

Redefining the Fax Server for the Modern Era

Paul Banco, Chief Executive Officer, etherFAX, LLC



Contents

Introduction	3
Faxing, Redefined	4
Fax Boards in the Cloud: Speed + Security	5
Secure Exchange Networks (SEN)	5
Cloud Faxing Use Case: Healthcare	6
What's Coming Next? More Security	6
Conclusion	7



Fax technology isn't outdated – it just has an image problem.

The average Fortune 500 company spends \$40 million per year on phone service, 40% of which goes to faxing.

Fax technology was initially patented in 1843. Despite its antiquated image, faxing has a long history servicing businesses of all shapes and sizes, and is still one of the most secure and trusted document delivery methods available today. Though faxing has been outpaced by email, messaging and other means of document transfer, fax is still the preferred weapon of choice by many industry professionals including healthcare, finance and others where the protection of private, sensitive information is vital to their businesses and customers alike.

As we progress through this modern day world and produce more and more “digital exhaust,” concerns over privacy, eavesdropping, and data breaches are more prevalent than ever.

We have been enjoying the benefits of faxing for 17 decades; but how can we teach this old dog new tricks?

To combat and defend against such threats and vulnerabilities, etherFAX has introduced a modern day adaptation of this tried and true technology, by adding secure document delivery to its network. The solution is etherFAX's patented document delivery system, Secure Exchange Network (SEN).

In our current climate of increasing hacker threats and security breaches, the emphasis on secure delivery will only get stronger. While email and cloud shine in the spotlight, faxing has stood fast behind the scenes filling this need, and it continues to do so.



**5.6
billion**

According to research by Gartner, fax will reach 5.6 billion pages carried by 2015.

In fact, according to research by Gartner, fax will reach 5.6 billion pages carried by 2015. Pitney Bowes estimates that 41% of the total telephone traffic cost on an average telecommunications network is fax-related.

According to Gallop, the average Fortune 500 company spends \$40 million per year on phone service, 40 percent of which goes to faxing. At the same time, however, 78 percent of telecommunications managers don't know the cost of sending a fax. Amid so much continued reliance on faxing technology, one wonders why we aren't being brought up to speed on the extremely relevant benefits of modern-day faxing applications.

Part of the problem is that the public has not been properly educated on the evolution of faxing, and part of the problem is that the technology itself has a bit of a public relations problem – the image of faxing has a stigma that is a result of mass perception – which is not only inaccurate, but also counterproductive and costly.

By ignoring the many significant advancements in modern-day faxing technology, various industries will not only pay an unnecessary price in dollars and cents, but we will also pay in the form of data theft and security breaches. Problems that have held back faxing technology include interoperability between mixed fax environments, speed of delivery, security, compliance and guaranteed delivery.

Fortunately, faxing now enjoys an array of high-tech renovations that not only allow us to deliver documents with complete security, but also instantaneously and without the need for any external hardware. New faxing technologies can integrate with leading fax servers, fax-enabled and production applications, multi-function devices, and fax machines, making configuration fast and easy.

It used to take several minutes to send a fax. Now it takes seconds.



To securely deliver a 30-50 page document, which is common throughout the healthcare industry, it can often take up to thirty minutes or more. Medical professionals don't have the time to stand around and wait for a fax to come through, especially in life critical situations. However, authorization is needed in order to perform medical procedures, and EMRs and authorized documents are required to be delivered 100% securely, which is why faxing remains as the go-to solution.

The problem is that in today's fast-paced, mobile-centric and cost-conscious work environments, this type of traditional faxing unnecessarily ties up key resources and wastes precious time.

But that's the old fax. Faxes today can be delivered instantaneously, and without the need for cumbersome and expensive fax boards, media gateways and other telephony infrastructure. Modern-day faxing also eliminates the complexities and costs of provisioning SIP, T.38, PRI, T1, and other analog connections, which are being phased out and discontinued across the country by major telecom corporations such as AT&T as we speak.

In other words, faxing can now be achieved without any dependency on the local telephone network altogether.

In April 2014, AT&T announced it was beginning a trial to eliminate landline connections in Carbon Hill, Alabama and West Delray Beach, Florida. According to The Wall Street Journal, AT&T has plans to convert its entire network, which stretches across 22 states, to Internet protocol technology within the next six years. If approved by the Federal Communications

Commission, the carrier would cease to offer new landline connections, and would move to disconnect all existing landlines by 2020. Verizon has been transitioning away from traditional copper phone lines, having spent more than \$23 billion in the past 10 years to increase its fiber-based FiOS services.

Fax technology is no longer synonymous with machines, phone lines, paper and toner. It is cloud-based and virtual.

Today's sophisticated fax environments leveraging the cloud for transport require zero infrastructure, interoperability requirements or monthly phone line expenses, and provide infinite scalability to send and receive sensitive documents.

Infrastructure as a Service (IaaS) - Fax Boards in the Cloud

Thanks to the rise of off-site datacenters and networks, or the "cloud," billions of faxes are now delivered around the world, and each within a matter of seconds. Through virtual adapters and virtual fax boards, modern-day faxing solutions can seamlessly integrate with existing, on-site fax servers at the office and fax-enabled or production applications, in addition to email and document management systems and other software.

Utilizing scalable networks linked across global datacenters via the cloud allows organizations to quickly send high volumes of data at blazing speeds. By extending your existing fax server into the cloud, lengthy documents can be securely delivered in seconds, rather than minutes.

To securely deliver a 30-50 page document, which is common throughout the healthcare industry, it can often take up to thirty minutes or more.

Enjoy the speed of today, with the secure network of tomorrow.

According to a report from Intel Security and the Center for Strategic and International Studies (CSIS), cybercrime has cost the United States economy \$100 billion annually. According to Verizon's 2014 Data Breach Investigations Report (DBIR), in 2013 there were 456 security breaches with confirmed data loss in the finance industry alone.

According to the Ponemon Institute's 2013 Global Cost of a Data Breach study, healthcare data theft is the most financially detrimental, costing the industry \$233 per lost record. Data from the Office for Civil Rights (OCR) has shown that more than 24 million ePHI (Protected Health Information) records were compromised between 2009 and the end of 2013, and incidents involving electronic medical records (EMRs) more than doubled from 2012 to 2013.

Fax is still a much more secure delivery method than both email and cloud storage. This is critical not only for industries such as healthcare and finance, but for logistics, education, government and more.

Cybercrime has cost the United States economy \$100 billion annually.

Although the method of faxing is very secure, there are still inherent risks. This can occur simply by human error, like dialing the wrong number, or due to things out of an organization's control such as poor communication lines, incompatible equipment and more. To ensure security, both the sender and receiver must be "trusted" and verified by the

network, allowing for guaranteed delivery, reporting, compliance, fast transmissions and most importantly, end-to-end encryption.

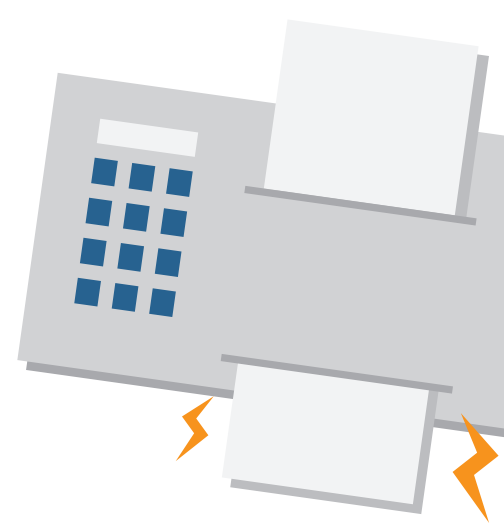
Although seldom used, thermal fax machines pose a severe organizational risk of a data breach. They keep a copy of every fax sent within the machine itself, and in order to steal data – like bank statements and medical records – all one would have to do is open it up. Inside a thermal fax machine, thieves can simply pull out the "ribbon," and access private information like social security numbers, W-2s, addresses and retirement account numbers. This is an example of the risk associated with outdated hardware.

In 2011, Americans were predicted to spend \$55 million on outdated, traditional fax machines.

New, virtual and security-focused faxing technology eliminates these kinds of risks. Yet, in 2011, Americans were predicted to spend \$55 million on outdated, traditional fax machines. There are better options available.

The Secure Exchange Network (SEN)

etherFAX's patented Secure Exchange Network is the only service that ensures more than fast connections and the guaranteed delivery of faxes. SEN provides end-to-end encryption, which allows the secure transmission of sensitive data between the sender and receiver. This means that organizations can now deploy their own private fax network by leveraging the global infrastructure of the cloud. Using SEN, and through "in-network delivery," faxes will be sent within seconds, and without ever traversing any external telephone networks – ensuring total security.



So how does it work?

On SEN, the path from the sender to the receiver is encrypted. Once a fax is sent from a fax server or fax-enabled application, its destination is identified by SEN, and the fax is then internally routed to the recipient via a closed network of controlled data centers.

Transmitting data over closed networks ensures lightning fast speeds, and faxing via the cloud has provided us with a very simple and unique approach to secure content delivery.

Private, cloud-based fax networks are significantly faster, encrypted with end-to-end security and provide guaranteed delivery. SEN processes millions of pages every hour, offers PCI-Level 1 compliance and provides complete data sovereignty for those that demand it.

Cloud Faxing Use Case: Healthcare

Along with educational institutions and government agencies, the healthcare industry alone fell victim to almost two-thirds of all identity breaches in 2012. Coming in at 36 percent, the healthcare field is responsible for the highest percentage of confirmed data breaches per industry. In 2012 alone, reports of health-record theft jumped by 61.5 percent from the previous year, and medical identity fraud has increased by 20 percent from 2012 to 2013. There have been more than 64,000 healthcare-related data breaches since late 2009.

SEN enables healthcare organizations and medical groups, insurance companies and billing operators to securely transport data and ensure compliance with government mandated regulations such as the Health Insurance Portability and Accountability Act (HIPAA).



For healthcare organizations, new virtual faxing solutions can include a cloud-based private fax network with 100% guaranteed delivery and security. SEN integrates with existing fax servers and applications, such as EMR solutions and healthcare management systems, leverage the cloud to manage business-critical fax communications without capacity constraints, improve the patient and partner experience by drastically cutting down on time spent waiting for fax transmissions and cut down on resources spent maintaining a traditional fax environment.

The ideal solution supports all HIPAA data compliance requirements, and your documents will never be stored off-site, remaining safe within your fax server and/or other integrated applications.

Through virtual faxing technology, healthcare groups and their affiliates can focus more of their time, energy and resources toward aiding their patients, and less on dealing with unnecessary and outdated hardware when urgent situations present themselves.

The healthcare industry alone fell victim to almost two-thirds of all identity breaches in 2012.

What's Coming Next? More Security

In today's climate of more precarious cyber-threats and an increased frequency of data breaches, total security will become the main priority for communications providers and their customers. Email hacking continues to put sensitive data at risk, as well as the sending or opening of important documents via the ever-increasing array of mobile apps on our tablets and smartphones. Moving forward, we must look to the past in order to think ahead.

Since the method of faxing is now as quick, light and easy as using email or a mobile app, there is no reason why this tried-and-true technology

85% of respondents said that their workplace currently makes use of faxing, and 54% claimed that faxing still plays a key role in their day-to-day operations.

should not see a very strong resurgence in the modern era, when the five biggest data breaches in 2013 alone jeopardized approximately 450 million records.

Though people have been hailing the death of faxing for almost 20 years, they did not take into account the rise of big data, the cloud and the wave of crime that would become associated with these advancing technologies. However, they also did not give credit to the enduring benefit of the faxed document – security – which is now ironically being recognized as an antidote to this virus, hidden in plain sight all along.

According to a recent poll by Opinion Matters, 85% of respondents said that their workplace currently makes use of faxing, and 54% claimed that faxing still plays a key role in their day-to-day operations. Behind Japan, the United States sends more faxes today than any other first-world society. From 2011-2012, the use of hybrid fax servers (virtual, cloud-based) increased from 20.5 percent to 31.4 percent.

There is a clear correlation between the events that are taking place around the world and the resistance by businesses and nonprofits across industries to let go of faxing. It has historically been the most reliable and secure method for delivering sensitive data, not to mention easy to use. And now, faxing is also digital, affordable and safer than ever before.



In conclusion, the fax server of the modern era is cloud-based, virtual, instantaneous and completely secure.

This white paper began with the acknowledgement that faxing does have a perception problem. But history has shown that time and time again, even when shinier new objects come into play, original methods and models are ultimately called upon in times of urgency. Blackberry devices are still preferred by the Department of Defense. SIM cards are still the primary method of identification for mobile phones. The NYPD spent \$1 million on typewriters in 2009. In a time when total security is the top priority, in practice, what was old is indeed new again.

We're ending this white paper with another acknowledgement - that faxing today is in fact as quick and easy as email and cloud storage, and most importantly, far more secure.

From 2011-2012, the use of hybrid fax servers increased from 20.5% to 31.4%.

Closed Networks: The New Standard in Secure Fax Communications

However, not all cloud-based, virtual fax technology that is being offered today is the same. Far from it. The key is to select a solution that utilizes a closed network, which ensures end-to-end encryption and guaranteed delivery wherever, whenever possible.

On a closed network, first, the sender remotely establishes a secure connection to SEN and delivers a document plus its destination. When the outbound call is placed, an authentication and internal routing mechanism will determine if the destination is managed by SEN (a customer's DID, much like a regular phone company), and will redirect the call to a SEN-managed client on the receiving side.

Ultimately, when your virtual fax provider is directly controlling, managing and monitoring the network of data centers in the cloud that receive your traffic, you can rest assured that your sensitive documents are being delivered with total security.

Your organization should select a closed network solution that is easy to deploy, and application and device-agnostic. A real-time, secure and reliable infrastructure as a service (IaaS) solution allows enterprise organizations to easily scale all fax communications, save significant money and free up critical resources. By incorporating a secure virtual fax solution, you can have the best of both worlds. To learn more about secure faxing in the cloud, please contact us any time.

Paul Banco, CEO



Paul Banco began his technology career with Merrill Lynch in 1999 as senior network engineer. While at Merrill Lynch, he supported the company's IT infrastructure for the Y2K group.

In 2003, Mr. Banco founded CiBan, a Certified Microsoft Partner providing technology solutions to small- and medium-sized businesses including network infrastructure, applications and support.

As a virtual extension of an organization's IT department, CiBan supports a range of business-critical technologies to help manage customer and partner relationships, and connect workforces inside and outside the office. Banco often serves as the role of CTO for clients, defining the technology direction and implementation strategy.

Banco helped organizations automate their fax server operations. As a visionary, he identified the need to leverage the cloud for secure document delivery and co-founded etherFAX in 2009 with Robert Cichielo.

As CEO of etherFAX, Banco is responsible for the strategic direction of the company and leads technology development, including the patented etherFAX and etherFAX SEN intellectual property.

Today etherFAX is considered the industry standard for secure document delivery, especially in the healthcare and financial services markets.

About EtherFAX

Established in 2009, etherFAX, LLC leverages 30-plus years of experience designing and developing fax technology solutions. By eliminating the need for costly components such as fax boards, media gateways, and telephony infrastructure, etherFAX's namesake technology, network and datacenter solutions leverage the Internet to manage business-critical fax communications.

As a hybrid fax solution, etherFAX eliminates the complexities and costs of provisioning SIP, T.38, PRI, T1, and other analog connections. By simply connecting on-premise fax server resources to etherFAX, all fax communications are securely delivered via the cloud. Say goodbye to expensive fax hardware, complex fault-tolerant designs, and costly disaster recovery solutions.

etherFAX is the fax board in the cloud, is highly scalable and offers high availability to business communications. Clients and partners that trust their business with etherFAX include Fujifilm, Callaway Golf, Hyundai, OrthoNet, Integra, McKessen and many more. Visit our website to learn more about how we can bring your fax server into the modern era: www.etherfax.net