



ike case study

by the Global Entrepreneurship Lab

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Electra case study

The following business case reflects the savings and competitive advantages that a company can achieve by implementing ike.

1. Introduction

Electra is the 8th largest electricity company in New Zealand. The company owns and operates the electricity lines and distribution assets for 40,000 users in New Zealand. To ensure that quality and reliable service is delivered to its customers, Electra is dedicated to maintain, monitor and manage its infrastructure in a professional manner. This involves a lot of field work and is not without challenges. This case study explains cost improvements made by Electra by introducing ike into its operations. Overall, Electra saved 50 percent of in-the-field data capture costs and completely eliminated back-end data entry with the use of Surveylab's ike.

2. A day in the life of Electra before ike

Situation:

Electra must constantly maintain, monitor and manage its infrastructure by capturing field data with multiple devices that then need to be synchronized. Electra had to post process all the information taken, a process that took a lot of time and generated many mistakes and discrepancies between contractor assessment of power pole condition and Electra's own assessment of the same asset.

Furthermore, natural disasters such as floods and slips regularly affect the region where Electra works causing power cuts, damage to power lines and network, road closures, etc. In these circumstances, access to sites for data collection can be difficult or



dangerous and this can lead to inaccurate recording of the assets damaged.

Electra used to address this task by ensuring that all Electra's contractors took photos of the power poles being assessed, accompanied by a GPS fix. However, Electra remained faced with significant data capture and maintenance challenges such as:

- Significant time lag between asset data capture and population of the GIS database. Sometimes up to 4 months.
- Transcription errors due to illegible handwriting. In these cases, re-work and subsequent data entry were required.
- 20% mismatch between photos taken by contractors, pole numbers and related paper records.
- All re-inspections due to these errors were expenses above the \$180,000 annual allocated for inspections.

Costs:

The costs were divided into 2 categories: Surveying which includes labour, vehicles, gas, etc. and Data Entry – Post Processing (DE-PP). Electra spent the following amounts of money:

Data Entry – Post Processing (DE-PP)	\$5,000
<u>Surveying</u>	<u>\$188,000</u>
Total	\$193,000

The company used to outsource the Data Entry – Post Processing stage and they realized that there were many discrepancies in the data they captured so that the cross checking cost had to increase again.

3. A day in the life of Electra after ike

Situation:

Surveylab designed a data capture application which was both logical and mirrored Electra's existing paper based methods. The application format allowed additional checks to be put in place. For example, each pole has a serial number followed by a digital verification number called checksum. In the past, this number was used to verify exactly which pole had been inspected by the linesman — but if the linesman got a digit wrong it was impossible for the data entry person to verify which pole had been inspected. The application forced the linesman to enter a valid pole serial number and checksum before they could proceed, thus ensuring the pole was correctly referenced at source.

The application also forced the linesman to answer all the questions about the power pole's condition before they could complete a pole's inspection. If issues were found, up to 6 photos could be recorded by the linesman of the pole.

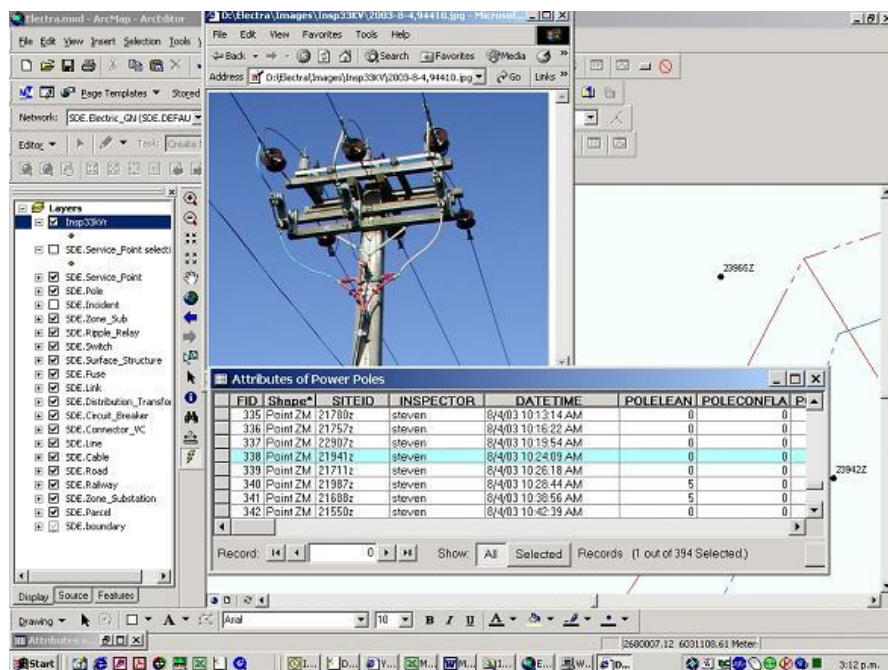
Electra uses ike to record location and condition of all network assets, ensure that high quality asset data capture is reported by contractors, record the before and after condition of repairs to check contractors work and monitor tree growth over time to plan cost effective pruning programs.

ike's digital camera ensures that each object or asset measured in the field is the correct one and each photo or position captured using ike is date and time stamped. Photographs, attribute and location data captured in the field integrate seamlessly with ArcPad, a mobile GIS application or can also be exported to any GIS. For Electra, this provides a proof of pole inspection by the contractor, and it is useful in case of legal challenge.

ike also enables capturing a remote target using a laser-range finder. ike's GPS and real-time DGPS processing allow for a sub-meter accuracy of the target location. This allows Electra to capture asset location and condition from a remote location, which is very useful when the access to the asset is obstructed, dangerous or non-existent (e.g. power pole located across a flooded river).

Results:

- No data discrepancies
- All data was collected and transferred into the ArcGIS database
- Immediately obvious savings in rework
- No lag or turnaround time between data captured and data being reviewed by Electra
- Savings in data entry



Costs:

Costs were substantially reduced after the company started to use Surveylab's product, ike. They did not have to spend in Data Entry – Post Processing anymore and the surveying stage was more efficient and accurate.

Survey cost before ike	\$193,000
<u>Survey cost after ike</u>	<u>\$129,000</u>
Savings	\$64,000

4. ike versus competitors

Surveylab's competitors provide products with undetermined accuracy under difficult circumstances. They are useless if you want to measure remote points that cannot be accessed easily. On the other hand, Surveylab's ike has the best accuracy in the market for any condition you face; its features make it the most comprehensive solution for asset management control and its ease to use reduces the training and operating costs in the short and long term.

Electra has tried other products and they claim that ike is the product that has given them the greater savings for their business by being 50% more efficient than the competition's best product. ike's additional features let Electra save 34% more than what they would save if they use other products.

