Virtual Film a white paper By nextScan for Service Bureaus

Synopsis:

VF is a method for inexpensively converting Microfilm to a digital format that can be viewed at any PC workstation, desktop or laptop computer. The film is indexed by the label on the box of film or title bar on fiche, and retrieved similar to using a conventional Microfilm Reader/Printer. Individual images or documents do not necessarily need frame detection or indexing. Within the ***VF*** environment, individual images can be Output, Emailed or Printed. ***VF*** can also be a stepping stone to a full scale conversion, whereby the film is preserved now by conversion to a digital format, and can later be output to any document management system.

A significant advantage of ***VF*** is that the end customer can use existing in-house personnel to perform the indexing of the individual images and documents over time. These documents can then be output to an Enterprise Content Management system or Document Management System such as LaserFiche®, FileNet® or various other SharePoint products.

The Problem:

Conventional Film Scanning is too expensive.

There are massive amounts of microfilm that must be scanned at some point. All government records prior to about 1990 are on microfilm. Court documents that are pre-1990's for Superior, State, Federal and all appellate courts are largely still on microfilm. Most university libraries and large city libraries still use microfilm today. McGill University in Montreal uses approximately 40 Reader/Printers to access their collections of microfilm. The University of California at Berkeley just purchased over 30 ScanPro 2000's for access to their collections. Archives like the Library of Congress, and the National Archives in over 50 different countries still have massive amounts of microfilm. The US Department of Treasury is currently converting 1.3 million rolls of savings bonds to a digital format and storing them using nextScan's ***VF*** archive software. The Environmental Protection Agency has even more film. Additional markets such as Healthcare, Insurance, and large corporations have film Archives that would benefit from permanent conversion to a readable digital format. With 100's of millions of rolls of film that need to be converted, the question is, when does the intrinsic value, (including the potential for loss of readability of the film), exceed the cost to convert to digital? Up until now, the cost of high volume conversion has been $40+ per roll, and for small collections of film, the cost has been as much as $150+ per roll.

What price is put on historical data that is being destroyed by day-to-day usage and deterioration of the film? Making a quality duplicate of the film might be a solution for short term preservation, but wouldn't it be nice to be able to convert to digital, for less than the price of that duplicate.

Many organizations are spending budget dollars on repair of old Reader / Printers or purchasing On-Demand Digital Scanners, but in the end they still have the film, and the film is still deteriorating due to usage, walk-outs, misfiling and catastrophes.

Virtual Film is the Solution:

Cut the Cost

The primary cost of traditional scanning solutions which import film images into traditional ECM/DMS systems is the indexing. The cost to generate a few keystrokes for each page or document on a roll of film can take 20 minutes or more depending on the content.

In ***VF*** you do not need to create individual page indexes or even need frames to be detected. ***VF*** has an Analog Viewer that allows you to browse a roll of film exactly the same as a conventional microfilm reader/printer.

Another obvious source of conversion cost is slow scanners. nextScan has pioneered the modern high speed film scanner. We have scanners capable of 1000's of pages per minute. The Eclipse 1000 can scan a roll of film at 24x reduction ratio film and 200dpi in just over 2 minutes. The reality is that most projects will probably be scanned at 300dpi, and in a normal "government day shift", the Eclipse 1000 can scan about 70 rolls of film.

With ***VF*** every step of the scanning process has been optimized to overlap tasks for maximum effectiveness and operator utilization. One nextScan client using ***VF*** technology is currently running 3 shifts per day averaging 250 rolls per day scanned. Another source of cost in actual production scanning, is wasted operator time and storage costs.

Preservation of Film is a huge concern for Archivists and Record Managers. Every time film is used it gets damaged, and a little less of the history is preserved. For older film, Vinegar Syndrome can damage the film irreversibly and completely erode the image. This is only present on Acetate film, but if present, it must be converted immediately to preserve theimages.

Because the conversion cost to ***VF*** is so low, organizations can prevent the further degradation of their film stores now. ***VF*** can bring efficiency to an organizations records management area through minimizing costs of storage and labor and also greatly reduces retrieval time.

What you can expect:

VF is a huge savings to the end user in time and costs. Film is preserved capturing the fidelity and highest image quality available from the film today. It also keeps the indexes and film libraries from falling into disarray. In many archival or library environments, record keeping employees may be the keepers of the key on how to find required documents on film and the quirkiness of an organizations indexes over time. There is a risk of this "un-documented" knowledge being lost should those employees leave or retire. ***VF*** will safeguard organizations from these internal process challenges.

With a conventional microfilm library, finding the desired document requires the following steps:

1. Find the index information to get to the correct roll or fiche.
2. Go to the storage library area for film and find the actual roll based on the film index from step1
3. Take the film to a reader/printer
4. Load the film
5. Search for the appropriate document. (This can be by blip or location on the roll but in the end the document must be verified that it is indeed the correct one)
6. Print or Output the document
7. Rewind / unload the film
8. Return the film to the storage library and replace it in its proper location.

The above system can be error prone and will cause usage damage to the film. It also adds the possibility of the film being misfiled or lost or in the case of public access, walk-outs.

With nextScan's ***VF*** you enter the index information in the Viewer and the roll/fiche is immediately displayed. If you know the exact frame, you can also enter the frame number or folder/document/page in the Digital Viewer and the page is instantly displayed. If you are searching and only know the approximate location on the roll you can instantly scroll to that area and display the associated pages. At any time during this process, you can go to the Analog Viewer mode and scroll through the film just as if you were sitting at a conventional reader/printer.

Once you have chosen which frames you would like to print, save or email, you just select them, choose the output format you would like and click the print or save or email button.

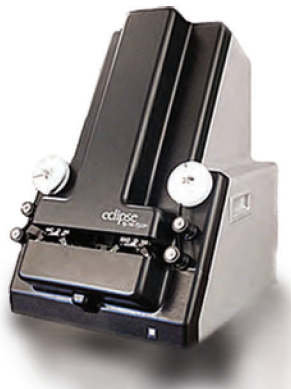
How it's done:

All you need for film scanning hardware is a nextScan scanner and the NextStar Plus software release. The steps for creating a Virtual Film Archive are as follows:

1) Determine the needed index requirements to locate a roll or fiche. This task requires knowledge of the film collection and needs to be well thought out. Using this knowledge, you will determine database fields and what type they need to be. This could take a day or two of interactive research with the end user.

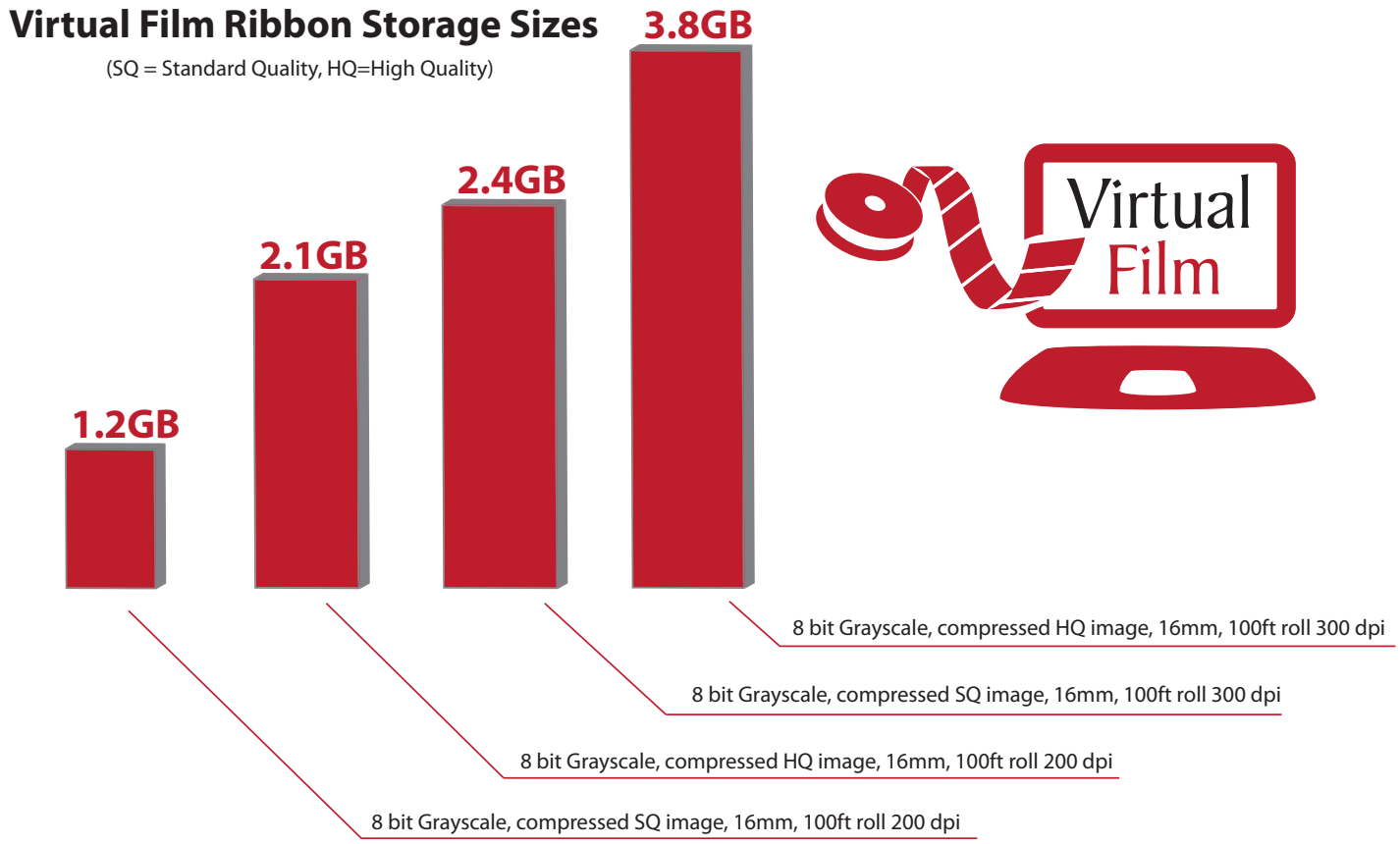
2) Create SQL Database containing the indexes using nextScan supplied tools. This takes about 5 minutes.

3) Scan your film entering the index information during actual scanning of the film. We have software and a camera (below) to take a picture of the film box and associate it with the roll in the database so you can add the indexing information later. We highly recommend this approach even if you are entering the index information at scan time. This gives added confidence and allows you to correct bad indexes down the road.



4) Once the film is scanned, the database and scanned film is exported to a backup device such as an external USB drive (this can be an ongoing daily or weekly task). The backup device can then be used to import the scanned film and database to the user's final active database and storage site.

The database is relatively small, but the scanned film data can be 1 to 4 gigabytes for a typical roll of film at 300 dpi. Depending on the users requirements, scanned film data can be stored on a SAN (Storage Area Network), Cloud based solution, or for small collections simply on a local hard drive or external USB drive(s). nextScan can also provide a Ribbon Storage Device (RSD) to hold the database and scanned data directly. These RDS can vary in size from 8 Terabytes to 32 Terabytes. There are operational advantages to having an RSD available at scan time.



nextScan supports two different SQL databases. MS SQL Server and MySQL. MySQL is a free shareware SQL database, and can help to reduce overall system costs. If you are concerned about MySQL stability because of it being a shareware product, just remember that Facebook® (and many other large organizations) are powered by MySQL.

Costs to get into the Virtual Film Service Bureau business:

VFsoftware was specifically designed to work with nextScan scanners. You will need to have a nextScan Film scanner to creat ***VF*** compatible ribbon files. There are several options here. If you already have a nextScan scanner, you will need the NextStar Plus software release. The Plus version of NextStar has the needed tools to create compressed Ribbon files, which are used in ***VF***. nextScan also offers a scanner rental/lease program. The following is a breakdown of costs that can be expected.

1) Cost of the base ***VF*** system.
   There is a base cost of the ***VF*** system for all of the server components. This base system includes import/export tools, Database generation tools, auditing tools for generation of post scan time roll and frame indexes, the Controller which allows control of workflow management during scanning and also manages the database for the final install site.

2) nextScan charges a per roll import fee
   The number of rolls/fiche should be estimated at the beginning of the project, and purchased as a block. Additional blocks of import licenses can be purchased if the database grows.

3) Workstation licenses
   Each workstation has a license fee which covers our tool vendor licenses. Liscenses allow for a limited number of concurrent active workstations.

4) Possible Database purchase

If the customer requires MS SQL Server, the pricing varies, but at the time of this white paper, the price was under $2000. We do not provide MS SQL Server, the end user will need to purchase it.

How do you get into this business?

nextScan will help you all the way! We want you to succeed with Virtual Film and will gladly provide support to your service organization through your first few installations to make sure they are successful.

1) Your Technical requirements.

VF is a network based set of software tools that uses an SQL database. You will need to have in-house personnel with qualified network capability and a basic understanding of SQL database operations. Both of these skill sets are easily attained by third party or Microsoft Certified classes. If these classes are needed, you should expect to spend from $1000 to $3000 per employee for such classes.

2) Training by nextScan

You will be required to send an engineer for a week long nextScan training class that will cover Scanner operations, workflow, network architecture and database operations.

3) Sales/Marketing

Co-Marketing opportunities and referrals

- You will be listed as a nextScan Certified ***VF*** Re-seller
- Cross-Referral network for leads and conversion project inquiries
- You will benefit from nextScan's marketing presence at Trade Shows and Industry meetings

4) Installation and customer training

nextScan will provide training manuals for your staff and User Guides for the end user. During the training at nextScan, we will "train the trainer". Integration requirements will vary with each installation and will be the responsibility of your technical staff to assess the required architecture. We can also provide consulting to assist you in this systems integration task.

nextScan

690 S. Industry Way Meridian, ID 83642
(208) 514-4000
www.nextscan.com
sales@nextscan.com