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***Cataloging images in library,
archive and museum***

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Abstract

This research was supposed to illustrate the process of image cataloging in a library, an archive and a museum in Oslo. Because of the importance and performance of visual items, cataloging becomes an effective aspect in preservation and irretrievability.

This qualitative study could facilitate the possibility to investigate and analyze the theory and practice in this specific area. Information has been gathered by semi structured interviews. Data collection has been managed from cataloger side rather than users.

In all these three places catalogers are treating the photo as a historical document. It was interesting to know whether the cataloging process is structured in sort of controlled way or no. It was absorbing to check whether catalogers are referring to any kind of national or international handbook, thesaurus or guidelines that literatures are introducing, in their daily work or no. It was also significant to know what the helpful competences are for cataloger and archivist. It is worth mentioning that it has not been done much research in this practice.

The results of the interviews clarified in general prospect that there is a gap between theory and practice. International standards are not recognized as required tools for cataloging neither in Arbark and Oslo Museum (these two have larger collection than Bekkestua library) nor in Bekkestua library.

Outcomes presented that interviewees think that learning by doing is the key factor in work development. In each of these places there are some creative and self-made tools like guidelines, structures and handbooks which are based on experiences rather than academic background or any other thing. It seems that they are feeling some needs.

Due to this research and outcomes, there might be requirement for deeper studies in order to come up with better recommendations.

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Declaration and Plagiarism Disclaimer

“The opinions expressed in this dissertation are solely those of author and acceptance of the dissertation as a contribution to the award of a degree cannot be regarded as constituting approval of all of its contents by the Division of Information and Communication studies”.

I certify that all material in this dissertation which is not my own work has been identified and properly attributed.

Lili Shakhsi

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Abbreviation

AAT	art and architecture thesaurus
OM	Oslo Museum
CMC	Computer Meditated Communication
IRC	Internet Relay Chat
MeSH	Medical Subject Heading
TGM	Thesaurus for Graphic Materials
CHIN	Canadian Heritage Information Network
LCSH	Library of Congress Subject Headings
ULAN	Union List of Artist Names
NIE	National Library of Estonia
ELNET	Eesti Raamatukoguvõrgu Konsortsium (Estonian Libraries Network Consortium)

1 Introduction

Images are much more than a simple record. They are visual form of different subject in wide variation of fields which try to cover daily human needs either informational or emotional. When it comes to Photos, the fixed format of images, it is tangible that photographs can grab our attention and speak directly to our emotions. This impulse to save our recorded memories is a powerful force which tells us much about the role of photography in our lives and our constant desire to distil our most precious moments into images. (“6 Reasons Why Photography Matters,” n.d.)

In this area building comprehensive and coherent database is a sort of need, which is an increasingly interdisciplinary task when the collection is somehow narrative. As a supplementary necessity of each and every source, there is a high demand for a deep study on usability and accessibility requirements.

For achieving this goal technology and theory play vital roles. When it comes to non-technical aspects, structure of indexing, archiving and cataloging as the key point can be field of extended analysis. Because the mentioned area is quite sensitive since process of translating or transferring a visual object in to textual format is taking place. Obviously, there is a risk of ambiguity, error or data drop for many reasons; either unsustainable working approaches or lack of expertise.

In order to make the subject access more successful in this domain, we may need a precise action in describing, identification and interpretation of visual materials by using sort of guidelines, for covering aboutnesses and ofnesses. Of course the principle of experts’ collaboration should be highlighted here

In this study the main idea is analyzing and observing the application of librarianship in cataloging historical photos. This research will be supported by some semi structured interviews from those who are dealing with visual archives and photo collections. Required data will be gathered in qualitative way. During this research the technical issues won’t be under focus. It is interesting to see how useful subject headings or thesauri are.

The main goal is explicating the process of cataloging by observing the cataloger behavior in qualitative way, so problem solving in cataloging process is far from approaches of this case.

Oslo city museum, Arbark and Bekkestua library are focus points for this research. All these three places are holding historical photos in their collection.

Whole thesis will circulate around these research questions;

1. What are the most important common features of cataloging photos in the focus institutions
2. To what extent are catalogers interested in following international standards?
3. What are the helpful competences for image cataloger?

2 Literature review

2.1 Image

The definition of an image follows its Latin origin, *imago*, as a pictorial representation of a person, scene, or object. An image is a realistic or semi-realistic representation of a variety of Subjects produced by a number of methods and in a number of different styles. (“F_Imageindexing.pdf,” n.d.)

Image is an artifact that describes or records the visual conception of anything either in two-dimensional or three-dimensional formats with more similarity when a physical object or a person has been focused.

Image can be presented not only in manual or (Microsoft) word render but also in mental way. It can be captured by optional devices such as mirror, camera, lenses, telescope, and microscope.

Hard copy is way for shifting from volatile image to fixed image, in order to make a temporary image preserved by recording it on paper or textile by photography or any other digital process.

2.2 Photograph

A photograph is an image created by light falling on a light sensitive surface with camera by usage of required lenses. The process and practice of making photograph is called photography.

Methods of recording the image of an object, through the action of light, or related radiation, on a light-sensitive material is called photography. The word, derived from the Greek *photos* (“light”) and *graphing* (“to draw”), was first used in the 1830s.(Newhall, 2013)

As a means of visual communication and expression, photography has distinct aesthetic capabilities. In order to understand them, one must first understand the characteristics of the process itself. The essential elements of the image are usually established immediately at the time of exposure. This characteristic is unique to photography and sets it apart from other ways of picture making. The seemingly automatic recording of an image by photography has given the process a sense of authenticity shared by no other picture-making technique. The photograph possesses, in the popular mind, such apparent accuracy that the adage “the camera does not lie” has become an accepted, if erroneous, cliché. (Gernsheim Erich, 2013)

2.3 Image usage

Images are central to a wide variety of fields ranging from art history to medicine, including astronomy, oil exploration and weather forecasting. Digital Imagery plays a valuable role in numerous human activities such as law, enforcement, agriculture and forestry management, earth science, urban planning as well as news casting, sport and entertainment. (Castelli & Bergman, 2004, pp. 1–10)

2.4 Cataloging

In a very simple way cataloging is the process of listing something for including in a catalog. Today cataloging process has been merged with metadata. Headings, alphabetic orders, were once the only access point to the catalog. (Coyle & Hillmann, 2007)

Library catalog is a register of all bibliographic items in the library or group of libraries such as a network of libraries for considering the textual, audio and visual materials. *Charles Ammi Cutter* in his *Rules for a Printed Dictionary Catalog* has mentioned the identification, collocation and evaluation of the existing informational materials the objectives of the bibliographic system. Catalog acts as an inventory in general way.

Cataloging is the subset of the larger field that is sometimes called bibliographic control or organization of information and it is helpful to view it in that context. (Taylor & Joudrey, n.d.) Currently there are plenty of definitions for this term, process or work. For instance *Richard P. Smiraglia* defines it as a process that encompasses “*the creation, storage manipulation and retrieval of bibliographic data*” (Intner & Smiraglia, 1987, p. 15).

Bibliographic control has been introduced by *Elaine Svenonius* in *Directions for research in indexing, classification, and cataloging* as “*the skill or art ... of organizing knowledge (information) for retrieval*”. (Taylor & Joudrey, n.d.).

From another precept cataloging is the means by which catalogs are prepared under the process of describing, selection and creation by including the access point and subject analysis, moreover authority control and encoding of the metadata are mixed in to this process. (Taylor & Joudrey, n.d.)

However careful and scholarly the methods used in building a collection, without expert guidance to its access and use, the collection remains difficult to approach. Cataloging and classification, well-tried disciplines often combined under the general heading of “indexing,” provide the needed guidance. Both techniques have been in use as long as libraries have existed, and their... (“library catalog (library science),” n.d.)

2.5 Subject headings

Subject heading classification is harvest of human and intellectual endeavor for building up a universal and professional format for topic description. Cataloging based on standards facilitates easy and uniform to access and retrieval of information in any database regardless of sidelong factors because subject heading assists the cataloger, archivist or ... to do something independent of time. Moreover, human and information area are coming over the lingual barriers via technology. Subjects heading's variation is quite relevant with focused field of knowledge. For instance MeSH is a specific subject heading and cataloging tool for medical topics.

The subject heading of library of Congress is perhaps the most widely adapted subject indexing language in the world, has been translated to so many other languages and useful in libraries all over the world. ("Subject Headings and Genre/Form Terms (Cataloging and Acquisitions at the Library of Congress)," n.d.)

2.6 Image Indexing

The amount of pictorial data has been growing enormously with the expansion of WWW. Through digitization, image collection has been transformed from unique and fixed resources to widely accessible via internet. (Rasmussen, 1997) Image Indexing lies on two main objectives; accessing images by their attributes and accessing not only to an individual images but also to groups of useful images ("Layne_1994.pdf," n.d.)

Image indexing is increasingly interdisciplinary (Collins, 1998). In indexing images having clear overview from image attributes play important role in having better outcome, image attributes can be divided in to four categories; Biographical attribute, subject attribute, exemplified attribute and relationship attribute. "Biographical "section may contain several subdivisions in two small category; birth of the image, Image travel around the world. "subject " attributes has three useful aspects for considering ; aboutness and ofness , each image is unique and specific and subject of image gets influence from time , time , activity and " exemplified" speaking of special materials, call these attributes "Object characteristics," and distinguish them from the subject of the material." Relationship "Image can attribute or associate with other images or textual works. Indicating the existence and nature of these relations can be important part of the indexing process. ("Layne_1994.pdf," n.d.)

Obviously, for this purpose coherent and applied tools are required in order to enable the cataloger, indexer or archivist to facilitate more chances for retrieving a visual item by well-structured cataloging.

The most common and universal ones are LCSH, AAT, TGM ("Subject Indexing for Pictures.pdf," n.d.) and some other sources could be UNESCO thesaurus and in local level each and every country might have something like CHIN (Canadian Heritage Information Network). (Neal, 2012, pp. 40–58) ULAN (Union List of Artist Names) (Jørgensen, 2003, p. 244).

Perchance the most evidence role of digital imagery to end consumer is on-line catalog. After digital cameras came to photo market, digitally born photos assignee huge amount to themselves, basically their management is a great job and on the other side the rapid replacement of traditional print catalogs to online format literally need manipulation, structure, support for high resolution, storage and transmission, rapid retrieval, and integration with traditional database facilities.(Castelli & Bergman, 2004, pp. 1–10)

2.7 Problems of image Indexing

To some extent image can be recognized as a language status that needs translation .That is why Image based retrieval process has some challenges in translation of visual representation of an object in to textual description, because of possibility of multiple interpretation of visual resources almost always there is risk of ambiguity and error, beside these language barriers are still prevents between users and images, moreover the quality of the indexing language plays a major part.

The main advantage of controlled vocabulary is the ability to promote consistency and increase probability of matching words chosen by the indexer to those of the image searchers. (Neal, 2012, pp. 40–59)

There is currently no wide –ranging generalized the ensure for image indexing so must of the organizations selection from existing thesauri and supplement heavily with free text.(Jørgensen, 2003, pp. 241–275)

2.8 Cataloger

The cataloger is the only human or subjective element involved in the classification process by acting as a conduit between the work of art and the end- user or researchers. Structure in cataloging centers on the cataloger understands of the generals of al practices and rules of analysis and classification as well as on his or her knowledge, expertise and experience.(Baca, 2002)

2.9 Skills and abilities

People who are interested in describing and indexing the pictorial materials are supposed to have some certain type of competences; ability in describing and organizing the information, special attention to details, capability in reading photographs and translating the visual information in to textual description also verifying information and solving the problems. In image indexing having knowledge about audience or user community is definitely required thus policies, visions and missions of work place are effective. For a cataloger a basic knowledge about history and repositories subject area can be quite handy. During cataloging procurer skills of using controlled vocabularies, descriptive guidelines and standards are undeniable.

(“TrainingOpportunitiesCataloging.pdf,” n.d.)

3 Methodology

Methodology is the research design, structure for explaining the coherence of the background information and objectives. Research method needs to be selected through research question and it is theoretical way for data collection.

This research is going to analyze the subject from qualitative approach. Moreover it has been structured in form of case study and for data gathering the preference is with interviewing in semi-structured format with open ending questions. Also some supportive information has been collected via online survey.

3.1 Qualitative research

Qualitative research in a general frame can be introduced; a research seeks to explore phenomena, more flexible and managed with semi- structure methods.

Qualitative research's analytical objectives are:

- Describing variation
 - Describing and explaining relationships
 - Describing individual experiences
 - Describing group norms
- (“Qualitative Research Methods Overview,” n.d.)

Data gathering techniques

- Interview
- Observation

3.2 Interview

Interviewing is a well-established and well-used technique for data collection. The interview can take any form, from the highly structured researcher-administered questionnaire to the highly open purposeful conversation. Choice of type depends on issues such as the research participants and time available for data collection.

Interviews can be used to confirm or refute data gathered from other tools such as observation and diaries.

Interview can be done in two main directions; structured and semi structured either virtually or face-to-face.

Most structured and some semi-structured interviews are working from the traditions that “Seale” in researching society and culture “calls interview ; data as research , where the assumption is the data being gathered are interviewees’ knowledge and experience of the outside world.(“Introduction to qualitative interviews,” n.d.)

Interviews are used when we are seeking qualitative, descriptive, in-depth data that is specific to the individual and when the nature of the data is too complicated to be asked and answered easily.(Pickard, 2013)

Seven stage of the interview process

1. Thermalizing
2. Designing
3. Interviewing
4. Transcribing
5. Analyzing
6. Verifying

3.3 Semi structured interview

The interviewer will have a list of themes and areas to be covered and there may be some standardized questions, but the interviewer may omit or add to some of these questions or areas, depending on the situation and the flow of the conversation.(“Introduction-to-Research-and-Research-Methods.pdf,” n.d.)

Still there is significant debate surrounding the use of computer-mediated communication (CMC) in the research process. Converting from physical interviews to synchronous or asynchronous ones. (Pickard, 2013)

3.4 Synchronous interviewing

Synchronous or real-time interviewing involves the use of internet relay on chat (IRC) software which facilitates a live chat area following the real time conversation. Its only difference with a usual conversation or interview will be exchanging the questions and answers in types from.

3.5 Asynchronous interviewing

Asynchronous or non-real time interviewing involves the use of e-mail and sometimes discussion threads within designed area.(Pickard, 2013)

Library, Archive and Museum are the data collection unites for this research and all are in Norway. They have been chosen so that every type of the traditional memory institutions is represented in this research. Required information have been gathered through semi-structure interviews. Beside these three places, National library of Estonia has collaborated in data gathering in two synchronous and asynchronous interviews. Those two virtual methods have been selected, because of their adaptability with NLE's case. There was no possibility to organize a face-to-face meeting with Estonian image cataloger team. So the results of interviews with national library have been used as background information.

All research results have been analyzed in qualitative way. The main idea in this study is highlighting the process of the same practice in different places with image catalogs.

4 Research results

Data for this research has been gathered by interviewing Archivists in Oslo congress center, a librarian from Bekkestua library and Oslo city museum. The interviewees were image catalogers at those institutes.

Some data has been used as background information from national library of Estonia via their participation in asynchronous interview.

Moreover, couple of observation has been done for extending the prospect.

Data gathering system is semi structured and qualitative.

4.1 Oslo Museum

4.1.1 Background information

The Oslo city museum was established in 1905 as a traditional cultural museum of the Oslo it has focused on collecting all kinds of objects and it has been here all the time special focus already from start was picture collection paintings and drawings and old fashioned pictures and also photography.

With over 2 million objects that only 100,000 photos have been digitalized and cataloged in museum's system Primus. The collection has been gathered by donated photos and museum's potential collection and photos taken by photographer of the museum.

The main focus of the museum is **cultural history**. This photo collection is supposed to cover the **Oslo history, life style** and **development** of the city in time. It can be called visual form of the history. That is one of reasons that professional photographs are supposed to record the latest figures of the city. These photos beside old time photos of Oslo, makes the feasibility of any kind of review accessible.

4.1.2 About the cataloger

Vegard Skuseth, photo archive manager with over 30 years' experience has found librarianship education the most valuable assist. Knowledge about the Oslo history is the second base for supporting the task. Moreover, he believes this work has enabled him in recognizing every corner of the city in long term.



Figure 1: Vegard Skuseth doing his daily work, gathering information

The main idea in cataloging is centralized on **history** rather than art. Depth of description is dependent on modality of cataloger's self-made guidelines. **Selecting subject** is flexible. None of the universal standards or thesauruses has control on this job. But users seeking behavior and cataloger's experiences have good impact on these selections, as cataloger thinks.

Vegard believes personal interests can be a cause for additional readings and seeking in working area. Having knowledge about relevant topics will be a great help for covering more details in cataloging. On the other hand, it is a way for saving time. He thinks his interest and information about **literature**, **theater** and **history** are helping him in recognizing the people when he is doing cataloguing related to theater collection also adding subjects when his dealing with events.

4.1.3 Photo cataloging

After photo selection and digitizing, items are ready for being registered in the system. The primary and necessary fact here, is preparing trustworthy information. Next if there are some doubts about people, date, location or whatever should be resolved before publishing. For this purpose, cataloger use to ask from whoever knows like a colleague or a researcher. Internet has good facilities for searching .when there is no information in hand about a photo, **crowdsourcing** is an interesting method by publishing on Facebook and asking people. Book and library are the traditional and eternal sources. (See Figure 3)

Of course, asking from other experts and checking other sources are parts of this job. For offering reliable information, cataloger tries to take care of the information quality which has direct influence on describing and at the main time enriches his background information. (See Figure 2)

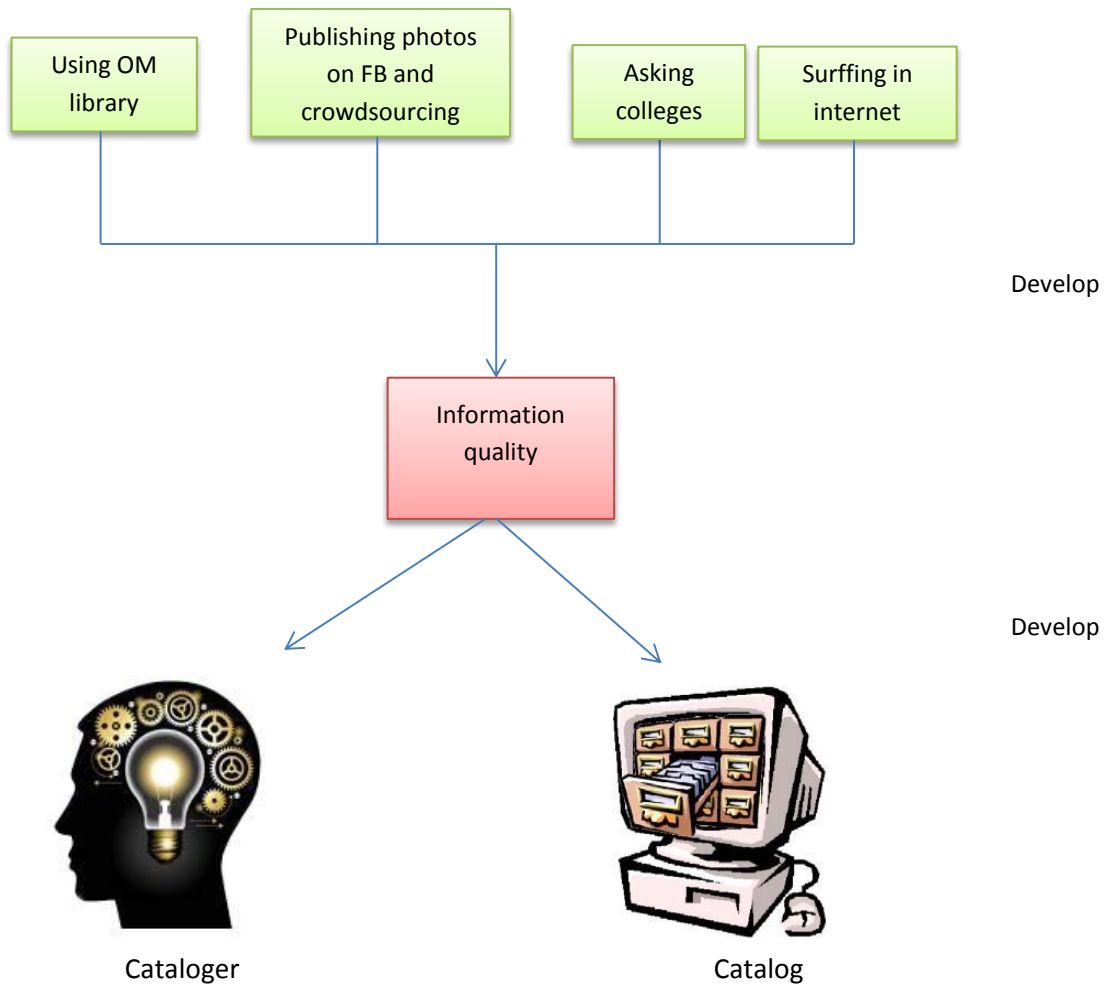
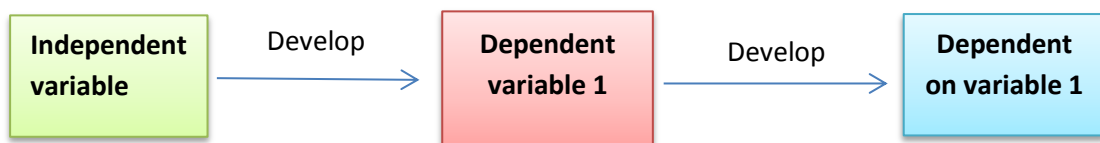


Figure 2: Cataloging process



Describing is the connection way between informational sources and cataloging. *“It is somehow mapping an item ... Vegard said “.* For having comprehensive description it is certain from Vegard’s prospect to know the city, have academic studies, orientation with primus (system). At the same time experiences and self-made guidelines are playing supportive rule.

4.1.4 Users and usability

During describing, cataloger is supposed to answer these general questions; where is it? , when is it? , what is this? Who is s/he? In order to make the item accessible from different angles like; people, time, location and the activity. Since there is room for users' comments in image databases, cataloger uses the comments in correcting his work.

In Vegard's opinion learning by doing and being in relevant environment are **key points** for rest of the improvements. By working and experiencing he could know more about the users, however, he still doesn't have any idea who are sitting behind their computer and searching for OM's collection. But he has learned a lot from users' comments, their questions and orders. Here we can feel the user interaction or at least the possibility of interaction.

OM collection is accessible from Digitalt museum and Oslobilder. In both sources there is commenting option. OM has a page on Facebook, of course with different features and functionality. It is mostly based on publishing the events and exhibitions also crowdsourcing.

4.1.5 Aims and objectives

All in all, OM is trying to insist on its basic aim making Oslo's history visual. For making it achievable, in cataloging part they are using all options for making their collection interactive. Either by fixing accessing points (Facebook, Oslobilder (<http://oslobilder.no/>), Digitalt museum (<http://digitaltmuseum.no/>) and reference links in the books) or involving users comments in cataloging. Cataloger has got quite good impact from crowdsourcing and users comments. The main idea of opening these rooms was communicating with elder generation by using their experiences. So harvesting of this interaction will be a collection with rich content.

This museum has not experienced any sort of evaluation. Just comments and feedbacks from their facebook page have been recognized mostly as editing sources. And it is somehow tangible that for them there is sort equality between people interaction in following the database or ordering photos and people's satisfaction. Something like if they are checking means they are happy. If they are happy means work is good!

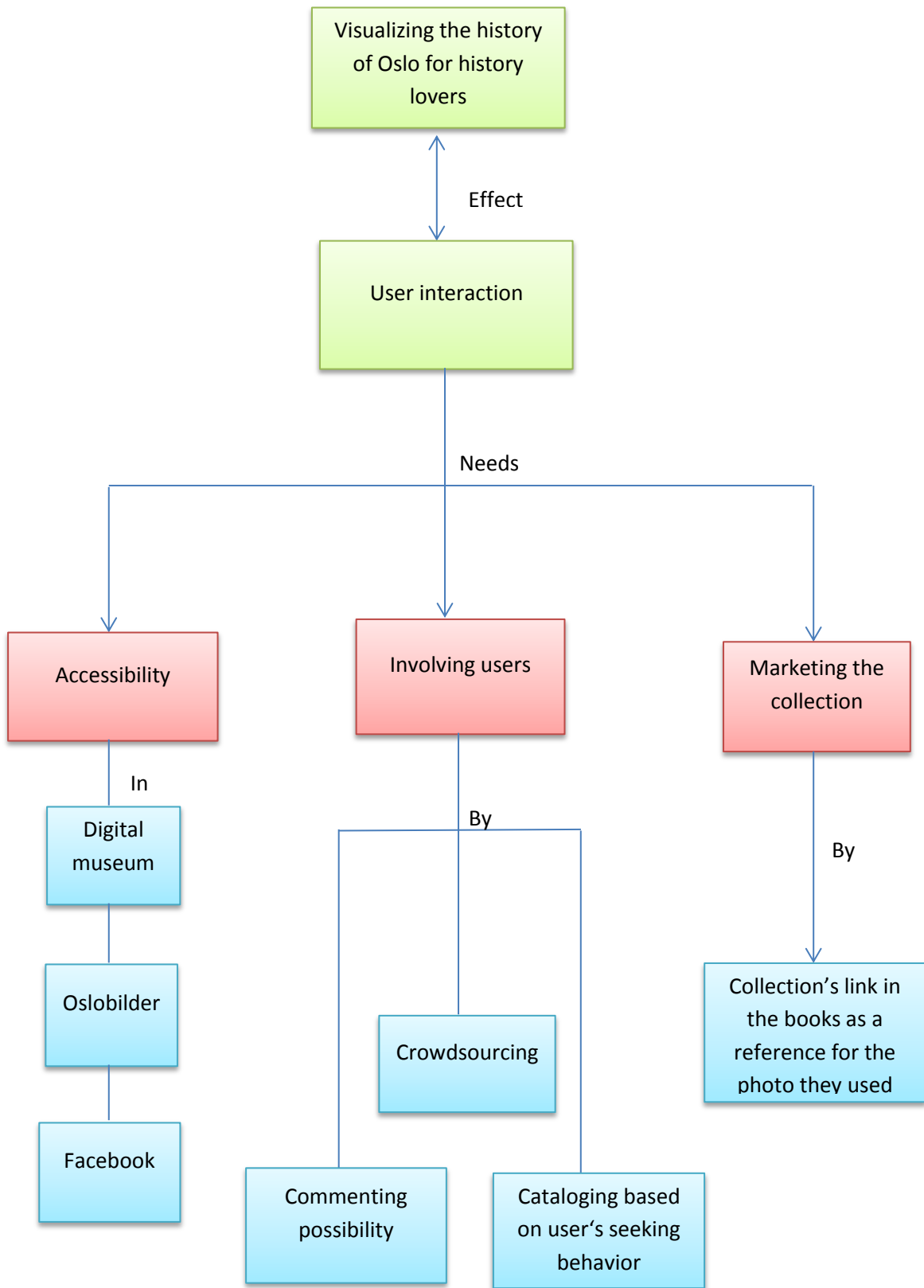


Figure 3: Channels of user interaction with OM

4.2 Arbark

4.2.1 Background information

Photos, films, posters and banners from labor movements have been gathered in form of analog and digital collection. This collection consists of 1,500,000 items about Oslo History in general aspect and in narrative way about labor history. A group with four different specialties is working on organizing this collection. This team is being supported by the party. Vivi Aaslund an archivist with over 40 years of experiences is the leader.

4.2.2 About the cataloger

Vivi is self-made as she says. She started working as a photo archivist since 1970 with newspaper "Arbid bra" without any academic background. It seems that; good memory and her personal interest about labor history beside her creative mind are supporting her work. She has done good job without any kind of guidelines. Vivi has managed her daily tasks based on a main idea. She says; «*The main thing about catch and catalog the information is to find them again in ten years or so*».

4.2.3 Photo cataloging

According to this aim Vivi and her team are trying to focus on specificity. They are struggling for presenting narrative description about content and concept of each photo. Vivi Said: «*... Specifying is really important...*»

As she said it is important to support the description process with rich source of information. Proper information can be gained from different ways by those who are dealing with metadata. It somehow depends on education and age. Older generations have more visual experiences and by being witness of several historical events. They have their own sources for sorting information. And young generation's knowledge is based on academic education and mostly online sources. Vivi said «*... To learn for myself I was reading the whole newspaper and following the news the night before and thinking with myself if it is going to be in the newspaper the next day where am I going to put the photo?*» another knowledge source for Vivi is a self-made handbook which consists of press clipping . It is harvest of her interest and creativity. In this collection the majority of cataloging information has been gathered by experiences and visual memories. Here the academic background is not helping to the catalogers that much just in some cases it has supportive role. May be that can be a reason for not using or not feeling need of using any kind of international standards. Somehow they are following newspaper standards and sometimes they

select the news title as a subject for that specific photo. Also they have been transferring their old and **self-made standards** which were in use from the analog era to **Photo station** (their system). Generally they don't have any sort of official standards in form of subject heading. Since a single photo is analog format has been placed in several categories, having guide line for shifting such analog information to digital seems impossible. In their cataloging, if the photo has been published in a book or newspaper, there is an address for further studies. They mentioned lack of Norwegian cataloging standards and no official course for image cataloging in theory and practice, as current gaps of this area.

It is worth noting that they don't recycle the unknown items. They just keep them in boxes with envelopes due to the little information that they have about them. For example one envelope was named "Spanish civil war", the other was containing photos relevant with trade union and so on.



Figure 4 Unknown photos gathered in envelopes according to their subject.

Vivi catalogs them as soon as she finds some information about them in old newspapers by seeing relevant photos or so. She is really perfect in recognizing the faces and date of events. Of course she is getting great help from Norwegian political parties' name lists and her additional readings.

4.2.4 Users and usability

People are welcome to contact the leader and ask for the photos they are interested in. Their favorites might be among paper photos. For instance there are many envelopes full of car photos that haven't been digitized.

Usually researchers or authors **come in person** and due to their field of work ask Vivi to recommend relevant photos. When the researcher, publisher or whoever is asking help for illustrating a topic, since all photos are neither digitized nor cataloged in general way, cataloger should act as a Curator. For

instance when someone is looking for visual items related to democracy. Vivi starts checking her memory and also reading user's texts about that topic.



Figure 5: Paper based references

4.2.5 Aims and objectives

One of their **aims** is achieving new users so they are trying to make the younger generation familiar with the Labor Party by teaching them about. There are some projects running between the Labor Party and school teachers. They are preparing and presenting packages about labor history and additional issues. They would like to reach younger generation and motivate them for further studies in field of history.

In order to cover more users seeking interest, they try to cover the subject selection in general form.

Visual way of thinking and learning by doing, are things that this job requires highly. Cataloger with art history background doesn't find her academic background much useful. She thinks in work life she is a photo historian rather than art historian.

In one hand it is really difficult to have certain structure for depth of the work; on the other hand there are no guide lines for includable and excludable facts. The work process can be visualized somehow in this way (See Figure 6):

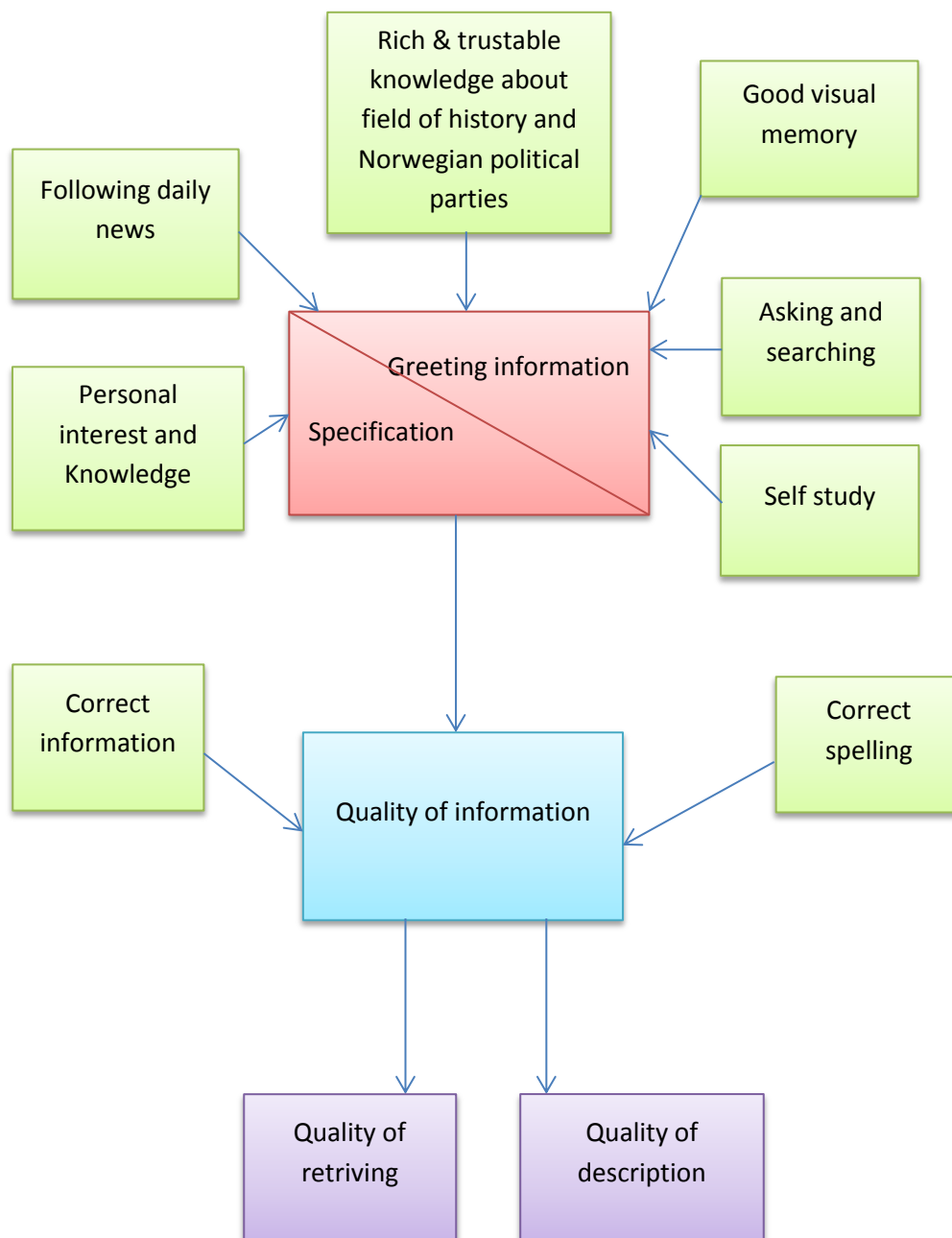


Figure 6: Workflow in Arbark

Briefly, information is coming either from controlled ways or uncontrolled ones. This general pack should be specified via further competences. A controlled type of knowledge is supposed to be used in describing in order. Higher output in retrieving demands standard cataloging. Correct information and correct spelling are two other important aspects in this process.

Since this team is willing to have an accessible and retrievable collection, there are some works that taking place for achieving this goal and having an end-user collection. (See Figure 7)

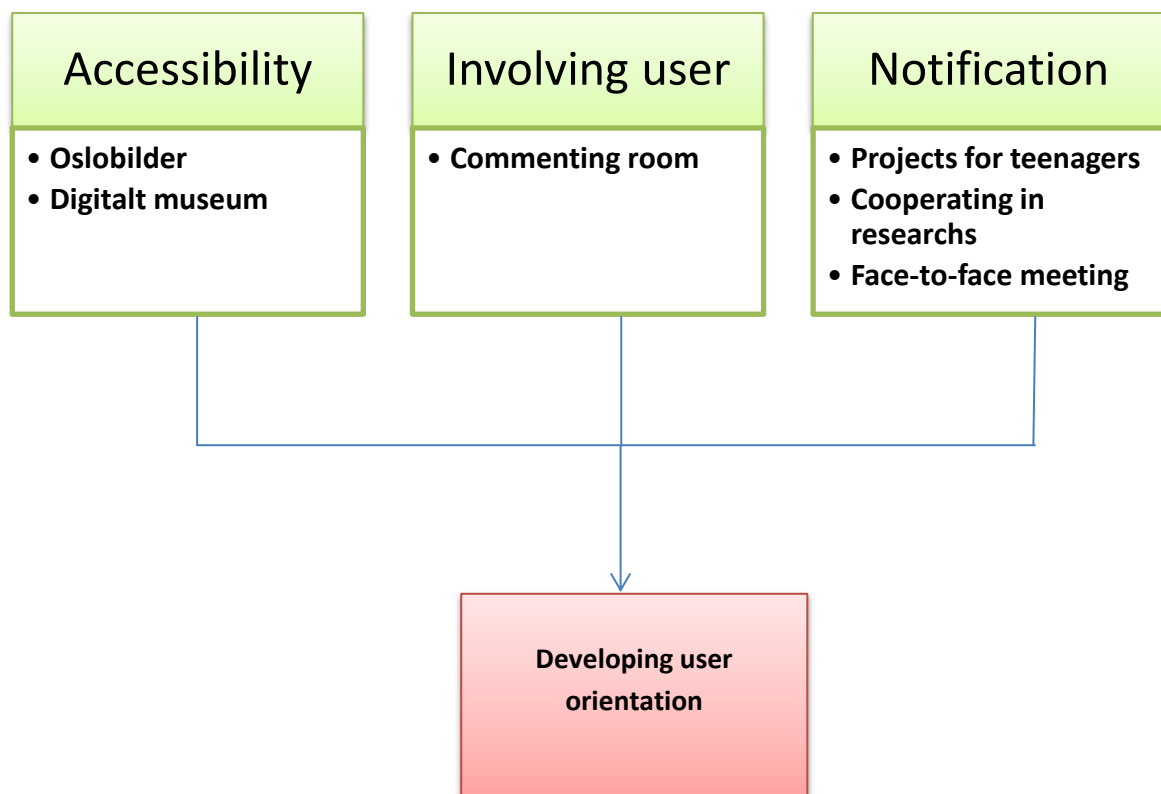


Figure 7: User centered approaches in Ar bark

4.2.6 Evaluation

Ar bark doesn't have any evaluation projects unless checking the team's work by leader. The other helpful source for this cataloging team in correcting their catalog is users' comments; however, it is not looking official.

4.3 Bekkestua Library

4.3.1 Background information

Bekkestua library has a small collection of photos and maps around 10,000 items beside its collection. This collection consists of; Private collections, Aerial Photographs, local newspaper's photo collection , photos from a famous photographer, non-famous photographers photos, photos from Bærum's famous people and

Bekkestua library's photos can be divided in two main category:

Old: partly existing in the library, portly came from local newspapers and some from privet people

New: Has been gathered by a photo competition and almost always people are welcome to send new photos to the photo section of the library.

4.3.2 Photo selection and curation

Definitely, there are some filters for selecting photos of course not in an official form. Library is interested in recognizable people, buildings, places and events. Photos from landscape and farm houses should be recognizable for the cataloger. For instance a flower or a tree is not interesting. The main focus is preserving important people, places and dates. At the same time a photo should be sharp and with high quality in order to be accepted. Because after digitizing photos lose their quality.

So the main idea about these photos is analyzing the photo as a historical document rather than art.

This photo got accepted. Because the cataloger could recognize the location and the quality was Ok.



Not this one, because the location is not clear for Tove.



4.3.3 About the cataloger

Tove is doing the cataloging solitary. She is a librarian with almost 15 years of experience and one year of additional studies in field of history. As she said she has been starting photo job from scratch. On one hand she had no experience with photo cataloging; on the other hand she is not a local person in Bærum.

She started with navigating in town and photos. Making connections not only with local historical society and newspaper but also with whoever she found her or his expertise handy. Actually she is experiencing interesting form of knowledge sharing with her self-made circle; however, it is something non-official. For instance she has some contact people to ask questions about ski jumping. Or they introduce a man who is living in Bærum and has been staying in the forest during the war and recommending Tove to talk with him.

She thinks these meeting are quite helpful for recognizing the faces in the photos and adding some more information for the users. Tove has found her historical information besides having good overview about user society and their information seeking behavior very effective in developing her work.

4.3.4 Photo cataloging

This library is using **Bibliofil** (library system for public libraries in Norway) as a cataloging system for both books and photos. Basically when it comes to subject selection the first option is books subjects and if cataloger didn't find any relevant item, she is free to develop a new one. So subject selection and depth of description are almost uncontrolled.

For describing the location, librarian uses a unique way. There is a big map of Bærum which has been divided in to regions. Each region has a number. This number represents the location in cataloging. Analog photos have been classified in the storage room due to this map.

Tove has written down the work process; where the photos are coming from. How she is getting information and some other details in form of a self-made handbook in case of need.



Figure 8: Orange shelf, consist of analog items classified by that special map

4.3.5 Users and usability

There user society has almost same interest which is history. Either they are looking for their roots or trying to illustrate their research or text. Pupils are the youngest group of the user society, since there is a great focus on history in early ages at school. Of course they are not seeking specifically photos. There are some photos about sports and gymnastics beside books with the same topics that are quite popular among young people to check. Local journalists and publishers are using the collection quite much. In some aspects politicians may also find some interesting points from this small collection.

About type of negative the cataloger inserts some information and she sometimes specifies black and white and colored photos. Due to some system limitations these details are not searchable for users. Interested people need to contact the cataloger for further details. Some information is accessible for administrative group rather than users.

Generally users are being treated in both face-to-face meetings or via virtual connections.

4.3.6 Evaluation

There is no official evaluation but Tove believes “... *A satisfied customer who got help more than her or his expectations might go to my boss and say good things about me or can go to politicians and tell them you can count on her help ...it is a good way of evaluation I think ...*”

Moreover, librarian uses the people’s comments for correcting her work. Also new findings give her further chance to extent her description. When someone writes comment for a photo “... *This house was belonging to grandparents for 50 years ...*” then she adds the period of the time and name of the family to previews information regarding that building.

4.3.7 Aims and Objectives

Work process regarding photos is processing around a big aim; that people should feel need of history and they should find the history in this house.

They are trying to help people to find their identities .They are some people that have been living in Bærum for some generations and may need to find their roots among these photos. Interested people have chance to have their favorite photos in printed form free of charge unless they when they want to have them for commercial usage.

For achieving this goal, library should make the people aware of Bærum’s photo collection. This collection needs presentation in order to increase the number of users.

Bærum photo collection is being presented in some ways like internal exhibitions, library’s link that local newspaper uses as reference for the photos. Once in a while library people go out of the house and try to present the whole collection to public and also Tove in a way tries to market her work when she is in the meeting with mostly old participants.

She thinks some lectures that have been arranged with the library might be effective in involving new users with history. For example some years ago one of the pioneer women from Bærum’s industry had

lecture. The lecture was about women at work. Or any other meetings with famous people that library arranged for public.

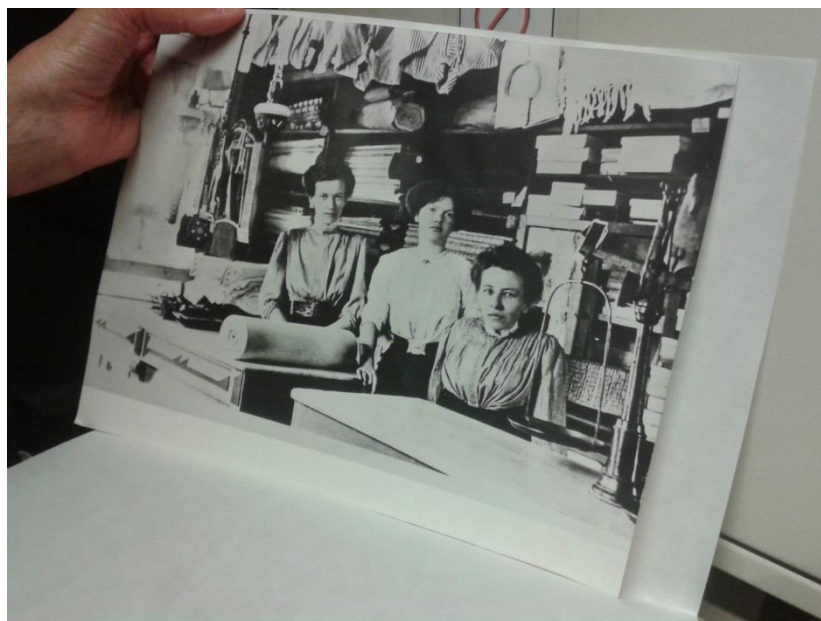


Figure 9: Women at work

All in all, in this library there is not much plans for cataloging photos and no further approaches for getting new users. The size of the collection might be a reason and there are not much financial supports from developing the work. And settle the work flow in more controlled way.

This collection can be all right for having a brief review about Bærum history in visual form.

4.4 National library of Estonia (NLE)

NLE after participating in different projects like; old maps under DIGMAP project and old postcards under European project Europeana Travel (2009-2011), in form of asynchronous interview has shared interesting information.

Using thesaurus is mandatory in Estonian cataloging system. In order to have a united catalog and of course librarians are free to add new subjects to the current ones. Scientific libraries are using ELNET and public libraries are using EMS and developed by NLE and Library of University of Tartu.

NLE is also using EMS for digital images and other objects.

After experiencing international projects, NLE probably got new insights. In DIGMAP project 4 libraries from different countries were collaborating and there were some problems in merging and unifying the information, because each of the libraries had their own way of describing and subjecting.

Asking is the common way of problem solving among catalogers of NLE. Moreover, there is a terminology workgroup in Estonia couple of times in year that cataloguers and professionals from all libraries in Estonia whose goal is preparing end user thesaurus, are working together.

4.5 Comparative study

4.5.1 Aims and Objectives

These three photo collections in Library, Museum and Archive have the same insight about visual items. All these three are following historical details in photos. Bekkestua library has the smallest collection and Arbark has the most narrative one.

Arbark is trying for sort of aims such as making collection accessible and retrievable for users, feeding the authors and reaching new users by introducing the labor history to teenagers.

OM has based its work on visualizing the Oslo to make the life style, architecture and many other things comparable in different period of time. Helping interested people in looking for history.

Bekkestua library is wishing to aware people to understand their need to history. *"... People should find the history in this house ..."*. Moreover, they are willing to help those who are looking for their identity.

In all these places several objectives that processing in form of activities. Catalogers in Bekkestua, OM and Arbark seems being satisfied with their own function, however, none of them has almost a clear idea about the outcome. They might not know whether their work is usable or no because they haven't done anything about testing the retrievably.

4.5.2 Education and experience

People get in to photo job with different backgrounds; Librarian, Art historian and even without academic education. Each of these people has their own way for observation and analyzing.

In spite of Bekkestua library, the others current leaders of cataloging section joined the group with potential information and relevant work experiences. Labor party's archive is the only place among these three that a group is working with photos and there is sort of quality control at the end.

Vivi and Vegard were somehow familiar with the work flow but Tove just started from scratch. Learning by doing and learning by experiencing are the general polices. Sølve the other member of Labor party's team thinks *"...there is course for achieving but not image achieving people enter to this field with different backgrounds ; some as a librarian , some art historian and some with relevant work experience. It is quite difficult to have standards ..."*

In all three places, Photo catalogers have developed a specific visual way of thinking and analyzing for themselves. Due to concept of the collection the focus of the analysis are flexible; mostly in Arbark it is

based on faces, in Bekkestua recognizing the locations is the main point and in OM both are required in general level.

4.5.3 Collections' feature

Labor party's narrative collection facilitates quite manageable tasks for experienced members. It seems that here experience and good visual memory are working better than education. Basically, there are no courses for learning about party members or how you should recognize the same person in different photos with different dressings! On the other hand in case of a problem outside their circle there is almost no one for asking questions.

In OM the situation is more or less the same but archivist there, believes that school of librarianship has an effective role in his working. Since here the collection is broader than others, recognizing all details sounds impossible. There might not be any way for knowing every corner of the city, rather than observing and experiencing.

OM works more interactively by using Facebook as a crowdsourcing tool. They are willing to get more details from people's comments. When cataloger can find out what person in the photo doing, he tries this way. He says *"... maybe he is making a hand craft that we don't know it ..."*

In Bekkestua cataloger tries to find answers for her questions by asking from her self-made connections. Maybe the small collection doesn't need so much time and much of creativity.

All in all, photos from these people's point of view are documentary. Bærum photos and OM collection are historical documents. Photos that presenting labor history and labor party's events have political value beside historical ones.

4.5.4 Guidelines

Each cataloger has self-made and nonofficial guidelines for cataloging and clarifying the depth of description including so many other details. Just in Bekkustua library it is possible to find these things in written form both archives are running by oral agreements.

In Oslo Museum during describing process cataloger supposed to answer these main questions; who? Where? When? What? And facing with several photos from the same period of time have made him to come up with some agreements. For instance he doesn't describe the dressings in early years.

In Arbark the cataloging circulates around finding proper answers to these questions; is it a portrait? Is it in a situation? Is it with others? There is no limitation on depth of description unless getting far from history domain. Accuracy and credibility of the information are the highlighted facts for the leader. As they mentioned there are no Norwegian guidelines so they have developed their own way mostly by using newspaper's (Arbider bra) standards.

When it comes to Bekkestua library, even though there are no specific points to keep in mind, the way of thinking is similar to OM. The only difference is numbered map of town. In both Bekkestua and OM, some works are being done about mentioning types of negatives; weather photo is colorful or black and white. But none of these details are retrievable by users because there are some limitations on both Primus and Bibliofil.

Here concept of the collection plays an important role in setting the questions and leading the work. Problem solving needs good base of knowledge and information in addition to a creative mind. Personal interests and well-structured group goals motivate the cataloger to investigate more for doing a more analyzed work.

4.5.5 Accessibility and interaction

“Oslobilder” is covering the Oslo city's photos in different directions. Basically, labor movement's photos, OM collection and Oslo landscape have chance to be accessible.

Some parts of OM collection are covered by “digital museum”, since this source is specific for presenting all museums in Norway.

Bærum collection is accessible via Bekkestua library's webpage. Arbark's webpage has the same functionality too.

In these Museums, library and archive catalogers are feeding the researchers and ordinary users either by face-to-face meetings or in virtual ways.

Only OM has a page on Facebook and does crowdsourcing there.

In all places there is commenting possibility for users by commenting and these comments are quite useful in correcting the work.

Moreover, users' comments and also their photo ordering (something that happens in OM and Bekkestua library) indirectly help the institution to get in touch with users' needs and interests. It is also helpful in rearranging the photo curation, subject selection and depth of the discretion.

5 Conclusion

In this qualitative study, the process of photo cataloging has been investigated in three main unites of knowledge and information; Library (Bekkestua library), Achieve (Arbark) and Museum (Oslo Museum). Results clarified that in all these places photo is a historical document. Each cataloger according to her/his background knowledge, work experience and personal interests has specific way of thinking and functioning. The scope of organization determines the catalog's focus. In use cataloging tools are almost unique in each and every place. Tools are harvest of catalogers' creativity and experience. In general overview specific academic education or international or national standard has no fixed room in cataloging process in these places.

There users are young people, history lovers and authors. All these places haven't had any type of evaluation . Almost everyone is satisfied with her/his current function.

5.1 About research questions

1. What are the most important common features of cataloging photos in the focus institutions?

Common point in these three places is treating photo as a historical document. All catalogers seem interested in their job. They did either relevant studies or experienced similar practices.

It seems that learning by doing is the **most common** way of adapting with tasks. Work process in all these places is following oral agreements and even if there is something written it is by the cataloger (Bekkestua library). Hand book or any other supplementary materials has been developed by catalogers; like a **self-made hand book** in Arbark and **numbered Bærum map** in Bekkestua library.

For describing, catalogers have almost similar sense about the item. They are trying to be in a way general to cover several points. Of course this issue has close relation with concept of the collection. In Arbark the collection is more focused on the history of labor party and the labor movement, Bekkestua library has narrative photos related to Bærum and OM has larger collection with general view. Basically each cataloger will have specific way for visual thinking in any of these places.

These collections have more or less **same users**; either content creators (authors, publishers) or content consumers (ordinary people looking for their identities *as Tove mentioned*).

Arbark and OM are both retrievable in **Oslobilder**. In addition to this OM have connections with **Digitalt museum** too. **Facebook** has given chance to OM to provide crowdsourcing for developing its description. Arbark and Bekkestua photos are accessible from their own website.

Generally, heavy users or maybe content creators prefer direct contacts instead of using search engines.

In **none** of these places there is any **evaluation system**. It seems there is no clear outcome and impact for the organization to set up further programs. The only way for involving users or connecting the user and cataloger is commenting option.

Similarities	Differences
Treating photos as historical documents	Access points
Work structure based on non-official agreements	Cataloging tools
Type of users	User interaction possibilities
No official evaluation	

2. To what extent catalogers are interested in following international standards?

Any of these Library, Archive and Museum with photo collection, leadership, subject selection, and classification rules, all are following the agreements and experiences of the cataloging team. Due to the results it seems that written and official literatures recommendations in using universal standards and working in united way aren't working. On the other hand it is unknown whether there are some official and controlled guidelines for these particular photos. Even it looks difficult to recommend a specific type of academic background.

More or less Bekkestua library is using the standards which are for books .And in most cases it seems to be useless. Arbark is selecting subject by searching their unique references either self-made or provided by party. OM is free from any sort of written guides. Cataloger is independent in making decisions.

3. What are the helpful competences for image cataloger?

Since the focused photos are containing historical content, one of the essential issues might be considered, is basic knowledge about history. In some narrative collections like what Arbark has even having clear overview about political parties beside knowing important dates for political and historical movements are quite helpful for the cataloger. There is such a sense that age may play effective rule.

Obviously personal interests are key points for cataloger to investigate for more details during the description. Also it will motivate the person to have further readings and searching to support that task in better way.

Networking is another helpful way for problem solving and extending the knowledge. It is quite usual that more experienced and interested catalogers are working hard in having further contacts and having

bigger circles. In historical topics, not everything there might be a written and official source. Here the knowledge sharing becomes highlighted

Having a good visual memory is something that catalogers in Arbark find more useful. Because they are dealing with so many faces daily that the two other places don't. Generally it is important to recognize the person or place or the time period. Remembering the location is highly required in OM and Bekkestua library especially in OM because of the higher number of the photos.

Almost everyone thinks that learning by doing is the most important way for shifting the theory to practice. Work experiences are developing the creative ideas for structuring the work in better way. So feeling the need is the first step. The other step might be bridging the gap by using creative ways. Like crowdsourcing with Facebook something that OM does. Or collaborating with schools is an interesting project that is running in Arbark for evolving new users.

Almost each and every of the interviewees believe their own background information is more useful in handling their daily task. Catalogers with librarianship background think that it is really useful. Vivi with no academic education says: *"I am satisfied with what I know. I don't want to learn more because I will be retired in three years ..."*

Tove, the other cataloger from Arbark, thinks her background is almost helping her. At the same time she says: *"I am not using art history much here. I am a photo historian rather than art historian ..."* Moreover, she thinks this job needs special course for itself; photo achieving. For the sake of let the catalogers and archivist to get united and unified information before starting this job. At the moment, it seems difficult to pin point a specific academic course for this job.

5.2 Further research

Image cataloging and image retrieval are topics with little focus. It seems to be little research in these domains. It can be a reason that there are no clear ideas for having developments in process of indexing, cataloging and retrieving.

The present research indicates that there is no relation between theory and practice. In cataloging historical photos, subject headings, controlled vocabularies and international standards are not common tools for catalogers and archivists.

Though it sounds uncommon, it might be interesting to identify those libraries, archives or museums that do use theory in their work process and compare the results so that effect of implementing theory in the cataloging process can be identified.

In the digital age there is still no clear definition of digital data collections. In digitizing the physical collections, the whole process appears more or less immature. In this job the distinct part is digitizing, the cataloging process showed little change.

Since virtual collections have non limited users, they have obvious differences with physical collections. As Vegard said: “we don’t know at night, who sits behind the computer and searches for photo in our collection ...” Basically one shot users are different from historians or authors who are heavy users of documentary photos. In order to maximize the usability it is necessary to know about users’ background information and their information seeking behavior.

The other recommendable research around historical photos can be user study with simulated work task against current task(Borlund & Schneider, 2010). In brief a simulated work task situation is a description of realistic information requiring situation that motivates the study participant to search the IR system .It is sort judgment from participant side. This method gives the opportunity of gathering information related to future. With focusing on authors and using this method in qualitative form, it might be feasible to go deeper. Mentioned method supposed to give a wider chance to study about user expectations besides checking the current possibilities. Research outcome could be useful in developing the cataloging process and feeding the users in a way they want.

System-based retrieval experiment around these three libraries, archive and museum should be done for checking the quality of the cataloging. This could be based on fixed questions with fixed answers assessed by participants from a focus group. The balance between right answers and participants’ answers determines the next steps of the research.

The result of three research endeavors: Current one, simulated work task and system based retrieval should be assessed in total.

5.3 Concluding remarks

Information needs to be global, for achieving this goal. Everything should be arranged in international and standard way. Results of Crowdsourcing, folksonomies and users’ comments should be presented in a more controlled way in both local and international language (English).

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