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Do users get what they pay for? A resource allocation model for Oxford University Library Services

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Abstract: *Oxford University Libraries Services (OULS) has recently been established as an integrated library service for the University of Oxford, bringing together over thirty different libraries and services. To help with the process of integration, OULS has developed an activity-based costing model to analyse the activities carried out across in the different libraries across OULS, and their costs; and has sought to trace those activities back to the users served, and the sources of funds to support those users. The paper describes the model and the effects it has had on library financing.*

I shall begin by answering the question, why did Oxford University Library Services (OULS) decide to do this? The project began as an Activity-Based Costing exercise, in two parts: (1) to analyse how staff in our libraries spend their time, and to work out how much it cost; (2) to find a way of relating those costs to the income we receive from our University and elsewhere. We had to do this because OULS is such a complex organisation. It was brought together in February 2000, and at present consists of 36 libraries and services, and it is still growing. (Figure 1)



Oxford University Library Services

Libraries and Services

Bodleian group

- [Central Bodleian](#)
- [Radcliffe Science Library](#)
 - [Hooke Library](#)
- [Rhodes House Library](#)
 - Vere Harmsworth Library
- [Bodleian Law Library](#)
- [Indian Institute Library](#)
- [Bodleian Japanese Library](#)
- [Institute for Chinese Studies Library](#)
- [Oriental Institute Library](#)
 - [Eastern Art Library](#)
- [Philosophy Library](#)

Other libraries

- [Department of Educational Studies Library](#)
- [English Faculty Library](#)
- [History Faculty Library](#)
- [International Development Centre Library](#) at Queen Elizabeth House
- [Modern Languages Faculty Library](#)
- [Music Faculty Library](#)
- [Plant Sciences Library](#)
- [Refugee Studies Centre Library](#)
- [Sackler Library](#)
- [Sainsbury Library](#) at the Saïd Business School
- [Social Studies Libraries](#)
 - Economics Library
 - Politics, International Relations and Sociology Library
 - Social Policy and Social Work Library
- [Taylor Institution Library](#)
- [Theology Faculty Library](#)

- [Cairns Library](#)
 - Churchill Hospital
 - John Radcliffe Hospital
 - Radcliffe Infirmary
- [Institute of Health Sciences Library](#)

Services

- [Systems and Electronic Resources Service](#)
 - [Oxford Digital Library](#)
- [Preservation Planning and Advisory Service](#)
- [Service Assessment and Planning](#)
- [Staff Development](#)

[Figure 1]

We had to integrate their administration. Our financial mechanisms were unclear. We wanted to know, How much does it cost to do a task? Does it cost the same in different libraries? How much do users (stakeholders) pay, for what they get?

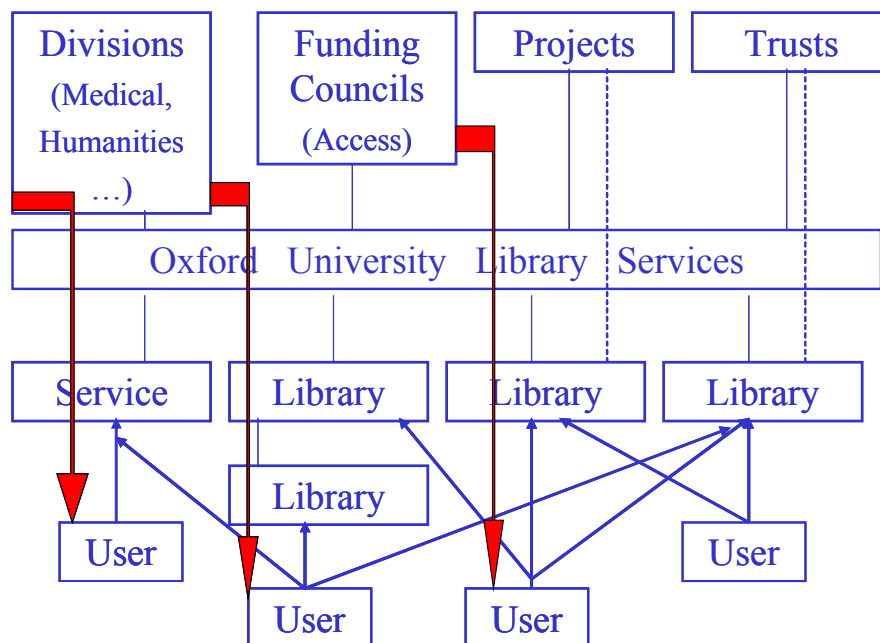
There are several different kinds of libraries in OULS. There are large research libraries; and subject libraries. There are 'autonomous services', which are not based in a library but provide services for everybody in OULS. For example, we have a Systems and Electronic Resources Service, which is responsible for the Catalogue system and for electronic datasets. We also have what I call 'embedded' services, where people in one library provide service for another. An example is Catalogue support: the cataloguers in the Bodleian Library make alterations requested by other libraries. The general administration is another example; some parts of it are based within the Bodleian Library but provide services for all.

I want to talk about our financial mechanisms. Where does our income come from? There are several sources. We get money from our University, which takes it from the Academic (subject-based) Divisions. We get money from the British Higher Education Funding Councils, because we let readers from all over Great Britain use our libraries, and because we are a legal deposit library. We get money for special projects funding, and from gifts and property we own. We make money from photocopying, and from the tourists who visit Oxford and our libraries

How do we spend our money? In the past we have simply looked at last year's expenditure, and made a few adjustments. Our accountants recognised six types of expenditure: Staff, Library materials (that is, books and journals), preservation, supplies, equipment and premises (buildings). There were all sorts of things we didn't know. We didn't know the true cost of an acquisition: not just the cost of the item, but the cost of staff time used on acquisitions, and the overhead for library administration that enables the acquisitions section to do its work. So we couldn't answer questions about the cost of services per user, for example how much it costs to answer an enquiry. And we didn't know how income relates to expenditure

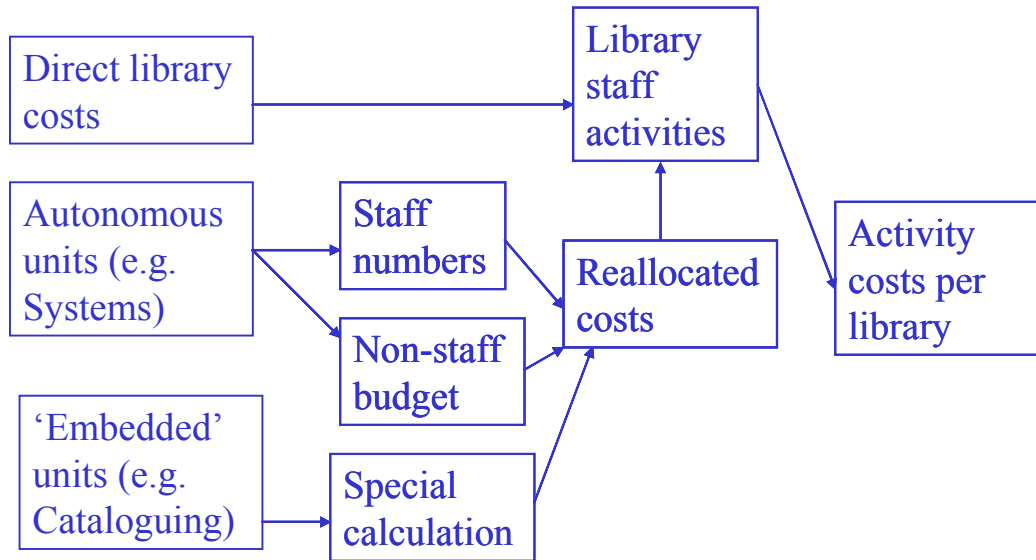
What we had was a 'Melting Pot': all the different type of income get poured into OULS, get mixed together, and then we spend the money in all sorts of different ways. But our readers, from the different academic divisions and elsewhere, use different libraries and services in complicated ways. (Figure 2)

The Melting Pot



[Figure 2]

We employed a firm of consultants, JM Consulting, who are experts in reviews of costs. The method they used was to push all costs through to 'service-point libraries', that is, to those libraries (and those departments in the big libraries) who directly serve a group of users). All of the background costs, for example administration, were split up and allocated to these 'service-point libraries' . (Figure 3)



[Figure 3]

JM Consulting analysed all our activities and tried to establish the use of libraries by different groups of readers.

How did we push all the costs through, how did we reallocate them? Within each library's budget, we added the cost of supplies, and all the cost of equipment, to all the staff costs, because spending on supplies and equipment is related to the staff activity. We added books and materials to the activity 'Selection', and spending on Conservation: to the activity 'Conservation'. We added premises costs to the activity 'janitorial and maintenance work'

We did a similar reallocation of costs of the autonomous & embedded services. Administration and equipment costs were spread across all staff costs. Cataloguing: was allocated to the activity 'Cataloguing'. Spending on Electronic datasets and general Collection Development costs were allocated to the activity 'Selection' and Common Reader Services: to the activity 'Retrieval of materials'.

A specific example: Library A has 16.6 FTE (full-time equivalent) staff out of a total OULS staff complement of 401.44 FTE staff. They therefore allocated to it (16.6/401.44) of the £1,187,182 central administration costs, i.e. £49,091

The result is a set of activities with costs against each of them, for each of our

libraries. There are interesting differences between libraries: for example, Library A spends 9% of its expenditure on cataloguing, Library B spends just 1%. (Figure 4)

| Summary of Total Library Costs: | | | | | |
|--|---------------|-------------|----------------|-------------|---------------|
| | Lib A | | Lib B | | Lib C |
| By Activity: | £ | % | £ | % | £ |
| Material related: | 454158 | 47% | 377529 | 28% | 107122 |
| 1 Selection | 216529 | 22% | 279049 | 21% | 63342 |
| 2 Ordering | 40805 | 4% | 8855 | 1% | 4655 |
| 3 Receiving | 23626 | 2% | 8003 | 1% | 9345 |
| 4 Cataloguing & classification | 88472 | 9% | 19681 | 1% | 10426 |
| 5 Shelving & reshelving | 19857 | 2% | 2465 | 0% | 3335 |
| 6 Conservation & preservation | 64869 | 7% | 59476 | 4% | 16019 |
| ... | ... | | | | |
| User related: | 182884 | 19% | 265898 | 20% | 55595 |
| Administration and enabling: | 325568 | 34% | 684313 | 52% | 71746 |
| Total | 962609 | 100% | 1327740 | 100% | 234464 |

[Figure 4]

We can also map the results to use. The first set of figures in Figure 5 are the sort of statistics you can find in many national collections for 'whole libraries', except that the sums of money are not what appears in traditional accounts, but include all the overheads for 'backroom' services. The second set is a more detailed set of figures which examine the costs of use – for example, what is the user-related cost of every user seat? The costs vary enormously from £333 per seat to £1,085 per set.

| Summary of Library costs: | | | | | |
|--------------------------------------|--------------|--------------|--------------|------|----|
| | Lib A | Lib B | Lib C | | |
| | £ | £ | £ | | |
| Unit Cost comparisons: | | | | | |
| 1 Total cost per opening Hour | | | 103 | 116 | 69 |
| 2 Total cost per volume held | 2 | 5 | | 3 | |
| 3 Total cost per reader seat | 1404 | 4225 | | 1662 | |
| 4 User related cost per reader seat | 333 | 1085 | | 427 | |
| 5 Loan & retrieval cost per vol circ | 0.26 | 0.30 | | 0.95 | |
| 6 Cataloguing cost per vol cat'd | 7 | 7 | | 2 | |
| 7 Staff devt cost per staff member | 1316 | 1635 | | 2031 | |
| 8 Admin cost as % of whole | 31% | 31% | | 30% | |
| 9 Enquiry cost as % of user rel cost | 33% | 33% | | 33% | |

[Figure 5]

But what about the users? Remember I said earlier that our Academic subject

Divisions pay a 'tax' to OULS. How are our users spread among the Divisions? Which libraries do they use? How much do they use them? What does it take to support them? What is the expenditure on each library?

To answer the question, 'How are users spread among the divisions?', we simply used the University's own figures about student numbers. Some students study subjects taught by more than one division, and for those we use what the University calls the 'teaching load', which is used to calculate how much money each division gets. For example, if an undergraduate is studying Engineering, Economics and Management, the University pays 30.78% of the student fee to the Social Sciences Division, and 69.22% to the Mathematics and Physical Sciences Division. (I am not sure that teaching load = library load!). We used the same method for taught postgraduates. Staff and Research postgraduates all belong to a division, so that part was easy.

Figure 6 shows an example of how we calculated this – there are 343 Biochemistry students and 84% of their fee is given to the Life Sciences Division, the rest is split among the other Divisions.

| Course | FTEs | Human | Soc Sci | Maths/Phys | Life Sci | Medicine |
|---------------------------------|-------------|--------------|----------------|-------------------|-----------------|-----------------|
| Ancient & Modern History | 58 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Archaeology & Anthropology | 79 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 |
| Biochemistry | 343 | 0.24 | 0.00 | 5.68 | 84.22 | 9.90 |
| Biological Sciences | 298 | 0.00 | 0.00 | 0.00 | 99.88 | 0.12 |
| Chemistry | 672 | 0.30 | 0.00 | 99.45 | 0.24 | 0.00 |
| Classical Arch. & Ancient Hist. | 14 | 50.00 | 0.00 | 0.00 | 50.00 | 0.00 |

[Figure 6]

Which libraries do they use? We have lots of libraries in the University. We used survey results to establish their department or course, which libraries they use, and how often they visit each library

Figure 7 gives an example. There are 86 students studying English and Modern Languages. In their English studies, they use the English Library and the Bodleian Library. In their Modern Languages studies, they use the Modern Languages Library and the Taylor Library. They use their main library 60% of the time, and their second library 40% of the time. That allows us to allocate the 83 students across the four libraries, in proportion to their use.

| | | | | | |
|--------------------------------|------|--------------|---------------|-------------|-----------|
| Library | | English Lib. | Mod. Lg. Lib. | Taylor Lib. | Bodleian |
| Level of use | FTEs | English 1 | Mod Lang 1 | Mod Lang 2 | English 2 |
| <i>English & Mod.Lang.</i> | 86= | 25.8 | 25.8 | 17.2 | 17.2 |
| Percentage attribution | | 30% | 30% | 20% | 20% |
| | | 60% | | 40% | |

[Figure 7]

How do we relate that cost back to the Academic Divisions? For each subject and library: we use the following formula:

*((FTE users of library [FTE= Full Time Equivalent]
x [multiplied by]
(use of library
/ [divided by]
use of all OULS libraries))
x [multiplied by]
fraction attributable to Division)*

This is the apparent outcome of the exercise:

| Division | Expenditure | Payment |
|-----------------|-------------|-------------|
| Humanities | 4,317,261 | 3,402,400 |
| Social Sciences | 2,237,674 | 1,979,796 |
| Maths/Physics | 1,184,154 | 3,354,759 |
| Life Sciences | 915,773 | 1,636,702 |
| Medicine | 848,350 | 3,070,129 |
| External &c | 9,012,353 | [5,003,878] |

You will see that when we analyse what comes into the melting pot and what comes out of it, some Divisions have more favourable results than others!

There is an extra question we must answer: What does it take to meet their needs? Do we spend the same meeting the needs of a member of staff, as we do meeting the needs of an undergraduate student. To solve this, we added the idea of 'user weights'.

First we gave everyone the same weight – this is like the University formula for the 'tax'. We also tried another mode, based on book budgeting formulae: Undergraduate = 1, Postgraduate = 3, Staff = 6, External = 1. A third method was to modify it so that Undergraduate = 1, Postgraduate = 1.5, Staff = 2, External = 0.4 – this may better reflect how OULS spends it.

But what are we measuring? Is it the cost of materials for them?, or staff time on them? Or a mixture?

The chart below is a chart of what happens when you change the user weights, according to the 1:3:6:1 model, for undergraduates, postgraduates, staff and externals (U:P:S:E)

| U:P:S:E | 1:1:1:1 | 1:3:6:1 |
|-----------------|-----------|-----------|
| Humanities | 4,317,261 | 4,956,906 |
| Social Sciences | 2,237,674 | 2,941,678 |
| Maths/Physics | 1,184,154 | 1,225,230 |
| Life Sciences | 915,773 | 1,130,177 |
| Medicine | 848,350 | 1,711,452 |
| External &c | 9,012,353 | 6,550,122 |

Changing the formula for user weights makes a big difference to the outcome, so it is important to get the weights correct.

What's happened since we started this exercise? It has been used in staff review to plan for better staff structures. It has certainly stimulated a lively discussion among academic divisions! It is also being used by the University in its forward planning. We can use it in benchmarking with other university libraries, and we can allocate resources more effectively and argue for more resources where needed.

All in all, the Activity-Based Costing and Resource Allocation model is proving to be a crucial development in the management of Oxford University Library Services.