

**Evaluation of the Data
Liberation Initiative**
Final Report

Prepared For:

The DLI Board of Management, *and*
Statistics Canada

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Executive Summary

Background

The DLI responds to the call from social-science researchers for government, particularly Statistics Canada (STC), to make public-use microdata files and databases more affordable. Federal government expenditure reduction measures implemented during the 1980s contributed to significant increases in the price of STC data. Consequently, STC data were priced beyond the means of most university researchers which resulted in a decline in the use of Canadian data both in research and teaching¹.

The DLI proposal received Treasury Board approval in January 1996 and was initiated as a 5-year pilot project in February of that year. Under the DLI, participating Canadian universities receive unlimited access to public-use microdata files and databases in exchange for an annual subscription fee.

The key objective of the DLI is to make STC's standard data products more accessible to the university research community. One of the original proponents of the initiative noted that the DLI "is aimed at increasing the flow of information from government to the public and in particular, the research and education community, and indirectly to all types of organizations in Canada."²

Study Overview

In February 1999, Goss Gilroy Inc. (GGI) was contracted to conduct an evaluation of the DLI. The purpose of this assignment was to evaluate the effectiveness of the DLI project from the perspectives of both the government and the recipient community. Seven different DLI stakeholders were identified and consulted as part of this evaluation, including: university DLI Contacts; researchers and students; STC's Internal DLI Steering Committee (ISC); members of the DLI Unit within STC; Directors of participating university libraries; members from federal government departments that provide funding for the DLI; and, members of the DLI External Advisory Committee. The evaluation was framed by four key dimensions of the DLI, including:

- the financial structure and affordability of the DLI;
- research and teaching using data obtained through the DLI;
- the program management and operations of the DLI and DLI Team; and,
- Statistics Canada's role and participation in the DLI.

Three qualitative and two quantitative techniques were employed to thoroughly examine each of these dimensions of the initiative. Our observations, in relation to the four main

¹ Interviews with members of the university research community over the course of this evaluation support this observation.

² Watkins, Wendy, "The Data Liberation Initiative: A New Cooperative Model", Government Information in Canada, Vol. 1, No. 2.5, 1994.

evaluation themes, are summarized below. It should be noted that the scope of this study did not require GGI to make recommendations for the future operations of the DLI.

1. Financial Structure and Affordability

- The DLI is financed through contributions from both the Canadian Government and Canadian universities and colleges;
- Initially, 70% of DLI funding came from the federal government; today, more than 70% comes from universities;
- The university subscription fees represent a small component of the total cost of supporting data services at universities;
- While current funding has been adequate, some questions were raised about the adequacy of funds to meet the evolving needs of the project; and,
- Those responsible for the project management of the DLI at STC felt that the current funding arrangement needs to be streamlined.

2. DLI-supported Teaching and Research

- Researchers and students felt that the project was extremely valuable;
- Researchers noted that DLI increased their potential for teaching and opened up new avenues for research;
- Students felt that the DLI had improved their data skills and increased their ability to do research;
- Documentation, including among other things, command files for public-use microdata, were not as highly regarded as were the data;
- Both data users and data librarians noted that data suppression and other techniques for protecting the confidentiality of respondents in microdata files limited the potential of the DLI in analyzing these files, and;
- In terms of improved policy analysis and more skilled potential employees, it is too early to identify the benefits of DLI to other government departments.

3. DLI Project Management and Operations

- The growth and evolution of the project have exceeded the original expectations of DLI project management;
- The EAC felt the operations of the DLI Unit were satisfactory, but felt that the Unit requires a more strategic vision to move from implementation to sustainability;
- The EAC recommended that the data files and databases that form part of the DLI service be managed as a collection;

- The DLI Unit at STC felt that improved communications with the EAC would allow the DLI to function more smoothly;
- Members of the Unit felt that the expectations of STC with respect to the project need to be clarified;
- The ISC felt that there was great potential for feedback from the research community back to the author divisions ;
- All university participants stressed the need for training; and,
- Several groups felt that other government data should be included in the DLI collection.

4. Statistics Canada's Role in the DLI

- None of STC's original reservations about the DLI (leakage of data into other markets; increased demand for support from data users) have become issues;
- Participation by, and support from, STC author divisions remains high; and,
- Many participants felt that standardizing data interfaces and procedures for adding new data to the collection are required.

Conclusions

- DLI has enjoyed greater support and success than had been anticipated at the outset of the initiative;
- DLI has made access to STC data for teaching and research more equitable across universities in terms of price, but there is still a wide gap in terms of the available expertise at some university data centres to provide a sufficient level of service, and;
- The long term viability of the project, in terms of service, training and infrastructure, depends on documenting a strategic plan for the future.

Table of Contents

Executive Summary	<i>i</i>
1.0 Introduction	1
1.1 Introduction	1
1.2 Study Objectives and Scope	1
1.3 Evaluation Themes, Stakeholders and Issues	1
1.4 Evaluation Methodology, including Research Sources	2
1.5 Report Structure	4
2.0 Background and Program Profile	5
2.1 Statistics Canada’s Requirement	5
2.2 Document Review and Data Collection Instruments	5
2.3 Logic Model and Description of the DLI Program	6
3.0 Evaluation Findings	10
3.1 Affordable and Equitable Access	10
3.2 Teaching and Research	16
3.3 Project Management and Operations of the DLI Unit at Statistics Canada ..	22
3.4 Statistics Canada’s Role	27
4.0 Conclusions	29
4.1 Program Process	29
4.2 Preliminary Program Results/Impacts	33
5.0 Looking Ahead	40
Appendix A - Evaluation Themes, Stakeholders and Issues	
Appendix B - Data Collection Instruments	
Appendix C - DLI Financial Summary	

1.0 Introduction

1.1 Introduction

This report presents the findings of the evaluation of the Data Liberation Initiative (DLI) pilot project. The study was conducted on behalf of the Director of Statistics Canada's Library and Information Centre and the DLI Board of Management.

1.2 Study Objectives and Scope

The objective of this study is to evaluate the effectiveness of the DLI project from the perspectives of both the government and the recipient community. Key factors in determining the DLI's effectiveness are affordability, accessibility and sustainability.

This report is based on the following dimensions of the initiative:

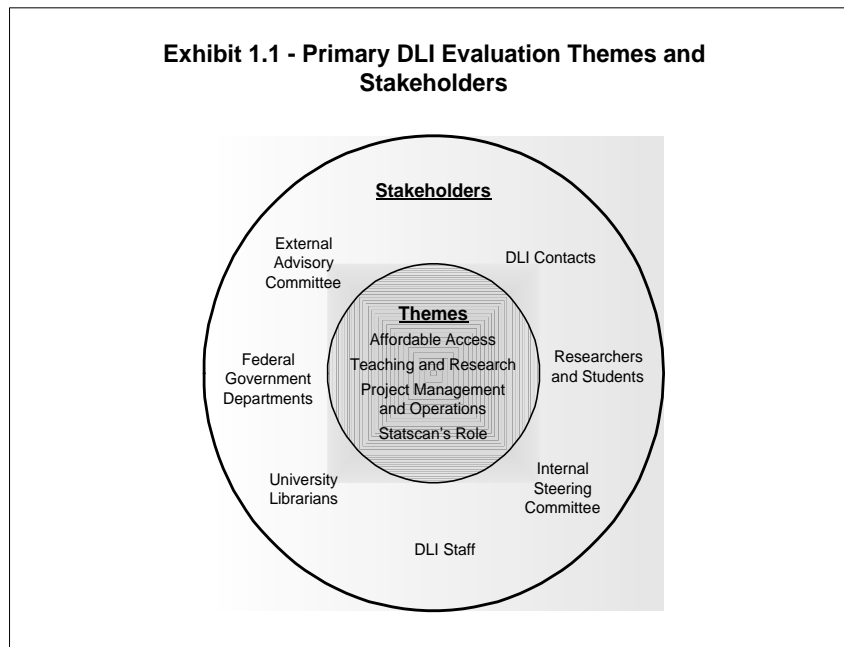
- the financial structure and affordability of the DLI;
- the program management and operations of the DLI and DLI Team;
- research and teaching using data obtained through the DLI; and,
- Statistics Canada's role and participation in the DLI.

These four dimensions of the DLI constitute the main themes of this evaluation. Because this evaluation is being conducted part-way through the DLI's 5-year pilot phase (i.e. at the end of the third year of operation), these findings will address both process and impacts (to date) of the DLI pilot project.

1.3 Evaluation Themes, Stakeholders and Issues

This evaluation has been guided by four evaluation themes. As noted in Exhibit 1.1, these address the affordability of the DLI for universities, the use of DLI data for teaching and research, DLI project management and operations, and Statistics Canada's (STC) role in the DLI. Seven different DLI stakeholders were identified and consulted as part of this evaluation, including: university DLI Contacts; Researchers and Students; STC's Internal DLI Steering Committee (ISC); members of the DLI Team; Directors of participating university libraries; Members from federal government departments that provide funding for the DLI; and, Members of the DLI External Advisory Committee.

Priority issues were formulated by the client-consultant project team for each stakeholder



group under the guiding evaluation themes³. As will be seen below, these issues were fully explored and addressed as part of the evaluative approach. This approach culminates in the evaluation's main findings and conclusions.

1.4 Evaluation Methodology, including Research Sources

A variety of data collection strategies were used to undertake this evaluation. These included:

- a detailed review of relevant DLI documentation, including Board of Management (BOM) Annual Reports, minutes of External Advisory Committee (EAC) meetings, related material from Statistics Canada's web site, reports on the amount of data downloaded from the DLI ftp site and messages from the DLI Listserv;
- focus group meetings with members of the EAC, the DLI Team and STC's Internal Steering Committee;
- surveys of DLI Contacts and students, conducted by the EAC, which were used to supplement the information gained through stakeholder consultations; and,

³ The evaluation issues are presented in detail in Appendix A.

- telephone interviews with researchers, graduate university students, library Directors and DLI Contacts at participating Canadian universities and representatives from federal government departments and agencies that provide funding for the DLI.

The characteristics and features of each methodology are highlighted below.

Document Review

The objective of the file and document review was to ensure that the objectives, structure, management and operations of the DLI were understood. The review focussed on the elements of the DLI that were identified in the evaluation terms of reference. The files and documents related to the DLI included guidelines, procedures and processes, initiative information, standards, promotional material and assessments. This information was also used to develop the program profile and logic model that is presented in Section 2.

Focus Groups

Focus group meetings were used as a key method to collect qualitative information. Focus groups with the EAC, ISC and DLI Team were conducted in order to gather a variety of perspectives. Participants in the meetings were asked to comment on their experience with the DLI, specifically discussing the financial structure, program management and operations, and the role of their respective organizations in the initiative.

Interviews

Information was gathered from the remaining stakeholders through telephone interviews. In total, 49 interviews were conducted with individuals that were identified for contact by STC. In some cases, all members of a certain stakeholder were included in the sample. In other cases, a sample of stakeholders was identified, from which a sub-sample of respondents for the evaluation was chosen.

The following is a profile of how these interviews were distributed across the various stakeholder groups:

- 17 University Researchers;
- 5 University Graduate Students;
- 6 University Library Directors;
- 18 DLI Contacts; and,
- 3 Federal Government Representatives.

Surveys

In addition to the consultations discussed above, the EAC conducted small surveys of both University students and DLI Contacts. Information from these surveys (details are given in Section 3) was used to help tailor the data-gathering instruments, provide the interviewers with additional background information and where relevant, augment the evaluation findings.

1.5 Report Structure

In addition to this Introduction, this report contains the following sections:

- Section 2.0 provides a background discussion regarding STC's requirement for this evaluation report and an overview of the documents that were reviewed. A detailed description of the activities, outputs and impacts of the DLI is also included;
- Section 3.0 provides the key evaluation findings that resulted from the stakeholder consultations, presented by evaluation theme; and,
- Section 4.0 provides a synthesis of the evaluation findings measured against the detailed program description (logic model) presented in Section 2.0.

Appendix A contains a copy of the priority evaluation themes, stakeholders and issues. Appendix B contains all the data-collection instruments that were used as part of this evaluation, Appendix C contains an overview of the financial information for the DLI.

2.0 Background and Program Profile

2.1 Statistics Canada's Requirement

The DLI BOM seeks to use the evaluation report to determine if the DLI should remain in-place, and if so, whether it should be modified. It was essential that, over the course of the study, all information from documents and stakeholders was accurately and systematically analyzed.

The DLI is a direct response to the call from social-science researchers for government, particularly Statistics Canada, to make public-use microdata files and databases more affordable. A change in the cost structure of these data occurred in 1984, where the price of data increased significantly as a result of federal government cost-cutting measures. Many data-users, particularly university researchers, were therefore forced to reduce the amount of data they purchased from STC. Ultimately, the use of STC data for teaching and research within Canadian universities decreased, and in many cases, U.S. data were used as an alternative.

The DLI received Treasury Board approval in January 1996 and was initiated as a pilot project in February of that year. Under the DLI, participating Canadian universities receive unlimited access to public-use microdata files and databases in exchange for a annual subscription fee. Commercial use of these data is prohibited through a data-use licence that participating universities must sign before they gain access to the DLI data collection.

2.2 Document Review and Data Collection Instruments

Prior to entering into the consultation phase of this assignment, an extensive document review was conducted. This helped ensure that the main evaluation issues were understood, and also helped fine-tune the data gathering instruments contained in Appendix B. These data collection instruments were developed with the client to ensure coverage of issues, themes and stakeholders. In total, five stakeholder interview guides and three focus group guides were developed.

The document review included:

- Minutes of the First and Second Annual BOM meetings;
- Minutes of EAC meetings;
- the Participant Binder developed for the 1998 DLI Training session;
- the DLI Data Acquisition and Use Agreement;
- records from, and on-going monitoring of, the DLI Listserv;
- a paper by Wendy Watkins entitled "The Data Liberation Initiative: A New Cooperative Model" in *Government Information in Canada* (Vol. 1, No. 2.5, 1994);

- a paper by Paul Bernard entitled “Phase Two of the Data Liberation Initiative: Extending the Data Culture” in *Government Information in Canada* (Vol. 3, No. 1, 1996);
- a paper by Wendy Watkins and Ernie Boyko entitled “Data Liberation and Academic Freedom” in *Government Information in Canada*, (Vol. 3, No.2, 1996);
- all copies of the DLI Update newsletter;
- the DLI Financial statements; and,
- the initial DLI Treasury Board submission.

2.3 Logic Model and Description of the DLI Program

The document review helped provide a comprehensive overview of the DLI. The following logic model formalized both the information obtained through the document review and the information obtained through detailed discussion with the client regarding the evolution of the DLI itself, into a succinct and useful “cause and effect” chart. It clearly illustrates the main interrelated activities and outputs developed by the DLI management team in the basic design and implementation of the initiative. Also, it clearly illustrates the actual/intended impacts or results of the key DLI activities and outputs.

In addition, the logic model provides an objective basis for:

- assessing the infrastructure that underlies the program, including skills, organizational structure, policies, procedures, systems and standards;
- identifying shortcomings in business processes and personnel; and,
- aligning the DLI’s organizational infrastructure with the impacts of the initiative.

Nature of the Model

There are two main features of the logic model presented in Exhibit 2.1. First, the vertical relationship between program activities, outputs and impacts implies primary causality only. While a program output may influence program impacts other than those indicated below that output, this influence is more of a by-product than an explicit output objective.

Second, the horizontal arrows that connect the activities simply imply the “logical” sequence of events in the main activity life-cycle of the DLI. In addition, the arrows help formalize the idea that activities undertaken at the outset of the initiative help support the impacts achieved by later activities, but their influence fades the further they are from that impact.

Five main program activities were identified for the DLI, as presented in Exhibit 2.1.. Each activity is examined below, along with their program outputs. A discussion of the program impacts are included in Section 4.0.

Identify and Embed DLI Requirements and Processes

As the name implies, a major thrust of the DLI was to make STC's standard data products more available. The DLI "is aimed at increasing the flow of information from government to the public and in particular, the research and education community, and indirectly to all types of organizations in Canada." (Watkins, 1994). This thrust comprises the first activity of the DLI.

The strategy for developing a program that would meet this aim was formally initiated at a meeting hosted by the Social Science Federation of Canada (SSFC) and attended by representatives from the Social Sciences and Humanities Research Council (SSHRC), Statistics Canada (STC), the Association of Universities and Colleges of Canada (AUCC), the Canadian Association of Research Libraries (CARL) and the Canadian Association of Public Data Users (CAPDU). Based on this meeting, a smaller working group was developed to design an initiative that would be acceptable to these parties. STC and the Depository Services Program played an advisory role in the initiative's development.

Once a draft framework for the initiative had been developed and accepted by the both STC and the SSFC working group, information sessions were held with a number of stakeholder groups. A Treasury Board submission was prepared, and final approval for the pilot of the DLI was given in January of 1996.

The key outputs from this activity were the research papers by Watkins and Boyko, the formation of key partnerships, the formation of business and work plans, and finally, the DLI Proposal. These outputs are listed directly below the first activity in Exhibit 2.1.

Align DLI Processes and Systems

Based on the consultations that were held during the formative stages of the initiative, a number of key requirements for the DLI were noted. First, the DLI had to provide affordable and equitable access for teaching and research. Second, the initiative had to ensure that data obtained through the DLI were used for academic research and teaching only. Third, a management structure was required to ensure that the initiative could be effectively managed and continue to provide value to DLI participants. Lastly, although no formal documentation was prepared, members of the EAC developed a model for delivering data to the university community. Aligning the DLI processes and systems led to three distinct groups of outputs, as shown in Exhibit 2.1.

The key outputs for this activity were separated into three groups. They are categorized according to the primary objective of each output. The first group of outputs includes the DLI Funding Structure, the DLI Licence and the creation of DLI Contacts, University Data Centres, Management Committees and the DLI Team / Unit. The second includes the DLI Order Process and the STC Service Model. The last group of outputs includes the ftp/Web interface and the STC Data Collection, Development and Management.

Assess, Enhance and Support Capabilities

A key link in the DLI structure were the data access services that were established at each university. At each data center, one DLI Contact was put in charge of responding to requests

for data from users within the university and managing the data that were resident in that university's data collection. During the implementation of the DLI, a team of data experts provided a 3-day training session for DLI Contacts to help them acquire the skills necessary to meet the demands placed upon them by the DLI. As an additional means of supporting the DLI Contacts needs, members of the DLI Unit developed and implemented a dedicated DLI Listserv. This allowed an informal means for Contacts to post questions regarding issues concerning the DLI. Based on a review of the Listserv's records, postings range from specific questions regarding individual data files to suggestions for improving the DLI itself. While the DLI Unit is primarily responsible for responding to questions posted to the Listserv, there is a high volume of discussion that takes place between DLI Contacts at separate universities.

For this activity, key outputs are broken into two groups. The first group of outputs includes the DLI listserv, the DLI workshops and training sessions, surveys and informal feedback. The second group includes product dissemination and the promotion of both the DLI and the DLI data. A number of different methods were used for promotion, including public news releases, posters and a DLI newsletter.

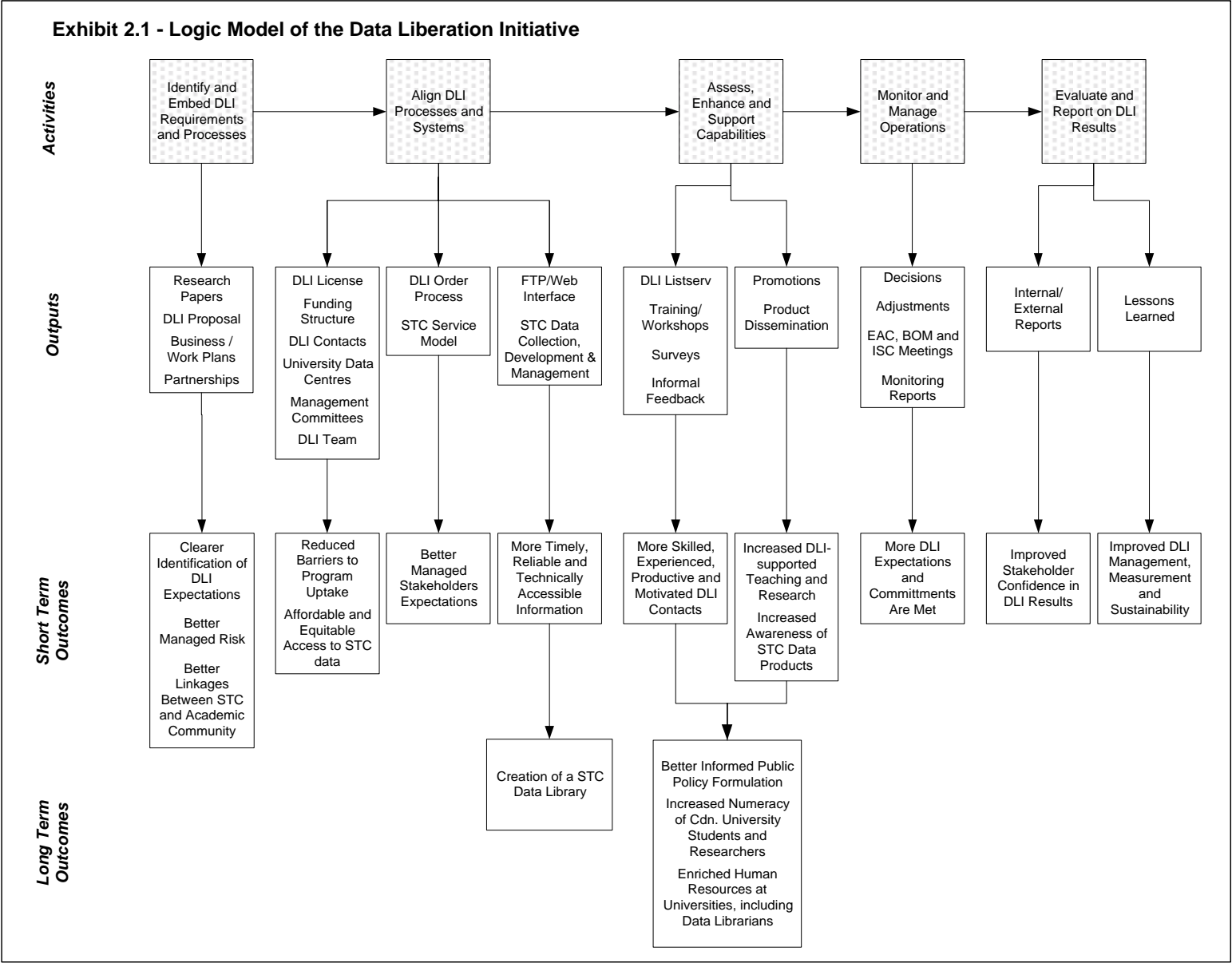
Monitor and Manage Operations

Having completed the first three activities, the DLI management team were then in a position to monitor and manage the operations of the DLI. Besides having processes that were in place to manage the operations and staff of the DLI, a number of management committees were also developed to ensure feedback from those involved in the DLI.

Key outputs of this activity include management decisions, program adjustments, monitoring reports and EAC, BOM and Internal Steering Committee (ISC) meetings.

Evaluate and Report on DLI Results

Besides the on-going and day-to-day monitoring of the initiative, the Treasury Board noted that an in-depth evaluation of the pilot of the DLI would be required. This evaluation was completed after year three of the initiative and is the primary output of this activity. Additional outputs of this activity will include recommendations and lessons learned, both of which are largely developed from the results of this evaluation.



3.0 Evaluation Findings

This section presents the findings of the evaluation. The findings are presented under the following categories:

- Affordable and Equitable Access;
- Teaching and Research;
- Project management and Operations of the DLI Unit at STC; and,
- Statistics Canada's Role.

For each stakeholder group, a target sample was formulated with the client, based on the relative importance of the information sought, combined with tradeoffs between budget limitation and statistical relevancy⁴. Although the target samples were not fully achieved, the actual samples achieved provided a sufficient base of information to meet the objectives of the evaluation. Interpretations of the resulting data were balanced across the multiple lines of evidence to ensure credible and accurate findings/conclusions. When interesting viewpoints were found by only a small number of participants, this information was clearly noted in the text below.

Exhibit 3.1 (next page) summarizes the population and sample distributions for all the stakeholder consultations.

3.1 Affordable and Equitable Access

As noted in the previous section, a key thrust of the DLI is to provide both affordable and equitable access to STC data for university students and researchers. The DLI funding structure recognizes this objective. Almost three quarters of the DLI's initial budget, and now roughly a third of the current budget, are provided by the federal government. While there has been a budget surplus for each of the four fiscal years the DLI has been in operation, these monies have been reinvested back into the DLI. Exhibit 3.2 presents an overview of DLI actual revenues versus actual expenditures. A more detailed presentation of DLI financial information is provided in Appendix C.

The goal by the end of the five year pilot was to have recruited all of the research universities (27) and some of the small universities (about 10) to the DLI. After only 3 years, the DLI has met and exceeded these longer-term goals. Comments from each of the stakeholder groups regarding the affordability and equality of data access provided by the DLI are presented below (see Section 4.1.2).

⁴ That is, larger sample sizes were deemed to have more discrimination power than smaller samples, particularly since purposeful samples were drawn from most of the stakeholder groups

Exhibit 3.1 - Stakeholder Consultations

Stakeholder	Population	Target Sample	Actual Sample
DLI Contacts	64	27	18
DLI Unit *	15	15	15
EAC *	11	11	11
Federal Government Departments	7	7	3
ISC *	15	15	15
University Librarians	10+	10	6
Researchers	120+	20	17
Students	179	10	5
Student Survey	Large	150	179
DLI Contact Survey	64	64	38

Notes: EAC - DLI External Advisory Council

* Focus Group

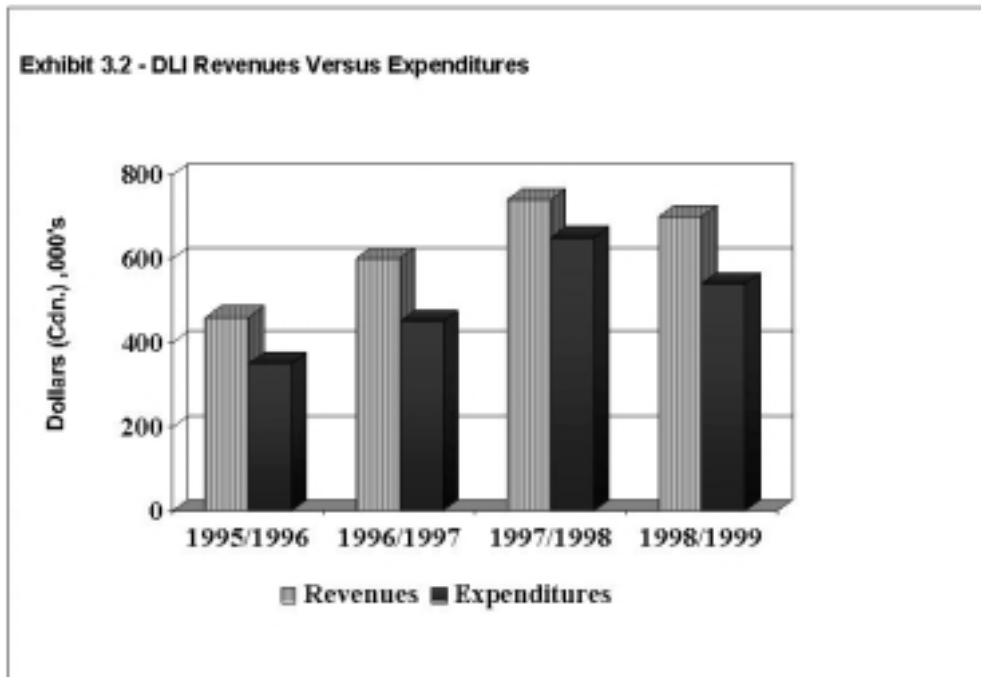
ISC - STC Internal DLI Steering Committee

+ Estimate

3.1.1 External Advisory Committee

Members of the EAC include university faculty members, Directors of university libraries, representatives from STC and DLI Contacts. Based on their experiences as an advisory body, the group was asked to comment on the sufficiency of funding for the DLI. ***Members felt that the budget for the DLI has been sufficient from the outset of the DLI up to the time of the focus group meeting, and the budget will likely be sufficient for the planned future operations of the initiative.***

A participant noted that seeking an alternative to the current funding arrangement, where three of the funding departments (HRDC, Health Canada and SSHRC) had to be approached on an annual basis for the funding (\$25,000 per year) was advisable. The participant noted that, in the case of HRDC and Health, it was sometimes difficult to find representatives within the department who were fully aware of the initial funding arrangement that was struck at the outset of the DLI. Moreover, because the sum of money is relatively immaterial when compared to overall departmental expenditures, it was often difficult to gain interest from these departments. A participant felt that this situation was exacerbated by staff turnover within these departments. In general, this process was regarded as sub-optimal method of transferring federal dollars to the DLI.



Overall. *The EAC felt that the DLI budget has been, and will remain to be, sufficient for the planned operations of the initiative.*

Other Findings. *A respondent suggested that the DLI should be funded through a base transfer from the Treasury Board. This individual suggested that this would significantly improve the funding process.*

3.1.2 Internal Steering Committee

The DLI Data Acquisition and Use Agreement is a key contract that is signed between participating universities and STC. It states that all data acquired through the DLI may be used for academic purposes only. This is an important feature of the DLI, as it prevents university academics from having an unfair cost advantage when bidding for commercial contracts. “The licence helps clarify the bounds of the data use” stated one of the focus group attendees.

This group was asked if the agreement helped protect their commercial market. *For the most part, attendants felt that the DLI had largely replaced part of their commercial market. Despite the loss of orders for data products from the university community, however, the group felt that their financial arrangement with the DLI currently meets their needs.*

When asked whether the current DLI financial arrangement was sufficient for the planned future operations of the initiative, a number of members felt that there was a potential for increasing the scope of the DLI Licence to include other research groups (community groups,

for example). This would effectively increase the revenues for the DLI. Others felt that allowing non-academic groups to participate in the DLI might contradict the mandate of the DLI. Overall, participants felt that the DLI licence review group should begin to anticipate such challenges to the DLI data-use licence.

Currently, the method for compensating divisions that provide data to the DLI is based on each division's pre-DLI revenues from the university community. One member of the group felt that their division budget has generally been sufficient to provide data to the DLI. However, the individual felt that two specific issues may arise where a larger budget would be required. First, the individual noted that many of the data products exist without complete or thorough documentation. As these data files are used more frequently at DLI universities, increased support for the user community from some divisions is required. If this continued contact increases, the respondent noted, it may become necessary for the DLI to compensate the divisions for this time. Second, the respondent noted that many areas within STC have data that are not packaged into a commercially available data product. While these can be prepared and potentially added to the DLI collection, the process would require a boost in the DLI budget to cover the costs incurred. With regards to this last point, one person noted that project's Terms of Reference does not allow DLI funds to be used for data development. Finally, it was noted that a committee has already been struck with the mandate to examine the current method of providing compensation to data-producing divisions.

In addition to the funding received from STC, the DLI has also been funded (and in some cases, continues to be funded) by several other government departments and agencies. These departments and agencies are noted in Section 2. ***No participant felt that a greater financial commitment should be sought with these or other departments to help fund the DLI.*** One participant felt that a completely new funding arrangement for the DLI was required. This respondent felt that the DLI should have dedicated funding that is approved at the Treasury Board level and included in STC's main estimates. Others concurred that this was an appropriate course of action.

Overall. *The ISC felt that the financial arrangements with the DLI currently meet their needs. No participant felt that a greater financial commitment from other federal departments was required.*

Other Findings. *Participants did not agree on whether the current financial arrangements were sufficient for the planned future operations of the DLI. A number of participants noted that increased demand for product support might necessitate an increased budget for data acquisition and support.*

3.1.3 DLI Contacts

A majority of the DLI Contacts were concerned about the extent of the DLI data collection. Some were concerned with the number and the completeness of the collections that were offered. Many feel that updates of some files are still required. Others felt that there was a risk that products which are currently available through the DLI to be removed from the collection. Two DLI Contacts made mention of a recent situation where international trade data will now be bundled with Oracle software. This arrangement will now require universities to buy a separate user licence to access these data.

Many of the DLI Contacts also had concerns regarding the suppression of variables in public-use microdata files. In order to prevent the need for this suppression, some felt that STC could provide a special selection of the most commonly requested custom tabulations for the DLI collection. Others felt that a remote user interface that allowed regulated access to non-public files would help. Finally, one Contact suggested that centralized data resource centers be created to allow certified researchers access to confidential data. [Note that this is similar to an initiative that is currently being developed.]

Despite these concerns, most of the DLI Contacts had not experienced difficulty in meeting their user's demands. Those who did have difficulty noted that some of their users' demands fell outside of the DLI's Licence. In many cases, the types of data requested were collected by departments other than STC, including Health Canada and NRCan. In general, respondents felt that making more public files available would be a good use of the DLI project money.

Many of the DLI Contacts had trouble determining whether the DLI collection contained the information that was requested. Many Contacts suggested that a better method for searching the DLI collection was required. The majority felt that the current thematic search tool was insufficient for their needs. A number of the Contacts felt that a dedicated web-based database of available variables and data files would be an improvement. And by providing a more detailed description of each variable, or including a copy of the actual survey instrument, many feel that their ability to search for information within datafiles would be greatly improved.

From a file-user perspective, many of the DLI Contacts felt that the appearance and format of data documentation was not an issue for many of their users. They did comment, however, that a standardized approach would be ideal. Many suggested that a preferred standardized format would be one that was web-compatible and widely-recognized. While some users suggested that an Adobe Acrobat format would satisfy these requirements, others felt that the format was still not readily useable for all users.

In some cases, command files for the SAS and/or SPSS software packages are available for dissemination with the actual data files. These files provide formatting for the data file so that it can be used immediately with each of these statistical programs. However, a number of DLI Contacts noted that these command files often contain errors. In general, though, many of the researchers and students have found the SAS and SPSS command files helpful.

Finally, DLI Contacts were asked to speculate on what they would like for the DLI in the future, both at STC and at their university. Exhibit 3.1 provides a summary of these responses. In general, most of the DLI Contacts agreed that the DLI was an important and useful initiative. However, many of the DLI Contacts felt that they did not have enough of a resource base to manage the DLI operations effectively. Many noted that they experienced difficulties retrieving and manipulating the data, and that better facilities and more training were necessary.

Overall. *Many DLI Contacts agreed that spending DLI money to expand the data collection was appropriate.*

Other Findings. *A number of DLI Contacts were concerned about both the extent of the DLI Collection and the suppression of certain variables in STC*

products. Most of the Contacts felt that an improved, web-based search engine was required for the DLI collection.

Exhibit 3.3 - The DLI Contacts Ideal Scenarios for the Future of the DLI

Ideal scenario for the future of the DLI at STC	Ideal scenario for the future of the DLI at their university
<ul style="list-style-type: none"> • continue DLI • expand the DLI collection • create separate Listservs for librarians and data librarians • improve data documentation • decrease data suppression • develop a simple web-based search engine • develop standards for the packaging of data • improve internal communication within STC • improve verification of SAS and SPSS command files • develop a microdata browser and extraction system • allow for communication of actual researcher demand to author divisions within STC 	<ul style="list-style-type: none"> • increase student and researcher knowledge of the data that are available • increase marketing of the DLI • provide data in consistent formats • expand use of DLI data • increase support for DLI Contacts • hold DLI instructional workshops for specific disciplines • acquiring the necessary resources for a dedicated data center • improved communication technologies • improved web-based access of CD-ROM products • continue building university data archive • provide web interface to spatial thematic search tool • make data available to secondary or CÉGEP students

Notes on DLI Contact Survey

Additional insight from the DLI Contacts was obtained using an email-out email/fax-back survey. In the questionnaire, Contacts were asked to comment on a number of dimensions of the DLI. One question specifically asked Contacts to rate their degree of satisfaction with 15 different aspects of the services that are offered as part of the DLI. These results are included in Exhibit 3.4 (over). The results generally reflect those opinions expressed during the consultation phase of the evaluation. As the table illustrates, Contacts were most satisfied with the procedures for ordering data and the mailings from the DLI Unit, and were least satisfied with the tools for searching the data collection and the completeness of the collection.

3.1.4 DLI Unit

Members of the DLI Unit felt that their current budget has been sufficient to meet their requirements. It allowed the Unit to purchase the necessary infrastructure to facilitate DLI operations, and to staff and resource the Unit itself. Moreover, the ability to roll-over the money from universities allowed them to improve their operations. Future improvements

that were proposed by the group include providing French SPSS documentation, pursuing other projects which would supplement the existing collection, and improving the level of service to the DLI users. One participant noted that their budget might be expanded to help put in place a system for data extraction.

Overall. *The DLI Unit have found the DLI budget to be sufficient for operations.*

Exhibit 3.4 - Summary Results from DLI Contact Survey, Satisfaction with DLI Services

DLI Service	Level of Satisfaction with DLI Services (% of all respondents)						
	Mean Score	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Missing
Procedures for ordering data	4.7	65.8	31.6				2.6
Time taken to complete data request	4.3	50	28.9	13.2	2.6		5.2
Completeness of the collection	3.5	15.8	31.6	31.6	10.5	2.6	7.8
Ease of identifying files in the collection	3.4	7.9	34.2	44.7	5.3	5.3	2.6
Tools for searching the collection	3.1	7.9	28.9	34.2	18.4	7.9	2.6
Documentation for data	3.4	7.9	31.6	42.1	5.3	2.6	10.5
The DLI Web site	4.0	28.9	42.1	21.1	5.3		2.6
The DLI FTP site	4.0	28.9	44.7	18.4	5.3		2.6
Mailings from the DLI Unit	4.5	57.9	31.6	7.9			2.6
Responses to questions received by the DLI Unit	4.3	50.0	28.9	15.8	2.6		2.6
Responses to questions received from other Contacts	4.4	44.7	34.2	5.3	2.6		13.1
DLI Listserv as a method of communication	4.4	52.6	31.6	7.9	5.3		2.6
DLI Update as a method of communication	3.9	23.7	36.8	21.1	7.9		10.5
The DLI EAC	3.8	21.1	18.4	15.8	2.6	5.3	36.8
The breadth of the collection	3.7	13.2	39.5	31.6	2.6		13.1

Notes: Relative frequencies / percentage values are based on the total overall sample of 38 returned surveys from DLI Contacts. This represents a response rate of 58%. Mean scores based on a value of 5 for Very Satisfied down to 1 for Very Dissatisfied.

3.2 Teaching and Research

A key objective of the DLI is to promote the use of data for teaching and research within Canadian universities. More than one stakeholder group commented that this will likely have a positive impact on the numeracy of students and researchers, and in time enhance the amount of information available for public policy debate and formulation. Specific comments from stakeholders regarding this evaluation theme follow.

3.2.1 External Advisory Committee

Individuals from STC's author, library services and dissemination divisions make-up part of the DLI EAC. The remaining EAC members are from the Canadian university research, teaching and data services community. This multi-stakeholder membership ensures the DLI has strong linkages within and between STC and the user-community.

Together, the EAC are responsible for advising the DLI Unit regarding the initiative's policies and procedures. And during the planning and implementation phases of the DLI, the EAC were also responsible for developing the DLI Contact training sessions, managing the development of the DLI web-interfaces, determining the key requirements needed to implement DLI data services and for developing the overall strategic focus for the initiative.

During the developmental stages of the DLI, the EAC recognized that an operational infrastructure for the DLI was needed. In addition to the required capital investments (servers and communication technologies, for example), investments in the following areas were also required:

- training for the DLI Contacts at the participating universities was required that would ensure that Contacts were able to get the data from the STC ftp site and transfer it to users within their university;
- strategies for publicizing the DLI, both within and between universities and STC. These took the form of press releases, promotional visits to various universities, a DLI Update newsletter and general word-of-mouth;
- developing a data use agreement which clearly stipulated the user boundaries of DLI data; and,
- developing DLI Scholarships for honours and post-graduate university students.

The group was asked if there were any areas or directions of the DLI that needed to be revised or expanded to increase the use of DLI data. It was generally agreed that future development should concentrate on four main areas.

First, the group felt that the DLI needs to be established as an identifiable collection of STC data. They feel that managing the DLI as a collection will allow the data to be organized in a much more coherent fashion, and will significantly enhance the ability of DLI Contacts to find specific files within the collection. Second, the group noted that the actual content of the data files should be addressed. They felt that the process of data suppression constrained the usefulness of the actual data files⁵. Third, the group felt that data documentation could

⁵ STC suppress data in publicly available data files in order to preserve the confidentiality of information.

be improved. They felt that some effort was required to make it more useable, complete and thorough. Fourth, providing data in more widely used and flexible formats, such as ASCII (with accompanying SPSS and SAS command files), would make the files more useable. It was noted that several STC products are currently being disseminated in these formats, notably the GSS and the 1991 Census, and that these represented examples of best practices.

Overall. *Members of the EAC felt that establishing the DLI as a collection, decreasing the amount of data suppression, improving documentation and/or providing more universal standardized data formats would increase the use of STC data.*

3.2.2 Researchers

Interviews with university researchers provided insight into what the DLI data have been used for. A number of different uses were noted. For the most part, data were used to conduct social science and geographic research. This is in direct alignment with the types of data that can be accessed through the DLI. Other respondents also noted that they used the DLI data for health, psychology and law history research. Most of the respondents noted that the DLI data were very to extremely important for their research. ***A number of interviewees noted that having access to the large DLI data collection opened up many new research opportunities that were previously unrealistic to pursue.*** Still, many researchers commented that having access to true longitudinal information⁶ would also be desirable.

Many researchers also indicated that they are increasingly using data for instructional purposes. Currently, however, most are using these data in graduate-level courses only. One noted that helping students gain experience with using Canadian STC data products was very valuable. The individual commented that this may be advantageous to a university graduate entering a social science profession where much of the currently-used Canadian data is produced by STC.

Many of the researchers noted that the DLI had made a difference with respect to their research and teaching activities. Most felt that the DLI data collection represented an extremely valuable electronic resource for universities. Two researchers commented, however, that the DLI did not significantly affect their research because they already had access to many of the files they required. One researcher noted that the coverage of the DLI data collection should be improved. ***Overall, most of the researchers felt that the DLI had increased their potential for empirical research and teaching.***

More than half of the researchers interviewed received DLI data in the same form that they were downloaded from the DLI Collection. In other cases, however, data were first processed by a universities data resource center before they were made available for researchers to use. In both cases, command files are primarily only provided in SAS and SPSS format. While these were the main statistical packages noted in the interviews, some

⁶ Data from a number of STC's longitudinal data files are included in the DLI collection. However, these data are essentially cross-sectional, since the 'keys' for linking individual records year over year are not provided. This is due to the fact that including this information could potentially compromise the anonymity of the data.

researchers also used programs such as STATA, Splus, dBase, Lindep, Gauss, Shazam and MapInfo.

Comments regarding the quality of data and documentation ranged from very good to unsatisfactory. This variation is most likely due to the variety and range of STC files that are in the collection. In general, most were satisfied with the data themselves, although some errors were noted in weight variables on certain files. Some (not all) were less satisfied with the data documentation that was provided with the data. Many noted, however, that often the documentation was either incomplete or not sufficiently detailed. With respect to the command files provided with some data, almost half of the researchers found them useful and almost half did not.

Overall, researchers provided a variety of different responses when asked what they felt was the biggest advantage of having access to the DLI data in their university. These include:

- having one center of expertise that manages the DLI files and provides data services to less experienced data users;
- getting more timely access to STC data;
- receiving robust and very accurate data;
- much of the data are nationally representative;
- the fact that the DLI is inexpensive;
- allows one to pursue research ideas with no extra cost; and,
- supplements student experiences and encourages their use of the data.

In terms of major challenges that would be faced by the DLI, researchers had the following comments:

- more training for data librarians is required;
- more promotion of the DLI is needed;
- hard to familiarize people with data;
- there is a potential for the licence to lose relevance;
- resolving the delays in the release dates of new data files;
- developing a better user interface;
- lack of direct access to author divisions; and,
- improving data documentation.

Finally, strategies for increasing their access to STC data include:

- expanding the collection;
- providing better data documentation;
- developing more explicit policies regarding access;

- providing better information on what is available, perhaps through electronic bulletins which include an overview of each data file;
- developing an improved user interface; and,
- developing better dialogue between STC and researchers regarding user-feedback on the surveys.

Overall. *Most of the researchers felt that the DLI had increased their potential for research and teaching. A number of researchers noted that the DLI data opened up new research avenues for them.*

Other Findings. *Many researchers felt that increasing students use of data was extremely valuable. With respect to the quality of STC products, many noted that the data were often good but the documentation and command files were sometimes not of the same quality.*

3.2.3 Students

Representatives from this stakeholder group provided valuable insight into how the DLI data were being used. Many of students that had used the DLI data were conducting research on their own or on behalf of a professor. These students typically worked with the GSS, FAMEX, Survey of Consumer Finances, CANSIM, Labour Force and Census data. *Almost all students that were interviewed felt that their ability to use data was improved as a result of the DLI.*

Software packages commonly used by these graduate students included SAS, SPSS, SHAZAM, STATA, Quattro-Pro and MS Excel. Several students noted that in some instances, data were provided in a format that required additional manipulation before it could actually be used. With regard the aggregate census tables, one student commented that “having to use different tables for different variables was a pain”.

Students felt that the DLI was advantageous to them in a variety of ways. A number of students felt that the DLI allowed them to carry out research that was both relevant and based on high-quality data. Another noted that the DLI had provided him with valuable experience at working with large datasets. Another commented that the DLI allowed students to become familiar with their universities data collection and therefore access the data they require very quickly.

When asked about strategies designed to increase the access they have to DLI data, interviewees also had variety of responses. Some suggested that providing better indications about which data are available would increase access. Others felt that decreases in the price charged for custom tabulations could increase access. Finally, one student suggested that data centres at universities should be standardized.

Overall. *Many students felt that the DLI has increased their data skills and has improved their ability to conduct research.*

Notes from Student Survey

As noted in Section 1, a survey of students that used data services was conducted for the DLI evaluation. DLI Contacts were asked to distribute the questionnaire to students that were using the data services at their university. Complete questionnaires were given back to DLI Contacts, and then forwarded to STC. The results of one question concerning their perceptions of data use are contained in Exhibit 3.5 (over), and represent responses from post-graduates students only. As the table indicates, *the majority of respondents feel that working with and using data have provided them with a number of valuable skills*. In general, most enjoyed working with data and felt that this was important (i.e. not to be underrated). Still, almost one out of every five students that were surveyed was unsure whether the effort they expended to use the data was worth the payoff they would gain from this experience.

Exhibit 3.5 - Summary Results from Student Survey, Level of Agreement by Post-Graduate Students With Statements Concerning Data and Data Use

Statement	Level of Agreement with Statements (% of all respondents)						
	Mean Score*	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree	Missing
I have acquired some new, marketable skills by working with data	4.5	65.5	22.4	8.6	1.7	1.7	
Using data in my courses has given me a competitive edge over other students	3.9	25.9	41.4	20.7	1.7	3.4	6.9
I have learned new software skills by working with data	4.4	60.3	27.6	6.9	1.7	3.4	
Working with data is overrated	1.9		3.4	19.0	34.5	39.7	3.4
Using data in course work makes the course more exciting	4.2	41.4	34.5	17.2	3.4		3.4
I have acquired new analytic skills by using data in my studies	4.5	55.2	36.2	8.6			
I did not enjoy working with data	1.6		3.4	5.2	34.5	55.2	1.7
I think more courses should incorporate the use of data	4.2	41.4	36.2	19.0	1.7		1.7
The payoff was not big enough for the amount of effort I had to expend to use data	1.9	1.7	5.2	20.7	25.9	44.8	1.7

Notes: Relative frequencies / percentage values are based on the total overall sample of 58 returned surveys from **post-graduate** university students. Mean score is based on a value of 5 for Strongly Agree down to 1 for Strongly Disagree

3.3 Project Management and Operations of the DLI Unit at Statistics Canada

Part of the role of this evaluation is to provide the DLI BOM with an objective assessment of how well the DLI has been managed. In addition, the evaluation will provide an assessment of the DLI Unit within STC. Comments from the various stakeholders follows.

3.3.1 External Advisory Committee

As noted above, the EAC are responsible for advising the DLI Unit regarding the initiative's policies and procedures. In addition, the EAC played a key role in the DLI's development. They helped design the web-interface, developed the training curriculum, trained DLI Contacts and determined the other key requirements needed to implement the DLI. They also provided the strategic focus for the initiative.

Participants from this group recognized that the DLI Unit has been effective at creating and maintaining the electronic infrastructure necessary for the DLI to operate. For the most part, they feel that the Unit have been responsive to requests for information submitted to the DLI Listserv. In many cases, the information provided back to the Listserv from the Unit has been extremely valuable to the user community. Members noted that to a large extent, the ability of the Unit to respond to detailed requests was dictated by the response time of the data-producing divisions.

With regard to the turn-around time on data requests, a number of participants felt that the service of the DLI Unit could be improved. One participant noted that implementing a formalized 'service model' for the Unit to follow could potentially improve the groups operations.

A number of members of the group felt that another area for improvement was for the DLI Unit to focus more on the potential of the DLI as a data collection or data library. Members of the EAC felt that the DLI Unit was too focussed on the process of providing data to universities, and not focussed enough on the actual collection of data they have amassed through the operations of the DLI.

EAC Members felt that STC's divisions have generally been responsive in meeting the requests for previously released data files from the user community. However, delays in the release of new data products occur frequently. In certain cases, this limits the ability of researchers to conduct up-to-date research. Most participants felt that the actual coverage provided by the data collection was very good.

Finally, the group made specific mention of the need to build the concept of sustainability into the DLI, particularly with respect to training. One participant noted that the EAC should ensure that the current DLI training team's knowledge and experiences are not lost if and when they retire from the DLI.

Overall. *EAC members felt that the operations of the DLI Unit were effective. However, they felt that the Unit required a more strategic vision of the DLI and the DLI data collection.*

Other Findings. *Members of the group felt that delays in the release of data from author divisions limited the currency of research and caused delays in research schedules.*

3.3.2 Internal Steering Committee

The DLI has changed the relationship between the data-producing divisions and the university community. Instead of responding to individual requests from university researchers, these divisions now simply provide one copy of a file to the DLI collection.

One participant noted that because these files are now more readily accessible, more people are using them. While this has meant that some divisions must now respond to an increase in requests for data support, it has also generated a higher volume of user feedback. This provides divisions with an indication of how the data they produce is being used. A participant also noted that because more researchers are using the data files, their division has changed the way that files are moth-balled and archived.

Not all divisions have had to respond to a larger volume of questions from the user community. A representative of one division noted that the DLI Listserv allowed feedback to be disseminated quickly to a large audience. For this reason, they felt that they were not responding to the same question time after time.

One comment from many of the stakeholders is that the documentation provided with the data files is often incomplete or not sufficient. Many of the ISC members felt that the DLI Unit could help mitigate this problem. *As the DLI Unit have become a centralized source for data documentation, they may also provide valuable insight into helping make data documentation more user-friendly.* Another participant noted that the Unit could possibly be used for product evaluation and, through consultations, future product design. This role is currently limited to major stakeholders in the products development.

Overall. *The increased use of data have generated an increased volume of potential user feedback that author divisions would find valuable. A member of the ISC also felt that the DLI Unit could provide valuable feedback regarding how to make documentation more user-friendly.*

Other Findings. *Some author divisions have found the DLI Listserv to be an efficient way to provide answers to users' questions.*

3.3.3 DLI Unit

The DLI Unit is dependent upon funding from both universities and government departments. To date, the group feel that both entities have generally met their financial obligations to the DLI in a timely and responsive way. Members of the Unit feel that this arrangement has been effective in funding the DLI.

As part of their operations, the DLI Unit is responsible for adding files to the collection of data. Within STC, the Unit is provided with data files from the appropriate data-producing division. Participants at the focus group felt that the quality of the data provided was generally very good. Data documentation was regarded as quite good, but in some cases the quality of the documentation was not on par with the quality of the actual data products themselves.

A number of members of the DLI Unit felt that communication with divisions was difficult at times. This was primarily due, they felt, to the lack of a uniform or standard approach to data production or data documentation across divisions. The individual felt that divisions respond to the needs of their immediate commercial clients. And, in cases where the clients of one division are much different than the clients of another, standard practices for producing data and documentation can, in turn, differ from division to division. Finally, the participant noted that “the DLI has imposed new demands on the data-producing divisions”. While the DLI users are quite varied, another participant noted, they all demand a very comprehensive package of support material. They note that work is currently being undertaken to standardize the data products.

Following this discussion, members of the DLI Unit were asked to comment on whether the process for acquiring data from divisions was adequate. One participant felt that the process was not as systematic as the Unit would like. Currently, the DLI have a list of contact names within each division they deal with. However, there is no follow-up process in place if these contacts leave or take on new roles within their division. A participant felt that formalizing this relationship, to some extent, would improve the long-term sustainability of the DLI.

Some respondents felt that there were ways to improve the relationship between the Unit and the divisions that would improve the sustainability of the DLI. These included:

- providing more complete feedback to the divisions on who is using these data and what they are being used for;
- developing a Procedures Manual or a formal process for divisions that guides how divisions commit data to the DLI collection, similar to the process currently in-place for CANSIM; and,
- acquiring a more permanent commitment from STC that supports the long-term growth of the DLI.

As noted in the previous section, the DLI is governed by the BOM. Some respondents felt that the EAC is also playing this role. Most felt that the governance roles should be better defined. While participants felt that the EAC provides good vision and direction for the DLI, they also felt that at times this vision was not clearly articulated to the DLI Unit. Another participant felt that the EAC’s expectations of the Unit have changed over time as the DLI has grown. They note that perhaps the overwhelming success and rapid growth of the DLI

has overridden the current capacity of the DLI Unit. As a possible solution, one participant noted that training for members of the DLI Unit and for the DLI Contacts would have a positive affect on how data services are provided to the user community.

Participants also felt that the expectations of middle management must also be clarified for the Unit. They feel that the expectations placed on them have surpassed the mandate of the initiative. One participant noted that, while the Data Use Agreement stipulates that “the DLI will offer [an] educational institution timely access to standard Statistics Canada data products...in available electronic formats”⁷, their actual duties now extend beyond currently available formats.

Overall. *A number of members of the DLI Unit felt that the EAC’s communication with the Unit needed to be improved. One participant felt that their duties now exceed the original mandate of the initiative. Participants also felt that the expectations of the middle management must be clarified for the Unit.*

Other Findings. *Respondents felt that the process for adding data to the collection needed to be improved.*

3.3.4 Library Directors

In many cases, having a centralized data resource centre was new to many universities. As data files are essentially large collections of information, the DLI data collection at universities and university data services come under the direction of library services. The DLI forced university libraries to make a number of adjustments.

Before being able to take part in the DLI, most universities needed to purchase or develop the necessary technological infrastructure that would allow Contacts to transfer and manage the DLI data. In addition to this start-up cost, libraries were also required to dedicate an individual to act as their DLI Contact. An EAC member (also a DLI Contact) felt that \$20,000 per university (not including the annual subscription fee) was a conservative estimate of the average annual operating costs, and that the standard deviation of this estimate was likely equal to this mean value. In aggregate, ***this represents an annual expense to universities of more than \$1.3 million.*** Library directors at a number of universities felt that additional funding was required to continue providing data services at their university.

Generally, library directors felt this investment represented good value for money. In many cases, no new employees were hired to act as a DLI Contact or data librarian. Where no previous data service was offered, all interviewees noted that responsibility for data was placed with an employee already working in the library (it increased their responsibilities). One librarian noted that a new responsibility included a significant procedural change to ensure that researchers were using data for non-commercial purposes only. These employees have also undertaken collaborative efforts with other library data centres. Individuals at some of the well-established university data centres provided assistance to those universities where no such service was in place. Also, several DLI universities have established central data resource centres where the DLI collection is managed from a single location, but data

⁷ From the DLI Data Acquisition and Use Agreement

services are offered to all members of that group. One librarian felt that STC could play a role in fostering or initiating more collaborative efforts of this kind.

In general, the directors that were interviewed felt that the DLI provided a valuable service to universities. They felt that the subscription fee represented good value for money. One of the librarians noted, however, that the two-tiered funding structure did not recognize the difference in funds available for such ventures that exists between large versus mid-sized universities. Despite this concern, each librarian interviewed confirmed that they would remain committed to the initiative if the DLI continued past its pilot phase.

Several directors provided input regarding factors or issues to address if the DLI continued. First, a number of directors noted the importance of training for those not experienced at working with data. As these services evolve, one noted, the data resource center could accommodate more requests and better promote data use. A number felt that STC has a role in co-ordinating and providing additional training. One of the interviewees noted that they had taken part in the original training program offered at the outset of the DLI, but found that it was not sufficiently focussed on those with no prior data management experience. This Librarian felt that the scope of future training programs should be limited to isolated aspects of data management and service provision. In addition, this interviewee felt that the support offered by STC as part of the DLI had not lived up to their university's expectations.

Second, many commented that revisions to the DLI Data Acquisition and Use Licence would be beneficial. They felt that adding data collected by other government departments would add value to the collection. They noted that in some cases (for example, NRCan geospatial data) this information was in high demand. With regards to actual data use, one director noted that making more explicit statements about who can or cannot use these data would be valuable.

From a strategic perspective, most librarians feel that the area of Data Services will continue to grow. Use of the more common data files, such as the Labour Force Survey or CANSIM, is increasing as more researchers and students become aware of its availability. In addition, one librarian noted that departments in the university that were formerly not data-intensive (Nursing, for example) are now becoming involved with data. Data are also being used increasingly as an interdisciplinary resource. From the perspective of having the DLI at their university, many feel that more can be done to enhance the initiative's potential. One suggestion is that a better data capture or retrieval system be developed to allow better access to the DLI collection. Other suggestions include increased training, promotion and publicity. Changes such as these will allow participating universities to maximize the potential of the resources already invested in the DLI.

Overall. *Directors felt training was important and required for those not experienced with providing data services. Almost all felt that the DLI provided good value for money. Universities have invested far more than the annual DLI subscription fee in order to provide data services at their university.*

Other Findings. *Some directors felt that STC could play a role in helping foster collaborative efforts to develop data centres.*

3.3.5 Federal Government Departments/Agencies

Representatives from the departments that help fund the DLI, who in some cases were also members of the DLI BOM, were asked to comment on their experiences with DLI. While response from this group was quite limited, all interviewees noted that the DLI was a very good program. The majority of the feedback that these individuals had received was positive.

One interviewee commented that the manner in which government departments are involved with the DLI should be reconsidered. For whatever reason, this individual felt many of the funding departments had little interest in the DLI. For this reason, collecting annual funding amounts was sometimes time-consuming or difficult. As an alternative to the current funding structure, the interviewee felt that providing a base transfer from Treasury Board for the DLI would be more effective. In addition, the respondent noted that this lack of interest in the DLI was reflected in the DLI BOM. This individual commented that some of the other government department representatives didn't fully appreciate the long-term implications of the DLI, as they were more focussed on shorter-term policy objectives of the current government.

While increased involvement from other federal departments/agencies was not recommended, a number of respondents felt that obtaining data from these departments would benefit the collection. A participant noted, however, that much of these data are administrative and hence not available for the DLI. This individual felt, though, that this issue would have to be dealt with in the future of the DLI.

Finally, one interviewee commented that there are certain risks inherent in the DLI. They felt that increasing the volume of empirical research may lead to misinterpretations of statistical results.

Overall. *A number of respondents felt that an alternative funding approach to the DLI was required. One respondent noted that a base transfer from the Treasury Board, on behalf of all original government participants⁸, would be optimal. A number noted that obtaining data from other government departments would be very beneficial to the DLI collection.*

Other Findings. *A number of respondents felt that some government departments lacked interest in the DLI, despite the fact that it could potentially provide them with significant benefits in the future.*

3.4 Statistics Canada's Role

The publically available data within the DLI are acquired by the DLI Unit from various author divisions within STC. When the DLI was first proposed, most author divisions expressed a number of concerns about the initiative. First, many divisions felt that the DLI would lead to a decrease in the revenues gained from the sale of commercial data products. This was largely expected because of the loss of orders for publicly available data products from the research community. Second, many also felt that the demands for user support would rise as more researchers and students used the DLI data. Many divisions felt that this

⁸ These include Health Canada, Industry Canada, Human Resources Development Canada, the Medical Research Council of Canada and the Social Science and Humanities Research Council of Canada and Statistics Canada.

would impose a significant additional cost to their day-to-day operations. And third, many divisions were concerned about the leakage of DLI data out of the non-commercial community. They recognized that this leakage could potentially undercut the commercial or consultant market structure.

Discussions regarding this evaluation theme focussed on the role that STC Headquarters and Regional Offices (RO's) played in the DLI. In general, none of the initial STC concerns noted above have become issues for any of the divisions. This is reflected in the fact that participation by STC author divisions within the DLI remains high.

It was also noted in the minutes of an EAC meeting that a number of RO's were concerned that the DLI would decrease their level of interaction with universities. However, members felt that university researchers and students would continue to require the services of the RO's, especially to obtain custom tabulations from administrative or non-public-use data sources.

3.4.1 Internal Steering Committee

Due to the nature of the way that data are disseminated via the DLI, STC's Regional Offices (ROs) are less involved in providing data to the university community. However, one participant felt that there was still room for the ROs to expand their role within the DLI. They felt that these offices could provide education and training related to data for the high school and/or university communities.

3.4.2 DLI Unit

As a key player in the operations of the DLI, the Unit is responsible for acquiring data from the data-producing divisions within STC. Primarily, members of the Unit look to the Information on Products and Services (IPS) catalogue to determine if data files are available to the DLI⁹. Members of the Unit feel that acquiring data for the DLI is a fairly straightforward process. They note that having better abstracts of the data files on the IPS would help improve the process, however. A participant felt that the continued development of the Thematic Search Tool may help mitigate this shortcoming.

Finally, the Unit feels that, on the whole, divisions have been supportive of the DLI. A participant felt that increasing the awareness of the DLI within STC, however, could make the DLI run more smoothly. They noted also that the DLI Unit could be more proactive in promoting the DLI, perhaps by having an open house for the rest of the department.

3.4.3 External Advisory Committee

Members of the EAC confirmed that they had no real relationship with STC Regional Offices (RO's). While all participants felt that the EAC did not need to work directly with these offices, many felt that improved communication between DLI Contacts and the RO's would be beneficial. One participant felt that Contacts and RO members should work together on issues of common interest. An important first step, this participant noted, is for both groups to meet and determine the best way to take advantage of this potential synergy.

Overall for this Section

⁹ It is STC policy that all products and services which are available from STC must be registered in the IPS.

The DLI Unit feels that STC divisions have been supportive of the DLI. A number of members of the Unit felt that embedding and using a uniform process for adding new data to the collection would be beneficial. Some members of the Unit also felt that increased promotion of the DLI within STC would be valuable. A member of the ISC felt that there was potential for STC ROs to play a valuable role in the DLI.

4.0 Conclusions

These Conclusions are more general and generic than those presented in Section 3.0. They are based on both a synthesis of the findings in 3.0, and a fresh assessment of the DLI gauged against the Logic Model framework of analysis. An illustration of this framework in Section 2.0 noted that the upper part of the Logic Model focused mainly on program processes, while the lower part focused on program results, or impacts. Using this framework, a straightforward assessment of the DLI's successes or failures after three years of piloted operation can be made. These are presented in terms of the standard evaluation categories. It is hoped that these conclusions, used in conjunction with the issue-specific Evaluation Findings of 3.0, will further aid the BOM in their formulation of Recommendations for the DLI.

4.1 Program Process

4.1.1 Program Design and Rationale

Achievements

A key objective of the DLI was to provide university researchers and students with affordable and equitable access to STC publically available data. This objective recognized that, prior to the DLI, STC public-use data products were not being fully utilized by the university research community because of the cost of access. To meet this requirement, the initiative was designed so that funding was shared by both participating universities and federal departments and agencies who shared an interest in the DLI. Most participants felt that the initiative provided good value for money and was based on a solid program rationale. Comments from the primary user community (researchers and students) confirmed that the DLI data have provided them with valuable and useful data resources.

A number of management guidelines were created for the DLI. These included the DLI Acquisition and Use Licence, the DLI Order Process and the DLI Service Model. The Licence was designed to prevent DLI data from being used for commercial purposes. At the time of this evaluation, no real problems with the DLI Licence have been identified.

In terms of the management structure, it needs to be noted that the DLI has enjoyed tremendous success within the university community. Those who manage and run the DLI have generally responded well to the numerous demands placed upon them by the new data users.

Opportunities

Those responsible for the management of the DLI felt that the funding structure should be revised. Specifically, many suggest that seeking a base transfer from Treasury Board to fund the DLI would be appropriate if the DLI were to continue after its pilot phase. With respect to the two-tiered funding structure for the DLI, many felt that this was an effective mechanism for the pilot phase. However, some of the participating universities suggested

that a three-tiered funding structure would better represent the relative sizes (and budgets) of Canadian universities.

There were a number of suggestions regarding how the management structure of the DLI could be improved. First, a number of participants suggested that better communication between management groups would strengthen the DLI. Others felt that the capabilities and capacities of the DLI Unit personnel should be reviewed to ensure that the DLI collection was managed both effectively and strategically.

Finally, many felt that there was an immediate need for more DLI Contact training. Some respondents felt that this was an explicit responsibility of STC as part of the service offered through the DLI.

Overall

The rationale for making access affordable and equitable was widely recognized during the consultative phase of this assignment. High costs were restricting universities access to otherwise publically available Canadian data files. The initial DLI design has been successful in providing public-use data to the university community. However, it is not clear that access is truly equitable. One EAC member noted that because of the large investment required by universities outside of the annual subscription fee, full access to the DLI data is still relatively easier for larger universities to achieve than smaller universities. A number of stakeholders have suggested that revisions to the current funding structure would improve the design of the DLI. Also, the EAC has noted that the capabilities of the DLI Unit should be reviewed to ensure that the data collection is managed effectively and strategically, and that the important linkages that have been developed with the academic community are maintained.

4.1.2 Program Implementation

Achievements

The DLI was formally implemented in February 1996. Participation in the DLI has far exceeded the original expectations of the DLI management team. In the “Report to the DLI BOM on the First Year of Operations”, after 18 months of operations, it was noted that “59 universities have either joined the DLI or are in the process of signing on. This is nearly twice as many as had been forecast by the original SSFC Task Force.”

In total, there are 88 universities and affiliated colleges nation-wide¹⁰. Out of these 88 academic institutions, 74 are presently members of DLI (or 65 institutions, excluding affiliates). The 14 remaining consist of six religious institutions, five technical schools, one college of fine arts and two others who could be potential members. Thus, the DLI covers 84% of all degree-granting institutions in the country, or 97% of all potential DLI participants. And as of September 1st, 1999, these participating universities have downloaded files from the DLI web-site a total of more than 100,000 times. These figures clearly demonstrate the demand for DLI data. They also provide an indication of the challenges that

¹⁰ Seldenthuis, Dick & Colleen LaPlante, eds. (1999) The Directory of Canadian Universities 1999, 33rd ed. AUCC. (overview provided by Tanya Primok)

the DLI Unit faced during the formative stages of the DLI, and the continuing challenges inherent in serving this number of participants.

Opportunities

Many respondents from across the majority of stakeholder groups felt that additional training programs for DLI Contacts should have been and should continue to be offered. Comments from the previous training sessions range from “the training was too intensive and too advanced” to saying that the training was extremely valuable. Many of the respondents who felt the training provided was too intensive also felt that the responsibilities placed upon DLI Contacts were too large. These individuals generally felt that they were not experienced enough (or in one case, not interested enough) to shoulder the responsibilities of a ‘data librarian’.

Overall

The DLI has exceeded the targets for participation well in advance of the end of the 5-year pilot phase of the project. From this perspective, project implementation has been a big success. And while some concerns were expressed by DLI Contacts that there was not sufficient training offered prior to the DLI’s launch, it should be noted that training prior to the implementation of the DLI would have been virtually impossible, as no infrastructure was yet in place.

4.1.3 Program Monitoring and Reporting

Achievements

There are a number of formal and in-formal feedback mechanisms in place to monitor the progress of the DLI. These mechanisms include the EAC, ISC and BOM meetings and the DLI Listserv. In response to feedback received over the first 3 years of the initiative, a number of actions have been taken. These include efforts to better catalogue the data resident in the DLI collection, better promote DLI data availability and use within universities, improve data documentation and command files and increase the resources available to the DLI Unit to meet program demand.

Opportunities

A number of stakeholders, particularly researchers and the ISC, felt that valuable feedback on STC data products was available but was not being collected. Many researchers felt that having a feedback mechanism directly back to the author divisions would potentially improve the coverage and power of some data files. This mechanism would allow them to provide the author division’s with a thorough assessment of data products.

From the perspective of the ISC, many author divisions noted that this feedback would indeed be highly valuable. They also noted that the DLI Unit could potentially provide valuable feedback on the format and usability of data documentation.

Overall

As more and more users begin to work with the DLI data files, the potential for STC author division’s to gain valuable feedback from this community also increases. At present, it is not

clear that any efforts have been made to capture this information. It is likely that author divisions would find this information to be a valuable dividend from their participation in the DLI.

4.1.4 Service Delivery

Achievements

The DLI has provided university researchers and students increased access to volumes of STC publically available data files. This finding is corroborated by both the responses from these stakeholder groups and statistics obtained regarding the number of DLI web-site ‘hits’ that originate from participating universities. Due to the fact that many of the data are centrally stored at either STC or within their universities data centre, researchers and students also feel that the speed at which they can access certain data files has increased.

Opportunities

A number of respondents from various stakeholder groups felt that new data were not being provided to the DLI collection in a timely manner. Many noted that initial release dates for new products were often missed, and that in taking time to develop error-free command files, the DLI Unit sometimes exacerbated this delay. In a number of cases, DLI Contacts and researchers noted that this delay had forced delays on research that had been scheduled according to the published release date.

A suggestion recently posted to the DLI Listserv by a DLI Contact offers a potential solution to this issue. This individual proposed that data be released once they are received by the DLI Unit, with the proviso that documentation is not complete and that minor verification may be needed. The Contact felt that this would allow universities with strong data expertise to access these data much faster. Contacts from a number of other universities also felt that this provided a method to minimize processing delays arising within the DLI Unit.

Respondents from each of the DLI Contact, Student and Researcher stakeholder groups felt that the search capacity for the DLI collection should be improved. A number of respondents felt that the process for searching the contents of the DLI collection were inefficient. They commented that given the amount of information contained in the collection, better search capabilities should be developed. Many of these respondents felt that providing a single web-based interface for searching the entire data collection was required.

Finally, a number of stakeholders felt that more training material for DLI Contacts should be developed and that more training sessions be provided. A number of respondents felt that on-going training was a necessity for the continued growth of the DLI. With regards equitable access to data, one Librarian noted that STC should help smaller and less experienced universities provide training for inexperienced DLI Contacts. Another Librarian felt that STC could potentially play a lead role in gathering and disseminating a set of lessons learned or best practices for developing and managing a universities data centre.

Overall

The DLI has increased access to STC publically available data. Two areas that could help improve upon current service delivery standards include providing newly released STC data more quickly and on-time, and improving the organization and search capabilities of the DLI data collection. It should be noted here that while many DLI Contacts and Library Directors felt more training was necessary, STC does not have the mandate to provide this service.

4.2 Preliminary Program Results/Impacts

4.2.1 DLI Contacts

Achievements

As part of their involvement with the DLI, university libraries are responsible for downloading the DLI data from the DLI ftp site and in turn providing them to users at their university. Given the level of satisfaction that users have attached to having access to these data, the DLI Contacts are responsible for providing a very important service to their users or clients.

In a number of cases, DLI data have been used to develop or augment a university's data collection. More and more, these data are becoming a central component of a university's electronic resource collection. Typically, each university maintains its own data collection. In some cases, though, universities have pooled resources and developed data centers which provide data services centrally to a number of universities. Comments from clients and members of these larger data resource centres (as they have become known) have been very enthusiastic about their experiences, and feel that this arrangement offers many potential benefits for the user community.

In 1999, two of these central data centres received recognition for their contribution to the quality of services offered to students and the university community. The TriUniversity Group Data Resources project, developed jointly by the University of Guelph, University of Waterloo and Wilfred Laurier University, received a regional quality and productivity award from the Canadian Association of University Business Officers (CAUBO). In addition, the Sherlock data-retrieval system, developed cooperatively by the Library Subcommittee of the Conference of Rectors and Principals of Quebec Universities (CREPUQ), received a national quality and productivity award from CAUBO. The Sherlock project has also received an award this year from the Canadian Library Association, in recognition of professional excellence and innovation shown by the project's developers and management.

Opportunities

The majority of stakeholder groups that were interviewed felt that more training was necessary for DLI Contacts. Their rationale was that with more experience, Contacts could offer more services to more users. It was noted that perhaps this could also include data development and customized data manipulation. It was noted early in the DLI's development that "because many of the files are large and complex, participants must have access to sophisticated hardware and software and to personnel who are well-versed technically. They must also have access to a data and information professional." (Watkins,

1994). It is clear that these requirements are still valid. One DLI Contact noted during an interview that for the DLI to truly provide equitable access, the initiative should include regular training as part of the services offered.

Overall

There are two distinct dimensions to providing equitable access to the DLI collection. First, there must be a mechanism to provide equitable access to all universities. This is addressed by the DLI two-tiered, annual subscription fee. However, one may consider ensuring that all university researchers have the same ability to access data within their universities. Providing more training to this stakeholder group would help make DLI Contacts more skilled, experienced, productive and motivated.

In terms of barriers to participation in the DLI, funding was defined as more of an internal resource issue. Comments regarding the management of the DLI was mixed, as were comments regarding the level of user support. It should be noted here that the overwhelming success of several centralized data centres (Sherlock, TriUniversity Data Resource Group, and Landru, among others) indicates that there are large potential savings (both time and money) to be gained if data services are provided in a collaborative manner.

4.2.2 Researchers and Students

Achievements

In his paper “Comments on ‘Data Liberation and Academic Freedom’”¹¹, political scientist John Courtney notes that:

“We do not often have occasion to point to success stories in making our case with government, but the establishment of the DLI stands as a happy exception to the all-too-usual pattern of failures.”

This quotation reflects many of the opinions that were gathered from the researcher consultations. In terms of impacts, the DLI has forged an important link with the academic community.

After three years of DLI operations, comments were generally very positive. Many researchers felt that the DLI had provided them with data they would not have obtained otherwise. In some cases, the DLI provided them with primary data sources for on-going or completed academic research. Others had used the DLI data to supplement other data files they had purchased or developed. Many researchers, particularly those from smaller universities, felt that the DLI provided them with access to data that for many years had been available only to universities with larger research budgets or to researchers who had received government research grants. In this respect, the DLI has provided equitable access to STC data.

¹¹ John C. Courtney, “Comments on ‘Data Liberation and Academic Freedom’”, *Government Information in Canada*, Fall 1996, p.1.

From a teaching perspective, many also felt DLI data were valuable to students. Through the DLI, students gained access to data that were robust, commonly-used and most importantly, Canadian. For the most part, students used DLI data for research they were conducting on their own or under the supervision of a professor. One student, and a number of researchers, also noted that data (DLI-data and otherwise) were sometimes used in the classroom as an aid for teaching or as a resource for assignments.

Opportunities

The concerns that were expressed by this stakeholder group (researchers and students) were primarily related to the extent of the data collection and the quality of data documentation and command files. With regards to the extent of the DLI data collection, a number of researchers commented that by including only anonymized data files, they did not have access to many data that would often be of more value. These data included those variables or records suppressed during the data ‘anonymizing’ process within STC along with those that comprise longitudinal and administrative data files. With regard to the second concern, a number of researchers felt that more quality-control would increase the usefulness of the DLI and documentation.

With respect to the students who were interviewed, a number felt that the interface used to access some of the data (Beyond 20/20) was difficult and cumbersome to use. On this note, a researcher commented that by providing a more simple interface, more students would access more data.

Overall

In addition to helping forge better linkages between STC and the academic community, the pilot DLI has been successful in providing researchers and students with affordable and equitable access to STC data. The evaluation findings also show that the DLI has supported university teaching and research. While information on the degree of use of DLI data is currently not captured, it may be a suitable aspect of the DLI to address in the future. More on this discussion is noted in Section 4.2.6.

It was difficult to gauge how widely-known the DLI was within the university community. However, a number of stakeholders within these two groups felt that more should be done to promote the DLI and the DLI data collection.

4.2.3 University Library Directors

Achievements

Many directors feel that the investment they have made in the DLI has been both valuable and important. Generally, their investment in managing and disseminating electronic information has given library staff (primarily DLI Contacts) the ability to download, manage and disseminate the often extremely large DLI datasets. Most Librarians felt that providing data and data services will increasingly become the major component of their electronic resource. In almost all cases, Librarians felt that the DLI will play an important, strategic role in developing these resources.

Opportunities

Most directors recognized the efforts required by the DLI Contacts to provide timely data services. Many also felt that more training was required to help services improve and evolve. Many also felt that more promotion would increase the number of users within the university and allow data services to become more of a priority within their university.

One Librarian felt that the two-tiered funding structure prevented their university from having equitable access. This individual felt that the funding structure should be revised to provide a unique cost (between \$3,000 and \$12,000) for mid-sized universities.

Overall

Most Librarians commented on the large investment (both financial and in-kind) that was necessary to provide data services at their university. One DLI Contact estimated that represented an aggregate cost to universities of more than \$1.3 million, excluding the annual subscription fee. A number noted that data are extremely costly to develop and manage, both in terms of dedicating employees (including DLI Contacts) to provide the services and in terms of the technologies needed to handle the large volumes of electronic information.

All Librarians noted that the DLI is a key component of the data services that are being offered at their universities. While there were a number of concerns that were noted, the DLI had nonetheless enhanced the services they were able to offer. A key issue that a number of librarians felt needed to be addressed in the future of the DLI concerned the future role that STC could play in fostering more cooperation and collaboration between participating universities.

4.2.4 DLI External Advisory Committee

Achievements

The DLI EAC have been the main guiding force in the development of the DLI. As noted in the minutes of their first meeting, their role has been to advise on matters of governance, principles of operation and funding. By the nature of its composition, the EAC has been effective at developing and maintaining a link between STC and the academic community. This link is strengthened through the informal feedback that each EAC member gains through their related commitments to other data user and producer groups.

The EAC has also had a positive impact on helping to reduce barriers to DLI uptake. This is related both to the development of the DLI funding structure and the workshops and training sessions that members of the committee developed and delivered. The training sessions that were delivered during 1997 and 1998 were attended by representatives from all but one Canadian university. At the first workshop, there were approximately 130 participants, including some members from STC's Headquarters and Regional Offices. The level of participant satisfaction for these sessions was very high. The overall ratings for the training sessions (ranked on a scale of 1 to 5, where 5 represented 'very satisfied') ranged between 4.2 and 4.8. The EAC remains committed to continuing these regional workshops. A number within the group feel that it is also essential that Library Directors also remain committed to these training sessions by ensuring that DLI Contacts are able to attend.

In addition to this training, the EAC also helped design the DLI web-interface and email order list, and enlisting author divisions within STC. Additionally, they created the DLI Licence to help assuage the concerns of various stakeholders, and promoted the DLI through workshops, the DLI Update and the DLI Scholarships.

Opportunities

The DLI Unit and the EAC are the main operational units of the DLI. Over the three and half years that the DLI has been in-place, these groups have managed to keep up with the pace of change that the initiative has enjoyed. However, this has not come without what a number of EAC members term ‘the growth pains of success’. Much of this attention has been focussed around the principles of operation. Given that the importance of an initiative such as the DLI has been validated by the stakeholder groups, it will be essential to resolve these differences to ensure the continued growth of the initiative. The EAC can play an integral role in ensuring that the key objectives and strategies for sustaining the DLI are clearly articulated to the DLI Unit. Members of the EAC recognize that there has been a shift in the strategic focus for the DLI as it has matured. Specifically, they feel that strategies related to sustaining the DLI, rather than simply implementing the DLI, are now most important. In this light, the EAC has an opportunity to advise STC of whether the DLI Unit has the resources that are necessary to meet this challenge.

Additionally, there is an opportunity for the EAC to ingrain or institutionalize the knowledge and experience that they have collectively accumulated over the pilot phase of the initiative back into the DLI. This may take the form of developing training materials that are directed at a larger audience than the DLI Contacts. In doing so, the EAC will further contribute to the long term sustainability of the initiative.

Overall

The EAC has been at the forefront of the development and implementation of the DLI. There is still a key role for the committee to play in the operations and governance of the DLI. However, it will be beneficial for this group to formalize their knowledge and propose strategies for ensuring the sustainability of the DLI.

4.2.5 Federal Government Departments

Achievements

Those who were interviewed from this stakeholder group felt that the DLI is supported by a strong program rationale. One of the respondents felt that the strong uptake in the DLI among universities was evidence of a need for this type of initiative.

Opportunities

Federal Government Departments provide funding to the DLI and also have representation on the DLI BOM. However, it became evident during the consultation phase that the involvement of several departments with the DLI was quite limited. Despite this lack of involvement, there are a number of opportunities which may potentially benefit them in the future. If the DLI continues to contribute to increased data use, then it is likely that more

research related to public policy issues will result. This will likely enrich and benefit the process of public policy formulation.

A number of stakeholders that were interviewed noted that other federal government departments could play a valuable role in the DLI by providing additional data to the collection. Many felt that the geographical, environmental, health, scientific, justice health and immigration data that these departments collect would be very valuable in helping strengthen and expand the DLI collection.

Overall

Based on the results of the consultations, it seems likely that maintaining the interests of several of the departments who provide funding to the DLI will be difficult once the pilot is over. One interviewee speculated that this lack of interest may be based on the feeling that the DLI offers their department little or no immediate benefits. A number of the representatives that were interviewed noted that a base transfer of funds from the Treasury Board, on behalf of all original government participants, would be a more efficient way to fund the DLI. Finally, many stakeholders felt that other government departments, besides STC, currently have data that would be very valuable to the DLI data collection.

4.2.6 DLI Unit at Statistics Canada

Achievements

Overall, many stakeholders felt that the DLI Unit responded reasonably well to demands from user community. In addition to their data management functions, members of the Unit also maintain the DLI Listserv. Stakeholders from each of the ISC, EAC, Librarians and DLI Contacts stakeholder groups felt that the Listserv provided a valuable service. A member of the ISC noted that being able to broadcast responses to all Listserv members once cut down on the number of times author division's had to respond to questions. In general, the service provided valuable support to the user community.

Opportunities

Members of the group felt that some expectations of the EAC regarding policy and procedures were not clearly communicated, and had changed over time. As a result, it may be beneficial for the EAC and the DLI Unit to work towards developing a shared vision of the DLI in the future.

Overall

There were a number of comments made regarding the need for improvement in some of the services that the DLI Unit provides. However, it is also true that they have provided a considerable degree of timely, reliable and technically accessible data to the user community. While it is likely that the services of the Unit are still evolving, members of the DLI management team should recognize that important concerns regarding the services of the DLI Unit have been noted.

4.2.7 Statistics Canada

Achievements

Those involved with the DLI within STC have contributed towards developing a valuable collection of data for university participants. Many participants commented on the value of the files currently in the collection, and the overall integrity of the actual data and the methods used to collect them.

Opportunities

A participant noted that “it would be valuable to conduct a survey or study of which files are being used and what they are being used for.” This individual noted that perhaps the Data-Use Licence could be modified to include a stipulation that DLI Contact must submit an annual report to the DLI, and also require feedback from researchers on what they are using the files for. It is unlikely, however, that this type of arrangement would be feasible for a number of reasons, primarily because of the additional demands it would place on the DLI Contacts time. A possible compromise would be to ask researchers to volunteer to provide information and feedback regarding their research and the files they use directly to STC author divisions.

Overall

The DLI ISC is responsible for providing direction on issues pertaining to the production and release of STC electronic products to the DLI. A central issue to many Contacts and researchers concerned the timely release of these products. In addition, a number of researchers felt that their level of direct contact with the author divisions was less than sufficient.

5.0 Looking Ahead

In addition to providing affordable and equitable access to data, designers of the DLI have proposed a number of longer-term objectives for the DLI. However, it should be noted that meeting these objectives will only be possible if steps are taken now to ensure that the DLI develops a sustainable infrastructure. Each of these proposed outcomes hinge on the continued delivery of data and data services to the academic community.

First, proponents of the DLI feel that a likely longer-term outcome of the DLI is that it will increase the overall numeracy of Canadian university students and researchers. The rationale for pursuing such an outcome is presented in the following question University of Saskatchewan's John Courtney poses to his colleagues:

“The question that we as university-based researchers must ask ourselves is one of adequacy of training of future researchers. Are we training electronically-literate students who can cope with the realities of the data and other material that increasingly are becoming available only in electronic form.”

As this excerpt notes, there is a large potential for the DLI, and initiatives like it, to have longer-term impacts on future human resource capacity.

Second, proponents feel that the DLI will also enrich the human resource capacity at universities through the creation of ‘data librarians’. This is an outcome of the DLI that is already taking hold at a number of participating institutions. And during the consultation phase of this assignment, it was clear that many researchers, students and library directors place a great deal of value in having or being able to have access to a data librarian. In many cases, having a point-source contact with expertise in data allowed many questions to be answered quickly and efficiently. And from a longer-term perspective, it is conceivable that these data librarians may play an increasingly larger role in promoting and facilitating numerical or empirical research or teaching.

Third, proponents of the DLI recognize that the DLI will increase the use of data for teaching and research. Based on the stakeholder consultations, this already seems to be the case. And many of the designers of the DLI feel that a likely long-term outcome of this increased data use will be an increased volume of research devoted to issues related to public policy formulation and debate. While this outcome may not be realized in the immediate future, it is nonetheless an important consideration those involved in planning the future of the DLI.

Appendices To The DLI Evaluation Report

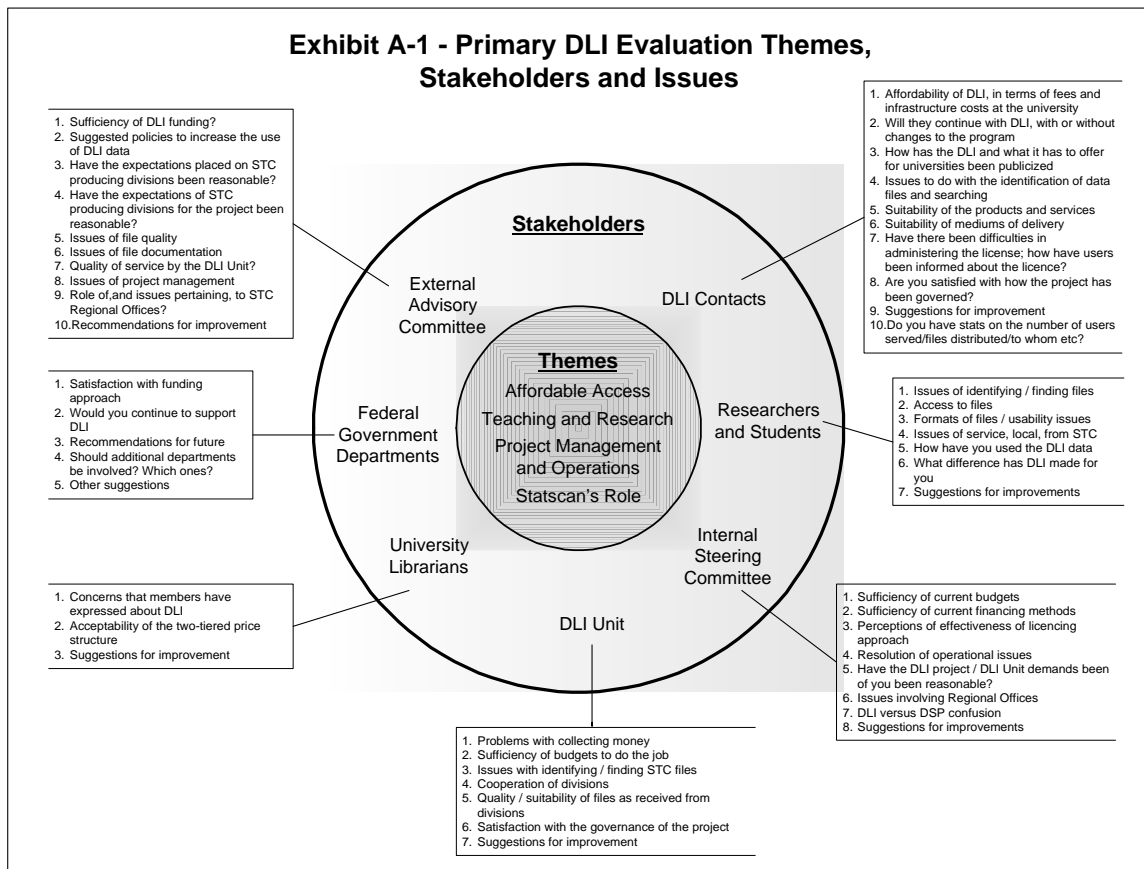
Appendix A - Priority Evaluation Theme, Stakeholders and Issues

Appendix B - Data Collection Instruments

Appendix C - DLI Financial Summary

Appendix A - Evaluation Themes, Stakeholders and Issues

The following exhibit presents the priority evaluation issues that were identified by the client-consultant project team. Each set of priority issues was tailored to align with the types of interaction each stakeholder group had with the DLI.



Appendix B - Data Collection Instruments

The following data collection instruments were used for the stakeholder interviews and focus group meetings. They were developed jointly by the client-consultant team. The evaluation issues presented in Appendix A were used to help formulate these questions.

B.1 DLI Contact Interview Guide

1. a) One area that is mentioned relates to the DLI collection. Do you have any concerns with respect to the extent of the collection?
 - b) (i) Have you had any difficulties in meeting your user's needs with the data that is available?
 - (ii) If there is not a public file, do you perceive a need for one?
 - (iii) Would this be a good use of DLI project money?
 - c) Because of confidentiality, STC must suppress certain variables. Has this been a problem for your users?
2. Searching for the right data is often fundamental to being able to use the data. (i) What sort of searching capabilities would you like to see **for the collection**? (ii) What sort of searching capabilities would you like to see **within datasets**?
3. a) Statistics Canada divisions are responsible for producing documentation for their datasets. This means that there is no common look and feel **between** datasets. Does this pose any problem for you?
 - b) Is there a particular format that you like? Is there a format you dislike?
4. STC has been supplying SAS and SPSS setup files with the microdata products on its ftp site. Do you find these useful?
5. If you had 3 wishes for the project's future at both STC and at your university, what would these be?

B.2 University Researcher Interview Guide

1. How did you become aware of the DLI?
2. a) How important to your research are the data now available through DLI? (please provide examples)
 - b) How important to your teaching are the data now available through DLI? (please provide examples)
 - c) Has use of the STC/DLI data made a difference for you? If so, how?

3. Has DLI provided you with access to data that you would not have otherwise had available? (please provide examples)
4. We are interested in how satisfied you are with DLI products? (Scale of 1 to 5; 1 being very dissatisfied and 5 being very satisfied)
 - a) How satisfied are you with the data documentation you have received?
 - b) How satisfied are you with the data and accompanying statistical package command files?
5. Do you receive data through an intermediary service? If so, do you receive direct products from DLI or locally tailored products?
6. Which statistical package do you use most often?
7. What do you see as the major advantages or benefits to having access to these data at your university? Are there any disadvantages (Note: For completeness only)?
8. What do you see as the major challenge to using these data for teaching and research in your institution?
9. Do you see any improvements that can be made to DLI that would increase your access to Statistics Canada data?

B.3 University Student Interview Guide

1. How did you hear about the Data Liberation Initiative?
2. How did you use Statistics Canada / DLI data for your studies?
3. If you used these STC data for a thesis or dissertation would you have been able to carry out your research if the data had not been provided to you without charge?
4. Which software program did you use to analyse the data?
5. What was the biggest challenge/drawback/difficulty that you faced in using these STC/DLI data?
6. What is the biggest advantage/benefit that you felt you got from using these STC/DLI data?
7. Do you see any improvements that can be made to DLI that would increase your access to Statistics Canada data?

B.4 Federal Government Department Interview Guide

1. Are you familiar with the Data Liberation Initiative (DLI)?

An objective of the DLI is to provide both affordable and equitable access to Statistics Canada data files. To this end, Statistics Canada have developed a 2-

tiered pricing structure for DLI participants, where smaller universities pay less of an annual fee than larger universities. Federal Government funding was provided in lump-sum payments by both Industry Canada (\$200,000) and the Treasury Board (\$100,000) at the outset of the Initiative. In addition, HRDC, Health Canada and SSHRC each provide annual funding of \$25,000 and Statistics Canada contributes \$100,000 annually.

2. Are you satisfied with the way that your department contributes to the DLI?
As mentioned, there are 5 federal departments/agencies that help fund this initiative. Health Canada, HRDC, SCHRC and Statistics Canada provide annual funding, and the Treasury Board and Industry Canada provided lump-sum funding when the DLI was initiated.
3. a) Do you think that other government departments or agencies should provide FUNDING for this initiative? If so, which ones?
b) Do you think that other government departments or agencies should provide DATA for this initiative? If so, which ones?
4. a) Do you feel that the DLI contributes to the long term strategy of your department?
b) Would you [continue to] support the DLI after the pilot phase of the initiative?
5. If your department continued to provide funding for the DLI, would you propose any changes to the current arrangement with Statistics Canada?
6. Do you have any other comments or suggestions regarding the DLI?

B.5 University Librarian Interview Guide

We would like to ask you a few questions about DLI and its value to your university.

1. Did your Library have to make organisational changes or adjustments to support DLI at your institution?
If 'Yes', what kind of adjustments were taken?
2. At the conclusion of the pilot, we anticipate DLI to grow into a standard service within Statistics Canada. What factors or issues would you like to address at the conclusion of the pilot period?
3. Do you anticipate your university to continue participation in DLI at the conclusion of the pilot?
4. We are interested in the role that DLI plays as an electronic resource in your Library. Can you briefly describe how you see DLI fitting within your Library's future plans, be they strategic directions, goals, preferred futures, or mission statement?

B.6 EAC Focus Group Guide

Issue: Sufficiency of funding

1. Do you feel that the funding of the DLI has been sufficient from the outset to now?
2. Do you feel that the funding of the DLI is sufficient for the planned future operations of the initiative?
3. Do you have any suggestions regarding the funding or financial structure of the DLI?

Issue: Suggest policies to increase the use of DLI data

4. Can you suggest any areas or directions of DLI operations that need to be revised/expanded to increase the use of DLI data?

Issue: Quality of service by the DLI unit? (responsiveness, follow-thru, completeness of team, services that are missing/gaps)

5. What do you feel are the strengths of the DLI unit?
6. What areas (if any) need improvement in the DLI unit?

Issue: Quality of files (documentation, format, content)

- 7a. What do you feel are the strengths of the DLI data documentation / format / content?
- 7b. What areas (if any) of the DLI data documentation / format / content need improvement?
- 8a. How would you assess the overall responses of STC divisions under the DLI, especially with respect to coverage?
- 8b. What areas of improvement can you suggest for STC?

Issue: Project management

9. Project management can be looked at in terms of 4 distinct aspects: 1. Planning (strategic and tactical); 2. Ongoing operation management; 3. Reporting (including on-going assessment and feedback); and, 4. Trouble Shooting and Contingency Plan. Could you please assess each of these areas from your perspective on how well the project management function is being done for the DLI?

Issue: Role of and issues pertaining to the Regional Offices

10. What is your current relationship with Statistics Canada's Regional Offices?
11. Has the DLI affected your relationship with this Regional Office? If so, in what ways?
12. Have Statistics Canada's Regional Offices been helpful to you regarding the DLI? What is your opinion of the service?

B.7 DLI Unit Focus Group Guide

Issue: Sufficiency of budgets to do the job

1. Do you feel that the existing budget level of the DLI has been sufficient from the outset to now?
2. Do you feel that the budget of the DLI is sufficient for the planned future operations of the initiative?
3. Do you have any suggestions regarding the budget or financial structure of the DLI?

Issue: Problems with collecting money

4. Do you feel that university and government DLI participants meet their financial obligations to the initiative in a timely and responsive way?
5. Do you have suggestions for improving the financing process of the DLI?

Issue: Quality / sustainability of files as received from divisions

6. Do you feel that the quality of the data products you receive from STC divisions is satisfactory?
7. Do you feel that the process currently in-place for acquiring data from the divisions is adequate?
8. What areas (if any) need to be improved in this process to promote the long-term sustainability of this relationship?

Issue: Satisfaction with governance of the project

9. Are you satisfied with the way that the DLI is governed?
10. Do you have any suggestions for improving this relationship?

Issue: Identifying and finding STC files.

11. How do you identify STC data products for inclusion in the DLI collection?
12. Do you feel that finding the data products is a straightforward process?
13. Do you have any suggestions for improving the way that data products are identified and located?
14. Do you feel that STC divisions have been supportive of the DLI and the DLI Unit?
15. What areas of this relationship (if any) need improvement?

B.8 Internal Steering Committee Focus Group Guide

Issue: Perceptions of effectiveness of licencing approach.

1. Do you feel that the DLI Data Acquisition and Use Agreement has been effective in protecting STC's commercial market?

2. Do you feel there are any issues concerning the agreement, which need to be resolved?

Issue: Sufficiency of current budgets

3. (For data-producing divisions) Do you feel that your budget has been sufficient to provide data to the DLI?

Issue: Current financing method.

4. Do you feel that a greater financial commitment from other government departments is appropriate?
5. Do you have any further suggestions regarding the way that the DLI is financed?

Issue: Resolution of operational issues.

6. Has the DLI had an impact on your data-production or dissemination operations?

Issue: DLI demands on STC divisions

7. Do you feel that the demands placed on you by the DLI and/or the DLI Unit been reasonable?
8. Are there areas of operation where you feel the DLI Unit should be given more responsibility?

Issue: Issues involving Regional office.

9. Has the DLI had an impact on the number of calls that you have received on your help lines?
10. Do you feel that the Regional Offices should become more involved with the DLI and the services it offers?

Appendix C - DLI Financial Summary

The following exhibit provides a detailed overview of how the DLI is funded. Note that the both budgeted and actual revenues and expenditures are provided for 1997/98 and 1998/99 fiscal years.

Exhibit C.1 - Financial Summary of the DLI

Line Item	1995/96	1996/97	1997/98		1998/99	
REVENUES	Actual	Actual	Budget	Actual	Budget	Actual*
Carry Forward		126,000	157,000	157,000	86,500	86,500
Health Canada		25,000	25,000	25,000	25,000	25,000
HRDC		25,000	25,000	25,000	25,000	25,000
SCHRC		25,000	25,000	25,000	25,000	25,000
Statscan		100,000	100,000	100,000	100,000	100,000
Universities	138,000	297,000	355,000	411,000	426,000	429,000
Industry Canada	200,000					
Treasury Board	100,000					
Other	15,000					
Total	453,000	598,000	687,000	743,000	687,500	690,500
EXPENDITURES						
DLI Salary	60,000	150,000	175,000	175,000	205,000	225,847
DLI Non-Salary	173,000	76,000	75,000	78,000	68,000	47,386
Contact Training / Travel			30,000	39,000	12,000	
Documentation / Printing			50,000	385,000	35,000	4,600
Cataloguing			25,000	25,000	25,000	22,500
EAC	10,000	20,000	20,000	7,000	8,000	14,037
Acquisition & Support	32,000	195,000	22,000	265,000	256,540	206,340
Evaluation					25,000	
Other	52,000		7,000	29,000	7,000	
Total	327,000	441,000	602,000	656,500	644,540	526,710
Balance	126,000	157,000	85,000	86,500	42,960	163,790

* Preliminary figures