

Crossing the Archival Borders

Fredrik PALM

Umeå University, HUMlab, Umeå, 901 87, Sweden

Tel: +46 90 7869077, Fax: +46 90 7869090, Email: fredrik.palm@humlab.umu.se

Abstract: Digital archival resources are becoming more and more common assets in institutional storage. The digital organisation of resources enables a possibility for different presentation than the logical storage of resources. A more natural approach has been developed in the QVIZ-project (FP6-IST-032518) where the existing archival storage principles are combined with a rich context and time-spatial representation for discovery of archival documents. This approach has shown the potential to enable cross-border access to different archives in Europe and also make us aware of the shared European history.

Keywords: Archival digital library, QVIZ, time-spatial visualization, contextualization, and interactive dynamic user interfaces.

1. Introduction – Archives and Their Users

For an archivist, it is obvious that the integrity and the correctness while storing and describing archival collections are the most important factors. This has been a guiding principle for public archives ever since their initial creation. The structure of archives has therefore always followed the form of the organisation creating the archival collection. This is widely known as the Provenance principle [1].

Users do not always have the knowledge about the organisations creating the archives in today's increasing access to digital archival collections. Therefore users of the digital archival portals run into issues while trying to find archival resources.

The QVIZ-project has developed a content structure that enables the discovery of archival resources without a prior knowledge of archival logical organisation. The archivist point of view can be outlined by the following questions:

- Where was the organisation governing?
- When did this organisation govern the particular territory?
- What activities was the organisation responsible for?

From a user-perspective, similar questions could be raised:

- Where is the territory of interest for my research?
- What is the most relevant time-period for my research?
- What types of documents could be useful for my research?
- What have other users been working with?

These principles have resulted in a prototype where the users interface is an important asset. A relevant challenge was to develop a pioneering and user centred prototype without violating the continuance of the archival correctness and proper maintenance. The QVIZ prototypes only handle references to archival resource and only stores the time-spatial properties of administrative context i.e. the corporate bodies ruling over a particular area. By only storing the references and not the digital images the archival institutions still acts as the curator of the archival content.

2. Objectives

QVIZ has the overall objective to enhance the end-users access to digital archival resources. The project increases the access by using knowledge from its user as well as the administrative context of the documents in time and space. The major objectives have been to:

1. Design the ontology of European Administrative units, defining temporal and spatial relationship
2. Design innovative query and visualization capabilities to explore administrative context and discover digital archival resources.
3. Support user communities knowledge building

The first objective focuses on creating a stable reference data model that records complex relations in time and space and the dependencies between administrative units at different geographical levels over time. As such the model will enable users to access archival resources by place name or location without the need of complete knowledge of its administrative history.

The second objective is aimed at creating a rich environment to explore the administrative unit context by defining rules and models for dynamic representation even when spatial data such as polygons are missing. This environment is also aimed at providing a simple way to discover archival resources for users that are not familiar with archival resources.

The environment for community knowledge building enables users to connect their knowledge work around archival resources

3. Methodology

The workflow for the development has followed these major activities:

1. Interpretation, analysis and synthesis of administrative unit hierarchies;
2. Archival content structures and indexing using administrative units; and
3. End-user analysis for using and exploring the QVIZ-system.

The base-line for the analysis of administrative unit structures was taken from the Vision of Britain [2] data model. A similar approach has also been used on the Swedish national archives' information system [3] to handle authorities, administrative units and collections of archival resources. Knowledge about archival structure and administrative units has been extracted to support the user requirements. These user requirements have been defined by making up user scenarios and these requirements have then been used to define the system architecture, system functionalities and end-user interfaces.

4. Administrative Units and Archival Content

Administrative units are closely related to the governance of people. One example could be church or taxations districts. Church districts often had the responsibility to keep track of births, deaths, migration, holy communions, etc. A taxation district often handle records of how much tax the inhabitants within an area must deduct. However these administrative units change over time. They change name, territory and its relation to other units. These dynamic changes are a reflection of changes to the structure of governance.

Archival institutions have a long tradition of storing archival collections in conjunction with the identity of the archival creator. If a new organisation is being created or two existing organisations are merged, it will be seen as a new archival creator. This means that when a new organisation is being created, a new archive deposit will be arranged. This principle is called the provenance principle.

The QVIZ-project has therefore used this close connection of knowledge about administrative unit history and the creation of archival collections in order to create a more user friendly search process. This knowledge is based on the General International Standard Archival Description (ISAD(G)) [4]. Figure 1 gives an overview of how QVIZ have used the administrative units to explore archival resources.

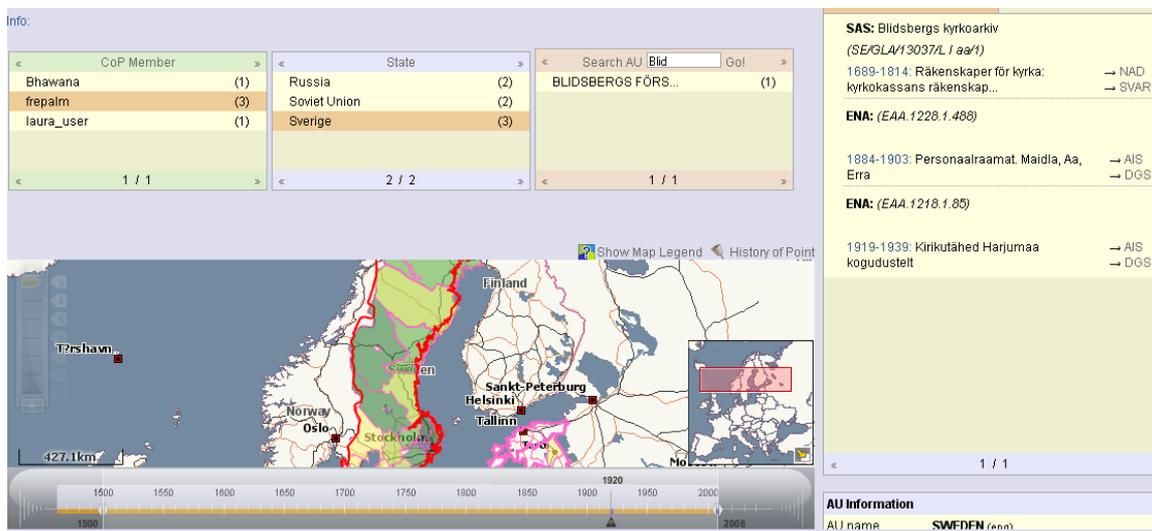


Figure 1: QVIZ, connecting archival resources to administrative and user context

Since the administrative unit structures and history differ in most countries, the same type of documents can be held by different authorities in different countries. Although important work has been made in the standardization of descriptions of the authority [5], the structure will to a great extent be connected to the specific context of the administrative unit. With a user interface that allows users to search by name of administrative units, browse and visualize the context of administrative units, the users can find archival documents connected to that context. As maybe can be seen in figure 1, the archival holdings does not follow today's border, since there are Archival volumes connected to Sweden originating from the time when Estonia was part of Sweden. This approach is adapting the use of name searching in combination of other spatial technologies as outlines by Linda Hill [7].

5. User requirements and results

Given the consortium's knowledge about administrative unit history and archival structure, an innovative dialogue between requirement experts and content providers have resulted into one single user scenario. This scenario also involves the user adding description and collaborative aspects of using and describing archival resources. As seen in figure 1 the user added information is also used in the search process

Figure 1 describes a part of the scenario where a user is not familiar with archival systems. The user only has limited knowledge such as; something is related to a specific place and/or a specific time period. The user can use the QVIZ query-map tools to get a quick and easy first "guide" into what kind of resources that exist for the place and time of interest. As a result of the discovery process, QVIZ displays a result list of all archival material available in the system. The result list contains references to archival portals where the resources are being kept. By re-direct services the user can gain access to the resources by selecting and displaying them

As a part of the resource discovery process the user can also explore the time-spatial context of a location or a so called administrative unit connected to the archival resources.

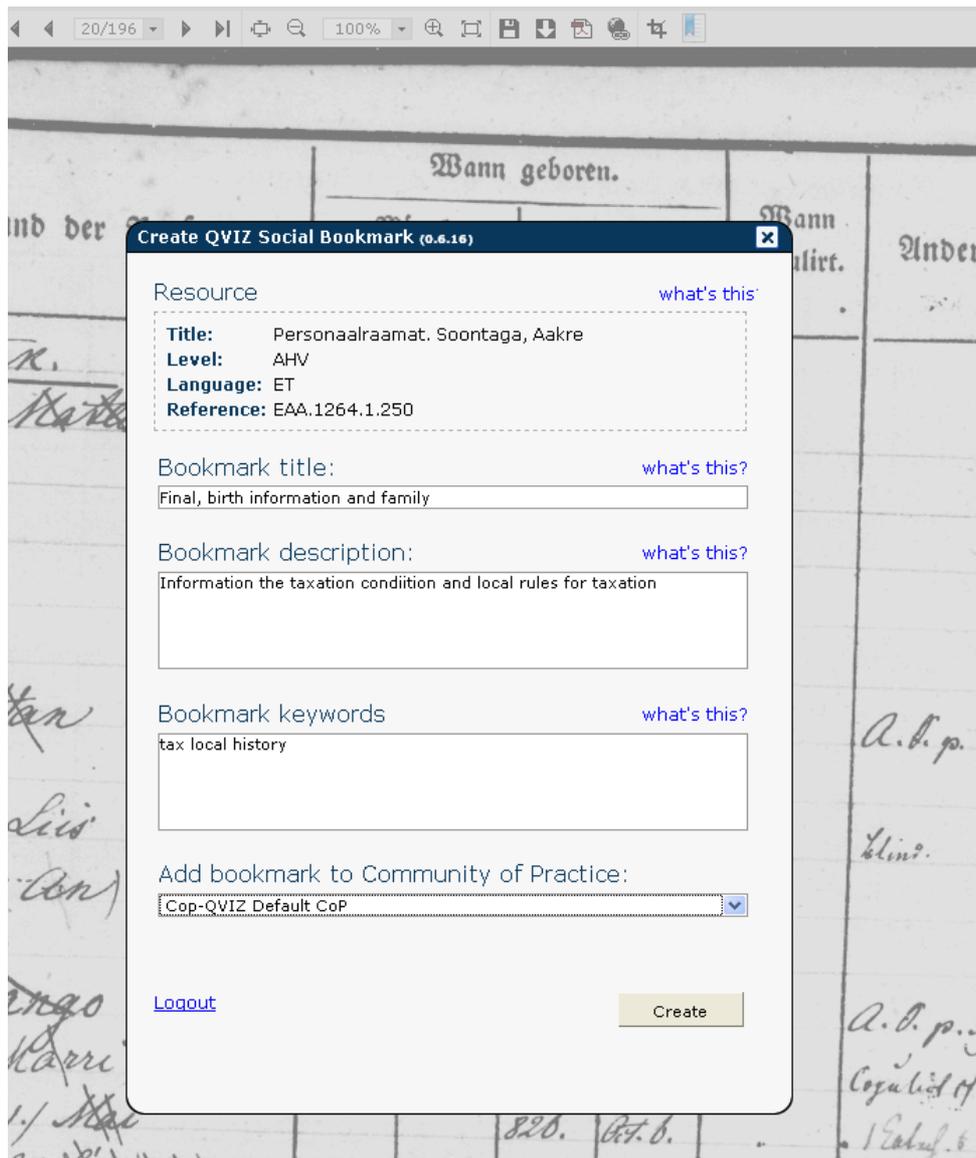


Figure 2: QVIZ bookmarking

Within an archival portal a user can select archival content of interest and store a reference to this resource. This is called social bookmarking in the QVIZ-system and is illustrated in Figure 2. The social bookmark will also store the archival and user context of the resource, so the social bookmark can be re-used with the context added.

The users can also organize their social bookmarks in different collections. They can also create articles and publications in a collaborative environment using advanced semantics to fulfill user requirements, this is shown in Figure 3. Knowledge building enable users to have a close connection to other user activities as well as the digital archival sources.

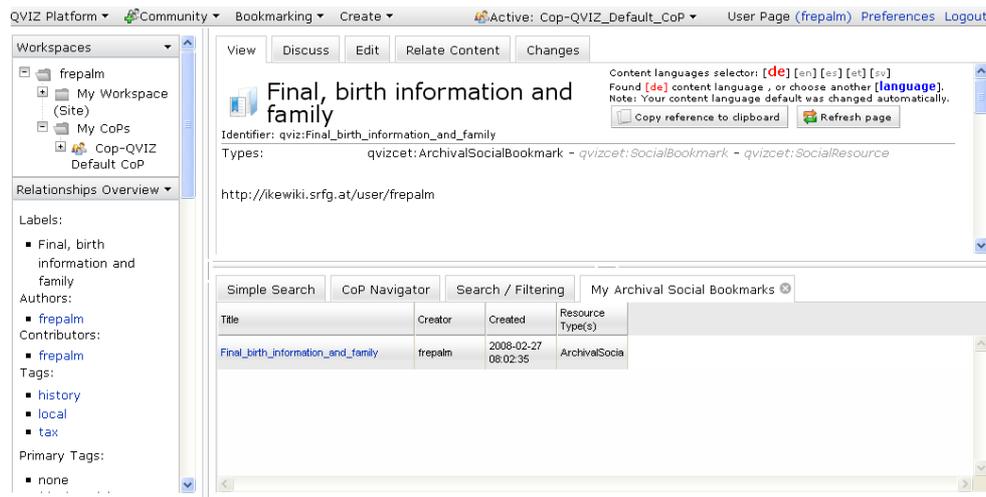


Figure 3: QVIZ collaborative environment for knowledge building

6. Technical Specification and Implementation

As seen in Figure 1 and Figure 2, the QVIZ-system has a part where the user discovers and is being redirected to archival portals to view the digital archival collections and its images. The user scenario also describes how users can enhance the resource description within a collaborative context - see Figure 3.

The QVIZ-system is based on complementing the role of content providers existing infrastructure and business models. QVIZ consists of four major parts:

- Environment for exploring references and descriptions of digital archival resources (Figure 1)
- Client tools and system services to make social bookmarks of archival resources within existing information portals of the Archives. (Figure 2)
- Environment for collaboration and exchange of knowledge between users and groups of users. (Figure 3)
- Administration tools for geindexing and uploading archival resources references

The query and map environment for exploring archival resources is also using social bookmark information in the search process. The technical solution is based on a faceted browser in combination with a map component. These two technologies enable visualization of border changes and archival resources distribution over time and space.

The client tool for social bookmarking is an important integration point where the same light-weight web2.0 client can be used in different information portals. The social bookmarking client brings contextual information about the archival resource descriptions to a community context. Currently the bookmarking is available in two national archival system (Estonia and Sweden) allowing bookmarking of about 15-20 million images. The bookmarks are stored in the collaborative environment. The user keeps the bookmarks as a resource reference for their research work, such as writing articles, presentations and organization of knowledge and content

7. Business Benefits

The most natural market QVIZ is operating within is the market for information services. The potential of QVIZ is most evident within European digital library services. More specifically, as a part of a service where content providers are offering access to documents kept in public archives. Such services can consist of:

- Intuitive search facilities

- Access and distribution of archival documents
- Advisory and research services
- Information services concerning administrative history.

In the current market it is very common that search facilities go hand in hand with the access and distribution of the analogue or digital documents.

QVIZ is complementing and enhancing these services towards a building of a European digital archival information space, which was pointed out as a priority by European Commission in 2004 [6]. Specifically QVIZ gives more easy access to archival resources in that it reduces the need for expertise of administrative history. QVIZ does not try to compete with content services and will only provide redirect services to archival portals, and thereby attracting more possible paying subscribers to the archival portals.

However since building a more detailed administrative ontology is a requirement for involving other content providers than Sweden and Estonia risks that QVIZ becomes a bit slower if the detailed administrative ontology does not exist. Short-term roll-out can be based on less detailed georeferencing and step by step adding more information

8. Conclusions

QVIZ achievements have leveraged the state-of-the-art within the field of accessibility to archival resources. Not only by re-using existing principles but also by adding rich and responsive dynamic query and visualization tools. The project has provided the functionality required by users. However this has led to a mixture of context where certain background knowledge is expected within the diverse fields of wikis and GIS. This could hinder the users to use the long lost functions in the present prototypes. More time could have been set aside to provide a better way to construct an interaction design when the needed functions were completed.

These achievements have however been developed and put as live demo-services by trying to complement and enrich existing archival information portals [8]. QVIZ has also increased the interactivity among users of archival resources, by motivating users to share resource references, describe references and create new and related content. The innovation is within the use of existing concepts and technologies, to bring these together to meet the needs of current and future users of archival information, and along the way also challenging our mind by making us aware of a shared European administrative history.

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