NEW TECHNOLOGIES
IN CASH TRANSFER PROGRAMMING AND HUMANITARIAN ASSISTANCE

A study by Concern Worldwide, Oxford Policy Management (OPM) and the Partnership for Research in International Affairs and Development (PRIAD)

EXECUTIVE SUMMARY

CaLP

THE CASH LEARNING PARTNERSHIP

NEW TECHNOLOGIES IN CASH TRANSFER PROGRAMMING AND HUMANITARIAN ASSISTANCE

A REPORT FOR THE CASH LEARNING PARTNERSHIP – CALP

GABRIELLE SMITH; IAN MACAUSLAN;
SAUL BUTTERS AND MATHIEU TROMMÉ

The Cash Learning Partnership (CaLP) aims to promote appropriate, timely and quality cash and voucher programming as a tool in humanitarian response and preparedness.

Originating from the will to gather the lessons learnt from the Tsunami emergency response in 2005, the CaLP is today composed by Oxfam GB, the British Red Cross, Save the Children, the Norwegian Refugee Council and Action Against Hunger / ACF International. The five steering committee organisations have come together to support capacity building, research and information-sharing on cash transfer programming as an effective tool to support populations affected by disasters in a way that maintains dignity and choice for beneficiaries while stimulating local economies and markets.

In 2010, the CaLP partnered with the International Federation of the Red Cross and Red Crescent societies (IFRC), with support from ECHO and Visa Inc.

For more information, visit: www.cashlearning.org

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EXECUTIVE SUMMARY

Technology today is evolving at an extraordinary pace, changing the way we live and work. In recent years, advances in new technology in low-income countries mean there is growing interest from donors, practitioners and governments as to how technology can best serve humanitarian responses. Technology is felt to have potential to detect needs earlier, enable greater scale and speed of responses, enhance specificity of resource transfers to match needs and increase accountability while reducing opportunities for corruption and diversion. However, despite overall positive experiences with these technologies, they are not being adopted systematically in humanitarian programming in areas where systems and solutions do exist.

The humanitarian sector has also experienced rapid uptake in the use of cash transfers as a tool for humanitarian response in recent years. This has been in part enabled by to the rapid spread of branchless banking and electronic payments technologies. The demands of transferring money to large numbers of recipients as well as the level of accountability required of cash transfer programmes have also led humanitarian actors to adopt other technological innovations that have potential to benefit humanitarian programming more broadly.

This study was commissioned by the Cash Learning Partnership (CaLP) in 2011, to review the current use of new technology in humanitarian cash and voucher programming and the broader implications for humanitarian practice. The research was undertaken to explore (i) preconditions for the use of technological mechanisms identified; (ii) user-friendliness of the technology for the recipient and for the agency; (iii) issues concerning accountability; and (iv) potential for wider impacts.

The research discusses in detail three types of technology currently being used in aid programming: electronic payment systems, the use of mobile phones for text and voice communication, and digital data gathering tools. For each, the study outlines current use, examines benefits experienced and issues faced by the recipient and the agency and highlights key lessons learned. The study also looks briefly at new emerging used of technology in aid programming including recipient management and crisis mapping. The report then looks at the potential benefits and risks of using new technologies in the cross-cutting areas of cost-effectiveness and accountability.

The research examines the constraints to the uptake of these technologies in humanitarian programming, and has identified barriers to wider adoption of new technology that can be broadly grouped under seven themes: technological, financial, institutional, operational, attitudinal, political and legislative.

Finally, the report outlines suggested actions to move towards more systematic adoption of effective and accountable technological solutions in humanitarian aid and concludes by making recommendations for humanitarian actors in differing technological environments.

Electronic Payment Systems

Globally there has been growing recognition that electronic payment (e-payment) systems have the potential to provide more efficient and reliable delivery of cash payments than manual cash-in-envelope systems. The four electronic payment systems that are currently being used by aid agencies are pre-paid debit cards, smart cards, mobile money transfer systems and electronic vouchers. This research discusses each e-payment system in detail and synthesises the main benefits experienced and issues faced in terms of accountability, security, partnerships, accessibility, cost, and operational efficiency.

The most important benefits that were noted for all four e-payment systems include improved security for staff and recipients; reduced leakage; improved reconciliation and control of expenditure; greater speed and efficiency of transfers; reduced costs for the agency and recipient; and the potential for realising wider impacts for the recipient. However, agencies implementing new systems in emergencies, with the poorest sections of society in low income countries, are likely to face challenges arising from lack of prior experience with technology; poor network and infrastructure; low literacy and lack of agency capacity. The research also discusses briefly the differential impacts that using e-payments may have on women, the elderly and the chronically ill.

The research found that access to e-payments technology alone should not be assumed to automatically have financial inclusion benefits for the poorest people. There is, however, evidence that access to formal identification gained through participation in cash transfer programmes can provide individuals with longer-term benefits including the potential for their households to access public services. The research also records experiences of whether there are differential or unexpected social or economic impacts of cash transfer programmes that used information and communications technology (ICT), in terms of recipients' sense of dignity; wider impacts on traders and the local economy; communications; sharing of resources transfers; and better targeting / efficiency of transfers. Although in some of these areas the use of ICT has clear potential added benefits, the longer-term impacts of these experiences have not been properly documented, and in all cases further research is recommended.

Lessons learned show that certain context-specific factors can contribute to the greater success of programmes using e-payments technology, namely: strong delivery partners; adequate training for all stakeholders; availability of on-the-ground support; a well-functioning payment agents network; a solid (private sector) strategy for and broader commitment to the development of emerging systems or networks; and a financial regulatory environment suited to or adapted to the realities of the humanitarian context.

Overall the research found that despite encountering some challenges, all practitioners who have used e-payment systems to date found them beneficial and would use them again. Under the right conditions, e-payment systems offer a promising way to deliver aid to recipients with speed, precision and flexibility even in challenging environments.

Mobile Communications

In addition to the potential for e-payments, the surge in mobile phone ownership in low income countries means that mobile communications are increasingly accessible to disaster affected populations. This research identified three main uses of mobile phones for programme communication during recent humanitarian

emergencies: providing information to households and communities; enabling two-way communications with recipients; and improving the effectiveness of programme communications between head offices and field workers, all of which have potential to improve aid effectiveness and accountability.

The research looked at the main benefits experienced and issues faced with the use of mobile phone communications in terms of partnerships, effectiveness and impact, scalability, uptake by staff, and accessibility to communities. The main benefits experienced included speed of communication; appreciation by recipients and communities; cost-efficiencies at scale; and the opportunity for voice-based communication. The main issues encountered were trust of recipients with regards to mass SMS messaging; prohibitive costs from the recipient side; limited network coverage and/or reliability in remote areas; and limited phone ownership and literacy.

Overall the experiences of those interviewed were positive and agencies expected that such systems would continue to be further developed in future emergency response. However, the research found that new communications tools should be used to complement rather than replace traditional means of communication. Furthermore, improved communications must be a strategic undertaking, not assumed to be an automatic benefit of a mobile transfer programme. Context-specific factors, especially literacy, socio-cultural factors (such as gender differentiation in access to phones), private sector partners, trust by recipients and in-house capacity of the agency all need to be taken into account in developing communications approaches using mobile technology.

Digital Data Gathering

Humanitarian agencies are looking to technology-supported solutions to increase the efficiency, speed and accuracy of data collection in all types of aid programming. This research outlines current digital data gathering (DDG) solutions, whereby hand-held devices such as PDAs, smartphones or data pens are used to record data in the field and transfer information back to a server. The research discusses in detail the benefits experienced and issues encountered in terms of operations, cost, and effectiveness / impact of using DDG solutions.

Agencies found that for the most part the technology was accessible off-line; quickly learnt and adopted by staff; easily integrated with existing systems; and accepted by recipient communities. Agencies adopting digital gathering technology experienced significant gains in speed and efficiency, and also noted improvements in data regularity and gains for controls and audits.

Some of the challenges and limitations faced by agencies included: hardware or software that was mal-adapted to challenging conditions; high costs and time required for set-up; and limitations of connectivity. Agencies also noted context-specific limitations: in some areas data collectors felt that PDAs increased personal security risks, and certain local authorities would not authorise the use of digital data gathering tools. In addition, potential gains in terms of speed of response gains are still limited by the sector's ability to act on information in a timely way.

Although the use of DDG technology is still very new to humanitarian agencies, their overall experience was positive and no agency interviewed was planning to switch back to paper-based forms. This research documents important lessons learned for maximising the benefits and minimising the risks associated with the use of DDGs. Adequate planning and preparation is critical, including assessing options and choosing context-appropriate solutions. Adopting a brand-new technological solution in the midst of a humanitarian emergency with no prior preparedness can create difficulties and could potentially slow down response times.

The report also examines in more detail the use of technological solutions for improving recipient registration systems, in particular ID card production and the capture of biometric data, and outlines the main benefits experienced and issues encountered with these processes. While experiences with biometric technologies have yielded reductions in leakages and fraud, these technologies require costly start-up investments and programmes still encountered significant errors.

Information management

Deployment of the technologies described in this report is enabling faster accumulation of data, and is highlighting a need for more effective data management systems in the humanitarian sector. The research details several solutions that have been adopted in cash transfer programmes including custom-designed aid management software solutions, cloud-based data management solutions, and web-based software tools.

The research found that while these systems offer real potential benefits in terms of scalability, rapidity, resource-sharing across multiple locations, automation and streamlining of processes and controls for access and audits, custom solutions have huge set-up costs and web-based solutions are limited by connectivity. Furthermore, restrictive in-country data regulations and concerns about data protection are barriers to uptake.

The research also highlights some preliminary experiences of humanitarian agencies with emerging technological data gathering or management solutions. One such solution is the use of the general public to gather data, or 'crowd sourcing'. Another such technology is the use of location data from mobile phones to track population movements or displacements during and after a disaster.

Cross-cutting issues

Cost effectiveness

Many of the technologies examined by this study have high initial costs, but significant cost-efficiencies over time when compared to the recurrent costs of manual operations. However, the short-term horizon of humanitarian funding cycles may not capture the extent of these advantages, and therefore represents a barrier to the adoption of technological solutions. In areas where emergencies are likely to recur, or where technology will be retained for use in longer-term programmes, a longer time horizon for cost comparisons would be advisable.

Although little direct cost-comparison evidence is available, this study found some cost comparison evidence in favour of e-payment systems and DDG versus manual cash transfer systems.

Accountability

Electronic payment and registration systems have clear potential to improve accountability of aid to donors by providing a clear audit trail from funding to recipients, although technological solutions do not completely eliminate errors or prevent corruption.

The use of technology also has the potential to increase accountability to recipients by facilitating two-way communications and improving information flows. However, in some cases the possibilities that technological

systems offer to place tighter controls on aid may go against some of the gains that the humanitarian community has achieved in advocating for dignity, flexibility and choice through the use of unconditional cash transfers. In addition, the degree of personal information available to aid agencies through the use of technological solutions puts recipients at risk of invasion of privacy, especially if they are not fully aware of their rights in this regard.

Constraints to wider adoption of new technology

If e-payments services and other tools work, why have they not been more widely adopted to date? Critically, why are they not being adopted systematically in areas where systems and solutions do exist? This research has identified barriers to wider adoption of new technology that can be grouped under seven themes: technological, financial, institutional, operational, attitudinal, political and legislative.

Technological barriers include limitations in agent coverage and cash flow for e-payments systems; gaps in mobile network coverage; difficulties in technical integration with existing systems; and error rates of biometric technology.

Financial barriers identified were lack of resources for investment in new technologies; and lack of a business case to justify the expansion of services by the private sector into remote areas.

Institutional barriers within humanitarian agencies include: lack of awareness about new technologies; time and effort required to adopt new systems; and limited resources and capacity to adopt new ways of working. The low capacity of private sector actors to scale-up and low levels of recipient literacy and education also remain important constraints.

Operational constraints in adopting new technologies include the limited availability of time and resources to research, cost and select an appropriate technological solution, and the time required to negotiate contracts, set up and test new systems, and train staff.

Political barriers include aid agencies' concerns about data protection issues and, more broadly, wariness of the risks of involving private sector actors in the humanitarian sphere and suspicions about their underlying motives. Aid agencies may also be unwilling to share technological innovations between themselves, resulting in incompatible of custom-built technological solutions to the same problem, which may have a detrimental impact on aid effectiveness.

Attitudinal barriers from senior decision makers within all stakeholders can constrain the wider adoption of new technologies. Senior managers of humanitarian organisations may perceive new technologies as being too risky or expensive, may not be familiar with the potential benefits that new technologies can offer, may fear that technology will lead to exploitation of recipients by the private sector, and may be hesitant to commit resources to adopting new systems. Donor mind-sets and requirements for aid and recipient attitudes to new technologies can also present barriers to using e-payments systems to transfer cash.

Legislative barriers in the regulatory environment vary from country to country. National governments can act as promoters of or as barriers to adoption of particular e-payment mechanisms or the use of digital gathering technology. There is also generally a lack of clear national policies on data protection in both donor and host countries as well as proprietary concerns around custom-designed solutions.

However, the research found that some of these barriers are already reducing as technology continues to advance in low income countries and donors and aid agencies gain more knowledge and experience of technological solutions. The growing adoption of cash transfer programming has pushed donors and aid agencies to forge alliances with private sector partners and adopt or develop technological solutions which have wider potential gains for humanitarian programming as a whole.

Suggested actions to move forward

If agencies are serious about realising the potential and use of new technology to deliver humanitarian aid to the poorest, rapidly and at scale, actions are needed to overcome the barriers identified.

Humanitarian stakeholders should work together to **improve the technological environment**, by collaborating with service providers, supporting the extension of existing mobile networks and branchless banking systems, and using existing solutions instead of developing parallel ones. The humanitarian community should also support the development of cross-mobile network interfaces and advocate nationally and globally for improvements in the regulatory environment.

Developing the capacity of stakeholders to use new technology for humanitarian response is also critical. Aid agencies should actively investigate digital data gathering and information management solutions, and improve their capacity and preparedness to implement new technology solutions by increasing familiarity of agency staff with new approaches. Greater linkages between humanitarian and development programming and longer funding horizons would help to improve recipients' capacity to benefit from new technologies, as would education and investment in developing user interfaces for illiterate populations. Donors should consider funding the development of open-source platforms, and make funds available for agencies to adopt new technologies. Sharing knowledge and creating an evidence base are also important to drive change.

Humanitarian stakeholders need to **formalise and improve new ways of working** in order to improve coordination, increase influence and realise economies of scale. Agencies should move towards consolidating experience with technological solutions and developing a 'tool box' of standard approaches, and invest in overcoming internal barriers to adopting new technologies. Donors should create incentive structures for the private sector to develop technology platforms that meet humanitarian needs, and finance the adoption of compatible technological solutions by aid agencies working together.

The research also recommends establishing an agency to act as a focal point or moderator within the humanitarian community to build links with the ICT sector, moderate technological development for aid and promote or advocate for adoption of technical standards for e-payments and data management systems. Leadership is also needed to develop codes of conduct, guidelines and minimum standards for the management and sharing of personal data.

Conclusion

The recommendations for the humanitarian community that finalise the research report focus on three different situations:

- **Where mobile connectivity is already established** in an area and technological solutions exist, agencies and donors should develop standard approaches to support systematic adoption of new technology in programmes to improve efficiency and effectiveness of aid provision.
- **In areas where emergencies are chronic or recurrent**, there should be a push, before the next crisis, for development of new financing models to meet costs of investment and for preparedness frameworks, between donors, agencies and the solutions providers.
- **When an area with limited infrastructure/technology** is hit by a sudden onset disaster, it is not the right time to start implementing new ways of working or try out new technology. However, the humanitarian community operating in these contexts should stay abreast of developments and seek to move forward the development of such solutions and of network connectivity where possible.