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babyTEL – A long history of FoIP excellence

A 2013 Davidson Consulting report predicts the overall FoIP market is growing at a 10.2% compound annual growth rate.

How it all started

Back in 1996, many pundits argued that the fax market was coming to an end and that fax would be completely replaced by email. Voice and Data Systems Inc. (VDS), now babyTEL Inc., begged to differ, expecting that the unique benefits of fax[1] would be with us for years to come.

VDS launched the world's first real-time fax over data network platform, the FaxPAD (Fax Packet Assembly & Disassembly) in 1996. Based on the X.38 protocol, the precursor of today's T.38 protocol, the FaxPAD was the first platform that transported real-time fax traffic over a data network instead of the PSTN (public switched telephone network).

The FaxPAD's ability to compress up to 8 fax calls in each direction for a total of 16 channels over a single 64 Kbps link, the equivalent of 1 PSTN line, was a revolutionary achievement that caught the attention of major telecom carriers and multinational companies the world over.

It wasn't just the operational efficiencies of the technology that made it attractive. In those days, long distance charges were rather high and international long distance was particularly expensive. As a result, the prospect of bypassing long distance toll charges by migrating call traffic from the PSTN to a data network was very appealing to carriers and multinational companies alike.

Initially the FaxPAD carried fax traffic over the X.25 network, then private IP networks and by 1999 the FaxPAD was the first FoIP platform carrying fax traffic over the public IP network.

The early adopters

Compass Communications, was one of the first telecom service providers who deployed a national FaxPAD network back in the late 1990's. As a small player in the New Zealand

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[1] To learn more about what makes fax unique read the babyTEL white paper entitled "Real-time fax and other faxing methods - a Primer."

telecom space Compass was looking for a technology that could give it an edge. Compass deployed a nationwide FaxPAD network and become a major fax services provider offering both real-time and broadcast fax services based on the FaxPAD technology. Today Compass Communications is an important and longest-standing competitor in the New Zealand telecommunications market.

Another FaxPAD success story was that of Singapore Telecom (SingTel). In 1999 SingTel became the first major carrier to deploy a multi-national FaxPAD network. The benefits of this technology for SingTel were tremendous. SingTel had a vested interest in expanding its IP networking infrastructure but at the same time their circuit-switched PSTN network was starting to get congested. SingTel was able to leverage the FaxPAD technology and its IP networking investment to solve its PSTN congestion problems. Rather than invest in circuit-switched network expansion, SingTel made room for additional voice traffic capacity by simply offloading all fax traffic away from the PSTN circuits and onto the IP network. As a bonus, with FaxPAD nodes in multiple countries SingTel was able achieve cost savings through toll-bypass.

VDS also had its own success story deploying a multi-national FaxPAD network that continued to operate into the mid 2000's until international tolls were reduced to pennies per minute. Partnering with smaller carriers from multiple continents VDS built a global FaxPAD network that included nodes in Canada, Kenya, Kuwait, Lebanon, Mexico, Mongolia, Pakistan, Panama, South Africa, South Korea, United States and the United Kingdom.

Overcoming the obstacles

Deploying reliable real-time fax services in those days was a major technological challenge. Fax delivery success rates could be as high as 95% on the PSTN but on the public IP network, and initially, we were only achieving success rates closer to 70%. Our lab tests demonstrated that under the right set of network conditions, we could achieve success rates equal to the PSTN. Knowing that we had only limited control over public IP network conditions, we realized that the solution lies in understanding the idiosyncrasies of different fax machines and the impact of different network conditions then developing techniques for dealing with them. That's when the team at VDS put on their thinking hats, got their technology and channel partners as well as key customers involved and brainstormed solutions that eventually helped achieve 98% delivery success rates for real-time fax over the public Internet.

Along the way, VDS overcame numerous technological challenges and amassed a wealth of experience and expertise in providing reliable, secure, mission critical fax services to customers worldwide. In addition to real-time fax, VDS offered store-&-forward fax, broadcast fax, fax-to-email and email-to-fax services.

Sharing customer values

babyTEL's culture of putting the customer first, understanding customer needs and sharing customer values is rooted in those early VDS days of working closely with partners and customers to solve challenging technical problems. We deployed systems to meet the demands of diverse international clients and leading telecommunications service providers such as Global One, Xpedite, Comtext, France Telecom, AT&T and Nynex U.K. The list of corporate clients included Ericsson, Foxboro, Picker Electronics, Future Electronics, Merrill Lynch and Morgan Stanley.

Starting in 2007, embracing a Technology as a Service (TaaS) approach, VDS pivoted and became babyTEL, a service company with VoIP, electronic fax as well as FoIP offerings based on its own technology.

Continuing a legacy of excellence

Today, babyTEL continues the VDS tradition of technological excellence and expertise.

Growing from its in depth knowledge of fax derived from its FaxPAD days, babyTEL exploded the myth that the T.38 standard did not work. With meticulous effort, babyTEL has today reached the point where faxes delivered on its FoIP (T.38) lines equal or exceed the success rate achieved on PSTN lines directly.

Currently, babyTEL has thousands of T.38 trunks installed proving that FoIP in fact works with spectacular results when applied correctly.

For any further questions, please contact:

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