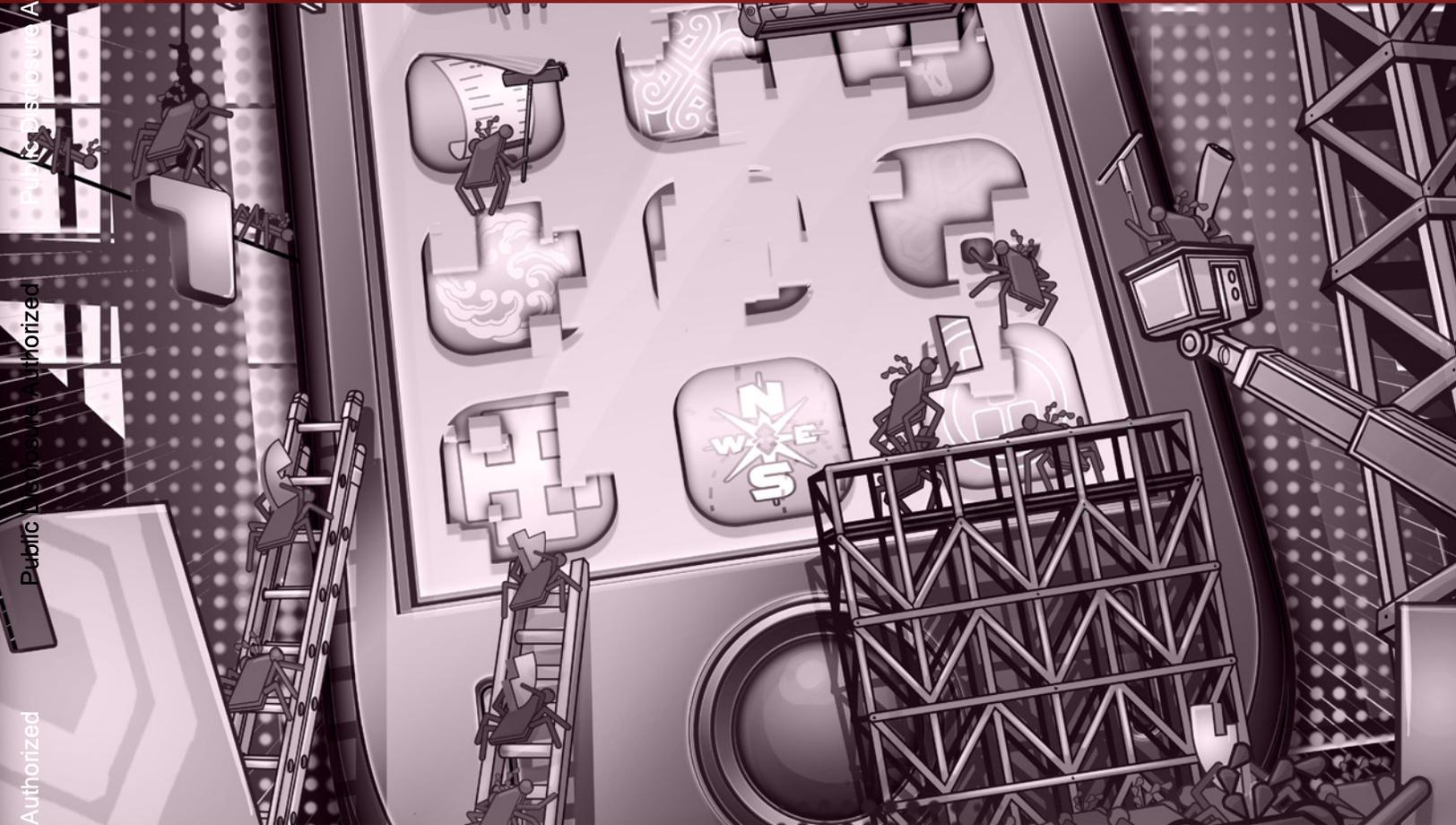


# Guiding Ideas from Mind to Market

Learning from infoDev's Mobile Microwork Innovation Competition



THE WORLD BANK

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# Guiding Ideas

## from Mind to Market

Learning from infoDev's Mobile Microwork  
Innovation Competition



THE WORLD BANK

The report “Guiding Ideas From Mind to Market: Learning from infoDev’s Mobile Microwork Innovation Competition” is available at <http://www.infodev.org/m2Work>.

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## About infoDev

infoDev, a global trust fund program in the Financial and Private Sector Development Network of the World Bank Group, supports growth-oriented entrepreneurs through creative and path-breaking venture enablers. It assists entrepreneurs to secure appropriate early-stage financing; convening entrepreneurs, investors, policymakers, mentors and other stakeholders for dialogue and action. We also produce cutting-edge knowledge products, closely linked to our work on the ground.

## About infoDev's Mobile Innovation Program

infoDev's Mobile Innovation Program supports growth-oriented mobile app businesses in emerging and frontier markets. infoDev does this by 1) enabling entrepreneurship in the mobile industry, through venture incubation and acceleration, 2) building mobile innovation communities of entrepreneurs, investors, partners, and mentors, 3) researching the app economy of emerging and frontier markets. The backbone of infoDev's Mobile Innovation program is a global network of Mobile Innovation Labs (mLabs) and Mobile Social Networking Hubs (mHubs), rolled out across eleven countries.

## For More Information

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This report discusses infoDev's From Mind to Market methodology that was designed to bridge early-stage innovation support gaps and guide promising business ideas on the path to sustainability. The multitiered mobile microwork innovation competition, "m2Work," was the pilot for the methodology within infoDev's Mobile Innovation Program. More information on the program can be accessed at [www.infoDev.org/workprogram](http://www.infoDev.org/workprogram).

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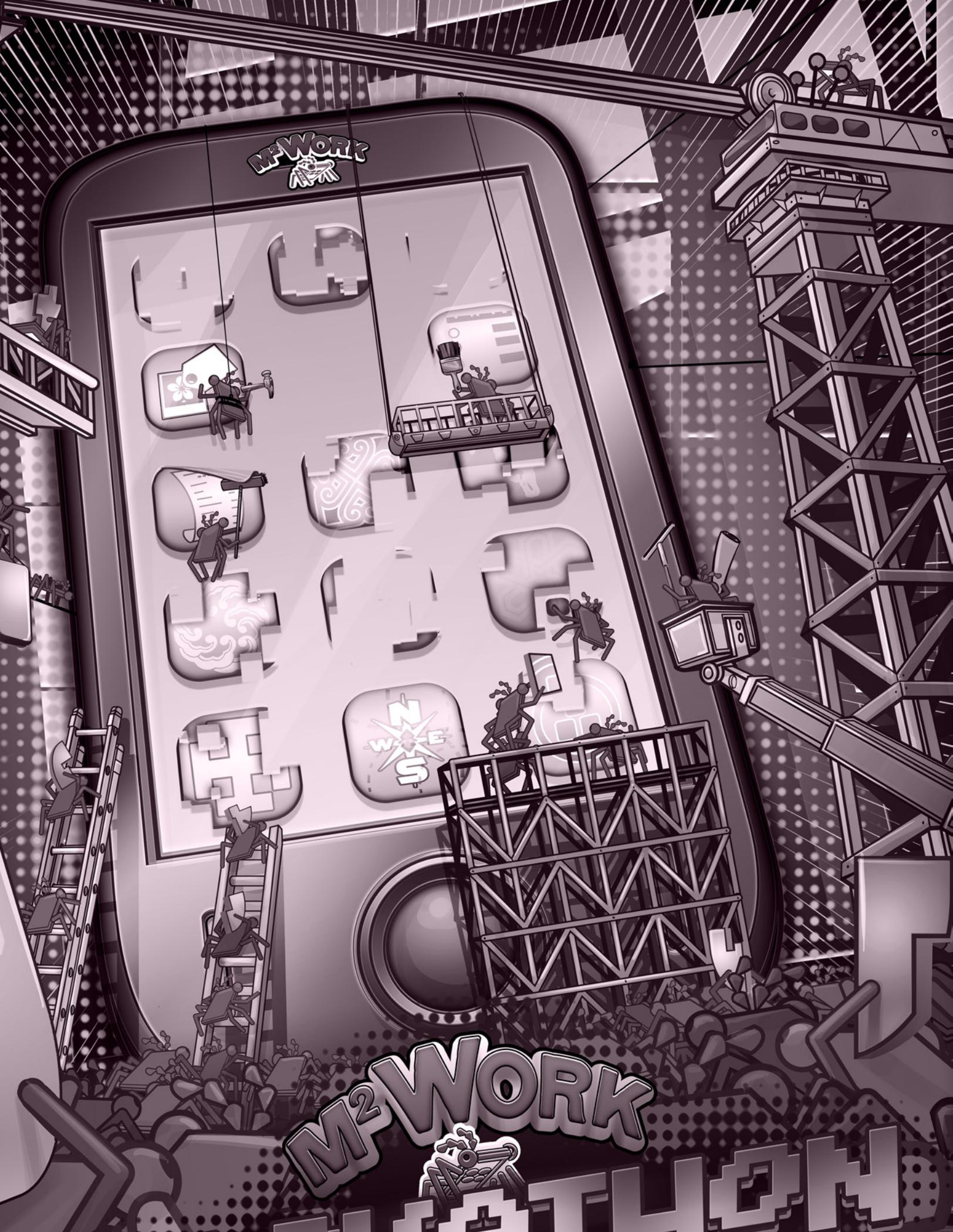
The m2Work Hackathon would not have been possible without proactive and efficient global facilitation by Young Innovations Pvt. Ltd. of Nepal. The four mLabs in Vietnam, Armenia, South Africa, and Kenya were strong local implementation partners. mLabs and Young Innovations in Nepal partnered with many local organizations to run the hackathon successfully: Nokia Vietnam and FPT Software in Vietnam; Samsung, Safaricom, Emobilis, Isis Software, and iHub in Kenya; Microsoft Innovation Center, Arm-Indian Center of Excellence, Gyumri Information Technology Center, Armenian Datacom Company, and Red Bull in Armenia; Nokia, Microsoft, BlackBerry, Qualcomm, Vodacom, CSIR, The Innovation Hub, University of Pretoria, The e-skills Institute, and the South African Innovation Network (SAINe) in South Africa; Microsoft Innovation Center Nepal, Google Developers Group (GDG) Nepal, CSIT Association of Nepal, Robotics Association of Nepal (RAN), Nepal Open Source Klub (NOSK), LOCUS, and Worldlink in Nepal.



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# EXECUTIVE SUMMARY



infoDev's "From Mind to Market" approach was designed to bridge early-stage innovation support gaps and guide promising ideas on toward minimum viable products, ultimately turning them into sustainable businesses. The approach aims to source ideas from a large talent pool and spur the best innovators to turn their innovations into sustainable, growth-oriented start-ups. The method combines open innovation and competition models with infoDev's grassroots incubation network.

The primary goal is start-up creation. Secondary goals include the generation of pools of ideas and prototypes, the creation of basic topical knowledge for a large group of innovators, and broader awareness-raising around a new topic, as well as partnership and capacity-building for implementation partners.

This report summarizes the "From Mind to Market" approach, which is based on four steps: (1) the identification of a novel topic with market potential and high potential for international development; (2) the implementation of a broad-based collaborative, open innovation competition; (3) the implementation of an activity that forges minimum viable products through face-to-face support at sites across the globe; and (4) the follow-up with a program of incubation and acceleration for the best and most committed innovators.

This methodology was first tested in infoDev's multitiered mobile microwork innovation contest "m2Work." The project aimed to tie global innovation competition elements together with infoDev's network of mobile app entrepreneurship enablers on the ground. For coverage of five regions, the project drew on infoDev's four mLabs—physical incubators for mobile app businesses—in East

Asia (Vietnam), Southern Africa (South Africa), East Africa (Kenya), and Eastern Europe, Caucasus, and Central Asia (Armenia), as well as on the mobile social networking hub, or mHub, that infoDev had seeded in Nepal. UKaid and the government of Finland funded m2Work.

In the first stage of 2011, infoDev's Knowledge Map of the Virtual Economy had revealed the potential of mobile microwork for job creation in developing countries. "Microwork" refers to small, instant tasks that can be completed for pay on mobile phones worldwide.

As the second stage, the global m2Work Idea Challenge solicited ideas for mobile microwork applications on Nokia's IdeasProject platform from February to early April 2012. In April, the six regional finalists received business coaching from microwork and mobile experts. In mid-May, a high-level jury tapped the winner and runner-up.

As the third stage, the m2Work Hackathon in September brought together app coder teams at five sites to develop microwork ideas into prototypes and business models. At the fourth stage, mLabs and mHub Nepal offered follow-on incubation and acceleration to several promising teams.

This report analyzes if the "From Mind to Market" methodology that m2Work piloted should be integrated into infoDev's larger Mobile Innovation agenda and, if so, how future editions should be implemented in collaboration with on-the-ground entrepreneurship enablers, such as mLabs and mHubs. Aside from conceptualization of the four-step framework, the paper depicts the outcomes of the m2Work pilot and derives three concrete lessons learned.





As of March 2013, the core results of m2Work included the following:

- Four people launched start-ups out of an intended five, with at least 22 people still planning to launch their apps.
- Nearly 1,000 ideas were submitted to the Idea Challenge, of which 95 percent came from developing economies.
- During the m2Work Hackathon, 301 app developers in five countries formed 61 teams that each developed an app prototype and business model.
- Substantial awareness was created for mobile microwork, illustrated by the popularity of m2Work media both for the Idea Challenge and Hackathon.
- m2Work created valuable implementation capacity and expertise, especially for infoDev and its mLabs and mHubs (such as toolkits, templates, benchmarks, strategies, partnerships, and tacit implementation knowledge).

The report derives three key lessons:

- Focus support on the most committed, and support them well: Commitment to follow through on an initial idea should be built into incentives for participation in the project (for example, offering mentoring and incubation as a prize). Expectations need to be communicated clearly at the beginning. Well-structured follow-through support after competitions is vital to bring products to market.
- Activate communities locally, but interlink them globally: Even for global competitions, local, face-to-face outreach and training are crucial to achieve a high quantity, quality, and continuity of engagement. Local finalists and winners should receive exposure and experience through competing regionally and internationally. Virtual cross-country collaboration requires dedicated community leaders and value-adding exchange channels.
- Make a strong effort for viable partnership models: It is necessary to plan in sufficient time and resources for partnership building in order to expand the reach and depth of activities. Elaborate partnership models can strengthen the effect of event and competition-based support models, providing branding, outreach channels, and unique support resources.

Future “From Mind to Market” projects will improve on the approach piloted in m2Work. For instance, entrepreneurial commitment will be a stronger selection criterion for award winners, and events and support will have more targeted outreach locally, regionally, and globally, with stronger partnership models in place.

The report finds that m2Work was a successful starting point toward more effective entrepreneurship support projects for very early-stage innovators, along with being a rich learning exercise for infoDev and its network of mLabs and mHubs. Future editions will build on the lessons to create a greater number of innovative, sustainable start-ups, and make the network of mHubs and mLabs more than the sum of its parts.

# OBJECTIVE OF INFODEV'S "FROM MIND TO MARKET" APPROACH



infoDev's "From Mind to Market" approach aims to source ideas from a large talent pool and spur the best innovators to turn their innovations into sustainable, growth-oriented start-ups.

The method combines open innovation, crowdsourcing, and competition models with infoDev's grassroots incubation network of mobile innovation labs (or mLabs) and mobile social networking hubs (or mHubs). (See Box 1.) Success is measured in actual start-ups catalyzed. It is better to have ten participants and five viable companies than 10,000 ideas with no follow-through. Secondary goals include the generation of pools of ideas and prototypes, the creation of basic topical knowledge for a large group of innovators, and broader awareness-raising around a new topic, as well as partnership and capacity-building for implementation partners.

In other words, the "From Mind to Market" approach in the first stages creates a safe space for quick, painless "learning by doing" for many. An open participation model enables inspiration and empowerment for a large group of innovators, who often have no previous knowledge or experience.

In the later stages, competition and selection help to promote those ideas and innovators that have what it takes to establish growth-oriented and sustainable start-ups. The model is also designed to turn challenges into solutions: it aims to show potential innovators and entrepreneurs worldwide the path to launching a profitable venture, while assisting infoDev's entrepreneurship enablers on the ground (such as mLabs and mHubs) in finding new talent in client countries.

*"It is better to have ten participants and five viable companies than 10,000 ideas with no follow-through."*



Photo credit: mLab Southern Africa

## Box 1: mLabs and mHubs

### mLabs

mLabs offer specialized mobile business incubation—in particular, physical workspaces and state-of-the-art equipment, back-office support, testing facilities, and technology-neutral platforms. While they also organize ecosystem-building programs, their focus is on supplying the capital-intensive resources small entrepreneurs need to test their products, and to develop the relevant technical skills and business know-how to turn scalable mobile solutions into thriving businesses. Currently, there are four regional mLabs in operation, in Armenia (pictured), Kenya, South Africa, and Vietnam.



Photo credit: mLab ECA



Photo credit: Young Innovations Pvt. Ltd.

### mHubs

mHubs are multi-stakeholder networks that organize informal gatherings on topics related to mobile technologies, competitions for entrepreneurs, local businesses, individual users, and peer-learning sessions. They also run training and mentorship programs and conferences. Through these activities, mHubs are able to map communities in the mobile industry ecosystem and help strengthen personal relationships between entrepreneurs, developers, network operators, device manufacturers, investors, marketing specialists, and students. Eight mHubs are in operation, in Nepal (pictured), Azerbaijan, Georgia, Kenya, Moldova, Tanzania, Uganda, Vietnam and additional hubs are planned for the Caribbean.



**Table 1: mLab and mHub Service Offerings**

Service portfolio options	mLab	mHub
Networking, e.g., thematic presentations followed by informal discussions	Yes	Yes
Multi-stakeholder, national-level conferences	Option	Yes
Online learning, collaboration and discussions	Option	Yes
Mentorship by successful entrepreneurs and investors	Yes	Option
Technical and business skills training	Yes	Option
Competitions to identify most promising product ideas and prototypes	Yes	Option
Office space at subsidized costs for limited periods of time	Yes	No
Mobile app testing facilities	Yes	No
Formal incubation program	Yes	No
Assistance with marketing apps (e.g., advice on pricing, delivery channels)	Yes	Option
Assistance with access to early-stage finance (investor network)	Yes	Option
Access to seed funding	Option	Option

NB: in each case, the combination of options varies according to demand, and some options, e.g., provision of seed investment, require additional funding.

\* Option: Advanced mHubs can implement this activity, for instance, if assisted by mLabs.



Photo credit: mLab Southern Africa



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# INTRODUCTION



Innovation is not a mechanistic, linear phenomenon. For an idea to become a new product or business, creativity will have to meet pragmatism—that is, the vision needs to be checked by reality. Hence, any approach to innovation support needs to consider that many aspects have to come together for an idea to be developed and sustained in a real-world project with palpable impact.

This implies that enormous potential remains untapped in the early stages of innovation when risks are high and concepts still unproven. Motivational and informational imbalances, as well as shortcomings of support institutions in the gap between basic research at universities and corporate research and development, can

structurally inhibit private sector activity in early-stage technology innovation, calling for support interventions in this space.<sup>1</sup>

On the other hand, the potential of crowdsourcing innovation—by sourcing ideas from large interconnected groups of individuals, mostly with limited expertise—can be a highly efficient way to bring about compelling products and new perspectives. Still, mechanisms that can successfully tap into the intellectual potential of

.....  
1 Auerswald, P.E. and L.M. Branscomb. 2003. "Valleys of Death and "Darwinian Seas: Financing the Invention to Innovation Transition in the United States." *The Journal of Technology Transfer*, Vol28, Is 3-4: 227-239; Heydebreck, P., Klofsten, M., and J.

## Box 2: Why Mobile Innovation for Development?

Innovation and entrepreneurship are key drivers of development. Among the most vibrant areas with potential for entrepreneurship-led growth are mobile applications (called "apps"). Mobile phones have created the largest communication and transaction platform in history: around three-quarters of the world's population use mobile phones. Mobile access has been linked with economic growth potential. The industry itself boosts the economy by providing high-value jobs. The tremendous growth of app usage is forecast to continue and further increase over the coming years, implying enormous potential for app entrepreneurs and software developers. Mobile apps also catalyze new activity in other sectors, such as healthcare and government.

App entrepreneurs do face substantial challenges in fledgling innovation ecosystems of developing countries. They might have unique insights into local circumstances and abundant creativity, but they often lack professional networks, favorable policy environments, information access, business skills, mentors, spaces for exchange, and access to investors. In most cases, ecosystems also have to integrate policy makers, mobile network operators, investors, donors, and so forth, for mobile app entrepreneurs to thrive.

For more information on mobile communication, see <http://www.worldbank.org/ict/ic4d2012> and [http://unctad.org/en/PublicationsLibrary/ier2012\\_en.pdf](http://unctad.org/en/PublicationsLibrary/ier2012_en.pdf).



hundreds of minds are not easy to gauge. Mostly, incentives for collaboration have to be interwoven with competitive selection in order to align the goals of the support intervention with innovators' complex motives and varying strategic behaviors.<sup>2</sup>

In sum, any innovation competition design needs to consider how to align outreach and incentive-setting with its objectives. Is the goal to get a large number of people to commit five minutes of attention, or a small number of people to dedicate a part of their career to following through on their contribution? There will often be fine balances to strike and trade-offs to weigh. It is beyond the scope of this report to review the emerging literature on incentive-setting and innovation competitions at length.<sup>3</sup> As the bottom line,

2 Bullinger, A. C., Neyer, A.-K., Rass, M, and K.M. Moeslein. 2010. "Community-Based Innovation Contests: Where Competition Meets Cooperation. *Creativity and Innovation Management*," Vol. 19 (3): 290-303; Blohm, I., Bretschneider, U., Leimeister, J. M., and H. Krcmar. 2010. Does Collaboration among Participants Lead to Better Ideas in IT-Based Idea Competitions? An Empirical Investigation. *Proceedings of the 43rd Hawaii International Conference on System Sciences*, p. 1-10.

3 Useful overviews and literature reviews can be found in the following: Murray, F., Stern, S., Campbell, G., and A. MacCormack. 2012. "Grand Innovation Prizes: A Theoretical, Normative, and Empirical Evaluation." *Research Policy*, Vol. 41 (10), 1779-1792; Campbell, G. A. 2011. *Incentive Competitions as a Policy Tool for Technological Innovation*. Sloan School of Management Thesis, Massachusetts Institute of Technology.

designers are advised to be clear on their objectives and not see innovation competitions as a panacea that can solve all innovation support problems at once. Different designs will tackle various gaps, and more often than not, it will be advisable to focus on fewer core objectives. For instance, an innovation competition that wants to build awareness for a topic as its top priority will look very different from one that wants to generate start-ups as the core objective.

infoDev's "From Mind to Market" approach was designed to bridge early-stage innovation support gaps and guide promising ideas toward minimum viable products, ultimately turning them into sustainable businesses. Based on the belief that entrepreneurship is a powerful enabler of sustainability, success is measured not just in terms of participation, but in actual start-ups catalyzed. The model integrates crowdsourcing and focused entrepreneurship support, in an effort to turn challenges into solutions. It aims to show potential innovators and entrepreneurs worldwide the path to launching a profitable venture, while assisting infoDev's entrepreneurship enablers on the ground in finding new talent in client countries.

This is in line with infoDev's core goals: identifying and tackling barriers for technology entrepreneurs in developing countries. All of its activities target early-stage innovation and growth-oriented entrepreneurs.



Of infoDev's work streams,<sup>4</sup> Mobile Innovation seemed particularly suited to the "From Mind to Market" methodology as billions of mobile application users and millions of developers and entrepreneurs across the globe occupy the space. Moreover, several market entry barriers (such as cost for start-up setup and technological equipment) are relatively low for mobile app companies compared to other industries (see Box 2). This creates the conditions for successful crowdsourcing campaigns and makes it possible to facilitate start-up creation in a lean process.

Hence it was logical for infoDev to explore its Mobile Innovation work stream for an opportunity to try out the "From Mind to Market" approach. By early 2012, infoDev's mHubs and mLabs had become the backbone of the Mobile Innovation program. In 2012, four mLabs had started incubating and supporting app developers and start-ups, and all eight mHubs were running community-building activities for mobile app entrepreneurs. The challenges and needs of mHubs and mLabs, of course, varied but it was clear that key tasks for infoDev would be to help peer-learning between mHub and mLab managers, build their partnership locally and globally to support their sourcing of talent, and provide opportunities for collaboration on a global scale—making the network greater than the sum of its parts.

Incidentally, in 2011, infoDev's Knowledge Map of the Virtual Economy had revealed the potential of

4 infoDev's complete work program can be accessed at <http://www.infodev.org/workprogram>.

mobile microwork for job creation in developing countries—small, instant tasks that can be completed for pay on mobile phones worldwide. In an effort to tie this promising topic and the functioning grassroots network of mHubs and mLabs together, infoDev launched the m2Work project in 2012 to pilot the "From Mind to Market" concept. With core funding from UKaid and the government of Finland, the infoDev and mLab teams collaborated with Nokia and other private partners to create a multitiered program, described in the following pages.

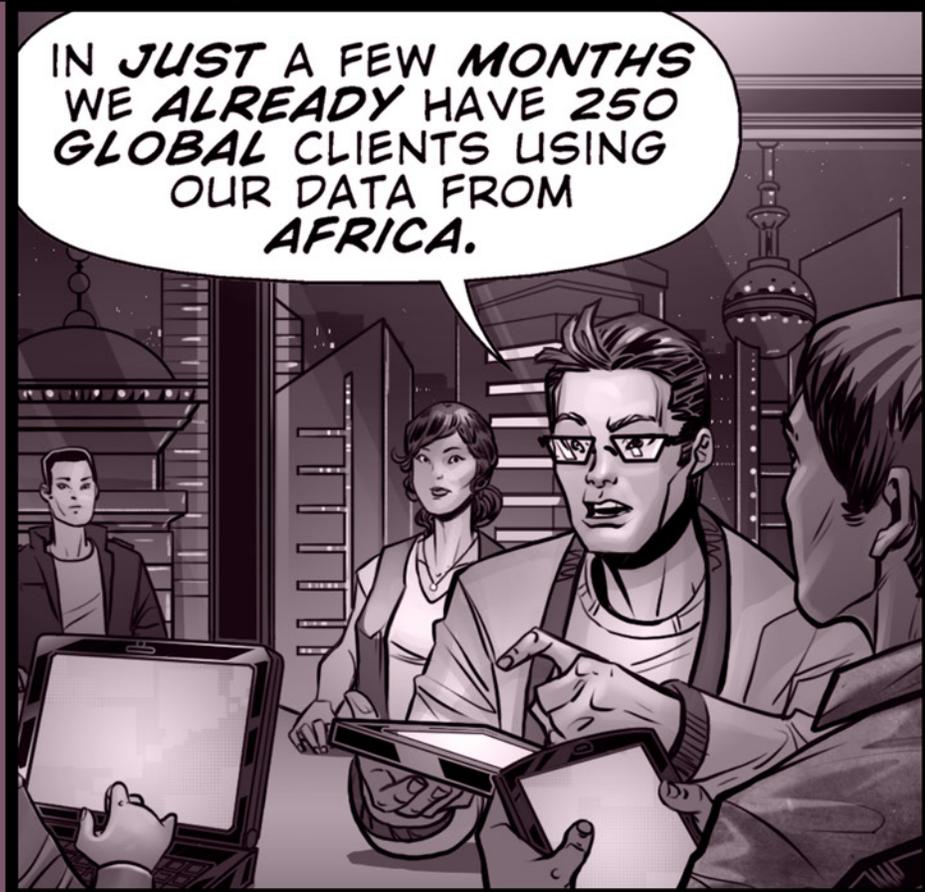
This report aims to analyze if the "From Mind to Market" methodology that m2Work piloted should be integrated into infoDev's larger Mobile Innovation agenda and, if so, how future editions should be implemented. To do this, it will describe the approach using the m2Work example, assess the core results of m2Work, highlight the key lessons learned from the pilot, and lastly present refinements for the methodology approach. The analysis will be useful to the following:

- infoDev and start-up enablers within and outside of its network (such as tech hubs, incubators, and accelerators)
- Donors and partners of infoDev's Mobile Innovation activities
- Researchers and practitioners working in the innovation for development space





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# “FROM MIND TO MARKET” THROUGH THE EXAMPLE OF m2WORK



## Overview: m2Work as the “From Mind to Market” Pilot

The “From Mind to Market” approach can be described as the integration of crowdsourcing tools with hands-on start-up support. The approach seeks growth-capable ideas from fragmented, untested innovators on a global scale, rather than the usual well-established ventures. The follow-through happens locally through direct and comprehensive business support at infoDev’s mLabs and mHubs. The four major steps are summarized in Figure 1.

The m2Work project of 2012 served to pilot the methodology. After the topic of mobile microwork had been identified in the 2011 Knowledge Map of the Virtual Economy (Step 1), m2Work began with a global Idea Challenge (Step 2) that sought to attract a large pool of participants with high-risk, high-reward measures, such as

minimal submission requirements and no-strings-attached prizes. The m2Work Challenge enabled the core infoDev team to engage directly with innovators and to constantly refine its approach in response to client feedback, discussions, and questions. The team was thus able to spot problem areas—such as confusion around the concept of mobile microwork or lack of motivation—and to address them.

In September 2012, the m2Work Hackathon (Step 3) was an attempt to follow up the Idea Challenge with grassroots, client-driven activity that would generate seeds of app start-ups. The global event consisted of 48-hour coding sessions at five sites—all four operational mLabs and the mHub in Nepal.<sup>1</sup> While infoDev monitored the activity, the direct control for the events was handed over to the mHub and mLabs as local enablers. mHub Nepal

1 The mHub in Nepal operates under the brand “MobileNepal” (<http://mobilenepal.net>) and is run by Young Innovations Pvt. Ltd.

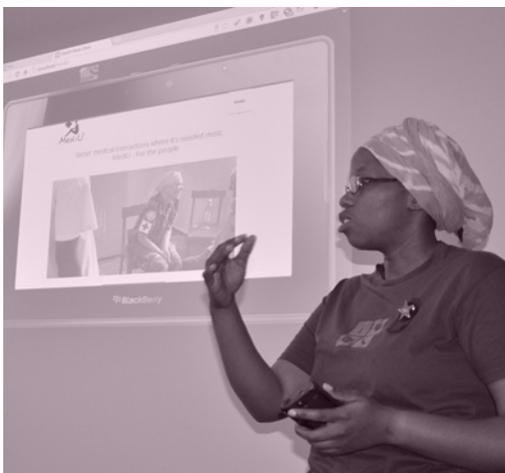
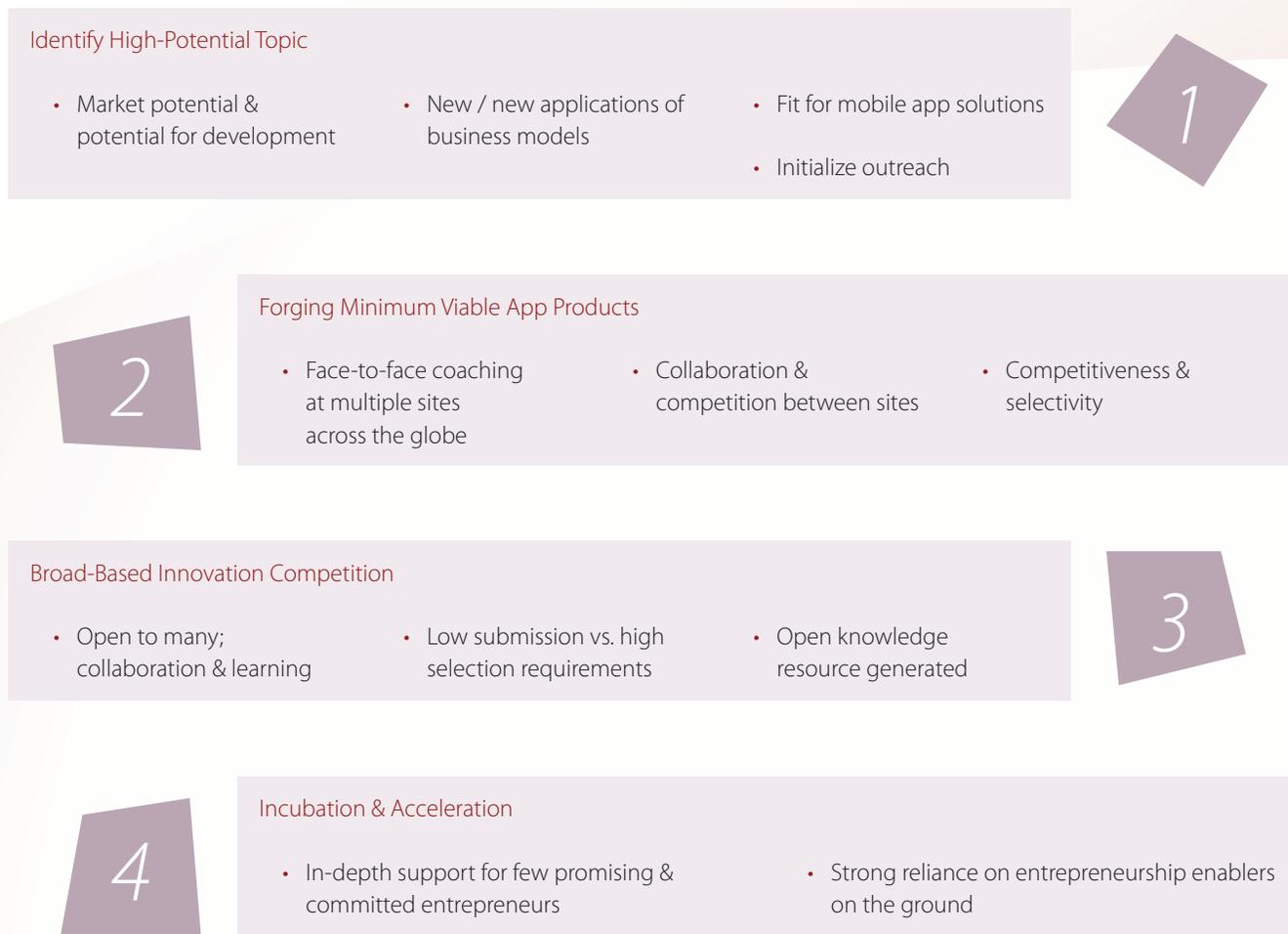


Photo credit: mLab Southern Africa



**Figure 1: The Four Major Steps of “From Mind to Market”**



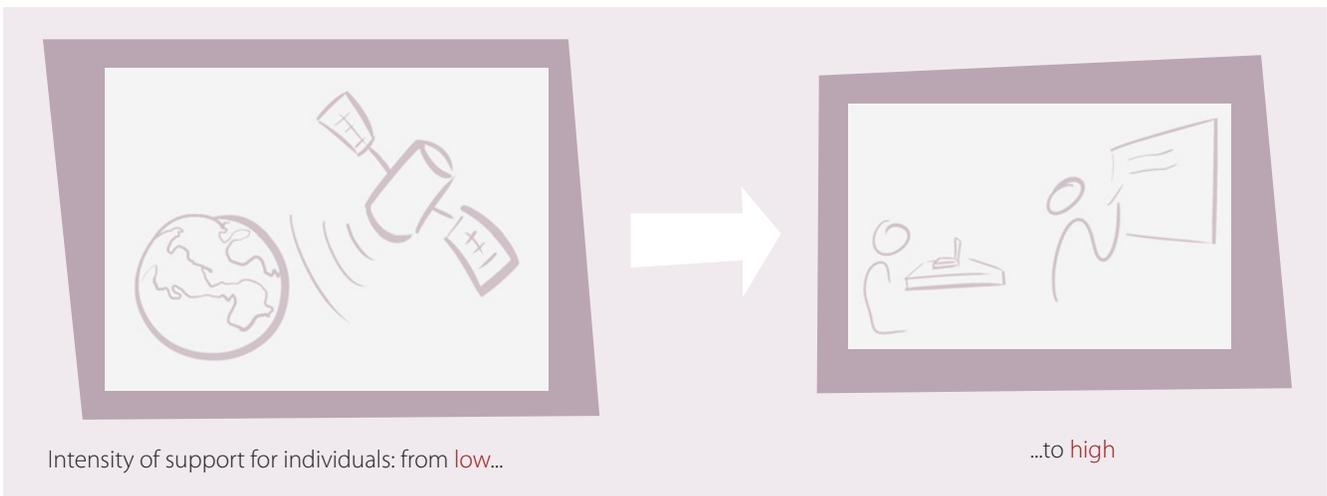
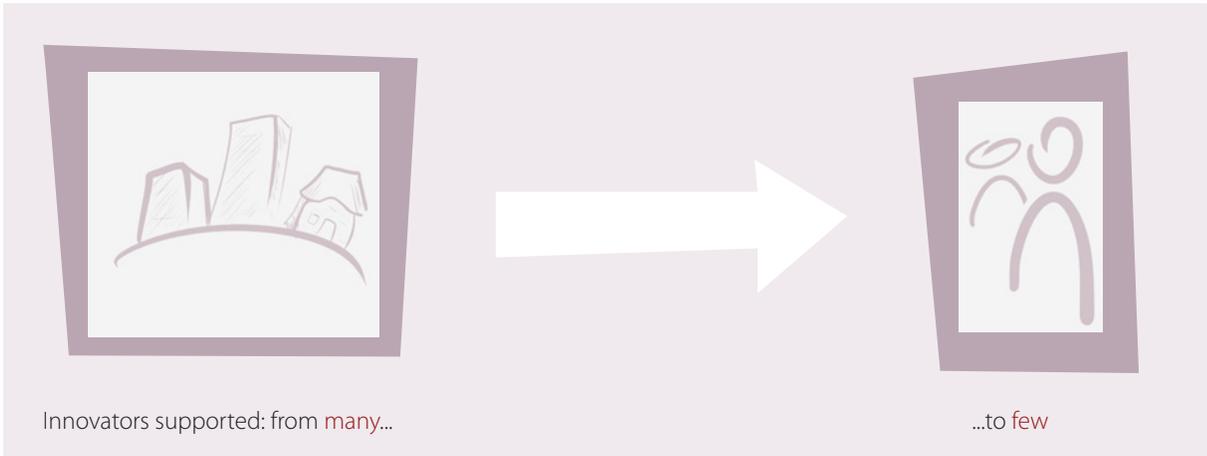
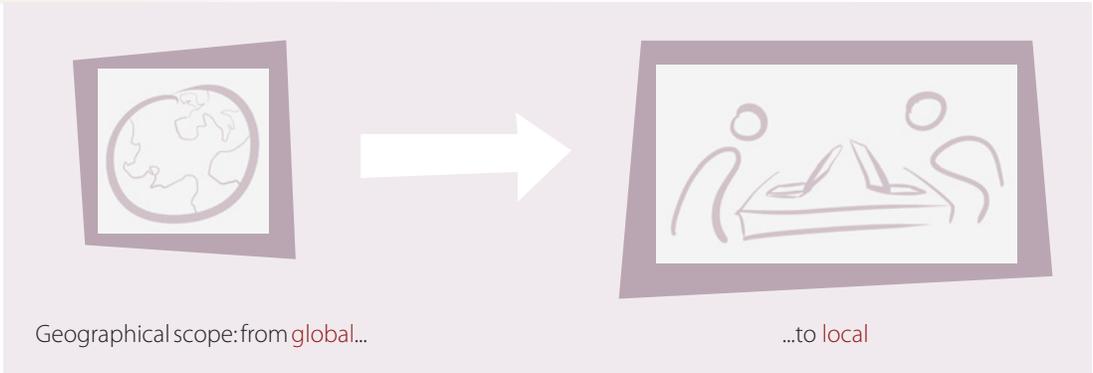
coordinated the multisite event globally, while giving each node much leeway to adjust to local circumstances.

Similarly, the follow-up for promising app prototypes (Step 4) was left to the mLabs and mHub Nepal. This choice was made both to have on-the-ground enablers try out different follow-up methods, but also because the infoDev team knew that the capacities and needs of every one of them would differ. For instance, the mLab East Africa in Nairobi had all its incubation slots filled at the time of the hackathon, while the event coincided with the launch and start of operations at mLab East Asia.

Now, several months and many rounds of evaluation later, the results are beginning to show. The author is indebted to all hackathon organizers and partners as well as survey participants for taking the time to provide feedback that has been essential to learn from this pilot.<sup>2</sup> The remainder of the report derives from feedback that was received from m2Work clients, partners, and stakeholders. This section includes short notes on “Dos” and “Don’ts,” before the ensuing sections will hone in on results and lessons learned.

.....  
<sup>2</sup> Comprehensive survey results and summaries from stakeholder interviews can be found in the Annex.

Figure 2: Progression of the “From Mind to Market” Approach



**Table 2: Goals and Tools for “From Mind to Market” Process Steps**

	Identify high-potential topic	Broad-based innovation competition	Forging minimum viable app products	Incubation and acceleration
Goals	<ul style="list-style-type: none"> <li>• Ensure relevance of topic for clients (mHubs / mLabs, entrepreneurs)</li> <li>• Obtain information and data on market opportunity and support gap</li> <li>• Prepare an outreach plan by identifying potential partners and active organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Engage highly motivated and talented (future) entrepreneurs</li> <li>• Clearly communicate criteria and commitments for selection</li> <li>• Generate a pool of ideas</li> <li>• Create basic topical knowledge for a large group of innovators</li> <li>• Raise broader awareness around topic</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and support a core of highly motivated and talented entrepreneurs ready for a start-up launch</li> <li>• Generate a pool of prototypes</li> <li>• Promote partnership and capacity-building for clients (mHubs / mLabs)</li> </ul>	<ul style="list-style-type: none"> <li>• Create sustainable start-ups</li> <li>• Support other private sector development and entrepreneurship goals (such as start-up revenues, investments raised, or jobs created)</li> </ul>
Tools	<ul style="list-style-type: none"> <li>• Have desk (market) research</li> <li>• Provide customer validation through informal outreach to mHubs / mLabs and entrepreneurs (mini-surveys, workshops, and focus groups)</li> <li>• Establish contact with potential partner organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct local workshops for outreach and submission guidance</li> <li>• Send out communication “blasts,” including to hand-picked multipliers</li> <li>• Have lightweight coaching</li> <li>• Establish an accessible repository for submissions</li> </ul>	<ul style="list-style-type: none"> <li>• Have intense events with expert coaching and mentoring (hackathons, bootcamps, pitching events)</li> <li>• Promote global linkages (for example by adding a global tier to local competitions or through facilitated virtual platforms)</li> </ul>	<ul style="list-style-type: none"> <li>• Provide incubation services (physical work space, app testing facilities, regular mentoring &amp; coaching)</li> <li>• Provide acceleration services, mentoring and coaching, investment-readiness focus, peer learning in badge, pitching / demos, and so on</li> <li>• Have seed finance</li> </ul>



Photo credit: mLab Southern Africa

## Step 1: Identification of a High-Potential Topic

*Step 1: Identify a topic (a) which has market potential and potential for international development, (b) which inspires new ways of doing business or new applications of established business models, and (c) which is amenable to mobile app solutions.*

The first step is the identification of a high-potential topic. This should be seen as an opportunity to put a new subject on the minds of innovator communities worldwide. While there should certainly be a business opportunity for mobile app start-ups (as this ensures the path to sustainability), infoDev believes that it is also important to push innovation frontiers by selecting subject areas that have not yet been explored by sufficient private sector activity in developing countries. The identification is a chance to set an incentive for entrepreneurs to think about novel ways of doing things.

A useful perspective on topic selection comes from design thinking. Accordingly, for innovation to happen, the topic should be at the border between the known and the unknown, and lend itself to experimentation and learning through iteration and collaboration both for the organization and its clients.<sup>3</sup> Often, this will imply that the topic is

already gaining traction in that market forecasts are promising, or in that early business models are showing promise but have not found scale and widespread impact. Alternatively, topic selection can draw attention to the challenges of regional and local applicability, by encouraging adaptation of solutions that have been successfully tried in some geographical contexts but not in others.

Topic selection is an opportunity for infoDev to directly involve its clients—entrepreneurs and entrepreneurship enablers in developing countries—in determining useful service portfolios and focus areas. This should be seen as part of the customer validation process. Based on desk research and the experience of infoDev staff, topics can be discussed with clients and their feedback integrated in fine-tuning the selection. Critical test questions include whether there is market potential for (app-based) business models and whether there is an important entrepreneurship support gap. Ideally, business interests and value creation coincide with inclusive goals of development, such as the integration of women entrepreneurs or users and clients earning less than \$2 a day, that is, those at the “base of the pyramid.” In the process,

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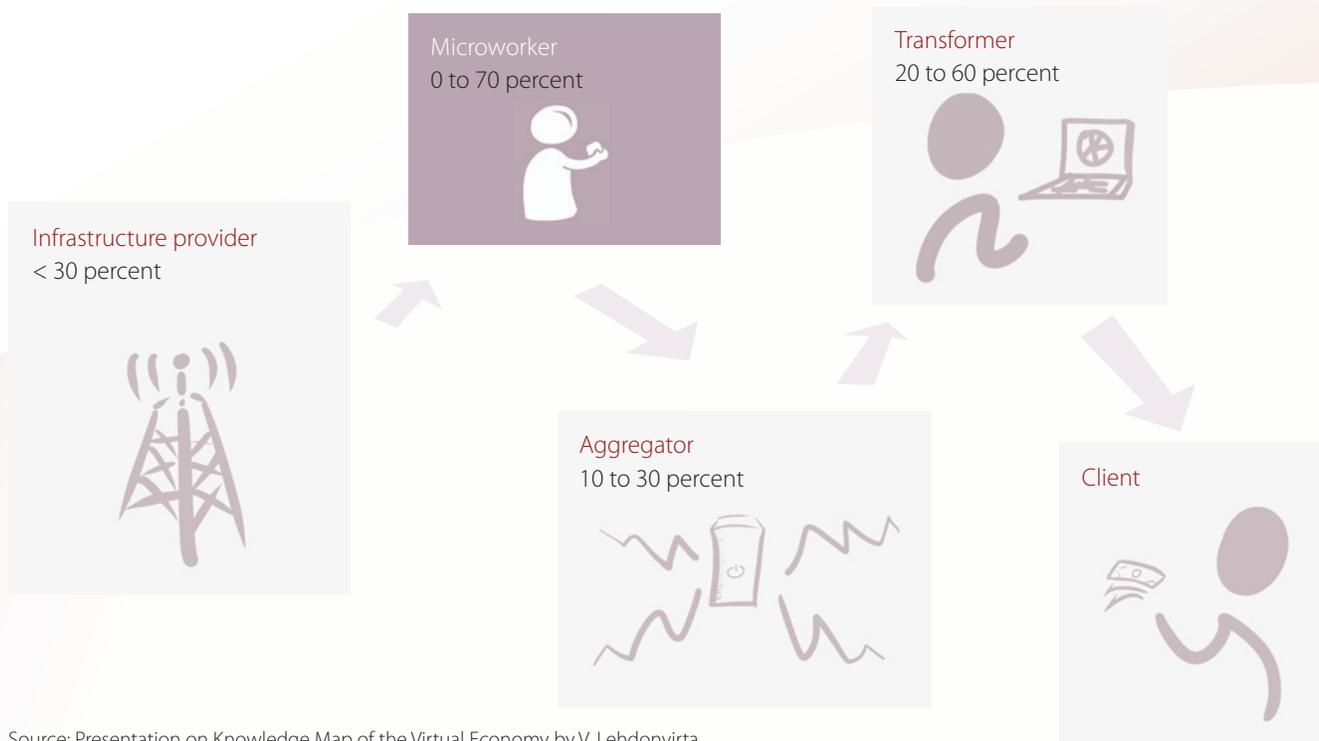
3 Koria, M., Graff, D., and T.M. Karjalainen. 2011. Learning Design Thinking: International Design Business

Management at Aalto University. REDIGE, Vol 2, Is 1. [www.cetiqt.senai.br/ead/redige/index.php/redige/article/download/82/132](http://www.cetiqt.senai.br/ead/redige/index.php/redige/article/download/82/132).

**Table 3: Step 1 Dos and Don'ts**

Do...	Don't...
<ul style="list-style-type: none"> <li>Choose a topic that is new, but relevant, to most clients and that catches people's imagination.</li> <li>Choose a topic that provokes thought about new ways of doing business, but make sure to identify a market opportunity and provide sufficient learning material.</li> <li>In addition to general information resources, secure market forecasts or unexplored open data sets that app developers can exploit later on.</li> </ul>	<ul style="list-style-type: none"> <li>Don't pick a topic that is too broad (such as “innovative app”), as developer communities need to be able to focus on and coalesce around the topic.</li> <li>Don't pick a topic that is too difficult to grasp for inexperienced innovators—this will make broad-based participation impossible.</li> </ul>

**Figure 3: Microwork Value Chain and Ranges of Value Captured by Chain Members**



Source: Presentation on Knowledge Map of the Virtual Economy by V. Lehdonvirta

market research data can be collected that will be useful for the later stages of the process. Finally, an initial stakeholder and landscape analysis should assess which global and local organizations are active in the field. This analysis also helps to make early contacts to potential partners for the project.

In the case of m2Work, the choice of mobile microwork was a result of the great interest that development and tech communities had in the Knowledge Map of the Virtual Economy when it was published in mid-2011. The report by Vili Lehdonvirta<sup>4</sup> highlighted that microwork is an industry that has no negative externalities on value creation, since a previously unmet demand—the completion of large numbers of small digital tasks that cannot be processed by machines—would be answered with the creation of employment

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<sup>4</sup> Dr. Lehdonvirta is an expert on virtual economies, including virtual goods, virtual currencies, and digital labor. After research appointments at Helsinki Institute for Information Technology and the London School of Economics, he is now Research Fellow at the Oxford Internet Institute.

for microworkers. This is in contrast to other information and communications technology (ICT)-based innovations that might lead to increases in efficiencies and productivity, but could result in job losses wherever technology is substituted for human work.

The Knowledge Map estimated that the microworkers capture and contribute up to 70 percent of the value-added, resulting in direct payments to them. The report also delivered rough estimates for the size of the global microwork market. In addition, microwork typically requires very little skills or training, as it relies on humans being intrinsically better at some tasks than computers. Offering this type of employment through mobile phones seemed promising, as this would bridge the barrier of computer access. The promise was that such business models could include population groups often marginalized as workforces of developing countries, in that women, disabled people, rural communities, and others can complete microwork from home on their phones.

## Step 2: Running a Broad-Based Innovation Competition

*Step 2: Run an innovation competition (a) which is open to a large group of people and has low entry requirements, (b) which allows for collaboration and exchange between participants, and (c) which is an open knowledge resource for the public.*

The second step of the “From Mind to Market” method focuses on the generation of a broad enough pool of innovators and ideas. Based on a crowdsourcing approach, seeking input from many is used as an effective way to derive compelling solutions. It is crucial to communicate transparently the selection criteria and the commitments for the selected innovators at the later stages. At the same time, it should also be clear and accepted that most ideas generated at this stage will not go anywhere, and that the ratio of “good” and “bad” ideas is not important. In other words, a large “crowd” of people can be encouraged to participate for fun and learning, but the prospect to receive help to start a company should be emphasized for those innovators that are talented and motivated enough to compete.

The environment should encourage open innovation based on exchange and peer-learning, and also offer a lot of accessible background information on the topic. As a relevant side effect, the fact that many innovators put their minds to the topic also means that all of them learn about it. While this positive spillover will largely go unmeasured, it is important to store codified submissions in an open database that others can access to find inspiration and to build on the groundwork laid by the community.

m2Work implemented this step via an Idea Challenge seeking submissions from across the globe. To ensure the tie-in with infoDev’s mLab network in particular, challenge finalists were selected from six regions: one per mLab region and one from the rest of the world, including developed countries. The regions were specified according to mLabs’ regional mandates and included East Asia and Pacific, Southern Africa, East Africa, and Eastern Europe, Caucasus, and Central

**Table 4: Step 2 Dos and Don’ts**

Do...	Don’t...
<ul style="list-style-type: none"> <li>• Set the minimum submission requirements low to attract a large number and broad range of ideas.</li> <li>• Set high selection requirements for winners, and set clear expectations on the type of support they will receive and the time and effort they will have to commit.</li> <li>• Get participation going early through spot prizes and local, face-to-face outreach.</li> <li>• Continuously provide learning material and feedback, such as through direct comments to submissions and through blog posts.</li> <li>• Deliver “lightweight” local face-to-face outreach and coaching, for example, through standardized mini workshops.</li> </ul>	<ul style="list-style-type: none"> <li>• “No strings attached” to cash prizes can lead to a lack of commitment from participants once the competition is over.</li> <li>• Relying on social media and remote communication is important for outreach, but it will likely not be enough to guarantee many high-quality submissions.</li> </ul>



Photo credit: mLab Southern Africa

Asia.<sup>5</sup> The six finalists were asked to come up with extended submissions, including video pitches, which the grand jury would review.

infoDev partnered with Nokia's IdeasProject in order to leverage the platform's existing innovator community. The minimum requirements for a submission were purposefully kept low.<sup>6</sup> In addition, the prize structure was designed to have no strings attached, in order to attract the highest possible number of submissions and target groups. Four spot prizes at \$1,000 each were awarded for the best idea submitted within four time frames along the duration of the challenge. Each of the six finalists received \$2,000. The grand prize winner was awarded \$20,000 and the global runner-up received \$4,000.

While this ensured that the jury had a large number of viable ideas to choose from, infoDev found that there can be trade-offs between the extreme openness chosen and the later stages of the process. For instance, some of the cash prize winners were not motivated to use their prize money as an investment in an app company, and therefore, they did not take their idea forward after the competition. Another adverse selection problem can be that innovators that derive great submissions from their industry or academic expertise might not find it attractive to commit to turning their submission into a time-consuming project.

5 A detailed list of countries can be found at <https://ideasproject.com/web/m2work/m2work-faq>.

6 <https://ideasproject.com/web/m2work/idea-guidelines>.

In sum, this meant that some of the top submissions were taken forward because the innovators were intrinsically motivated to start a company, but others were not because the submitters did not have the time or willingness to work on an app project (see Box 3). Similarly, the tie-in with local entrepreneurship support for some of the prize winners turned out to be a challenge, for instance, in cases where mLabs were too far from their location.

In addition, m2Work showed that even if the Innovation Competition is run primarily on a web platform and even if it has a global scope, local outreach is crucial to increase the quantity and quality of submissions. Addressing participants through social media channels of the World Bank, Nokia, and infoDev led to many submissions from across the globe, but the most significant peaks happened when mLabs conducted face-to-face workshops with their existing innovator communities. A good methodology to combine scalability and local outreach was to provide mLabs with basic, customizable information material, such as presentations. As resources allow, workshop facilitators can directly assist the submission, helping participants to improve the relevance of their ideas and business models, as the positive results from mLab ECA sessions illustrated. Moreover, infoDev set up links to mobile microwork expert Vili Lehdonvirta for the setup of remote talks. With this help, mLabs were able to set up mini-workshops with limited resources, engaging the existing tech communities they serve.



Photo credit: mLab ECA

### Box 3: Finalists and Spot Prize Winners of the m2Work Idea Challenge

Throughout the m2Work Idea Challenge, four spot prize winners were selected from the pool of ideas submitted before specific deadlines. They received cash prizes of \$1,000. In late April 2012, the jury then chose six finalists—one from each of the five mLab regions and one from the rest of the world. Each received a cash prize of \$2,000, as well as business coaching and a platform to pitch their refined ideas for a chance to win the grand prize. The finalists' refined video pitches are available at <http://www.infodev.org/en/article.840.html>.

Idea	Short description	Total prize money	Pursued after challenge?
Smart Rickshaw Network	Crowdsources traffic maps from rickshaw drivers	\$22,000	Yes / No
MicroForester	Distributed reforestation project	\$6,000	Yes
3MD	Allows para-skilled health technicians to carry out medical diagnoses	\$3,000	No
Smart Blackboard	Allows underemployed teachers to complement face-to-face education	\$2,000	Yes / No
Microwork Publishing Platform	Spreads and creates texts and translations for rare languages	\$2,000	Yes
Anitrack	Gamified app that deploys microworkers to track illegal poaching	\$2,000	Yes / No
Ask MOM Money Manager	Data entry of photographed receipts by microworkers	\$1,000	No
Remote Night Watcher	Microworkers remotely survey video material from security cameras	\$1,000	Yes / No
InDepth	Real-time market research and survey system	\$1,000	No

Note: The creators of Smart Rickshaw Network, Anitrack, and Remote Night Watcher still aim to continue to develop their applications, but so far they have not taken any major steps.

### Step 3: Forging Minimum Viable Products

*Step 3: Run an activity that forges minimum viable products (such as a working prototype and business model) (a) which is carried out at multiple, physical sites across the globe, (b) which connects individual sites through collaboration and competition, and (c) which enables developers and entrepreneurs to build on the knowledge generated during the innovation competition of step 2.*

Next, a bridge has to be built between ideas and products. For the Innovation Competition, openness and breadth of participation is key, but in order for start-ups to be generated, incentives and support services for innovators need to shift at this point in the innovation process. For mobile applications, this means that innovators should be given an opportunity to develop functioning prototypes, as well as basic business models for potential start-ups. This also implies that, at this stage, eligibility for prizes should be limited to those entrepreneurs that are motivated and capable to continue the entrepreneurial journey. Prizes should now take the form of entrepreneurship support, such as mentoring and coaching, or participation in comprehensive incubation and acceleration programs.

the knowledge of mobile microwork that they had acquired during the Idea Challenge. In a relatively short preparation time of six weeks, the local organizers were able to attract an impressive level of participation with highly satisfied participants (see Table 5). All hackathon organizers pointed out that global facilitation through templates and toolkits provided by Young Innovations Pvt. Ltd. (the company behind mHub Nepal) was instrumental for the quick implementation.<sup>7</sup>

Each site was given much freedom on the incentive structures. Some mLabs chose to offer incubation prizes, while others awarded cash (see Table 6). For all sites, the hackathon was an opportunity to solidify and expand partnerships with local stakeholders of mobile innovation ecosystems, such as device manufacturers, operating system providers, mobile network operators, and educational institutions.

Feedback interviews with organizers and partners, as well as surveys with participants showed that the events were overall well-received, but also that the tie-in with the m2Work Idea Challenge had not been strong. Not many hackathon participants had taken part in the Idea Challenge, and few coders picked up ideas developed during the Challenge—most preferred to develop their own business and app idea from scratch. Out of 61 prototypes produced during the hackathon, only 10 were based on submissions from the Idea Challenge. It remains unclear exactly how much of the mobile microwork knowledge that had been created during the Idea Challenge was actually transferred to hackathon participants. At the least, hackathon organizers were able to convey the concept of mobile microwork; all sites reported that hackers

<sup>7</sup> Young Innovations published their own evaluation report of the hackathon, available at [http://m2workhackathon.org/sites/default/files/downloads/Report\\_m2Work\\_Hackathon.pdf](http://m2workhackathon.org/sites/default/files/downloads/Report_m2Work_Hackathon.pdf).



*“m2Work was great. It showed me my potential, like if I can design a prototype from an idea in just 30hrs, I can do anything. Also I came to meet with top level developers there, which was like the best prize [a] hackathon can provide me [with].”*

m2Work attempted to build this bridge by means of a global hackathon, run at five sites, at mLabs in Armenia, Kenya, South Africa, and Vietnam, as well as at mHub Nepal. The event happened more than four months after the Idea Challenge, so that a direct tie-in with Step 2 turned out to be challenging. However, at the minimum, the organizers could draw on

**Table 5: Participants’ Satisfaction with the m2Work Hackathon**

Rate your satisfaction with the following on a scale from 1 (“terrible”) to 5 (“great”)		
Hackathon overall	4.47	Mean, n=139



**Table 6: m2Work Hackathon Partners and Winners**

	Partners and sponsors	Prizes and winning teams / apps	App subject area
mLab East Asia	Nokia, Windows, Saigon Hi-Tech Park	First prize: THASA Team / Anticounterfeiting Second prize: Seniors Team / "Gesture Language & You" Third prize: The Earth Team / "Smart Blackboard" First Nokia Lumia 800 prize: Ethics Edu Team Second Nokia Lumia 800 prize: OU Team / "Product Preview on-line" Third Nokia Lumia 800 prize: THASA Team / Anticounterfeiting FPT Software prize: Seniors Team / "Gesture Language & You"	Transparency and Accountability Language and Transcription Education Education Business and Jobs Transparency and Accountability Language and Transcription
mLab East Africa	Samsung Kenya, Safaricom, Emobilis, Isis Software, iHub	1st Prize: Tafsiri 2nd Prize: Smart Blackboard 3rd Prize: MobiAgent 4th Prize: Kaisari	Language and Transcription Education Business and Jobs Transparency and Accountability
mLab Southern Africa	Nokia, Microsoft, BlackBerry, Qualcomm, Vodacom, CSIR, The Innovation Hub, University of Pretoria, The e-skills Institute, SAINe	Best m2Work app: Translate 4 Me / BlackBerry Apps Lab team Best m2Work app: MediU (Medical Ubuntu) Best m2Work Service (Microsoft-sponsored): Ishmael Makitla Most Impact & Targeted m2Work App (Nokia-sponsored): Teamov8 Best Virtual Hacker (Qualcomm sponsored): Tanaka Mutakwa Best Individual Hacker (Qualcomm sponsored): Blessing Mahlalela	Language and Transcription Health Platform Transparency and Accountability - -
mLab ECA	Microsoft Innovation Center Armenia, Armenian-Indian Center of Excellence, Yerevan State University, Gyumri Information Technology Center, Armenian Datacom Company, Red Bull	1st Prize: "MicroForester" 2nd Prize: "Help me see" 3rd Prize: "Test my app"	Environment Answer, Find & Solve Business and Jobs
mHub Nepal	Microsoft Innovation Center Nepal, Google Developers Group Nepal, CSIT Association of Nepal, Robotics Association of Nepal, Nepal Open Source Klub, LOCUS, Worldlink	Winner: Medic Info 1st Runner-up: NewsIT 2nd Runner-up: Article Digitization	Health Business and Jobs Business and Jobs

did understand the concept better after the event than before.

It also became apparent that hackers are problem solvers and that they need a sense of ownership for their app. It helped them if they felt empowered to identify and work on problems from their own day-to-day experience. This also meant that hackers usually did not extend their scope and ambition beyond the local context.

Participants pointed out that having on-site coaches was critical, as is typical for hackathons. When coaches were unavailable, participants highlighted this as an important shortcoming. Coaches helped with technical aspects, but they also encouraged coders to see the bigger picture and not ignore the business aspect of their application from the very beginning—which was important to note. In the end, this step is about developing a minimum viable product, and not just a technically functioning mobile app. Hence, at many sites, experienced entrepreneurs that had gone through similar business building experiences were seen as the most effective coaches. Often, it can prove decisive for the early stages after the hackathon whether or not teams were able to build initial contact networks with coaches, mentors, and sponsors directly at the hackathon site.

Moreover, hackers seemed to miss additional, more specific input than the broad background information on mobile microwork that they were given. There were calls for more contextual

information, such as problem statements, market research, or unique open data sets to work on. For the kinds of hackers that m2Work attracted, the prospect of social impact was an important additional motivator. In part for this reason, they found mobile microwork to be a compelling technological and business concept.

It was clear that participants of the hackathon had a more entrepreneurial mindset than those of the Idea Challenge. Nearly all of the surveyed coders intended to take steps toward turning their application into a business in the follow-up of the hackathon (see Table 7). In a survey conducted five months after the event, 23 individuals reported that they had continued to develop their app, and an additional 25 said they still intend to continue to develop their app. In the same survey, four people reported that they had already launched start-ups, and 22 people were still planning to launch their companies.<sup>8</sup>

Moreover, whenever an mLab was able to offer incubation as a hackathon prize, participants reported that it was a very strong motivator to do well (see Table 8). In turn, telephone interviews revealed that different prize categories were useful to incentivize different participant groups; for instance, gadgets or cash prizes could motivate developers that did not intend to start a company.

8 Only 56 out of the 301 hackathon participants participated in the follow-up survey, so the actual number of people that have continued or will continue to work on their app might be significantly larger.

**Table 7: Participants’ Intentions on Next Steps Following the m2Work Hackathon**

Which of the following steps do you intend to take next? I intend to...		
continue to refine the app prototype.	92 percent	Percentage of “Yes” answers, n=111
develop a sustainable business model.	88 percent	Percentage of “Yes” answers, n=108
develop a specific business plan.	82 percent	Percentage of “Yes” answers, n=105
launch an app-based product/service (offer in an app store, or otherwise bring to the user market).	85 percent	Percentage of “Yes” answers, n=106

**Table 8: Participants’ Motivators to Participate in the m2Work Hackathon**

What was your motivation to participate in the m2Work Hackathon? (Scale from 1 “Strongly disagree” to 5 “Strongly agree”)		
Prizes (cash / devices, and so on).	3.68	Mean, n=129
Start-up support (events, incubation, contact to mLabs/mHubs, and so on).	4.13	Mean, n=128
I like the challenge of hackathons.	4.35	Mean, n=127
Learn about mobile microwork.	4.22	Mean, n=129
Exchange with other innovators/developers/entrepreneurs.	4.28	Mean, n=130
The focus on inclusive innovation/economic and social development.	4.08	Mean, n=129
Get in touch with partners and sponsors of the hackathon.	4.06	Mean, n=130

Interviewees felt that what was missing the most from the m2Work Hackathon was a global level of collaboration and competition. The feedback held that a global prize would have motivated developers to do their very best. A global competition element would have boosted the recognition and exposure factor that comes with winning an app competition, which would have been a special value-added for the small ecosystems of Armenia and Nepal.

For enhanced global collaboration, interviewees suggested that teams should have been given the opportunity—

- To jointly follow presentations that introduce the topic
- To identify similar projects and work together for quick brainstorming and knowledge sharing



Photo credit: mLab ECA



Photo credit:  
mLab ECA

- To adapt apps to different mobile platforms, according to local coding expertise
- To partner up globally for app distribution
- To listen to each other's presentations at the end of the global hackathon

On the other hand, several interviewees also mentioned that any virtual cross-site collaboration

should not interfere with intense coding periods at each hackathon site.

Finally, all the organizers emphasized the role of pre- and post-events. Pre-events can help to educate coders about the topic and the hackathon setup, but also assist with team formation. Some sites experimented with virtual platforms for team formation or mandated teams to be formed before the start of the event, which allowed for more focus on the coding during the 48 hours of the hackathon. While incubation has to be limited to high-potential teams, it was also felt that most participants would greatly benefit from informal post-events during which they could share what they have learned and polish the prototypes they developed at the hackathon.

**Table 9: Step 3 Dos and Don'ts**

Do...	Don't...
<ul style="list-style-type: none"> <li>• Run the activity shortly after, or integrated with, the broad-based innovation competition to fully leverage already built capacity and awareness.</li> <li>• Coaching is crucial. Make sure teams have immediate access to experienced entrepreneurs or subject experts during and after events.</li> <li>• Focus on incubation and start-up support as incentivization, but also offer small cash prizes, giveaways, and recognition to attract participation from nonentrepreneurial innovators.</li> <li>• Provide as much contextual information on the topic as possible, such as problem statements, market research, or unique open data sets.</li> <li>• Facilitate global exchanges and include a regional or global competition leg to increase the recognition value for winners.</li> </ul>	<ul style="list-style-type: none"> <li>• Don't market events and competitions (such as hackathons) as stand-alone initiatives. Rather have pre- and post-events, and communicate that they are all stepping-stones in the longer term start-up creation process.</li> <li>• Don't rely on participants interacting with each other across sites without active facilitation.</li> </ul>

## Step 4: Incubation and Acceleration

*Step 4: Provide incubation and acceleration locally to those entrepreneurs (a) who have shown promise, for example, by winning a prize, (b) who are motivated to be entrepreneurs, (c) and who have developed a viable business model for their app.*

The final step to guide ideas all the way “From Mind to Market” is to steer the winners from steps 2 and 3 through incubation and acceleration programs. The specific support mix for a start-up team has to be determined based on their needs and on available resources and conditions in the mobile innovation ecosystem. For instance, if no mobile-specific incubation slots are available in a given team’s proximity, virtual mentoring and coaching, mixed with regular informal face-to-face meetings, can be an efficient means of support. At this stage, the approach merges into incubation and acceleration techniques common in the mobile innovation space (see the Overview section). Obviously, infoDev can leverage its network of mLabs and advanced mHubs here to help the teams complete their journey all the way to the market.

In terms of incubation and acceleration support for m2Work Idea Challenge and Hackathon winners, the mLabs and mHub Nepal differed markedly. The follow-up has been left to be decided by each site separately, both to allow them to account for local circumstances and test m2Work’s effectiveness to source talent and generate “deal flow” (that is, suitable candidates and promising teams) for incubation in mLabs.

mLab East Asia had planned to encourage all teams to polish their apps with coaching, planning support, and extra technical and business training. The activity was also slated to feed into a separate Mobile Innovation Challenge in spring 2013. However, an abrupt change in leadership of the mLab in late 2012 slowed down its operations for a few months. The winning team from the m2Work Hackathon worked on their app in the mLab facilities occasionally during this time, but they did not receive in-depth support. The mLab became more active following a regional Mobile Innovation Challenge and a UNICEF Hackathon that it hosted in spring 2013. Together with more

**Table 10: Step 4 Dos and Don’ts**

Do...	Don’t...
<ul style="list-style-type: none"> <li>• Employ prize structures that motivate the continued commitment of both the start-up team and the start-up enabler (mHub or mLab) and align their incentives. If equity investments are not feasible, use milestone agreements and traction funding.</li> <li>• Lead teams that receive incubation and mentoring on to acceleration programs and competitions for more advanced start-ups. Going back and forth between ongoing support and ad hoc competition pressure can help to keep the momentum and drive up for start-up teams.</li> <li>• If own incubation and acceleration resources are insufficient, refer teams to other programs as a means of partnership and relationship building.</li> </ul>	<ul style="list-style-type: none"> <li>• For teams that just developed their minimum viable product, don’t promise full incubation support over an extended period, but rather draw on milestones and provisions.</li> <li>• Don’t overly push teams if they turn out to have limited potential. Better use scarce incubation and acceleration resources selectively and drop teams that do not show enough motivation or deftness to pursue the start-up journey beyond ideation.</li> </ul>

## Box 4: How an Ambitious Idea Makes It to Market: the MicroForester Case

Alexander Shakaryan's start-up MicroForester is one of the projects that have potential to become a poster child of the From Mind to Market methodology. In spring 2012, Alexander came to an m2Work outreach workshop hosted by mLab ECA with no prior knowledge of microwork. After churning out a handful of promising ideas, he quickly saw that MicroForester brought him the best feedback from peers and judges, in particular, through recognition as second best submission for the fourth Idea Challenge spot prize. Alexander scored the regional finalist prize and the global runner-up position in the Idea Challenge, securing him \$6,000. The m2Work Hackathon in September 2012 further helped him build national recognition and partnerships, ultimately leading to being one of the awardees in the local government's STEP competition, leading to another \$15,000 in prize money for MicroForester. In May 2013, Alexander pitched in the Dragon's Den of infoDev's Global Forum, scoring fifth place and winning another cash prize.



Photo credit: Alexander Shakaryan | mLab ECA

By the end of 2012, Alexander had shown his commitment to MicroForester, quitting his regular job to pursue the start-up idea. While the team has never relied on a formal incubation slot at the mLab, the mLab leadership helped him with in-kind contributions, mentorship, and contact building. Notably, no one out of the four original team members is a "pure" software developer. Instead, the team used the cash prizes to cover expenses and outsource the major coding tasks in order to focus on business and partnership development. The emerging start-up mainly targets the corporate social responsibility departments of firms, international development organizations, and local governments that have an interest in both employment creation through microwork, as well as reforestation. As of May 2013, the MicroForester team had perfected a second version of the app, secured first partnership agreements and grants, and had started the process of obtaining tree planting permissions for Armenia. Alexander is now based in London.

Sources: Author interviews and emails. For more information, see the following: <http://www.itel.am/en/news/5007>; <http://blogs.worldbank.org/psd/microforester-seeding-social-entrepreneurship-while-planting-trees>; [http://telecom.arka.am/en/news/development/winners\\_of\\_grant\\_competition\\_under\\_the\\_science\\_technology\\_entrepreneurship\\_program\\_in\\_armenia\\_announ/](http://telecom.arka.am/en/news/development/winners_of_grant_competition_under_the_science_technology_entrepreneurship_program_in_armenia_announ/); and <http://infodev.org/press-releases/media-release-5th-global-forum-innovation-and-technology-entrepreneurship-awards-five>.

than 15 other promising teams that came out of these events, the m2Work Hackathon winner has now entered a short acceleration period with a demo day scheduled for the end of October 2013.

At mLab East Africa, the Idea Challenge Regional Finalist Nancy Wang had received informal

mentoring from the mLab's manager. Her team was also part of the m2Work Hackathon, winning the runner-up prize (see Table 5). For hackathon winners, the mLab had set up an interesting incentive structure.<sup>9</sup> All incubation slots at the

9 <http://www.pivoteast.com/m2work-hackathon-prize-money-breakdown/>.





*“The mLab East Africa Management and the community have been really openly helpful in the past five months. Business coaching, mentorship, testing facilities, etc...”*

—A hackathon winner that received follow-up support

mLab were filled at the time of the hackathon, so the management used a layered cash prize scheme to push teams forward after the event was over. Four teams would receive a smaller cash prize right after the hackathon, while the two teams with the most traction would receive additional funding. In March 2013, the projects Smart Blackboard and MobiAgent,<sup>10</sup> which had shown the most traction, were offered to compete for a total of \$10,000 in traction funding, subject to compliance with due diligence steps and agreement on investment terms. As of summer 2013, plans are underway to complete a seed investment deal with the MobiAgent team worth \$10,000. In addition, the Tafsiri<sup>11</sup> and Kaisari<sup>12</sup> teams benefitted from additional business coaching sessions and the app testing facility provided by the mLab.

mLab ECA pledged to support the winning teams to finish the development of their prototypes and upload them to app stores. The most widely noted success story is the MicroForester app by Alexander Shakaryan (see Box 4). Both an Idea Challenge finalist and m2Work Hackathon winner at mLab ECA, Alexander received regular support from the mLab, for instance, for his Idea Challenge video pitch or in the form of mentoring and brokering of contacts. Indirectly, m2Work led to another start-up being created: the Letsein team (previously mTech team) formed at the event, which later went on to win the mLab’s YAN Hackathon in December 2012. Following further support and training provided

by the mLab and the Armenian-Indian Center of Excellence in Yerevan, the team was ready to incorporate their start-ups by April 2013.

mLab Southern Africa has worked with four of the teams to help them finalize their applications. The BlackBerry Apps Lab at the University of Pretoria has already provided support to the top team. mLab Southern Africa crowded in a host of partners for the hackathon, which made it possible to offer different prize categories for various winner categories. For instance, members of the MediU<sup>13</sup> team reported that they received advice on business modeling and project management, as well as work space and a fast Internet connection.

At mHub Nepal, most participants found the concept of mobile microwork interesting, but too challenging to integrate it into their business models. Moreover, the mHub had no capacity for incubation, given that its regular activities focus on community building through meet-ups and workshops. As a result, no team received incubation support. However, at least one of the groups formed at the hackathon took its project forward. As of April 2013, the Mobile Survey<sup>14</sup> team had incorporated their start-up with the help of the BizSpark program of the local Microsoft Innovation Center. The team had also been selected as a finalist<sup>15</sup> in the mHub’s Pivot Nepal mobile innovation challenge, which enabled the team to receive intensive mentoring and coaching from local experts.

10 MobiAgent is a solution that enables users to earn a small sales commission each time they sell a product to people on their phone contact list.

11 Tafsiri is a business-to-business app that provides translations into languages of local communities.

12 Kaisari is a compliance and authenticity monitoring system that enables organizations and individuals to track fraudulent products with the help of microworkers.

13 MediU (Medical Ubuntu) aims to streamline health services offered by governments by offering small remunerations for care takers and relatives that support patients during their treatment by means of the mobile platform.

14 <http://pivot.mobilenepal.net/idea/mobile-survey>.

15 <http://pivot.mobilenepal.net/finalists>.





Photo credit: mLab Southern Africa

# M2WORK OUTCOMES



## Results

m2Work's main outcomes and results include the following (as of March 2013):<sup>1</sup>

### 1. Start-Ups

Four entrepreneurs that participated in m2Work reported to have launched start-ups, compared to an intended five, with at least 22 people still planning to launch their apps. So far, the

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1 With available resources, it was impossible to conduct a rigorous, long-term impact evaluation for the m2Work project. It should be noted that highly reliable findings would only be generated by tracking start-ups over months and years, as well as control group comparisons. This report limits itself to reporting descriptive, often indicative, results numbers collected shortly after the m2Work project closed in early 2013. For data collection methods, see the Annex.

entrepreneurs have raised a combined \$24,000, not including m2Work prizes.

### 2. Ideas

Of the nearly 1,000 idea submissions to the Idea Challenge (all available at [www.ideasproject.com/m2Work](http://www.ideasproject.com/m2Work)), 95 percent came from developing economies (see Figure 5). Armenia provided 399 ideas—here the local mLab carried out intense outreach supplemented with new mentorship schemes.

### 3. Prototypes

The m2Work Hackathon gave 301 software developers in five countries intensive coding and networking experience. Sixty-one teams developed an app prototype and business model each.

**Figure 4: Visualization of Best Ideas by Category, Available at <http://ideasproject.datarangers.fi/m2work>**



**Figure 5: Ideas Submitted by World Bank Region**

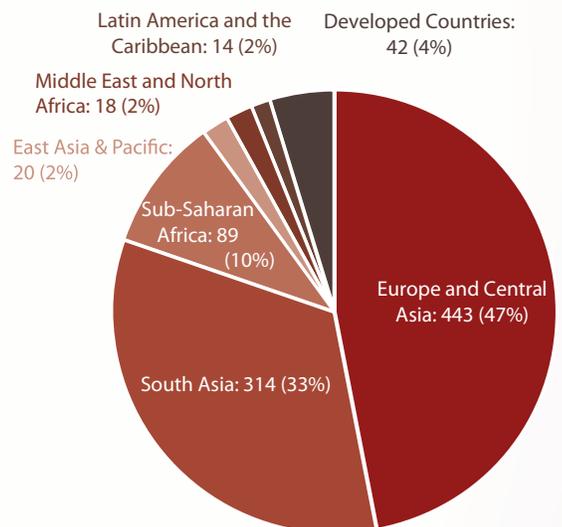


Figure 6: m2Work Hackathon Statistics by Site

		mHub Nepal	mLab East Asia	mLab S. Africa	mLab E. Africa	mLab ECA	Total
Interest to participate in the Hackathon		101	70	72	146	53	<b>442</b>
Number of Female Participants		3	4	6	27	40	<b>80</b>
Number of Male Participants		36	40	29	93	35	<b>233</b>
Number of Pre Events		3	1	1	1	26	<b>32</b>
Number of Teams		10	15	11	10	16	<b>62</b>
Products		10	15	10	10	16	<b>61</b>
m2Work Ideas		1	0	0	2	7	<b>10</b>
Number of Judges		5	5	4	5	7	<b>26</b>
Number of Winners		3	7	6	4	3	<b>21</b>

Image credit: Young Innovations Pvt. Ltd.

#### 4. Awareness

During the Idea Challenge, all submissions received a total of 93,531 views; participants commented 395 times and left 2,535 votes. More than 3,000 visitors viewed the m2Work Hackathon website. m2Work judge Vili Lehdonvirta's post<sup>2</sup> was

the most visited one on the World Bank's Private Sector Development blog in the first half of 2012. The project itself drew over 63 media mentions in local and international outlets, including the BBC and Alhurra TV.

<sup>2</sup> <http://blogs.worldbank.org/psd/developing-world-innovators-rule-first-lessons-from-mobile-microwork-competition>.



Figure 7: m2Work Hackathon Website Statistics

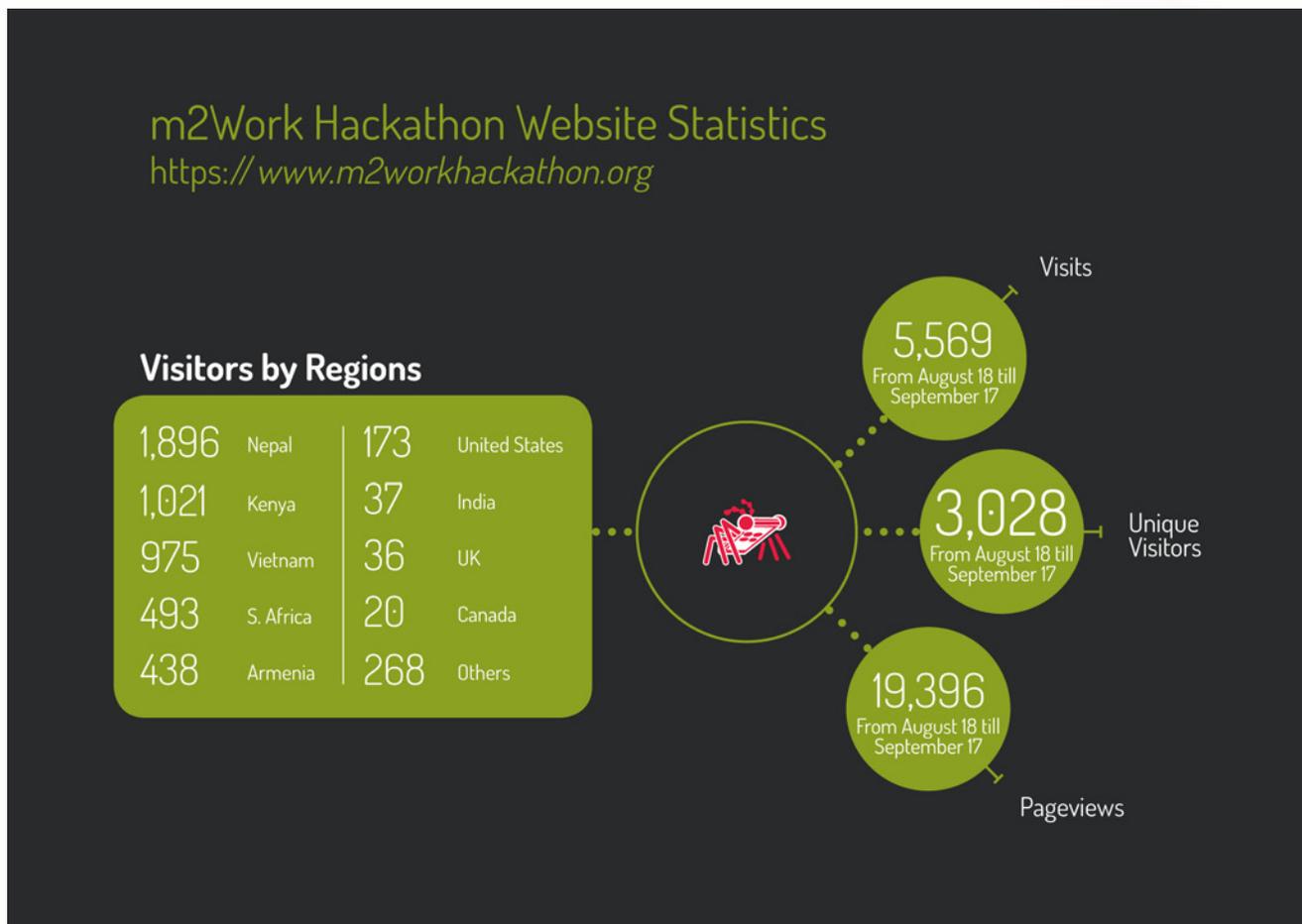


Image credit: Young Innovations Pvt. Ltd.

## 5. infoDev and Enabler Capacity

At all steps of the project, lessons learned were codified and toolkits established. The groundwork has already contributed to infoDev's internationalization pilot and its Mobile Innovation Roadshow across four countries in

Southern Africa,<sup>3</sup> as well as several hackathon implementations in ECA.

3 The roadshow was implemented in collaboration with the Southern African Innovation Support (SAIS) program, <http://www.saisprogramme.com/?tag=mobile-innovation-roadshow>.



Photo credit: mLab Southern Africa

# LESSONS LEARNED FROM THE M2WORK PILOT



## Focus Support on the Most Committed and Support Them Well

Not everyone is born an entrepreneur. It is key to tap many people's intellectual potential, but, if start-up creation is the central goal, only those innovators should receive hands-on support who are prepared to go ahead on the entrepreneurial journey.

From m2Work, infoDev learned that this condition needs to be communicated clearly at the beginning to participants, so that they are aware of expectations towards them. infoDev found that low submission requirements for ideas and business models are good means to attract a large number of submissions from a wide range of people. At the same time, infoDev found that it could have spent its support resources more efficiently, if it had introduced stricter selection criteria in order to limit prizes and hands-on help to those innovators willing and able to commit to their venture.

The popularity of incubation prizes among exactly this group of participants has shown that this type of award should be the core piece of the incentive structure from the beginning. The prospect to learn from a top mentor, or to receive in-depth support to refine a pitch or business model, is usually a strong motivation for those that have an entrepreneurial mindset, so that this type of award would probably have led to a more favorable self-selection of participants with top submissions. No strings attached prizes (such as cash or devices) can be given out in addition to incubation prizes to attract innovators with a less entrepreneurial mindset—such as employees of established tech companies or curious students—but these incentive structures should not be the main focus.

A tighter integration of incubation, mentoring, and coaching into the prize structure could also help to achieve a more seamless transition between Step 2 and Step 3 than m2Work was able to provide. For instance, participants of the innovation competition of Step 2 could be given privileged access to the support in Step 3, which includes more hands-on help for entrepreneurs to develop their product. Moreover, the time gap between Steps 2 to 4 should be much smaller than had been the case for m2Work—in fact, the implementation periods could even overlap.

It was realized that even the more committed entrepreneurs mostly rely on a clearly structured support program once they have developed a minimum viable product. In several cases, hackathon winners were disappointed that the local mHub or mLab did not provide them with more support, either because the mHub or mLab was already at full capacity, or because it was not able to set up the appropriate support with given resources. It was critical to guide competitions into continuity, for instance, through hosting follow-up events where participants could reconvene and make a more informed decision whether they want to and are able to take a project forward. Sufficient

*"The team is busy doing their full time jobs . . . We were called for the competition (hackathon), [once] it [was] over, [the] app [was] over, etc. . ."*

*"We found difficulty in coordinating our team to continue with the project as we were all students from different institutions each with equally busy schedules."*



*—Hackathon participants on the reasons why they didn't pursue their app start-ups*

resources need to be allocated in advance to enable this kind of hands-on follow through.

At a higher level of abstraction, the lesson here is that innovation competitions are neither effective nor efficient for start-up generation, if they are “one-offs,” and do not have a preparation and follow-up process. Local and global implementers should be aware that innovation competitions for start-up creation are best thought of as elements within longer-term series of integrated events and processes. Hosting a pitching event will not do the work. Rather, alternating the support mechanisms along the innovation pipeline is needed to attract a large pool of talent and to cater toward varying entrepreneurial needs and progress stages. For instance, hackathons can be used to push ideation, mentoring to support the business model design phase, and start-up competitions to enable partnership building and access to investors for existing projects looking to grow.

## Activate Communities Locally, but Interlink Them Globally

It was found that no global virtual platform or interactive medium can replace local outreach and training. The Armenian mLab’s outreach workshops during the Idea Challenge, as well as the galvanization of coder communities at each of the five hackathon sites, clearly sparked the most inspiration and activism around m2Work. This does not mean that the global reach of the Idea Challenge did not have its benefits. Several of the six finalists’ ideas came from bright people that had not before participated in any mLab or mHub event. But infoDev also saw that those that had ties to mHubs and mLabs were more likely to take the idea further, provided they received initial follow-up support.

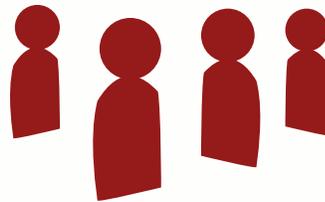
This means that local outreach and activation of communities is crucial to achieve a high quantity,

*“I would have appreciated expert opinions on how to push the app further and how to get it into the market rapidly. The organizer should have provided incubation and mentorship to all interested participants and not just the winners.”*

*“[P]rizes [that help the] winning team to sustain their business model and prototype to at least a year. The prizes could be cash or supports like Mentoring, Financing, Business Model, Marketing, [software] Licens[ing] [...]”*

*“[I would have] preferred the [mLab] to let us meet there [...] so that we could get the ideas straight and also get resources for testing and [meet] guru developers who would have come in greatly to help us improve the [...] application.”*

*“Financial and Business Networks.”*



*—Hackathon participants on the reasons why they didn't pursue their app start-ups*

quality, and continuity of engagement. The Innovation Competition of Step 2 should be broad-based, but participation should be enhanced through more targeted and intense outreach and education through local nodes, such as mHubs, mLabs, or other partner institutions. During the m2Work Idea Challenge, this was done as an adjustment at the midpoint of the submission period. In the future, these outreach activities should be emphasized more and implemented from the start.

The frustration of several hackathon participants over a buzz that they felt ebbed off too quickly leads to the conclusion that local and global competition stages can and should be integrated and alternated. While infoDev originally intended to go from global to local both in terms of prizes and support, it became clear that it is advisable to give finalists and winners exposure and experience through competing regionally and internationally. Hands-on entrepreneurship support will always need a strong local component, but high profile regional and global events can serve as a pressure and proof point for good teams, pushing them to forge their product toward marketability.

For both Step 2 and Step 3, infoDev learned that community facilitation is key on virtual platforms that aim to bridge physical distances. Without a dedicated community builder, collaboration and team building between innovators during the Idea Challenge happened, but rarely. Moreover, no teams formed in the virtual space. In addition, the affordances of the IdeasProject platform did not offer enough opportunities for exchange, such as dedicated discussion forums and comment functions for blog posts. Similarly, during the hackathon, the participants hardly collaborated across the five sites, and organizers had other priorities than to send updates to the interactive website that had been put in place. Any future activity that aims to enable cross-country collaboration and exchange will require community leaders that push questions and engagement on virtual platforms. For instance, open code repositories and video “check-ins” every few hours could enable global collaboration, if they are moderated and incentivized properly.

## Make a Strong Effort for Viable Partnership Models

The activities that infoDev, as well as mHubs and mLabs, implement are always designed to leave room for partnerships that enhance the value that they create for developers and entrepreneurs. m2Work was no exception. The project thrived on contributions of various partners—from the IdeasProject platform for the global Idea Challenge to the numerous local implementation partners for the hackathon (see the Overview section of “From Mind to Market” through the Example of m2Work”). However, given the short preparation time lines for both the challenge (December 2011 to February 2012) and the hackathon (July to September 2012), infoDev and the entrepreneurship enablers were not able to crowd in as many partners as they would have wanted.

The lesson here is that it is worthwhile to plan in more time and resources for partnership building and expansion of the activities beyond the infoDev microcosm. For m2Work, infoDev experienced great readiness to support the project from various partners locally and globally, but often this was realized only when it was too late to draw up more intensive partnerships. So it is likely that the marginal return on more effort spent and time taken to build partnerships would have been very high. In particular, infoDev realized that developing a well thought-through outreach and partnership plan already in the topic identification period could have helped to secure larger-scale engagements from partners, in particular at the global level.

In the future, infoDev should use more elaborate partnerships to strengthen the effect of event and competition based support models, in that the models provide branding and awareness, additional outreach channels, and unique support resources. For instance, it would have been hugely beneficial

*“I participated from Nigeria; I did not get any information from the organizer on the review of my app [...]”*



*—A virtual hackathon participant*

to include tech entrepreneurship hubs outside of the mHub and mLab network in m2Work. These satellite hubs could have hosted their own activities on their own account, but using toolkits and branding provided by infoDev. In this respect, the Water and Sanitation Hackathons<sup>1</sup> were models that infoDev could have emulated.

Similarly, the hackathon sites were able to conduct successful events, but they, too, pointed out that more time and additional resources would have enabled them to raise more contributions from partners locally, multiplying the hackathon's effectiveness. It is important to note that partnerships go beyond financial sponsorships and prizes, and often include in-kind contributions, such as sending experts and coaches to the hackathon sites. The partnerships that were struck already provided substantial additional value for hackathon participants, but most if

<sup>1</sup> For an evaluation of the Water Hackathon, see <http://water.worldbank.org/publications/water-hackathon-lessons-learned>. The Sanitation Hackathon website is at <http://www.sanitationhackathon.org/>.

not all focal points saw room for improvements. While hackathons and similar events should not be misrepresented as ready-made tools for start-up creation, they can contribute both to the galvanization and continuation of sustained partnerships for mLabs and mHubs.

Such partnerships can take different forms. It became clear that there is more potential, if sufficient thought and time are invested in designing a tie-in with partners' existing support programs. For instance, platform providers, such as BlackBerry and Nokia, sponsored additional prize categories that rewarded innovators working for a given device series at individual hackathon sites. But these large players also have acceleration programs and international events for hacker teams (such as Nokia's and Microsoft's App Campus, or BlackBerry's regional and national Jam Hack series). It would have been useful to create a structured follow-up process that would guide teams toward such offerings, while at the same time creating a greater motivation to do well.



Photo credit: mLab ECA



Photo credit: mLab Southern Africa

On the global level, additional partnerships would have been possible with more preparation time. Microsoft's Innovation Centers or Qualcomm's Global Reach program are just two examples of global entrepreneurship support networks that projects such as m2Work could tap into, if the right partnership can be struck. Moreover, organizations that focus on international development such as the GSMA Development Fund, the Bill and Melinda Gates Foundation, or other World Bank units could have added tremendous value, if infoDev had been able to spend the time necessary to coordinate and set up such partnerships. Again, the Water & Sanitation Hackathons have shown how powerful broader engagement of partners and sponsors can be.

Next to sponsoring and entrepreneurship support, an interesting resource that partners could make available for mutual benefit is open data. Several hackathon organizers mentioned that coders found the mobile microwork topic interesting and compelling, but they were lacking specific context and information. For instance, open data resources (compiled by the World Bank,<sup>2</sup> the Open Knowledge Foundation, and many others) could be enhanced with context-specific meta-information to provide a breeding ground for more compelling app prototypes.

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2 <http://blogs.worldbank.org/opendata/>.



Photo credit: mLab Southern Africa

# THE FUTURE OF THE "FROM MIND TO MARKET" APPROACH



Although m2Work can be seen as a successful pilot, the lessons learned should inform several adjustments to the methodology of infoDev's and others' upcoming "From Mind to Market" projects:

- Upcoming projects should be designed with a shorter and more integrated schedule between the broad-based innovation competition (Step 2) and the incubation and acceleration phase (Step 4). For instance, hackathons can be run in parallel to the advanced stages of the innovation competition, and the prototypes developed can be made part of the submission requirements. Mentoring, coaching, incubation, and acceleration support will be offered as prizes at different stages of the competition for finalist and winning teams.
- In addition, the requirement of an entrepreneurial mindset should be emphasized more strongly in selecting support and award recipients. With the support from infoDev's donors, the network of mHubs and mLabs is growing in depth and breadth. This can enable a better and more continuous activation of local entrepreneurial talent, as well as the integration of hands-on support to winners of competitions and other promising innovators.
- infoDev should aim for greater regional reach of events and support, as well as a more structured global linkup between the nodes that mHubs and mLabs represent. In particular, infoDev should follow requests from m2Work participants to add an

international competition leg onto local competitions. mLabs and mHubs have already hosted several successful innovation competitions,<sup>1</sup> implying vast tacit and explicit implementation knowledge on their part. Ongoing pilots and projects that infoDev is conducting—including a start-up internationalization initiative, an mAgri Challenge,<sup>2</sup> virtual incubation,<sup>3</sup> and distributed entrepreneurship support pilots, or crowdfunding—will bring more insights into how global and virtual entrepreneurship support can be run most effectively.

- infoDev should also aim to build and broaden its partnership models, for instance, by collaborating with strong implementing partners, including global level partners. With the growth of the "From Mind to Market" brand and infoDev's implementation capacity, the activities should provide increasing value for partners.
- Finally, infoDev now has a better sense of the resources required to run a "From Mind to Market" project and which tasks external partners should implement. This will help to make (annual) repetitions more efficient and effective, while building "From Mind to Market" activities as a brand and an important and well-integrated part of its portfolio.

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1 See Annex for weblinks.  
2 <http://infodev.org/mAgri>.  
3 <http://infodev.org/virtualincubation>.

From all that is known, m2Work appears to have been a successful starting point toward more effective entrepreneurship support projects for very early-stage innovators, helping viable ideas and business models move “From Mind to Market.” m2Work delivered satisfactory results for the small project size, but more importantly, it was a rich learning exercise for infoDev and its network of mLabs and mHubs.

While the project is only a small piece in a larger mosaic of mobile innovation support programs, it has been a crucial step toward finding a formula of support activities that convene mobile entrepreneurship networks across the globe. Now

that 12 mHub and mLab pilots are operational—and more in the pipeline—it is time for infoDev to create additional value for these entrepreneurship enablers and their clients. The overarching goal is to make the network “more than the sum of its parts.” m2Work has demonstrated that there is demand for such an approach, and it has yielded first insights on how to serve this demand.

More iterations and thought will be necessary to further refine projects that convene local innovation networks for maximum output of high growth start-up creation. As more benchmarks and knowledge become available, it will be important to conduct more rigorous impact and



cost-benefit evaluations than this report was able to deliver. Overall, it appears that m2Work showed good, promising results, but strictly speaking, only long-term tracking of start-ups and control group comparisons could yield highly reliable findings. This report serves to set initial benchmarks for future editions, but more work needs to be done on a comprehensive evaluation of “From Mind to Market” projects. This evaluation should include quantification of the impact on start-up generation and private sector development indicators, but also of the generation of immaterial resources, such as knowledge and skills. However, project implementers need to be aware that, if long-term impact evaluation is an important goal,

time-consuming and effort-intensive tracking and analysis will have to be budgeted for in advance.

The continuing support from infoDev’s donor partners indicates that there is room for further exploration of new pathways, and for innovation and iteration. This report finds that “From Mind to Market” projects such as m2Work can become an important pillar in early stage innovation support, and that infoDev should further strengthen the approach. With the lessons learned, future “From Mind to Market” editions could create even more value for the many bright and motivated mobile tech entrepreneurs that infoDev serves across the globe.

Photo credit: mLab Southern Africa





Photo credit: mLab Southern Africa

# ANNEX



## Links on m2Work

### Idea Challenge

Web page: <https://ideasproject.com/web/m2work>

Announcement: <http://www.infodev.org/en/Article.797.html>

News archive (incl. spot prize announcements): <https://ideasproject.com/web/m2work/m2work-newsarchive>

Closing: <http://www.infodev.org/en/Article.826.html>

Finalist selection: <http://www.infodev.org/en/Article.834.html>

Refined finalist submissions: <http://www.infodev.org/en/Article.840.html>

Winner announcement: <http://www.infodev.org/en/Article.842.html>

Alhurra TV / I-Tech video: <http://www.youtube.com/watch?v=zG1UH4dCAaY>

Blog post by Vili Lehdonvirta: <http://blogs.worldbank.org/psd/developing-world-innovators-rule-first-lessons-from-mobile-microwork-competition>

Blog post by Alexander Shakaryan: <http://blogs.worldbank.org/psd/microforester-seeding-social-entrepreneurship-while-planting-trees>

Blog post by Nicolas Friederici: <http://blogs.worldbank.org/psd/expose-engage-empower-connecting-unlikely-entrepreneurs-in-the-mobile-era>

## Hackathon

Web page: <http://m2workhackathon.org>

Announcement: <http://www.infodev.org/en/Article.894.html>

Summary: <http://www.infodev.org/en/Article.914.html>

Young Innovations Pvt. Ltd. Final Report: [http://m2workhackathon.org/sites/default/files/downloads/Report\\_m2Work\\_Hackathon.pdf](http://m2workhackathon.org/sites/default/files/downloads/Report_m2Work_Hackathon.pdf)

## Further Reading

### Useful Links from the infoDev Network and the World Bank

infoDev Work Program: <http://www.infodev.org/workprogram>

infoDev mAgriChallenge: <http://infodev.org/mAgri>

infoDev virtual incubation material: <http://www.infodev.org/virtualincubation>

mLab East Africa's Pivot East: <http://www.pivoteast.com>

mHub Nepal / MobileNepal's Pivot Nepal: <http://pivot.mobilenepal.net/>

mLab ECA's Regional Mobile App Contest: <http://www.mlabea.com/eng/regional-mobile-application-contest/>; <http://www.mlabea.com/eng/news-announcements/regional-mobile-app-contest-best-idea-winners-announced/>

mLab East Asia's Mobile Innovation Challenge: <http://mic.mlab.vn/en/>; <http://www.techinasia.com>

Photo credit: mLab ECA



[com/5-top-winners-mlab-east-asias-mobile-innovation-challenge/](http://www.worldbank.org/5-top-winners-mlab-east-asias-mobile-innovation-challenge/)

Water Hackathon Lessons Learned: <http://water.worldbank.org/publications/water-hackathon-lessons-learned>

Sanitation Hackathon website: <http://www.sanitationhackathon.org/>

World Bank Apps for Development Challenge: <http://www.worldbank.org/appsfordevelopment>

### Academic Papers

Auerswald, P. E. and L.M. Branscomb. 2003. "Valleys of Death and Darwinian Seas: Financing the Invention to Innovation Transition in the United States." *The Journal of Technology Transfer*, Vol. 28, Is 3-4: 227-239.

Blohm, I., Bretschneider, U., Leimeister, J. M., and H. Krcmar. 2010. Does Collaboration among Participants Lead to Better Ideas in IT-Based Idea Competitions? An Empirical Investigation. *Proceedings of the 43rd Hawaii International Conference on System Sciences*: 1-10.

Bullinger, A. C., Neyer, A.-K., Rass, M, and K.M. Moeslein. 2010. "Community-Based Innovation Contests: Where Competition Meets Cooperation." *Creativity and Innovation Management*, Vol. 19 (3):290-303.

Campbell, G. A. 2011. Incentive Competitions as a Policy Tool for Technological Innovation. Sloan School of Management Thesis, Massachusetts Institute of Technology.

Heydebreck, P., Klofsten, M., and J. Maier. 2000. "Innovation Support for New Technology-based Firms: the Swedish Teknopol Approach." *R&D Management*, Vol. 30, Is 1: 89-100.

Murray, F., Stern, S., Campbell, G., and A. MacCormack. 2012. "Grand Innovation Prizes: A Theoretical, Normative, and Empirical Evaluation." *Research Policy*, Vol. 41 (10): 1779-1792.

## Quantitative Hackathon Survey Results

Note: infoDev publishes these data sets to increase transparency and enable replication and additional analysis by third parties. Most open-ended responses were omitted to ensure participants' anonymity. The data were collected in order to generate illustrative descriptive statistics. There are substantial analytical limitations connected to the usage of the data for other purposes and without contextual knowledge. If you want to use the data, you are advised to obtain background information from infoDev and to ensure appropriate contextualization.

### Hackathon Participants

[https://www.dropbox.com/s/z30xqwp971i7ohz/m2Work%20Hackathon%20Participants\\_public.xlsx](https://www.dropbox.com/s/z30xqwp971i7ohz/m2Work%20Hackathon%20Participants_public.xlsx)

### Hackathon Follow-Up Survey

[https://www.dropbox.com/s/9p0ct3swhsg97yt/m2Work%20Hackathon%20Follow-Up\\_public.xlsx](https://www.dropbox.com/s/9p0ct3swhsg97yt/m2Work%20Hackathon%20Follow-Up_public.xlsx)

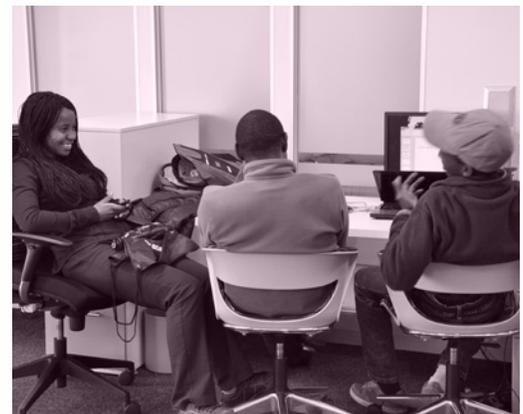


Photo credit: mLab Southern Africa



## Summaries from Hackathon Focal Point Interviews

### Integration of Idea Challenge and Hackathon

There was agreement that the integration of challenge and hackathon did not work well. Few ideas from the challenge period were taken forward during the hackathon. The challenge helped to introduce the topic to some, but often the participants or constituencies of the hackathon were different from those interested in or participating in the challenge. Probably the hackathon would have worked almost as well without the idea challenge.

### Topic of Mobile Microwork

The topic of mobile microwork was challenging to understand in the beginning. It required direct coaching and hand-holding to get participants to think about and understand the concept. However, participants thought the topic was meaningful and interesting. In the end, participants understood the concept better and sometimes small communities of practice formed around the topic.

### Motivation to Participate and Perform during the Hackathon

Hackers are problem solvers. It helps when hackers are able to identify and work on problems from their own day-to-day experience. For the kinds of hackers that m2Work attracted, the prospect of social impact is important. Whatever the app that they develop, a feeling of ownership of the app motivates hackers.

### Standardization versus Local Adaptation of Award Structure

Letting each hackathon site or organizer decide on the prizes awarded to the local or regional winners is necessary to accommodate the specific conditions at each site. If incubation spaces are available, incubation should be offered as a prize, as it is a very strong motivator. Different prize categories can be useful to incentivize different participant types (for

example, gadgets or cash prizes for techies that don't want to start a company, incubation or seed money for participants willing to start a company). However, a global prize should be awarded in the future, as this is much more prestigious and would be a very strong motivator to do well.

### Hackathon Preparation (Outreach, Idea Design, or Pre-Events), Excluding Team Formation

To make full use of all the opportunities in the preparation of a hackathon, more time is required than was the case. A virtual community for idea exchange and preparation, as well as team-building, for the signed-up participants can help to advance the ideas even before the event starts.

### Participants and Team Formation

The m2Work Hackathon mainly attracted students and junior hackers. Fewer senior, experienced, highly-paid coders attended. Pre-events helped for team formation, saving time at the event. Teams that had members with different and complementary skills did better, especially when entrepreneur or business types teamed up with techies. Women often added specific skills, for instance, in terms of presentation and design. Nontechnical or entrepreneurial people (such as development practitioners or students from other fields than computer science or information technology) did not participate in significant numbers. Although there were concerns that not enough was done to match up the participants, it is not obvious that the organizer should intervene and prescribe team formation entirely.

### Event Facilitation, Design, and Content

The clear and structured facilitation through YIPL helped the site organizers. Additional evaluation tasks (such as interviews) were sometimes challenging to carry out for the organizers. Whenever ideas and teams were fixed before the events, this allowed for more focused and effective work during the hackathon. There is disagreement whether such a hackathon event should be extended to three days. Sometimes it was advocated to leave it at two days to accommodate

professionals and to do more preparation work (such as pre-events, including team-formation and “ideathons”) in advance. Other times, it was pointed out that travelling to the site multiple times can be a problem for participants, so that a three-day “all-in-one” event makes more sense. In future editions, subject-area and technical experts should be present at the hackathon, fulfilling roles of mentors, coaches, and potential investors. Specification of problem statements, such as during the Water Hackathon, might be helpful to generate more meaningful output, but there has to be room for hackers’ need for ownership and free thinking if they are supposed to follow through on prototypes toward start-ups. One way or another, more context material to work with should be given to hackers, in particular topic-specific open data repositories or market research. There should be at least one follow-up event after the hackathon for the teams to refine their prototypes.

### Global and Virtual Collaboration

A global collaboration element would be of great value for the hackathon. Teams could jointly follow presentations that introduce or explain the topic, identify similar projects and work together, adapt solutions to a different mobile platform (depending on local coding expertise), partner up globally for app marketing and distribution, and listen to everyone’s pitches at the end. The collaboration and virtual element should probably not interfere with the intense coding period.

### Value for mLabs / mHubs

Overall, the hackathon added value for the mLabs, for instance, through solidifying existing partnerships, building the mLab brand locally, and generating incubatees.

## “Sound Bites” from Hackathon Participants<sup>1</sup>

### General Feedback

“m2Work was great. It showed me my potential, like if I can design a prototype from an idea in just 30 hours, I can do anything. Also I came to meet with top-level developers there, which was like the best prize hackathon can provide me.”

“What an incredible experience it was. I would like to work more on apps.”

“Having subject experts a coordinators will give hackers confidence in building a prototype.”

“Make winning price more so that the winners have more financial help to further refine the idea.”

“Overall the event was very good, it helped us focus on our development. We were able to test some control procedures that we are interested in implementing in our start-up. It has also highlighted the need for doing research and presenting our ideas to potential investors. It has also highlighted the value of team work and being in a contributing group. It has also highlighted the need to turn ideas into ventures which is very different and requires total support.”

“The hackathons events are a very great opportunity especially for me as student to acquire more skills as developer. Currently on most universities we as students don’t get opportunities to showcase our different abilities in the IT field.”

“I think that the apps that were presented at the hackathon are pie-in-the-sky applications that are difficult to diffuse in the market due to the complex environment of the stakeholders involved in implementing the app successfully. I think that hackathon judges must not be amazed by the complexity of prototypes but recognize the ease of applicability of the app into real-world systems.”



Photo credit: mLab East Asia

1 The comments came from m2Work Hackathon surveys. They underwent light copy-editing to improve legibility.



"m2work ideas are just too many for a few groups to exhaust so frequent hackathons and better publicity is necessary to ensure that more ideas are provided and acted up on. Judging should also take the m2work aspect as the fundamental goal."

"Support mobiles to test."

"Need to check carefully what every team is about: Did they really do the task at the time the contest happened or have they already done it at home?"

"The m2Work hackathon event in Vietnam was good in overall. But the time of announcement about the event was too tight. The information about the event should be opened more, via a trusted distribution channel. We received appropriate emails, but we would like the information to be distributed to wider community."

"Great support from organizers. A good start for us just in two days. Not fair for busy one. If we have only one idea and one platform with clear standardize evaluation will be better. However, it will lack the creativeness, freedom, and playing for fun (that I really like in this hackathon)."

"1. The rules (candidates must do 80 percent of project at Hackathon contest): Someone or some teams are repaired (50-80 percent) at home or re-used their project (from others contest, from their own projects) and bring them to the Hackathon contest. They played games, listened to music, chatted when other teams were working very hard. (This thing make me very disappointed about this Contest, others are fine and I like it). 2. Award criteria: Some teams made their app not following Hackathon's m2work spirit."

"Continued mentorship of hackers. Maintain records of hackers who have participated before so that when they establish they can offer mentorship to new hackers. Link hackers with potential investors/venture capitalists. Extensive publicity of hackathon events to increase participation and competition. Look into ways of advising hackers of securing intellectual rights of their inventions."

"I noticed that there were repetitions of ideas that were in the previous hackathon and were rated

at the top by the judges. I think this is not good because it discourages creativity of new ideas. It's not nice to have a working idea in the market being presented in M2work hackathons over and over again."

"One suggestion for the next events can be an online video connection with the other m2Work hackathons."

"A higher internet access bandwidth will be highly appreciated during the hackathon."

"Provide hackers with a template / process / checklist that can be used to generate ideas. The same questions are asked over and over: how will your app make money? Who will use it? So how about putting all that stuff together and converting it into an FAQ wiki? Secondly the same applies to coding. Most of the apps are connected to the web so how about providing hackers with tutorials on developing simple cross platform web connected apps. Follow ups: This survey is a good example of a follow up. So follow up on hackers in a few days' time, plenty of good ideas and apps were presented . . . something good is and will come out of this. Overall: I attended the South African Mlabs Hackerthon. Awesome event!!! A troop of developers are and will change the way we use technology for a long time."

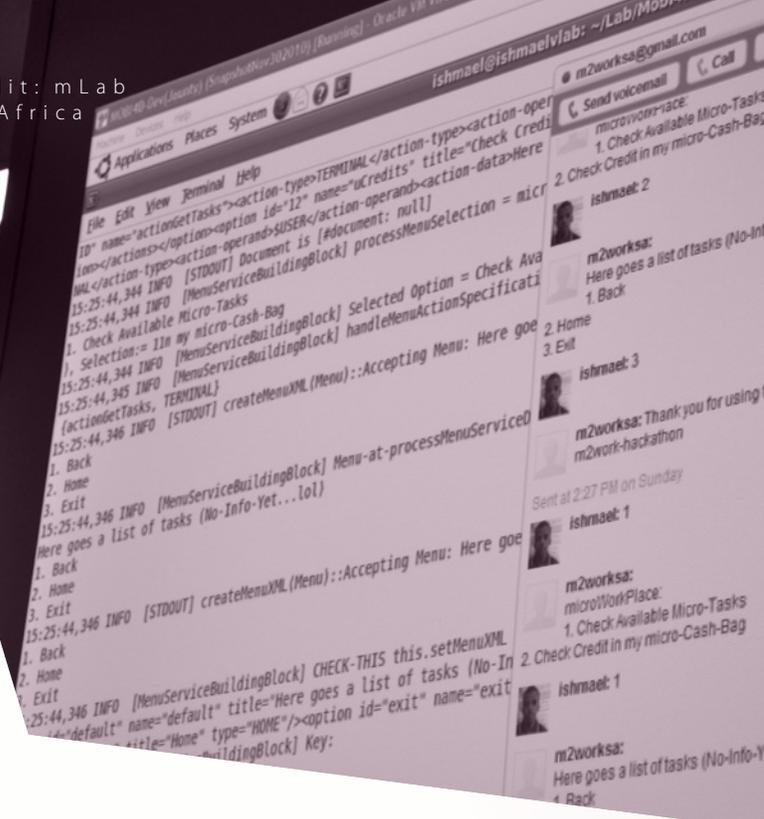




Photo credit: mLab Southern Africa

"I was a virtual participant, maybe more interaction with the virtual participants could be applied."

"High amount of cash prizes would do great. Also a trip prizes to attend various worldwide national business conferences than only cash prizes would help us to learn more and help turn our ideas into real business venture."

"This was a good job for a hackathon that was first of its kind. We hope to attend many more. Work on the facilities like badges and t-shirts to ensure everyone who attended the hackathon left with one of them."

"It is very helpful event for our team in general, we have noticed our advantages and disadvantages."

"Most of the people that entered the SA competition are students, the prize must also include an incentive for them and not just towards the start-up. Otherwise, thank you very much, we

hope to make a big impact with our prototype. M2work is a great platform as it took many of us out of our comfort zones and challenged us to be more than we can be."

"There needs to be more "awareness campaign" especially to software development houses to understand the value of bringing their developers to hackathons. So some more PR exercise for organizers."

"This event is so important to IT specialist and the problem is that it is not well known, so if you will make sure that people understand what is all about then you will see many people getting involved. Also it must be known to our government because there are many opportunities that government can get from it (e.g., creating jobs for people via their phones). This is an excellent idea that anyone came up with, pick it up guys."

"m2work hackathon was an awesome experience.

It was a lot more than I had imagined. All the hackers were amazing. We were fully dedicated towards our work. Me with my team gave our best and we hacked the hackathon. It's a proud feeling to be a part of the hackathon. We are still working on it to bring it to a live product so that it'll be useful to lots of people. Really a great and amazing experience of my life."

"m2work Hackathon was a life time opportunity for me. I would like to give special thanks to World Bank for showing interest in this sector and to organizers, who gave their full dedication to make it perfect. This learnt more than I had imagined, and to my and my team's hard work we hacked the hackathon. We are still working for it and looking towards World Bank for next competition with seed amount, so that we make our dream come true and help millions of people."

"Everything was awesome in my point of view, the food facilities were great, and the required materials provided during the hakathon were enough. It would be great if some sort of arrangement for sleeping would be made in future programs, coz HACKERS NEED SOUND SLEEP TOO. :)"

"To 'focus on inclusive innovation/economic & social development,' we brought the 'new' platform that we think it is the best appropriate platform for our selected idea. The 'new' platform supports 'write once, deploy on all Major Smartphones (Android, iPhone, BlackBerry, Windows Mobile, and Symbian):' It is RhoMobile Suite. We also would like to have sponsors to put our app into the market."

"I did not get a t-shirt though I really wanted one."

### On the Support that Participants Received Following the Hackathon<sup>2</sup>

"Satisfied with the support. It jump-started our team on the proposal development and opened our eyes to see more business opportunities available for our app."

"Highly satisfied with the support. Let me just say



2 Includes answers only from hackathon participants that received some kind of follow-on support.

that I'm happy with the support that I've received so far. Though I am open for more support."

"Highly satisfied with the support. It inspiring me and give me very much useful information and knowledge."

"Highly satisfied with the support. We highly appreciate the support from mLab [ECA] that we received in the early stage of our development. Now, when we moved forward, we are trying to build a network with potential partners outside Armenia. Also we are making efforts to afford the best UI designers and developers, so we will be able to make using MicroForester a fantastic experience. I have already told in the previous survey that we would be happy to receive assistance on dealing with UK organizations and events."

"Satisfied with the support. Friendly, willing to support anytime I need. - Try hard to link me to expert or other groups."

"Highly satisfied with the support. The m:Lab East Africa Management and community has been really openly helpful in the past five months. Business coaching, mentorship, testing facilities, etc..."

"Not satisfied with the support. Moral support was good, but we were looking for investors. I want take this idea to business, for that we need more that a moral support. Like testing lab, mentors, grants..."

"Satisfied with the support. They gave us ample time during the coaching. The sessions were also informative enough."

### On Follow-On Support that Participants Were Missing<sup>3</sup>

"Familiarization with the environment and the way forward in development platform."

"Financial support."

"Financial and Business Networks."



3 Includes answers only from hackathon participants that did not receive follow-on support.

"Yes, development support and help in terms of my subject at hand. Mentorship program, both in development and in a business sense."

"Mentorship with concerned experts."

"A prize to winning team to sustain their business model and prototype to at least a year. The prizes could be cash or supports, like mentoring, financing, business model, marketing, licenses of different softwares, which would be used to promote prototype."

"Mainly we are not trained one in servers and business so this could be helpful for us. Thanks."

"I preferred the ihub to let us meet there either at the mlab, ihub or nailab so that we could get the ideas straight and also get resources for testing and also am sure there are also guru developers who would have come in greatly to help us improve the kaisari application."

"We are expecting to manage some company for that. Maybe this survey would be in our mobile survey application which we had developed during hackathon. So we like to get help on what the organization could."

"I participated from Nigeria, I did not get any information from the organizer on the review of my app, and also we need such events to be organized in Nigeria to help other mobile developers so as to create jobs to help the economy."

"Financial and coaching to realize the core function of the hackathon, which is creating employment for the unemployed."

"How to get more resources and tools."

"Advice on writing the business model and the proposal."

"We did not develop that project and therefore we did not ask for support from Incubators or mLab. But if you are interested in our idea, it will be nice from you to support us for promoting that project,

which helps blind people connect to the helper by phone and the helper give directions to the blind person using blind's phone's camera scenery and GPS coordinates."

"I would have appreciated expert opinions on how to push the app further and how to get it into the market rapidly. The organizer should have provided incubation and mentorship to all interested participants and not just the winners."

"Yes, we liked. - Financial, ideas. - Big ideas about the application."

"I did not [...] receive anything."

## Reasons for Hackathon Participants Not Continuing to Work on the App

"Lack of time."

"I need more techniques such as servers, and some phones for testing."

"Later I came to realize new idea that had better potential and for me new idea got more priority. However m2work did provide me exposure and pushed me to keep working on the mobile app sector."

"We found difficulty in coordinating our team to continue with the project as we were all students from different institutions each with equally busy schedules."

"I stay far from the rest of the group members I joined during the m2work hackaton."

"Team is busy doing their full time jobs. No follow up from organizers. We were called for the competition (hackathon), it got over, app got over, etc."

"Lack of support from the organizers in terms of funding and incubation. Only few groups which took place in the competition took the first three positions and got the necessary help."

Photo credit: mLab ECA



