# The Computerworld Honors Program

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## Final Copy of Case Study

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*Laureate*

**Organization:**
World Vision

**Organization URL:**
http://www.worldvision.ca/Pages/welcome.aspx

**Project Name:**
Last Mile Mobile Solutions (LMMS)

**What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?**

For tens of millions of people around the world, hunger is a constant condition. For far too many, hunger is aggravated by lack of shelter and other necessities most of us take for granted. The causes include famine, natural disasters, civil conflicts and many other factors. Last Mile Mobile Solutions (LMMS) was developed by World Vision Canada in collaboration with FieldWorker Mobile Technology Solutions, Intermec and Sybase, an SAP company, to increase the aid agency's efficiency, effectiveness and ability to document and analyze its humanitarian programs in which it distributes food, medicine and various other types of aid around the globe. Currently, the majority of humanitarian aid distributions are managed in the field using manual, paper-based systems, which can be inefficient, labor-intensive, painstakingly slow, prone to human error and vulnerable to fraud. Additionally, these paper-based processes used to register aid recipients and record distributions are awkward and intrusive, often depriving recipients (beneficiaries) of their dignity. In developing LMMS, World Vision has adapted mobile technology already in use in private sector environments in order to automate its paper-based processes. The solution is designed to function in remote, rugged environments that may lack stable electricity and communications or may even be impacted by war or civil conflicts. As such, LMMS can also benefit other organizations doing similar types of work. While no hard metrics were established against which to measure the project's success, the intent was to streamline the on-the-ground processes (registration, distribution, documentation) in order to reduce staff time and beneficiaries' waiting time, and to ensure the integrity of the processes and the associated data.

**Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.**

LMMS was developed using FieldWorker Enterprise, a rapid application development solution that furnishes organizations with a complete, enterprise mobile data collection and synchronization solution at a fraction of the cost of in-house or customized solutions. Embedded in FieldWorker Enterprise is SQL Anywhere, Sybase's data management and synchronization suite that enables the rapid development and deployment of database-powered applications in remote and mobile environments. The physical components of LMMS include a roaming laptop server that runs the LMMS software to administer the aid program, including beneficiary registration, creation of distribution plans, data management and project reporting. Field staff collect registration data, verify beneficiary identities and document aid distribution using ruggedized Intermec handheld devices equipped with touch screens, bar-code scanners and cameras. The devices are connected to the roaming laptop server via a wireless network, or via a cradle as a backup. As field staff collect beneficiary information during the registration phase of projects, they produce beneficiary photo and bar-coded identification cards on the spot. Information resides on both the handheld devices and on the roaming server in Sybase SQL Anywhere databases. The handheld devices run the UltraLite implementation of SQL Anywhere as well as SQL Anywhere's MobiLink synchronization technology. The main technical challenge facing World Vision and its technology partners was to develop a solution that could work in very remote and rugged environments in which power and connectivity between the handheld devices, the roaming server and the organization's centralized server in its headquarters were intermittent. LMMS takes advantage of FieldWorker's and SQL Anywhere's "always available" functionality, which provides access to local data even when connectivity is not available. When connectivity becomes available, data is synchronized between the handheld devices and roaming and back-end servers.

**Please list the specific humanitarian benefits the project has yielded so far.**

LMMS makes it possible to identify individuals in need of assistance and to deliver and document humanitarian aid more efficiently than is possible using paper-based, manual systems. LMMS empowers beneficiaries (people receiving aid), allowing them to participate in aid programs without surrendering their dignity. From an accountability perspective, LMMS enables World Vision to analyze the status and impact of relief operations more quickly than in the past and to share that information rapidly with donors and partner organizations. More specifically: Beneficiaries have reported feeling a greater sense of empowerment because they own their ID cards and photos, they do not have to "give away" their fingerprints, and they feel more included in the distribution process. Beneficiaries spend less time waiting in lengthy lines, which has an immediately positive impact on decreasing personal security risks, while increasing feelings of self-worth and productive time available for critical household and income-generating tasks. Aid agencies as well as donors are able to account, down to the household level, where aid has been distributed, as well as immediately identify lost items, beneficiary receipt, shortages and areas with continuing needs. A recent independent study conducted in Haiti by Accenture Development Partnerships found significant time and cost savings across beneficiary registration, pre-distribution, distribution, and reporting activities. While savings could vary depending on a variety of factors, the study revealed at least 50 percent time savings for a single distribution project. In the case of multiple distributions, time savings increased up to 90 percent over the old, paper-based, manual system. LMMS has also proven quite reliable in many of the world's harshest environments for advanced technology. And because of its extremely intuitive design, training requirements have been minimal.

**Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.**

"When we use the LMMS system, the people who are receiving aid say they feel a sense of empowerment because the system is more reliable. With their own ID cards and picture verification, they do not have to give away their fingerprints, and feel more included in the distribution process. They also spend less time waiting in queues, which reduces overall tension and personal security risks at distribution sites, while freeing up time to care for children and do other critical household and income-generating activities. By using LMMS, the World Vision field workers become knowledge workers," allowing every transaction to become a data collection opportunity, which further informs analysis, decision-making and planning of aid efforts. And, of course, LMMS allows aid agencies and donors to account for where aid has been distributed, right down to the household level. If you have ever been to relief situations, you can find an excuse for any inefficiency. Thanks to LMMS, we don't have to." - Otto Farkas, Director. "The biggest benefit of LMMS is that it dramatically reduces the time it takes to make a distribution [of food or other types of aid]. In one case, we were doing a distribution to about 400 households. Before LMMS, this distribution would have taken at least half a day. With LMMS, the distribution took a little over an hour and a half." - Unidentified aid worker from YouTube video (http://www.youtube.com/watch?v=u-rF36KRWks). "Since World Vision has been using the LMMS system, things have been much better because now if something is meant for you, you will get it, in less time than it took before and with fewer problems." - Beneficiary (http://www.youtube.com/watch?v=u-rF36KRWks] latest video: http://www.youtube.com/watch?v=iNS8OFE2s30).