



DISCOVERY RESEARCH GROUP



CASE STUDY

ASTERISK IP-PBX

OVERVIEW

One of the growing demands placed on call centers today is the need for delivering reliable services at a competitive price point. In an industry where competitiveness runs steep, the almighty dollar is often the driving determinant for many organizations when deciding who to partner with for their contact center needs. Recognizing that price is a dynamic force for many customers, Discovery Research Group, a world-class market research organization, began looking at technology solutions that would improve efficiencies, enable them to better manage their overhead costs and pass the savings and benefits onto their customers.

Rebuilding their technical infrastructure in 2002 included the implementation of Asterisk, the industry's first open source PBX, to improve interoffice telecommunications as well as provide unified messaging services to contact center interviewers. As a result, the organization experienced enhanced functionality, slashed telecommunication fees and has been able to reduce operational costs - saving \$250,000 in the first year alone. By reducing operational expenses, the organization has been able to remain competitive on price and grow their business in the process.

Discovery Research Group provides primary market research through telephone interviewing and Web administered surveys. Headquartered in Salt Lake City, Utah, Discovery has grown from 25 interviewing stations to over 450 computer assisted telephone interviewing (CATI) stations located in four phone centers in the Western United States. In addition to the CATI stations, nearly 100 professional and business associates are connected to the company's network.

Reducing Recurring Telecommunication Fees and Improving Telephony Functionality with Open Source PBX

CHALLENGE

Like other phone centers, managing overhead costs is a big priority for the organization. With the company's call centers being located in rural areas such as Logan and Price, Utah, and Rexburg and Twin Falls, Idaho, service costs, such as telecommunication fees, were high. Monthly recurring long distance loop fees were expensive and functionality was not as robust as it needed to be in order to provide exceptional service to customers.

“Some of our phone center locations are in very rural areas, so getting a long distance T1 required nearly \$3,000 in loop fees with rates in the five cents per minute range,” explained Brandon Tatton, director of Information Technology at Discovery Research group. “When we deployed Asterisk, we were able to turn everything into a VoIP network, routing everything back to Salt Lake City, where telecommunication rates were much more competitive.”

In addition to high monthly fees, each of the company’s call centers functioned as independent entities using different telecommunication switches in each location. Having five different switches, telephony functionality such as interoffice dialing and the ability to transfer calls internally was impossible. No uniformity or interoperability across the organization also meant troubleshooting challenges, requiring the IT staff to have knowledge of each technology. Plus, with their old system, the ability to monitor calls – of utmost importance to clients - was unavailable.

“Part of market research is monitoring to ensure quality and prior to Asterisk, that was a very daunting task,” said Tatton. “In one facility, interviewers would have to set the handset from one receiver upside down onto a handset from another to be able to listen to calls in progress.”

SOLUTION

Prior to co-authoring Asterisk: The Future of Telephony, Jared Smith was a programmer at Discovery Research Group and purchased an Asterisk development kit. Created by Digium, Asterisk is a complete PBX in software. It runs on Linux, BSD and MacOSX, and provides all of the features you would expect from a PBX – and more. Asterisk does voice over IP in many protocols, and can interoperate with almost all standards-based telephony equipment using relatively inexpensive hardware. Providing voicemail services with Directory, Call Conferencing, Interactive Voice Response and Call Queuing, Asterisk also has support for three-way calling caller ID services, ADSI, SIP and H.323, as both client and gateway.

After a few months of testing, the solution was deployed across the entire organization, one facility at a time. In addition to using the Asterisk open source platform, Discovery Research Group also purchased Digium hardware including a multitude of TE110P Wildcards that support both voice and data modes on its single span, over 50 single port T1 cards and ten TE410p cards that improve performance and scalability through bus mastering architecture.

“Four years later, we are still using the original T1 cards – they are just phenomenal,” said Tatton. “Over 95 percent of the hardware is from the original purchase and in addition to high reliability, Digium hardware helps keep the costs of deployment down. The Digium cards were significantly less than other manufacturers and by not spending as much on the hardware, we were able to reallocate our resources and buy better equipment such as the channel banks we chose.”

RESULTS

Through the Asterisk implementation, Discovery Research gained added capability such as the ability to monitor any channel from any phone in the organization. Another benefit was the ability to provide voicemail to as many people as they want without additional licensing fees. Tatton also appreciates that the solution runs on commodity type hardware thereby not requiring purchase of specialized phone equipment. And now, instead of long distance loop fees, calls can be placed from anywhere in the organization without incurring toll charges.

“One of the other things we did to extend the solution was build an application for our interviewers where they can log in from their phones and check their schedule, how much they’ll be paid and other types of information,” said Tatton. “We were able to build dynamic applications to use in the phone system and interface it right to our database, making it easy to pull information in and out.”

Tatton praises the solution with delivering the ability for them to morph, change and grow at a moment’s notice and says, “The Asterisk solution has changed the face of our organization by making us more nimble and flexible.” With very little effort, the solution offers the flexibility of call routing, the flexibility to grow at any rate and the way Discovery Research’s dial plan is set up, the flexibility to monitor any phone in the organization from any other phone.

"We have been able to offer a lot of different things, such as the monitoring, to our clients," said Tatton. "The Asterisk solution has absolutely helped us manage our costs which keeps our price competitive. By reducing our overhead costs, we are able to offer our services at a less expensive rate and still make our margins. In the very first year of deployment we saved over \$250,000 in our long distance and technology related costs. By not pricing ourselves out of business, the solution has enabled us to grow our business. It is a phenomenal PBX with unlimited flexibility."

Digium's vision is a world based upon open communications.

Our mission is to transform the way businesses acquire and operate their communications systems through the application of open source software.



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