data on the participating farms as well as on the quantity and quality of cocoa. Farmers benefit directly by receiving feedback on their products. In addition to strengthening the relationship between producers and buyers, the registration also serves to reinforce a purchase guarantee. The *TMS* thus increases the overall level of organisation of the cocoa sector in Sierra Leone, which hitherto was very fragmented.

In the meantime, the system has registered 20,000 farmers using photographs that have been used with their approval. It was important for Welthungerhilfe that the participants would know to whom and why they have passed on their data. Participants who cannot write have the opportunity to give their consent by fingerprint. In addition, the farmers can view their data at any time and also request that changes be made.

27 <http://farmerline.co/>

The role of local partners

In Sierra Leone, internet coverage is still a big challenge, which is why the system also works offline. The information is then synchronised as soon as an internet connection is available. For the development of the technical components, Welthungerhilfe deliberately chose a partner from West Africa. In similar circumstances, *Farmerline* had already set up an information service for farmers in Ghana. As the company was still relatively small at the beginning, the project start was rather bumpy and followed the logic of trial and error. Daniel Scholler, who managed the project on behalf of Welthungerhilfe, emphasises that commissioning a local software developer was nevertheless the right decision. Such projects not only promote **South-South collaboration**; the developers were already familiar with the technical requirements from a similar context and had experience working with cocoa farmers. They were thus able to make an important contribution to the design of the project, which also ensured that the local partners took *Farmerline* seriously right from the start.

The battery life proved to be a major technical challenge, as the power banks used for charging purposes turned out to be insufficient. The project participants therefore received funds to charge the devices in charging stations operated by small generators in local villages. Moreover, the local weather conditions also put the devices to the test. As both examples show, it is important to consider the local conditions and requirements that technologies must meet already during project development.

While technical problems initially hampered the project, the human element proved to be more difficult to manage in the long run. Not all stakeholders appreciated the sector's increased transparency. Intermediaries sometimes manipulated the data because they benefit if as much as possible of the cocoa they sell is registered as certified. This demonstrated **that technology can simplify processes, but it can neither replace nor circumvent social or cultural factors and interests**. For this reason, workshops are now being organised in the framework of the project to communicate the benefits of the system to intermediaries. Their acceptance is indispensable for the long-term success of the project. When asked if he would do anything differently, Daniel Scholler responded that he would opt for a smaller scale by registering only a few farmers at first. For future projects, his advice is not to be distracted by the technical component. The most important factors are how the **project**

is coordinated, implemented and monitored (the management component). What's also important is patience. Even if donor pressure is mounting: The implementation of digital projects requires a realistic timeline, which is usually longer than initially hoped. In addition, Scholler recommends solutions that stay as close as possible to existing processes. Successful projects are usually based on processes that are already happening in the analogue world. Digital projects can be used to tackle problems that cannot be solved analogously, or to improve the efficiency and cost-effectiveness of analogue solutions.

2.3 High tech: new solutions for complex requirements

State-of-the-art technologies are now being used in a growing number of development cooperation projects – for example by linking smartphones, satellites and digital maps (“mapping”). An impressive pioneer of this trend is the *Satellite Sentinel Project*. It relied on online reports, telephone messages and satellite images to remotely analyse and document all indicators of war crimes in South Sudan between 2010 and 2015. The project was run by the NGO *The Enough Project* in cooperation with the satellite company *Digital-Globe* and operated without any staff the ground.

NGOs may opt to develop new digital instruments such as apps or online platforms. There are good reasons for developing applications as an alternative to *Facebook*, *WhatsApp* and other commercial offerings, such as the right fit or data protection issues. Examples include eLearning solutions or community empowerment apps that enable risk-free participation and reporting on the part of vulnerable groups. There are numerous open source solutions that can be further developed for such purposes. Initiatives such as the Belgian project “Hack the Goals”²⁸ specifically target programmers in developing countries in order to develop digital approaches for the implementation of Agenda 2030. However, completely new systems rarely manage to prevail or retain users in the long term. The challenge of maintaining the incentives for active use once the project phase has ended should not be underestimated. For this reason, experts often advise against the development of costly in-house solutions and encourage the use of available and accepted applications.

An example from *World Vision* shows, however, how in-house development can succeed. The NGO developed the *Last Mile Mobile Solution (LMMS)*, an information management system that is now used by numerous organisations in development cooperation and across the humanitarian sector.



Global:
World Vision

LAST MILE MOBILE SOLUTIONS (LMMS)

Technical ingenuity is required

The *LMMS* information management system is used, for example, in the distribution of relief goods. The “last mile” is particularly critical in the field of humanitarian aid, where *LMMS* can be used to support data collection, administration and reporting. It makes it possible to distribute relief goods more quickly and transparently, via a mobile app or a chip card system in which the recipients are registered. This also simplifies the tracking of deliveries and inventory.

World Vision developed the system together with an IT service provider in 2008. The aim was to promote a digital solution that would enable clear identification of recipients and prevent corruption and lack of transparency in the management of humanitarian aid. Since then, the system has been continuously revised and adapted to the latest technical developments.

World Vision now offers *LMMS* as a fee-based service. As of December 2016, *LMMS* had registered over 4.5 million users. It has been used in 29 countries by more than a dozen different humanitarian organisations, including *Oxfam UK*, *Save the Children*, the *International Committee of the Red Cross (ICRC)*, *UNICEF* and *UNDP*.

A critical issue, as already mentioned in trend no. 2 “datafication”, are the sensitive personal data that the system collects and evaluates. International guidelines and standards seek to reduce data vulnerabilities as much as possible, but they cannot be completely prevented on either a technical or a social level. Such considerations should also be taken into account when weighing up the pros and cons of digital tools, especially if these are to be deployed in sensitive environments.

According to project manager Amos Doornbos, however, the greatest challenge of tailor-made digital solutions is the successful integration into existing analogue processes. Time and again, NGOs have struggled to recruit competent experts who can perform the task of transferring technology to existing processes.

28 <https://www.hackthegoals.be/>

Visions of and for the future: drones, blockchain and virtual reality

Many technologies that could facilitate interesting new approaches to social challenges are still in their infancy. The use of drones, blockchain technology and virtual and augmented reality holds the promise of particularly diverse and innovative solutions. In the following, we will outline some of these future opportunities for development cooperation.

Drones: air-borne assistance

In recent years, these flying tools have become much more efficient and affordable. They make it easier to establish communication links, or to gather environmental information about inaccessible, dangerous or destroyed areas. This makes them especially valuable for emergency aid and civil protection purposes. Drones also offer new perspectives in agriculture and in environmental and wildlife protection, for example for monitoring large areas or the swift detection of ecological changes. Digital mapping can be used, for example, to monitor fields and collect data on soil and plants in real time. If used in conjunction with meteorological and

climate data, drones can also be used to forecast rain or dry periods and to improve irrigation and fertiliser use. With the help of drones, nature reserves can be monitored more effectively and illegal activities such as logging or poaching can be detected more quickly. In cities, aerial photography can help to improve the quality of life in densely populated areas through better planning of fire protection measures and the sanitation, water and electricity infrastructures.

In the Maldives, for example, the [United Nations Development Programme \(UNDP\)](#)²⁹ is working with the Chinese drones manufacturer *DJI* to improve disaster control. Aerial photographs are used to produce three-dimensional risk maps that indicate which regions are particularly threatened by tsunamis and which are comparatively safe. Using conventional methods, it would have taken almost a year to collect this data from the country's eleven islands. The drones were able to perform the same task in a single day.

Drones can also provide relief in areas with poor infrastructures where access to essential goods, such as vaccines, is limited. They thus open up new opportunities for the health sector and the supply of medicines. The start-up company [WeRobotics](#),³⁰ for example, flies medicines to Peru's remote Amazon regions.



Drone images can record the large-scale clearing of forest for palm oil plantations in Borneo
© Richard Whitcombe/Shutterstock.com

29 <https://stories.undp.org/drones-for-social-good>

30 <https://www.cnbc.com/2017/11/13/werobotics-testing-drone-medical-supply-delivery-in-amazon-rain-forest.html>



Borneo:
Fairventures Worldwide

ONE MILLION TREES

Better monitoring through digital visualisation

The *One Million Trees* programme, a collaboration between *Fairventures Worldwide* and the *Borneo Institute*, aims to develop sustainable solutions to combat deforestation on the Indonesian part of the island of Borneo. It includes various measures designed to protect the environment as well as to provide new economic opportunities for local farmers.

In order to make the impact of the measures visible, not least for donors, *Fairventures* emphasised the importance of close monitoring from the beginning. To this end, *Fairventures* staff initially collected data on soil types, locations and growth under various conditions by hand, but this was extremely expensive. With the support of the Germany-based consulting firm *Open Forests*, *Fairventures* has been investing in the digitalisation of the monitoring system since 2015. In future, small farmers will be able to enter information directly into an app, and the use of drones also made it possible to map the entire project area.

Where no drone footage was available, the information was supplemented by satellite images, which are also linked to GPS data. The images are available via [a virtual map online](#),³¹ which also helps to visualise the progress of the reforestation efforts. The website also contains photos of the participating farmers and their fields.

The team is currently working on a smartphone system based on triangulation. In geometry, triangulation refers to the determination of optical distances through precise measurements of triangle angles. In the future, small farmers will be able to digitally record the growth of trees and the increase in the value of their land by scanning their fields with their smartphone cameras. This reduces the margin of error compared to manual data entry. In addition, reliable data sets improve the farmers' negotiating position vis-à-vis their intermediaries.

With this platform, the *Fairventures* team participated in the German edition of the *Google Impact Challenge* and won the Audience Award in June 2018.



31 <https://webmap.fairventures.openforests.com/map?lang=de&sidebar=marker>

An online map documents the reforestation efforts
©Fairventures Worldwide

Building trust through visualisation

According to project coordinator Wolfgang Baum, the advantages of the digital monitoring project are obvious: First, the programme has already saved a lot of money compared to the previous analogue version. Secondly, the processes have become more transparent, and the success of the project can be credibly and comprehensively communicated, especially through the online map. “This enables us to take the donors with us into the field, so to speak, which helps them to understand the project right away,” says Baum. This is particularly important for complex and less visual issues like reforestation, which, unlike topics such as child protection or education, often lack the necessary visual material. Digital technologies can thus be used for vivid storytelling. According to Baum, projects of this kind, which focus on transparency and continuous reporting from the outset, help to strengthen long-term trust in the sector.

Needless to say, the implementation of the programme’s digital components also posed a number of difficulties. One such obstacle was the limited supply of electricity. It was therefore not always possible to recharge the mobile devices on which the app relies. To address this issue, central generator stations have now been set up. Indonesia’s weather conditions also made the use of the technology more difficult. The touch screens of the cheap devices did not work as expected, and the sunlight made it difficult to read from the displays. For this reason, the team now relies on particularly high-quality products and the use of sun visors.

Indonesia’s lack of Internet coverage also continues to present technical challenges. Although the coverage has improved since 2015, the data can only be synchronised if a stable connection is available. Wolfgang Baum adds that he now strives to actively involve the project participants in the data collection process as early as possible, to ensure that they fully understand the immediate benefits and are able to profit from them.

Virtual and augmented reality: virtual expansions for improved visualisation

Technologies that work with virtual or augmented reality also harbour enormous potential. In virtual reality applications, users usually immerse themselves in a programmed world with the help of special glasses. By contrast, augmented reality adds a digital component to a person’s real field of vision (see picture). This enables engineers and doc-



App-based augmented reality © pixabay.com

tors, for example, to access information without having to look away from what they are working on. In recent years, a great deal of progress has been made in this area, which has led to increased use of the technology, especially in computer games. Today, numerous virtual and augmented reality applications can be accessed directly via a smartphone or by means of special glasses.

This technology is already being used, for example, to inform people about international projects at development-related events. With the help of virtual reality, storytelling becomes more comprehensible and vivid. A few years ago, the UN used an app to bring the daily life of a 12-year-old girl from a Jordanian refugee camp closer to participants at the *World Economic Forum*. There are many possible applications for this type of storytelling, especially in the field of education, where the use of virtual reality can improve the transmission of knowledge. In some industrialised countries, augmented reality is already being used in training programmes³² in the automotive sector to project the processes related to vehicle repair and maintenance directly onto the learner’s field of vision. Similar applications can also be envisaged for training programmes in the global South.

32 <https://www.bosch-presse.de/pressportal/de/en/augmented-reality-applications-accelerate-motor-vehicle-repairs-and-support-technical-trainings-130688.html>

Moreover, the technology on which augmented reality is based can also be applied in other areas. *Welthungerhilfe* is currently testing an [open-source smartphone app in India](#),³³ which relies on augmented reality in conjunction with artificial intelligence. The app is designed to help detect malnutrition in children by 3D scanning their weight and height. These data are used to automatically calculate whether a child is malnourished or not, so that quick and effective measures can be taken if necessary.

Blockchain: verification via the data chain

Blockchain technology refers to the linking up of chains of data. This technology was developed to replace centralised registers for data administration and verification with so-called “distributed ledgers”. Blockchain technology offers major advantages in terms of verification, which makes this method especially useful in scenarios where there is a lack of trust in the functionality of data management. In the framework of development cooperation, this opens up many possible applications precisely because the reliability or trustworthiness of central authorities such as land registries, birth registers or central banks are often called into question. Even in industrialised countries, numerous applications of the technology are currently being tested or piloted.

With this technology, data are no longer stored centrally on a server. Instead, several identical data records, so-called blocks, are created in parallel and managed locally. The database is chronologically expanded in a linear fashion, similar to a chain to which new elements are constantly being added at the bottom – hence the term blockchain. All authorised changes are synchronised as additional blocks, so that each record contains all transactions that have ever been performed.

This makes it possible to minimise or even eliminate the possibility of tampering. The technology can also be used to store information about contractually agreed services, to make supply chains more transparent or to provide access to cheaper financial services. Polls can also be conducted in a tamper-proof manner, since all potential voters cast their ballots using a type of locally stored digital token that can only be used once.

The German NGO *SÜDWIND* is currently investigating the potential use of blockchains and other digitalisation technologies in remittances. Within the framework of the

[Building Blocks project](#)³⁴ of the *UN World Food Programme* (WFP), 10,000 Syrian refugees in Jordan were able to redeem cash transfers using a blockchain-based system. This virtually eliminated the transaction fees that previously had to be paid to external financial service providers during the cash transfer. The blockchain system was integrated into existing technologies so that the process remained unchanged for the beneficiaries themselves and did not disrupt the food aid programmes. By January 2018, the project had been expanded to include 100,000 Syrian refugees. The WFP has already announced plans to expand the system to all 500,000 refugees living in Jordan.

Another such example is the *AmPLY* platform operated by the South African start-up *9Needs*. *AmPLY* uses a blockchain infrastructure and so-called “smart contracts”



Blockchain © Deavmi, Wikimedia Commons

to strengthen the registration, contract, information and management systems used for early childhood development programmes. The data stored in *AmPLY* also includes meta-data (e.g. date, time, location) and an electronic seal. This information makes it easier for external authorities to verify the validity of the data without having to access it themselves. In this way, the platform facilitates children’s access to education, health care and social services.

Oxfam is also testing various applications based on blockchain technology. As part of the *Ox-Chain* project launched in 2018, the organisation is working with design-

33 <https://childgrowthmonitor.org/>

34 <http://innovation.wfp.org/project/building-blocks>

ers, programmers and experts to research the possibilities of using the technology in international cooperation projects and to develop practical application scenarios for *Oxfam*.

Although the technologies described in this section are very promising, their practical implementation is still a

long way off in most cases. They first need to be properly tested to ensure that they can be used reliably and across the board. For more widespread use, it is necessary to significantly reduce their costs, simplify their handling and minimise the safety risks.

CHAPTER 3

Conclusions

3.1 Recommendations for the implementation of digital projects

Digitalisation has become indispensable in development cooperation. Numerous NGOs have started to experiment with the use of technological solutions in their projects, in many cases with impressive results. Five recommendations for the successful implementation of digital projects can be derived from the examples cited here, and from international reports about pioneering practices more generally:

1. Digital technologies should complement existing approaches

The use of digital technologies is particularly promising if they perform a concrete – often complementary – function in a larger project. In many cases, successful digital projects are based on analogue processes: they close gaps that cannot be filled by analogue means at all, or not in a manner that is efficient or cost-effective.

There are now numerous forums, blogs and initiatives that present projects and learning outcomes from all over the world, which serve as guidance for many NGOs. Building on these experiences, a group of organisations has developed the so-called [“principles for digital development”](https://digitalprinciples.org/).³⁵ On the one hand, these principles serve as guidelines for the planning and implementation of digital projects, and on the other, they can be used as a code of conduct.

35 <https://digitalprinciples.org/>

Interesting blogs to keep up to date with the latest trends in *digital development*:

- <http://blogs.worldbank.org/ic4d/>
- <https://globalvoices.org/-/topics/digital-activism/>
- <https://globalvoices.org/-/topics/technology/>
- <https://ict4dblog.wordpress.com/>
- <https://unwin.wordpress.com/>
- <https://www.ictworks.org/>

2. Start small, but be brave

The integration of digital components can often feel like a leap into the deep end of the pool. Both inside the organisation and vis-à-vis partners, this requires an openness to take risks, to think unconventionally and sometimes also to accept setbacks. That’s why it’s important to have the freedom to experiment. It is also sometimes necessary to win over partners who may lack the vision to see what digital solutions can accomplish.

Many NGOs have found it useful to start with a manageable pilot project. In this process, technology start-ups can serve as a role model. Rather than planning a service for a large target group from the outset, they tend to start with a more cost-effective, agile prototype, which they then test in small groups and adjust in accordance with the feedback received. Only then do they start planning to expand their service to larger groups. The same principle can be applied to digital projects – while not losing sight of the fact that the context is sometimes more complex than that of a commercial start-up.

3. Technology requires people and expertise

Before launching a project, it pays off to thoroughly sound out the technical possibilities and the challenges to be expected. Only rarely is the latest technology also the best solution. It may also be possible to draw on existing infrastructures whose long-term prospects are more promising – perhaps even more cost-efficient – than the development of a new solution.

How the people involved will interact with each other is usually one of the biggest challenges when it comes to the use of digital instruments. For development projects, this poses the following questions: Are the staff and partners sufficiently trained? Have appropriate precautions been taken with regard to digital security and data protection? Are the participants united behind a common cause? How will information and knowledge be handled if employees leave the project (“knowledge management”)?

Will users (i.e. the target group) consider the digital tools in question to be useful? Do they have the skills they need to use the technology? Are there enough points of access, and are these non-discriminatory? Have possible adverse effects been considered and analysed? (See also VENRO Insight (2018): [↘ Good intentions are not good enough: How we take into account undesirable effects with “Do No Harm”](#).³⁶)

If the technical knowledge is lacking, external support may be available, either through commercial providers, tech NGOs or local technical experts. By now, well-trained

developers and technology experts are on hand in many countries. They are also better acquainted with the local context and know which technological solutions will be appropriate.

4. Plan timelines and budgets accordingly

Digital projects require a lot of patience, especially if they are uncharted territory for the NGO in question. It may take a long time before a project goes from the initial idea through piloting and adaption to the final implementation. That’s why it helps to plan enough time for the design and launch phase and, if necessary, to resist the pressure from donors who want to see quick results. Digital projects require appropriate budgeting, and NGOs may not be familiar with some of the cost factors. This might include, for example, expenses for IT security, programmers and data protection, or for new forms of marketing to raise awareness of the service among the target group. Some NGOs have been able to get students from technical colleges involved in their projects and thereby managed to reduce the programming costs.

5. Data protection

If digital instruments are used for data collection, the data also needs to be protected by appropriate technical standards. It is therefore advisable to establish clear rules in



The nine principles for digital development © digitalprinciples.org

36 <https://venro.org/publikationen/detail/good-intentions-are-not-good-enough/>

advance on how data should be handled. This should be based on the EU's General Data Protection Regulation (see box on p. 14). The publication [“Responsible Programme Data Policy”](#),³⁷ which was developed by *Oxfam* in cooperation with the NGO [The Engine Room](#),³⁸ offers useful guidance on how such principles can be implemented in the day-to-day practices of NGOs. In the context of this guideline, *Oxfam* highlights five key issues:

- The right to be counted and heard
- The right to dignity and respect
- The right to make an informed decision
- The right to privacy
- The right not to be exposed to risk

This type of guideline helps organisations to adopt a responsible and holistic approach to data.

3.2 Recommendations for non-governmental organisations active in digital discourses

The digital transformation is changing the context in which NGOs operate. However, NGOs are not mere bystanders, but agents that are actively involved and provide important impulses for shaping this transformation in a positive manner:

1. Helping to set the agenda

In the coming years, donor investment in the promotion of digital technologies and projects is likely to increase further. At the same time, the spread and networking of digital technologies continues apace. NGOs are in a unique position to link up local partners and donors to positively shape the agenda. NGOs know what it's like to work on the ground and know the needs and realities of local partners and target groups. They understand which approaches may be particularly useful, and they can use this knowledge to influence how donors support digital projects in development cooperation, today and in the future.

NGOs that are well known for their work in support of digital rights

- Center for Internet and Society, India
- R3D: Red en Defensa de los Derechos Digitales, Mexico
- Digital Rights Foundation, Pakistan
- Derechos Digitales, Chile
- Son tus Datos, Mexico
- Coding Rights, Brazil
- Karisma, Colombia
- Korea University/open Net Korea
- Digital Asia Hub, Hong Kong
- Right2Know, South Africa
- ITS, Brazil
- Africa Freedom of Information Center
- Association for Progressive Communication, worldwide

The use of digital technologies also creates risks in terms of fair and sustainable development, and it is up to NGOs to raise awareness of these risks.

NGOs can give a voice to people who are disadvantaged or marginalised by the digital transformation. About half of the world's population currently has no access to the internet. Women and rural populations frequently have significantly less access to mobile phones, the internet and thus to all digital services. Individual ethnic groups may also be disadvantaged and excluded from access to knowledge and participation opportunities if the digital infrastructure is lacking in their region. NGOs can raise awareness of such “digital divides” and denounce discriminatory political decisions.

NGOs can also help to raise public awareness of threats to digital citizenship and net neutrality. For many NGOs, it is part of their *raison d'être* to demand responsible action and accountability from companies and governments in both the North and the South. They can point out, for instance, that many of the technologies used by autocratic governments for monitoring purposes are being produced and sold by Western companies.

³⁷ <https://policy-practice.oxfam.org.uk/our-approach/toolkits-and-guidelines/responsible-data-management>

³⁸ <https://www.theengineroom.org/>



The hatred and agitation against the Rohingya spread rapidly via social media, thereby contributing to violence and displacement.
© Sk Hasan Ali/Shutterstock.com

2. Empowering partners

A core goal of digital discourses is to ensure the equal participation of all people. Digital censorship, state and commercial surveillance, the blocking of social media platforms and internet shutdowns have dramatic consequences for the people concerned and for the work of development NGOs. Without the necessary political conditions on the ground, the true potential of digital technologies will not be realised. NGOs can systematically empower their partners to work for the defence of digital rights, local participation and the creation of appropriate legal frameworks. First and foremost, this includes the freedom of the press, non-discriminatory access to communication technologies, freedom of expression in the digital arena, access to information held by corporations and public administrations, and the protection of personal and sensitive data.

Training programmes on the use of digital technologies, security tools and software solutions (“digital literacy”) can help to support capacity building on the ground. Such programmes also play an essential role when it comes to imparting knowledge on the independent handling of data, which is equally important for local partners and the local population alike. They can help to educate beneficiaries about their rights and about the risks involved in using commercial services.

3. Supporting research

Although some lessons have been learned from past projects, there is still a lack of ground-breaking research projects. The identification of development policy challenges and the development of solutions requires better access to large data sets as well as their evaluation. At the same time, NGOs want to know which instruments have proved to be particularly useful. Progress in this area also requires a certain openness on the part of governmental and non-governmental actors. Such research projects will benefit from targeted cooperation with academic institutions and an open approach to experiences, successes and setbacks.

4. Calling for the responsible handling of data

Data collection will continue to increase, creating many opportunities for development cooperation. However, instead of concentrating on obtaining maximum amounts of data, a critical balance must always be struck between the benefits and risks. NGOs should always critically question when data collection actually makes sense – and for whom. In development policy, where cooperation with those in need of protection often takes centre stage, the negative consequences of ill-considered procedures may be more serious

than in other contexts. This makes it all the more important to always keep in mind the independence and agency of the people about whom data are being collected.

High standards must also be maintained when disclosing data in the context of project reporting. Sometimes even detailed project information may pose a risk to the partners or communities with which development NGOs work. The security of sensitive data must be a central element in any development project. It is therefore an important task for NGOs to assess the possible risks and draw attention to them before disclosing any data.

5. Focusing on data quality

Responsible handling also means paying attention to data quality and completeness. As a rule, large quantities of digitally collected data do not conform to statistical standards and are therefore not representative. If political decisions are made on the basis of distorted statistics in which marginalised groups are not sufficiently represented, for example, there is more at stake than just wrong numbers – names the life chances and future prospects of numerous people.

To improve development policy, governmental and non-governmental actors therefore need high-quality data, broken down by socio-economic indicators such as income, employment, gender, age or disability.

Only data that have been carefully collected based on sound methodology make it possible to accurately assess the advances and setbacks in individual countries and sectors. NGOs are well-positioned to draw attention to poor data quality. They can often provide information about people who would otherwise be absent from the data spectrum.

Annex

Abbreviations

AR	Augmented reality
BMZ	German Ministry for Economic Cooperation and Development
DFID	Department for International Development
GDPR	General Data Protection Regulation
GIS	Geographic information systems
IATI	International Aid Transparency Initiative
ICT4D	Information and communication technology for development
ICRC	International Committee of the Red Cross
IMS	Information management system
ITS	Institute for Technology & Society
LMMS	Last mile mobile solutions
mLearning	Mobile learning
NGO	Non-governmental organisation
SDGs	Sustainable Development Goals
SIDA	Swedish International Development Cooperation Agency
TMS	Tracing and mapping system
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
URLs	Uniform resource locator
USAID	United States Agency for International Development
VR	Virtual reality
WFP	World Food Programme
WV	World Vision

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VENRO is the umbrella organisation of development and humanitarian non-governmental organisations (NGOs) in Germany. The association was founded in 1995 and currently has more than 130 member organisations. Their backgrounds lie in independent and church-related development co-operation, humanitarian aid as well as development education, public relations and advocacy.

VENRO's core objective is to strive to make globalisation more equitable, in particular through the eradication of global poverty. The association is committed to upholding human rights and to the preservation of natural resources.

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