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Funding Mobile Strategies for Social Impact:

The Future is Now

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The Future is Now

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ZeroDivide is a funder, thought partner, and capacity-building organization working to transform underserved communities through the strategic use of technology in ways that increase economic opportunity, civic engagement and healthy outcomes.

With more than 14 years of experience in the field, ZeroDivide provides the leadership, guidance and cultural knowledge necessary to build equitable and thriving communities. The organization partners with foundations, businesses and government agencies to achieve these outcomes.

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INTRODUCTION

THE FUTURE IS MOBILE. ACTUALLY, the present is mobile too—of the 7 billion people worldwide, 5.9 billion are mobile phone users. That’s 87% of the world’s population.¹

Concurrent with massive investment by commercial interests, civil society and the social sector have made powerful use of mobile strategies to accelerate political change (the Middle East), bolster humanitarian relief efforts (Haiti), shift the terms of public debate (Occupy Wall Street), and much more.

Katrin Verclas of *MobileActive.org*, a leading nonprofit intermediary in the mobile space, stated, “We’re doing about 96% of our work with organizations outside the U.S. Our experience is that, except for a handful of funders, there just isn’t awareness of the opportunities in mobile or much support for this work here yet.”⁵

What, then, do funders need to understand to support their grantees in seizing these opportunities?

How can funders support mobile projects

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- Katrin Verclas, co-founder and editor, MobileActive.org

Alongside these high profile examples, there are many thousands of lesser-known, community-driven initiatives from around the globe that have used the most basic cell phones to amplify social impact on issues of human rights, economic development, and health care delivery.

It’s difficult to overstate the opportunity for social impact via mobile. Yet, despite numerous studies by Pew² and others documenting the high rate of mobile use by youth and communities of color in the United States—key populations for social equity grantmaking—the domestic social sector has been noticeably lagging in mobile projects by and for underserved communities.

ZeroDivide’s research in 2011 found a dramatic lack of philanthropic investment in mobile strategies for community change.³ Despite the many examples of outsized impact and the near-ubiquity of cell phones, most funders surveyed were unaware of mobile strategies and/or unclear about how to invest in them.

Practitioners and funders based in the U.S. can learn much from mobile initiatives in the developing world about how to use this technology to support underserved communities.⁴

beyond fundraising campaigns and communicating via social media? What are strategies to help grantees realize the broader potential to amplify program impact?

This paper takes on these questions and provides background information derived from interviews with practitioners and secondary research. Examples are given from various mobile projects by and for underserved communities, on issues that range from health disparities to workforce development and more.

Structure of the Paper:

- Context: The U.S. Mobile Landscape and the Digital Divide
- How Communities are Making an Impact with Mobile Strategies
- Keys to Success for Mobile Programs by Underserved Communities
- Recommendations for Funders

CONTEXT:

The U.S. Mobile Landscape and the Digital Divide

ZERODIVIDE DEFINES THE DIGITAL divide as the gap between who does and does not have access to the Internet and digital communications tools, and the disparity in fluency in using these resources. In the U.S., the digital divide has traditionally been discussed in terms of computers—who does or does not have access to one at home with broadband Internet access.

As of May 2011, 40% of U.S. residents still did not have broadband Internet access at home. The most common reason cited was that broadband is too expensive. Research shows that communities underserved by communications technologies are often the same socio-demographic communities underserved by commercial and governmental institutions: the low-income, racial and ethnic minorities, the disabled, immigrants, and others.⁶

Now, the increased affordability and sophistication of mobile devices is allowing millions from these communities to heighten their participation in civic dialogue and commerce. More than 86% of adults in the U.S. own a mobile phone and more than 50% of these are smartphones that can browse the Internet.⁷

It's clear that mobile technology is providing powerful opportunities for engagement and enabling great disruption. Witness the April 2012 report by the Pew Internet and American Life Project:⁸

The rise of mobile is changing the story. Groups that have traditionally been on the other side of the digital divide in basic Internet access are using wireless connections to go online. Among smartphone owners, young adults, minorities, those with no college experience, and those with lower household income levels are more likely than other groups to say that their phone is their main source of Internet access.

Other notable statistics regarding underserved communities and mobile technology include:

- Of smartphone owners in the U.S., 25% go online mainly from their phones: for Blacks and Hispanics, 38%; for those aged 18-29, this jumps to 42%; for household income under \$30,000/year, it's 40%.⁹
- Hispanics are significantly more likely than any other U.S. ethnic group to regularly engage in all types of mobile activities, from texting to web browsing to uploading video. Blacks also lead whites in most of these categories.
- A report by The Hispanic Institute in 2011 found that mobile technology is boosting civic engagement among U.S. Hispanics, particularly around immigration, education and voter registration/mobilization.¹⁰

No matter how one defines the digital divide,¹¹ it's clear that mobile is proving to be a dramatic tool for enhancing digital participation and is only going to continue to grow as a means of conducting commerce, advocacy and service delivery.

Yet, while these figures show significant increases in mobile use by historically underserved communities, and the trends are very likely to continue in this direction, serious barriers to full participation persist—and are manifesting in the form of new divides. Significant differences in cost and functionality continue to exist between full-featured smartphones and simpler, less costly “feature phones.” Financial and geographic limitations on access to new high speed 4G mobile networks threaten to create a gaping chasm between the “fast” and the “slow”—those who can fully engage in 21st century dialogue and

commerce via audio, video and the Internet, and those who cannot.

Smartphones vs. Feature Phones: An emerging mobile divide

Smartphones are small handheld computers that also happen to be phones, cameras, and media players. While their share of the mobile market continues to increase, as noted above, half of cell phones in the U.S. are not “smartphones”¹² as of February 2012.

Largely due to the high cost of smartphone ownership, this half of the population rely on “feature phones”—more basic, less expensive devices that can perform voice calls, text messaging, and take pictures. Relatively few feature phone owners access the Internet from their phones because of (a) the additional cost and (b) they are not optimized for this experience.

It’s not just the higher up-front cost to purchase a smartphone, but the total cost of ownership that has limited their market share. Purchasing a quality smartphone in the U.S. usually means also committing to a costly two-year service contract and agreeing to a steep early termination fee

These factors are contributing to a growing divide between mobile users along class lines...

—Verizon’s fee can run as high as \$350.¹³ For people who are low income, have poor credit, or are unsure of their future income or job prospects, this may be a risky or impossible expense.

In contrast, consumers can purchase a simple feature phone from any discount carrier for \$50 or less, with a no-contract service plan that costs \$30-\$60 per month. Owners can cancel service, switch carriers, and get a new phone at any time, with no financial penalty. This gives users greater power to control expenses in response to changing priorities or economic circumstances.

Some less expensive smartphones are starting

to hit the U.S. consumer market, with no-contract data plans in the range of \$50-\$75 per month. While these are becoming more popular in underserved communities, they often come with significant tradeoffs that can seriously limit their usefulness: a more difficult user interface, technical hassles, and poor quality of materials or service.

These factors are contributing to a growing divide between mobile users along class lines—those who can afford to access the Internet and make use of advanced services virtually anytime, and lower-income users with less mobile access, who rely mainly on text messages and voice to access and share information.

The Parallel Divide: Network Speed and Availability

Smartphone users’ appetite for mobile data is rapidly ballooning,¹⁴ especially among youth.¹⁵ But even the most advanced smartphone is limited without reliable access to high-speed wireless data networks.

Carriers tend to deploy more towers and faster mobile data networks in locations that are more densely populated. Places that are sparsely populated—especially rural communities—often have spottier, slower wireless coverage. Additionally, several telecom companies have been accused of redlining communities of color in urban areas, meaning they’ve built less new capacity in these neighborhoods than in pre-dominantly white neighborhoods with similar population density.¹⁶

Devices that can only access 3G networks, still common for older and cheaper phones, often can’t reliably stream video, explore the web, or use other features popular on smartphones and tablets. For now, the cost to use 4G networks and devices is significantly higher than for 3G devices and plans.

How Communities are Making an Impact with Mobile Strategies

DESPITE THE CHALLENGES, HISTORICALLY underserved communities are creatively and successfully using mobile devices to amplify social impact. In most cases, these strategies build on the devices' multiple functionalities. Far more than just phones, today's mobile devices are being used to send text messages, record and disseminate video and photos, access the Internet, geolocate, and act as a computer.

Each mobile “channel”—or function—presents unique opportunities for changemakers:

Text/SMS Messaging

Text messaging—also known as SMS or Simple Message Service—is the most popular activity by mobile phone users, other than voice calls. Available on practically all phones—feature phones as well as smartphones—SMS is used widely and creatively by underserved communities throughout the developing world. In the U.S., 72% of adult cell phone users send and receive text messages, and the rate is higher for teenagers.¹⁷

Building on the success of trailblazing text-based services MedicMobile¹⁸ and SexINFO by ISIS¹⁹, a number of innovative projects have launched in the last two years, including:

Txt2Wrk helps connect disadvantaged job-seekers with timely employment opportunities via text messaging, augmented by a voice-to-text functionality that expands accessibility to those with low literacy. The project emerged from a participatory design process at an Oakland hackathon in which a formerly incarcerated participant described the challenges of job search for those with limited resources, no home computer or broadband connection. The design team con-

tinues to adapt the platform so it can be used by a broad array of social service organizations who would like to use voice broadcasting and SMS alerts to communicate with their clients.

Text4Baby Case Study

Text4Baby is one of the leading U.S. mobile health programs, a free service which launched in February 2010 to improve maternal and infant health outcomes. It has 275,000 subscribers nationwide.

Three times per week, from early pregnancy through the first year of a child's life, Text4Baby transmits informational tips regarding pregnancy or caring for a baby.

To join, participants text the keyword BABY to 511411 (or BEBE for Spanish-language service). They're then sent messages requesting their zip code and the baby's due date. Thereafter, mothers receive SMS messages timed to be relevant and useful to their particular stage of pregnancy, or of their child's development.

In November 2011, researchers evaluated Text4Baby's performance in San Diego and found among participants that:

- 75% reported it informed them of medical warning signs they did not know.
- 71% reported talking to their doctor about a topic from a Text4Baby message.
- 63% reported it helped them remember an appointment or immunization.
- 39% reported calling a service or phone number they learned about from it.

Emilia Guasconi, marketing manager for the program, noted that while Text4Baby is not specifically designed for low-income women, “texting is a great way to reach many underserved communities. For instance, Medicaid recipients tend to text more than the average person.”

Multimedia

Most devices now allow users to create and send photos, video and/or audio files. Many smartphones also support editing functions within the device and include apps connecting the content with social media, allowing for immediate distribution. Most studies predict the use of video increasing exponentially in the next 5 years, though many users will be limited by access to high-speed networks and hardware functionality.

Mobile Voices/Voces Moviles is a project by low-wage Latino workers in Los Angeles to tell their own stories and increase public understanding of their issues. Participants send photos and text directly from their feature phones—smartphones aren't required—to a rich bilingual web presence. To increase readership and publicize the service to low-income community members, the stories are also featured in a quarterly newspaper they produce and distribute for free to the broader immigrant community in Los Angeles.

WITNESS' The Hub is an interactive community site for activating human rights advocacy, where anyone can upload video, audio or photos recorded on a mobile device. Each media item posted can be used to spur action by linking with the resources, advocacy groups, and campaign tools made available. More than 3000 such campaigns to address human rights concerns have been conducted via these videos, from Chicago to Kinshasa and Tulsa to Lima.

Mobile Web

Most mobile devices, including some feature phones, now have web browsers that allow the user to access web sites and web-enabled services. Any organization, program, or service that aims to be useful to mobile users in the 21st century should offer a mobile-optimized version of its web site for display on a small screen, or at least some

mobile-friendly landing pages for key topics.²⁰

NextBus is a popular online service for tracking the timing of buses in many U.S. cities. Users can access and interact with this service via a very simple mobile web browser—or by text message.²¹ While they stay warm and safe, they can easily learn exactly when to expect the next bus so they can get to the bus—and their job interview, doctor's appointment, etc.—right on time.

CitizenshipWorks is a new mobile-optimized website by the Silicon Valley Community Foundation that connects immigrants with legal service providers, English as a Second Language classes, social services, and multimedia resources to keep them current about relevant community events and provide timely information about the path to becoming a citizen. Many eligible immigrants have not applied for citizenship and, as a result, cannot fully participate in civic life, vote or get access to better employment opportunities. Even when they do apply, the process is lengthy and sometimes confusing. Through the site, an "E-Z Visa Priority Date Calculator" sends users a text alert when they are eligible to move to the next step in applying for legal permanent residency.

Geolocation

All cell phones can track and share their location, either by triangulation among cell towers or via GPS (Global Positioning System). This geodata can then be applied to tag photos, texts, and other information gathered via mobile. Crowdmapping, a form of data visualization, is a related use of geodata.

Ushahidi is open-source software that allows users to crowdmap critical information in real-time that is sent in via text. In response to the massive earthquake in Haiti in 2010, aid workers used it to record texted requests for help, map needs and assets, and rapidly refine the deploy-

ed hundreds of times: for election monitoring in Afghanistan, India, Kenya, Lebanon, Mexico, and Sudan; identifying and rescuing trapped seniors in a blizzard in Washington, D.C.; and targeting local environmental hazards in rural, poor communities in California's Imperial Valley (see **Imperial Visions Action Network**).

Fresno BusTracker was developed by a cluster of community-based organizations and The Know Youth Media, based on Ushahidi's functionality. The service allows community members to text in reports that are automatically geotagged in order to track incidents on the Fresno area bus system. The data collected from this project is strengthening a local advocacy campaign for transportation justice, illuminating service disparities experienced by low-income communities. One measure of success is that the transit authority is now actively promoting the BusTracker to the public as a means toward fostering better service and departmental accountability.

Smartphone Apps

"Apps" are software applications that are downloaded to a smartphone or tablet. They provide direct access to online content or services that is an alternative to finding them on the web, and they often add extra capabilities that the mobile web cannot support (such as accessing a phone's camera or GPS). Apps can provide an enhanced user experience (GoogleMaps), better interaction with service providers (Netflix, IRS), easier access to games/media (Angry Birds, NPR), or help with the creation and distribution of content (Instagram, YouTube).

There are a vast number of apps that can be leveraged to help bolster service-delivery and advocacy:

Civic Info Apps: *SeeClickFix.com* allows community members to report non-emergency local concerns to the appropriate officials, from graffiti to dangerous intersections.²² Also, the

CPR Smartphone App by the San Ramon Valley Fire Department allows private citizens trained in CPR to register and be alerted if someone near them needs CPR. The application also directs users to the nearest defibrillator.²³

Citizen Reporter Apps: *MePorter.com* and related apps are tools for enhancing citizen journalism. They simplify the gathering and sharing of on-the-spot news stories, using one simple app instead of requiring a variety of tools. This integrated approach can enable personal storytelling, event coverage and more, without overwhelming contributors with having to learn and manage multiple services.²⁴

Banking and Financial Services Apps: *Piggymojo* incentivizes people to save money instead of spending, with an emphasis on asset-building in low-income communities. *Square* and related apps are enabling small businesses, community groups, and nonprofits to turn smartphones and tablets into cash registers by pairing them with card-reading devices. Following the lead of innovative nonprofits, in 2012, the U.S. presidential campaigns began using Square to accept donations at public events.²⁵

Note that while smartphone and tablet apps currently get much of the attention in discussions about mobile, they may not be the best strategy to benefit an underserved community. The significant cost of app development and upkeep, as well as underserved communities' relatively limited use of smartphones, may argue for a different approach. The key is to be sure that the mobile strategy and device match with the technology used by intended beneficiaries, or to make sure that devices are provided.

Tablets and E-Readers

While often considered items for only those with middle- to high-incomes, tablets and e-readers

are experiencing an uptick in ownership among several typically underserved demographics.²⁶ Some research indicates that immigrants and first-generation U.S. residents might be more likely than other groups to purchase a tablet.²⁷ As of January 2012, ownership of a tablet or e-reader reached 29% in the United States.²⁸ Also, pricing trends indicate that in the next year or two, some of these devices may be given away free and/or sold very cheaply, since companies can earn more selling e-books than the e-readers themselves.²⁹

Tablets can be especially useful for enhancing underserved communities' interaction with service providers, such as social workers, community organizers, food bank volunteers, and others. In the U.S. health care sector, these tools have been found to significantly help streamline data gathering, increase access to information in the field, and speed response times.³⁰

[Health care] Clinicians are increasingly finding mobile devices such as tablets, laptops, smart phones and PDAs useful in health care delivery due to their speed, convenience, and flexibility.

- HHS Mobile Devices Roundtable, Summary - April 4, 2012

Smart Screen by Epion is an Android tablet housed in an antimicrobial case that's designed for educating patients in physician waiting rooms and at the point of care. It provides educational games, instructional videos and opportunities to join clinical trials based on their specific conditions. In a pilot during Spring 2012 at thirty physician practices in seven states, the tablets also have a series of apps for clinicians, such as drug references, dosage calculators and health assessment tools.

Merge Healthcare's imaging software delivers high-resolution radiology images and reports to tablets through the company's iConnect Access system. Practitioners can view images and studies while away from their regular workstations. Aside from the mobility, touch-screen tablets also enable finger-controlled image manipulation.

The Queens Library became the first New York public library to lend out e-readers, in April 2012. Commonly spearheaded by librarians, e-reader pilot programs are springing up in schools around the country, bringing these alternative learning tools to K-12 students. From full adoption of the devices at Clearwater High School in Florida to exploratory beta projects such as at Creekview High School in Georgia, educators are exploring how Kindles and other e-readers can mesh with curricula and enhance learning.

Focus on Text/SMS Messaging:

While much of the mobile buzz domestically is about apps and tablets, internationally much of the success in the arena of mobile for social impact has centered around SMS strategies.

The potential of text messaging for social benefit has been vastly underexplored in the United States, despite the technology being well established, nearly ubiquitous, and easily deployed.

For underserved communities in the U.S., the U.S., especially young people, text-based services represent the low-hanging fruit of mobile opportunities. **See Sidebar for case study.**

- 95% of 18-29 year old mobile phone users in the U.S. use text messaging.
- The median user in this age group sends or receives 40 texts per day.
- People with lower incomes text more often than wealthier people.
- African-Americans and Latinos text more frequently than Whites.³¹

In light of these realities, what have been the barriers to deployment by underserved communities in the United States?

The foremost barrier is cost, which has several layers because—unlike most of the rest of the world—U.S. mobile carriers charge both the sender and the recipient of a text message. While some consumers do have flat-rate plans for unlimited text messages, these are expensive. More common amongst lower-income users are pay-by-the-text plans or limited data plans, which often have very steep overage fees tacked on.

Organizations looking to conduct an SMS campaign need to deal with being charged for each single message sent: if the program has 500 subscribers, and three messages are broadcast to the list, the bill is for 1500 messages sent. In addition, to even launch a text-based service in the U.S. that will serve more than a handful of participants, one is required to obtain access to a Common Shortcode. This is a five- or six-digit number to which mobile users text a keyword to subscribe, cancel, or use other features.

Shortcodes are more expensive and complex in the U.S. than many other countries. A dedicated shortcode used by one organization costs at least \$500 per month.³² Shared shortcodes are considerably more affordable, but have some tradeoffs.³³

One recommended option for social benefit organizations is to contract with a third-party SMS service provider, such as Mobile Commons or TextMarks. They buy large-volume blocks of text messages from carriers and resell them at a more affordable rate to nonprofits and other customers interested in conducting SMS campaigns. Notably, the Text4Baby program succeeded in convincing U.S. wireless carriers to waive all fees to transmit and receive their messages—20 million as of this writing.

Another significant barrier to domestic SMS campaigns are the many rules and restrictions imposed by mobile carriers and the U.S. government—mostly aimed at curbing text message “spam.” There are many “do’s and don’ts” for running SMS-based programs in the U.S.—the Mobile Marketing Association offers an excellent

detailed guide to best practices for reaching consumers.³⁴

Despite facing some significant hurdles to implementation, organizations conducting any outreach or service delivery effort aimed at underserved communities in the U.S. should strongly consider employing SMS campaigns to increase their reach and impact. This is especially important for programs which seek to engage people under the age of 30.

Sidebar: Text2Shelter Case Study

For programs that aim to engage youth, text messaging is an essential channel. This is true even for under-resourced youth in the most dire circumstances, whom many might assume would have little use for—or access to—mobile technology.

Text2Shelter, which launched in March 2011, is a program of The Teen Project—a grassroots, grant-funded organization to connect teens who are homeless or aging out of the foster care system with shelter and other crucial resources. This group has assembled a database of 17,000 aid organizations and programs nationwide. A teen who texts SHELTER and their current ZIP code to 99000 will receive a message with the location and phone number of the nearest shelter or aid organization.

“Often people wonder: how does a homeless kid afford a cell phone?” said Lauri Burns, founder of The Teen Project and herself a former foster child who grew up in the juvenile dependency system. “It’s as important to them as getting something to eat. These kids are so hooked into that mode of communication and the life-saving resources you can access.”

Keys to Success for Mobile Programs with Underserved Communities

AS PART OF THIS RESEARCH WE interviewed personnel from 10 mobile programs that work with underserved communities in order to identify key learnings and recommendations. Every single practitioner noted the importance of a strategic outreach/marketing plan and a wide range of partnerships, cemented by strong face-to-face relationships.

Below are the main keys to success cited by our experts, followed by a deeper focus on two of them:

Build powerful partnerships: A wide range of partnerships are vital for building community trust and awareness, as well as strengthening implementation and distribution. Voxiva, which runs Text4Baby and other U.S. mobile health programs, has made the generation of strategic partnerships a primary component of program development—working with sponsors, community-based nonprofits, insurance companies, government agencies, and others (see **Focus on Building Powerful Partnerships**).

Instead of having a bunch of smart technologists build something and then try to convince people to use it, the community members were involved from the earliest stages. We identified community needs, strengths, and opportunity areas. When you do this, people feel ownership of the project. They'll help spread it person-to-person throughout the community.

Prioritize publicity and outreach:

Mobile projects work best when combined with outreach efforts through other media and communications, events, and personal interactions. Successful tools for creating awareness range from billboard and magazine advertising, to fliers handed out by caseworkers, to news coverage, live events, educational programs at community venues, and more.

Involve the community: A key best practice to address cultural relevancy is to engage community members in the design of a mobile project from the earliest stages—a process known as “participatory design.” This process was the hallmark of VozMob: “Instead of having a bunch of smart technologists build something and then try to convince people to use it, the community members were involved from the earliest stages. We identified community needs, strengths, and opportunity areas. When you do this, people feel ownership of the project. They’ll help spread it person-to-person throughout the community.”³⁵

Foster strong ties with technologists: Building principled and productive relationships with skilled mobile technicians is a necessary element for the success of any mobile project. “Hackathons”—a daylong or weekend event where coders, or “hackers”, get together with others to brainstorm how to solve problems—can be one way to encourage collaboration

with community members. Another approach is the “circuit rider” program of the Knight Foundation’s Community Information Challenge, in which tech experts are “shared” between several nonprofit projects as needed to offer guidance (see **Focus on Hackathons and Other Ways to Engage Mobile Developers**).

Be realistic about the limitations of technology and access: A mobile strategy must be appropriate to the technology resources of the intended participants. For poor and marginalized communities, it's often best to lead with valuable services that can be used by people with the simplest phones, over the slowest wireless network—text messaging and the mobile web are solid starting points.

Always include training: Though often resource intensive, hands-on training of community members is needed in order for nonprofits and community groups to make the most of mobile solutions. Numerous successes demonstrate that projects by and for underserved communities can succeed, but a significant investment of time and resources is necessary to ensure participants truly understand the opportunities to use their mobile devices to address their needs, issues, and goals.

Focus on Building Powerful Partnerships: Sharing the Work

All mobile practitioners interviewed for this report noted the importance of developing a range of partnerships as a key element in their success. This is true for local as well as national mobile services.

Building trust, building strength through “town and gown” collaborations: From the start, Mobile Voices/VozMob was a partnership between a community-based organization (the “town”) and a local university (the “gown”). Day laborers and domestic workers from the Institute of Popular Education of Southern California (IDEPSCA) teamed up with socially-conscious techies from the Annenberg School for Communication & Journalism at the University of Southern California. A rigorous participatory design process reinforced the partnership and ensured all players contributed value and felt invested.³⁶

Word of mouth and publicity on IDEPSCA's radio show, as well as in an established community newspaper run by members of the VozMob core team, helped publicize the project.

Also, VozMob core team members regularly visit local day labor centers to explain the website and get community members thinking about what kinds of stories they might want to tell through this platform. They train people how to use their phones as media tools, and also help them better understand their cell phone plans so people know what kinds of mobile services will or won't incur extra charges.³⁷

Partners can share mobile program costs: Offering text messaging programs at a regional or national level can become costly once carrier messaging fees, educational materials, and publicity costs are factored in.

Text4Baby brought together several high-profile founding partners to underwrite the program's cost, provide credibility, and help with promotion: the National Healthy Mothers/Healthy Babies Coalition, Johnson & Johnson, mHealth provider Voxiva, and the foundation arm of CTIA (the leading industry organization for wireless carriers).³⁸ The U.S. Department of Health and Human Services also is a leading partner, as are several major health insurance providers and state health departments.

Johnson & Johnson covered much of the initial development costs for the service, as well as the cost to develop and place advertising and marketing materials. Despite this, Text4Baby is scrupulously noncommercial. Text messages sent to mothers contain no advertising or promotional messages related to Johnson & Johnson or any other consumer brand.

By partnering with the CTIA Wireless Foundation, all Text4Baby messages are delivered free by all U.S. wireless carriers. That is, neither Text4Baby nor any subscribers are billed for this service—which has so far sent over 20 million text messages.

Focus on Hackathons and Other Ways to Engage Mobile Developers

Providing any kind of mobile service means teaming up with developers—programmers and designers—who can turn the idea into a reality, keep it functioning, and help adapt it to emerging trends and evolving technology.

Often the most creative, capable, and enthusiastic developers for community-focused mobile projects come from what is known as the hacker community. Though the term “hacker” has been much abused in media coverage of scandals such as computer viruses and identity theft, by and large hackers are smart, creative people who often are the source of great innovations.³⁹

Many organizations and funders with a mission to help underserved communities lack robust ties to the techie/hacker community. Bringing them together with nonprofits through events and projects can yield a wealth of creative and practical solutions to community problems. *SocialCoding4Good* is one project that aims to increase awareness of this new type of tech volunteerism and match developers with projects that can utilize their ideas, skills and time.⁴⁰

Hackathons or Code Sprints: An excellent way to get started on this path is to attend and support “hackathons”—events where hackers get together to collaborate on ways to solve problems and seize opportunities.

Most hackathons last a day or a weekend. Usually there is a general theme to the event and prizes are awarded for the best solutions created during the event. Participants self-organize into teams on-site, meeting new people and strengthening their personal and professional networks. At the end of the event, teams demo their prototyped solutions, which are assessed by a panel of judges who present prizes.

But except for a few notable examples, most hackathons have not included community-based

organizations and nonprofits in the process of designing solutions to community problems. The events have been largely comprised of technologists talking to each other to identify and address their understanding of public concerns. Few of the innovations developed have been adopted by underserved communities.

That said, there are a modest but increasing number of hackathons that are undertaking the intensive community engagement and relationship-building that’s often needed to establish trust and wide-ranging participation. The organizers of these events usually employ aspects of participatory design to generate community input and ongoing engagement (e.g. Creative Currency’s “Collaboration Weekend” partnership with Glide Memorial Church).⁴¹

Code for Oakland was one hackathon that embodied this more robust approach. The goal was to build mobile-enabled solutions to meet pressing needs in the economically challenged city of Oakland, California.⁴²

The event took place in June of 2011 and was organized by a broad coalition of partners representing community groups, city government, local business (including several tech companies), local media organizations (including *Oakland Local*), and more. Code for Oakland also partnered with a larger national initiative, *Code for America*, which recruits teams of developers to work with cities for a year to build and implement digital solutions.⁴³

The partners arranged a community listening session, low-cost access to a local conference center, wi-fi access, free food and t-shirts, and \$5000 in prize money. They also recruited judges, most of whom were stakeholders and community members—not technologists—representing the diversity of Oakland.

One team of hackers who first met and worked together at Code for Oakland went on to win a prize from the national *Apps for Communities Challenge*, sponsored by the Federal Communications Commission and the John S. and James L.

Knight Foundation.⁴⁴ They created *Txt2Wrk*, the innovative service mentioned earlier to help people with limited Internet access find jobs.

Roger Ly, now a lead developer for *Txt2Wrk*, explained that just a couple of weeks before he attended Code for Oakland, he'd been released from a halfway house after serving a prison term. That halfway house, like many transitional housing facilities, did not offer much computer access and did not allow residents to have phones with data plans. This made looking for a job even more challenging.⁴⁵

At Code for Oakland, Ly teamed up with other hackers and attendees who were interested in helping find jobs for workers who tended to be hard to place. His experience inspired the group to find a solution that would be accessible via text message.

The original vision of *Txt2Wrk* has expanded to help all kinds of traditionally underserved job seekers. This project is now being developed as a platform, so organizations with expertise in

field. *Black Girls Code* is a nonprofit that trains women of color to participate in the tech marketplace as builders and exposes them to the possibilities for improving their lives and their communities by utilizing the abundant technological tools around them to create change.

“The value of kids and teens learning programming skills at a young age is immense,” said software engineer Robbie Trencheny.⁴⁶ “They’ll take their programming skills and build mobile services and apps for their communities—because kids like to build things that will work on the tools they already have, and that their friends and family have. They like to show off what they can do.”

He recommends ongoing efforts to teach programming skills to kids, in school or after school. “Supporting that kind of education now, will pay off very quickly in a few years. These kids move very fast. If you want to grow the base of mobile services in a community, help develop developers there.”

We’re now building something that could make a huge difference to people who really need jobs badly right now.... And none of this would have happened if we hadn’t all met and hacked together at Code for Oakland.

specific communities, or with a trusted network of employers, can “roll their own” version of *Txt2Wrk*.

“We’re now building something that could make a huge difference to people who really need jobs badly right now,” said Ly. “And none of this would have happened if we hadn’t all met and hacked together at Code for Oakland.”

Homegrown techies: Teaching youth in underserved communities how to code is an important aspect of bridging the digital divide that can also help spur the development of culturally relevant mobile services.

Although the digital divide is steadily eroding, tremendous barriers remain for the entry of women and people of color into the technology

Recommendations for Funders

MANY SOUND ARGUMENTS NOW EXIST for funders to support underserved communities' use of mobile technology to surmount the digital divide and amplify their social impact.

Yet, the philanthropic sector's investment in mobile strategies continues to be modest, despite hundreds of examples demonstrating the potential for grantees to dramatically leverage their efforts with tools that are nearly ubiquitous.

What then are the barriers to investment, and how can the sector overcome them to support grantees in seizing the significant opportunities?

ZeroDivide's 2011 survey of how U.S.-based foundations were supporting their grantees in using technology for programmatic impact identified several key obstacles to funding that are relevant to mobile.⁴⁷ The funders—varying in size, programmatic emphasis and geographic reach—highlighted the following issues:

- Lack of familiarity and expertise with technology among foundations' decision-makers
- Lack of clarity on funding strategies to foster grantees' use of tech for social impact
- Competing funding priorities—little dedicated funding for grantees' media/tech work
- Lack of clarity on intermediaries to assist foundations, nonprofits with tech strategies

Because the digital divide and technology innovation will continue to be moving targets—fluctuating with social, economic and political developments—crafting funding strategies that address these unpredictable cycles can certainly be a challenge for funders.

However, there are a number of foundations that have engaged early in this space, including community foundations, that have surfaced valuable best practices derived from their experiences.

The sweet spot for funders working with underserved communities lies in increasing the value people can generate from the types of mobile devices and access they already have. For now and the next few years, this means ensuring accessibility—designing projects for feature phone users—and emphasizing the strengthening of community capacity, knowledge, and strategy development.

Key ways funders can support mobile strategies by and for underserved communities:

Fostering Learning

Support research on local mobile usage, ownership: Nonprofits and allied mobile developers need to know this critical information about their constituents in order to assess opportunities and avoid potential pitfalls. The research can be conducted by devising a short mobile survey to yield actionable data.⁴⁸ Foundations can provide funding for conducting the survey and synthesizing and sharing the results.

Support nonprofits' learning: Funders can help nonprofits and community groups learn about the potential of mobile to support their mission by contracting with experts to provide free or low-cost workshops, both in-person and online. They can encourage peer learning by hosting brown bag lunch discussions featuring nonprofits who have implemented a mobile project. Another

er approach is to fund curriculum development and dissemination by intermediaries about what mobile can do and how it can help: case studies, printed how-to guides, best practices, etc.

Promote funder education: Funders can actively support professional development for their staff and their affiliated affinity groups by sponsoring trainings, mini-conferences, brown bag lunches, etc. Several foundations have contracted intermediaries to conduct workshops for their Trustees/Board, in order to promote a more tech-savvy culture and increase understanding of mobile's value across the organization.

Supporting Grantees

Conduct a mobile assessment of grantees, fund mobile elements for existing projects: Many social change efforts that funders are already supporting could be enhanced or expanded with modest investment. For instance, food banks might add a text messaging component to ongoing campaigns for donations of food, money, or volunteer time.

Public health projects might use mobile channels to augment existing distribution of new health information or resources. Every nonprofit could benefit from creating a mobile-optimized version of its website.

Fund a cohort of existing grantees to experiment and generate mobile projects: The David and Lucile Packard Foundation has piloted a similar model focused on social media, contracting expert Beth Kanter to work with a set of grantees regularly over an extended period. Participating organizations meet in a group, in 1-on-1's with Kanter, and online to share learnings, experiment with new tools, and workshop new elements to augment existing campaigns.

Develop a Tech Talent Bank: It can be quite challenging for nonprofits to find community-minded techies and assess their skills and appropriateness for the project. Foundations can play a helpful role by vetting contractors and offering recommendations, just as they often do with organizational consultants—IT staff may be instrumental in this effort. Funders are also investing in efforts to teach coding skills to youth in underserved communities as a longer-term approach to building the pool of local, culturally competent techies (while also creating job opportunities).

Subsidize bulk text messaging: Silicon Valley Community Foundation is underwriting the cost of bulk text messaging for multiple organizations across their Immigration Integration portfolio.⁴⁹ Services like *Mobile Commons* or *TextMarks* bundle message costs and have a strong track record of working with nonprofits.⁵⁰ Another approach is for funders to directly purchase a shortcode for their grantees to share, though this requires more familiarity with technology and possibly a greater cost.⁵¹

Convening Key Stakeholders

Sponsor hackathons and “mobile challenges,” encourage participatory design: Foundations can play a helpful role in bringing together technologists and nonprofits working with underserved populations to foster more culturally-relevant mobile solutions. While hackathons and challenges have proven to be productive sites for techies to collaborate with each other, those that have embraced a participatory approach have generated projects with a high-degree of subsequent usage, and also transformed the nature of the relationships between the participants.

Collaborate on matching funding: Since few foundations are likely to create significant amounts of new funding for grantees' tech/media activities, one successful approach has been to create matching initiatives that aggregate money from several sources. Over the last three years more than 83 community and place-based foundations have co-funded new media projects in their region, incentivized by a cash match from The John S. and James L. Knight Foundation's Community Information Challenge.⁵² Mobile presents a strong opportunity for funders with similar geographic or programmatic focus to collaborate.

Convene potential partners from different sectors: Most successful noncommercial mobile programs rely on a network of partners, from sponsors to government to educational institutions and more. Short of providing funding, the power to convene is one of the greatest values that funders can bring to a grantee's project. In addition to facilitating connections, funders can assist community organizations in assessing which types of partnerships make the most sense for their particular situation.

Expanding the Audience

Provide translation and localization support for existing mobile offerings: Language barriers often keep immigrant communities distanced from opportunities. Simply funding translation of existing mobile services, websites, and apps can go a long way to engaging and serving these communities without having to start from scratch. Similarly, incorporating geolocation features into existing projects can increase relevancy and engagement - though privacy and security concerns should not be overlooked, especially for more vulnerable populations.
(see **Appendix C: Resources**)



CONCLUSION

Mobile strategies provide tremendous opportunities for funders interested in strengthening grantees' social impact and generating a strong return on investment. The technology required is (relatively) inexpensive, nearly ubiquitous and already in the hands of underserved communities.

Unfortunately, despite many proven successes, clear best practices, and numerous available approaches, funding for U.S.-based projects still lags significantly behind international deployments.

We encourage our colleagues in the philanthropic sector to ramp up their learning around mobile so that they can make wise and timely investments that augment their grantees' efforts and outcomes. Playing catch-up with technology can be costly and inefficient, and the social sector is already quite behind.

The future is mobile—and so is the present.



Z E R O D / V / D E TM
COMMUNITY / TECHNOLOGY / OPPORTUNITY

Appendix A: Citations

- 1 Global Mobile Trends by CultureLabel.com, March 2012, <http://bit.ly/HAIRWR>
- 2 Digital Differences, Pew Internet and American Life Project, April 13, 2012: <http://bit.ly/ITsSSw>
- 3 A Survey of Technology-Related Grantmaking, Perlstein, ZeroDivide, March 2011
- 4 See MobileActive.org for a comprehensive listing of initiatives, <http://mobileactive.org>
- 5 Interview with Katrin Verclas, Co-founder and Editor of MobileActive, September 14, 2010
- 6 In Search of Digital Equity: Assessing the Geography of the Digital Divide in California, Ali Modarres, December 2008: <http://scr.bi/HMxkTW>
- 7 Pew Internet and American Life Project – Device Ownership, February 2012: <http://bit.ly/HgOuao>
- 8 Digital Differences, Pew Internet and American Life Project, April 13, 2012: <http://bit.ly/ITsSSw>
- 9 Smartphones as Internet Appliance, Pew Internet and American Life Project, July 2011: <http://bit.ly/AhPpf1>
- 10 Connected Hispanics and Civic Engagement, The Hispanic Institute, May 2011: <http://bit.ly/xdWLV4>
- 11 “The New Digital Divide,” Susan P. Crawford, The New York Times, December 3, 2011
- 12 comScore Reports December 2011 U.S. Mobile Subscriber Market Share: <http://bit.ly/yP25ql>
- 13 Verizon Wireless customer agreement, Jan. 17, 2012: <http://bit.ly/xifptZ>
- 14 Average U.S. Smartphone Data Usage Up 89% as Cost per MB Goes Down 46%, The Nielsen Company, June 17, 2011: <http://bit.ly/yU9pIN>
- 15 New Mobile Obsession: U.S. Teens Triple Data Usage, The Nielsen Company, December 15, 2011: <http://bit.ly/ya9Ux1>
- 16 Electronic Redlining: Racism on the Information Superhighway?, Chad Kahl, 1997: <http://bit.ly/J8xW5a>
- 17 The Mobile Frontier, webinar by Convio and Network for Good, February 2012
- 18 MedicMobile is an award-winning project that makes use of the groundbreaking FrontlineSMS functionality, which was initially launched in 2005: <http://medicmobile.org/>
- 19 SexINFO, operated by Internet Sexuality Information Services (ISIS), was the first text messaging service for youth in the U.S.: <http://www.isis-inc.org/sexinfo.php>
- 20 For examples of mobile-optimized web sites, see: Mobile Web Design: Tips and Best Practices. Noupe.com, Feb. 9, 2010: <http://bit.ly/yIjlue>. Also, many free open source web-building tools, such as Wordpress, make it easy to find and apply a mobile design (theme) to a web site. Third-party online tools such as Mobify.me help create and deliver a mobile site based on an existing conventional full website.
- 21 How Nextbus.com works on a mobile device: <http://bit.ly/xxMvXn>
- 22 How SeeClickFix.com works: <http://bit.ly/xYD8wc>
- 23 “This App Could Save Your Life” Wall Street Journal, May 27th, 2011: <http://bit.ly/HHLVe1>
- 24 MePorter.com information: <http://bit.ly/x1O3Vy>
- 25 Obama, Romney Campaigns Adopt Square for Mobile Donations, by Leslie Horn, PC Magazine, Jan. 31, 2012: <http://bit.ly/yLVmYp>
- 26 Pew Internet and American Life Project, Jan. 23, 2012



- 27 Nearly 5 million immigrants and first-generation U.S. citizens own a tablet PC device, Rebtel research report, Feb. 23, 2011: <http://bit.ly/zF23M8>. This research was done before the launch of the Kindle Fire
- 28 Tablet and E-book reader Ownership Nearly Double Over the Holiday Gift-Giving Period, by Pew Internet and American Life Project, Jan. 23, 2012
- 29 Why Amazon would be smart to give away the Kindle, CNN.com, Amy Gahran, March 4, 2011: <http://bit.ly/xO9E14>
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- 31 Americans and Text Messaging, Pew Internet and American Life Project, Sept 19, 2011: <http://bit.ly/xnYLFt>
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- 36 Interview, Costanza-Chock, January 17, 2012.
- 37 Community engagement tips: Help people understand their phones and use them as media tools: interview with VozMob coordinator Pedro Joel Espinosa, by Amy Gahran, for the Knight Digital Media Center at USC Annenberg, Feb. 3, 2012: <http://bit.ly/Akmgbk>
- 38 Text4Baby partners: <http://bit.ly/y8eLsJ>
- 39 Eric Steven Raymond, How to become a hacker, 2001: <http://bit.ly/xRwIBt>
- 40 SocialCoding4Good is an initiative of Benetech, funded by a generous grant from the Knight Foundation via Silicon Valley Community Foundation: <http://socialcoding4good.org>
- 41 Co-sponsored by Gray Area Foundation for the Arts, this "Collaboration Weekend" developed a unique partnership with community-based service provider Glide Memorial Church: <http://bit.ly/HQxhm4>
- 42 Code for Oakland, June 4, 2011: <http://codeforoakland.org>
- 43 Code for America: What we do: <http://c4a.me/wS1GbZ>
- 44 Apps for Communities: <http://appsforcommunities.challenge.gov>
- 45 Interview with Roger Ly, software developer, Txt2Wrk, January 18, 2012.
- 46 Interview with Robbie Trencheny, software engineer, January 20, 2012
- 47 Amplifying Social Impact in a Connected Age: A Survey of Technology-Related Grantmaking, Perlstein, ZeroDivide, March 2011
- 48 Example of a quick survey for local mobile market research, by Amy Gahran, Knight Digital Media Center at USC Annenberg, Sept. 23, 2011: <http://bit.ly/pZQkpz>. This survey was intended to ascertain opportunities for community-based hyperlocal news and information, but can be adjusted for other uses.
- 49 Interview with Manuel Santamaria, Silicon Valley Community Foundation, December 5, 2011
- 50 Mobile Commons info: <http://bit.ly/xY0ctg>
- 51 According to the U.S. Common shortcode Administration: "Registering and leasing a CSC costs \$1,000 per month for each "Selected CSC" and \$500 per month for each 'Random CSC.' These fees are non-refundable regardless of whether any wireless carrier agrees to activate your shortcode." <http://bit.ly/Aky3BS>
- 52 Knight Community Information Challenge, program information and application: <http://bit.ly/whS7NM>

Appendix B: Interviewees

We wish to thank each of the experts listed below for their participation in interviews with Amy Gahran for this paper. Though not every one of them is quoted directly in the final text, each one's comments inform the findings and recommendations throughout this paper.

Lauri Burns, founder, The Teen Project:

<http://theteenproject.com/>.

Interview Jan. 17, 2012.

Sasha Costanza-Chock, founder of Mobile Voices, co-director of the Center for Civic Media at the Massachusetts Institute of Technology:

<http://vozmob.net>, <http://civic.mit.edu>.

Interview, Jan. 17, 2012.

Pedro Joel Espinosa, coordinator, Mobile Voices:

<http://vozmob.net>, <http://bit.ly/Akmgbk>.

Interview Feb. 3, 2012.

Emilia Guasconi, marketing manager, Voxiva and Text4Baby:

<http://www.voxiva.com>, <http://text4baby.org>.

Interview Jan. 17, 2012.

Roger Ly, software developer, Txt2Wrk:

<http://txt2wrk.net>.

Interview Jan. 18, 2012.

Mary Monahan, author of “Engaging the Underbanked and Unbanked in the U.S.”:

<http://bit.ly/wEd1v4>.

Interview Jan 12, 2012.

Bill Moore, CEO, Rootmetrics:

<http://rootmetrics.com>.

Interview Jan. 26, 2012.

Robbie Trencheny, software engineer:

<http://robbie.io/>.

Interview Jan. 20, 2012.

Kathryn Zikuhr, research analyst, Pew Internet and American Life Project, author of Digital Differences:

<http://bit.ly/ITsSSw>.

Interview Jan. 10, 2012.

Appendix C: Resources

For a clickable version of this list, visit http://zerodivide.org/resources_mobile

General – An Initial List:

Apps for Communities Challenge	http://appsforcommunities.challenge.gov/
MobileActive	http://mobileactive.org
Mobile Commons	http://www.mobilecommons.com/
Ushahidi	http://ushahidi.com
Wireless Innovation Project	http://project.vodafone-us.com/

Articles and Reports – A Sample:

Dialed In: A Toolkit to Liberate Your Cell Phone	http://bit.ly/lx0WID
Evaluating mHealth Adoption Barriers	http://bit.ly/lctkrX
Opportunities in Mobile Health	http://bit.ly/l83855
Pew Internet and American Life Project	http://www.pewinternet.org/
Reform Immigration with your Cell Phone	http://bit.ly/HXG7PK
The Mobile Frontier: Successful Strategies	http://slidesha.re/lkGuFM

Privacy and Security Issues:

The Guardian Project	https://guardianproject.info/
Mobile Security via MobileActive.org	http://bit.ly/SecureMA

Projects Mentioned in Paper - In order, if not already mentioned above:

MedicMobile	http://medicmobile.org
Internet Sexuality Information Services	http://isis-inc.org
Txt2Wrk	http://txt2wrk.net/
Text4Baby	http://text4baby.org
Mobile Voices/VozMob	http://vozmob.net
WITNESS' The Hub	http://hub.witness.org
NextBus	http://nextbus.com
CitizenshipWorks	http://citizenshipworks.org
Ushahidi	http://ushahidi.com
Imperial Visions Action Network	http://www.ivanonline.org/

Fresno BusTracker	http://www.theknowfresno.org/ushahidi/
SeeClickFix	http://seeclickfix.com
CPR Smartphone App	http://firedepartment.mobi/
MePorter.com	http://MePorter.com
Piggymojo	http://piggymojo.com
Square	http://squareup.com
Smart Screen by Epion	http://www.epionhealth.com/smartScreen.htm
Merge Healthcare	http://merge.com
The Queens Library	http://bit.ly/IN9Ue5
Community Information Challenge, Knight Foundation	http://bit.ly/J67rcH
TextMarks	http://textmarks.com
Text2Shelter	http://theteenproject.com/teenproject-app.asp
Voxiva	http://voxiva.com
SocialCoding4Good	http://socialcoding4good.org/
Creative Currency	http://creative-currency.org/
Code for Oakland	http://codeforoakland.org
Oakland Local	http://oaklandlocal.com
Code for America	http://codeforamerica.org
Black Girls Code	http://blackgirlscore.com