The Costs & Risks of Using Your Fax Machine

Introduction

Despite the fact that e-mail has become the preferred form of communication for individuals and businesses alike, most companies still send and receive important faxed documents. Because only a paper copy is produced, saving this information in a form that is readily accessible to those who need access to it is at best an ad hoc proposition. Finding the proverbial needle in a haystack is often easier than finding a fax from last week much less last year. The costs of accessing and finding this information can be significant but are generally overlooked. What's worse, the fax machine may pose a substantial risk to your company.

Natural Data Inc. has created NOAH, which connects to any standard fax machine and automatically creates copies of all faxed documents as e-mail attachments. Not only can this create personal productivity benefits, but NOAH can route faxes to information systems like document tracking and retrieval. By maintaining records of what faxes have been sent and to whom, companies can satisfy governance and other regulatory requirements at the national and local level.

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Overview

When television first appeared, pundits predicted that radio would be dead within a few years. When PCs became a fixture at every desk, mainframes were declared obsolete and poised to disappear entirely. When e-mail became available on everyone's desktop, fax machines became the next "old thing" soon to die and become obsolete. Radio has survived and flourished, and so have mainframes. Fax machine sales continue at a brisk pace. While e-mail has certainly replaced the hand-written "cover page" messages, the number of faxed documents in the workplace is still measured in the "billions of pages."

People have found that faxing, like radio and mainframes, still provides a valuable function. Faxing is still the preferred means of moving material documents reliably, quickly and economically from one place to another.

The kind of documents that are being faxed and what happens to them is what is really important, however:

- The documents still being faxed contain information that is very important to businesses.

- This important information resides outside the information infrastructure workers have come to rely on to efficiently do their job.

- Security, today is a vital issue, and can be a major concern when there is no record of what information is transmitted and received over business fax machines.

- Companies can be at risk with compliance on document retention and privacy regulations at the national and local levels because fax machines have no intrinsic controls or monitoring functions on their own (Sarbanes-Oxley Act).

- Should a physical disaster occur and paper based documents are destroyed; it may be impossible to recreate the crucial information contained in them.

Many companies have given little thought and even less effort to solving these problems despite a significant loss of productivity and the potential for major economic costs if information is lost or misused. It is not because solving them isn't important. It is because most companies do not understand that a solution exists that is simple and very cost effective. This paper explores the problems and considers solutions to these problems. It also provides information to help companies do their own cost analysis related to information processing and risk assessment.

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There are five groups of solutions discussed in this paper:

- **Fax servers** – Fax servers are general-purpose computers with special fax telephony hardware and software to process incoming faxes and allow electronic documents to be sent from desktops.

- **Desktop faxing –** Use a standard computer with a fax/modem to send and receive faxes on an individual basis.

- **Fax subscription services –** Receive a special phone number you give out to those who send you faxes, received into your e-mail.

- **Fax machines –** Are used to send and receive hard copy material documents. They use telephone lines to communicate to and from any fax machine in the world.

- **Natural Data's FBX** - Can be used to implement fax servers, desktop faxing. Fax subscription services, connect fax machines all in one pc platform, with full transaction logging and archiving providing complete document retention.

Inbound Faxes – Issues and Considerations

What Kind of Problems Arise with Inbound Faxes?

Company executives and managers sometimes say, "We just don't get any faxes at my company." While that may be true only in a very few companies, it is more likely to mean, "I don't use the fax machine myself. Maybe I get a copy from someone or they e-mail me about a problem." But companies large and small get invoices, purchase orders, contracts, service agreements, signature pages, credit applications, quotations, receipts and a myriad of other things from customers, vendors, government agencies and partners.

Fax machines are "ubiquitous," and as easy as they are to use, they have some common problems we are all familiar with.

- An incoming fax requires immediate attention, but it sits on the fax machine or in someone's in-basket waiting to get processed
- An important fax arrives after business hours or when the recipient is away from the office, where the fax machine resides, for days at a time. It may go unprocessed for an indefinite period of time.
- One goes to the fax machine to pick up their fax and they accidentally, or purposely pick up someone else's fax.

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- Faxes are an important part of company information system, but they are difficult to convert into a form that is usable by those systems. These problems are common, whether there are a small or large number of faxed documents.

How Does a Company's Information System Accommodate Inbound Faxes?

Depending on the type of company, faxed documents can be a significant part of the input cycle of a corporate information processing systems. For example document management and tracking systems, forms processing systems, credit applications, and medical records. Getting these kind of incoming faxes into these systems is generally a costly and time-consuming. Scanning the paper documents is the primary way that inbound faxes get into information systems

Routing Inbound Faxes in E-mail to Correct Recipient

There are several different ways faxes can arrive as e-mail attachments.

1. Fax servers process inbound fax documents and convert them to e-mail attachments. Generally, fax servers are standard computer servers with special software and hardware to handle the fax phone lines and process faxes.

2. A standard desktop computer with a fax/modem and fax software can receive faxes. This is a "special case" fax server that handles only one phone line for one recipient and has fewer software features.

3. Fax subscription services provide users with a phone number (which may or may not be local). Centrally located fax servers process inbound faxes and send them as e-mail attachments to a fixed e-mail address.

4. Natural Data Inc.'s NOAH connects to a standard fax machine and processes the faxes but still allows them to pass through to the fax machine. It utilizes your existing fax telephone line and number.

Each of these methods has benefits and drawbacks.

Fax Servers

Fax servers are computers equipped with special hardware (telephone interfaces) and software to process inbound and outbound faxes. The telephone lines can be standard phone lines that an ordinary fax machine could connect to, or they can be digital lines designed to carry large volume fax traffic. Some of the telephone hardware can support Direct Inward Dialing (DID) so that a range of numbers assigned by the telephone company all ring on just a few actual lines. The number

dialed is sent before the call arrives, and the telephone hardware can use that number to route the call to a particular extension. In the case of fax servers, the routing can be to a particular e-mail account. Fax servers are most effective when there is a very large volume of fax documents that require specialized phone lines like the ones just described or when a large number of users must be supported. In those cases, the relatively high costs to purchase equipment and software then to install and maintain might be justified when compared to specific support for each user. You should be cautioned that there are a large number of direct and indirect costs associated with fax servers. Fax servers also require demanding technical expertise with telephone equipment and computer hardware and software to properly install and maintain. While fax servers can handle outbound faxing of electronic documents, this requires software to be installed on company servers and desktop computers. There are new commands and procedures to learn. Note, paper documents still require a standard fax machine to be sent to another fax machine or fax server. For those reasons, fax servers are not ideal solutions for small to medium sized businesses. Fax servers do not scale down well to small branch offices or telecommuter workers even if they are used in larger office settings.

Desktop Faxing

A desktop computer with a fax/modem connected to a phone line to send and receive faxes is a special case fax server. The desktop requires software to send and receive faxes. The hardware and software are not particularly expensive as add-ons to the computer, but they seldom generate effective solutions. Unlike the specialized hardware found in fax servers, fax modems rely heavily on the desktop computer to do the processing work to send and receive faxes. This can slow down the work that the user is doing while a fax is sent or received in the background. Using a desktop fax system for inbound faxes also means that a phone line to the outside, either directly or routed via DID, must be available. And to be really effective, the computer must be left on all the time. No faxes can be received when the computer is off, rebooting, or the software not running. Desktop faxing, like fax servers, still requires a standard fax machine for sending out paper documents. For the extra costs, procedures and lack of company integration, desktop faxing has not made any significant inroads as a reasonable solution for the vast majority of companies.

Fax Subscription Services

Several companies offer both individual and corporate subscription plans that provide users with a dedicated phone number to receive faxes as email. Depending on the subscription provider and the level of service, the number assigned to a user may or may not be local. When a fax arrives at the assigned number it is converted into e-mail and sent to a user-provided e-mail address. When subscription services first began a few years ago, individual subscriptions were free, but the telephone number to send a fax could be located anywhere in the country. The idea was to move the user to a higher level of service or to a business account that was fee-based. Now, almost all subscriptions are billed a fixed monthly fee plus a charge per page for each fax received. Accounts for business users, or

accounts with locally selected numbers command higher fees but may offer volume discounts. These subscription services are based upon fax servers set up with DID type inbound call routing and conversion to e-mail. The services are more affordable than dedicated fax servers because the costs can be widely distributed over a large number of users. Subscription services were initially very popular for individuals – especially "road warrior" workers – because they could receive faxes wherever they were but more because the subscriptions were free to obtain. Businesses have not adopted this model because of several factors:

1. Even with corporate group packages, there is still no "company policy" for faxing, only a collection of individual accounts billed together.

2. Businesses are concerned about data privacy. When faxes are delivered to a fax server owned by another company, there is always a concern that the information might be intercepted in some way

3. Companies are concerned about reliability. If the subscription fax servers become inoperative for an extended period of time, inbound faxing ceases.

4. The accumulated cost-per-page fees can be significantly more expensive than in-house solutions, even if the initial outlay is less.

5. There is still a need to maintain a fax machine with a telephone number to handle outbound paper based faxes. Natural Data Inc.'s NOAH connects to any standard fax machine and automatically records information in a Transaction Log along with a copy of all inbound and outbound faxes. These copies can be email tiff or pdf attachments, or they can be written to a file folder. There are two important points to keep in mind. First, it works with the fax machine and fax telephone line you already have. Second, copies of faxes are made automatically without anyone having to do more than use the fax machine. There are no new procedures to learn or commands to master. The fax machine is used as it always has been. Once a copy of a fax has been made as an e-mail attachment or as a file in a folder, it can be stored, forwarded and processed.

This makes NOAH behave as a fax server. Faxes can be delivered to a general delivery inbox and routed to individual recipients. Or, recipients can access a shared mailbox. NOAH is more than a fax server. It is also a management tool that can be used for a variety of other purposes:

As a fax server. Faxes arrive and are delivered to the fax machine and, or an e-mail account. Software, such as Microsoft's Server 2003 allows desktop users to send documents as a fax through NOAH FBX ports. Additionally, outbound documents from the fax machine are routed through the same fax server telephone lines. An additional savings in line charges can be realized here. Several NOAH FBX cards can be used in the same server providing as many as thirty-two (32) ports, supporting

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fax machines, Direct Inward Dialing (DID) Trunks and regular analog telephone fax lines.

As a router to information systems such as document management and tracking systems.

As inbound or outbound faxes are transmitted, a copy as a file is sent, directly or indirectly, to the information system.

Summary of Features

The table on the following page summarizes some of the features and costs associated with these four different methods:

Costs Associated with Different Fax Technologies and their Implementation

Description	Natural Data's NOAH	Fax Servers	Desktop Fax	Subscription Services
Usage Costs	None	Low Cost	Low Cost	Volume
Per User Costs	None	Expensive	Inexpensive	Volume
Initial Cost	Low Cost	Expensive	Low Cost	Inexpensive
Setup	Very Low	Expensive	Low Cost	Inexpensive
Software Req'd	Provided	Server/Client	Desktop	Desktop
Administration	Provided	Expensive	Inexpensive	Inexpensive
Maintenance	Inexpensive	Expensive	Inexpensive	Inexpensive
Outbound Fax	No Cost	Electronic	Electronic	Extra Cost
Paper Faxes	Yes	No	No	No
New Features?	Yes	Yes	Yes	Unknown
Training Req'd	None	Heavy	Moderate	Simple
Scales to Head & Branch Office?	Yes	No	Yes	Yes

Natural Data's NOAH Products create and provide a remarkable blend of power, simplicity of installation and use, and low cost. It is clearly a product for today's Corporate Business needs.

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Outbound Faxes – Issues and Considerations: Electronic Versus Paper Document Faxing

A document to be sent via fax may be in electronic form on computer files or exist as sheets of paper. A standard fax machine must send paper documents, or they can be scanned to an electronic image, which is a time-consuming and costly process. Electronic documents can be sent via software from fax servers or desktop fax/modems.

There are still a very large number of paper-based documents that are sent by fax. The reasons are simple:

1. Even if documents were created electronically, they are often printed and take on a new life as a paper document, they are annotated and distributed to others.

2. Conversion back to electronic form is time-consuming, expensive and often not easy to adjust for the changes and annotations. If the document was an invoice, statement, shipping advice or similar information created from an application, there may be no way to incorporate the changes electronically.

3. Fax machines are simple to use. Everyone knows how to use them, and they are everywhere.

4. Faxing is inexpensive and quick. The time and cost to scan and send the document far outweighs the advantage of sending it as an e-mail attachment. Faxing is also the fastest way to get a paper document from one place to another.

Faxing electronic documents requires software and hardware combinations that can recognize the format of the electronic document file, convert it into a format for faxing, and communicate with a receiving fax device. Fax servers and desktop fax/modem solutions are capable of this.

When electronic documents are faxed, there may be some advantages:

1. The time and effort to fax a large document is just the same as a single page d one. Once the fax software starts, there is no waiting for the paper to move through the fax machine.
2. There is no degradation of the faxed image from mechanical problems moving or scanning the paper.
3. The fax software can optionally provide features such as a corporate and personal address book, a mix of fax numbers and e-mail recipients, notification messages and e-mail copies.

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Problems with Outbound Faxing

Fax servers, desktop faxing, and fax subscription services are all very similar in nature when it comes to sending faxes, so we will refer to any of these methods as "fax servers Fax servers promote convenience and features that make it easier to send documents from your desktop, but there are some document situations where fax servers cannot handle or do not handle well. The most obvious one is faxing paper documents, which requires a fax machine. Sending several electronic documents as one fax transaction may be inconvenient or even impossible with some fax server software products.

Outbound faxing could be limited to a single electronic document at a time, and no product allows paper and electronic faxes to travel as one single fax. Even though fax servers may offer advanced notification and reporting features, they add significantly to the administrative effort and costs. Historical reports are used primarily to analyze telephone traffic for very large volume fax systems. For even moderate fax volumes, however, the most useful information is simply an e-mail notification of an unsuccessful fax attempt or a copy of the fax itself, which NOAH provides.

Fax machines designed for business have helped reduce the time required to send documents, primarily by allowing rapid scanning of a document into memory before the fax session begins. The sender no longer has to stand by the machine while the fax is transmitted. The sender still has to return to the fax machine to get an acknowledgement of the fax status, not with NOAH. NOAH can provide all notifications as emails.

When a fax is to be sent to multiple recipients, sometimes referred to as broadcast faxing, most fax machines have some method of setting multiple recipient phone numbers, but this may not be as convenient as using a phone book from a fax server or a fax broadcasting service. Fax servers with multiple lines and broadcast services also can send several faxes at the same time, reducing the overall time to complete a fax broadcast.

Summary

Faxing electronic documents is relatively easy and effective when using fax servers, desktop faxing, subscription services that support outbound faxing, and devices such as Natural Data Inc.'s NOAH that make fax machines intelligent. When it comes to paper documents, only the fax machine with or without NOAH can send a document without substantial additional effort. When outgoing documents are on paper, nothing beats the fax machine for convenience, ease of use, low cost, and general availability. However, with Natural Data Inc.'s NOAH, the best of electronic document sending, paper based document sending and automatic archival of those documents is unique in its power, flexibility and simplicity.

Document Retention and Privacy

Introduction

Faxing seems so benign a process because it is so simple. Walk up to a fax machine, insert a document, dial a number and the document is transmitted anywhere around the planet you wish. The fax machine is the communications workhorse of the office, often under-appreciated for its usefulness. And certainly under-estimated in terms of the potential risks it poses to businesses large and small.

Legal Requirements

Data and document retention policies in any company, no matter how large or how small it is, should be designed to preserve records as dictated by federal and state law. If you are in doubt about which types of data and documents your company is required to maintain, consult your account, attorney or records manager. You could also check with The Association for Information Management for the US and Canada or the Public Records Office in the United Kingdom.

If your company becomes the subject of litigation, you will know all too well another compelling reason to properly retain information. It is not only retaining records properly that is important. Ready access to the specific information in them you need can save time and a great deal of money in support of a dispute.

While many companies have put into place significant and costly resources to maintain their e-mail and computer information records, few companies have done anything at all for their fax correspondence. Even when there are procedures in place to keep logs and copies of faxed documents, these procedures rely on employees making sure they are rigorously followed. Because fax machines are readily available to employees, knowing that everyone has made and properly filed copies is an impossible task.

How Long to Keep Records

The following table provides some guidelines on federal and state requirements for document and records retention. This list is by no means exhaustive. There are also some types of businesses that have other and more stringent requirements. Some examples of laws and agencies with additional requirements include FLSA (Fair Labor Standards Act), OSHA (Occupational Safety & Health Administration), SEC (Securities and Exchange Commission), HIPPA (Health Insurance Portability and Accountability Act), and UETA (Uniform Electronic Transactions Act).

Table Of Document And Record Types And Corresponding Retention Periods

Document/Record Category	Retention Period
Accounts Payable	7 years
Accounts Receivable	10 years
Audit Records	Permanent
Bank Statements	8 years
Capital Stock Certificates	Permanent
Deeds, Mortgages	Permanent
Employee Medical Records	Duration of employment + 30 years
ERISA Retirement/Pension	Permanent
Employment Applications	3 years
Year-end Financial Statements	Permanent
Insurance Records	Permanent
Labor Contracts	Permanent
Paychecks	8 years
Payroll Records	6 years
Purchase Orders	7 years
Sales Records	7 years
Tax Returns	Permanent
Withholding Tax	7 years

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Title 44, Sec 3301 of the U.S. Code defines a public record as all "books, papers, maps, photographs, machine readable materials, or other documentary materials, regardless of physical form or characteristics." The Electronic Signatures in Global and National Commerce Act of 2000 defines a record as information "created, generated, sent, communicated, received or stored by electronic means." Consider these when you evaluate your policies. How you manage document retention of your faxes can have a dramatic impact on how you comply with these acts and regulations.

The Cost of Improper Document Retention

There is no set formula for calculating what costs a business faces if copies of documents have not been properly maintained. Here are a few things you should consider when estimating your own risks and costs:

Litigation Requires Document Production

1. How many documents must be searched, and how many from among those must be produced?
2. What is the cost per hour for someone to search for the required document or documents?
3. What is the cost per hour for legal representation?
4. What is the cost of employees who are involved in administering and supervising the search for records?
5. What is the cost of not being able to produce documents in a timely fashion?

While very large firms may face millions of dollars in legal and related fees, even a very small business can find itself spending tens of thousands of dollars defending itself. Legal action can be as simple as a small claims court action or an administrative review by a state or federal agency. Every business owner knows these situations can arise as an unexpected but all too common an occurrence.

Dispute Resolution

If your company had a dispute with a vendor or customer, you would still have costs involved in document searching and retrieval. If your company has retained documents properly, disputes will often be resolved without the need to increase costs should litigation follow.

Administrative Inquiries

Your business may have to respond to a query from a government agency regarding employment, licensing, complaints or other related matters. These queries may not stipulate specific document product, but responding to a query with complete and accurate information may help resolve the issues. Documents that are not adequately retained, or those that are difficult to readily locate, can lead to additional costs, and often to fines or penalties.

Office Security Risks

Confidentiality of Information

Many companies are concerned about what information is sent from the company. There are several reasons why these concerns exist:

1. Statements made by employees may be deemed to be legally binding on the company, such as an implied contract or offer.

2. Employee opinions or suggestions might be construed to be company policy or directives.

3. Trade secrets or strategic information might be inadvertently made available to persons who should not see it, whether those persons are employees or not.

4. Competitive information regarding products, customers or financial information could be detrimental to your company's success if it were unexpectedly released.

Many companies invest heavily in hardware and software to protect their computer systems and information files from inadvertent or purposeful tampering or access. At the same time, their fax machines are an open conduit through which information can pass completely undetected. While your employees may be trustworthy and reliable, sometimes the best of intentions can go astray if undetected.

Perhaps a salesman gets a call asking for some specific information faxed about "reference customers." We all want to make that next big sale, but what if the caller is really a competitor and can get information about customers you might not want to give out? A record of the fax and the recipient number could help avoid any repeats of this and lead to the establishment of proper procedures.

Facility Security

Companies have insurance to help them in the event of unlikely but dramatic losses, including physical damage from fire or floods and loss of business compensation. But if important paper documents are also destroyed, it may become impossible to recover the information they contained. The result could be losses no policy will provide for. If your faxes have been copied to e-mail with your e-mail backed up regularly off-site, it can be back to business at once as soon as e-mail data is restored.

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Summary

Security and document management are important aspects of business management. Whether you are applying policies to comply with federal and state laws, protecting confidential information, or making sure your records are protected for long-term and ready access, how you deal with copies of fax documents is extremely important but often overlooked.

What Are the Costs Associated with Inbound Faxes?

Direct costs associated with faxing, such as paper, toner and phone lines, are pretty much taken for granted. No single cost for faxing stands out as onerous and later as part of an aggregate bill. But what about the indirect costs? What are they and how big are they? Consider these questions.

1. Do individuals check for their own faxes or is someone responsible for collecting faxes and distributing them?

2. If individuals collect their own, do they often end up sorting through and distributing faxes received for others as a courtesy? Do they also take time to check the fax just in case something has arrived?

3. If someone who has received a fax is out of the office, how are their faxes handled in their absence?

4. Are archives kept of inbound faxes? Is a person responsible for making and filing the archives or is it left up to those who receive the faxes?

5. Are records of faxes kept for things such as billing, dispute resolution, and to provide evidence of document retention and privacy policies?

6. Are fax copies also kept in vendor or customer files?

7. How are copies of faxes made and distributed when several people need to be aware of the information contained in them? It is easy to see that a modest amount of fax traffic can produce a meaningful amount of costs. Whether the costs are direct – such as for labor to distribute and copy faxes, for file cabinet and floor space, and for people-intensive file searches – or indirect as productivity losses from key workers, the costs are still there.

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When faxes are scanned in-house, what are the direct and indirect costs associated with that process? Here are some things to consider:

1. The labor costs to get the fax to a scanner. This may mean that someone must first make a copy of the fax so work on it can proceed while the fax is added to the system.

2. The costs of acquiring computers, software and scanners to perform this task.

3. The ongoing costs of administering and upgrading the computer systems supporting the scanner, and the annual license fees for the operating system and application software components.

4. The cost of employees to scan the documents and store them.

5. The cost of forgetting or omitting a key and important document.

Some of these application systems directly connect to digital copiers, but the cost of those copies is very high. The most significant problem, that of an extra step to copy or scan the faxed document, still remains with the risk of forgetting to process a fax or not having it processed in a timely fashion.

An additional cost not included in these figures is the cost of maintaining files containing paper copies. There are costs for filing cabinets, for the floor space they occupy, as well as costs to age off previous years' files into longer-term storage. And there is the cost of that storage.

The cost to locate a copy of a fax is calculated in a similar fashion. Start with the number of employees who have to search for fax copies, the number of copies that have to be located, the average time to find a copy, and the average cost of an employee's time and multiply them together. This will give you the total cost of searching for fax copies.

The indirect costs for delay in processing a fax, having a lost or missing fax, or creating a business error because you send a customer or vendor the wrong information because a previous fax was not available can be added into these costs.

The risk costs for failure to comply with laws and regulations, failure to detect security or privacy violations, and similar failures can also be added into these costs.

Lastly, add in risk avoidance costs of physical losses of paper-based files, legal and administrative fees to respond to disputes, litigation and agency administrative inquiries.

How to Compare These Costs to Determine Savings

Fax servers are most suited for very large volume fax processing. If there are large numbers of inbound fax lines, special phone lines can be ordered to allow multiple numbers that are dialed to ring on the same line. Even with the relatively high cost of the fax servers, software and the phone lines themselves, fax servers may offer cost effective faxing for a large number of users in a given facility.

Direct Inward Dialing, or DID, allows anyone of a group of telephone company-assigned numbers to ring on a one or more incoming trunk lines. When one of these numbers is dialed, a signal is sent on the line identifying that number before the call begins to ring. Equipment enabled for DID can process this dialed number information and use it to route the call. This is how extensions on a PBX can be dialed directly from the outside.

Fax servers equipped with appropriate telephone interface hardware can accept DID calls. When the hardware determines what number was dialed, the software can use that number and associate it with an e-mail address. Faxes can be put directly into user's e-mail by assigning each user on of these types of telephone numbers.

Fax Server Costs and Issues

For fax servers, the cost of the computer and fax hardware can be a significant investment, and the software acquisition cost may match or even exceed the hardware costs. In addition, there are operating system and user license fees for the server. The level of IT support for any server is not insignificant, and fax server software can be complex and involved. Software is normally required on end user desktops with new procedures and functions to learn to use. And the telephone company charges can be significant depending on the type and level of services.

Fax servers also do not handle faxing of outbound paper documents, a task that is still left to standard fax machines. Fax servers generally provide a means of sending electronic documents as outbound faxes from user desktops or application programs. Special software is required, either on user desktops or on special servers. Depending on the vendor, per user licensing fees may also be added to the overall costs of fax server ownership.

Scalability

While fax servers might be cost effective for a larger number of users, they scale very poorly to smaller groups, both in terms of costs and technical support. A branch office may not be a good place to install a fax server. Not only would the employees at the branch office benefit from a fax server, however, but a good case can be made for the need to integrate their information precisely because they are remote.

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Summary

Fax servers require the following components:
1. A server computer
2. A server operating system license
3. Operating system client access licenses
4. Special fax interface cards (internal boards)
5. Fax server software license
6. Fax port software license (i.e., telephone line)
7. Fax client software license (charge per user for client software)
8. Fax server optional software modules

Here is an approximation of these costs, including setup and installation:

Item	Low End Cost	High End Cost
Computer & OS	$2000	$6000
Fax Interface Cards	$1500	$10,000
Fax Server Software	$1000	$10,000
Fax Port Costs	$500	$1000
Fax Client Software/User	$0	$100
Fax Optional Modules	$0	$20.000
Setup and Installation	$2500	$15,000
Total Estimated Costs	$7,500	$62,000

In addition to these costs, there are ongoing update and maintenance costs associated with any server computer. These include upgrades and security and service pack patches to the operating system, backup of the computer disks on the server, and other standard computer related tasks. If your company does not have a professional IT department, these costs will become costs for an outside consultant. These costs can be a significant percentage of the original acquisition costs each year.

Lastly, there are the costs to train users on how to use the software and administer the server. Don't forget the costs of someone who monitors and administers the server on a day-to-day basis.

Traditional fax servers do not handle sending of paper documents, so there is still a need for fax

machines and their telephone lines. Making sure outbound paper documents are properly handled, archived and secured will remain as a problem.

Standard Desktop Computers with Fax Modems

Fax modems were an essential part of every computer just a few years ago when dial-up connections for e-mail were the norm, but broadband connection has replaced the modem as a connection tool. While laptops still sport modems, very few new computers do.
Desktop faxing has not proven to be a popular long-term solution. Faxing software for the desktop lacks advanced functions, especially for inbound documents. Faxing consumes a lot of computer resources, slowing down other work once on the desktop. Users also don't like leaving their computers on full time and faxes can be received only when the desktop is on. There is not enough cost or benefit behind desktop faxing, and it has mostly disappeared.

Fax Subscription Services

Costs to establish account vary from no cost to several thousands of dollars, depending on the level of services but more on the number of users, as in the case of a business account. Ongoing costs are per user per month and per page of fax received. Some subscription services require a separate account for sending faxes, or they do not have an outbound fax service at all.

For modest volumes of pages and users, charges per month begin at $10 plus $0.10 per page received. Additional costs may include a monthly charge for a local phone number versus one automatically selected for you in any area code. Extra charges can double the base monthly rate. As an example, a company receiving 30 faxes per day averaging 5 pages per fax would pay approximately $600 per year in received fax cost. Add outbound faxing charges, and the total comes to over $1000.

These costs do not include the cost of a fax machine, telephone line and long distance charges that are still needed to send paper-based documents. A fax subscription service does not provide the security and document retention needs of outbound paper documents using a fax machine.

NOAH

NOAH connects to any standard fax machine that already exists in your company. It takes just minutes to install and set up, and no special IT or technical skills are required. Once installed, it automatically makes a copy of all inbound and outbound faxes as e-mail attachments sent to one or more e-mail address you choose. You can also specify the same or different e-mail addresses for inbound and outbound faxes.

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Natural Data Inc.'s NOAH:

- Routes inbound faxes to e-mail. A default e-mail box can be used to forward faxes to the correct recipient.
- Keeps an audit trail or log of all inbound and outbound faxes in the same or different e-mail address.
- Routes inbound or outbound faxes to information processing systems such as document tracking and management systems, form processing systems, and databases.
- Works with fax servers and subscription services to integrate fax machine documents with the e-mail faxes those servers and services create.
- Monitors outbound faxes for delivery addresses and content.

Natural Data Inc.'s NOAH is unique because it allows companies to capitalize on the equipment and knowledge workers already have.. Simply use the fax machine as you always have.

Natural Data Inc.'s NOAH ports start at around $1700F for a three- port board retail. Installation takes only a few moments and can be done with current personnel. There are no costs per user or per page of fax or monthly fees to pay.

Natural Data Inc.'s NOAH Ports reduce or eliminate:

- The costs associated with receiving a fax
- Lost or misplaced faxes
- Time to access a fax, even when the recipient is out of the office
- Time to search for a fax that was sent or received
- Costs of filing cabinets, floor space, and labor costs
- Risks associated with uncontrolled information leaving the company
- Risks associated with document retention and privacy issues
- Productivity loss of workers.

Direct and Indirect Costs of Faxes

Faxes play an important role in business communication. For most organizations, very little has been done to reduce the costs and risks associated with sending and receiving faxes because the easy, effective and low cost solutions are not perceived as available.

Additionally, businesses have had a hard time measuring what the real costs associated with faxing really are. It seems that everyone has a story about faxes that were lost before they reached the recipient, faxes that were misfiled and could not be located when they were needed, and disputes that arose about whether a fax was actually sent/received or not. Everyone may groan about a lost

contract, a special price offer, or other missed opportunity when a fax is mishandled, but seldom is there anything done to prevent this from happening in the future. Because no one understands there is a cost effective and simple way to do this.

Employee time, lost opportunity costs, and reduced business efficiency are all reasons to improve how faxes are handled. The payback can be measured in months or less with increases in worker productivity, access to business information, reductions in risk, and the ability to seize opportunities as they arise.

Risk Costs

Failure to comply with federal and state regulations regarding document retention and privacy could put your company at substantial risk legally and financially. The costs involved for document searches and production can be very expensive and also take time away from actually doing your business. Fines and penalties can be substantial.

Settling a single dispute because your company has provable information about transaction history could easily justify the cost of improving faxing in just a few hours.

Protection against physical facilities loss of records, especially if it comes as a by-product of improving worker efficiency and document retrieval, is especially valuable.

Knowing when sensitive or inappropriate data is leaving your organization can help stop a problem before it grows out of control.

Risk situations always make a few simple changes in equipment and procedures look easy and cost effective once you have critical need for them. When the cost is low, and the effort is minimal, it is important to take these risk-aversion steps before you need them, not afterwards.

Improving Faxing

Fax servers can be very powerful in improving efficiencies in sending and receiving faxes and in some cases creating archives or logs. But fax servers can be technically complex to install, costly to acquire and implement, and require user training to effectively use. Desktop faxing has proven to be only marginally useful in business applications. Fax subscription services are inexpensive to set up and simple to use, but they have ongoing costs that provide no return on investment, are subject to outages, and are less secure than faxes sent and received in your on location. All of these solutions do not address at all the problem of sending paper documents. Only Natural Data Inc.'s NOAH combines powerful technology with features of a fax server and subscription service, plus uses your existing fax machine to make sure all documents are properly archived and routed. Taking no technical expertise to set up and install, it has acquisition costs far less than a fax server and a payback of six months to a year depending upon fax volume. Best of all, there is nothing to do. Just send and

receive faxes as you always have. So labor and training costs are nil. Whatever solution you decide to implement, be sure to create policies that explain what the solution should do for you and a means of measuring how well it meets those objectives.