Evaluating CALIS interlibrary loan and document delivery: the MML plan

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Abstract
Purpose – This paper aims to report on the methodology and findings of the China Academic Library and Information System (CALIS) Model Member Libraries (MML) plan which evaluated the success of interlibrary loan and document delivery (ILL/DD) services among 71 CALIS member libraries.
Design/methodology/approach – CALIS constructed an evaluation instrument consisting of a set of primary and secondary performance indicators, which were used to assess participating libraries in a number of areas such as the number of bibliographic holdings contributed to the union catalog, the number of qualified professional staff dedicated to ILL/DD, the amount of training provided for library staff and end-users, request volume, fill rate, turnaround time and user satisfaction.
Findings – CALIS has implemented the evaluation with the purpose of better understanding ILL/DD service among its member libraries. The evaluation has achieved the expected targets and improved service performance as originally planned. The performance measures provide a basis for the MML to compare their ILL/DD service performance with another similar institution.
Originality/value – According to the evaluation, the major objectives of MML on ILL/DD service are summarized.

Keywords China, Interlending, Interlibrary loan, Document delivery, Consortia, CALIS

Paper type Case study

Introduction
CALIS, the China Academic Library and Information System, is an academic library consortium whose mission is to promote resource-sharing among academic libraries in China. Headquartered in Beijing, it has a long tradition of promoting and supporting resource-sharing in a number of ways, including the development of a peer-to-peer resource-sharing system for use by member libraries (Yao and Zeng, 2012). In 2011, CALIS launched its CALIS Model Member Libraries (MML) plan in an effort to promote CALIS services among member libraries. Through the MML program, CALIS hoped to test the validity of its service model, promote wider use of CALIS services, improve the impact of CALIS projects and train librarians on the latest concepts and technologies. Because interlibrary loan and document delivery (ILL/DD) are such critical components of CALIS service offerings, 71 libraries took part in the MML plan for ILL/DD services.

This article provides the reader with an overview of the CALIS ILL/DD service evaluation of its MML, including the purpose of the evaluation, assessment indicators, the evaluation framework and data collection and analysis. It demonstrates how the evaluation was conducted and how it became an essential tool for measuring CALIS services[1].
First, both primary and secondary performance indicators should be constructed and a definition of each indicator should be given to MML staff members.

Second, an evaluation framework should be established, including the weight, ratio, score, source and counting method of each indicator. It is crucial to seek professional advice at this point.

Third, data collection for each performance indicator should be either directly obtained through the CALIS ILL/DD system or indirectly through member libraries and their users’ surveys.

At the same time, an evaluation system should be developed, so that the evaluation process could be managed (note: the evaluation system is not discussed in this paper).

Finally, the data must be analyzed, the evaluation results provided and any feedback or problems should be summarized. If necessary, the evaluation indicators should be revised according to participants’ feedback.

Evaluation framework of ILL/DD service

The ILL/DD service evaluation framework, intended to measure and guide future improvement of current CALIS services, focuses on four selected issues:

1. The basic requirement, which refers to bibliographic holdings data;
2. Service ability, reflecting the technology, staffing and collections needed to support ILL/DD services;
3. Service quality; and
4. Service effect.

These four issues comprise the four primary indicators; in addition, the framework comprises 12 secondary indicators, a scoring method, definitions of indicators and the source of data for each. A few of these criteria are qualitative indicators, but most of these indicators are quantitative in nature. This will help greatly in clarifying libraries’ differences and will be especially useful for measurement.

Participating libraries are scored against each indicator; the total possible score of the evaluation framework is 100 points (as we will see later, there are also two bonus points that could be awarded). The basic requirement, the first primary indicator, is intended to encourage member libraries to submit their holdings data, including books and periodicals, to CALIS and to update these records in a timely manner. As ILL/DD services are built on a foundation of reciprocity, the most basic requirement for participation is that a library must have collections to share and provide the necessary bibliographic access to those collections (Table I).

The second primary indicator is service ability, which comprises three secondary indicators that measure whether a participating library has access to the necessary technical equipment (e.g. networks, computers, scanners, printers, fax machines, digital cameras), human resources (e.g. full-time staff with suitable professional qualifications) and collections, including databases and e-resources, required to support ILL/DD service (Table II).

Service quality, the third primary indicator, has multiple dimensions and is the core indicator of this evaluation. It includes three secondary indicators:

1. Total Transactions, which must be processed via CALIS ILL/DD control center in order to be counted;
2. Fill Rate, or the percentage of filled requests as a measure of total request volume; and
3. Service Time, which refers to the average turnaround time (Table III).

Service effect, the fourth primary indicator, contains four secondary indicators, which are:

1. The Increase of Registered Users, i.e. the number of new registered users during the data collection period.
2. Internal Requests, or the number of ILL/DD requests submitted by the end-users from the member libraries’ own institution.
3. Training, the number of user training sessions held by member libraries.
4. User Satisfaction Level, which measures the users’ satisfaction with the member libraries’ ILL/DD service.

And finally, as the assisted searching and retrieving service is complicated and difficult to carry out, it is awarded as a new indicator to be added to the evaluation framework. The libraries that provide this service will get two more extra points (Table IV).

### Table I Primary and secondary indicators for basic requirements

<table>
<thead>
<tr>
<th>Primary indicator</th>
<th>Score</th>
<th>Secondary indicator</th>
<th>Score</th>
<th>Definition of indicator</th>
<th>Source of data</th>
<th>Counting method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic requirement</td>
<td>10</td>
<td>Bibliographic holdings</td>
<td>10</td>
<td>Library submits all holdings data to CALIS and updates them on time</td>
<td>Provided by member libraries</td>
<td>Submitted holdings (%)</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>90</td>
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<td>80-90</td>
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<td>60-70</td>
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<td></td>
<td>50-60</td>
</tr>
</tbody>
</table>
Table II Primary and secondary indicators for service ability

<table>
<thead>
<tr>
<th>Primary indicator</th>
<th>Score</th>
<th>Secondary indicator</th>
<th>Score</th>
<th>Definition of indicator</th>
<th>Source of data</th>
<th>Counting method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service ability</td>
<td>20</td>
<td>Owned equipment</td>
<td>5</td>
<td>Library has adequate technical equipment for ILL/DD service (e.g., networks, computers, scanners, printers, fax machines, digital cameras, etc.)</td>
<td>Provided by member libraries</td>
<td>One can get 1 point as long as one kind of machine is equipped and is running well. The total score of this indicator is 5 points</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Staff</td>
<td>10</td>
<td>Library has full-time ILL/DD service staff with their professional qualification</td>
<td>Provided by member libraries, audited by CALIS</td>
<td>One can get 2 points with each full-time staff on ILL/DD service; one who has CALIS ILL training certificate can get plus 3 points; the total score does not exceed 10 points</td>
</tr>
<tr>
<td>Use of search engines</td>
<td>5</td>
<td></td>
<td></td>
<td>The basic databases used for ILL/DD service</td>
<td>Counted by CALIS</td>
<td>One can get 2 points if CALIS literature retrieval systems (such as eDu, CCC, Union Catalogue) are used as the basic databases. One can get 5 points if the usage amount of CALIS literature retrieval systems is higher than the average level</td>
</tr>
</tbody>
</table>

Table III Primary and secondary indicators for service quality

<table>
<thead>
<tr>
<th>Primary indicator</th>
<th>Score</th>
<th>Secondary indicator</th>
<th>Score</th>
<th>Definition of indicator</th>
<th>Source of data</th>
<th>Counting method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service quality</td>
<td>40</td>
<td>Total transactions</td>
<td>20</td>
<td>Total transactions handled through CALIS ILL/DD system with central handling function</td>
<td>Counted by CALIS</td>
<td>Amount Score Amount Score</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt;=2,000 20 200-400 11</td>
<td></td>
<td>1,800-2,000 19 100-200 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,600-1,800 18 80-100 9</td>
<td></td>
<td>1,400-1,700 17 60-80 8</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>1,200-1,400 16 40-60 7</td>
<td></td>
<td>1,000-1,200 15 20-40 6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>800-1,000 14 1-20 5</td>
<td></td>
<td>600-800 13 0 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400-600 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The score maybe adjusted according to the real transaction amount of member libraries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fill rate</td>
<td>15</td>
<td></td>
<td></td>
<td>Counts the proportion of filled requests against total requests</td>
<td>Counted by CALIS</td>
<td>(%) Score (%) Score</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90 15 50-55 7</td>
<td></td>
<td>85-90 14 45-50 6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80-85 13 40-45 5</td>
<td></td>
<td>75-80 12 35-40 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70-75 11 30-35 3</td>
<td></td>
<td>65-70 10 25-30 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60-65 9 &lt;=25 1</td>
<td></td>
<td>55-60 8</td>
</tr>
<tr>
<td>Service time</td>
<td>5</td>
<td>Average turnaround time</td>
<td></td>
<td></td>
<td>Counted by CALIS</td>
<td>If the service time is less than 3 days (promised time difference), one can get 5 points. For each day's delay, 0.5 point is deducted</td>
</tr>
</tbody>
</table>

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accordance with the evaluation method and procedure, and the evaluation framework was reviewed by experts. The data are handled in the CALIS evaluation system. The top score is set at 102 points, which includes a possible two extra points.

The evaluation results showed Shaoxing University in Zhejiang Province tops among the 71 participants, with its score of 99 points. The lowest score of all the participants is 62. As the minimum passing score is 60, all participating libraries have passed the evaluation, suggesting there is a solid foundation for current and future resource-sharing initiatives between CALIS member libraries. The distribution of scores is as follows: 9 participants scored between 90 and 100 points, 27 participants scored between 80 and 90, 23 participants between 70 and 80 and 12 participants between 60 and 70 points. We think the evaluation results accurately reflect the situation of MML during the evaluation period of October 1, 2012 to May 1, 2013. In the following section, each evaluation indicator will be analyzed, and the experience and lessons will be summed up.

**Basic requirement analysis**

Holdings are considered to be the most important indicator to investigate the basic requirement, and so holdings are not only the first primary indicator, but also the only secondary indicator in this section. All 71 MML submitted holdings data to CALIS, each library submitting more than 350,000 holdings on average, and the holdings are then loaded into the CALIS union catalog. Then, the number of a library's submitted holdings is counted as a percentage of its total holdings. The higher the percentage, the higher the score. East Normal University submitted its holdings information with the highest volumes among all participants. Their holdings have reached over one million: 1,080,015 pieces to exact. Sixteen libraries get full credit for this indicator, as their total holdings reached 100 per cent, thus ensuring a wide variety of holdings for CALIS users to access (Figure 1).

**Table IV** Primary and secondary indicators for service effect and extra award points

<table>
<thead>
<tr>
<th>Primary indicator</th>
<th>Score</th>
<th>Secondary indicator</th>
<th>Score</th>
<th>Definition of indicator</th>
<th>Source of data</th>
<th>Counting method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service effect</td>
<td>30</td>
<td>The increase of</td>
<td>10</td>
<td>The number of new registered users</td>
<td>Counted by CALIS</td>
<td>The number of new registered users: More than 200 = 10 points From 150 to 200 = 8 points From 100 to 150 = 6 points Less than 100 = 5 points</td>
</tr>
<tr>
<td>Internal requirement</td>
<td>10</td>
<td>The number of</td>
<td></td>
<td>The pieces of requirement: More than 2000 = 10 points From 1,500 to 2,000 = 9 points From 1,000 to 1,500 = 7 points From 500 to 1,000 = 5 points Less than 500 = 3 points</td>
<td>Counted by CALIS</td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td>5</td>
<td>User trainings held</td>
<td>5</td>
<td>One can get 0.5 points with each time of training organized on ILL/DD service, the highest score is 3 points</td>
<td>Provided by member libraries</td>
<td>The one who provides promotional materials to CALIS, add 1 point; the one who assists CALIS provincial centers to provide service and training, add 1 point</td>
</tr>
<tr>
<td>User satisfaction level</td>
<td>5</td>
<td>User satisfaction</td>
<td>5</td>
<td>Very satisfied = 5 points Satisfied = 4 points Ordinary = 3 points Dissatisfied = 2 points Very dissatisfied = 1 point</td>
<td>Counted by CALIS</td>
<td></td>
</tr>
<tr>
<td>Award</td>
<td>Extra 2</td>
<td>Special service</td>
<td>2</td>
<td>The library provides &quot;assisted searching and retrieving service&quot; gets 2 extra points</td>
<td>Counted by CALIS</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1** The percentage of submitted holdings versus total holdings of the libraries

![submitted holdings Vs total holdings](image)
Service ability analysis

Service ability includes three secondary indicators:
1. available technical equipment;
2. the staffing levels and qualifications; and
3. the usage of search engines.

For the equipment indicator, most libraries reported having the necessary equipment for ILL/DD services, i.e. network access, computer, printer, fax machine, scanner, digital camera, etc.

Regarding the staffs, more than 82 per cent of libraries have sent their staff members for training on CALIS ILL/DD service, and at least one of their staff members obtained CALIS certification. Forty libraries have two or more staff members with CALIS certification (Figure 2).

The indicator “the usage of search engine” is used to gauge the availability of suitable CALIS information retrieval systems in MML. This is used to improve data accuracy, and to increase the fill rate of ILL/DD requests. Although the numbers submitted through CALIS literature retrieval systems are small, most MML have started to use appropriate databases, union catalogs and other CALIS information systems for submitting ILL/DD requests. It is expected that MML will help promote wider use of these systems.

Service quality analysis

Service quality has three secondary indicators: total transactions, satisfaction rate and service time. These are core indicators of the CALIS ILL/DD service evaluation framework. Only the requests submitted directly from library to library are counted. The data collection period for this indicator ran from October 1, 2011 to May 15, 2012.

Wenzhou Medical University ranked number 1 with 3,866 total transactions, followed by Shaoxing University with 3,694 in the seven-month survey period. However, only four libraries’ total transactions numbered more than 2,000 requests; about half of the libraries’ total transactions are 100 or less (Figure 3). Obvious differences seem to relate to libraries’ operational capacity for carrying out ILL/DD service, the degree of attention to the service and the richness of the local collections. As the main purpose of this MML plan is to encourage more libraries to use the CALIS ILL/DD control center, the results show that all Model Members are beginning to use these services. Although participant libraries’ total transactions are not very satisfactory, it is understandable. The low level of transactions at some libraries may suggest unmet user needs and a possible area for growth.

Fill rate is another important key to evaluate service quality. The average fill rate of all MML is 86 per cent. The four libraries with the greatest number of total transactions are Wenzhou Medical College, Shaoxing University, Tianjin University and Fudan University, yet their fill rate is only about 90 per cent which does not even place them in the top half of the ranks of MML. However, the fill rate of some libraries with a small number of total transactions is very high, nearly reaching 100 per cent. For the fill rate indicator, CALIS advises that as long as the transaction amount reaches a certain number, the statistical evaluation on fill rate is a more useful indicator of the library’s performance (Figure 4).

With respect to service time, known also as turnaround time, if the average response time from initiation to completion of the request is within three days, the service time indicator suggests that the MML is meeting its expectations. The chart shows that 76 per cent of the libraries meet the standard. The other 24 per cent of the libraries are encouraged to analyze their processes, identify and resolve problems that adversely affect their service time and improve their operational management (Figure 5).

Service effect analysis

This indicator focuses on evaluating libraries’ promotion and training efforts with respect to ILL/DD services, as well as the users’ capability to use the service. The four secondary indicators are:

- Fill rate of libraries
- Percentage of libraries meeting fill rate standards
- Library satisfaction rates
- Library service time

Figure 2 The number of full-time ILL/DD staff members with CALIS certification

Figure 3 Total ILL/DD transactions of MML

Figure 4 The ILL/DD fill rate of MML

Figure 5 The ILL/DD service time of MML
1 the increase of registered users;
2 internal requests;
3 user training; and
4 user satisfaction level.

The last one is not counted this time because of the system development issues and the difficulty in carrying out the investigation. On the whole, about half of the libraries get full credit for service effect; only one library failed to pass.

The evaluation shows 11 per cent of the libraries registered more than 500 new users; 40 per cent registered between 200 and 400 new users; and the rest fewer than 200 new users.

ILL/DD requests include the requests submitted by the end-users of their own institution and other institutions. Internal requests refer to the number of requests submitted by the end-users of their own institution. Compared to total transactions which reflect the ability of one library to serve users from other libraries, internal requests reflect the dependence of libraries’ own end-users on local ILL/DD services. The amount of internal requests of Fudan University is 7,801, ranking it number 1 on this indicator. Wenzhou Medical College’s internal requests total 5,882, ranking it number 2. The total amount among all 71 Model Members is 70,269, with an average of 990 in each library during the data collection period (Figure 6).

Training measures the number of each library’s training workshops and trainees involved in the ILL/DD service, as well as the promotional materials provided to CALIS and the library support provided to its provincial service centers. In all, 73 per cent of the libraries get full credit in this area.

**Award analysis**

This evaluation provides two additional points for these libraries to promote the assisted searching and retrieving service. This added-value service is relatively difficult for MML because they have to arrange staffs with rich experience to do this job. Only 18 members get the additional award.

**Conclusion**

According to the evaluation, the major objectives of MML are as follows:

- disclosing all its holdings information to the public by submitting it to CALIS;
- continuous professional personnel training;
- promoting the use of CALIS search engines and databases to end-users;
- strengthening its cooperation with other member libraries of CALIS;
- increasing the variety of the services; and
- providing special and unique materials for CALIS member libraries.

CALIS has implemented the evaluation with the purpose of better understanding ILL/DD service among its member libraries. The evaluation has achieved the expected targets and improved service performance as originally planned. Its results were studied. The member libraries have made a great effort to ensure the success of the CALIS MML plan. The performance measurement provides a basis for the MML to compare its ILL/DD service performance with another similar institution. In addition, there are several other benefits, such as the standardization of CALIS ILL/DD service, the formulation of service working guidelines for member libraries and the examination of CALIS cloud platform and its functionality. ILL/DD service staff members have become more professional, confident and cooperative as a result of professional training. Such accumulated experience would eventually become the foundation of the development of efficient and quality services.

**Note**

1 The CALIS service evaluation system home page is at http://pinggu.calis.edu.cn/ (in Chinese).

**Reference**


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