Unlocking the transparent archive

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Abstract

In the history of modern photography mankind has accumulated an enormous collection of photographic material. A large part of this collection consists of transparent material (e.g. Glass plate, acetate, nitrate, celluloid based material and slides). Most of the time only a selection was made from this material. By now it's clear that this material isn't going to last forever. In search for a cost effective way of preserving this material we can use digital equipment to make a copy. Technology has made such huge advancements in resolution and color accuracy that we are able to put it to our advantage. Having gained a wealth of experience in the last 2 years in a Dutch project called 'Images for the Future' (the digitization of over 2 million transparent images) we are now ready for the next step in large scale digitization of transparent photographic material.

Eureka

A key part of the 'Images for the Future' project was to innovate the whole process in order to scan at a high rate at the highest quality. At the same time we realized that the volume of this project was only a small part of what is still stored in archives and institutions. We asked ourselves the question if there is a way to unlock this part of the archive that otherwise nobody will ever see? The enormous amount of images would probably scare off even the most seasoned archivist or librarian. The challenge was how to innovate the process even further so we could digitize these hidden collections at a reasonable price and thus make it more interesting to do so.

The idea originated from something that was used extensively in the past, the contact sheet. In the past photographers and editors would use contact sheets to make a selection of the images they wanted to use. The contact sheet was a helpful tool to select the best images because not every image was worth printing (maybe the composition wasn't right or the image was out of focus). Transforming this idea to the digital era isn't something new but it provides a new way in which we can unlock the transparent archive. By scanning negatives and slides as a contact sheet it is possible to open up an entire archive for a fraction of the cost. The idea is both elegant in its simplicity and powerful in its use.

How does it work?

Over the past year we've worked on several projects in the Netherlands whereby part of the collection was scanned as contact sheets. To make this process successful and efficient an dedicated workflow had to be configured. This workflow can be divided in a few basic steps (Figure 1)
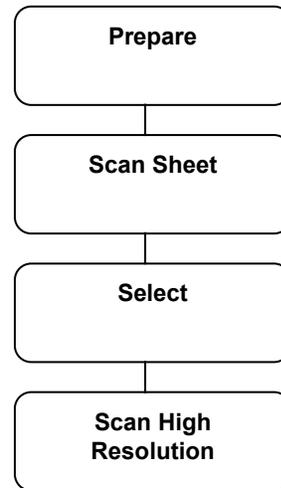

Figure 1. Workflow Steps

Prepare

(Re)package

The first step is to identify how the negatives are stored (either in paper envelopes, glassine sheets, transparent sheets or maybe not at all). In order to make a clear contact sheet the

Figure 2. Negative Contact Sheet   **Figure 3.** Positive Contact Sheet

filmstrips need to (re)packaged in transparent sheets (Figure 2) . This is also a good opportunity to see in what condition the material is. Are there damages like tears or even worse vinegar syndrom? This is a time consuming step and probably the most costly undertaking of the project but it's worth the effort. It makes all the difference in the digitizing process.

Divide and conquer

(Re)packaging is also an opportunity to think ahead in the digitization process. A sheet filled with negatives will have to be converted to a positive image. A positive image is something we can recognize and are used to working with. Experience has already learnt that black and white negatives are combined with color negatives in the same sheet. This isn't so much a problem for scanning as it is for the conversion to a positive image. To make the workflow efficient this conversion is done automatically. Automated processes work well when they can be standardized. Converting black and white and color negatives to positives at the same time has proven to be impossible for the time being. So dividing the material into uniform batches will contribute immensely to an efficient workflow. Then again it is probably a good idea anyway to have it separated if only for different storage criteria.

Identify

A key (but often overlooked) part in any digitization process is the identification of the items to be digitized. To facilitate completeness checks, prevent typos and to keep track of the items during the entire process (from transportation to delivery) it is necessary to give each item a unique identifier. We've learned that a bar code system is perfectly suited for this purpose. When (re)packaging this is the perfect moment to label each sheet with a barcode. The barcodes can then be scanned to make an inventory or shipping list. Scanning a barcode prevents typos. This is especially important when the items are actually digitized. A digital inventory list also enables us to automate the completeness check making the workflow again more efficient.

Scan Sheet

To keep the workflow as efficient as possible a custom made system was built to digitize the contact sheets. The sheets are placed in the same position again and again facilitating in an automated cropping process. The sheets are shot at a high resolution to be able to enlarge each individual image to make a selection for the high resolution scan. Experience has learned that an average rate of scanning will deliver 2,400 sheets in an 8 our working day. If a sheet contains say thirty-six 35mm images a simple calculation would mean having access to over 86,400 images in a day.

A slightly different set up was configured for digitizing framed slides. Framed slides usually come in sheets of twenty slides and often notes are written on these slides. Using a fill light makes it possible to see the image as well as the information written on the frames.

Select

Scanning on Demand

Like in the past this digital contact sheet can be used to make a selection of a few iconic images. This is the real power of this concept. A selection tool was designed for this purpose. The tool is web based and can be used from any workstation in any place. The selection of individual images can be made in the exact order as the sheets are numbered or if the bar codes are linked to other data this can also be applied to search and filter for specific items. When a sheet is selected it will be presented in its entirety and a cadre can be placed over an individual image to enlarge it (Figure 4).

Figure 4. Selection Tool

The image can then be selected and if necessary rotated (again providing an ability to make the workflow of post processing the high resolution images more efficient). After confirmation of the selection a shipping list is created for the scanning of the high resolution images (Figure 5).
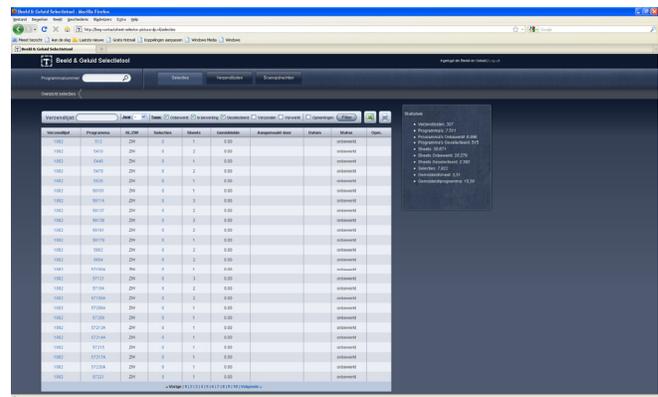

Figure 5. Shipping list

To make it easier for an operator to see which images have been selected the entire contact sheet with the selected images clearly marked is kept as reference thumbnail (Figure 6).
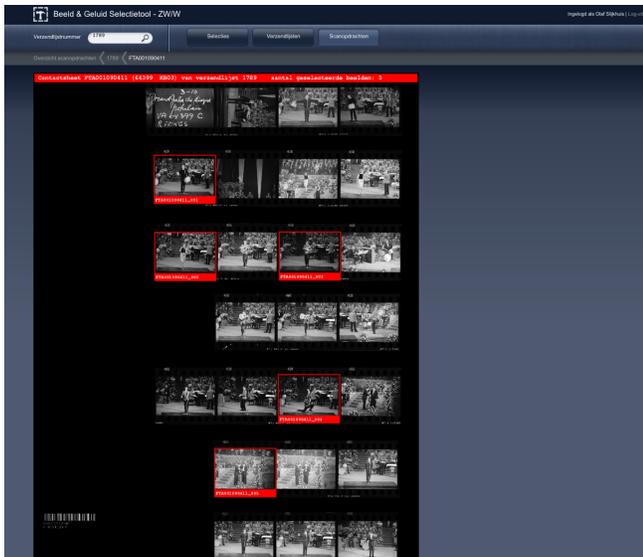
Figure 6. Reference Thumbnail

Having the digital contact sheets already to your disposal enables a scanning on demand process. Whenever your budget allows it or when there's a request for a set of specific images these can be selected at that specific moment.

Power to the public

Here's where it gets interesting! Creating a process in which scanning on demand is easy opens up another possibility for the digitization of transparent material. Consider stepping up from scanning on demand to a way of crowd sourcing. For a project instigated by the city archives of Amsterdam a crowd sourcing tool in which metadata can be added to digital files ('VeleHanden' which can be translated as 'ManyHands') was designed (Figure 7).
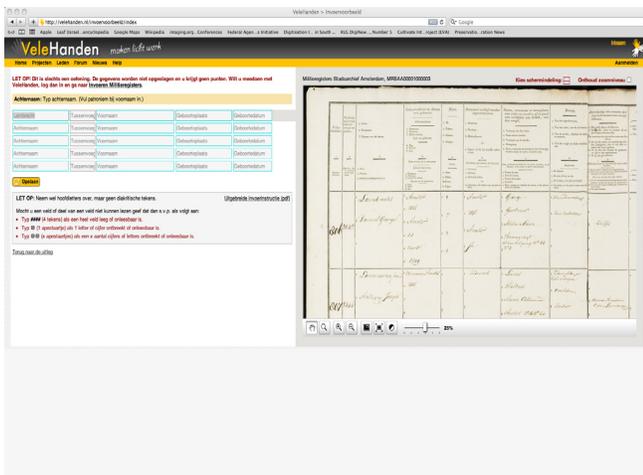

Figure 7. Screenshot VeleHanden Crowd Sourcing Tool

This tool can be implemented for any number of crowd sourcing projects and isn't restricted to specific projects for the city archives of Amsterdam. The next step is combining the contact sheet selection tool and the crowd sourcing tool to make it possible for the public to make their own selection.

Scan High Resolution

After making the selection the selected negatives can be scanned at a high resolution. The reference thumbnail of the contact sheet is presented to the operator enabling him to choose the right image without trouble. The images are individually scanned and have to be removed from the contact sheet to provide a high quality image. The filename of the image is linked to that of the contact sheet (barcode_reference number). Information or metadata already linked to the barcode of the sheet can be used to provide each individual image with the same information.

Opportunity

Statistics

The use of a crowd sourcing tool to let the public make their own selections provides an opportunity to generate information about the choices that are made. This information can be converted to statistical data which in turn can be used to plan resources, publish themed books, organize exhibitions, make acquisitions, etc. An archive or institute can even create opportunities to act even more in the present as instead of in the past.

Crowd Funding

Remember the possibility of combining scanning on demand and crowd sourcing? Looking at it from a financial point of view it's not hard to imagine that the public will have to pay for obtaining a high resolution image. This image in turn can be added to the image repository thereby contributing to the overall access to the collection. Depending on the price per scan it is even possible that part of this revenue can be used to digitize parts of the collection which are not in high demand by the public but are of historic or cultural importance or are in danger of deterioration. The crowd or public will thus fund part of the digitization and contribute to the access of an archive.

Community

Since the start of the crowd sourcing platform 'VeleHanden' last year not only was it successful in generating an enormous amount of records it also helped in creating a community around the project which people were and still are involved in. People will ask each other for advise and help each other out wherever they can. It seems they feel rewarded for contributing to something they feel is important. By involving the public the result might be beneficial in ways we could not have imagined beforehand. Creating a kind of responsibility and interest which might benefit financial and social security for an institution in the long run.

Conclusion

Creativity and innovation are probably not household concepts in the archiving world but it is the combination of old practices with new technology that will create new opportunities. In the case of the transparent archive this means a fast and cost effective way of unlocking a part of history which otherwise will probably be forgotten or vanish completely.

Author Biography

Olaf Slijkhuis's background is in Communication Science, Art History and Photography (practitioner). Since 2007 he works for Pictura Imaginis (the Netherlands). First as datamanager responsible for High-End scanning projects like Metamorfoze subsequently as production manager transparencies and as project manager for the 'Images for theFuture' projects. He is currently working as an accountmanager specialized in photography and international relations.