Response by The European Library Office to the review of National Libraries Global

1.   Introduction

In July 2010, the Management Committee of The European Library (TEL) received a summary of Bill Oldroyd's technical review of National Libraries Global (NLG). The Committee asked The European Library Office to undertake further work in advance of the ICADS/CDNL meetings, clarifying the position of The European Library towards NLG by assessing the likely costs of developing the NLG service.

The Office has prepared this brief report, which should be read in conjunction with the technical review.

2.   Strategic position of The European Library to NLG

The first priority for TEL is to focus service development on the needs of the academic and research communities, particularly (but not exclusively) in a European context. At the same time, the Management Committee recognises that it makes sense for TEL to open up to the international community through a service like NLG. Given resource levels, this must be a longer-term aspiration, unless external funding can be found.

A key plank in TEL's strategy is to incorporate university and other research libraries within its membership. NLG could well increase the reach of TEL, providing new audiences for its aggregated material. A better understanding of the target audiences for NLG would be helpful to establish if there is fit with The European Library's.

Several of Europe's national libraries (e.g. Spain and the Czech Republic) have expressed interest in contributing their content to NLG. To achieve economies of scale for Europe's national libraries, we should leverage the work already done for TEL, positioning TEL as an onward conduit to NLG. On an operational level, it means that the TEL libraries only do preparatory work on their data once. TEL aims to act in this capacity for other services, such as Europeana, so adding another 'channel' requires little additional overhead.

2.   Cost implications of National Libraries Global

NLG's aim has been to produce a "lightweight, low barrier to entry, highly customisable solution to getting national library digital content online". However, The European Library Office considers that current cost estimates may be too low to achieve a world-class site that attracts users.

3.1   Existing cost estimates

3.1.1   Technical and design costs

The National Library of New Zealand (NLNZ) has outlined the following steps in developing the NLG prototype into a production system:

- To update the harvester, the suggested solution being to use that developed for DigitalNZ
- To develop the web interface, either by tidying the existing one or by completely redesigning it by an experienced web designer
- To implement a suitable hardware/hosting arrangement, moving it from the National Library of New Zealand test server

The NLNZ's estimate for this work is NZ$50-60,000 (€28,000-€34,000[1])

3.1.2 Staff support

The National Library of New Zealand has indicated that the following personnel may be required (no costs are included):

- Service manager to handle customer enquiries
- Content manager to liaise with potential partners
- Harvest operator to harvest data
- Technical support
- System administrator
- Possible marketing manager, unless this role is part of the service manager's responsibilities

3.2 Cost estimates by The European Library Office

Based on the experience and lessons of setting up and running The European Library and Europeana, the Office is putting forward the following comparative costs for NLG:

3.2.1 Technical costs

- The European Library has spent around £28,000 (NZ$60,000, €33,500) on its current hardware
- Ongoing hosting of the service by an external host is around £23,500 (NZ$49,500, €28,000) per annum; it is recommended that the NLG service is not hosted by a national library but by a dedicated hosting organisation. In 2009, The European Library moved its servers from the National Library of the Netherlands to the University of London Computing Centre, following an invitation to tender. This new arrangement has worked extremely well, giving a high level of service and control.

3.2.2 Design costs

- The European Library portal will be redesigned and re-launched in 2011. The sum earmarked for this is €30,000 (NZ$53,000) and is based on similar work in Europeana. The redesign will be the result of extensive analysis of the target audience. TEL has learnt that the interface matters in attracting and keeping audiences.

3.2.3 Staff support

The current European Library operation runs on a staff of 8 FTE's, supported by appropriate use of expert consultants:

- General manager, who leads the team and works closely with the Management Committee
- Technical manager and one junior developer, who provide technical and systems support
- Collections manager and 2 content ingestion specialists, who work on data harvesting and metadata issues

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[1] All currency conversions done via the XE currency converter (http://www.xe.com/ucc/) on 27th July 2010

- Marketing and editorial manager and 1 marketing and editorial assistant

The annual cost of these staff is around €558,000 (NZ$980,000). Bill Oldroyd suggests in his report that NLG would need a staffing level of at least 12 people.

In the experience of TEL, there is a learning curve from start-up phase to maturity. Over the last 6 years, processes have become more efficient; from incorporating and managing 9 libraries with 4 staff in 2004, 8 staff are now able to manage 48 libraries, showing considerable improvement in the ratio. The start-up and the establishment of relationships is the most resource-intensive phase and most of TEL's libraries were brought in via externally-funded projects, which paid for the recruitment of additional personnel to provide support.

The current staff base of TEL will increase with a new externally-funded project, which will bring a pilot group of 19 research libraries into TEL. TEL has estimated this will require another 2 FTE's in the TEL Office, together with staff in the individual libraries working on data preparation and aggregation. Again, the start-up phase is the most resource-intensive; over the next two years, this €4 million project will establish the infrastructure to bring in several hundred research libraries.

NLG might like to take the TEL experience into account when calculating the numbers of staff required. An aggregator model at continent level may be the most cost-effective solution. TEL can be seen as the aggregator for Europe and 4 or 5 more such continental level aggregators would markedly reduce the staffing needed at NLG.

The TEL Office is hosted by the National Library of the Netherlands (KB) and a Service Level Agreement is in place between the KB and TEL's primary stakeholder CENL (Conference of European National Librarians). The KB provides administrative support (personnel and finance) and provides a workstation and workspace for all TEL employees.

Service innovation and development are critical and rely on external project funding, mostly from the European Commission. Most of this funding is spent on personnel and is distributed across a network of partner libraries, which collaborate on projects to help build The European Library. The average value of a 2-3 year project is around €3-5 million in total (NZ$5,300,000-NZ$8,800,000). This has included work on the harvester Repox, work on multilingualism, on setting and deploying the metadata standards etc.

3.2.4   Other tools

The European Library and Europeana share an open-source harvester and content ingestion tools; other libraries or aggregators may choose to adapt these if they wish or use others, as long as they are compatible. The Office also recommends use of a CRM (Customer Relationship Management) tool to keep track of relations with member libraries; this may be open-source or proprietary.

4.   Business models

The European Library funds its operational service via annual subscription. 48 national libraries pay according to tiered subscription bands, determined by each nation's relative wealth and size of its library. The current average cost per library is €14,500 per annum (NZ$25,500) but the fee range is wide.

The marginal cost of additional libraries means that it makes sense for The European Library to expand its membership. From 2011, it will be open to the research libraries of Europe. This scaling-up of The European Library is possible because of external funding from the

European Commission, which will enable an adequate and sustainable infrastructure to be put in place.

We suggest that a version of this business model for each continent, region or cultural grouping, where the NLG becomes a 'super-aggregator', or is mirrored on each continent, hence a distributed NLG, would have some interesting advantages:

- gives geographical and/or cultural coherence,
- ensures that use is made of the work already done, for example, in Europe
- provides an approach via building blocks, making the project more manageable and sustainable, and also reducing risk
- gives a proof-of-concept with lower financial demands on libraries
- costs of ownership and management would be spread
- creates a mulitiplier effect
- makes use of language and cultural groupings
- enables NLG to deal with fewer partners directly.

Such a distributed model might start with Africa, Middle East,Australasia, North and South America and TEL hosting systems.

A hybrid model would also be possible where continents such as Europe contribute via The European Library but individual libraries from another region might come in separately until critical mass is reached.

5.   Possible options

From the experience of The European Library Office, there are a couple of options that the NLG could consider:

1.   Create a new system from scratch, with individual national libraries allowing their material to be harvested

2.   Undertake joint development using a common, distributed technical infrastructure across continents or regions, modelled on the approach adopted in Europe. Such repositories might be 'dark' or 'light' (visible to the public). Regional aggregators would then contribute their indexes to a single central index for NLG (see Figure 1) or just to each other, so there is no central version of the NLG but one in each continent or region

The first option could start very quickly but may soon lead to scalability issues, both for the technical system and overall management. The second would distribute costs and responsibility across the partner network and would require phased growth development. It would be slower but probably more sustainable.

To achieve the second, the most robust of the available systems could be replicated with a volunteer library from each continent or region, prepared to provide a couple of individuals from its staff to work on maintaining the service locally and to sponsor an individual to work with the national libraries of their region to harvest their material.   The responsible library could start by placing the system on their own servers, thus reducing start-up costs.
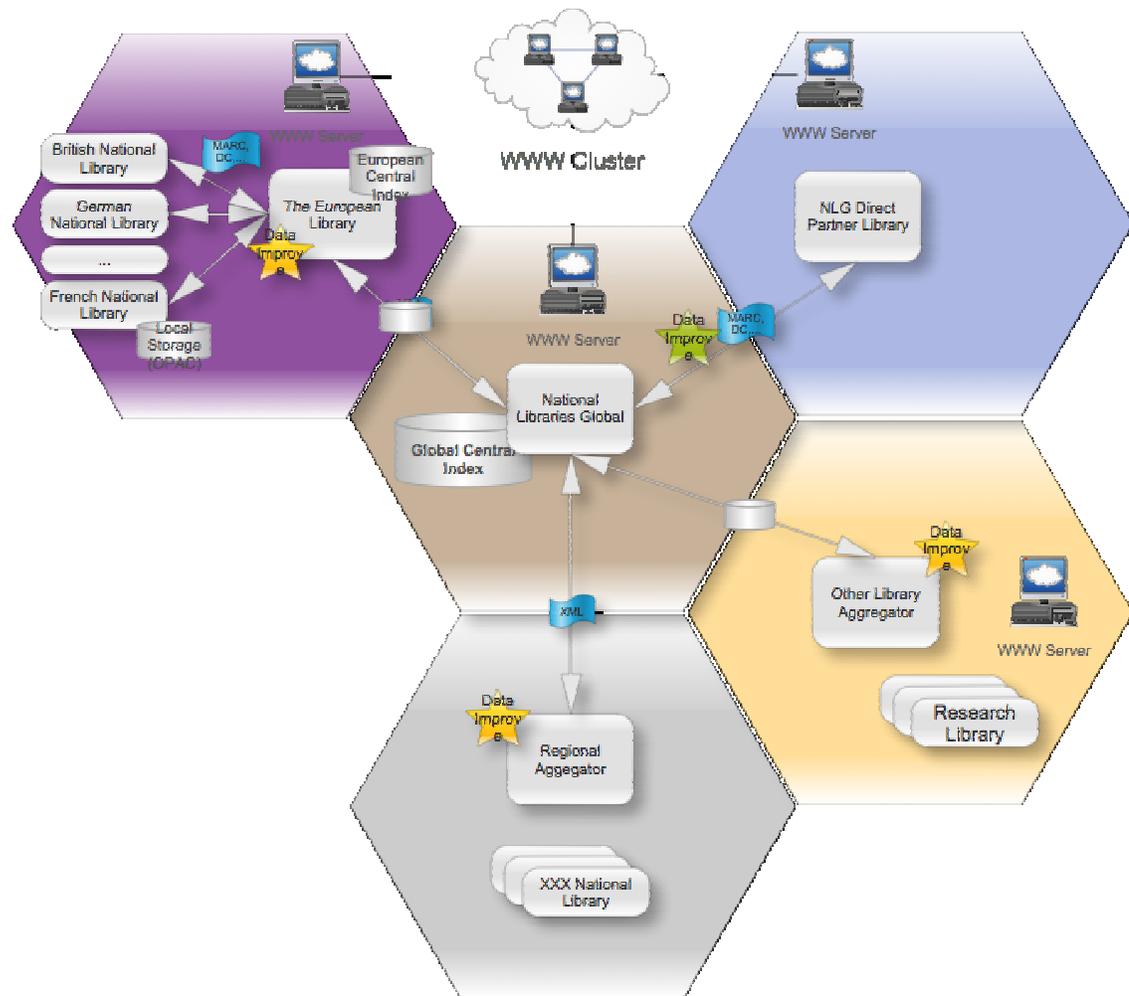
Figure 1: Possible Aggregation Infrastructure

A central index design and the use of equivalent tools have the potential to reduce the amount of manual work for metadata mapping, normalisation and data improvements for information retrieval, allowing semantically meaningful data exchange. Another important advantage of a common technical infrastructure would be that technical realisations of innovations could be shared on an open-source basis and would therefore be applicable to all systems without further adoptions and integration tests.

6. Start-up costs

Both approaches, a centralised system or a distributed regional continental system, have start-up costs:

1. Centralised system: Cost of hardware; recruitment of team to develop the site, manage the project and bring in the national libraries; design of the site and deployment of the software
2. Distributed system: Recruitment of individuals to manage the project and bring in the national libraries; design of the site; deployment of the software and collaborative working environment.

For a first-class service and portal, the TEL Office considers that external project funding is essential. Such a vision might include investment in an aggregation of African libraries, for example.

Once the infrastructure has been established, ongoing operations would need to be funded by the libraries themselves, with further innovation achieved via fresh external funding.

Table 1: Summary of estimates of start-up costs in Year 1

Year 1

€ euros	NLNZ cost estimates	TEL comparative cost estimates for centralised model	Distributed model cost estimates
Staff	Not stated	558,000*	40,000 per volunteer coordinator for maintenance & support and manager
IT	34,000		20,000 or 34,000 depending if central system is set up or not
Hardware		33,500	
Hosting costs		28,000	
Portal design		10,000**	10,000
Marketing	Not stated	20,000***	10,000 because marketing is regional
Total		679,500	40,000 x number of regional aggregators
Initial start up costs		200,000****	20,000 for collaborative working environment deployment and set-up

*	Based on current staffing levels in TEL
**	Based on sharing work done on TEL
***	One year of promotion, using a consultant
****	Hardware, hosting, 2 FTE´s for one year
*****	Based on 5 regions in first year, including TEL, costs of hardware, hosting, deployment of software, 2 individuals managing everything centrally for up to 12 months

Table 2: Summary of estimates for operations over Years 2-5

€ euros	Year 2	Year 3	Year 4	Year 5
Central NLG*	700,000	900,000	1,000,000	1,200,000
Distributed system	80,000 x 5 = 400,000**	80,000 x 7 = 560,000	80,000 x 10 = 800,000	Year 4 plus additional hardware = 850,000
Collaborative workspace	15,000	15,000	15,000	15,000

costs					

*	Based on TEL costs and doubling numbers of libraries contributing each year
**	Based on 2 people and some hardware costs per region and 5 regions or partners

Table 3: Estimated costs to TEL National Libraries Year 1 to Year 5 if TEL acts as a regional host

	Year 1	Year 2	Year 3	Year 4	Year 5
Central NLG	100,000 – division of estimated costs	100,000	100,000	100,000	100,000
Distributed system	15,000, extra work in development and management. **Everything else is in place**	40,000 for additional server capacity and developer to host NLG mirror	60,000 for additional server capacity and developer to host NLG mirror	60,000 for additional server capacity and developer to host NLG mirror	70,000 for additional server capacity and developer to host NLG mirror

6.   Conclusions

The European Library aspires to showcase its libraries' collections worldwide via a service such as National Libraries Global. It also considers that a global service could serve the academic and research communities well. The issue is whether national libraries have sufficient confidence in the user need for this service and are willing to seek the necessary funding, internal and external, and level of cooperation to achieve it.

7.   Questions for NLG

What is the target audience for the site?
Would the phased development (continent by continent) joining in to the NLG be workable?
What would the governance be?
How many libraries have volunteered metadata?
How many libraries might act as initial sponsor for their region or continent?

The European Library Office, July 2010