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**eContentplus**

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<sup>1</sup> OJ L 79, 24.3.2005, p. 1.

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## 1 Abstract

This report takes on the task of summarizing the APEnet project in the perspective of sustainability and in that role to formulate part of the legacy of the project towards the emerging APEX project.

The aim is to serve as a sign post in the fortification of the Archives Portal Europe as a major actor, service provider and development environment for the European archival domain and Europeana in a long time perspective.

The report proposes to define some critical areas and areas of concern, where future sustainability might be at risk, and to present some foreseen risks and recommended solutions manifested in the APEnet follow-up project, the APEX project proposal.

## 2 Introduction

The ultimate goal of the APEnet project is to create a solid foundation, not only for the Archives Portal Europe as such, but as a pillar on which Europeana, and the European Cultural Heritage domain as a whole, can safely rely for future collaboration and service provision in a changing environment.

Throughout the APEnet project's lifetime there has been an ongoing discussion among the partners how to best provide for a long time sustainability of the project results. It was obvious at an early stage that the project time- and resource frames were not enough to fully reach this goal in the current project.

A solid technical ground for the Archives Portal Europe, for content ingestion and for the interoperability with Europeana, has been laid in the APEnet project but the amount of content providers are not sufficient to reach sustainability and neither are the end-user centered developments.

Expert- and financial resources for expected longtime developments of metadata standards, interoperability updates, implementation of technical and software novelties, new user functionalities etc. will also have to be accounted for in a situation where the Archives Portal Europe will have to run without project funding.

The organisational issues related to how the Archives Portal Europe longtime/extended financial sustainability should be reached also has to be solved in the next phase of the Archives Portal Europe development.

It is therefore important to estimate and dissect some possible weaknesses and risks in the present and future development and maintenance processes, or at least to set up a number of sign-posts to envision and sketch out a few future roles and scenarios, some stepping stones and possible stumbling blocks to aid in the long time evolvement and administration of the portal.

This report is not the place for a an advanced Risk Management Analysis but at least it can serve as an assessment outline of risk areas that can be a basis for a proper Exit Plan in the follow-up project, the APEX, and for the Archives Portal Europe Foundation.

### **3 Archives Portal Europe sustainability**

#### **3.1 *The APEnet project exit***

In general, at the start of a project, a meticulously compiled project life cycle plan is made. It is quite understandable that in many project plans an often neglected measure is the planning of the actual ending of a project – an Exit Plan.

From a sustainability standpoint the actual finishing of a project can be of a vital importance to a useful project result.

In the case of the APEnet project there is no formal task expressed in the DoW that will handle the exit processes. This does not mean that the longevity of the project results is in jeopardy. On the contrary it can be stated that the outcomes in the form of products developed in the project have an extremely good prognosis of not only useful survival in a long term perspective, but also of further dynamic development.

#### **3.2 *Structural impact***

An important factor for the successful welding of a basis for a sustainable common cause among the main European archival institutions manifested in the Archives Portal Europe is the APEnet projects close connection to the EBNA (the European Board of National Archivists). EBNA was in a way the founder of the portal through the stating of five priority actions for the European archival domain, the creation of an archival portal being one of those actions. Another important counterpart in the European Commission is the EAG (the European Archives group). The active connection to the ICA (the International Council of Archives) and the founding of the EURBICA APEnet Liaison Group (EURBICA being the European Branch of the ICA) also plays an important part in the process where the project has firmly established its objectives as an inclusive future mainline activity for European archival institutions.

#### **3.3 *Development impact***

The valuable APEnet project results were rendered possible through the intense and committed work of the active project partners in the areas of technical and standards development and through the intense dissemination conducted by the project partners.

The impact of the project is best mirrored in the formidable interest shown by national archives or the national archives administrations at the ministries all over Europe in participating in the APEnet follow-up project, the APEX project proposal, where an absolute majority of the European Union and associated member countries has shown an active interest in participation.

#### **3.4 *Risk assessment***

A sine qua non is that a risk assessment is not neglected but seriously considered and handled through the future development processes. A heavy responsibility falls on the future Archives Portal Europe steering-, development- and dissemination team to live up to the confidence invested in the portal by its content providers.

An equally important responsibility falls on the team assigned to portal usability that has to ensure that the complexity of the archive material and the intricate structure in which it is compiled are not to become a hindrance for a wide range of non-expert user categories to access the immensely diverse masses of information that the Archives Portal Europe is building up to contain/being prepared to house.

It is not presumptuous to state that many user interfaces built by experts also turns out to become expert systems that are virtually unapproachable to most people - professionals and a small number of initiated users excepted. This has to be avoided in the future development processes in the Archives Portal Europe case.

### ***3.5 Sustainability assessment and risk containment***

In order to secure the investments, (more than a million Euro a year for the past and upcoming three-year periods) ultimately made by the European taxpayers, the sustainability of the Archives portal Europe and the services it provides is of outmost importance and will be a prioritised task during the coming three year period.

## 4 Areas of risk assessment and – containment

The following Archives Portal Europe functions and processes are among the ones where attention should be given to risk assessment and containment to ensure portal sustainability.

### 4.1 *Metadata standard implementation*

During the last decade there has been a growing consciousness of the value of an integration of the European cultural heritage. Fostered by the European Parliament and Commission, the wish and determination by European institutions to structure, digitise and disseminate their content in an international environment has rapidly increased. This is the case also in the archival domain.

As the integration of content in national and international online environments is set in motion, one of the first stepping stones has been the recognition of the need for common denominators – standards to use for ingestion and correct display in the portals user interfaces. Main European-level aggregators, including Europeana clearly see the need not only to establish but to continuously develop and adapt the standards used.

When it comes to the European archives domain most large public institutions has followed a long tradition of common standards based on the International Council on Archives (ICA) guidelines. These standards then make up the basis for the more recently developed XML exchange format versions. It deserves to be noted that the archival XML standards are still in a state of transformation and that under the lead of the active working groups these standards can be expected to expand and/or conglomerate.

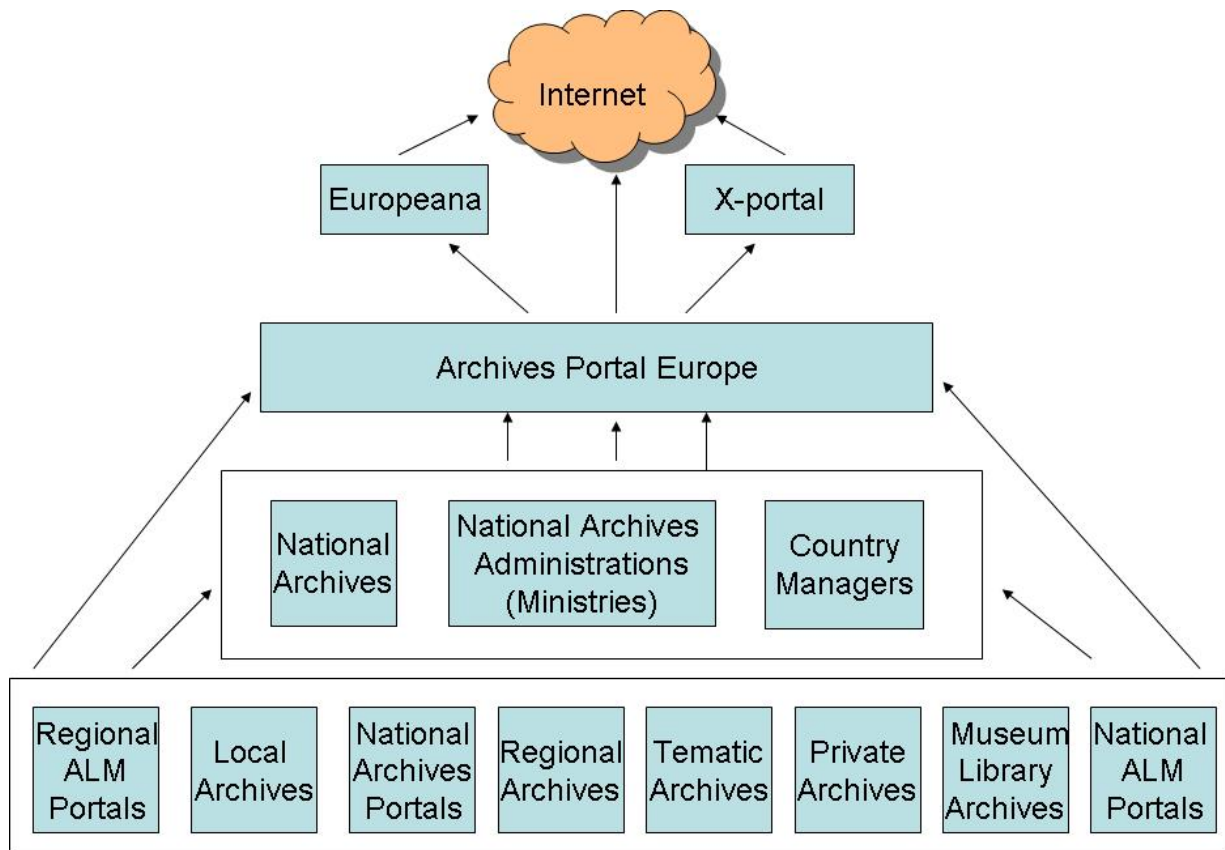
The Archives Portal Europe administration will therefore undoubtedly be an important actor, at present as well as in a long term perspective, to tunnel the needs of a great number and variation of content from a large number of archival institutions throughout the continent.

Numerous and disparate content from a great variation of institutions will put an economical and organisational strain on the Archives Portal Europe administration.

### 4.2 *Ingestion of content by new content providers*

At present the APEnet consortium has only accepted National Archives or the National Archives representation at the national ministries as partners and content providers to the Archives Portal Europe. The small amount of content provided from outside this circle has been entered through the already established national partners.

Throughout the APEnet project lifetime partners have had ongoing discussions on the logistics of content ingestion, how to manage and divide responsibilities and create efficient workflows, how to open up and provide for other actors and content holders, from regional and local-, thematic archives or archival holdings within e.g. museums, universities and libraries. This process has led to a number of possible solutions which does not by necessity exclude each other but may serve as a complement and by that constitute a framework of possible ingestion pathways for efficient and scalable ingestion processes. Examples of possible ingestion path ways and aggregator stations are illustrated below.



### 4.3 Content injection

Even if the tools and aids produced in the Archives Portal Europe concept up till now provide a certain extent of automation in the ingestion procedure, there are still, aside from variations in the use of standards among content provider institutions, formal and legal matters as well as knowledge transfer and policy measures that will need communication and information exchange.

Therefore cost effective ingestion workflow logistics and also some sort of knowledge exchange board at the future administration of the Archives Portal Europe will have to be in place to facilitate national and regional aggregators, country managers and other content providers with smooth ingestion paths.

This is needed since the ingestion process hardly can be made fully automatic, without a properly working human interface for the content providers to collaborate with. Furthermore the distribution of responsibility for the aggregation of data can become an area of conflict if the conditions to establish a single national aggregator are not in place.

### 4.4 Financial model

Like all publicly founded projects that aspire on long-lived project results for the products developed, the Archives Portal Europe will in the end have to be financed in a way that is economically viable and sustainable for decades to come and even if it has the best possible prerequisites to achieve this goal it is not self evident that it will succeed. Subsequently an attentive approach should be taken towards an expected economically lean post-project situation. Also the financial consequences of the development processes should be continuously validated.

It has not been possible to produce a fully scalable cost-benefit analysis for the running of Archives Portal Europe so far. However, even without a full analysis at hand, cost such as hosting, technical updates, possible standards development updates and implementations, the cost of an Archives



Portal Europe foundation, security and SLA:s, content provider and user services, dissemination activities, content management and design updates will together with a number of other costs amount to a substantial yearly sum that needs to be financed by Archives Portal Europe partners and/or content providers and possibly based on content hosted or at a flat rate per partner/provider.

The following figures in the table below are related to the estimated costs for annual hosting, support and technical management of the Archives Portal Europe. The figures are not adjusted for scalability but are based on the amount of content at the end of 2011. It can however, while read with care, hopefully serve as a pointer to the future part of the financial needs that comprises the concrete running costs of the portal.

Environment	Category	Service	Unity	Quantity	Monthly unit cost	Monthly const	Annual cost	Annual cost Hosting	Annual cost development, support and maintenance
Development	Storement Data Center	CPU	CPU	4	102,00 €	408,00 €	4 896,00 €		4 896,00 €
Development	Storement Data Center	Disc	GB	100	0,60 €	60,00 €	720,00 €		720,00 €
Development	Storement Data Center	Memory	GB	8	51,00 €	408,00 €	4 896,00 €		4 896,00 €
	<i>Total Storement data center</i>				<i>153,60 €</i>	<i>876,00 €</i>	<i>10 512,00 €</i>		
<b>Total Development</b>					<b>153,60 €</b>	<b>876,00 €</b>	<b>10 512,00 €</b>		
Preproduction Branch	Storement Data Center	CPU	CPU	15	102,00 €	1 530,00 €	18 360,00 €		18 360,00 €
Preproduction Branch	Storement Data Center	Disc	GB	1300	0,60 €	780,00 €	9 360,00 €		9 360,00 €
Preproduction Branch	Storement Data Center	Memory	GB	15	51,00 €	765,00 €	9 180,00 €		9 180,00 €
	<i>Total Storement data center</i>				<i>153,60 €</i>	<i>3 075,00 €</i>	<i>36 900,00 €</i>		
<b>Total Branch preproduction</b>					<b>153,60 €</b>	<b>3 075,00 €</b>	<b>36 900,00 €</b>		
Preproduction Trunk	Storement Data Center	CPU	CPU	2	102,00 €	204,00 €	2 448,00 €		2 448,00 €
Preproduction Trunk	Storement Data Center	Disc	GB	150	0,60 €	90,00 €	1 080,00 €		1 080,00 €
Preproduction Trunk	Storement Data Center	Memory	GB	8	51,00 €	408,00 €	4 896,00 €		4 896,00 €
	<i>Total Storement data center</i>				<i>153,60 €</i>	<i>702,00 €</i>	<i>8 424,00 €</i>		
<b>Total Trunk preproduction</b>					<b>153,60 €</b>	<b>702,00 €</b>	<b>8 424,00 €</b>		
Production	Storement Data Center	CPU	CPU	15	102,00 €	1 530,00 €	18 360,00 €	18 360,00 €	
Production	Storement Data Center	Disc	GB	1300	0,60 €	780,00 €	9 360,00 €	9 360,00 €	
Production	Storement Data Center	Memory	GB	20	51,00 €	1 020,00 €	12 240,00 €	12 240,00 €	
	<i>Total Storement data center</i>				<i>153,60 €</i>	<i>3 330,00 €</i>	<i>39 960,00 €</i>		
Production	Backups	Storement backups	GB	1001	0,35 €	350,35 €	4 204,20 €	4 204,20 €	
	<i>Total Backups</i>				<i>0,35 €</i>	<i>350,35 €</i>	<i>4 204,20 €</i>		
<b>Total Production</b>					<b>153,95 €</b>	<b>3 680,35 €</b>	<b>44 164,20 €</b>		
<b>Total</b>					<b>614,75 €</b>	<b>8 333,35 €</b>	<b>100 000,20 €</b>	<b>44 164,20 €</b>	<b>55 836,00 €</b>

### 4.5 Knowledge and development updates

The archival- and records management science, especially in the areas dedicated to structuring and preservation of digitised or born digital records, is subject to dynamic development and change. These developments are a challenge to the archival community in many ways and certainly also have consequences in how the holdings are presented and the way the internet user interfaces are built.

The experiences from the APEnet project show that there is an uneven spread of knowledge, development opportunities, and research facilities among the partner institutions, this goes for methodology and technology both. A perhaps lesser but still tangible obstacle is that the resources for implementation of new knowledge and research findings might be missing even though industrious and devoted archivists, system analysts and programmers can seep novelties through increasingly tighter budget frames of the European archival institutions.

This situation will most certainly become more acutely evident when the Archives Portal Europe opens up to a large number of smaller and medium-sized institutions. There is a risk that lack of know-how will hamper the Archives Portal Europe expansion if it is not possible to accommodate for this very large group of potential participants. The consequence would be lesser content coverage in the portal.

Not only will a knowledge, development and implementation deficiency affect the Archives Portal Europe by fewer content provider partners participating, but it will also affect the portal user interface if the resources for adaption to future developments are not in place. This might not be considered as a pressing problem with three years of fresh APEX finances ahead but seen in a longer perspective the

swiftly changing on-line information-flow environment, where the Archives Portal Europe is competing, is unforgiving towards interfaces that do not live up to the users increasing demand of fast and intuitive access. In a situation like that the content providers will consider the portal less attractive as well.

The risk is then that the Archives Portal Europe will become gradually stagnant and a mere monolith over past achievements.

#### **4.6 Usability a main factor for sustainability**

The Archives Portal Europe user services will hardly, now or in the future, give the quick answers to questions such as “Who was...?” or “What happened...?”

Archival information systems are not dictionaries based on stand-alone objects but they are rather information structures where the objects need the context in which they were created to make sense.

This means that the Archives Portal Europe have to be more than a pure aggregator or a mere supplier of “raw” data for external service providers. For serious use an aggregator portal for archival content must provide the researcher with the necessary historic and administrative setting in order to become a viable source of information.

Therefore an urgent task is to develop novel and inventive methods and techniques to make it easier for inexperienced users to crack the code to the archival information structures and make the way as short as possible to the landscapes of unique storytelling and serendipity.

Unfortunately even the best of user manuals and knowledge management tools are not enough to smooth the path to a user friendly system. An approachable interface is going to be an indispensable part of a portal that contains archival information.

There is however a dedicated cadre of experienced users world wide, they are to be found not only among the professional archivists and academics, in genealogic and local historic societies but also in a great variety of other research areas. They are often more than willing to share their results and offer guidance to others who share their interests.

To accommodate for these our most valuable users the development plans for the Archives Portal Europe must contain publication platforms and meeting places where they can disseminate their collections and discuss and share their findings.

#### **4.7 Archives Portal Europe sustainability and the surrounding world**

The future roles of the Archives Portal Europe will ultimately be determined by the surrounding world, by the technical, political and not least by the economical evolution in the years to come. The fact that “no man is an island” is certainly true for interfaces developed for internet use, an environment where interaction is the key to survival.

It is a difficult task to predict even the near future sustainability of the Archives Portal Europe taking into account factors such as the coverage of the Europeana Data Exchange Agreement (DEA) with the Creative Commons 0 licensing (CC0), the Public Sector Information Directive (PSI), the Europeana Data Model (EDM) developments, the impact of Linked Open Data and the response to the opening up of content reuse among commercial actors and the creative industry.

Some European cultural heritage projects have taken the decision to act only as an aggregator of content to other service providers, for the moment primary to Europeana.

In the APEnet project the main object of the Archives Portal Europe is to publish the collected European archival descriptions, albeit with a growing number of digital and digitised representations attached to them. Therefore, for obvious reasons, the portal was created as an end-user interface.

For the Archives Portal Europe partner institutions that choose to accept the Europeana Data Exchange agreement and adhere to the changing PSI directive it is quite plausible that the portal also

will inherit the role of a “dark portal” and become an aggregator, not only for Europeana but also for any service provider actor that wishes to create applications based on the meta data from the Archives Portal Europe partner which is published under the CC zero license agreement.

The final responsibility for the data that is published under the DEA/CC0 condition is of course taken by the content holders themselves but it will also affect the Archives Portal Europe since the portal will act as a forefront for the content aggregated through it.

Whether a substantial amount of external service provider products that are based on content aggregated through the Archives Portal Europe will contribute to the sustainability of the portal is open to debate, but certainly it will mean an increased responsibility to support, update and maintain the data published through the portal.

## 5 Planned sustainability actions

The sustainability planning in the APEnet project is expressed and documented as concrete tasks in the description of work (DoW) of its follow-up project, the APEX.

In the APEX DoW a full work package (WP8) is dedicated to the task. Also WP1, WP6 and WP7 have significant parts dedicated to securing the sustainability of the project results. In the technical and content handling work packages (WP2, 3, 4 and 5) long time sustainability also permeates a number of tasks.

The primary measure to guarantee the long time survival of the Archives Portal Europe is the forming of a post-project administrative body – the Archives Portal Europe Foundation.

In the next three year planning the APEX project sustainability work package (WP8) will lead the work to set up the organisational and financial terms for the foundation. It will then be ready to seamlessly take over the responsibility of running the portal.

The APEX project will throughout the project life time use risk management and containment tools that will be indispensable also for the monitoring and documentation of the post-project sustainability hazards.

In the APEX project DoW an ambitious effort for knowledge transfer is planned through extensive workshop and lecture activities. But in a post project perspective it will not be economically viable to crew a team of lecturers and to arrange workshops throughout Europe (and beyond).

The consequences of this is that some kind of incremental knowledge transfer mechanisms, aside from user manuals and on-line tutorials, would have to be part of the long-time sustainability of the portal, not only as an added value for the content provider institutions but also regarding functionalities related to the user interface of the portal.

To account for this requirement the APEX project dissemination and training work package (WP7) will implement a Learning Management System (LMS) on the project website where communication and knowledge transfer can take place. Post-project the LMS will have developed into a useful toolkit for the foundation in the day to day running of the portal.

During the APEX project lifetime the Tools and Support work package (WP5) has substantial resources available to provide help for the Archive Portal Europe partners with mapping to standards and ingestion of content. Most likely it will not be possible to maintain this service on a full scale without project funding. Therefore it is of outmost importance that a network of ambassadors and supporters that can serve as tutors to new providers (irrespective of being national, regional aggregators or just interested individuals at single institutions) will be constructed during the project period, a network that the Archives Portal Europe foundation can rely on for continuous collaboration.

## 6 Conclusions

As the APEnet project is coming to a successful ending, the three year experience is summed up in a legacy that is projected into a thorough continuance plan in the APEnet follow-up project – the APEX. The scope of the planning proves the determination to create a firmly sustainable service that is able to establish itself as one of the cornerstones for the publication of European cultural heritage in an on-line environment – the Archives Portal Europe.