



Inveneo creates technology solutions that meet the needs of NGOs and the communities they serve

A new way to serve NGOs and remote communities with technology

How Inveneo is changing the way communication solutions are made available

Currently technology and communications services are delivered to remote communities in developing countries in one of two ways:

- Through Non-Governmental Organizations (NGOs) or other aid organizations
- Through commercial or government owned organizations such as phone companies, consumer products companies and ISPs

However, there is a limited amount of aid and traditional companies cannot find business models or capital to serve these areas. This leaves large parts of the world population under-served. In fact, over one billion people have no access to electricity or telecommunications, much less simple computing, e-mail or basic Internet access tools.

Inveneo, a 501(c)3 non-profit organization, offers a new alternative to these NGOs and communities through its open, non-centralized, sustainable approach. Inveneo's mission is to match the specific needs of NGOs and people in these under-served

areas around the world with affordable technology solutions. Inveneo designs these technologies with unique self-management capabilities to give local people full control over use and maintenance.

Through partnerships with technology companies for system components and delivery, NGOs can adopt this powerful technology at a low cost.

Inveneo incorporates open source technologies into its solutions allowing non-engineers to utilize these highly versatile and reliable technologies without the burden of high priced support agreements and licensing costs. Through the integration of easy to use user interfaces and instructions how to build these systems locally Inveneo encourages the spread of these systems.

Support is also provided via discussion groups, email lists, monitoring tools and consulting services. Inveneo participates in conferences and training events to teach others how to build appropriate solutions. The creation of a portal to provide information and exchange experiences with other technology projects that serve NGOs and remote communities around the world is planned.

Below: Inveneo's Steve Okay is teaching at the ICTP, Trieste, Italy

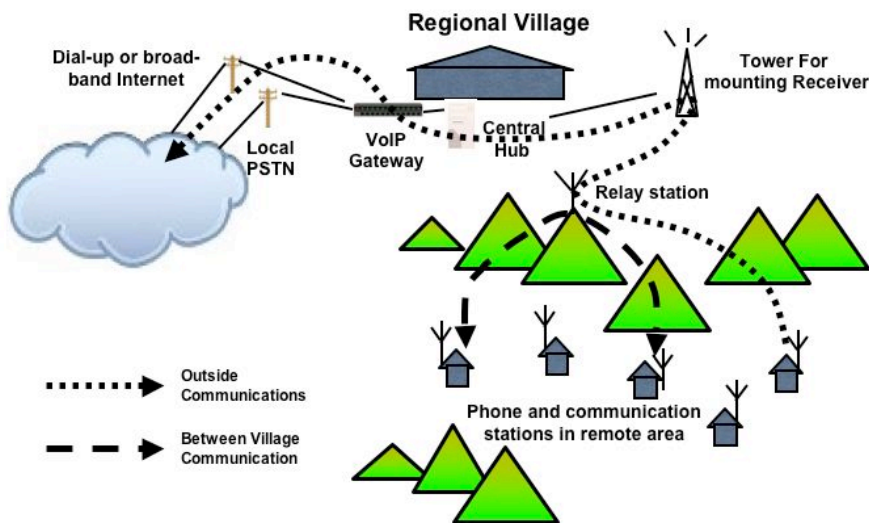


Below: Jane Nabwire of ActionAid shows Ugandan villager how to use email



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Solar powered communication system



A first: A solar powered communications system

The lack of or the unreliability of power and phone lines as well as the high cost of access to existing infrastructure severely limit the ability of NGOs to provide services. Communities are isolated and depend on intermediaries for information.

Inveneo has designed a communications network that allows NGOs and the supported communities to communicate between various stations as well as into the existing phone network and Internet. The stations provide computing and phone capabilities while operating with battery power charged from solar panels or other forms of power generation such as wind, pedal, micro-hydro and more. Wireless networking (WiFi / 802.11x) provides the communication between the various stations and the central hub. Voice over IP (VoIP) is used to transmit phone calls from the stations to the hub. The central hub provides the interface to the existing phone network (PSTN) and Internet. Through use of relay stations the reach of the wireless network can be extended to cover distances of up to approximately 100 km (60 miles) from central hub to the stations.

How this communications network can be used

There are many scenarios in which this complete network or components can be used to improve the reach or impact of development and aid projects. Here are some examples:

Health care: Health clinics can communicate in real time with doctors and nurses in hospitals; PCs are used to gather statistics and access databases, review treatment options etc. Communities are empowered to document traditional treatment options and to share this information.

Income generation: Through improved communication farmers are aware of market prices for crops and materials allowing them to increase their income by being in a better negotiating position with middlemen. Coops are formed between villages to improve buying power and share resources. This results in substantial income increases.

Aid distribution: Through access to databases in real time aid (e.g. food rations) can be distributed more efficiently ensuring that all beneficiaries receive their fair share.

Community empowerment: Communities get access to information allowing them to take part in shaping on their own destiny. Information about government programs and citizens rights empower people to be aware of their rights and opportunities.

Education: Communication tools and the ability to efficiently use these is a crucial skill for future generations. The integration of ICT in teaching curriculums demonstrates this capability. Inveneo's system allows more children and adults access to these tools. The network also allows for delivery of content for the curriculum.

Disaster relief: Rapid and cost effective deployment of phone and data networks after disasters such as hurricanes and earthquakes. This allows first responders to communicate locally, regionally and globally. Affected populations can access voice and data infrastructure.

Feature overview

Solar powered communications system

1. Central Hub Station

Gateway to local phone network (PSTN, analog or digital); Internet access gateway (dial-up or broadband); voicemail system with mailboxes for individuals; intranet web server for local content; file sharing; network monitoring

2. Solar Powered Relay Station

Extends the range by 20 km or more; Point-to-point or point-to-multipoint connections; multiple Relay Stations can be connected to the Central Hub to cover large areas

3. Solar Powered WiFi Phone Station

Small footprint; rapid deployment; security through access codes; LAN port for data hookup

4. Solar powered PC and Communications Station

PC: energy efficient PC; Linux OS; X Windows graphical user interface; office productivity suite (word processing, spreadsheet, email); web browser
Phone: "standard touch tone phone"; ability to check for voice mail messages

General design features

Rugged, water and dust resistant cases; all Station systems have no moving parts; tolerant to tropical and desert climate; low cost and long durability.

Open source

Inveneo's systems utilize open source software (Linux, OpenOffice, KDE, Mozilla, Asterisk and others). Our designs are made available under the GPL to the public. Many components are designed to be manufactured by the end user communities in the countries of deployment and Inveneo provides the plans to build these.