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Supportive Services for Digital Scholarly Editors in the National Library:

A Marriage of Necessity or the Necessity of a Marriage?

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Abstract

Due to the constantly evolving nature of digital scholarly editions, this user group has some unmet needs. A supportive service in a national library can help meet these needs since they are service-centered institution whose mandate includes national textual heritage and they should have staff with the required competences.

The research aim of this thesis is to achieve a collaboration between the two institutions that will support scholarship in its present processes and safeguard editions for ongoing sustainability and developmant. To achieve this it determines the answer to three objectives concerning the current state of the edition in each institution, their needs (especially those which are unmet) and the facilities and competences necessary to meet the needs.

The investigation is an interprevist, instrumental case study which uses interviews as a collection technique since the topic is subjective and institutionally context bound, there is a need to have a rich and detailed result going deeply into the phenomenon and a spontaneaous account concerning the possible alliance from each of the interviewees. The sample consists of members of an independent scholarly institute, a national library and a university library all of which fit together to form one case study the parts of which build one upon the other.

In order to acheive this the case study is analyzed using a critical ethnographic framework. Normally a research method it is used here as an analysis tool since it looks for a practical outcome rather than a simple theory and and an «the ought» rather than an «is» tool is necessary to bridge the gap. The analysis was applied to the case study yielded an answer to the aim and objectives since it showed how a library could meet the needs and success factors of scholars pointing to certain necessary competences. If the library was not able to meet those needs, the critical ethnographic analytic framework made recommendation of how best to achieve the aim and objectives

The findings showed that while there is still a gap between the needs of digital scholarly editors and services in the national library, given the right conditions, collaboration is possible especially using virtual research environments with all the tools for editing and storing their matierial with the support of digital curators.

Key words: digital scholarly editions, national library, support system, critical ethnography

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I. Introduction

In order to understand the position of digital scholarly editions (DSE) in modern scholarship and their possible relationship to libraries, one must look at their evolution and origins. Scholars from fields such as history, languages, literature, art history, linguistics, philosophy, science, etc. have a centuries-old history of producing scholarly editions of significant works of their field in a physical format with the primary aim of uncovering the intention of the author (Robinsons, 2009) and conveying it to the public in a format that is limited under the edifices of the book. Carolyne Macé, the Belgian Classicist and textual scholar, is widely quoted in saying that every text deserves to be edited well, even if no one will ever read it. This scholarly editing had specific standards set out by the Committee for Scholarly Editions established in September, 1976. The tradition of the Scholarly Edition along with its rigorous standards made scholarship surrounding certain texts more accessible to the general public. Scholarly editions also highlighted the perennial and social nature of these fields of study, the recyclability and relevance of their texts to new generations.

Between the 70's and the 90's digital scholarly editions took off and in the 90's there was a large movement behind them. At that point they were thought to be simply an extension or digital surrogate of Scholarly Editions defined by Kenneth Price as, "yielding a text established on explicitly stated principles by a person or group with specialized knowledge about textual scholarship and the writer...identified by its rigor....containing suitable notes, introduction and textual apparatus." (Price, p. 3) In the 90's a "digital" scholarly edition was simply thought to be a digitized version of this. McGann added to the definition of a DSE (digital scholarly edition), electronic tools which, he felt, brought not just a new point of view on materials but also lifted the attention to a higher order which included socializing DSE (McGann). The making of digital scholarly editions, according to Mats Dahlström, using new media, "seems to open up new kinds of communication between academic and professional communities formerly more or less isolated from each other, e.g. between programmers and software designers on the one hand and textual critics and bibliographers on the other, creating grounds for new kinds of negotiation of competence and power." (Dahlstrom, Introduction) The results impacted the scholarly community in a way physical editions were not capable of doing and included visual and esthetic digital appeal which brought an appeal to new types of users.

With the dawn of the digital age, scholarly editors have taken on new tools to administer their craft including collaborative tools and highly interactive interfaces. Content and contextual material take on a living character. One tool that has not yet been developed is one to produce ongoing annotation or dynamic editing. Peter Robinson who is currently a great proponent of ongoing scholastic editing says of the current process:

> we can envisage a senior textual scholar... creating a new edition of the
>
> Comedia, adding transcriptions and collations made by others to
>
> her edition but correcting and refining them, and then developing a
>
> new textual commentary. We see a role for scholarly digital editions
>
> and publishers like ourselves in this process. We can create custom
>
> interfaces, giving better access to the materials than anyone else; we
>
> can include paid-for images unavailable on the open web; we can
>
> provide an important validating function, warranting the quality of
>
> the edition. (Robinson, 2013, p. 33)

Libraries have in the past held a role in the editing process mainly in the form of collecting content. This was especially true of special collections librarians or curators. Editors of the past have sought the collection expertise of library curators as well as their facilitation (a physical space to edit delicate physical objects). The situation is slightly different today in the case of DSE. The physical space is no longer necessarily required since the texts are available (largely) digitally. Digitized collections and resources are accessible, searchable and interlinked in a way they never were before.

As scholarly editors have evolved to meet the new opportunities of a digital era, constantly assimilating the latest technology relevant to their literature, is it not possible that the librarian of today must do the same and adapt their digital skills, objects and spaces to the serve their editors? A new breed of library curator is in development, one who can provide services to digitally minded humanist users. (Tammaro, 2007, p. 4)

Further the natural life cycle of a DSE is social and ongoing, there is no point at which no other editor may annotate the texts or the notes themselves. It is essential that resources, services and support be shared with DSE centers as well so that their sustainability may be ensured.

Digital libraries in this paper refer to the digital element of a bricks and mortar library like a public, scholarly or university library. The term library collection includes the contents of the library both digital and physical. The paper refers generally to public or national libraries since they are responsible to preserve and transmit knowledge and heritage. Digital editors refer to the group of scholars who produce scholarly editions and annotate them. It take Elizabeth Yakel's definition of digital curatorship for the general purposes of this paper. According to her it is, "the active involvement of information professionals in the management, including the preservation, of digital data for future use." (Yakel, pg.335)

Research Problem

The community of scholarly editors face the problem of sustainable support which can match the dynamic nature of editions especially in the area of their annotation since they do not have the support of a external sources like a digital curator, are usually funded for a short period and are in need of more continually updated IT resources to develop and sustain their editions for the future. However scholarly editions often by their nature have a longer life cycle than the services, funding and IT resources currently available to them.

In other words the research question is how can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic and ongoing nature can be sustained into the future and how can a public or national library can provide this support?

From Scholar's Perspective

Having services (like easy and appropriate digitization, advocacy, a library or digital curator), support (like ongoing funding), and resources (like a repository which can maintain them for the future) may make an important difference to the performance of this type of textual scholarship since: 1. Up until now digital scholarly editors within independent institutions have not had access to external services. A digital curatorial competences on the other hand might be able to fulfill these and other needs. 2. Funding can end projects by this group which have the potential to go on for a longer time. 3. The technology that scholars use has often been experimental and has ceased to be in use quickly. This means that new technology must constantly be applied otherwise there is a problem with reusability. In

general technology is advancing so quickly that it quickly becomes defunct and must be constantly renewed. A library data manager together with a digital curator could provide storage, maintenance, access and retrieval of editions in their repository or online system, ensuring that it does not corrupt (Yakel, p. 338) and reducing the pressure of cost on the part of editors.

From Library's Perspective

If the Library sees itself as a facilitator, 1. it must make librarians available to meet the needs of editors and especially digital curators since they have knowledge of how the digital element of the library operates and are able to host the digital editions and make them available for scholars to annotate. A well managed collection of scholarly editions would add significant value to the library. One which may be accessed and annotated by library users would add an even higher value 2. It must be proactive where funding is concerned since funding is difficult to procure. It is vital that the library sees the added value of digital scholarly editions in order to be cooperative about raising funding. For example, the fact that digital editions increase the user base, are the target of many grants (as works of digital humanities and heritage) and nurture more publications raises the value of the library. 2. Having up-to-date technology for scholarly editions (whatever the nature of the alliance) which is constantly being renewed raises the value of the library even further and makes it easier for a broader range of scholars to perform scholarship on digital texts. 3. Having Librarians available to the project and especially research digital curators, since they have a familiarity with the collection that most users do not, adds a vital value to the library.

Aims and Objectives

The aims and objectives are defined as follows:

Aim: To trace a vision of ongoing support and services for Digital Scholarly Editions based in a public or national library with an aim to facilitate researchers who wish to produce digital scholarly editions in their current processes especially in areas where their needs are insufficiently fulfilled and in a sustainable way in order to allow the self-perpetuating nature of their textual scholarship in the future with special reference to ongoing annotation and to bring added value to the library.

Objective 1: Come to know what the state of editions are which indicate the success factors of Digital Scholarly Editors such as more collaborative editing projects, more online publications, and projects which tend to perpetuate themselves and attract funding.

Objective 2: Identify and describe the tools and needs necessary for Digital Scholarly Editing such as access to content, richer tools, encoding and mark up, better and more collaborative annotating, easier search and browse facilities and interfaces.

Objective 3: Develop an understanding of what competences are necessary for public librarians to meet the needs of Scholarly Editors, i.e. those who are knowledgable about the specific fields in which the Digital Scholarly Editions are situated, those who are good researchers and good at guiding research projects.

2. Literature Review

Up until now there have been no studies of close cooperation between digital scholarly editors and national librariaries. As such there are not examples to draw from or compare this study with in this literature review. Rather this section strives to expound on the background to this investigation and to situate the study among current research and to bridge the gap in the current research.

2.1. Needs of Digital Scholarly Community

The first part of this Literature Review presents research on the needs of the users (i.e. digital scholarly editors and their scholarly network) surrounding digital scholarship and editions. The first group of researchers such as James March of Stanford emphasize the basic commonality of scholarly exchange which is so aptly showcased in digital collaborative projects (2007). This applies to those who collaborate on scholarly editions which are commonly collaborative. Thus a need of this community is found in a collaborative exchange. Clement, *et al.* expound on the traditional and digital scholarly editions which, "give insight into theories and modes of practice that may best facilitate how the librarian and archivist of the future might approach the stewardship of digital humanities data." (Clement, *et al.,*Interviews) The same can be applied to digital scholarly editing. And so stewardship of digital texts and data is another need of this user group as are the theories and best practices of how this might be achieved. One currently popular practice that might be of use to DSE would be a support center either in the library or in the research center. Schaffner and Erway study a number of solutions by which library's can support digital humanities including but not limited to digital humanities centers (Schaffner and Erway, p.11) which were also studied by Zorich (2008) in her report to CLIR. Much of what these authors say with respect to digital humanities in general apply very aptly to digital scholarly editions in particular. At any rate it is clear that some sort of service should be provided by the library for digital scholarly editions.

Another group of researchers such as David Sewel point to the intrinsically ongoing nature of digital editions in the hands of multiple collaborators. They note that the technology supporting these evolving editions is necessarily experimental and their scholars have a need for developing IT support but not the means to acquire it (Sewel, p.1-45). Meanwhile it is expected that researchers have an ongoing need for financial support of these projects, say many of the authors surveyed, since there is not be a terminus to the projects. They could

hypothetically develop ad infinitum. Thus scholarly editors have a need for ongoing IT and financial support. All of these needs of DSE researchers in the production of Digital Scholarly Editions must be born in mind as the first step and foundation upon which this study is carried out.

Peter Robinson speaks at length about the financial needs of the editing community. He recounts his experience as a pioneer in the field and as a commercial tradesman of digital editing. He said that over a decade he lost significantly and expressed a worry that, "we are heading toward a world in which anonymous funding agencies decide which editions should be funded and anonymous librarians decide which editions should be available in their school at the perfect exclusion of the individual scholar." (Robinson, 2013, p. 31)

2.2. Digital Scholarly Editions

The term digital scholarly editions refers to electronic editions of scholarly import. Since these editions are digital it is possible for editors to work together commenting on the meaning of the text, directing the reader to similar works, etc. and for these activities to be carried out in commonality all over the world. This creates the possibility for a very rich scholarly community surrounding even just a single text.

It is notable that several authors pointed to the aspect of scholarly editions of data. The review looks to a recent study by Clement, *et al.* who did a study of practitioners on this point. One is quoted in an interview as saying, "digital scholarly editions should not only be to provide long-term preservation and stewardship of data; the library/archive should also act as a content creator, collaborating with scholars to build digital publications and encouraging peer review by external groups." (Clement, Background) So it is clear that even when considering the data aspect of Digital scholarly editions, the literature points again to collaboration and peerage.

2.3. Digital Humanities and Scholarly Editions

Digital humanities is a field of digital scholarship. Digital scholarly editions are one type of this and as such falls under the provenance of digital humanities, which is generally thought to act contextually for digital editions. Scholars within the digital editing community have developed a wide range of tools and guidelines for producing and developing scholarly

editions. Brown *et al.* mention as tools in the pursuit of digital scholarly editions, XML,TEI and SGML. Using these scholars, she thinks, "will be able to build upon editions, restructuring, adding to or recombining them to produce new texts."(2009)

Kenneth Price includes interpretation and encoding (2013) as skills like Brown, *et al.* (2009). Alex Poole includes the digital curation of big data (2013) which reiterates a point of Gregory Crane's point that digital scholarly editions are really comprised of data and the scholarship occurs when researchers interact with the data. Sara Buchanan also includes interpretation among skills specific to the digital humanities field (2009). She adds intrinsically rich texts, a content-driven orientation, digital interface technology, pedagogy including university courses, research methodology, data collection and curation and the capacity to deal with born-digital texts.

Tammaro (2013, p. 358-362) includes among the roles of an emerging field of digital curation the following which are appropriate to this investigation:

1.) Ensure proper access, storage and data recovery. (This role is essential since future editors do not have the possibility to continue the editorial work if there is no position for someone to ensure storage and accessibility, probably in a repository).

2.) Organizes personnel education, training and other support for adoption of new developments in digital curation. (Ongoing editing would be a new development in digital curation. This role would be important so that the community surrounding the editions are able to do their work when the time comes.)

3.) Understands and communicates the economic value of digital curation to existing and potential stakeholders, including administrators, legislators, and funding organizations. (Economic issues are a major hinderance to the development and even continuation of editions. This role fulfills this need.)

4.) Establishes and maintains collaborative relationships with various stakeholders (e.g., IT specialist, information professionals inside and outside the institution, data creators, (re)users and other stakeholders like vendors, memory institutions and international partners) to facilitate the accomplishment of digital curation objectives. (Editors would be a stakeholder. In this case the curator would maintain a collaborative relationship with them aiming at new digital editions.)

5.) Archive and preservation. (This is a major need of editions for their continuation into the future.)

6.) Observes and adheres to all applicable legislation and regulations when making decisions about preservation, use and reuse of digital objects in collaboration with legal practitioners. (Curators could help to keep editors informed on things like copyright laws.)

7.) Formulates digital curation policies, procedures, practices, and services and understands their impact on the creators and (re)users of digital objects.

2.4. Public Library as a host for Scholarly Editions.

This thesis attempts to show what the Public Library has to offer to the producers of scholarly editions. It attempts to prove that Public Libraries have the best facilities to support the production and maintenance of digital scholarly editions. As a corollary it proves that Scholarly Editions proves beneficial to the Public Libraries.

The most important thing Public Libraries have to offer Digital Editors is the ability to foster a digital scholarly community around them and this is largely done by the digital curators in their capacity as researchers. The scholarly community already turns to these Public Digital Libraries for much of its research both physical and digital and networks are in existence between libraries around the world. Furthermore Digital Libraries have the facilities to hold many more Digital Scholarly Editions than other environments which invites a wider and richer user-community.

Marija Dalbello points to the Digital Library in general as the resource which supplies an environment suitable to textual scholarship (2004) of which Scholarly Editions in their dynamic-text form are surely an example. This has a lot to do with the stability of the Library institutions and especially Public Libraries. It is likely that years from now public and university libraries will still be in existence, will receive some funding and will have the necessary services like research librarians and IT departments (and probably other services that haven't been thought of yet).

Furthermore Scholarly Editions bring an added value to libraries. Not only is a digital discussion around a text likely to bring more users to the library, but the quality of the library

is also enhanced since an advanced information interchange takes place and the services are increased since the library has a high level of pedagogy.

3. Methodology

This section traces the methodology used in answering the research question (Pickard, 2007 referred to broadly in this section). First it sets forth the context of the methodology. It continues by defining a research paradigm which corresponds to the research question, the aim and objectives as the governing concepts. It defines what type of reality the investigation deals with, how the knower and known relate to each other, howonecan come to know it and the purpose of the research relative to the governing concepts. It then sets out a method to achieve the aim and three objectives discussed above and found in appendix 1 for ease of reference:

With reference to these guiding concepts this section selects the best data collection method in order to achieve those ideals. A qualitative investigation is first selected as the type of inquiry into the aims and objectives since they are fundamentally tied to their contexts and are therefore subjective. (This selection corresponds to the the governing concepts and is informed by the philosophic considerations.) Furthermore the instrumental case study is chosen because of it's holistic, in-depth approach which is context-bound and focusses on a single phenomenon.

3.1. Context

This section provides a sketch of the context in which the methodology is situated. It bears in mind that the function of the methodology is to define what is necessary to approach the research question, "how can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future and how can a public or national library can provide this support?"

The idea of libraries supporting digital humanities let alone digital scholarly editions is a relatively new one. Most previous studies reflecting on any type of collaboration between libraries and digital scholarly editing communities focus on the theoretical realm. In other words a study which aims at a practical plan to build such a supportive service has few if any precedents and requires a new type of methodology.

Focussing on creating any support for the natural, dynamic and ongoing nature of the digital scholarly edition is again a new type of study. Digital scholarly editors like Peter

Robinson have spoken at length about this aspect of digital scholarly editions but to explore ways in which this end can be supported by libraries is again innovative.

In order to explore the research question and achieve the aims and objectives listed above, the thesis has to investigate subjective phenomena, the thoughts and feelings of two different camps: the library and the editing worlds about a new idea. It was necessary to find out what the priorities were, who thought what would work or not work. Interaction between the investigator and the participants and between the participants and the ideas was also of the essence. In order to answer the research question, it was necessary to see where each participant, who was tied to a particular contex, fit within the framework of the aims and objectives.

The best way to do this was for the investigator to enter the context of the participants. In order to do this a method was required which was at once holistic and detail-rich. To match such a method and select data relevant to the concepts above, a technique which was able to enter the subjective nature of the data and which was flexible was necessary. Furthermore a practical approach was necessary since the intention was to create something, a plan. Thus the theoretical approach is Interpretivist, the research method is a qualitative, instrumental case study with structured and unstructured interviews as the data collection techniques. The data analysis follows Critical Ethnography.

3.2. Philosophic Considerations

In order to achieve the goal by answering the research question with the achievement of the aims and objective, certain philosophic questions must be dealt with. The paper needs to define what sort of reality the aims and objectives govern. In carrying out research about this type of knowledge, it is necessary to know who is the knower and what is his/her relationship to the object of knowledge. It must be asked how the investigation can come to know its object. Finally it must asked what kind of purpose is sought by the investigation. By defining the nature of the inquiry, one is better able to ask what method meet its needs. This lead easily to the selection of an appropriate data selection technique which select data appropriate to answering the research question and achieve the aim and objective.

3.2.1. Research Paradigm

In order to answer the research questions, the interpretive tradition was chosen primarily because the research question invites a project which is new, namely that librarians

should support editors in their work. Thus there are two viewpoints of the question. From the librarian's point of view the question is, "shouldonesupport editors?" From the editors point of view the question is, "dooneneed support from editors?" The answers to these questions as well as the view of the aims and objectives are deeply tied to their institutional, professional, temporal and personal contexts. From the point of view of the institutions, national librarians are focussed primarily on preserving national literature and providing services while editorial research centers are prone to regard scholarly exchange and innovation as the guiding principles. Thus the phenomenon under discussion is bound by context.

It is also bound by time as the question is quite current. Previously it was unimportant and in the future it probably be settled. Thus Interpretivism rather than Postpositivism or Positivism is the correct paradigm for this study since post positivism does not recognize the time and context bound properties of this question while positivism does not believe in the phenomenon being created, an essential component of this study. Furthermore an interpretivist paradigm is appropriate because it answers the research question since it defines the matter of investigation as context-bound. The research question asks about support from the point of view of two contexts. Further the aim to achieve support for the current processes and ongoing sustainability must be seen from these different contexts. Finally each of the objectives (knowing the state of editions, their needs and what competences are necessary for those needs) necessitates an understanding of the phenomenon of digital scholarly editions from the perspective each institute's (library and scholarly center) natural setting.

Ontological Question

In defining the philosophical paradigm as Interpretivist, one must check the prognosis with a series of philosophical questions. The first is the ontological question, "what is the nature of the reality in the investigation?" It refers here to support service such as the one described in the aims and objectives from the vantage point of the conceptions, feelings and experiences of librarians and of the digital scholarly editor with respect to it.

In order to answer the research question one must define the nature of this as relativistic since there are multiple constructs of the reality (found in the experiences of each context-bound   supporter and supportee) that are inseparable from the social contexts (the multiple institutes) they inhabit and this reality is therefore socially constructed. In other

words how a scholarly institute might see sustainable support for their editions are fundamentally different than someone in a national library since one approaches the research question from a social context of being invited to provide support and services. The research community sees the question from the construct of a scholarly body who is being asked to rely on an outside institution. The social context of the university library is again different since, in addition to the qualities of the national library, they are constructed specifically as a scholarly institute and, as the contain the aspects of functional scholarship and supportive services, may already have ideas about sustainable support with respect to digital scholarly editions. The ways in which each institute responds to the aim and objectives differ relative to their organizational functions and mission statements.

Critical realism would not be appropriate in answering the ontological question with respect to the research question since the solution of the question revolves around the attitudes of each group. Critical realism embraces the idea that there is an objective social reality but that human imperfection gets in the way of knowledge. That is not the case here where the attitudes of practitioners from each type of institution is inseparable from his or her context in time and place and therefore the phenomenon is subjective.

Realism also would not fit this study as an answer to the question, "what is the nature of the reality under investigation?" Reality here refers to the specific practitioner's experience of the research problem. In other words it is investigating how libraries can provide support to digital scholarly editiors of independent institutions in a way that ensure their current processes and guarantee their ongoing sustainability appropriate to their dynamic life cycle and that will enrich the library. In order to achieve this result one must reflect with the individual practitioners about their experiences with regard to these points. Again this reality can't be separated from the individuals, their institutions or the challenges of their specific time. It is therefore subjective and not objective. Thus the a relativistic ontology is best suited to this study.

Epistemological Question

A transactional stance characterizes the answer to the epistemological question for this thesis, what is the relationship between the knower and the known, in this investigation. The very crux of the research question in this investigation, "How can a national or public library best support the current processes of digital scholarly editions, their sustainability in keeping with their ongoing nature and add value to the library?" implies that the knowledge sought

rests precisely in the context of two different types of institutions, one scholarly and the other service-centered, both of which are bound by the time in which they exist. In other words the need for library support for digital scholarly editions did not exist in years past nor, hopefully, will it exist in the future.

This is slightly different than the previous question since the knower is the focus rather than the knowledge they possess.

The contextual nature of the relationship between knower and known creates an atmosphere which is fundamentally subjective. In order to gather data from these two different types of groups in such an atmosphere, the investigator and the people who served as the subjects of the investigation must create a transaction. Otherwise authentic data would not be obtained and a working model of support would not be realized. The investigator affects the narrative of the participants and vice versa and plays a part in the final testimony. The narrative is be altered by this exchange and produces a result which is the product of transaction.

Thus the transaction occurs between the individuals, their ideas and those surrounding the problem, as well as with the investigator and her ideas concerning the problem. The investigator and the research problem are changed or shaped by them and they are be changed by her and the ideas. An exchange or transaction occur and the role of the investigator is subjective and a significant one.

This is a point of departure from the traditional role of the researcher who aims at maintaining a objective stance. It is necessary to this investigation not only because three separate contexts exist in which the data is to be gathered and which affect the data but also because the project is a practical one. The aim is not only to aim, but to do. In order to achieve action it is not possible to separate cause from effect.

Furthermore, as a researcher, a humanist, a digital philologist and a librarian, the investigator's viewpoint as well as the time and context of the participants color the direction the interpretation of the data takes. This flows naturally from both the research question surrounding the type of support each institute needs and can provide since it looks at the transactions in the context of the institutions.

The objective epistemological stance of Positivism is not appropriate to the objectives of this investigation since, for example, it is necessary to enter the subjective context of the editor in order to elicit and understand the significance of his/her needs and his attitudes with respect to receiving support for those needs from a library. In entering the context which is subjective the investigator's presence and viewpoints affect the results of the interaction since he/she has his/her own subjective views with respect to the research question. With an objective epistemology the investigator maintains an objective distance from the interviewee which does not fit with the research question's contextual and subjective nature.

The modified objectivism of post-positivism is even less appropriate to this study since it implies a total divorce between the interviewer and the participants. Again the research question, "how can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future and how can a public or national library can provide this support?" requires us to enter into the field of the participant and try to understand their attitudes relative to their context and relative to the question. Subjective interaction allows each of the participants and the investigator to react to the question and to each other on the basis of each one's subjective expertise and viewpoint.

The investigation is very much like taking a snapshot in time, trying to understand what the current state of the edition is, what are the current needs, what roles supporters might play and what provisions for the future are presently possible. Four subjects have a position and a part to play in the whole picture but each person's role, personality, place, etc. influence the part that he or she plays relative to the whole. Attempting to make this investigation based on an objective stance would produce results lacking in richness which would be ineffective in answering the research question since it would not take into account the subjective stance of the participants relative to the question, nor the investigator's subjective stance relative to the participants.

Methodological question

Empathetic interaction was chosen to answer the methodological question, "How will I come to know the results of the study?,'" because the context has an affect on the object of knowledge (Pickard, 2007). The object of knowledge sought here is what is the best means of sustainable supportive services for digital scholarly editors within a public library. In order to ascertain this it is necessary to determine what are the needs or the editors, the facilities of the

libraries and how can these entities best work together to achieve specific, sustainable support.

In order to authentically attain these data pieces the context must be considered: the institutional missions effects the personal biases through which the participants respond to the research question and project. Therefore the investigator must, at every step, interpret the data relative to the respondent's context.

Neither the experimental stance of Positivism nor the modified stance of Postpositivism would be appropriate to the research question because with the experimental stance one dissects the object into variables and tests them. In the case at hand, a holistic approach is sought, seeking to understand the situation in its present state and then looking for solutions to match the attitudes of the different participants with the goal at hand. The modified experimental stance also is inappropriate since it requires the investigator to maintain an objective distance from the subject. In investigating this research question it is essential that the investigator enter the world of the subject and interact with him/her in order to understand how the research question can be played out in that context.

Thus after posing the three philosophic considerations, the nature of the research question, the aim and objectives are relative, subjective/transactional and can be approached by empathetic interaction, the philosophic paradigm is Interpretivist. This informs the research purpose, the data collection method and technique.

3.3. Purpose of research:

The purpose of the research is to create a plan whereby a supportive service can be applied to a research center by a national or public library according to the conditions of the research question laid out above and the aim and objectives. The plan is based on the transaction that occurs between the investigator and the participants. Since the attitudes of each participant must necessarily be tied up with their individual institutions, it may be that at this present moment it may not be possible to construct the support system. However based on the responses of the librarians and the researcher, it is possible to see what would be necessary in order to attain this vision.

The final test then is to see a) if the research plan can be applied to the present institutions, given the appropriate conditions as determined by the critical ethnographic analysis (See below) and b) whether given the same condition the plan can be applied successfully.

The purpose of this research is the transference of findings rather than the prediction and verification of Positivism and the prediction and falsification of Postpositivism because the purpose is a plan and mandate to support digital scholarly editors both within the selected institution and other institutions in order to prolong their work and existence and to direct this mandate at public and national libraries. The purpose is practical and aims at transferring the plan which is to be a result of the transaction and the Critical Ethnographic interpretation. Prediction along with either verification or falsification belong in the realm of theory and do not have a place in this study.

Thus the purpose is most appropriately informed by the research paradigm of Interpretivism and is transference to other contexts. This is supported by the fact that nature of the reality under investigation is relativistic and practical, the relationship between the knower and known is transactional and subjective, the way of coming to know is through empathetic interaction and the purpose is transferability. These findings inform the methods by which the research will be accomplished.

3.4. Research Methods:

The research method to be selected must be informed by the conceptual framework listed above, must be adequate to answer the research question and the aim and objectives. Having selected an Intepretivist approach for the reasons listed above, the research method must necessarily be qualitative. One type of qualitative method is the case study whose purpose is to, "provide a holistic account of the case and in-depth knowledge of the specific through rich descriptions situated in the context." (Pickard, 86) In order to answer the research question, the aim and objectives, this method is extremely appropriate since in order to discover how a functioning system of support can be constructed (research question), one must see the evidence of all parties ultimately as a whole. Furthermore in order to collect data which answers the aim by making such a construction possible (across two types of institute) rich descriptions in context are necessary. Also in order to answer the aim and objectives the investigation must take the shape of a method which looks at the specific in an in depth and detailed way.

A instrumental case study is defined as a case study focussed on a particular phenomenon where the case itself is less important than the phenomenon. This will suit the research question well since support of digital scholarly editions in general is slightly more important than the particular institutions at hand since the aim is the construction of a plan for supportive services.

Instrumental Case Study

Given the subjective stance of the investigator, the case study in general provides a solution that will give support to digital scholarly editors. Pickard quotes Yin defining a case study as, "an empirical inquiry that investigates a contemporary phenomenon within its real life context; when boundaries between phenomenon and context are not clearly evident and in which multiple resources are used." (Yin 2002, cited in Pickard, 85) This is appropriate to unlocking the research question since it is first empirical. It is based on the evidence of real life practitioners in the fields of digital scholarly editing, national libraries and university libraries which are thought to produce the most fruitful results with regard to the question of sustainable library support of digital scholarly editors.

The study will investigate a contemporary phenomenon, namely insufficient support for digital scholarly editors as evidenced in the literature review. It will also investigate in an indepth way how to obtain sustainable support. This phenomenon is conducted in the living context of editions and possible sources of support and the context (the institutions as defined by their missions) is not clearly separable from the phenomenon of support that is lacking through the natural life-cycle of the digital scholarly edition. Furthermore multiple resources are used: institutes of three different sorts are consulted.

Pickard defines the purpose of the case study as stated above as, "to provide a holistic account of the case and in depth knowledge of the specific through rich descriptions situated in context. This may result in an understanding of a particular phenomenon but it is understanding the the case that is paramount." (Pickard, 86) The phenomenon in question, both the current state of supportive services and how they can be transformed is well served by in depth inquiries of a few institutions each representing a different aspect of the phenomenon.

But it is most interesting to the overall framework that this particular case be richly and deeply followed since it is easier to extract a plan from three specific cases which are interlinked and can be seen as one whole case. That is, to begin with an under-serviced user group, the scholarly institute which produces editions, proceed to the target supportive group, and then look at the university library which is both scholarly and a library. Putting a magnifying glass on these institutions provides knowledge of the phenomenon and a knowledge of the case which is transferrable and which lends itself to the framework which is applied in the analysis.

A small modification applies to Yin's definition and choose an instrumental case study which allows us to draw the focus slightly away from the case as the sole interest of the inquiry. The phenomenon of inadequately supported digital scholarly editions drive a mandate that requires a practical result from the case study. Instrumental case study is well-applied here since there is a little bit more interested in the needs of editions for ongoing support and the possibility for reduplication of the solutions found rather than with the three particular institutes in question.

Arguments may be made for other methods of gathering research. For example a survey might be a good method since it aims at finding patterns within research. This might be a good way to extract the details needed to build a plan for support. However this method involves the use of standardized questions applied to each participant in an identical way. This is not appropriate for the case at hand since the various institutes are treated as diametrically different. The data extracted from each is different even as their institutional contexts are different.

The Ethnography is a potentially an apt fit for the research question since it combines the viewpoints of the insider (the participant) and the outsider (the investigator). In this way the insider could bring his perspective on under-serviced digitally scholarly editions and the outsider could act as a guide using the aims and objectives to extract the relevant data. There is a problem with this type of method. It relies on pulling the insider a little bit out of his context which is not advisable for this study. The context in this case is perhaps the most relevant of all. The thesis wishes to show what the actual case of the problem within its living context because one can find the most successful motivations to solving the problem as well as the most authentic problems. These would not result from an Ethnography. However it

should be noted that one type of Ethnography, the Critical Ethnography serves as a basis of analysis as is shown later.

Hence, the method thus is qualitative, since the interest is in the subjective experience of the particpants and the research method is an instrumental case study since the idea is to deeply examine a particular phenomenon within its context of the three relevant institutions. The study is of a few cases in depth in order to discover the needs of dse's and their viable solutions. The technique of gathering data is the interview of varying structure based on what kind of information is to be induced. (Batiancila,18) According to Stenhouse this type of collection is best used when one wants to know what is on the participant's mind. (Stenhouse, 1981 cited in Pickard, p. 172) In other words this method allows me to glean the participant's subjective views, from varying points of time relative to the project of this thesis. This is extremely fitting to this particular enquiry since it may be dealing with three different phenomenon or one phenomenon manifesting itself in three different contexts. The subjectivity of this approach is vital to the aims. Adapting the level of structure of the interviews based on the emerging level of experience with the question is possible.

3.5. Data Collection instruments

The research question,"how can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future and how can a public or national library can provide this support?" demands data in a descriptive form which can be applied in a practical way. It demands a personal account of one's experience of a type of digital entity which must be colored by one's institutional context. It demands a collection instrument which is multi-faceted and can be tailored to different situations and data requirements. This is so also of the aim,"To trace a plan of ongoing support and services for Digital Scholarly Editions based in a public or national library with an aim to facilitate researchers who wish to produce digital scholarly editions in their processes in a sustainable way in order to allow the self-perpetuating nature of their textual scholarship especially in areas where their needs are insufficiently fulfilled and to bring added value to the library."

In order to trace a plan for anything (here for ongoing support, etc.), one must know the elements that can bring one from point 1 (under-serviced editions) to point b. (a system to

support them in their processes, etc. within a national library), there is a need for data from different contexts so the collection techniques must again be flexible.

The three objectives, to understand the current state of the editions, the needs of the editors and the competences of the libraries, again a multi-faceted research instrument is necessary since the investigator wishes to acquire data on each point from each of the different institutions.

Furthermore, in order to fulfill the requirements of the Interpretivist paradigm, there is need for a tool that is relativist, transactional, subjective, implies empathetic interaction and who's purpose is the replicability. Also the instrument must well suit the instrumental case study's requirements of "an empirical inquiry that investigates a contemporary phenomenon within its real life context," where the phenomenon weighs slightly more heavily than the case. This section shows that interviews of varying structure best fit these requirements.

The purpose of interviews is to seek, "qualitative, descriptive, in-depth data that is specific to the individual." (Pickard, 172) This is precisely suited to the instrumental case study as "qualitative..., in-depth." It responds to the Interpretivist because the data is, "specific to the individual," or context-bound. Furthermore interviews allow you to discover, "what people think, feel and remember." In other words the interview is transactional and subjective and further supports the Interpretivist stance. This also implies the right type of tool to answer the aim and objective.

Finally, interviews, "can be used to reconstruct of events, descriptions, and feelings about current events and predictions of future developments." (Pickard, Ibid) In other words this collection instrument provides data which answers the research question.

Sampling Strategy and Techniques

The sample was selected based largely on their institutional identity. The first objective was that all the institutions be from the same country. This was important both for proximity and because a national library had been selected as the source of support for the digital scholarly editors. The first institution selected was the research center which performed digital scholarly editions. They were chosen based on their reputation as a thriving editing institution. The thinking was that they would provide a rich description of a succeeding center.

The choice of the national library as the support center was made based on the general status of national libraries of a) being interested in collected all the texts from their country, b) standing for and working for national textual heritage, c) their mission to service and support of their users and d) the probable inexperience of national libraries with supporting scholarly institutes. It was thought interesting to the thesis to see how a national librarian would respond to the project for all of these reasons.

The final institute selected was a university library of prestige from the same country. It was thought that scholars within a library context would surely have some thoughts on a support system. Since the institution is both scholarly and service-oriented. This institute, it was thought, could show the way to bridge the gap between a center focussed on scholarship and one focussed on collection and service. It was of interest to see what their thoughts on a functioning support center would look like and whether they could be replicated in the public sector.

3.6 Ethical Considerations

In engaging participants from each institution an informed consent form was issued before engaging in any research. The informed consent letter disclosed the title and purpose of the research, the type of data collection that would be employed ensuring the researchers that they could answer the interviews at any length they chose and could share only information they were comfortable disclosing.

Confidentiality was guaranteed within the normal boundaries of the law You are guaranteed total confidentiality with regard to anything you say, do or write in relation to this research within the normal boundaries of the law and they were guaranteed not be asked to reveal anything that could harm or distress them in any way. All data was guaranteed to be identified by a fictional name that is only known to the investigator.

Total anonymity could not be guaranteed since the participants were contacted through their institution, but it was guaranteed that no data would be directly associated with them by their real name and in the event of publication that no identifying personal data would be revealed. It was further guaranteed that the only people who would have access to the data resulting from the study would be the investigator's supervisors and examiners who might

request to see it. But it was guaranteed that they would in no way attempt to identify the participants through this data.

An implication of this agreement was that the nation in which the study was undertaken not be revealed and also that projects worked on only be revealed in general terminology.

3.7 Validity and Limitations of Studies

Validity

The validity of this type of study, an instrumental case study, lies ultimately in its replicability. In answering the research question through this type of study, not only looks at conditions as they are but also as they must be in order for the project to be accomplished. In this sense, if the provisio of the correct conditions is made, the study may be applied to any digital editing community within a national or public library.

The data can be said to be reliable in the sense that it is subjective and bound by the context of each participant's institution. In this sense the only judge of reliability is the participant him or herself, since he or her is the only one with this subjective experience and viewpoint of the project. The data can further be said to be reliable since, the transcribed interviews were returned to the interviewees for the purpose of validating them. While not every participant returned the transcriptions, no corrections were requested to be made to the transcriptions.

Limitations

Prior to looking into which data analysis and presentation framework best fits the research problem and methods and methodologies and help achieve the aim and objectives as well, this section briefly comments on some points which limit the parameters of the thesis.

Many similar problems exist within other areas of Digital Humanities and indeed within Digital Humanities in general. The investigator chose to limit the scope of the thesis to digital scholarly editions largely because of the possible impact of this field on textual scholarship as a whole and the possibilities dse bring to the scholarly community as well as to the general public. In other words the community of scholars gain a platform of communication through dse and the public gain an accessible and interactive tool for education through these.

It was decided to limit the study to ongoing annotation as the final goal again because of the possibilities to scholars both present and future. Peter Robinson saw these possibilities and described them when he said of ongoing annotation, "adding transcriptions and collations made by others to the edition but correcting and refining them, and then developing a new textual commentary." (Robinson, 2013, 102)

A digital textual apparatus that is stagnant is already an exciting thing since the community of scholars have had the opportunity to come together to collaboratively and socially annotate a text but ongoing annotation brings scholarly interaction to a whole new level since permanently dynamic editions capture the scientific dialogue that occurs through the ages.

Of the many aspects of digital scholarly editing the investigator chooses to focus only on the tools, functions etc which the editor identifies as needs of the editor since the investigator would like to construct a focused plan and this requires that the needs of the editor in question be paramount. It is expected, from the literature review, that these include sustainability, economic and technical needs as these seem to obstruct the goals of editors.

In focussing on the necessary competences for librarians which ensure sustainable support for digital scholarly editions, it is thought that the role of librarian and especially the digital curator is of great importance and therefore the competences of this and not other fields is a limitation to the scope of the thesis. It is important to see if librarians can support DSE since libraries are the chief transmitters of digital textual scholarship and digital curators in particular since they deal especially with the digital aspect of the library.

The intended output to providing a road map to successful supportive services is limited since this is narrow in scope, can be achieved through the case study and answer the research question. Furthermore it is the ideal result of the research sample (starting with an editor and obtaining needs, following with a national librarian who shows what competences are available, then speaking to a university library who has found a way to make these elements work and finally seeing which aspects of the university library's solutions would work in the public context) whose natural final step is a plan.

Since the objective is a practical, an "Is vs. Ought" approach is best. In other words the investigator will not only try to find out what is the case with regard to supportive services but what ought to be the case and this will take the shape of a plan.

3.8. Framework of analysis

Theoretical implications of analytic framework:

This material resulting from the instrumental case study is analyzed according to a Critical Ethnography framework because the investigation is based on a practical project, an aim to be achieved by the process. Critical Ethnography does not end its research with the "is," what the present conditions are surrounding the phenomenon. It asks what "ought" to be the conditions of the phenomenon and what transformative actions ought to take place.

It is an ideal framework to use as an analytic tool in interpreting the research. However it is also used as a theoretic framework, a research method like an instrumental case study with governing concepts of its own. For the purpose described above, this thesis will not use the framework in this light. However it important to understand the theoretical implications and be sure that they coincide with the research question, the aim and objectives as listed above.

This process takes place first in reference to the project and its theoretical problematic, all of the governing concepts defining the project. The guiding criterion are first to establish the relationship between the project and the current conditions. This include an examination of the social constructs or evidences to see from an abstract perspective how the conditions may be altered. Next the critical ethnographer looks at the impact of a public discourse on the conditions and project to raise awareness and encourages action in the public realm. Finally the interviewer claims fully that their personality affects the responses received, interprets them and evaluates what that impact is and states clearly whom they wish to benefit from the transformative action largely executed by the public.

This framework is especially pertinent to this study since the answer to the research question is action. It implies the practical rather than the theoretical realm. It seeks a solution for sustainability to match the dynamism and life-cycle of the digital scholarly edition and its community. This constitutes an action-based or "ought-based" theoretical framework, the concepts involved in the project are perfectly geared toward a public critique and existence in the public realm, and furthermore the investigator as a researcher, an editor and a librarian

have a unique persona with respect to the problem. For all of these reasons critical ethnography forms an ideal theoretical framework to guide us to answer the research problem.

Framework as basis of data analysis

The critical ethnographic framework is usedalso as an analytic basis to solve the research problem and and attempt to reach the aim and objectives since in the case of facilitating Scholarly Editions, the subjects interviewed and their attitudes are very closely linked to their context or environment which indicates the general epistemological analysis. Furthermore in gathering data a social exchange is bound to occur and it is expected that the interviewer will not be neutral with regard to the interviewee but is empathetic, has a clear stance with regard to the resulting data and its interpretation and a social mandate. Additionally as with any interaction or discussion of a person's perceptions, interviewer will be to some extent subjective. The reflexive question of the interviewers stance will inform the critical ethnographic framework.

The investigator analyzes the data found in the interviews using a Critical Ethnographic Framework since the context in which the individuals work shape their viewpoints profoundly and the interviewer has a clear stance, namely to find a means by which digital scholarly editors could by supported by libraries. In order for an analysis to be considered Critical Ethnography three conditions must apply say Simon and Dippo. These criteria consist of (1) a particular "problematic" that de-fines data and analytic procedures in a way consistent with one's pedagogical/political project: (2) the engagement of such work within a public sphere that allows it to become a starting point for social critique and transformation; and (3) the inclusion of a reflexive inquiry which would identify the limits of its own knowledge claims. (Simon, 197)

The first criterion, the problematic, may be defined here as the research problem and aims and objectives listed above which trace out the boundaries or frame of the investigation. Simon and Dippo define the project of critical ethnography as an activity determined both by real and present conditions, and certain conditions still to come which it is trying to bring into being. The project here refers to the real and present conditions of digital scholarly editors, their work, their needs and supports which is established in the interviews as well as what could be namely libraries supporting their gaps in need fulfillment. The problematic required

in critical ethnographic work denotes "a particular structure of concepts, which make it possible to pose some kinds of questions while simultaneously suppressing the possibility of posing others." (Simon, 197) The problematic here is the research problem together with the aims and objectives and basic assumptions laid out above. These clearly meet the project at hand to support researchers especially for sustainability for future development.

The second criterion is the entering into the public sphere that allows it to become a starting point for social critique and transformation. In other words a work of critical ethnographic analysis must not be confined to the theoretical realm but must insist on a social critique and transformation of the project. The authors say of entering this sphere that, "issues concerning the moral quality of the social order are defined, and transformative projects articulated." (Simon, 199) This portion of the analyses will make statements about the moral quality of the social order within each institution and their relationships with each other and will articulate an agenda of change where the ethnographic project has not been fulfilled.

The third criterion is the reflexive one. (NB In cases where the third criterion is applied, the first person is used.) Madison speaks of reflexion in her first chapter of her book, Introduction to Critical Ethnography. (Madison, 7) She notes that as the author of such analysis the investigator must embrace her subjectivity, clearly stating how her personality affects her research and understanding whom she wish her research to benefit. In the case of this study the subjective stance is one of a student who wishes to find out from the experts how libraries may support the future of digital scholarly editing for a sustainable future, the persona in each interview is slightly different. In the cases of the digital editor, I play the role mainly of an empathetic listener as I wish to extract as much information about the current state of editorial practice and health as possible. In the case of the national librarian, I was empathetic to his ideas but played more of a leading role as I wished to see where his ideas would go when confronted with the new notion of facilitation. In the case of the university librarian, the persona was one of an interrogator, asking many detailed questions and listening a great deal, having both the fruit of the previous interviews at hand and also wishing to see how a successful library facilitation worked in a nuts and bolts way. As to the reflexion of who the research benefits, primarily it is undertaken for the sake of the editor and the continuation of their work into the future but also in a sense for libraries who wish to play a supportive role in this process.

4. Results

The data collection method, informed by the philosophic considerations is an Instrumental Case Study which should, "provide a holistic account of the case and in-depth knowledge of the specific through rich descriptions situated in the context." (Pickard, 86) The transactions that occur in the following interactions form the case which answers the research question by providing detailed and contextual information corresponding to each of the objectives. They also provide a holistic account of the project which answers the aim and the research question. For an overview of the process, see appendix 2.

The data collection technique consisted of three interviews, one of a member of a research center which includes digital scholarly editions among its activities, one of a national librarian, one of a university librarian. The first two individuals interviewed show hesitancy at the prospect of libraries hosting digital scholarly editions which seems to be a new or slightly problematic idea, yet through the interview both conced several common points of interest in collaboration and resource sharing. To the university librarian however the idea of facilitating scholarly editors is not new. In fact in this library it is the status quo. His primary function is to support digital researchers in producing digital objects including digital scholarly editions.

The data resulting from the exchanges form the case and provide an answer to the research question by achieving the research aim of a plan for an ongoing supportive system in keeping with the dynamic and self-perpetuating nature of editions. The investigator answers this research question first in parts showing how the data answer each of the objectives which form the "how" to achieve this aim. Therefore the evidence given is analyzed under the categories found in the objectives which the problematic: the state of editions in each institution (which reflects its success factors), the needs and tools of the editors in each institution and the functionalities of librarians which meet the needs and/or success factors of each.

There are many gaps between answering the research question with a plan and the narratives of the participants. Since this paper is more interested in the "ought" rather than the

"is" those gaps are fulfilled by means of the critical ethnographic framework which deals in action and the achievement of the project rather than simply theory. Therefore the evidence thus categorized is interpreted according to the three criteria of a Critical Ethnographic Analytic Framework. Also since this work is an instrumental case study and should be deeply analyzed rather than broadly, certain questions are framed so that the answers correspond with the aims and objectives as well as the three criteria.

The criteria are applied to the interviews first by analyzing each case separately and then by tracing a path between the cases in the findings section to show how successful library facilitation of digital scholarly editors occurs. The thesis presents the material using multiple data linked to form a cohesive whole.

The cases are dealt with in chronological order. Following the concepts predetermined in the aims and objectives (part of the problematic or guidelines), each interview asks questions the participant question eliciting responses that are categorized under the following: "State of the Edition," "Needs and Tools," and "Functionalities of the Librarians." Each evidence is shown to answer the research question using Critical Ethnography as a framework of analysis. Therefore the data in each category is analyzed by asking the following questions relative to the three criteria.

To analyze the data regarding the, "State of the Edition," the questions are posed, "how does this state of the edition compare to the project (research question and aim)?", "how can each State of Edition evidence be interpreted in the public sphere? (This component helps bring about the plan which is the aim.)", and "how do I as a subject with an agenda affect the elicitation of each State of Edition evidence? (I as the subjective investigator will judge how the testimony can lead to the achievement of the research question and aim.)"

In reference to the Need category, the investigator asks: "How is the research question (project) affected by this need? What does the investigator learn?," "What is the relationship between this need and the public arena? (Establishing the evidence within the public realm can help achieve the aim)," and "How do I affect the elicitation of each need? (the affect on the elicitation of the needs means that I draw the participants toward the needs that are elemental to the completion of the research aim.)"

In reference to Library Functionalities, the question is: "Do the evidenced functionalities help to achieve the project?," In other words does the evidenced functionalities

bring about a plan which fulfill the aim. "What public value statement can be made? Do functionalities require public attention?" This elicitation speaks to how the research aim may be achieved, i.e. through public intervention. "Do the evidenced functionalities fully reach the expectations? If not what is still needed?" This is the final link in the chain to see if the evidenced functionalities answer the research question by achieving a plan for a support system (in the findings section) run by the people with the correct competences which not only answer the needs evidenced but also considers the needs necessary to bring about a plan in keeping with the research question.

4.1. Digital Scholarly Editor at Research Center

The editor represents an independent organization which conducts digital scholarship based on various typologies of resources, makes use of digital and scholarly tools and is centered on a collaborating user group of scholars. He is a self-identified intermediary between programmers and scholars and his stance is one of autonomy. Although he shows openness in to the new idea of supportive services from the library, there are few places in which he thinks it necessary to look to a library, or indeed outside the institution for support. It is clear that before the research question of how a library can provide support that ensures sustainability equalling the life-cycle of editions, it is vital that negotiations be made concerning key points like where the editions should be stored, whether the library's technology is able to support editions and other obstacles concerning sharing resources. This conversation provides a good starting point for fulfilling the research aim, namely a plan for such supportive services.

The desire for autonomy must be honored, although some concessions must be made also on the part of the research center if the aim is to be achieved. It is notable that the participant's view expresses a resourceful center which is proactive in all elements of digital scholarly editing which present themselves in the interview, with proactive views for the future, if not always the means to attain those views. This energy can ensure the success of the research aim, provided he agrees that such a supportive system is be beneficial to his organization. This procurement of the agreement is fundamental to achieving successful results and must be achieved from both parties.

The testimony of the intermediary editor is an important component in answering the research question. The overall exchange shines a light on the inner workings of the world of digital scholarly editors. This understanding is vital to the creation of a road map for the construction of a DSE support system matching the intrinsically dynamic nature of editions since it shows how real life practitioners see their editions through their processes and success factors (first objective), what their needs are which form a gap from achieving their aims, both those to which they themselves want to find solutions and those they are willing to seek support from outside, and especially those which prevent them from obtaining ongoing

sustainability and annotation (second objective), and finally what competences and functions they require as a solution to their needs which form the skeleton of the plan (third objective).

4.1.1. State of Digital Editing

The interviewee first identifies himself as an intermediary between the scholars at his institute and the programmers, the two components required to produce a digital scholarly edition, which serve as the first evidence for analysis under the category of the "State of the Edition." He seems well versed in both areas and first traces the technical side of producing such editions. Knowing how to produce an edition from a technical point of view is one side of the coin that is the digital edition, the other being scholarly expertise, bridging the gap between these communities.

These two components of the current state of editions and their correlation with each other answer the research question's quest to support editors in their current processes as well as those which mark the ultimate aim of sustainability into the future. Even sustainability is not unrelated to the relationship between technology and scholarship, since these are the cornerstone elements of the editions which are to be sustained. So there is a first glimpse of what a plan for a facilitating system might look like, with excellent technology and first rate scholarship being at the base.

In answer to the first framework question which analyzes the data regarding the "State of the Edition," the investigator asks, "How does this state of the edition compare to the project (research question and aim)?" Regarding the relationship between this response and the research question about how sustainable support of editorial institutes by libraries can best be achieved, that support must ensure top rate technology and appeal to the best scholars in each particular fields. Scholars and technicians within the institutes must be supported but within their own capacities and agendas. It is clear from this and further evidence that the center draws from high caliber scholars already and that they are consistently on the cutting edge of technology but that this state of the edition is sometimes difficult to maintain. In answer to the framework's first question then, the desired supportive services compare positively to the evidence given. It becomes clear that one aspect of such a service is to promote editions by helping with the development of top notch technology and promoting awareness of editions among highly rated scholars.

In answer to the second question of how the technical and scholarly aspects of the edition espoused by the researcher may be affected by being brought to the public eye and how this effects the research question, there is no doubt that public awareness of the necessity for topnotch technology and scholars help bring about the support system sought by the research question. The question of how to bring about awareness to each of these elements of the edition varies slightly since the aim is different in each case. In the case of attracting attention for the ongoing development of technology, the affect is most probably fundraising opportunities while publications in online journals and giving papers at conferences raises awareness of the scholarly opportunities within digital scholarly editing (and probably attract new scholars to the field).

Finally in answer to the third reflexive question, my role in eliciting the information about the editor's intermediary role between scholars and technicians was minimal. In fact the participant answered very differently than I had anticipated and changed the course of the exchange. One point with regard to the research question must be further noted. Constantly renewed technology and scholars are essential to the self-perpetuating nature of DSE. It is further clear that by defining the two aspects of editions, a good start is made toward tracing out the plan for ongoing supportive services of dse according to their self-perpetuating nature.

The second evidence regarding the "State of Editing" comes in the of two methods of editing. The first is to create XML files of the texts and then generate an edition from it. This method is strong in that it supports layers of annotation well, which are the backbone of dynamic editing. It is weak in that it is not very suitable to collaborative editing, which is a primary success factor for editions. The second method, the online editing tool, has the opposite strengths and weaknesses. It is a good tool for collaboration but weak in showing layered annotation.

In answer to the research question, understanding the two types of digital scholarly editions and the two corresponding types of researchers who produce them: those who are remote, highly collaborative and not as technologically savvy and those who edit in a highly dynamic but less collaborative way who are well versed in technology. These two types of edition processes and editors must be taken into account in order to achieve the supportive service sought in the research question.

In answer to the first criterion of the framework, this state of the edition compares quite well to the research aim. It is quite probable that in building a center for the support of

present and ongoing editing, that the independent institute and not the library would provide these tools for incorporation into a comprehensive system. There is a gap however between a fully functioning support system and the current state of these edition tools. Dynamism and collaboration are each essential to the project. The development of a tool which combines both and provides technical support for scholars not conversant with XML or TEI is the ideal state of the edition in this respect.

Relative to the second criterion of the framework of how this state of edition is affected by being brought to the public eye, if represented to the proper channels (e.g. the library board) and as part of a greater whole, it is possible that funding can be procured to develop the single tool in order to bring in a wider range of scholars and to acquire a technical supporter (who could possibly continue to work at the independent research center). Bringing the attention of the public to the system as a whole answers the research question since it enables librarians to better serve DSE through support, financing and attracting interested parties.

I do not play a role leading to my agenda in eliciting this evidence but the question encouraged open discussion about editions, editing projects and activities at the institute. The spontaneous evidence shows that the tools use to produce editions come first to the participant's mind before the editions themselves. This is important in answering the research question since librarians are aware of the slightly heavier weighting on technology.

Next are some projects the center has undertaken. They serve to identify some success factors which help answer the research question by showing the librarian what his support should try to achieve for the editors. Additionallyes the investigator can see that some success factors (objective 1) which would promote ongoing sustainability (aim) are not present in the exchange. By being aware of these, the library can incorporate them into the system as "ghost-objectives" which can bring the editorial center up to speed with the research objective which answer the research question.

The participant mentions first an editorial project on an Early Printed scientific series. He points out that the centre's Medievalist group has produced only a transcription of it since accessibility to other scholars iss the primary criterion as it was previously unavailable. This evidence reflected a success factor of collaboration, flexibility of approach, and the choice of

content of great importance to its field. This last factor is helpful in approaching the research question since it tells the library that the appropriate choice of editorial content (especially when it has previously been unavailable digitally) which is in their capacity to provide and is significant in building a successful support center.

In response to the first framework question of how this state of the edition compares to the project of a supportive service which supports digital scholarly editions in their current processes and their sustainability as dynamic texts into the future, the provision of previously unavailable digital texts furthers the project since it ensures an innovative service, highly collaborative with a flexible approach thus adding value to the support service.

In order to achieve the research aim and bring about a useful support center, which answers the research question of how libraries can best facilitate DSE, the public should be made aware of projects like this one which achieves important content selection by bringing previously unknown works to light and shows effective methods of editing in them. It is likely that this type of project attracts financial support for the institute since editions like this are of high value and would increase its value of the library as well (aim).

As in the case of the following projects and activities evidenced by the editor, I did not play a detailed role in eliciting the response. I did however infer the success factors relative to this project and hold the stance that their identification helps us to form the final road map to successful support.

The participant next evidences generally that other projects require much annotation and call for a more technologically rich approach. The technological advancement of the center's approach as well as rich annotation are highly significant success factors since projects using these skills attract attention and funding. Thus these factors contribute greatly to ongoing support of DSE and should be guiding lights in the construction of a support system which successfully answers the research question.

These factors play a highly important role in relationship to the project since the potential for ongoing support is great, given the right facilitator, and therefore self-perpetuation is equally great. These skills are also relevant to the public insofar as the expertise they imply may be of use in other projects within the public trust. At this point in the interview I am not strongly active, but still listen to the general story of editions. However I

do infer the success factors and their significance to my agenda, namely the project of a support service for editorial centers.

The center shows innovation in another project, an annotated national collection of women's letters. Not only do they choose a topic of current as well as historic national interest, but in this case a great deal of collating and other piece-meal tasks are required. The center uses volunteers to collaborate on this project. The center's ability to choose current topics from historical texts helps to keep the editions current and attracts funding. Reaching out into the public for volunteers generates interest and awareness in the project. These are valuable success factors and steer us in answering the research questions since they help answer how to "best" help DSE's to have a sustainable future by looking at the things they do best.

These success factors relate to the governing ideas of the thesis (the project) since projects which attract funding, interest and participation are the ideals toward which the supportive body assists the DS editors in achieving. Successful DSE's make for a successful center.

This evidence shows the public another side of the center's capabilities and again, as the project is of national importance, it and the skills required to produce it must be of interest to the center's public. Since this type of project attracts funding and interest, revealing them to the public should achieve those ends.

I the investigator had tried to steer the participant toward talking about educational projects. While that was not achieved, this project was brought to light. I believe its true value lies not in outreach or education but in the innovative approach and relevance to the national public. This type of project ought to be undertaken, fostered and funded as it directly helps to bring about the project.

The projects this institute presents to the public also includes internationally relevant literature like their Arabic Aristotle project. Not only is the project of great international import but it also departs from their national language, which is their policy language (as do others in Latin, French,etc.). This type of project shows that the ability to select international content of vast import for its editions, another point of importance in answering the research question. The international projects also open the center up and bring value to a wider public

audience. From my subjective and interpretive stance, the editors manifest themselves as innovative, flexible and from a wide interest base and that the center is willing to be flexible on their behalf which brings more value to my agenda.

Thus in summary the success factors associated with the state of research in this center included expertise in scholarship and technology, innovative and complementary editing tools reflecting a wide range of users, collaborative editions, selection of content of historic (including previously unedited texts), national and current, and international importance, selection of projects which attract funding, attention and participation, tended to perpetuate themselves, showed flexibility of approach, collaboration locally (including significantly with the national library) and internationally. These success factors serve as valuable guidelines in the construction of a plan for a successful supportive system by librarians which aids DSE's in their current processes and procure for them a sustainable future in keeping with their ongoing and dynamic nature.

In answer to the second criterion of bringing the project into the public sphere, the interviewee himself made a statement which implies what would happen to editions without aid. He gave a warning at the end of his interview about the future of digital editing as a whole which centered on the increased reallocation of funds. This statement brought the project out of the realm of the theory and implied a moral quality in the social order of editing and can serve as a basis of future transformation. I as the investigator did not instigate this response, simply asking if there was anything else he would like to add. Rather it affected me. Its clear mandate however aligned with my hopes in the project and underscored for me the imminence of support, especially financial, being established for this group.

Needs

In order to meet the aim, "Identify and describe the tools and needs necessary for Digital Scholarly Editing such as access to content, richer tools, encoding and mark up, better and more collaborative annotating, easier search and browse facilities and interfaces." The investigator asks the editor, "What needs do you have in these activities that are unfulfilled? Please rank the needs in order of importance," and followed up with various detailed questions under this umbrella.

By achieving the objective through these questions, a building block is laid in answering the research question and achieving the aim or project. The aim requires data about

what sort of services best support the scholars in their processes. In order to provide this it is necessary to know where support is lacking, their needs and what tools they require to follow their processes. The needs and tools mentioned in the objective are suggestions. I introduce these and others but mostly follow the scholar in his context-bound account of what his center needs.

The center speaks of many needs and tools which they either already meet within their organization or have plans to do so. These are largely economic/resource based or technological as well as some that would benefit the user community of scholarly editions. They mention a few areas however where they feel that libraries can help them better meet them or in which they are willing to accept support from the library. They also mentioned a few "bucket list" items.

Among the list of unfulfilled "bucket list" needs which the institute evidenced that he hoped to realize in the future are annotation by the user of the edition and social annotation. This unfulfilled need corresponds to part of the aim of the case study, namely, "to allow the self-perpetuating nature of their textual scholarship." User and social annotation promote the self-perpetuation of the digital scholarly edition since they provide continued or ongoing textual scholarship. Furthermore collaborative annotating is one of the needs listed in objective two. Thus the editor evidences two needs which, if fulfilled, would help to answer the research question, achieve the aim and one of the objectives.

In answer to the first criterion of the analysis which is also an application of the governing concepts, the present condition of the need, as stated by the interviewee, is that this type of technology is not yet available. He does not state that they look to the library for its fulfillment. Relative to the project, this need is of huge importance. The development of user and social annotation is a need of the institute rather than a hope given the impact it would have on the dynamism of the texts and importance this could have to the centre and their editions. In order to change the present conditions and help bring the problematic (research question, aim, objective) about, first development of the technology is needed, secondly the question arises about where the tools to accomplish this type of annotation should reside: in the library, in the center or in a virtual research environment.

In bringing this type of need to the public sphere (particularly the national library), "issues concerning the moral quality of the social order are defined, and transformative projects articulated." (Simon, 199) (From now on the second criterion question is framed in this way.) Thus the evidence, which answers the aim and an objective, is applied in the practical realm. In this case the moral quality of the social order is defined as a lacking value which the public would have if these needs were fulfilled. The transformative projects which are articulated are development of the appropriate tools and the achievement of this type of annotation. It is important that their added value be appreciated for thus the need for development might be achieved.

From my subjective perspective, my personality affected the research because as a research-librarian and as a researcher committed to my aim, I wish to learn from an expert what is happening with social and user annotation in order to see what kind of gap existed between the present situation and achieving the aim of ongoing annotation. I primarily wish to benefit the editorial community by asking this question.

Next the participant evidences that the textual community can not be considered the key to the survival of the edition. It is however clear throughout the interview that the center is involved with editors and users around the world in a lively way. The editions of this center are meant to be disseminated and circulated among the scholarly public.

From the project's perspective, this gives us clues as to who or what is the necessary component to the ongoing support of the edition and the editing community. It is safely inferred that the author points to the financial needs of editions in this evidence and that the editors themselves are the ones in need of financial assistance in order to do their work.

Again in bringing this problem to the public eye, the value statement about the evidence within the social order is that editors have great value within the public system because of their contribution to cultural heritage and to scholarship as a whole and are deserving of the funding they need to carry out their processes. As a transformative project it may be that an advisory service would also be of help in drafting a financial planning statement and uncovering funding sources. The participant's insistence that looking to editors for survival is not enough implies that a different action is necessary and the evidence itself brought the needs and project into the public sphere.

My personality affects this issue since I believe that the scholarly network surrounding digital editions is the very reason for their existence. Even sustaining the editions is for the sake of future generations of scholars who can produce new annotations and reinterpreting the texts in terms of their new framework. Although I do not directly affect the elicitation of this evidence, I clearly wish to benefit the scholarly community in applying the research aim to support ongoing annotation through the Critical Ethnography. I also wish to benefit the public at large.

The editor then mentioned two more technological needs. The first was linked data. The editor's comment that using existing identifiers is preferable pointed in the direction of easier collaborative studies. The editor said that linked data is already being discussed in a practical way in the institute and gives the sense that it is not far off.

From the perspective of the project and answering the research question, how to give appropriate support to the institute, the library should support linked data and the use of existing identifiers from a distance but the function should be included in the support system with the permission of the center, which is the aim, since the editors already have laid great groundwork in their institute and have an agenda on how they would like to use it.

From the perspective of entering the public realm a value statement may be made that the reusing identifiers and linking data between editions increases usability for the public. The resulting transformative action is minimal. Linked data is already in development in this context. The library can support them in this development and also in its application for the benefit of the public.

My personality affects the garnering of this evidence since, as a digital librarian, I believe that linked data enriches editions, makes usability easier and links different researchers together in their projects. I directly elicit this response. In gathering this data I wished to benefit editors, public users and the virtual research community.

The other technology which the interviewer suggests to the editor is that of ongoing or dynamic annotation, which is central to the project and problematics of this framework. In this case the editor feels that the technology is far off but that it is being discussed broadly. He feels that the only works that it is be practical to introduce this type of technology are those that are extremely popular and in very broad demand. He does not think that it would be

viable for more obscure works. This answers the research question since it clarifies that, since ongoing annotation is not immediately available, preservation of editions until it is developed more fully answers the question of how to provide ongoing support, "so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future." It also points out that this need is primary in the list of unmet needs necessary to answer the aim and objective since it is the most defining concept and is furthest from development.

In relation to the project, it is this dismissal of ongoing annotation being immediately available that causes an alteration in the problematic and project. Initially the aim was simply to assist editorial research institutes in the production of ongoing editions. However following this evidence I, the investigator, changed the project to ensure the sustainability and maintenance of editions until dynamic editing technology were more widely available as well as the need to focus on the development of ongoing editions.

It is quite important to the project thus stated that this lack of technological development be widely known. As a statement of value or moral quality with respect to the social order, ongoing annotation has the capacity not only to preserve cultural heritage and scholarship but also to make them a living thing handed down through the centuries. As a transformative project society can make efforts to make ongoing annotation a reality not only for the most important texts but also for lesser known texts of value whose legacy it is important to carry on. Again in these cases the editor does not mention looking to the library for support in developing such tools. If support is to be given to editors on this score and if (as in the case of this editorial institute) there is not much interest in ongoing editions, perhaps the development should occur in another technological institution, though possibly not in the library.

My personality affects this transaction first because of its importance to the project and secondly because, as a librarian, the user oriented aspect of editing is enhanced through ongoing annotation. I wish to benefit primarily the editing community, but also the library and the public user in eliciting this evidence.

Another technological need seems to be quite a pressing one and subsequent evidence states that it is necessary to editors in other institutions as well. It is a tool that combined XML editing with the online editing tool. These types of editing are mentioned earlier but at this point the editor mentions a proposed in-house solution. Such an editing tool would ensure more widespread and higher quality editing which are needs explicitly stated in objective two.

Relative to the project then the present conditions are not far from the ideal conditions and the fulfillment in part of one of the research objectives. Thus the planned tool is a step closer to realizing the research aim provided the research center allows the tool to be used in a comprehensive support system. If not the aim (support for higher quality research tools and more highly collaborative research projects) can only be achieved in a laissez faire manner or by developing their own tool.

Here, since the institute is already developing the tool, the purpose of bringing it into the public sphere is to increase awareness of a valuable tool rather than to create a transformative project except to increase the scope of its application and to raise awareness of and support for digital scholarly editions at large.

My personality affected the gathering of this piece of data since easier collaboration is a priority for me. As a librarian I hope a library run support system is of use to editors with respect to the development of this tool. However the evidence indicates again that where technology is concerned the centre prefers to use their own services rather than those of a library's. I primarily wish to benefit the editorial community and scholars in my interaction with the editor.

A side note must be inserted here with respect to the research question, "How can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future and how can a public or national library can provide this support?" This repeated lack of using the library as a reference point for the fulfillment of their technical needs suggests that in some cases the question is answered by leaving them to their own devices. The editor mentions at a different point in the interview that libraries are not strictly speaking technological institutions and that the editors have a programmer in their centre. These evidences indicate that the institute is a highly technological organization and this may cause some hesitancy at the thought someone else meeting their technical needs. However, if the support system is to be a comprehensive one, it is possible that the editors might share their technical resources with the center. This would benefit anyone wishing to edit in an environment which catered to all their needs. It is also possible for the library to create a support system which only aims to meet the needs which the editors seek help in and therefore not generally technical ones.

When asked directly what needs of the center are unmet and might be met elsewhere, the editor points immediately to the sustainability of their collection. The editor evidences that maintaining the collection takes up more of the budget and time than development since the system has to be constantly maintained. This could be an area where the library can be of use should its repository be technologically compatible with the editions. This is a pivotal point to answering the research question and achieving the aim and second objecting as sustaining editions for the future is vital to ongoing scholarship upon them and this is a way that libraries can accomplish this.

Relative to the project the present conditions of maintenance and preservation are hugely lacking with respect to the problematic. This is so much so that it is creating problems in achieving its normal processes much less developing in new directions. The ideal conditions are that the center agree to transfer their completed editions to the library to be supported in a sustainable way in their repository should the necessary conditions (compatibility, access, development) be met.

The moral quality of the social order in bringing this profound need into the public realm is that digital scholarly editions, if stored in the repository of the national library, would be more widely available to the public. This brings value in the form of education, scholarship and wider accessibility to public heritage as well as broadening the user base and freeing editorial institutes to develop their methods and take on new projects. The transformative project then is to mediate between the editorial center and the library to be sure that both parties are pleased with editions being preserved in a sustainable way in the repository. This discussion may also be included in the preliminary agreement between the two parties to take on the support project.

I do not exert my personality in the elicitation of this evidence. However I am deeply moved by the profundity of the problem and feel strongly that this is a clear area where the library can help, given the necessary conditions laid down by the editors.

Another need is that of aggregating or collecting different editions and collections of editions into one system which was inter-searchable. This allows further scholarship to be done which imples more technology. He mentions that the infrastructure is not sufficiently developed to sustain this yet. This significantly enhances editorial collections and research and a solution should be found for this problem. It answers the research question since it

promotes closer collaboration and richness of editions, two marks of successful editions, provided a solution can be found to support editors in this process.

Relative to the project, funding, technical development and a proper infrastructure are obstacles which stand in the way of achieving this part of the project. If these obstacles can be removed a new element is brought to the project which brings great value to it.

This value statement also relates to the public. The advantages to public scholarship in aggregating editions on common themes related to their heritage ought to be shown to them. Then the transformative project could be undertaken: funding and technical assistance are given to such research institutes in order for editions to reach their next level of potential value for the public.

Another need voiced by the editor was the difficulty of local solutions not transferring easily to the broader editing community. This need is one which affects the scholarly community and communication and can have an effect on scholarly collaboration, one of the cornerstone success factors of this project. Facilitating this need of communicating solutions and creating more unity among the community helps achieve the aim of the project by supporting the community in their current processes.

In response to the first criterion of the analytic framework local solutions transferring broadly is an empowering element of the broader picture since it enables researchers to act as a team who can achieve the goals set out in the problematic.

Public value is gained by local solutions being transferred effectively to the extended digital scholarly editing community because more editors are able to effectively edit texts of importance to the public. The transformative project that the public can engage in and which the supportive system can participate in lies in strengthening networks by providing a central base where editors can share their solutions with each other.

The reflexive element of the analysis indicates that the investigator's personality does not play a direct role in the eliciting of the evidence. Subjective interaction does however occur since, on the one hand keeping technical solutions current is part of the context-bound nature of the matter under investigation and, on the other, a strong scholarly network is part of

my agenda for the current editorial process and as a vital building block to achieve the natural life-cycle of editions and ongoing annotation.

The next evidence points to the swift evolution of technology and the need to learn from the past. He suggests that the present generation is asking itself the same questions about aggregation as were asked years ago, but now the technology is different. Keeping constantly in touch with the latest technology is potentially inhibitive to dynamic textual scholarship. It also affects sustainability and maintenance. Thus the difficulty is interpreted as a need to constantly recycle technology while developing new tools. This would answer the question at hand as recycling acting as a balance to developing would ease the pressure placed on editors and allow them to creatively follow their editing path, the element of the research aim.

This need relates to the project because the final product should include ongoing sustainability. The constantly developing world of technology is an exciting challenge, however some stability is required for editions to be maintained into the future. It is clear that, given the constantly changing nature of technology, maintenance for editions must reflect this by adapting and renewing editions in an ongoing way.

The moral or value statement for the public regarding rapidly changing technology is that changes in editorial practice are usually improvements which can effect the public's access to editions and the ways they can use them. The public (here users) can help transform the difficulty by getting involved with the technology, raising their own awareness of the benefits they can gain by accessing editions through more advanced technology and communicating that awareness to stakeholders who can support both technological advancements, renewal and recycling.

In reflection, my personality asserted itself here in terms of empathetic interaction. As a member of the field I am well aware of the difficulties attached to the rapid development of technology. I was more affected by the description of the problem rather than vice-versa.

Perhaps the primary need voiced by the editor was that of finances which is also listed as part of the state of the edition. Peter Robinson also spoke of this when he (as a supplier of editions to scholars) said, "We believe that ifes the investigator can reduce the cost of making digital [1]editions so much that in most cases scholars can fund the work through the resources usually available in universities, then far more digital editions are made." (Robinson, 101) In

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[1]   Robinson, pg. 101

answer then to the question, How can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future and how can a public or national library can provide this support? One answer with the greatest priority because of the breadth of its applicability and the greatest urgency of its need is financial.

This need is listed as extremely profound and related to the project. It relates to the project in most aspects. Most of the success factors require more funding, all of the needs listed above depend upon it, even the creation of a comprehensive support center can only be accomplished with more and greater sources of funding. If this need is not met, the project cannot be met at its most basic level. These conditions must be changed if the problematic is to be met.

In making a public value statement, the value of the edition itself is on the table as without funding editors cannot continue their activities. The transformative project then for the support of editions to raise awareness about the financial needs of editions, the value they have for the public and by actively engaging in fundraising. Stakeholders as members of the public realm can have a particular role to play in this project.

I am affected by this mandate and the problem itself as it is basic to the ongoing existence let alone sustainability of editions. I enter the context through empathy, as a researcher who can understand the implications of this need. My stance is not neutral and, as I listen, I encourag him to explain this need.

Competences

This section corresponds to the objective, "to develop an understanding of what competences are necessary for public librarians to meet the needs of Scholarly Editors, i.e. those who are knowledgable about the specific fields in which the Digital Scholarly Editions are situated, those who are good researchers and good at guiding research projects," in the context of the general aim, "to trace a plan of ongoing support and services for Digital Scholarly Editions based in a public or national library with an aim to facilitate researchers who wish to produce digital scholarly editions in their current processes especially in areas where their needs are insufficiently fulfilled and in a sustainable way in order to allow the

self-perpetuating nature of their textual scholarship in the future with special reference to ongoing annotation and to bring added value to the library."

This thesis does not answer this vital question relative to the needs of the editing institute listed above. It looks to the library in the next section to see if they have the competences and facilities to achieve these needs and achieve objective two. If they do not, what changes are necessary for them to meet the editorial need. In this section rather the interviewer gives evidence about what areas of their work they want library support for. The areas under question look are mostly content related and sustainability needs.

In this portion of the interview it was clear that cooperation was important to the editor but that safeguarding their rights to their own work is also necessary. It must again be reiterated that in order for any support system to exist between the two institutions, it is first necessary for a negotiation to be entered into and certain fundamental conditions to be accepted by both parties. After that it is also be necessary for both parties to agree on the details of a system like the one found in the next section.

The interviewee first evidenced that cooperation and collaboration are already in place to some extent between his institution and the national library citing an edition by a colleague of his of a manuscript in the library's collection. A provisional, temporary copy of the edition exists in the library. This answers the research question as a building block to the aim since it expresses good will and a desire to collaborate within certain boundaries.

This indication of good will as well as the existing sharing of resources shows relative to the problematic (governing concepts) that the editor believes that library possesses some necessary competences and that, under the right conditions, the editors are willing to collaborate with the library and accept their support.

The editor mentions a competences in which he could see libraries playing a part in their editions, namely to ensure the permanence of their collection of editions. Again he stresses that the details have to be worked out. This evidence corresponds to the continuation of the life cycle of digital scholarly editions, a primary element of the aim of this thesis. It is especially interesting that the editor raises this problem and suggests that a library might have a role to play regarding their patrimony.

Relative to the objective under consideration in this section, the evidence indicates that the competence to maintain the research institute's existing editions is a priority and that he

believes that the library potentially has that competence. Relative to the aim the sustainability of the editions is seen in this evidence. Relative to the overall project, it is clear that a preliminary discussion is necessary.

The evidence can be interpreted relative to the public realm in the moral statement of quality that both the existence of a support system for digital scholarly editors and the inclusion in it of a sustainability are good for the public surrounding the library at large, for the library itself and for its patrons since it would transmit scholarship of high value to all of these parties and sustain it for the future. The transformative action the public (any of the above) could take would be to mediate the preliminary discussions and ensure their support to the editorial community.

The framing of the question may have elicited the response of sustainability as the primary area in which the editor seeks competent support. However a transaction occurs because I am affected by the evidence concerning the need for questions to be worked out. This colors my view of how the support center can be brought about, since I have not pre-empted that a discussion first needs to occur especially surrounding the extension of the life-cycle of the edition. I became aware of sensitivities within the context of the research center which altered by subsequent line of questioning to some extent.

He also raised difficulties in greater detail in looking to the library for the technological competences required to sustain a collection of editions. The crux of all of the difficulties are surrounding the differences between mass-digitization and editing since, according to the evidence, one looks at many texts generally while the other looks at one text deeply and in detail. He has fears about repositories, overly simple search engines and interfaces all geared toward mass-digitized objects.

While this evidence expresses hesitation in joining forces with a library rather than an elicitation of competences necessary for sustainability and maintenance, two points can be made relative to the problematic. The first is that the necessary technological competences or rather facilities can be inferred. The editor seeks a complexity suited to editions in repositories (objective three), search facilities and interfaces. The second is that once again, the editor seeks assurance for these things from the library before welcoming a support system (aim).

Further considerations are then evidenced which must be included in the preliminary discussion. He suggests that migrating to a repository might demand that editions be reprogrammed to technical specifications which would threaten the autonomous and creative process of editors.

Relative to the objective at hand it is clear that autonomy and creativity are processes necessary to editing. Editors then seek competences from a support center that allow these to flourish. Relative to the objective that such a support center exist in a national library, technicians must have competences of technical flexibility and a willingness to try new technologies.

In the public realm of a national library, the autonomy and creativity existing in a support center for editors adds value to the library itself, creating richer content and functionality. The existence of such a center also draws more patrons (scholars) to their library and creates more discussion around their content. Transformative actions which could occur are to retrain their staff to support creative technology, encourage them to embrace the autonomy of the editorial process, while being open to support where necessary.

Reflexively I was affected by this evidence as I learned more about the editorial process, as well as the personality and vigor in which editors are intertwined with their work. I interacted with the participant in an empathetic way and was informed by the elicitation of these hesitations and necessary competences.

A final hesitation was that the editor must not be tied down to one library where content was related as in the case when an editor is dealing with several manuscripts from various libraries. This really corresponds to the first objective, since autonomy is a need for the editor.

After the preliminary considerations are discussed, the editor evidenced that library content is an important facility for their work and would welcome access to it through a support system. A content related resource he saw that might be useful would be both source material and context material. As an example he cites the national library's online newspaper collection. He said it would help editors if they could create links between their annotations and newspaper clippings.

In answer to the third objective it is clear from the evidence that a support system provides facilities to access broad content. Content is obviously the starting point of digital

scholarly editions. It is also the area in which national libraries are strongest. This also corresponds to the aim since it shows one vital way in which editions can be supported and sustained into the future.

As public value statement, highlighting and interpreting this material for the scientific public is the very reason editions are created. It should be noted that from the evidence it is not clear that there is a need for a great transformative project since librarians and editors already collaborate with regard to content to some extent. However expanding content would obviously enrich the context of editions and thus they would be of greater public value.

Ranked as first importance are facilities which could support the scholarly community. These facilities included an integrated editorial tool (combined with the XML infrastructure) and the competence to handle economic sustainability.

Relative to the aim the integrated editorial tool makes it easier for the researcher to pursue his current processes of editing and to collaborate with other editors while economic sustainability creates a stable environment ideal for editions to flourish and develop toward their dynamic and ongoing potential. The competences and facilities to provide these needs should be cultivated in order for national and public libraries to support editors.

The priority given to these competences is in itself a value statement for the public. It should be noted that the center has plans for their development. As a transformative action then it might behove the public surrounding the national library to search for a balance between support and respecting autonomy.

The interview ends with what might be taken as a mandate. The editor highlighted the precarious and even fragile position in which editions currently find themselves. He point to certain funding initiatives which used to be devoted to the making of editions but which are now being geared to online archives. He suggests that this trend can be seen in other places as well. He says that the editing of texts of historical or literary importance is in great danger if not already gone. In his own institution he says that editors are forced to apply for funding for new technological features and do editions on the side. It is clear that a new movement for or voice on behalf of the classical scholarly edition is needed. It can be seen from this interview that issues exist which would have to be worked through before libraries can be that necessary support but certainly a support is needed.

4.2. National Library

The interview that comprises this part of the case study aims to gather data which answer the research question and see whether a support system such as the one described in the research aim and consistent with the conditions laid down in the first interview can be hosted by a national library. The reasons for choosing a national library for the support system have been mentioned before. Briefly they are these: national libraries are the procurers and sustainers of national textual cultural heritage and they (in the modern digital world) play a role of transmitters of digital textual scholarship.

The primary purpose of the interview with the national librarian in answering the research question and achieving the aim is to see whether the national library are able and willing to meet the needs laid down by the editor. Thus in order to achieve the aim, "To trace a plan of ongoing support and services for Digital Scholarly Editions based in a public or national library with an aim to facilitate researchers who wish to produce digital scholarly editions in their current processes especially in areas where their needs are insufficiently fulfilled and in a sustainable way in order to allow the self-perpetuating nature of their textual scholarship in the future with special reference to ongoing annotation and to bring added value to the library," and the objective concerning facilities and competences, "Develop an understanding of what competences are necessary for public librarians to meet the needs of Scholarly Editors, i.e. those who are knowledgable about the specific fields in which the Digital Scholarly Editions are situated, those who are good researchers and good at guiding research projects," carried more weight than the other two objectives. Questions were also asked relative to the current state of the edition and the librarian's understanding of the needs of the editing community, but these were relative to understanding what facilities and

competences the library could offer editors to meet these needs and attain a good state of the edition.

Again each of these categories (state of the edition at the library, the needs of the editors as mentioned in the previous interview and as understood by this librarian and the functionalities of the librarians which may be of help in creating a support center for the editorial institutes) shall be analyzed from the point of view of the three criteria: where role does each piece of evidence play in achieving the project (as seen in the guiding concepts), what moral quality or value statement can be made for the public (including other library patrons, stakeholders and the national public at large) and what transformative action can take place, and from a reflexive vantage point, how did I as a subject and my personality affect the transaction and whom did I wish to benefit.

As a preliminary it should be stated that this interview did not attempt to bring the conditions of the editor to the door of the librarian. Rather it strove to understand what conditions the librarian would need to see before undertaking to support editors as described in the research aim. It is understood that both institutions have proviso's which must be met before a support system can be achieved. It is a partial goal of the practicality of the analytic framework to bridge the gap between the obstacles described by the librarian and necessary state of things required for the fulfillment of the research aim.

In connection with the considerations about the two parties coming to terms a not shoulde be made about the interviewees stance about the project in general. At the beginning he saw no role the library could play in supporting scholars but by the end he had laid out a viable project that would involve collaboration between the two parties.

As a library that did not have a special purpose to facilitate editions and the idea was new for him. The librarian played the role of a data curator within the library and primarily looked at editions from a data perspective although he placed considerable importance on the content or corpora of the library for editions.

This stance with respect to the project was in a sense promising. Although he did not see that there was a state of the edition in the library, like the first participant his role in the library reflected technological (data) and scholarly (content-based) components. These elements also exist within edition-creation.

The evidence of the second participant made a strong impact on me and I had to reframe several questions. It was clear at this point that there was a significant gap between what the library currently had on offer and the needs of the library. I wished to benefit the scholarly community but it was clear that much would have to change in order to achieve the project.

At the beginning he was reluctant with respect to the project of library facilitation of editions, an understandable attitude to a new proposal and one in which he stated was not in his area of expertise. Throughout the interview however this hesitancy was overcome as he traced out a concrete plan as to how the library could facilitate this group of researchers. However, as the editor's qualms regarding the infrastructure geared toward mass digitization lay at the heart of the plan, his proposal must be taken under advisement by the editorial community.

However the librarian did show a great deal of good will and willingness to help editors and to give them a very real place in the library. There is therefore a great deal of hope especially that the two parties could solve their differences especially with regard to the sustainability of the present collection of editions.

State of the Edition

This section of the case study sought to answer the research aim relative to the objective, "Come to know what the state of editions are which indicate the success factors of Digital Scholarly Editors such as more collaborative editing projects, more online publications, and projects which tend to perpetuate themselves and attract funding." In this interview the investigator sought to understand how digital scholarly editions were situated in the library as well as the participants views and attitudes toward them and how he thought his library could change to achieve the success factors of editions.

In the first evidence the librarian distanced himself and his library from supporting digital scholarly editions, which he said was a new idea to the library and that therefore the state of the edition in the library was non-existent.

Relative to the project this was not encouraging. It must be seen as a starting point to achieving the desired support system rather than a prohibition of any potential collaboration.

The value statement for the library is that a cooperation with digital scholarly editions brings richer content, usability of the content and a higher scholarly profile in addition to the success factors listed in the previous interview. In other words the librarians, stakeholders, library users and the general public surrounding the national library must be made aware of the intrinsic value of editions and the benefits they would bring to the library through a support system.

Again in response to the reflexive criterion, a transaction and interaction occurred since my proposal was influenced by my desire to achieve a support system which was a new idea to him and had an affect on him and his response affected me since I had to modify my anticipated questions. I desired to benefit the library here because of the potential added value of collaborating with digital scholarly editors. I also wished to benefit the digital scholarly editing community because I believed that the national library was the best source of support for them.

The participant next evidenced that they do not collaborate with or work with digital scholarly editors and he found the study more pertinent to university libraries. This suggestion was not pertinent to the study since university libraries server their university libraries almost exclusively. It is not to be thought that they would include independent research centers among their serviced users. For this reason a public library like the national library is a better choice for support.

Relative to the project this policy is the opposite of its aim of an integrated and comprehensive support center within the national library. In order to achieve that aim the fact that no place presently exists for dse must be seen as a starting point for the creation of such a center. Furthermore the library must be convinced of the advantages of meeting dse needs, starting by recognizing their current state, their success factors and seeing a place for them within their library. This is a fundamental condition which must be achieved in order for the research aim to be achived.

As a subjective participant in the exchange, I was unsure of how to proceed given such a broad rejection of the project but proposed to think of the project hypothetically, wanting to see what kind of support he would be willing to envisage with a little distance.

In the next evidence he pointed to his institutional mission as the reason for not getting involved in this type of project, saying that they are only focussed on collecting literature in the official national language and would only be interested in digital scholarly editions published in that language. It is noteworthy that this type of data is intently context-bound and therefore is aptly dealt with by Critical Ethnography. Interestingly the digital editor also said that his institute worked primarily with the official language of the country. Thus it can be seen that the two contexts collide.

Relative to the aim and objective of this section, the participant appeared to believe that the purpose of the exercise was to ingest editions into their library. This is not the case or at least may be only partly the case. The aim is to create a plan to build a support center for digital scholarly editions which aids them in their current processes and allows them the life-cycle intrinsic to their dynamic nature. Including editions in their holdings may or may not be part of that but it is not the primary purpose.

Again the value statement must be for the public in the sense in which the national library is a public entity. The existence of a support center for digital scholarly editions within the national library enriches the library because it allows them to participate in the new direction of textual scholarship in their national language even as they have a tradition of serving scholars of paper based literature and editions.

Reflexively I was pleased that the two participants espoused a similar mission statement: that their content should be in the national language. This seemed to be a point of common ground. I thought it was more likely that the library would support scholarship in their national language.

Needs:

This section strives to achieve the research aim by meeting the objective, "Identify and describe the tools and needs necessary for Digital Scholarly Editing such as access to content, richer tools, encoding and mark up, better and more collaborative annotating, easier search and browse facilities and interfaces." In this instance needs are only sought to see what the librarian's attitudes were toward the library's needs and how the library would deal with them without yet looking directly at competences.

The interviewee discussed two primary ways in which he could meet the needs of the editorial community which in some way answered the needs listed by the editor. One was with the library's content (digital and paper) and the other was preservation.

With regard to content, the expert knowledge of their collections was the first thing he mentioned when asked which roles the library could play in order to facilitate digital scholarly editing. Two things should be noted here. The first was that the editor listed content as a need both as source material for editions and for contextual linking to annotations.

While doubtless the librarians would use their expertise to facilitate collection usage for source material, further discussions must be had regarding linking the digitized collection to editorial annotations. The second thing that must be noted is that digital scholarly editors are in themselves experts in the area of source material they would like to use for their own editions.

In order to achieve the aim of supporting editors in their current processes both source material as well as librarian expertise of the collection are elements of the national library that are relevant to these processes since well selected source material (fitting the succcess factors listed by the editor) is the foundation for every edition. This need certainly answers the objective at hand and was one raised by the editor.

The public moral quality statement is that editing well-selected content enriches the library user's experience of the collection, promotes scholarship and (by showcasing the library's treasures) has the potential to attract funding. The transformative project is for the library to include the content as well as access to people who have expertise of that content in the support system.

In eliciting this response, I was empathetic but also had a lively interest relative to the aim of supporting users since providing content and expertise is a part of my aim. I wished to benefit both the library community and the editors.

The other aspect of the editors' need for content was evidenced by the editor: linking contextual material to the actual editions. This was a need specifically stated by the editor. The library evidenced that all digital material was available to the editors.

Relative to the general aim, this is a more detailed way in which the library is willing to support the editors in their processes. In order to achieve this aim digital and contextual content should be centralized in the support system. Furthermore this evidence meets the objective at hand since it foresees a need of the editor which they themselves mentioned and espoused a willingness to provide for it.

The value statement again exists relative to the library as a public body. Providing digital and contextual source material to the editors is good for the library since it encourages links between objects in its collections, raises awareness of their collections and gets their users involved. Should the editor's hesitations about the library's digital content be satisfied, transformative actions may occur by aggregating the collections to the supportive system and by raising the awareness of funding bodies who are interested in seeing knowledge presented in new and creative ways with respect to the support system.

From a subjective perspective I was pleased to hear that the library was offering resources which corresponded so well with the user's needs. I felt that there may be obstacles to overcome in light of the editor's hesitations about the state of the digital content. However I saw this as a subject for the preliminary discussion. I sought here to benefit both the library and the dse community.

The librarian also saw the library's large digital collection as a resource of his library which could correspond to user needs. As the editor had said, this type of resource played a different role in libraries who mass-digitize than for editors who look at one text in detail. The further problems to be overcome for editors where mass-digitized texts are concerned are dealt with later.

Relative to the research aim, providing a large amount of content within the support system meets the aim because it gives them many choices and a great deal of contextual material which can act as details in the editing, but it is essential that a curator be made available to find those details. Otherwise it is be difficult for the needs of editors to be met and the research aim will not be easily achieved. Relative to the objective this was not a need evidenced by the editor but it is connected to one. Provided the digital content is provided in a format that is usable by the editors and there a curator is available in the support system, this objective is also achieved, although the discussion of the curator belongs in the following section.

The public value statement is that opening the doors of the collections to editors improves the value of the editions and thus of the library provided that someone with collection expertise is available for editors and provided that the digital files are appropriate for editions.

Reflexively my sense of hesitance about whether the needs espoused in the previous interview did not dominate the interaction, rather I saw his representation as unique and original and tried to listen empathetically and ask as many questions as possible. Here I sought to benefit the project itself with as rich and broad a view as possible.

The next need of editors which the librarian evidenced was that of storage and sustainability of the collection of editions, hereafter referred to as data. He mentioned as a facility an online interface where all the library's holdings are kept. This would provide easy storage and maintenance to the editors but also access and usability of the library's content and the ability to link their texts to others within the interface. Two conditions must be met first. The interface must be adapted to editions before being included int the support system. They have to be made more complex especially in their searchability. Further limiting specifications must not be imposed. In adapting the interface for the purposes of the system the broad spectrum of technologies must be supported and be usable within the interface.

Ease of storage, accessibility and usability enhance the dynamic nature of editions and therefore the inclusion of an interface which supports these functions, help to meet the main aim of this thesis. Further maintenance of the collection was an important need listed by the editor. These functions support that maintenance and therefore this evidence helps to meet the second objective.

In reference to the project, ensuring the preservation and permanence of the collection (or as close as possible) is a key need. The editor listed this as the primary drain on the resources of the institution. Also preservation and maintenance of the collection are vital for proper upkeep of the editions until the facilities of perpetual and social annotation and apparati have been developed for editions.

In answer to the second criterion, a public value statement is that dynamic storage of editions and good searchability of the library's collections would provide a more easily maintained and richer collection of editions which would allow the library's public easy

interaction with editions (given the permission of the editors). Maintenance of the collection would procure patrimony for the future.

Reflexively I was more active in eliciting needs and ways of meeting them with regard to maintenance and sustainability because of their importance to the project. I asked leading questions and interacted more with the participant. My aim was to benefit the editorial community, the library and its users, but foremost the editorial community.

When asked whether he had ever surveyed the needs of the editorial community, he referred to the research community at large. The librarian next evidenced that they had conducted such a survey when they began digitization of the collection. In compliance with this survey mass-digitization had been done resulting in high quantity but poorer quality. In other words the OCR was poor and may not be appropriate for digital scholarly editors.

Relative to the project the existence of unsuitable digitization for the production of editions in the library does not further library assistance for the editorial community. In order for the aim of supporting editors in their current processes in order to achieve ongoing sustainability the OCR files which the editors wish to work on have to be remediated. This may mean that a few texts would have to be rescanned unless another solution can be realized between the two parties.

The public value statement here must be made relative to the library stakeholders responsible for the digitization of texts. While mass-digitized texts are in themselves good for the library, scholarship on a smaller portion of texts digitized in a high quality way is also good for the library since it draws attention to important works in their collection. The transformative action that could occur would be for the librarians not only to provide access to the high quantity of texts but also to give editors the facility to re-digitize to a higher standad the fewer texts that they wish to edit.

My role in the discussion was more active in this evidence since I was already aware of the problems of mass-digitization since they were mentioned by the previous participant. I was eager to understand the library's viewpoint in this regard. I asked leading questions and interacted in an empathetic way.

The national librarian next evidenced that more money would be needed to provide better OCR, a good thesaurus and perfect metadata. The editor had also mentioned finances as an important need. It should be noted however that editors do not need quality OCR, thesauri

and metadata for a large number of texts since they tend to work on one or only a few texts at a time. Therefore the amount of money necessary for this part of the project is lower than first projected by the librarain.

The public value statement is directed again to the library. Providing a smaller amount of money to support editors in creating small scale, quality digitization for the purposes of their scholarship would create good public attention (they had received bad press for their mass-digitization) for the library while achieving other library aims such as public usage and accessibility of texts from their country. The transformative action that could occur would be for the library stakeholders to create a financial plan for the project, identify funding bodies, submit a proposal and carry out fundraising in creative ways for the project in cooperation with their editorial users.

Competences and Facilities:

This section of the interview strove to achieve the aim of a support plan that would aid editors in their current processes and help them to obtain sustainability in keeping with their ongoing, dynamic nature by eliciting data which responded to the third objective, "To develop an understanding of what competences are necessary for public librarians to meet the needs of Scholarly Editors, i.e. those who are knowledgable about the specific fields in which the Digital Scholarly Editions are situated, those who are good researchers and good at guiding research projects." This section especially seeks competences and functionalities relative to the need evidenced by the first participant.

The librarian first evidenced that the main competences of up-to-date IT, funding and Library services would come better from a University Library rather than a national one. Relative to the aim, a public or national library is a better source of support for the project since it is in the public domain (public intellectual heritage). Also centralized support would be more beneficial to editors since it would yield an integrated package with fewer disadvantages than splitting preservation and resource expertise from IT, funding and services. This evidence suggested that the library did presently have sufficient services to meet the needs of their editors.

A public value statement is that improving library competences and facilities to achieve the needs of editors and keep the service in house would improve the quality of the

library, bring in more users and more funding. A transformative action might be to engage the services of a digital curator (whose functions and competences are listed in Appendix 1) who would have the expertise to accomplish the same things as a partnership with a university (non-public) library.

Reflexively I interacted with the participant empathetically as I was aware that a shift was occurring in his attitude toward digital editors. He had moved from stating that there were no services for editors in the library to searching for a viable solution. I entered into his vision of how support services could be attained and looked forward to his next evidence. I wished to benefit primarily the editorial community but also the library as I saw the support service within the library as beneficial to both.

The librarian next evidenced that the library's OCR and XML resources could be available to editors and that the library would be happy to store and maintain digital editing done on OCR. If the conditions mentioned above regarding the quality of the OCR files and the re-digitization of the few files needed by the editor, this proposal could not only benefit the project by supporting editors in their current processes by providing content as well as their future sustainability through storage and maintenance but also benefit the library's digitization project.

The public statement of moral quality is that provided the editor's requirements about quality OCR are met, giving access to all digitized files would help ensure the continuation of scholarly editing and would certainly benefit the library. This is not precisely what is meant by a support system but it is a proposal that values editorial work and could potentially gain funding for them. A transformative action would be to only include the OCR in the support system for reference while also including the means to re-digitize whichever texts they needed to produce editions.

I was encouraging to the participant in this elicitation since, again, it showed the library's view of how support could occur and indicated a greater commitment to the project.

The next facility the library evidenced was that their online site might be used to store editions, where they want to put all of the various content that they have from newspapers to magazines to books. The benefit to the project of an online site for storage is that it would provide greater accessibility than a repository and would be easier to maintain. This would not work as an editing environment but would serve to store editions in a way that awareness of

them could be raised. It would be necessary, however, given the editors' needs for autonomy that editions be stored in a part of the site dedicated only to them and that the editors have control of it.

The access and usage of editions which would be gained for the scholarly public and the public at large surrounding the library website for editions to be included there. A transformative action would be to meet the searchability needs of editions on the site and guarantee autonomy for editors storing their work on the site.

From my reflexive perspective I felt hesitant about whether the editorial community would agree to this type of storage given their need for autonomy but I did not discourage the participant in his evidence since this brought up another resource that could be considered in building a support center. This evidence benefitted the library and its patrons the most and the editors within the scope of the project the least.

The library also offered the XML, the OCR, the metada for all kinds of digital humanities research including editions. Given the preliminary discussion about the quality of such files necessary for editing, expertise in the content available in this resource (given the scope of files) is a competence which would aid editors in creating new editorial projects. Thus such a competence would help achieve the aim and objective at hand.

Ensuring that people competent in the content of such files are available in the support system would raise the value and quality of the library not only for editors but for those members of the public wishing to access the large digital content.

From a subjective perspective while expertise in the content of such files would help projects being created, I was still aware of the problem the editorial community might have with the quality of the files. I was also aware that at this point the participant was well disposed to support editions with the facilities available in the library.

The next facility the participant evidenced was a virtual environment in place for textual linguistic and literary scholarship as well as the competence to administer it. This facility corresponded to a similar virtual editing environment housed in the editorial institute. While the editorial community would probably prefer to use their own tool, the environment evidences that the library has the competence to support the tool possibly in a virtual support

environment where editors could receive other types of aid (content related expertise for example) from competent individuals thus achieving the third objective.

Linking the editorial tool to a virtual environment within the library has the potential to link editor to all sorts of library services contributing to the quality and ease of edition-creation which enriches the library's public heritage.

Reflexively I did not frame my question to elicit this resource but its broad application impacted me. It seemed that this resource or a developed VRE like it had the potential to deliver any library competence to the editorial community virtually. Expertise in TEI, access to funding opportunities, online publication and copyright information, content expertise,etc. Could all be delivered through such a virtual environment. In my investigation I wished to benefit the editorial environment.

The next facility evidenced was that of the national library's corpora and the competence of expertise in it. In a way the corpora is the cornerstone of libraries supporting editorial communities since editions are built around text. A quality digital corpus is therefore at the base of digital scholarly editions. Any support center for editors must be based on such a corpus. Thus (given the discussion about quality) this facility and competence meet the needs of editors listed in the previous interview and help achieve the research aim.

Access to such a large facility along with the competence to navigate it increases the usage of the digitized library, a chief aim of any library, and thus increases the value for the stakeholders. The transformative action would be to ensure a person of such competence (like a digital curator) would be available within the support system as well as relevant funding.

My stance at this point was engaged and interactive given the possibilities that access to a large corpus within a support system could offer to editors.

The librarian also proposed a partnership between national libraries, university libraries and editor, each bringing its own competence. He saw this as the ideal with the national library bringing content, the university library bringing the IT, and the editors their scholarly expertise. These three competences are indeed those most necessary to meet the editor's needs. However university librarians are bound more tightly to the patrons of their universities. Furthermore editors have dual expertise in scholarship and technology. Their technological lie more in the areas of preservation, maintenance and stability. From the evidence above it is fair to say that the national library has the competences to fill these needs

with input from the editorial institute. At any rate it is clear that these competences meet the objective at hand and therefore also the research aim.

Partnering with a scholarly research center and meeting their needs in this way raises the scholastic quality of the library in itself, for its patrons and stakeholders. The transformative action that could occur would be to benefit from the expertise of the university librarian in terms of editing technology and possibly to train a technician with the same expertise who would provide support within the virtual support environment.

My personality did not affect this evidence, accept through active listening. The party I most wished to benefit was the editorial community.

The librarian next evidenced that they would be willing to offer the facility of their servers to editions created from their files. Given that it is necessary that editors have access to their editions not only in the library but also within their own institutes for the sake of their autonomy, this service would ensure the sustainability of editions fitting their natural life-cycle and would thus meet the aim and objective at hand.

Helping editions to achieve their natural life-cycle is of great worth to the public, since it means that not only current users can collaborate in editions but that the public conversation surrounding each edition's text can be passed on to future generations.

The library next evidenced that its capacity a national heritage library could offer the service of ongoing sustainability in a stable infrastructure to editors. A sustainable infrastructure would above all else allow editions to be preserved until ongoing annotation is properly developed and more than any other evidence meets the research aim and the editor's needs for the purposes of this project.

For editions to be included among protected heritage texts and to achieve ongoing sustainability guarantees all the scholarly value of editions to the public. The only transformative action that could be required would be to see if the editorial community would agree to ingest their texts into the infrastructure. Given the preliminary discussion of handling complex entities like editions and of autonomy, it does not seem likely that objections would occur.

My reflexive stance was positive and approving since this was the first time someone had mentioned a facility which would ensure ongoing sustainability.

4.3. University Library

This part of the instrumental case study approached the research question from the perspective of an institute that was both scholarly and service-centered. It looked for a model of a library that supported its editors in their work. Therefore it strove to answer the research question by achieving each of the three objectives relative to the research aim, "to trace a plan of ongoing support and services for Digital Scholarly Editions based...with an aim to facilitate researchers who wish to produce digital scholarly editions in their current processes especially in areas where their needs are insufficiently fulfilled and in a sustainable way in order to allow the self-perpetuating nature of their textual scholarship in the future with special reference to ongoing annotation and to bring added value to the library." Thus the questions were primarily interested in how the university librarians supported editors' needs in order to build a model of support and services and see if it could be applied to the case in the public realm of the national library supporting an editorial center.

State of the Edition

This section looks at the first objective, "to come to know what the state of editions are which indicate the success factors of Digital Scholarly Editors such as more collaborative editing projects, more online publications, and projects which tend to perpetuate themselves and attract funding," relative to answering the research question, "how can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future and how can a public or national library can provide this support?"

The university librarian's stance relative to what was going on in the library regarding editions (the current state of editions) was one of service and support and he answered the questions from that perspective. Like the first participant, he began with a discussion of the tools which supported edition creation at his library. He said that the support center provided expertise and accessible TEI (Textual Encoding Initiative) within VRE's (Virtual Research Environments) which allowed scholars to produce their editions. Thus the support center has successfully created an environment for researchers to create editions which combines the positive aspects of two tools mentioned by the first participant. So the fact that the environment is virtual allows for broad collaboration while the application of TEI inside it

allows for rich annotation. These are success factors. Support in the application of TEI is an even stronger factor. This evidence answers the first objective relative to the tools necessary for edition-creation, going beyond the previous evidence by combining the two tools and providing support. This tool answers the research question by showing how editors can be supported in their current processes with both technology and expertise.

The public value statement for public libraries is that this is the best paradigm of a tool for edition-creation. Having TEI included in a VRE and backed up with the support of someone with expertise allows scholars to create editions at their best. The transformative action that could occur would be to a) bring the editorial tool up to speed within the support system by combining a virtual/online environment and TEI/XML and appointing someone internally who has expertise in these technologies or by hiring someone new to run the center.

My subjective stance was one of great interest. Clearly this participant supported a highly functioning support service and, as I wanted to know precisely how it worked, this interview was more highly structured. I wished to benefit the national library's potential support center by seeing what tools would be best applied there and most importantly the editors in the research center.

He next evidenced that his center supported editors throughout their use of the VRE. To him the success factor was that the scholarly editors were able to perform their work. His role was to provide the tools. This process of support is both a success factor, describing the state of edition (objective one) but also shows how the participant meets the needs of the editors and achieves the aim.

The public value statement may be phrased like this, supporters working closely with editors is a general principle of quality edition-creation. The transformative action that could occur in the editorial support center hosted by the national library (the project) would be for the two parties to agree to work together, for the editors to realize that they could benefit from a well run support system and for librarians to realize the value of providing a support system to the point that they would be willing to provide someone with the role of supporting editors, especially with the VRE-TEI tool

My reflexive stance was extremely positive. These success factors were the marks of a well-run support system and I was disposed to view this librarian as the expert from whom a

plan for support in the other situation might be carved out. I wished to benefit the project, scholars who use the national library and especially the editorial community.

He next evidenced a content-based project on Classical material. The success factor was its international collaboration. Another success factor was how TEI worked within the VRE on a translation. These success factors again went further in answering the research question and the objective at hand.

The evidence was of public value since it showed that the dual tool could be used in translated works within the provenance of the national library. The transformative action would again to apply this tool to a support system. Editors would then have the choice to work on translated texts of national provenance if they wished.

My reflexive stance was again empathetic interaction as well as a more detailed approach consistent with the expert character of the participant.

He next evidenced concerning diversification that the general library policy had been that only scholarly works on the library holdings could be stored in the repository. He said that editions had different needs since they often represented texts from other libraries and even other countries. He suggested that editions should have a separate place in the repository. Thus two success factors in this library's state of the edition were international collaboration and a place in the repository fitted to the needs of editions.

To the public of the national library international collaboration is highly valuable although texts of other languages are not. A separate place in the national library's repository for editions would be of public value both in itself by preserving national patrimony and by easing worries of editors concerning ingesting their editions there. The transformative action then would be to create a separate place in the repository specifically for editions and catered to them.

As a linguistic scholar I was highly interactive in the elicitation of this evidence, however I was aware that the edition-specific place in the repository was of more value to the general project of the thesis given that the national library's mission is to ingest texts of its national language.

His evidence showed that, as a technical supporter, a library project manager and a professor, he saw enabling scholars to achieve their editions was a mutual success factor, of the editors when they had achieved the skills and knowledge necessary and of the center when they had imparted these skills and knowledge. The resulting success factor was in a sense the edition itself. The facilitation of the editor is the most fundamental condition of the aim. Therefore the evidence answered the aim and reached the objective by eliciting such an important success factor.

The attitude of mutual success in achieving editions is basic to a successful support system and is therefore of public value to the national library's patrons and to the digital editing community. A transformative action that could occur would be to raise awareness to both parties concerning the benefit of a well-functioning support system.

He next evidenced that the experts in terms of content and the type of edition were the experts themselves. The success factor here is the autonomy given to the scholars regarding the selection of the types of projects they would like to perform. This is one answer to the research question which differs slightly from the evidence in the two previous interviews who thought that library collection curator's expertise should be included in the support system.

It is of public value to give scholars as much autonomy as possible in their scholarship since by all accounts they have a great deal of expertise in their subject areas. However it is also of public value that the library curators who are experts in the collections themselves be available to assist scholars in finding the best contextual content where assistance is helpful. The transformative action that could occur would be to establish the scholars as the leaders of their projects and define the support system as an aid available to editors rather than an authority they must follow.

Reflexively I was surprised by this evidence given the well-defined expertise of library curators concerning their collections. In listening closely I saw that both the autonomy of the university library's model and the inclusion of collection expertise in supporting editors could coincide.

Another success factor of the virtual research environment was its dynamism. While the editions are housed in these environments, they are dynamic. Editors may annotate socially and edit collaboratively in an ongoing way with the collaboration of multiple editors until the edition is completed and stored in the repository. The librarian espoused that this is

the type of edition that attracts the attention of the scholarly field. Therefore from many perspectives this factor answers the objective at hand and brings us a step closer to answering the research question regarding ongoing dynamic editions.

The dynamic nature of these environments belongs in any public discussion of editions. The problem at hand then is not to create dynamic editions but to create sustainable environments so that the scholarly discussion can go on over time. This should be of interest to the public sector since it would allow for the transmission of textual heritage. The question of repository vs. Environment may continue for some time, but certainly the dynamic environment is of huge significance for the edition. It should be noted that the research institute also treated editions dynamically through their online tool.

I note the fact that two editorial institutes focus on dynamic scholarship. The importance of dynamism in itself to editions is worthy of separate note. The best way to incorporate them into an editorial support system should certainly be discussed and developed. The university library seemed to have developed dynamism the furthest with their VRE's but the next steps must be taken to extend the lifespan of the "hot" editions so that they can continue to be annotated into the future. It may be that the repository or the infrastructure has to be developed to support ongoing editing. This is certainly a matter for future research.

He next evidenced concerning funding that every project which was sustained in his virtual research environment (and later in the repository) had successfully applied for funding to create their editions. Since funding was such a drastic need of both of the previous participants this was a hugely important success factor which answers the research question relative to this support center.

A system of acquiring funding would greatly improve the success of editions which is of value to the national library and its public. The university model must be applied to the independent editors. Some sort of business model, together with the tapping of innovative funding sources, must be worked into the support center as a transformative action.

Again I as the investigator felt that I had found a solution to a very difficult problem following this evidence. However it was clear that the model would not transfer exactly given that universities have their own sources of funding while public bodies have others.

Public funding for editions is an area that must be exploited. Digital scholarship concerning historically important texts is one of the greatest safeguards for the survival of textual heritage since an ongoing scholarly conversation develops around the literature which continues into the future. This is an area of vulnerability as public funding previously used for editions is being diverted elsewhere at present. The case must be made again for editions to benefit from public funds. The more actors who can be involved in this work the better.

The interviewee next brought up a point of importance related to the needs of the editor when asked about the library's digitization policy. He evidenced that, while his library had participated in some mass digitization projects, they recognized that digitization on demand was better suited to the needs of editions. He pointed to the editor's scholarly expertise which implied autonomy in content-selection. This policy not only answers the research question of how to best meet the editor's needs but also side-steps the difficulties that existed for the first participant regarding the quality of mass-digitized texts.

Text digitized individually can reach a high level of quality. This is of public value since editors are empowered to produce quality editions for public use. A transformative project would be for a digitization on demand faculty to exist in the support system alongside the mass-digitization project.

Yet again I was affected by the participant's expertise and solution-oriented stance. This model would benefit the dse community and the library public but would not be of benefit to the project proposed by the second participant to clean up the lower quality mass-digitized texts.

The next evidence was that fonts from the 19th century onward did quite well in mass digitization and produced perfectly usable OCR. He said that only the more archaic fonts required careful attention for usable OCR. This evidence renders a much wider base of editable texts and therefore fulfills a user need.

Usable OCR records are of value to producing editions and are thus of value to the library public. It is of great value to the library that editors can make use of their mass-digitized texts post 18th century. A transformative action would be to provide digitization-on-demand for earlier works and provide the files for later texts that have already been digitized

Subjectively this evidenced state of edition was a relief since it replaced value on a large portion of the national library's mass-digitized data which, should the editorial community agree, would reinforce the mutual aim of both parties.

In discussing the structure of the support center for editions and scholarly projects, the university librarian described the inner hierarchy of his center. The university has a department dedicated to research and innovation, he was an employee of this department offering technical support as a project manager to the support center within the library. In this way his office meets the technical needs of editors and researchers and answers the research question by offering high quality technical support.

Technical support is of high public value for the support center, but following the interview of the national librarian, it is possible that there is currently no role for someone with expertise in edition-related technology. A transformative action would be to train or hire someone to fill such a role. It must also be noted that technical support is only one aspect of the needs of digital editors. Other services are also required within a support system which the library may find it easier to fill.

As an investigator I was aware that the national library had evidenced that they were not equipped to deal with the editorial technologies while my editing community were. I was aware that this part of the system may not be immediately transferrable.

The librarian evidenced that the VRE's were available not only to researchers from every faculty but also to the students. It is the policy of the university to open the data of the research that happens within the VRE's to the students. He said that professors use the content of their VRE's in their lectures. Opening editions to students meets the clause of the research aim to add value to the library. As a university library using editions for an educational purpose meets their institutional objective and thus raises its value. It also raises success factors of collaboration and the reuse of data in a way likely to attract funding.

A simialar public value statement can be made regarding the national library users that opening access to editions raises public awareness of national heritage, part of its institutional mission. Also relative to the editorial community opening the doors of their editions to the library's public raises awareness of their (editions') value and could attract funding. The transformative action would be to at least include a link to the editions' location on the library

website. The details of how to open access to the content of editions would have to be agreed upon between the two institutions.

Subjectively I was affected by this transaction since the continuance of editions into the future is of great value to me. Opening access to editions not only to scholars but also to the public would support the ongoing nature of editions. However this was not a need espoused by the editor nor a competence stated by the national librarian.

Continuing in his remarks on the state of editions in his support center the discussion turned to functions of the editions.Dynamism was first discussed. The editions are dynamic while in the VRE but are stagnant once ingested into the repository. A new edition can be created if it is checked out of the repository and re-edited but this is not ongoing-dynamism. This evidence took us a step closer to the aim of sustainable support consistent with ongoing and intrinsically dynamic nature of editions, but it did not achieve it. It did evidence some good success factors consistent with the objective at hand.

Ongoing editing is at the heart of the future of digital textual scholarship and is therefore of public value. None of the institutes had yet achieved it. If a support system were to develop a tool to either edit texts within the repository or to ingest a "live" edition in the repository that supported ongoing editing and annotation, they would attract significant attention and, probably, funding to their institution. The development of such a tool is the transformative project.

Reflexively I specifically asked the participant about this issue because it is central to the project and in the case study he is the expert of supportive systems. A transaction occurred since he stated the extent to which his system had achieved dynamic editing but not ongoing editing. I was affected by his evidence since this is a high priority need of editors and no one in the case study had achieved it. It is necessary to make a mandate concerning the development of such a tool in the support system.

Needs

This section answers the objective, "Identify and describe the tools and needs necessary for Digital Scholarly Editing such as access to content, richer tools, encoding and mark up, better and more collaborative annotating, easier search and browse facilities and interfaces," relative to the research question in a functioning support center. It compares the

elicited tools to those listed by the first participant and checks if they should be considered in a public support system.

In discussing his editors' needs, the admitted he was placed in a difficult position as the key provider of services within the support center. However since he was also an expert in editorial technology he was well-equipped to handle the challenge. This dual stance as support librarian and technical editor colored his stance and enabled him to discuss editorial needs from a unique perspective. As a service provider whenever he brought up a need he also tried to suggest a remedy. The section also checks whether the suggested remedies work in a public environment.

The first need he brought up was to solidify the methodologies and practices used by researchers including those relating to TEI usage into a resource that would help fulfill future researchers needs. Relating to TEI he said that the encoding language was very large and that only a small part of it was normally used by editors and that on an ad hoc basis so that the parts of his service's expertise were not integrated into a system for the users. This need and solution answer the objective at hand and also the research aim since learning from the experiences of the past make edition-creation easier.

Creating a knowledge base of practices, provides organization to editorial knowledge, fills the gaps in needs and promotes user autonomy. It is of intrinsic public value and especially benefits those scholars who do not have vast technical knowledge. This could be a way to aggregate editor's expertise so that they can learn from each other, a need evidenced by the first participant.

Next was discussed the editors' need to work from different locations. This is significant to the project because international collaboration and scholarly exchange are major success factors for editions. The interviewee assured us that through the VRE's scholars from near and far are able to work together on editions. In other word the VRE's can be fitted remotely.

This model fits quite well with the independent institute's expression of needs. Provided the technology was transferrable this would build on and improve an area where the institute already excels. Probably a three way partnership would be necessary to move these VRE's into the public domain and all parties would have to be agreeable to that.

This is another area where resource sharing would have highly valuable results for editors. The argument has to be made to the principle actors in the cooperation of the common benefit for providing support to editors in order to guarantee their sustainability. Sharing resources does not necessarily mean making all your tools and faculties available to all editors. Institutional lines must be respected. But in this case the plan would ask the university library to share their technical expertise in the area of VRE's with an editorial support center in a public or nation library since then all editors could benefit from it.

One need that was a major obstacle to the other participants in the forming of a support service did not seem to phase this library. When asked about funding he simply said that the projects were funded externally. He inferred that the financial problem his organization faced was sustainability within the repository. To counter this problem his group worked with researchers to ensure that all editions were completed before ingestion. The solution he saw to financial difficulties was to create a long term business model.

In comparison to the public discussion, the need mentioned here for more permanent funding was common to the other institutions. The editorial institution shared the particular problem of funding for sustainability. This problem did not exist for the national library since its repository was protected by the government a national heritage library. Storing editions there as part of a support service is a solid investment into the future of editions. As for the university librarian's suggestion of a long term business model, this is sound advice for sustainability but which funding bodies can be applied to is a different question. The national library certainly has access to more funding than an independent institution. Fundraising for digital projects falls into the portfolio of the digital curator. Drafting a sustainable long term business model would be one of his or her duties.

When asked about the previously elicited need for aggregation, the interviewee's stance was interested although he had not aggregated different editions to a common place yet. He made a few suggestions as to how aggregation could be done sustainably. He pointed to aggregation services such as the Europeana consortium (which aggregates texts but not editions) linking files from various institutions. But he also mentioned websites on particular subjects.

Neither of the librarian's suggestions had been incorporated into a working model for editions in the university library and therefore cannot be directly applied to the plan for a public support service to meet this need. However as models of aggregation in different areas

of digital humanities, it would be wise to investigate what aspects of these types of aggregates could be applied to editions within the framework of the public discussion. Thus the evidence did not directly meet the editor's needs.

Aggregation is extremely important to scholarly exchange and meeting this need would directly affect an answer to the research question. Aggregation of editions seems to be an underdeveloped area and also an unmet need among the editorial community. A transformative action would be to implement the means to develop aggregations within any proposed support service for editions.

Competences and Functionalities

This section of the interview achieves this objective, "to develop an understanding of what competences are necessary for public librarians to meet the needs of Scholarly Editors, i.e. those who are knowledgable about the specific fields in which the Digital Scholarly Editions are situated, those who are good researchers and good at guiding research projects," in order to achieve the research aim, "to trace a plan of ongoing support and services for Digital Scholarly Editions based in a public or national library with an aim to facilitate researchers who wish to produce digital scholarly editions in their current processes especially in areas where their needs are insufficiently fulfilled and in a sustainable way in order to allow the self-perpetuating nature of their textual scholarship in the future with special reference to ongoing annotation and to bring added value to the library."

The first functionality corresponded to a need he mentioned above, namely the need for a knowledge base integrating past experiences of the editing tool. The facility he wante dto impliment was that of standardization of editorial practices within the support center. The library has also created guidelines on how to create these transcriptions. Researchers know these guidelines already but the investigator can also advise scholars on how to produce these. There are many books and many reports on how to do the work.

A support center within a library which has clear guidance for editors on standardized best practices would be a great value for editors. It would save them the time and resources of looking them up. This would be especially the case for new editors. Many editors at the institution are seasoned in this field and would rather contribute to a standardized best practice knowledge bank rather than being in the position of needing guidance. A

transformative action would be for a support center to seek the advice of these editors in producing a knowledge base.

A knowledge base would be extremely useful to many editors both now and in the future. It would be very appropriate for the library to house such a collection of best practices within their support center. It would benefit the editorial community directly and the library public indirectly.

The library's center for copyright advice was next discussed. He said that his library offered the service of an copyright desk. Here scholars can both enquire whether the materials they are using are protected by copyright and also ask advice as to which is the best type of copyright for their own work.

This is a very current need and follows the guidelines of the project. The library has developed a good working model of how to handle the issue and prevent problems.One could easily fit into the support center and could be handled by the digital curator. It is a simply and cost effective solution and should be applied to the public libraries although in the case of editions.

It is doubtful whether one person needs to devote all their time to the subject in the case of the editorial support service. It would be enough to have the information available in the virtual center which could be backed up at any time by a knowledgable person (digital curator) who could handle individual problems as they came up.

The next editorial need he brought up was that of capacity. He said that his department was relatively small considering that they were trying to service all the faculties of the university and that it had gotten to the point that they had to limit the number of VRE's thus leaving many editorial needs unfulfilled. The solution to this problem seemed to be again one of finance.

This may serve as a word of caution to those of us wishing to build a support center for editors. It is important to realize what you can and cannot do. In the ideal world all the editors of a particular country could have access to support from a center within the national library using something like the VRE's, however the center must balance the capacity of its staff with the needs of its users. If needs always come first, new staff must recruited and trained and this process must be made financially viable.

When asked how the librarians in his center impacted editors he had two answers. The first was technological and the second was by introducing scholars interested in the same things to each other. This second almost liaising role had not been mentioned by anyone up to this point. However it is a huge advantage of a support center. As the staff members working in the center get acquainted with more and more editorial projects, they have more and more opportunities to bring editors together who are working on similar fields. This is a great facilitation of new projects, collaboration and sharing of expertise and definitely falls into the aims of the support center.

This service is highly effective and takes almost no time, effort or cost, yet greatly enhances the editorial community. It should certainly be adopted in the public library support center.

From my own perspective this was a highly useful suggestion and again reflects the unique stance of the interviewee as fundamentally a person of service and at that not only in the technical field. I think one can learn more than what model of operation to adopt from this interviewee but also something about the role and personal commitment that are necessary in the public support center.

A need of editors that had been espoused by both the national library and the editorial institute was the content expertise of the librarians. The university librarian on the other hand stated quite simply that in his case the editors were themselves the experts. This issue of who the expert is (the librarian or the editor) has been discussed above. Since in the case of the public domain the library wishes to offer this expertise and the editors wish to receive it, the university model is not applicable. My stance is that including personnel in the support center who have expertise (especially of a vast collection) is for the good of the project.

The librarian said that fundraising is a big discussion at the moment. He said that it had been argued that role of the curators should change a little partially to move away from the knowledge of the collections as such but to focus a little more of the process of working with these collections. So getting funding for digitization or editing and the transcription work on these collections is becoming a more important part of their responsibilities at the moment. He said that many of their curators are actually contacting potential funders and notifying researchers of scholarships.

This is a massively important need and response for editions. The role of fundraiser in the curator has already been suggested, but here is a working model. It seems perfectly applicable to a publicly maintained editorial support center in a national library with the exception that curators would be funding public funds and not scholarships. He also evidenced that curators were creating alliances between the library and commercial organizations. This is potentially a great source of income for editorial support.

The lack of funding for editions has them at their peril. This was evidenced by the editorial intermediary who evidenced that if editors alone were relied on alone for funding, they would not survive. Looking to the library for services and resources is a new way to look at many of the problems of editions but most especially that of funding. Here there is a concrete example of a library using its curators to open up funding for research projects. By partnering editions with fundraising, the largest threat to their survival and sustainability can be removed.

The librarian also spoke about the need for outreach and making sure that their work is also useful for a more general public. He said that there was some pressure on the library to make sure that their work is visible and that it's useful for people outside of the university. He said he thought that curators have to be more outgoing.

Another need which is specific to the university editors which his support center fulfills is providing aid in drafting what is called a data management plan. The funding sources require it. This is another case of a need well fulfilled by the center. If more funding is opened up in the potential national library's support service for the public editorial community this model may well have an application. From this perspective funders could well require this or other reports. Aid should be offered by the center, most probably by the curator.

When asked about what home is most appropriate for digital editions, he evidenced that editions move through various stages. He said that when they are still being worked on they should be in the institutions of the editors in order to be as close to the researchers who are working on them as possible. He said that they should be somewhere in a research environment in a dynamic environment...but at the point when they're finished then they need another home but he could not say what that home would be.

This is very valuable insight into the public discussion. In the case of the support center, in the case particularly of the institution interviewed, the edition should exist in the

institution in whatever format that may be. It would be beneficial if the dynamic edition, the one that is still being worked on, were in a virtual environment of some sort so that their process could be supported by the library's support. However once the edition is completed, it seems untenable to store the entire collection in the institution since they evidenced that this was too great a drain on their resources. It seems most practical to store them in the national library's repository since it has the greatest sustainability features. However suitable functionalities would have to be present to house an edition and a public dialogue between the two actors would have to be engaged upon both in order to maintain the autonomy of the editors and to move editions into the public domain.

In conclusion relative to the first criterion of critical ethnography the university librarian solved the research problem which derived from the concepts behind the problematic insofar as his role in the library was to facilitate digital scholarly editors. In answering the questions he traced out a method by which librarians can meet at least most of the needs of the researchers. The interview with the university librarian answered the questions which related to the aims and objectives, the parameters of the project to find support for the digital scholarly editor within a library.

In relation to the second criterion the university library has largely achieved an active support center within the library for editors who are members of the university so the public discussion are not mainly centered on the development of such a cooperation. Instead the discussion focusses on how to apply the principles behind the center to libraries in the public sphere especially so that a wider group within the editorial community can profit.

Subjectively I think the model in many ways can be transferred or conjoined with public or national libraries. However this model was built for the university public who have some different needs to editors in independent scholarly institutions. For example before a research team begins a project, funding is secured for it within the university. Funding sources are not so widely available to institutes or libraries within the public domain. Funding is a huge source of vulnerability among independent research centres and is among it chief needs. It is therefore one of the most fundamental resources needed in a support center. Apart from funding however the model which transpired through the interview is a good guideline in planning support for independent institutions.

5. Analysis

This section fulfills the action based aspect of Critical Ethnography. It traces a plan of action consistent with the evidence given by the three participants which shows how the answer to the research question, "How can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future and how can a public or national library can provide this support?," namely the research aim and objectives can be applied to the case study, the culmination of the three interviews listed above. This culmination consists of a plan to create a support system, hosted by the national library which fits the needs listed by the independent digital editing center, reflecting the facilities available at the national library and using the support center for DSE in the university library as a working model. It gathers the data analyzed through the analytic framework to go beyond the present conditions of what is available for a support system and suggests alterations to those conditions to achieve the best possible working model.

At the outset it should be noted that the participant from the independent research center and the national library had certain hesitations and issues which must be worked out before a detailed discussion of how to build such a support system can be discussed. The first issue is quite fundamental: are the two institutions willing to work together? On the part of the DS editor, there some issues surrounding the community's wish for the autonomy of their editions and processes especially where technology is concerned. Where ingestion into the repository was concerned, he expressed a wish to avoid applying to strict technological standards and also a concern about how well an environment geared to large data sets would handle DSE. Also he in general looked to his own institution to meet the needs of the edition. Thus before a plan can be created, the issues of the editor must be dealt with. Assurances on the part of the library should be made to maintain the integrity of editions and the autonomy of the editors who would use the system. Additionally the value of the system for editions must be communicated. The system includes answers to the needs they expressed: access to the collection with the support of a digital curator's expertise to open the doors to new, valuable projects, tools fitting their needs, advocacy, fundraising, communities of practice knowledge bank, virtually available experts on encoding technologies, etc. These and further benefits should convince them of the value to themselves of a service.

From the point of view of the librarian, up until now the library has not supported scholars in their work. For them too the value of a DSE support system must be communicated and the reasons must be given why they as a public institution ought to support DSE. The DSE support system is of value to the library because it attracts patrons, produces projects of intrinsic value to them, which attract attention to their collection, tend to attract public funding and allow them to bring access to information in a digital age. Furthermore as a public library the national library is the institute responsible for textual cultural heritage and the transmission of textual culture. From a digital perspective DSE is the current form of textual culture. These communications of value do not need to be over-emphasized as the national librarian espoused a desire to help the DSE community especially where scholarship on the library's digital collection was concerned. Rather it is important to focus this participant's attention to the areas in which the DS editor expressed need and also to gain his assurances on the points made by the editor.

Aim

This section produces a support system consistent with the aim of the thesis in a general way drawing from the information espoused in the interviews. At the outset of this thesis it defined the aim to be, "To trace a plan of ongoing support and services for Digital Scholarly Editions based in a public or national library with an aim to facilitate researchers who wish to produce digital scholarly editions in their processes in a sustainable way in order to allow the self-perpetuating nature of their textual scholarship especially in areas where their needs are insufficiently fulfilled and to bring added value to the library." This section accomplishes that with in a skeletal way.

Corresponding to the "plan" part of the aim, the section refers to the general framework in which the system is available. The details are left to the sections on the objectives. Throughout this paper the investigation has discussed various forms that support from a library could take. The evidence of the editor inferred a wish of independent scholarly institutions to maintain autonomy in their work as well as the areas in which support was indicated. The national librarian seemed to be well disposed to giving editors support which reflected their autonomy. The university librarian set forth a model of virtual support through virtual research environments. It seems that it is possible to contain all the necessary services and supports in a comprehensive virtual environment.

The section on the "ongoing support and services" can be answered thus in a general way. In order to ensure that any supports or services are ongoing, a long-term agenda should be submitted to the library board which should include a long-term financial plan. The supports and services were outlined by the three participant. They can be grouped into the following classes: services/supports corresponding to edition-creation, content, knowledge and expertise, preservation, access and maintenance. Each of these services can be included in a virtual environment which editors can take advantage of as needed.

Corresponding to, "Digital Scholarly Editions," everything within the virtual support environment must maintain the integrity of editions with special notice given to preservation in a repository or server. Furthermore the virtual system must be informed by the success factors found in the first objective on the state of the edition. Without going into detail one way to achieve this is by including collaborative tools, promoting a strong research community, providing online publication links and a curator promoting editing projects on certain texts within the library collection.

The next part deals with the aim's criterion, "based in a public or national library," by outlining why the support system should be public, what kind of relationship the library and the editing center should have and what the place of the support system should have in a public library. It also looks at which ways it is appropriate to apply the model of the university library support system to a public one.

The support system should be public primarily because the ongoing editing of scholars is in a sense intellectual heritage. It is also intellectual property and has rights of its own. This is an especially pertinent consideration when looking at the maintenance aspect of this project. For the moment most texts dealt with in DSE are within the public domain and it behoves the public for scholarship to be done on them. Thus it makes sense for the institution that houses works on national heritage also to support those who communicate them to the public, draw attention and funding to them.

The relationship between the library and the scholars should be one of support and not authority. DS editors must have freedom in their processes. On the other hand if the library supports DSE production and as most editions are in the public domain, it would be beneficial to both parties if editors would permit their editions to exist in the public library in some way

so that public attention can be given to editions and they can be maintained into the future. Thus a kind of resource sharing or resource exchange could exist, given the agreement between the two institutions.

In many ways the model of the university library can be applied including the use of VRE's, digitizing on demand for texts after the 1800's, TEI expertise, the inclusion of TEI/XML in the VRE backed up by a person with expertise in TEI/XML, the production of a business model, knowledge bank and copyright services. However in a public library, the funding comes from different sources, public rather than university, so the business model appears differently and probably has to tap more sources. Also the librarian and the scholars have different expertise. While the university librarian espoused technical and not content expertise, the case is rather the opposite in the case of the national library which houses a huge corpus and the scholarly institute which has more in house technicians. Thus although an appropriate support center should include contact with a properly trained technician, the system can be characterized as a service one.

Objective 1

The definition of this objective was the first means to answering the research question and, as a governing concept, part of the problematic it formed a part of the analytic framework. It was defined as, "to come to know what the state of editions are which will indicate the success factors of Scholarly Editors such as more collaborative editing projects, more online publications, and projects which tend to perpetuate themselves and attract funding." Based on the evidence given in the investigation and the Critical Ethnography framework, this section shows how these findings fit into the bigger picture of the aim of a public support system for DSE.

Eliciting the present state of the edition in each institute, it should first be noted that the testimonies were each very context bound. In interviewing the three institutions, each interviewee self-identified with a specific role within his institution. Their unique stances relative to their institutions create different viewpoints of what would make for a successful support center, in other words what are the success factors of editions. The first interviewee's self-identification as an intermediary between scholars and programmers in his institution. The second interviewee was a national librarian. He evidenced a lack of expertise in the area of digital scholarly editions. The third interviewee, a university librarian, identified himself as a technical service provider for editors and scholars in general. These three standpoints color

the evidence each gave in their narratives relative to the project on the state of the edition, the needs of editors and their place within a support system.

The independent institution focussed partly on technological processes and partly on the editorial projects themselves. It was clear that they were both highly technologically advanced and that projects were selected for editions which were of scholastic or national importance and could thus attract funding and should be self-perpetuating, that they were a highly collaborative institution, that these earmarks indicated the editions' success factors. Thus editors must be given the opportunity to use evolving technology and a wide range of contact within the support system in order to achieve the success factors within the VRE. It is important to include a staff member with editorial technology expertise as well as a curator who can ease the selection process of projects along, help find funding for projects of high value and help to connect individuals who are interested in similar material. Other success factors included collaboration both local and international, project choices which hadn't been discovered before, which were of national interest or appealed more broadly as well as approaches which were flexible or innovative. In order for projects edited with the support system to achieve these success factors, it is important that a wide range of digital content (or freshly digitized content) be made available within the VRE and, as the digital corpus is vast, that a digital curator be available within the VRE. Furthermore it must be possible for editors to be able to add new approaches and technologies within the VRE.

Since the national library does not have a facility for editions, they do not have any projects underway which could determine the success factors. They have however undertaken a project of textual scholarship which uses a language and literature tool which could be applied to edition projects. This project's success factor was a large-scale work of digital scholarship which made use of the vast corpora of the library.

He later spoke about what types of digital scholarly edition projects they would be interested in hosting. These potential projects indicated the success factors which he would value: adding quality to mass digitized texts. This particular project does not fit with the "state of edition" however it is certainly self-perpetuating and in this sense fulfills the first objective.

Thus for the national librarian it would be important to open the digital collections to the editor. To complement such a vast amount of data, some of which is faulty it is important

to include digitization on demand on texts with fonts after the 1800's or on unreadable fonts. As stated above it is also important to include a digital curator who has expertise of the system

The third interviewee identified himself as the technical supporter at the center in the university library. He had a dual institutional perspective of scholarship and service, technology and content. He listed as the primary success factor the successful production of digital scholarly editions and the contentment of the users with their end product. This included technical success factors like a combined tool and service-oriented success factors like the use of a digital curator.

By indicating what the current state of editions was for scholars, this participant shows first what the starting point is in carrying out the objective. This gives a measuring stick by which it can be said that successful support has been achieved. The scope of the university support center may be said to be a success factor as they provided services to all the faculties within the university with only a handful of people.

He, as the sole participant who had a fully functional support center (albeit a technical one), had more evidence to give concerning the current state of editions in his library and their success factor. He listed diversification, the transfer of knowledge and skills, freedom of the scholar to choose their type of scholarship, dynamism in VRE's, funding, individual digitization, successful integration of the center into the university's hierarchy, student involvement in research as success factors of his support center. Since these factors have ensured the smooth running of one support center, they should certainly be taken into account if a center is built in a national or public library. Transfer of knowledge and skills, freedom of the scholar to choose their type of scholarship, dynamism in the VRE, digitization on demand, integration into the host institution's hierarchy are success factors that would apply quite well to the support system within the public VRE.

All three interviewees spoke about the technical state of the edition in terms of the way they are created. The national library offered XML files for the purposes of editions, but did not have a further developed production system for them. The independent center had two methods, one was XML and the other was an online tool, each of which had separate strengths and the center had plans to develop a new tool combining both. The university library support center had a virtual research environment which had TEI (a form of XML) inside. This was the most advanced form of the edition from a technical perspective. The tool that includes

XML/TEI in the VRE along with a technical support staff member should be applied to the public support system.

Objective 2

This section places the second objective which deals with editor needs within the framework of the plan for a support system as it has been constructed thus far. The investigation determined that the second objective which would help bring about the aim was to "identify and describe the tools and needs necessary for DSE such as access to content, richer tools, encoding and mark up, better and more collaborative annotating, easier search and browse facilities and interfaces." This objective is extremely important in the context of answering the research question since an effective support center must understand the needs they are supporting. This way the library can bring the state of the edition from its current state with certain gaps which prevent it from achieving its success factors to their attainment in meeting the third objective. Meeting these gaps is precisely how a library can best support digital scholarly editions in a sustainable way. The needs or gaps especially in the area of ongoing and social annotation prevent them from achieving support through their life-cycle and achieving ongoing dynamism. This is the crux of the research question and the aim of this thesis.

This section simply lists the needs of editors as espoused by each of the participants. The following section shows how all of these needs can be dealt with in the VRE support system.

Eliciting the needs (the second objective of the project) of the editors is key to constructing a useful support center in a national or public library since meeting these needs is the foremost role of such a center. The editorial institute was the primary place to seek editor's needs. They stated annotation by the user of the edition and social annotation as needs they were discussing but had not achieved. He stated further that there was a need for an external source to ensure the survival of editions and that this source was not the editors themselves. Another need he mentioned was linked data, which he said would further collaboration and that the center was not far off from applying it. Also discussed was dynamic or ongoing annotation. He felt that this need would not be fulfilled at this time except on texts of vast

importance. Another technological need was the combination of the XML editing and the online tool. He also listed as a need aggregation of editions on the same topic.

The national librarian did not speak about needs of editors since he did not as yet service their needs, although he seemed in this discussion to open his mind to the idea. He seemed aware that high quality digitized texts were a need of the editor.

The university librarian on the other hand had a lot to say about the needs of his editors. His general tone was one of a service provider. He wanted to make things work for the editors. The first unfulfilled need of editors that he brought up also met the second criterion of naming user needs, the formulation of which drew on his experience as a service provider. It was that of a consolidated knowledge system with all of the methodologies used by editors especially of TEI. He wished to bring together all of the specialist knowledge of each project into a knowledge bank. The next need elicited from him involved national and international collaboration in digital scholarly editions. A knowledge bank would ensure editions continue until later generations while ensuring collaboration fills one of the editor's success factors.

Another need was that of sustainability of the editions in the repository which occurred because of financial issues. The two needs of sustainability and financial need could seen across all three participants and the need of a long term business model.

Objective 3

This section ultimately answers the research question since it shows how the needs listed above can be met with carious competences' presence in the support system. The final objective is to "develop an understanding of what competencies are necessary for Data Curators to meet the needs of Scholarly Editors, i.e. those who are knowledgable about the specific fields in which the Scholarly Editions are situated, those who are good researchers and good at guiding research projects."

This objective answers the complete's the plan for the system since it defines who is competent to meet the needs of the editors and bring about a supportive service which centers on the gaps between the present state of the edition and the success factors, specifically ongoing support compatible with the natural life-cycle of the edition. Additionally it determines what the public support system must do to meet the needs.

This section deals with each of the needs listed above by matching them to the competences list in the interviews. Where no corresponding competence or function exists, it suggests one.

The first two needs mentioned above were annotation by the user of the edition and social annotation. No participant listed as a competence annotation by the user. A suggested competence is to include funding for developing the necessary technology in the long term business plan. Once the technology has been developed, it is possible to include it in the support system. The VRE recommended by the editor allows for social annotation.

The next need listed by the editor was an external source to ensure the survival of editions. Both the national and university librarians listed the repository as a source for preservation of editions. The university librarian stated also that a part of the repository should be devoted only to editions and that part should be adapted to their needs (complexity). The plan for the support system goes further since the technology used in edition-creation eventually becomes defunct. There should be a data curator also attached to the system who provides maintenance to the editions in the long term and allows editors to update the technology used in their edition if they wish.

The next need listed by the editor was linked data. This technology already exists and tools to apply it should be included in the support system. No participant listed this competence, but the editor did say that his institution had almost achieved a working model. It should be noted that DS editors should be free to add tools to the system if they wish and thus play a more active role.

The next need discussed with the editor is central to this thesis, namely, dynamic or ongoing annotation. No participant evidenced the capacity to meet this need. However the national library said that they had a sustainable infrastructure which would above all else allow editions to be preserved until ongoing annotation is properly developed. This infrastructure should be linked to the support system and a portion of the budget should be allotted to further development.

The second to last need evidenced by the editor was combination of the XML editing and the online tool. This can be achieved by using the university library's VRE with XML or

TEI capacity inside of it along with a virtual expert in XML/TEI (note this was part of the role played by the digital scholar).

The last need he mentioned was aggregation of editions on the same topic. The university librarian mentioned various large centers like Europeana who have done it. For the purposes of this plan it would make sense to delegate part of the funding to research and development. It seems that the technology for some types of aggregation already exist. Therefore in order to meet this need research must be done in other institutes and existing tools must be applied to the VRE support system.

The university librarian listed several needs of editors which should be included in the VRE's. The first was a consolidated knowledge system with all of the methodologies used by editors especially of TEI. This is extremely useful to scholars who use this VRE system. It encourages the recycling of information and the lack of wasted time and effort.

All three institutuions listed finance as a need. Thee university librarian suggested a solution in the form of fundraising within and outside the institute. He said that this is becoming more and more a need of digital curators. He also evidenced that curators were creating alliances between the library and commercial organizations which were proving lucrative. The digital curator seems to have the competence to solve this problem in the VRE system.

The university library also said that editorial scholarship had the need for outreach and making sure that their work is also useful for a more general public. This applies quite heavily to the national library whose digitization does not reach the public of itself. It has needs of projects like this one concerning DSE to draw attention to their collections. Also the DSE center would benefit from outreach to the general public so that there work can be supported by the public.

6. Conclusions

This investigation was based on a gradated case study of institutions related to the production of digital scholarly editions. The first participant was the target, the user who creates DSE. The second was the potential host for a supportive service. The third was someone who ran a support service in a different type of environment which could be used as a model for the construction of a plan for a support service for digital scholarly editors. This goal was the end goal laid out in the research aim at the beginning of the thesis. It was to be brought into being by achieving the three research objectve. At the end a plan was indeed achieved from the data collected from these institutions and following this aim and the three objective and bringing the current state of affairs to what they ought to be using an analytic framework. Through the transaction process the investigator's ideas were impacted, shaped and formed by entering the research environment. The plan is the product of that formations o that it is not exactly the same as the one sought in the beginning. Looking back one can see how this transformation took place.

1. Preliminary Considerations

Throughout the case study there have been many shifts in attention from those initially laid out. The public library support system within VRE's was not even mentioned in the early concepts which led to the research problem and subsequent aim and objectives. The VRE proved to be a corner stone tool in the construction of support system which was the solution to the aim.This section looks at the early research relative to the findings

It began by developing a definition of DSE relative to its predecessor the scholarly edition. The main difference between the "scholarly surrogate" and the DSE in the modern sense was the communication between technology and scholarship and the new doors that transaction implied. Throughout the interviews it has been clear that both technology and scholarship are two sides of the coin that is the digital scholarly edition. However the shape of the technology especially was then unknown to the author.

However the stress on communication which in the early discussion was based on a necessity for scholarly community and scholarship which was thought would be a foundational idea of the thesis. In the interviews these elements played a contextual role though not as noteworthy as was initially thought in the needs of the edition as it played out

on the ground, although the investigator tried to steer the discussion in this direction. One participant even claimed that if DSE were left to the scholarly editors (editorial community), they would not survive. The scholarly community was certainly an element in the discussions but it was not the preeminent factor promised by the introductory material.

Ongoing annotation in the introductory material was thought to be the most important consideration and aim. Support for this innovative idea was thought to answer the problems of editions having a life-cycle that did not coincide with their funding, planning and the general problem that there was no point at which one could say that an edition was at an end. In the interviews however no participant had a concrete plan to introduce it into their edition-creation process. It was not even spontaneously mentioned as a need. No one mentioned a facility for this primary concept. For the purposes of the thesis it was delegated in the support system to development and funding allocation. The plan indication that it should be applied to editions which were in sustainable storage at such a time as development caught up.

Constantly changing technology and the coincidently necessary funding on the other hand was mentioned as a need by the first participant. Funding and development were again counted as the corresponding facilities in the support system. The third participant brought another solution to this problem with the introduction of a knowledge base which would include lessons learned with earlier technology.

The hosting institution also was redefined in the course of the thesis. At the outset any digital library was thought to be an adequate host for a (then undeveloped idea of) a support service. However as the myriad of needs surfaced it became evident that support had to come also from the library as a whole in order to unlock non-digital services and more specifically from a public library (like the national library which participated in the study). This was largely because national libraries have the custody of the whole corpus of national literature in the public realm and they have the responsibility for its dissemination. It became clear that when dealing with editions of works in the public realms (or otherwise) certain safeguards had to be given.

The digital curator was thought in the introductory material to be extremely important in serving DSE and throughout the interviews it became clear that the roles specific to the digital curator were essential to the DSE support system. In two of the interviews it was clear that they needed a person who fulfilled these roles but that they were unfamiliar with what a

digital curator was or did. The final interviewee gave much evidence of the role a digital curator could play in a support system.

Again in the development of the research problem, the core problem, was the ongoing nature of editions. This did not prove to be of great importance to the participants while greater stock was placed in sustainability of already produced editions. This was because maintaining current editions created a clog in the productivity of editions. While this need is more pressing to edition-creators, it is clear that in the long run the development of ongoing editing tools safeguard the continuation of editions.

Further in the development of the research problem several points were made including the lack of external services, the completion of funding before the projects were finished and the experimental nature of the technology: the fact that it quickly becomes defunct and it is necessary apply new technology.

The lack of external services did not appear to be a huge problem to the first participant who appeared to prefer the preservation of his institution's autonomy and the integrity of their edition. Nor did the second participant seem eager (at the beginning) to supply external services. Meanwhile the third participant showed how external service provision worked extremely well and safeguarded a high volume stream of well-produced editions.

For the second point the recall of funding before the edition was finished seemed more important than that editions be ongoing. These in fact go hand in hand. In order to have ongoing editing, you must have ongoing funding. The plan for the support system located in the findings borrowed from the third participant and recommended a long term business plan for the support system.

The fact that editorial technology was experimental did not seem to be a problem, in fact it seemed to be an aim of the editorial community. However the fact that it becomes quickly defunct did seem to be problem. The system solved this problem by insisting on ongoing maintenance which would bring the technology up to date. The knowledge base also prevents editors from recreating technology and helps them manage their tools as they come up.

One point in the development of the research problem was the value added to the library by the existence of DSE in their collections. This proved a trickier issue than envisioned. The national librarian appreciated the value this would bring to the library but editors saw difficulties in how their editions would be ingested into the library's repository. They realized the need to store externally but worried that the repository may not be appropriate for complex entities like editions.

Other value points like an increase the user base, the fact that editions might be the target of public grants (as works of digital humanities and heritage) and nurture more publications were not evidenced by any of the participants, although it was clear in an underlying way that all three participants saw the value of editions existing in their institutions.

Regarding other points, the editor did not consider libraries to be technological institutions and therefore they did not look to their IT department as was anticipated in the introduction. The university librarian did see his role as a project manager in the library as fundamentally technological. Both the editor and the national librarian saw the library's expertise in the collection as a means to approach to the research problem.

Literature Review

The considerations along with the literature review informed the research question, aim, and objectives. Despite the deviations from some of the original guidelines it was possible to create a plan for a support system for digital scholarly editors in a public (national) library which supported editors in their processes and gave due consideration to their ongoing nature. Through the analytic framework it was able to recommend transformative actions to this end and to answer the guiding concept.

One author in the literature review laid the "stewardship of digital humanities data" at the door of the library. This was a foundational idea of the research question and aim. The national librarian in particular spoke at length about what to do with this type of data while the university librarian suggested a special place in the repository dedicated to DSE data. Schaffner and Erway and Zorich took this a step further suggesting some type of support system for DH of which DSE is a part. Thus the public library was built into the research enquiry as the location from which support would emanate to meet the users needs. In places where the national library did not have a plan for support, suggestions were made.

Another author brought up big data curation which played a surprising role in the findings. The situation was not that editions comprised big data but rather that the collection on which they depend for content and context, the mass-digitized corpus of the national library, are made up of big data. While the editor shied away from such data, the university library showed how it could be used effectively for editions. It seems that while the fonts of older mass-digitized data cannot be used for editing purposes, it should be possible to edit more recent texts. For older texts it would be important to have digitization on demand.

These considerations formed the research aim and objectives which governed the quest for support system which produced editions according the the criteria above, consistent with their processes and their ongoing nature, which valued their success factors and which met their needs with appropriate competences and facilities. Through the interviews that formed the case study, analyzed by the aims and objectives and the criteria of the Critical Ethnography, a plan gradually emerged which answered the question in a totally different way than had been anticipated.

Digital Scholarly Editor

The evidence of this participant was extremely useful. It gave the first "in the field" representation of DSE, how they function, what kinds of projects they entail and what tools they use. It also highlighted the problems they experience and what areas they might be willing to seek help from an external service.

It met the first criterion of the Critical Ethnography in a general way since it met the objectives in every respect and through them the research aim. In terms of the state of the edition it traced the dualism of technology and scholarship, pointed to tools and earmarks of successful projects which guided the investigator in defining the plan for a support system. He listed many needs of editions, many of which he was happy to pursue within his own institution. This underlined the need of independent DSE institutions to maintain that independence and only look to a service in areas where they cannot meet their own needs. In terms of facilities and competences he was willing to look beyond for fulfillment the most notable were funding, maintenance of the collection and content.

In bringing the state of the edition, its needs and the facilities which would fulfill them, attention can be given them, they can be valued for the types of projects they do,

following an awareness of their value to the public it is possible that funding can be gained and a supportive system can be achieved. Reflexively the most important transformative action that can be achieved is to convince the editors of what they can achieve through a supportive service.

The interview ended with what might be taken as a mandate. The editor highlighted the precarious and even fragile position in which editions currently find themselves. He pointed to certain funding initiatives which used to be devoted to the making of editions but which are now being geared to online archives. He suggested that this trend can be seen in other places as well. He said that the editing of texts of historical or literary importance is in great danger if not already gone. In his own institution he said that editors were forced to apply for funding for new technological features and do editions on the side. It is clear that a new movement for or voice on behalf of the classical scholarly edition is needed.

National Library

This part of the instrumental case study approached the research question from the perspective of an institute that was both scholarly and service-centered. It looked for a model of a library that supported its editors in their work. Therefore it strove to answer the research question by achieving each of the three objectives relative to the research aim, "to trace a plan of ongoing support and services for Digital Scholarly Editions basedwith an aim to facilitate researchers who wish to produce digital scholarly editions in their current processes especially in areas where their needs are insufficiently fulfilled and in a sustainable way in order to allow the self-perpetuating nature of their textual scholarship in the future with special reference to ongoing annotation and to bring added value to the library." Thus it was primarily interested in how the university librarians supported editors' needs in order to build a model of support and services and see if it could be applied to the case in the public realm of the national library supporting an editorial center.

The first step toward a collaborative support system within the public library is clearly for the national librarians and the editors in the institute to sit down to a negotiation and to clarify certain points, make some concessions and generally agree to work together with the resources available to them. The editors for example showed hesitancy about ingesting editions into a repository built for mass-digitized entities. The national librarian on the other began by making statements of hesitancy concerning supporting scholars in general. If these and other issues could be worked out, the national library is the best host for a support service

because of its service minded approach and its commitment to national intellectual patrimony. Such a service system would only be built if it could clearly meet all the needs of the editors. In this interview the librarian turned a corner and became quite supportive of the idea of hosting editors in some way. Perhaps editors care more about the continuation of their editions than they do about their hesitancies. If they could be shown that a support service could be constructed within the national library, they too would be supportive of this arrangement.

Overall relative to the first criterion, the editor, although he espoused that he was not an expert in this area, the librarian listed needs and competences that met the research aim by opening the door to a public DSE support system.. He did not seem to be aware of many of the details of how such a system could be created because he had not worked with DS editors in the past and was unfamiliar with their needs and aims. But as the interview progressed he showed a lot of good will to the community and was positively inclined to work together. Relative to needs, he put his finger on some key issues which had been mentioned by the librarian. These included the question of what type of sustainable storage and maintenance might be available to editions in the national library. With regard to competences he national library's unique role with regard to textual cultural heritage and the dissemination of digital scholarship to the public were clear from his testimony. Furthermore he offered for his large dataset of library content for DSE use. At a glance it is thought that this offer falls on deaf ears since the editors had issues with this large-scale digitization for editions. It would be interesting if a compromise could be found as this would open the doors to many interesting editorial projects. He also evidenced that they had worked with another group of researchers to produce a linguistic corpus and that they had played a role of modifying faulty OCR files. Perhaps they would be willing to do the same for editors.Thus in general he met the research aim and objectives.

With regard to the second criterion of the public realm and the transformative action in a general way offering to work with DS editors, thinking about their needs and offering their expertise and facilities in itself brought the quest for a supportive service into the public realm. The transformative actions that the library must undertake include using their fundraising services to obtain the necessary finances for the service and a plan for ongoing financing in the future. This need was espoused by both the first and second participant and must be taken seriously by the library's stakeholders. It may be necessary to submit a plan to

them including the added value that such a service brings. The next transformative action must be to review the needs espoused by the editors and adapt the support system along with the competences and facilities they need in order to edit in the way described in the research plan remembering that ingesting their editions into the repository is only one aspect of it. Finally the technology including the repository and the interface must be tailored to the more complex needs of the edition.

Finally from a reflexive perspective, the editor's ideas flowed fairly freely without much need for direction. His proposal to submit the XML files to the editor was his own idea. It was clear that there was a large gap between the editorial center and the national library but that this gap could be breached given the opportunity to discuss the final plan together and make amendments necessary for the smooth functioning of their own institutions and an effective support system. Throughout this interview the party I mainly wished to benefit was the editorial community. However the library would also benefit greatly from the existence of the service in their instition.

University Library

Relative to the first criterion of critical ethnography the university librarian solved the research problem which derived from the concepts behind the problematic insofar as his role in the library was to facilitate digital scholarly editors. In answering the questions he traced out a method by which librarians can meet at least most of the needs of the researchers. The interview with the university librarian answered the questions which related to the aims and objectives, the parameters of the project to find support for the digital scholarly editor within a library.

In relation to the second criterion the university library has largely achieved an active support center within the library for editors who are members of the university so the public discussion does not mainly center on the development of such a cooperation. Instead the discussion focusses on how to apply the principles behind the center to libraries in the public sphere especially so that a wider group within the editorial community can profit.

Subjectively I think the model in many ways can be transferred or conjoined with public or national libraries. However this model was built for the university public who have some different needs to editors in independent scholarly institutions. For example before a research team begins a project, funding is secured for it within the university. Funding sources

are different for institutes or libraries within the public domain. Funding is a huge source of vulnerability among independent research centres and is among it chief needs. It is therefore one of the most fundamental resources needed in a support center. Apart from funding however the model which transpired through the interview is a good guideline in planning support for independent institutions.

In summary this section has traced a plan for action which corresponds to the research aim and objectives by referring back to the evidences given in the interview and laid out in the preliminary ideas. It was decided that a virtual support system was best which would provide tools, services, functions, competent persons to meet the current processes of editors as well as the facility to store, update and maintain completed editions in a repository that has been adapted to suit the needs of editions. In this way the current needs of editors are met and they are guaranteed a sustainable future until ongoing scholarship which is compatible with their intrinsically dynamic nature. Solutions were borrowed from the other participants to create a cohesive support system.

7. Recommendations for Further Study

This investigation into library support for digital scholarly editions using Critical Ethnography to create a practical output can be seen as a pilot study. Although work has been done on the role of libraries in digital humanities as well as the future of digital scholarly editions, a study of this nature is unique in its approach, goals and achievements. But there is still much to achieve. One detail-rich account has been seen of the current state of editions, the needs of digital scholarly editors and the competences and facilities available to them in national libraries. But if a wider scale impact is to be achieved, further study is needed. An investigation into how to approach the initial negotiations between the national libraries and the independent scholarly institutes. Would a form of Change Management be best? Should this decision be left in the hands of the HR department at the library? Should expert opinion be consulted (like the University Librarian in this case)? Generally in reference to questions such as these, most probably there is no one answer for every library. The best case scenario is that individual studies be carried out for each of the following points and that a range of possibilities should be offered for libraries to choose from.

State of the Edition:

More study should be done on the technical/scholarly nature of editions. This is a constantly evolving field and eventually requires competences of a similar nature from the library staff who attend the support services. There was some disagreements among the participants. The digital editor did not feel that libraries were technical institutions. He felt that they were experts where content was concerned. The national librarian felt that while there were indeed collection experts in the library, they were also technically expert in some respects (like data management). The university librarian on the other hand felt that the library's role was to provide technical support and that the editors had the content knowledge and generally did not need help in that area. This point should be investigated further. It is clear that digital scholarly editions are comprised of content scholarship and technology. It must be made clear what role the librarian can play in supporting such a multi-faceted entity.

Also relative to technology different approaches were evidenced in the state of the edition sections. The editor used XML and a simple online editing tool for different needs and user types. He also expressed a wish to continue to use experimental technology. The national librarian used an interface, server and repository appropriate to mass-digitized data files

which he was willing to hand over to the editors. He did not have any editing technology per se but was willing to leave that to the editors. The university library used TEI in a VRE. TEI is a fairly stable technology to edit with, as is XML. What of experimental technology in digital scholarly editions? How does this affect their success factors? What does it mean for storage and maintenance? It is surely too much for a library to constantly update technology in the editions they store when it evolves so quickly. Also this was one of the preliminary problems, that editorial technology quickly became defunct which is not in keeping with the innate ongoing nature of the edition. Yet this very point is evidenced by the editor to be one of the success factors of their editions in that it attracts funding. Is TEI/XML in a VRE alone the answer? Can a solution be found to managing the rapid advance of experimental technology? Again further study is required.

Needs:

A major need mentioned by the editor was that of funding. In fact it was a crucial need. Funding that they have consistently relied upon is now being channelled in different directions. The national librarian also mentioned funding in an off-hand way that indicated they were not presently equipped to meet a large new financial need. For the university librarian funding did not seem to be a problem. His users are university scholars and professors. Before they come to the support center they have applied for and been granted funding. Is the lack of appropriate funding for editors simply a matter of organization? What are the sources available to them independently? What sources do libraries have at their disposal for projects such as these? If there is still a deficit, what new or creative ways are there to improve the situation? The university librarian mentioned a new fundraising project to partner with external sources. It is clear that this role falls within the duties of a digital library curator as defined in Appendix One and referred to by the university librarian. Is this role clearly understood and implemented in libraries? Again further study is required.

Another need mentioned by the editor was that of storage and maintenance of their collections. He said that the need was so great that most of the time and resources of the institution were filled with these duties. The national library also offered his repository to store editions of national origin. But there was a conflict of interest that is probably more widespread. While the editors worked on digitized texts one by one with great care and detail, the national library had mass-digitized so that there was a huge corpus of digitized texts but

the files were sometimes faulty. This was not, according to the editor, only a problem of content but also storage and maintenance. He worried that a repository and interface designed for mass-digitized texts would not be detail oriented enough for editions. Quite probably in applying the product of this case study, it may be found that many national libraries digitize en masse and this always creates problems for editors. The solution for content problems can be solved as it was in the case of the university library by offering digitization on demand. But the problem of the configurations of the repository must be solved.

Competences:

One competence that was not dealt with explicitly demands further attention. It is the ability to balance the editor's need for autonomy with the library's new supportive role. Obviously certain safeguards must be put into place to guarantee that balance. In a sense the university librarian gave the solution in the competence to provide VRE's and give technical support. By giving support virtually, editors can access the service if they like with no obligation. There can even be incentives for participation. But further investigation must be put into which kind of VRE's are best suited to support all of the services mentioned in this thesis.

The difficulties listed above indicate that a simple library curator is no longer sufficient for projects such as this. There is a need for further development of a role of a person competent to negotiate between parties, who has scholarly, research and technological skills, fundraising and advocacy training. Such a role can be filled by a research-librarian or a digital curator. From this case study it is apparent that such a role does not exist in the national library. If this is widespread further study must be invested into how to institutionalize this role.

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APPENDIX I: Aims and Objectives, Research Question

Research question: How can the scholarly editing community be best supported so that the life-cycle appropriate to their intrinsically dynamic nature can be sustained into the future and how can a public or national library can provide this support?

Aim: To trace a plan of ongoing support and services for Digital Scholarly Editions based in a public or national library with an aim to facilitate researchers who wish to produce digital scholarly editions in their current processes especially in areas where their needs are insufficiently fulfilled and in a sustainable way in order to allow the self-perpetuating nature of their textual scholarship in the future with special reference to ongoing annotation and to bring added value to the library.

Objective 1: Come to know what the state of editions are which indicate the success factors of Digital Scholarly Editors such as more collaborative editing projects, more online publications, and projects which tend to perpetuate themselves and attract funding.

Objective 2: Identify and describe the tools and needs necessary for Digital Scholarly Editing such as access to content, richer tools, encoding and mark up, better and more collaborative annotating, easier search and browse facilities and interfaces.

Objective 3: Develop an understanding of what competences are necessary for public librarians to meet the needs of Scholarly Editors, i.e. those who are knowledgable about the specific fields in which the Digital Scholarly Editions are situated, those who are good researchers and good at guiding research projects.

APPENDIX II: Process Chart
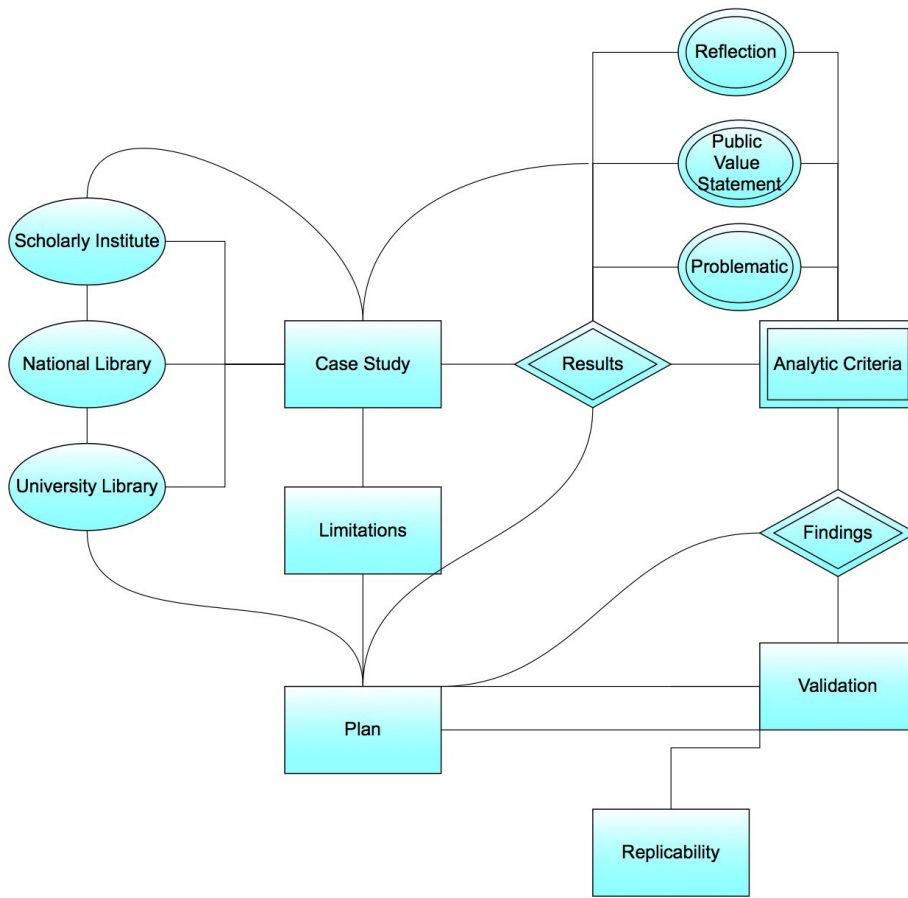
APPENDIX III: Interview Questions

For Scholar

1. What are the primary scholarly activities done on scholarly editions at Huygens Institute? (What are a few of the main projects?)

2. What needs do you have in these activities that are unfulfilled? Please rank the needs in order of importance.

3. Is the national library supporting you in your activities in any way? What support would you like?

For National Librarian

1. What changes would the KB digital librarians have to make in their role in order to facilitate digital scholarly editions?

2. Have you ever surveyed this user group to ascertain what role you could play in meeting their needs? If so, what were the results? If not, what results would you envisage?

3. In what sense do you think the national library could complement the work of scholarly editions at Huygens and vice a versa? What obstacles to a partnership do you see?

4. Do you think digital scholarly editions would add value to your library? Why or why not?

5. What do you see as the most vital things your library can offer digital scholarly editors?

University Librarian

1. What is the present state of activity of digital scholarly editions in your library? Could you be considered a hybrid librarian....editor + librarian ?

2. What are the (your) needs of digital editors working in your library? Can you rank them in importance? Are any needs unmet?

3. What functionalities do librarians or curators perform in support of digital editing? Do they need to change in any way?

4. What level of collaboration exists between digital scholarly editors and library staff? What frictions or obstacles exist between the two parties and how are they resolved?

Declaration and Plagiarism Disclaimer

"The opinions expressed in this dissertation are solely those of the authorand 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.

Signed,   Date,

30/10/2014