



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

YEAR:
2012

STATUS:
Laureate

Organization:
Infratab Inc.

Organization URL:
www.infratab.com

Project Name:
Sustain. Track. Trace. The Nicaraguan Spiny Lobster

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

The social/humanitarian issue for which the project was designed to address is the sustainability and traceability of the Nicaraguan spiny lobster. The Nicaraguan spiny lobster is an economic resource to Nicaraguan industrial lobster companies, 300+ small fishermen known as artisans and the Nicaraguan population. The Nicaraguan spiny lobster population is decreasing due to the difficulty in enforcing the number of traps in use by artisans and non-Nicaraguan lobster boats. Enforcing the number of licensed traps means reducing the income of many of the artisans as much as 67%. This comes at the same time that industrial fishermen exporting to the U.S. and the EU are faced with the requirement of batch-lot track, trace and temperature monitoring of lobster caught. Artisans wishing to sell their catch to industrials for export are thus faced with track and trace requirements that are hard to fulfill given their size, skill, computer resources and savvy. The specific metrics used to measure the projects success include: 1) real-time GPS tracking of traps at a location and number of lobsters caught per location, 2) number of unlicensed traps found and removed from the ocean, 3) number of artisans who provide temperature track and trace on each daily catch, 4) increase in the Nicaraguan spiny lobster population. INPESCA, the Nicaraguan government fishery agency, has been chartered to implement a sustainability program, enhancing its current data with GPS tracking of trap locations and lobsters caught at these locations with the purpose of setting annual catch limits and annual catch targets.

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.

The technologies used: 1) a combination EPC/NFC tag (an EPC tag + a NFC tag, together), Infratab/UPM Freshtime seawater EPC/NFC line, buoy and trap tags, Infratab Freshtime EPC/NFC sensor tags for lobster containers; 2) plastic non-tech cable ties with handwritten IDs for traps (alternative to the seawater tag); 3) Samsung Nexus-S NFC smartphone; 4) Psion Workabout Pro RFID EPC/NFC mobile reader; 5) Freshtime PC, mobile and smartphone dashboards; 6) Freshtime cloud; 7) Hermani AG insulated plastic lobster containers. The technical challenges: 1) RFID tags that could survive being underwater for longer than a year. Tags for lines, traps and buoys. Lifespan: 1 year. Difficult to remove. Difficult to counterfeit. 2) RFID tags that would be inexpensive to use by artisans yet usable by fish ministry ocean auditors to locate traps, industrial fishermen and their packers for the supply chain. Answer: place an NFC tag on an EPC RFID tag. 3) An inexpensive RFID affordable and easy-to-use reader for the artisan which could send data automatically to a cloud database. Answer: NFC smartphone. A longer distance RFID mobile reader for finding and reading traps as well as read NFC tag. Answer. Psion Workabout with EPC/NFC. 4) With all this high tech, for some artisans, plastic cable trap ID tags.

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

We are at a stage where the technical benefits are known and measurable. The RFID seawater tag has endured six-plus months of still working in seawater. The use of a cold container and Freshtime sensor tags result in increased price of lobster, sufficient to pay all tagging costs and generate positive cash for those operating with licensed number of traps. The humanitarian benefit comes when there is hard data that validates that the spiny lobster population is sustainable. The other humanitarian benefit is that the artisans are able to achieve sustainable living, giving enforcement of an annual catch limit. Objective is that artisans who care can achieve higher prices for verifiable, traceable fresh lobster. The challenge is acceptance by artisans who have been operating with more tags than were licensed for years. Unlike in the U.S., lobster buoys are used infrequently. Instead, GPS cell phones are used to record the location of traps so that only the artisan knows the location of his traps. Traps identified, either using Freshtime seawater tags or plastic non-tech cable ties, enable on-ocean government auditors to know what traps are licensed and to confiscate unlicensed traps. Finding un-buoyed traps is the issue.

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.

Our quote must be from an artisan. We are not there yet, but we will be there.