

***THE ECONOMIC VALUE
OF TERMINOLOGY***

***AN EXPLORATORY
STUDY***

SUBMITTED TO
THE TRANSLATION BUREAU OF
CANADA

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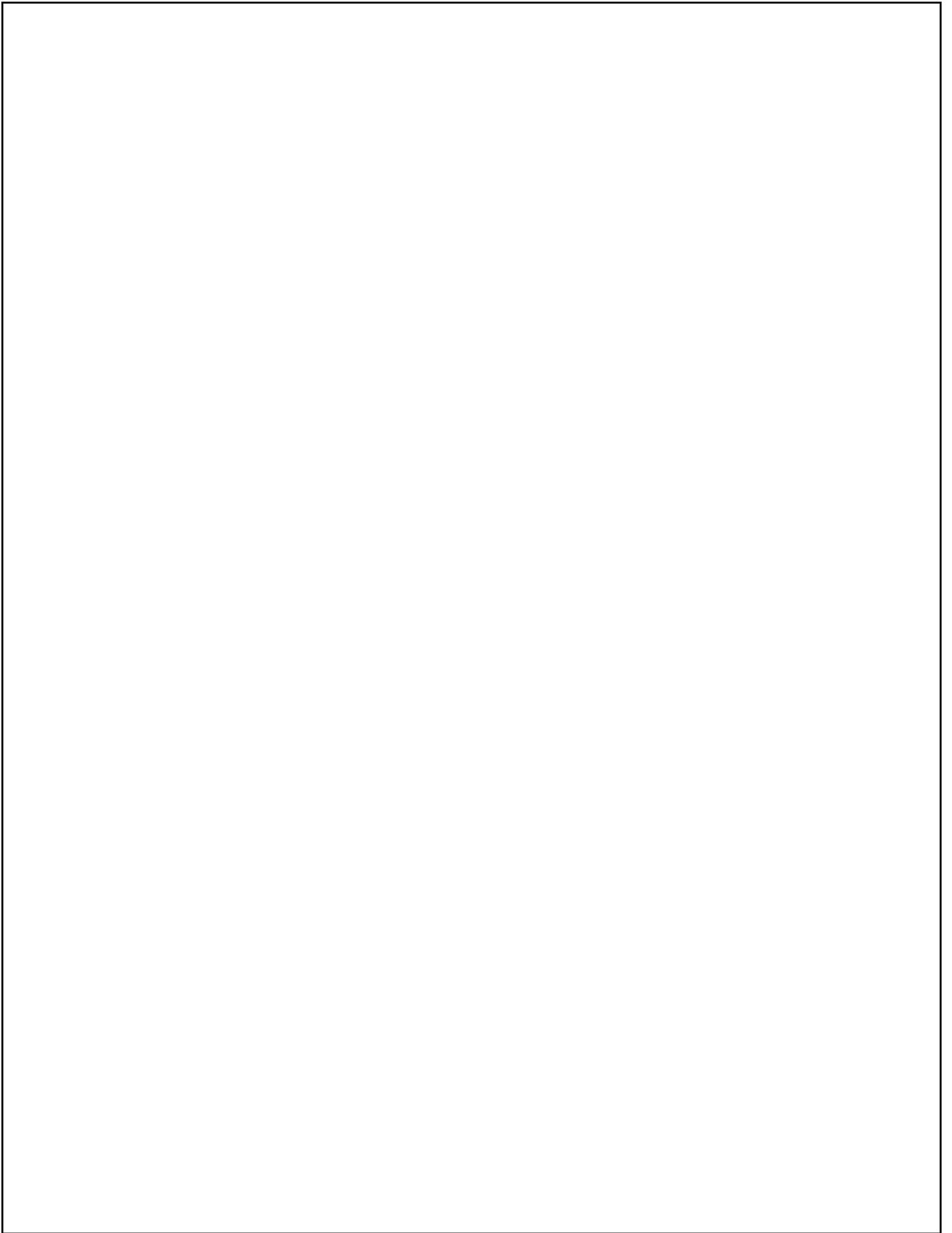
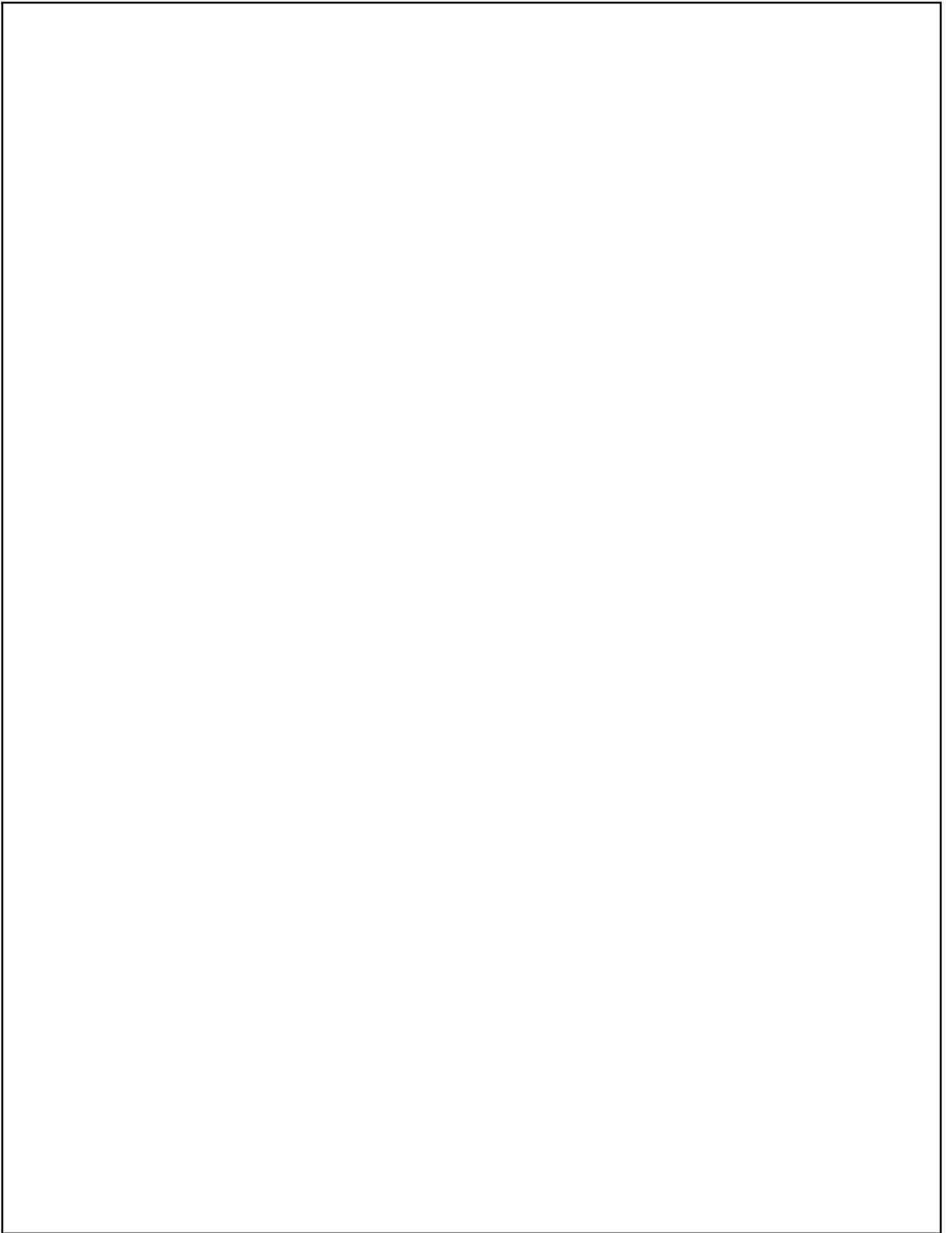


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Executive Summary

Few attempts have been made in the past to assess the economic value of terminology. Industry professionals do not necessarily see their work and their profession from this angle. They see terminology's qualitative impact on the language process, but definitely not its economic impact. Moreover, it is very hard to separate terminology from the language process. Finally, the terminology function is virtually an integral part of the work of translators and revisers.

The Translation Bureau of Canada did an initial survey study of small and medium-sized businesses, as well as major corporations, to develop a snapshot of Canada's terminology market. This study allowed the Bureau to make a preliminary assessment of the economic value of terminology. The initial results shed some interesting light on the subject. The current economic, social and communication environment is also highly favourable to the expansion of the language sector in general, and terminology in particular. Global trade, population shifts and the Internet have created this enabling environment.

The present study aims to validate the survey study's results, but also to go further in assessing terminology's economic impact. In this sense, the present study is meant to be exploratory. Its research methods are thus more qualitative than quantitative. The study will allow us to identify ways to measure how terminology affects the language process by increasing revenue and productivity, and by reducing costs.

Objectives of the Study

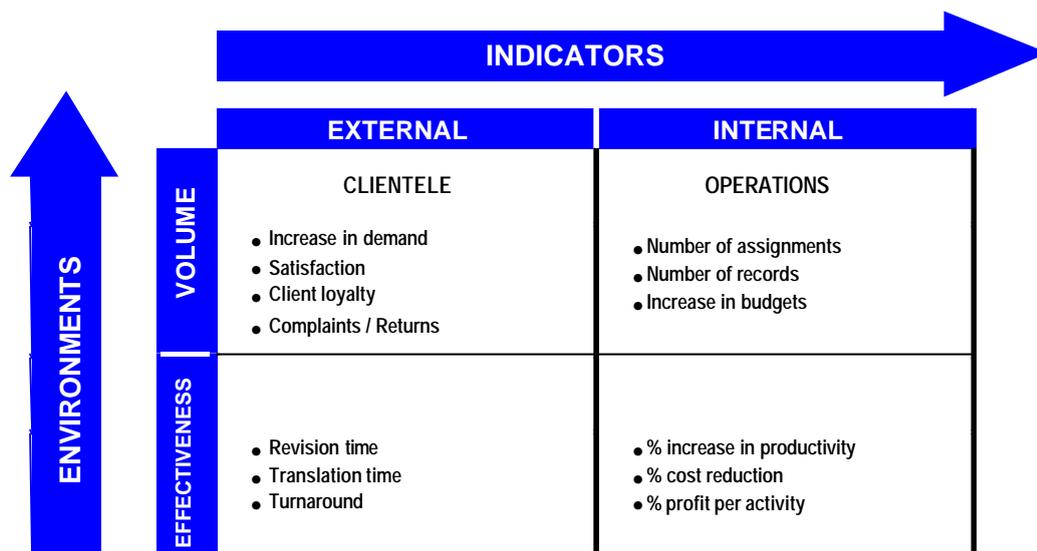
The study mainly aims to determine the economic value of the terminology function in businesses and organizations, in terms of revenue, percentage of return on investment and cost reduction. The study's sub-objectives are: 1) to clearly define revenue, effectiveness or cost reduction factors associated with the function; 2) to establish performance measurement tools for ongoing assessment.

Methodology

We first completed 12 case studies with managers of units where the language function was found. An initial interview with the person responsible provided a snapshot of the function in the organization. We then e-mailed a questionnaire. We provided follow-up to clarify responses. We organized focus groups in Ottawa (March 29, 2004) and Montreal (March 30, 2004). There were 8 participants in Ottawa and 12 in Montreal. They represented 8 language firms and 12 contract sources. Of these, 5 provided in-house language services in the public sector. The other 7 operated in the private sector.

Analytical Model

Assessing the economic value of the terminology function basically means assessing the value of intangible assets. More specifically, it means assessing an organization's intellectual capital. The following model



was used to develop our data gathering. We particularly stressed:

- ◇ Volume and growth
- ◇ Increase in productivity
- ◇ Time (terminology – revision – writing – translation)

Limitations of the Model and the Study

Measuring intangible assets poses major methodological problems. Five major limitations were encountered in the exercise carried out as part of this mandate: ① measurement after the fact rather than longitudinal data gathering; ② reported measurement rather than measurement as part of an experiment; ③ availability of internal data; ④ availability of external data; ⑤ difficulty in separating the terminology function and factors affecting it.

Case Studies

Twelve firms agreed to take part in the study. They included 4 financial institutions (insurance companies, banks, cooperatives, mutual funds, trusts, etc.), 2 pharmaceutical companies, 1 chain of retail stores, 2 public institutions and 3 language firms. These firms operate across Canada. They are located in Quebec, Ontario and the Prairie Provinces. They operate mainly in English and French, though financial institutions operate in several other languages.

The annual volume of words (translated / revised) ranges from 3 million to 14 million. This volume is fast increasing, except in the public sector. Costs have risen due to investment in tools, or have been controlled because tools were acquired in the past and their benefits are starting to be felt. In all cases, contracting out the function controls costs and cost increases. Recent years have been marked by the following trends:

- ◇ More and more writing/translation/revision is contracted out.
- ◇ Project management and quality control are kept in-house.
- ◇ The role of translators and revisers includes terminology functions.
- ◇ Machine translation tools make preparatory work easier. They also reduce the terminology function's weight in the language process.
- ◇ Freelancers have more and more access to in-house terminology records/banks.
- ◇ Work volumes, the pressure of deadlines and cost management concerns make it necessary to invest in and use terminology tools and banks.

The terminology function has thus greatly changed in recent years. Yet it remains just as important. It is becoming far more technical. Yet it remains just as closely related to the language process. Only two respondents said their firm saw terminology as having an impact beyond the language process (risk management for a financial institution; controlling protocols and reducing serious errors for a pharmaceutical company.)

Economic Value

The first way to assess terminology's economic value is to establish standard billing for terminology work. Respondents often feel that terminology is part of the value added of services provided to major clients. Respondents thus tend to underestimate, and even not to bill, the value of terminology.

When terminology is billed (especially by language firms), the trend is to bill about 15 minutes per record (creation or update), or about \$20.

However, it is more important to seek to determine the role of terminology in the writing/translation/revision process. Participants are generally able to say that 8 to 17 minutes per hour are spent on terminology, or 15% to 30% of the time. In dollars and cents, this means \$12 to \$24 in indirect billing (based on an average of \$80 an hour).

A second type of economic value can be determined based on the increased productivity the terminology function can generate in the language process (translation or revision).

Terminology raises productivity by an estimated 10% to 33% in writing, and 5% to 9% in translation. Here we must note the importance of terminology in unilingual activities (not just bilingual or multilingual) when considering increased productivity in revision.

These data suggest that, by thus boosting productivity, a firm or unit reduces costs by about 10% and proportionally increases its profit margin.

When we assess the distribution of this increased productivity among the direct impacts of terminologists, terminology tools and translation tools, we can see that terminologists play a vital role. However, their role and impact doubles when they have the proper tools. Terminologists and their tools each generate \$35 of every \$100 in increased productivity.

Validation

First, it is clear that terminology is not very widely seen in terms of economic value. People intuitively know its commercial impact, but they have never quantified it as such. However, participants are well aware of the terminology function's qualitative benefits. Benefits mentioned include standardization (which has a multiplier effect), service to the clientele, effectiveness in translation, and quality control.

It is difficult to bill terminology. Language firms see terminology as a way to make their own work more productive. This investment is part and parcel of developing a long-term relationship. Clients also “loan” their terminology or validate terms the language firm proposes. It thus seems difficult to bill such work. For special requests, some language firms add a percentage to the final invoice, or bill on an hourly basis. Businesses with in-house services include the terminology function in in-house rates for language services.

On the whole, the focus groups validate fairly well the increased productivity reported in the case studies and surveys (about 10% to 30%).

An OTTIAQ work group specified that a terminology activity should total at least 30 minutes, or \$35 in dollars in cents. Where records are exchanged or sold, the rate per record would be about \$15. [OTTIAQ is the *Ordre des traducteurs, terminologues et interprètes agréés du Québec*.]

There is also a price tag for NOT doing terminology, which means continually repeating similar or identical searches. Considering that a search can take an average of 20 to 30 minutes, the impact can become enormous. Based on a rate of \$80 an hour, each needless search would have a negative impact of \$26 to \$40. Conversely, a record’s value over time would be the number of times it is consulted, multiplied by \$26 to \$40.

In our view, terminology’s economic value involves two final key considerations. First, terminology is a major asset. It generates a competitive advantage for one firm over another, or even for a business that wants its terminology at the forefront of an industry. For instance, some people mentioned the sale of Nortel’s database to outside interests, or corporate outsourcing of the terminology function by CP [Canadian Pacific], banks or car manufacturers. Without knowing its value, we can imagine this represents a major asset.

Secondly, we cannot ignore terminology’s multiplier effect. Once created, a record is used several times in its life cycle. Several people use records in their language function. Training courses, manuals and instructions also use records. Every time a record is used, its total value increases. This factorially multiplies its economic value. (However, it can be argued that a record’s marginal value diminishes over time.)

Conclusion

Terminology's qualitative benefits are fairly easy for organizations to identify. Further analysis shows that terminology allows increased productivity. Terminology can also generate higher profit margins or even independent revenue. This is true for language firms and for in-house services (in-house billing).

Terminology also offers a competitive edge that should not be overlooked. Terminology banks are an investment with enormous multiplier effects. They let businesses develop long-term client-supplier relationships, or make their products stand out on the market.

But this economic value analysis must be further developed. The present study is meant to be exploratory, although it has suggested several answers that future studies might make it possible to explore. We thus recommend experimenting with different kinds of private-sector organizations.

At the same time, it would be interesting to gain a better knowledge of these economic analysis mechanisms, to disseminate certain types of data more widely (if only to validate them), and to start presenting terminology as a key element of a corporate marketing strategy.

1.0 Introduction

Few attempts have been made in the past to assess the economic value of terminology. The Localization Industry Standards Association (LISA) has already produced preliminary data. The other known assessments discussed here basically have to do with terminology costs, and not profits or benefits.

There are several possible explanations for this. First, industry professionals do not see their work and their profession from this angle. They see terminology's qualitative impact on the language process, but definitely not its economic impact, with revenue (direct or indirect) and expenditure as terms in the same equation. Moreover, it is very hard to separate terminology from the language process. The terminology function forms such an integral part of the writing-translation-revision cycle that it is virtually impossible to identify its inputs and outputs. The terminology function is also virtually an integral part of the work of translators and revisers. This means that it is hard to see clearly when a professional switches from translator to terminologist.

Other factors have also mitigated interest in further assessment of terminology's economic value. In the vast majority of cases, terminology work is not done by terminologists. Moreover, terminology is only one input in the corporate business management and communication processes. Both inside and outside an organization, terminology is visible only when there is a problem. Examples include mistranslation, poor writing, or using the wrong terms in an operating manual.

The Translation Bureau of Canada did an initial study to provide a snapshot of Canada's terminology market. The study allowed the Bureau to make a preliminary assessment of terminology's economic value. The Bureau did this study in late 2003 and early 2004. The study involved telephone interviews with small and medium-sized businesses, as well as large corporations. The study assessed market size and profiled corporate use of the terminology function and tools. It also allowed a preliminary assessment of the terminology function's economic aspect¹.

¹ In this report, we will use the notion of the terminology "function", as opposed to "terminologists", simply because terminology work is done mainly by professionals who are not terminologists.

Without reviewing all of the results², the study yielded the findings below:

- ◇ The terminology function is found in 7.8% of Canadian businesses.
- ◇ Less than 1% of Canadian businesses have an in-house terminology specialist.
- ◇ Based on various scenarios, it is estimated that the terminology market (internal and external investment – full or partial contracting-out) ranges from \$90 million-\$175 million (minimum), to \$250 million-\$300 million (maximum).
- ◇ Managers of the terminology function estimate that it offers a 10% return on investment. In other words, a \$100 investment yields a \$110 return.
- ◇ Terminology accounts for 15% to 30% of translation/writing work. Terminology increases productivity in translation and revision by about 20%.

These initial results for terminology's economic impact thus seem satisfactory. Moreover, the economic, social and communication environment is highly favourable to the expansion of the language sector in general, and terminology in particular. International trade, population shifts and the Internet have created this environment. Some very preliminary research and discussions also aim to determine terminology's impact within a broader corporate management framework:

- ◇ Reducing operational, legal and business risks
- ◇ Improving service to the clientele
- ◇ Developing business activities (products, advertising and so on)

Terminology can thus clearly play a major (albeit often low-key) role in an organization.

This study precisely aims to validate the above study's results, but also to further assess terminology's economic impact. In this sense, the present study is meant to be exploratory. Its research methods are thus more qualitative than quantitative. The study will allow us to identify ways to measure how terminology affects the language process³ by increasing revenue and productivity, and by reducing costs.

² We refer readers to the study report *Portrait de la terminologie au Canada* [Portrait of terminology in Canada], March 2004, Translation Bureau of Canada.

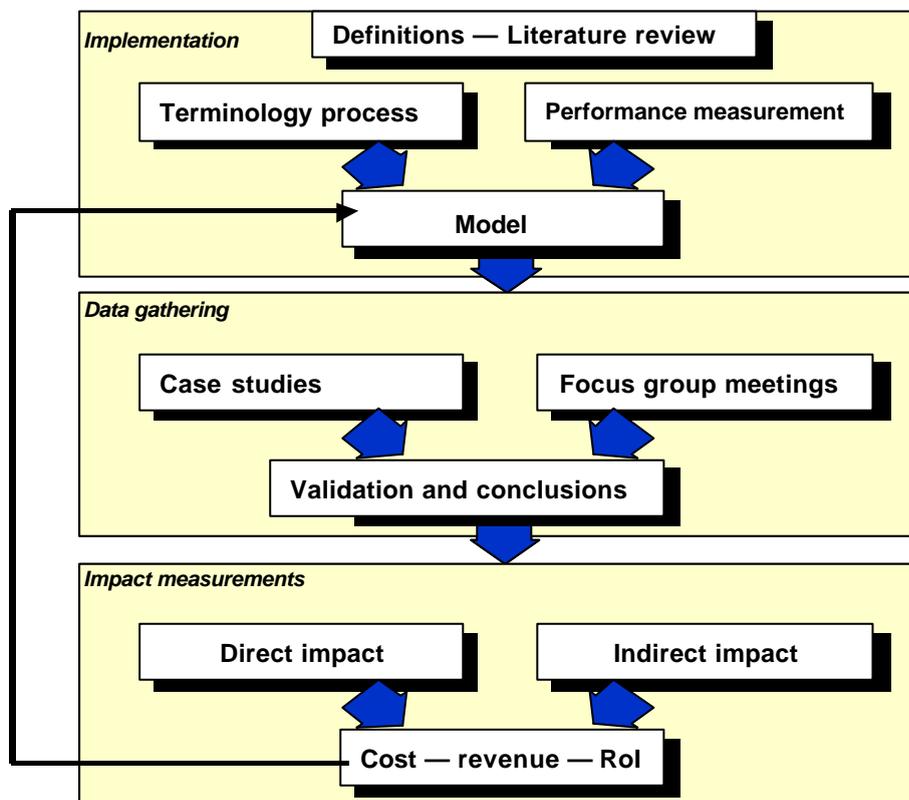
³ We did not broaden the analysis to include corporate management. Respondents already found it very hard to see terminology's economic impact on the language process, which was familiar to them. We thus decided not to pursue our analysis further.

2.0 Objectives of the Study

The study mainly aims to determine the economic value of the terminology function in businesses and organizations, in terms of revenue, percentage of return on investment or cost reduction. To achieve this objective, we pursued the following sub-objectives:

- ◇ To define clearly the terminology process, as well as revenue, effectiveness or cost reduction factors associated with the function and its extensions;
- ◇ To establish performance measurements/grids for ongoing assessment of terminology's impact. By adopting standardized measurements, we can replicate data gathering in the future, to identify and compare changes over time.

The figure below shows how we achieved these objectives:



Note: RoI = return on investment

3.0 Methodology

An exploratory analysis almost necessarily means using qualitative research tools. Moreover, our methodology is based on two methods, applied in sequence.

We first completed 12 case studies with managers of units where the language function was found. Appendix 1 contains the tool we used. We made about 40 telephone calls to reach and convince these 12 participants. Names of potential respondents came from the directories of OTTIAQ [*Ordre des traducteurs, terminologues et interprètes agréés du Québec*], ATIO [Association of Translators and Interpreters of Ontario] and ACGL [Association of Linguistic Service Managers]. When this research is completed, respondents will receive a grid summarizing its results.

An initial interview with the person responsible provided a clear snapshot of the language function in the organization. We then e-mailed a questionnaire. We provided follow-up to clarify responses.

Focus groups then met in Ottawa (March 29, 2004) and Montreal (March 20, 2004). These focus groups respectively numbered 8 and 12 people. Appendix 2 contains the recruitment and discussion guide. These focus groups validated responses to the e-mailed questionnaire. They also allowed further understanding of how the terminology function is managed. Participants came from 8 language firms and 12 contract sources (5 public and 7 private).

These two methodologies made it possible to validate certain results and to state new hypotheses. They also formed the basis for work grids to continue these projects.

4.0 Analytical Model

Assessing the economic value of the terminology function basically means assessing the value of intangible assets. More specifically, it means assessing an organization's intellectual capital. This means nothing less than recognizing the role of human resources, their knowledge, learning and skills, and thus their effectiveness in an organization's economic performance.

Measuring intangible assets poses major methodological problems. For terminology, this value is even harder to determine. There is a simple reason for this. It is hard to measure the "production" of the terminology function. It is almost entirely transparent to the end user. It often forms part of a more comprehensive workflow, such as writing or translating a text, providing language advice for use in producing a text (oral or written), or disseminating terminological information.

The proposed model is based on several studies of assessing intangible assets and intellectual capital, as reported⁴ by Sveiby and Ochs. Three major categories of performance indicators may be used:

- ◇ **Individual skills:** The knowledge, abilities and skills of existing resources.
- ◇ **Internal structure :** The organization's processes and procedures.
- ◇ **External structure :** Client satisfaction, image, customer relations.

These categories of indicators may apply to an organization in three environments:

- ◇ **Stability:** Measurement of performance in ensuring the regular volume of work.
- ◇ **Growth:** Measurement of performance in a period of higher demand.
- ◇ **Effectiveness:** Measurement of performance in absorbing higher demand in a cost-control environment, or maintaining regular performance in a cost-reduction environment.

This model has been used in economically assessing the services of organizational units involved in human resources, data processing and legal services.

⁴ www.sveiby.com and Ochs, Patrick, *Le marketing de l'offre* [supply-side marketing], Paris, Economica, 1998, 94 pages.

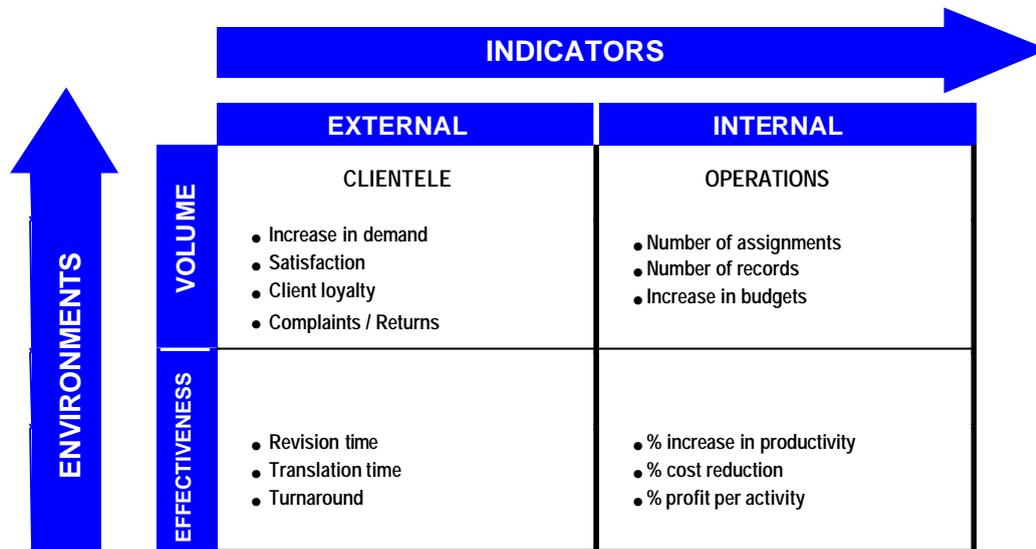
The initial model that we examined can be charted as follows:

		CATEGORIES OF INDICATORS		
		<u>External structure</u>	<u>Internal structure</u>	<u>Individual skills</u>
<u>ENVIRONMENTS</u>	<u>Stability</u>	<ul style="list-style-type: none"> • Customer satisfaction • Repeat business • Complaints and returns / requests for corrections 	<ul style="list-style-type: none"> • # of assignments per resource (# of words / day) • Duration of assignments 	<ul style="list-style-type: none"> • Training costs • Work tool costs
	<u>Growth</u>	<ul style="list-style-type: none"> • Increase in volume per regular client • New clients • New “services” / products offered • Complaints and returns / requests for corrections 	<ul style="list-style-type: none"> • % increase in demand • % increase in human resources • % increase in cost of tools 	<ul style="list-style-type: none"> • Number of resources • Spending on work tools • Use of tools
	<u>Effectiveness</u>	<ul style="list-style-type: none"> • Faster turnaround • Integration of new activities (impact on resources) 	<ul style="list-style-type: none"> • Cost per activity (cost per word) • Increase in number of resources (or external budgets) 	<ul style="list-style-type: none"> • Use of tools • Words in banks / glossaries • Creation of banks / glossaries

To validate this chart, we held three discussions with terminology specialists. Their main comments were as follows:

- ◊ The model is interesting, but complex and with too many indicators, especially for an initial study.
- ◊ The “individual skills” component is too broad and far exceeds the terminology function. Its use would provide interesting information, but it would be hard to relate this information to the language process.
- ◊ Stability is unrealistic these days. Organizations basically operate in a growth environment.

Based on these comments, we redefined the model, simplified it and made it the basis for our data gathering.

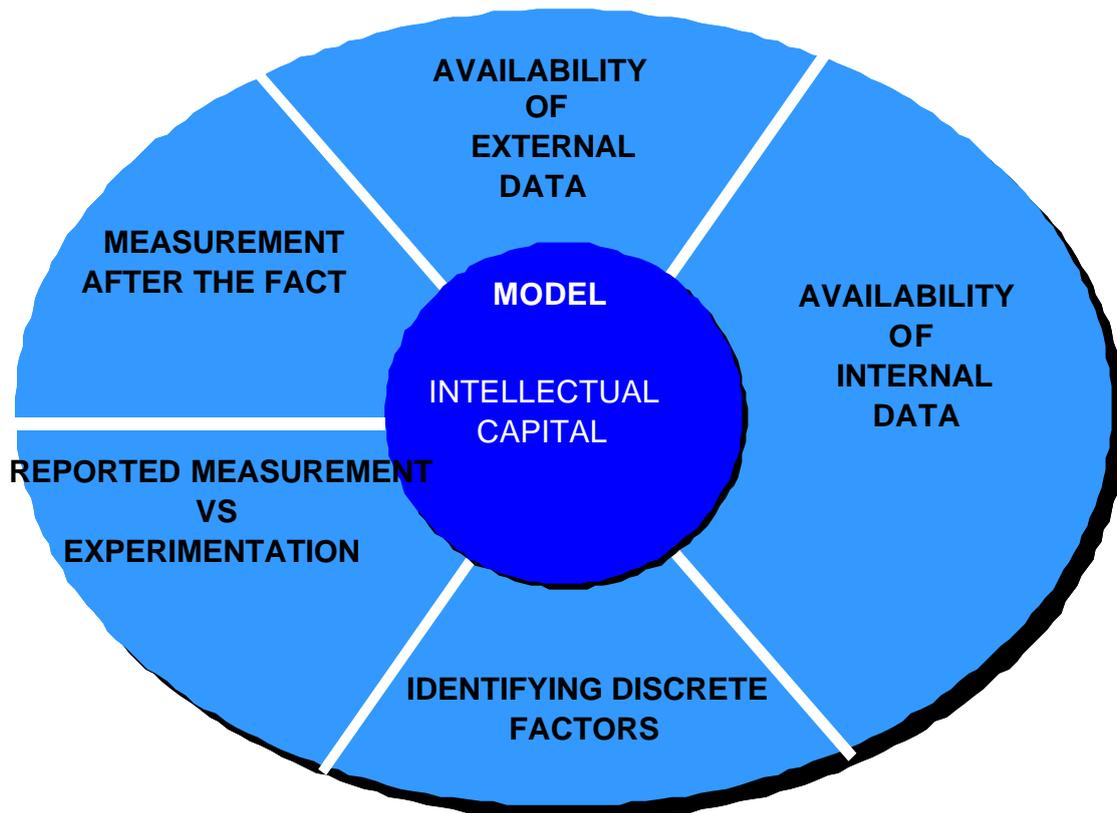


Based on the components of this simplified model, we particularly stressed the following in our data gathering:

- ◇ Volume and growth
- ◇ Increase in productivity
- ◇ Time (terminology – writing – translation – revision) spent on the terminology function.

5.0 Limitations of the Model and the Study

Measuring intangible assets poses methodological problems. Five major limitations were encountered in the exercise carried out as part of this mandate. These limitations may be summarized as follows:



Measurement after the Fact

Organizations have information on volumes, but not necessarily the information needed to measure their impact. We must remember that, even today, terminology's economic value is still very intuitively understood. We thus asked people to measure everything after the fact, based on volumes, but without measuring indicators.

Reported Measurement

Since few data are available, impact is not measured as such but reported, based on the managers' knowledge, experience and intuition. We must implement measures that we can monitor over time as part of an experiment.

Availability of Internal and External Data

Here again, knowledge, judgment and intuition must make up for lack of data.

Identifying Discrete Factors

It is hard to measure the "production" of the terminology function. It is virtually transparent to the end user. It often forms part of a more comprehensive workflow, such as translating, writing or revising a text, giving advice or disseminating terminological information. Moreover, factors that affect terminology necessarily have an impact elsewhere in the function of which terminology forms a part.

These are major limitations, but we think the results still give a good indication⁵. The respondents know their units and work volumes well, even without formal data gathering systems. We also find a degree of consistency in the results. Finally, some measurements and results are fairly close to the findings of surveys done with many respondents.

⁵ Here, we must remember that a qualitative approach points the way and offers indications. It does not provide data that can be extrapolated to the entire population considered.

6.0 Case Studies

Twelve participants agreed to complete the questionnaire in Appendix 1. We sought to ensure that they represented the language industry's three key sectors: language firms, contract sources and in-house language services (public and private). This section reviews the data-gathering results.

6.1 Profiles of Participants

Our 12 cases include 4 financial institutions (insurance companies, banks, cooperatives, mutual funds, trusts and so on), 2 pharmaceutical companies, 1 retail distributor, 2 public institutions and 3 language firms.

These firms operate across Canada. They are located in Quebec, Ontario and the Prairie Provinces. They operate mainly in English and French, although financial institutions operate in several other languages. Key data are summarized in the chart below:

Financial Institutions

<u>Institution 1</u>	<u>Institution 2</u>	<u>Institution 3</u>	<u>Institution 4</u>
3.2 million words translated/revised	Over 10 million	2.5 million	14 million
39% increase in volume of words	20% increase	1% increase	15% increase
22% decrease in spending on language services	5% increase	5%-10% increase	3% increase
75 records per year	4,500 records per year (12% increase)	1,700 records per year	2,500 records per year (2.5% increase)
3% increase in spending on terminology	8% -10% increase	0% thanks to Trados	2.5% increase
In general, highly automated; highly developed terminology banks; significant use of contracting-out, with in-house project management and quality control.			

Pharmaceutical Companies		Public Sector	
Pharma 1	Pharma 2	Public 1	Public 2
3 million words translated/revised	Over 4 million	9 million	10 million
5% increase in number of words	17% increase	11% increase	3% increase
0% increase in spending	12% increase	0% increase	3% increase
220 records (up 5%)	500 records (up 12%)	4,100 records (up 10%)	5,000 records (up 3%)
0% increase in spending on terminology	6% decrease	0%	1% increase
Largely standardized technical vocabulary explains the low number of new or updated records. There is significant use of contracting-out, with specialized resources in which training time has been invested.		Basically dictated by official language acts. The growth of activities is usually stable for these institutions (less cyclical than some industries). This explains the low increase in spending and volumes.	

Language firms			Retail Store
Firm 1	Firm 2	Firm 3	Retail
10 million words translated/revised	35,000 hours	11 million	7 million
10% increase in number of words	10% increase	5% increase	9% increase
	10% increase in spending	5% increase	15% decrease (contracting-out and acquisition of tools)
14,000 records	26,000 records (up 26%) 5% increase in spending on terminology	20,000 records (up 5%) 5% increase	350 records (up 10%) 20% increase (software)
Work done for clients; terminology often positioned as value added, without fully billing. Records help firms to improve productivity.			Own vocabulary is fairly standard; clients provide their terminology.

Participating firms are generally well aware of terminology's impact on their internal procedures and/or provision of service. Its qualitative impact is fairly clearly understood. Quantitatively, the exercise made firms realize the importance, not of having a measurement, but of the type of measurement as such.

The following trends have marked recent years:

- ◇ More and more translation/writing/revision is contracted out.
- ◇ Project management and quality control remain in-house.
- ◇ The role of translators and revisers includes terminology functions.
- ◇ Machine translation tools make preparatory work easier. They reduce the weight of the terminology function in the language process.
- ◇ Freelancers have more and more access to in-house terminology records/banks.
- ◇ Work volumes, the pressure of deadlines and cost management concerns make it necessary to invest in and use terminology tools and banks.

The terminology function has thus greatly changed in recent years. Yet it remains just as important. Only two respondents explained they saw terminology as having an impact beyond the language process (risk management for a financial institution; controlling protocols and reducing serious errors for a pharmaceutical company).

6.2 Direct or Indirect Billing

The first way to assess terminology's economic value is to establish standard billing for terminology work. Focus groups and case studies seem to show that terminology is part of the value added of services to major clients. There is thus a tendency to underestimate, and even not to bill, the value of terminology.

In terms of direct billing, language firms are more likely to bill terminology services. They tend to bill about 15 minutes per record⁶ (creation or update). This represents about \$20 per record, based on an average rate of \$80 an hour. (Hourly rates vary from \$60 to \$80.) When directly surveyed, participants almost routinely mention a value of \$20 to \$25 per record.

⁶ A focus group validated this 15-minute period.

However, it is more important to seek to determine the value of the role of terminology in the writing/translation/revision process. We asked participants to assess the number of minutes spent on terminology activities in an hour spent revising or translating a text.

Participants are generally able to say that 7 to 20 minutes per hour are spent on terminology. Terminology research takes the most time for financial institutions (7 to 20 minutes) and pharmaceutical companies (10 minutes), and the least time for language firms (7 to 8 minutes). Participants' responses mainly range from 8 to 17 minutes. If we express this as a percentage, we see that terminology accounts for 15% to 30% of an hour of billed translation or revision. In dollars and cents, this means \$12 to \$24 in billing (based on an average rate of \$80⁷ an hour) for each hour spent translating or revising.

We may thus conclude that:

- ◇ Language firms tend to bill time spent on terminology research. It has significant economic value, directly or indirectly (when included in the language process). Language firms bill at a lower hourly rate than the in-house rate businesses use.
- ◇ Terminology research contributes \$12 to \$24 to the language process for each billed hour of translation/revision.
- ◇ Terminology activities represent up to 30% of translation work.

Thus, we must not overlook terminology's significant impact on how much organizations bill (in-house or externally), and thus their ability to generate revenue.

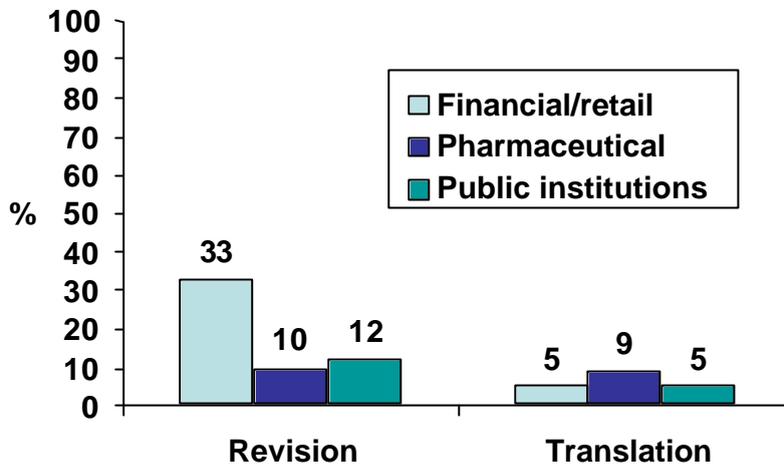
6.3 Increased Productivity

A second type of economic value can be determined based on the increased productivity the terminology function can generate in the language process, in translation or revision.

The chart below summarizes how people see terminology's impact.

⁷ Several firms have in-house billing, based on an hourly rate higher than that billed by language firms.

Increased productivity (%)



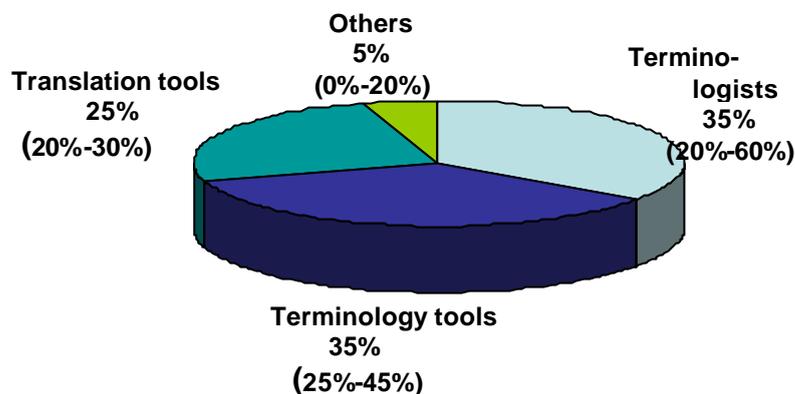
Perceived impact is greater for revision. This allows us to stress the importance of terminology for unilingual (as opposed to bilingual) activities. Respondents from language firms automatically tend to associate terminology with translation. But if businesses have in-house services, or award contracts, they must consult terminology records/banks/glossaries for a very large number of unilingual activities. Businesses may also simply require the support of a terminology expert.

Productivity increases more for revision (unilingual or bilingual) because work is more difficult at this stage. (Revisers must handle more complex cases that translators could not resolve satisfactorily.) This stage may also require research or standardization. Productivity increases less for revisers or translators who are more familiar with the terms generally used.

Greater increases are also a function of higher volumes of words. Higher volumes probably require more investment and more awareness of terminology's impact.

These data suggest that, when productivity is thus increased, a firm or unit proportionally increases its profit margin (10%).

Finally, participants indicated how this increased productivity might be distributed among the direct impacts of terminologists, terminology tools and translation tools, including translation assistance tools (TATs). The chart below supports the hypothesis that terminologists play a vital role. However, their role and impact doubles when they have the proper tools.



Terminologists and their tools thus each generate \$35 of every \$100 in increased productivity.

This cumulative effect may be validated based on what we see on the market. All respondents with high volumes and growth are investing or have invested in such tools. This has allowed them to absorb a fairly large increase in volume, without experiencing an equally large increase in spending. Some firms are also starting to hire terminologists or are adding terminologists to their team.

7.0 Validation by Focus Groups

We held two focus groups at the end of March 2004 to broaden our study. We added new respondents/participants to validate the data we gathered by other means, and to chart new directions for future research.

First, it is clear that terminology is not very widely seen in terms of economic value. People intuitively know its commercial impact, but they have never quantified it as such.

Participants are well aware of the terminology function's qualitative benefits:

- ◇ Standardization: Standardization reduces the risk of error. It thus improves productivity, the training of resources and overall quality. Standardization's most positive impact is the production of controlled languages. Standardization also has a multiplier effect. (Several people use the same source on several occasions.)
- ◇ Service to the clientele: Here, we see terminology's impact with other factors (software, documentation, training and so on).
- ◇ Less duplication, mainly in research and consultation.
- ◇ Making translation work easier: In the surveys and case studies, we found that terminology benefits revision more than translation. On the other hand, we clearly understood from the focus groups that terminology benefits translation more than revision. We must thus retest this contradiction in later phases of our study.
- ◇ Fewer commercial risks, better security, protection of the public.
- ◇ Quality control of the finished product.

Because people lack knowledge of terminology's economic value, they think it is hard to bill terminology services. They generally include terminology services in the overall cost. Language firms see terminology as a way to make their own work more productive. This investment is part and parcel of developing a long-term relationship. Clients also often "loan" their terminology or validate terms that language firms propose. It would thus seem difficult to bill such work.

For special requests, some language firms add a percentage to the final invoice, or bill at an hourly rate. Businesses with in-house services automatically include the terminology function in in-house costing of language services. They add a percentage to the time, the rate per word, and so on.

It is hard for a focus group to assess terminology's impact on productivity. In general, however, the focus groups validated fairly well what the surveys and case studies reported:

- ◆ In the current environment, with the Internet and other databases, it takes about 15 minutes to create a record. In dollars and cents, this means about \$20. It was noted that, several (20) years ago, the Translation Bureau estimated the cost at \$10 to \$15.
- ◆ Terminology research is required for 4% to 6% of all words in a text.
- ◆ Experienced translators spend about 20% to 25% of their work on terminology activities. For a new translator, this percentage might be as high as 40% to 60%.
- ◆ Lack of a database, such as TERMIUM[®], reduces productivity by 10% to 30%. This is fairly close to the 15% to 20% range already determined. Some said productivity could be reduced by 100%. The work would take twice as long.

These data tend to be close to our previous estimates.

From some of the discussions, we learned that, in dollars and cents:

- ◆ Work by OTTIAQ specified that a terminology activity should be rated at no less than 30 minutes, or \$40 in dollars and cents.
- ◆ Where records are exchanged or sold, the cost per record would be about \$15.

During the discussions, we talked briefly about the price tag for NOT doing terminology, which means continually repeating similar or identical searches. Considering that searches can take an average of 20 to 30 minutes, the impact can become enormous. Based on a rate of \$80 an hour, each needless search would have a negative impact of \$26 to \$40. Conversely, a record's value over time would be the number of times it is consulted, multiplied by \$26 to \$40.

One participant estimated that a record might be consulted 15,000 times during its life cycle. The financial impact is thus \$390,000 (15,000 X \$26). The scope of this study must, of course, be broadened to validate this information.

In our view, terminology's economic value involves two final key considerations. First, terminology is a major asset. It generates a competitive advantage for one firm over another, or even a business that wants its terminology at the forefront of an industry. (Microsoft comes to mind.) For instance, some people mentioned the sale of Nortel's database to outside interests, or corporate outsourcing of the terminology function by CP [Canadian Pacific], banks or car manufacturers.

Secondly, we cannot ignore terminology's multiplier effect. Once created, a record is used several times in its life cycle. Several people use records in their language functions. Training courses, manuals and instructions also use records. Every time a record is used, its total value increases. (However, it can be argued that a record's marginal value diminishes over time.)

An exercise with a financial institution, to assess a record's value over time, shows this impact fairly well. The institution creates 2,500 records a year. Each record takes 15 minutes to create, at a rate of \$80 an hour. The cost is thus \$20 for each record (15 minutes = 25% of an hour @ \$80 an hour = \$20) or \$50,000 for all records (2,500 records X \$20). It takes about 5 minutes to update a record, at a cost of \$6.67 (5 minutes or 8.3% of an hour @ \$80 an hour = \$6.67) or \$16,667 (\$6.67 X 2,500 records) for updates only. The language exercise cost is \$66,667 (\$50,000 + \$16,667) for these 2,500 records. To this, we may add \$800 in data processing costs (allocation of total expenditures to the 2,500 records). We thus obtain costs totalling \$67,500 (\$66,667 + \$800⁸). The record is consulted an average of 15,000 times a year. If we consider that the research to create the record cost \$20, minus consultation costs (an average of 1.5 minutes per consultation), this yields a net profit margin of \$18.25 (\$20 - \$1.75) for each consultation. The net profit would thus be \$45,625 for the first year (\$18.25 X 2,500 records). For later years, we must reduce the research cost used (\$20) to reflect the record's decline in value over time. However, we can see that a record becomes profitable as of its second year of use.

The following section will allow us to carry out an experiment to identify this value.

⁸ It must be understood that a cost-benefit analysis should add human, material and other costs, as defined in a costing analysis.

8.0 Experiment

Due to the above methodological problems, especially availability of information, we recommend doing an experiment to collect several types of data on a monthly basis. This would establish the baseline for data gathering and would involve the following steps:

1. Choose 5 to 10 firms/organizations with significant language activities.
2. Obtain a clear snapshot of the language function: number of resources, existing tools and systems, use of external resources, work volumes, increase in volume, languages involved, hourly rate, acquisition of tools, and so on, to understand the environment as well as possible.
3. Cost language services, separating direct and indirect costs.
4. Identify 5 to 10 records to be created in a given period (one to three months, depending on the organization's volume). Identify the following items:
 - a. Profile of the record (complete, working)
 - b. Time required to create the record
 - c. Other factors affecting the record
 - d. Person who created the record
5. Determine the following whenever each record is consulted or updated:
 - a. Consultations: The time in minutes and an indicator of the complexity of the consultation (from 1 for a quick consultation to 10 for a detailed consultation).
 - b. Updates: The date of the update, the type of update (from 1 for a quick update to 10 for a detailed update) and the duration of the update.

By using a measurement scale from 1 to 10, a record's value can be weighed over time. If a record remains relevant, it should continue to be rated at the same level on the scale. On the other hand, if a record decreases in value, its rating on the scale should also decrease.

These data may be stored in calculation files and updated monthly.

6. For each record at year-end:
 - a. Calculate the cost of producing and using the record (creation time + consultation time X hourly rate + direct costs and a portion of indirect costs allocated per record).
 - b. Assess the profit earned by the record – that is, the number of times the record has been consulted, multiplied by the cost of creating the record, adjusted based on the two scales used to measure the complexity of the consultation.
 - c. Find the difference between the two to determine the record's net value.

This grid may be used for a fairly long period (12 to 24 months) to ensure a degree of validity and reliability.

To simply assess volumes and increased productivity, we can recommend a simple work grid to be completed for each “major” activity. (We may define a critical minimum number of words as a basis for identifying a text or assignment.) The chart in Appendix 3 summarizes this work grid. The grid could be reviewed monthly to determine impacts on writing, revision and translation time.

9.0 Conclusion

This more qualitative phase allowed us to go further in examining terminology's economic value. It also allowed us to validate this information and the information generated by surveys of Canadian small and medium-sized businesses, as well as large corporations.

Terminology's qualitative benefits are fairly easy for organizations to identify. Further analysis shows that terminology allows increased productivity.

Terminology can also generate higher profit margins or even independent revenue. This is true for language firms and for in-house services (in-house billing).

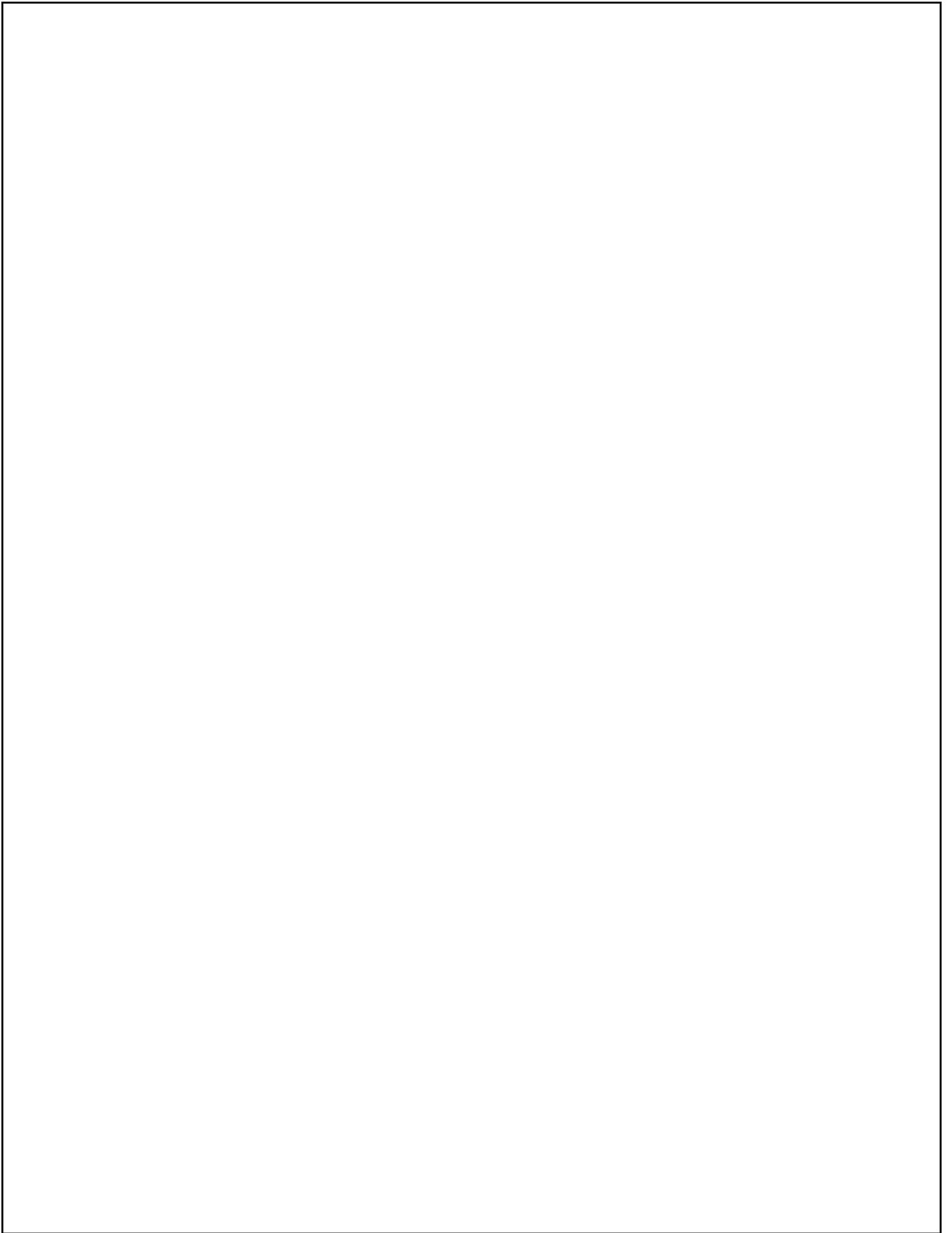
Terminology also offers a competitive edge that should not be overlooked. Terminology banks are an investment with enormous multiplier effects. They let businesses develop long-term client-supplier relationships, or make their products stand out on the market.

But this economic value analysis must be further developed. The present study is meant to be exploratory, although it has suggested several answers. We thus recommend experimenting with different kinds of private-sector organizations to broaden this analysis.

At the same time, it would be interesting to gain a better knowledge of these economic analysis mechanisms from professionals, to disseminate certain types of data more widely (if only to validate them), and to start presenting terminology as a key element of a corporate marketing strategy.

APPENDIX 1

DATA GATHERING GRID
FOR CASE STUDIES



TERMINOLOGY PROFILE

This brief profile aims to determine terminology's economic value. We must clearly distinguish between terminology's cost and value. It is easier to account for cost than for value!

For several items in this profile, you will have only an estimate, an overall assessment or even an intuitive assessment. Feel free to provide this figure. You no doubt have an excellent idea of your area of activity. In your organization, you are in the best position to arrive at this estimate or assessment. Above all, this remains an exploratory study.

All data are confidential and will not be disclosed to anyone. The results we present will be consolidated, without mentioning the participants' names. We will eventually tabulate the results with data. But we will not identify any firm, and we will not provide any information that would allow this. You will thus be able to compare your data with data for firms in the language sector.

Thank you for your cooperation.

Questions about work volume:

Translation

1- Can you tell us how many words were translated in the past year (the past 12 months)? _____.

(If you have another indicator that you deem more useful, please mention it: _____ in the past 12 months).

2- % of annual increase in this number of words (or other indicator): _____%.

3- % of increase in spending for **translation**, including human resources and work tools (glossaries/dictionaries, software/applications, excluding computers): _____%.

Terminology

4- Can you tell us how many records were created or revised in the past year (the past 12 months)? _____.

(If you have another indicator that you deem more useful, please mention it and indicate the volume: _____ in the past 12 months).

5- % of annual increase in this number of records (or other indicator): _____%.

6- % of increase in spending for **terminology**, including human resources and work tools (glossaries/dictionaries, software/applications, excluding computers): _____%.

Questions about the link between terminology and translation:

7- For each hour spent on translation/revision, how many minutes are spent on terminology functions (by terminologists or other persons)? _____ minutes.

8- What is your hourly billing rate (for in-house clients, for external clients) for:
A translation activity: \$____;
A terminology activity: \$____;
A revision activity: \$_____.

9- By what % has productivity/effectiveness in translation improved in recent years (such as the number of words a translator translates per day)? _____%.

10- In this % of improved effectiveness, what proportion can be attributed to:

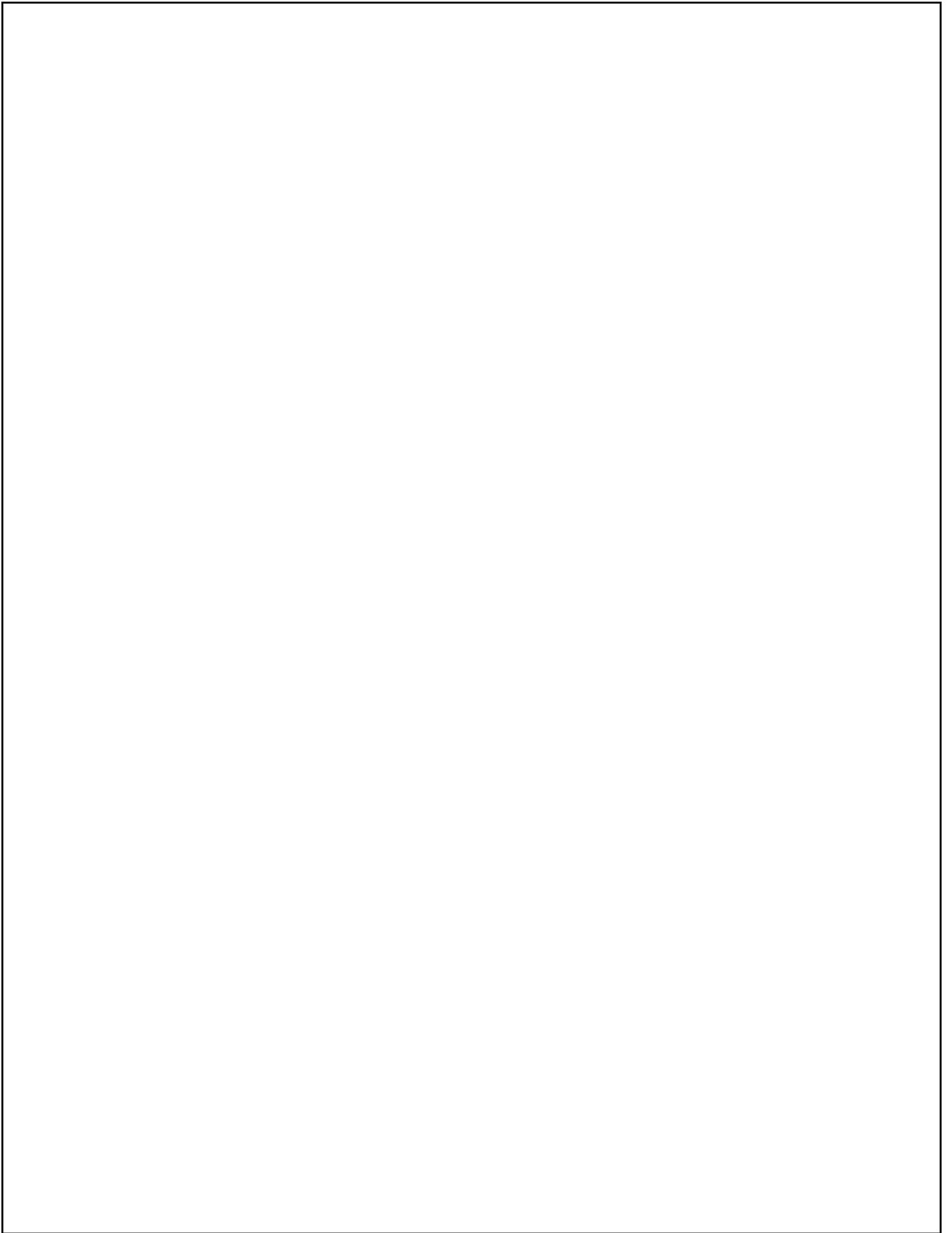
Terminology – impact of terminologists:	_____ %;
Terminology – impact of tools (glossaries, terminology banks and so on):	_____ %;
Automated translation assistance tools:	_____ %;
Other components:	_____ %.
TOTAL:	100%
	(improved effectiveness)

Thank you for your cooperation.

Guy Champagne
514-285-1310

APPENDIX 2

RECRUITMENT AND DISCUSSION GUIDE



SELECTION QUESTIONNAIRE

May I speak to (name on list)? Good morning/good afternoon/good evening, Madam (Sir).
My name is _____ from Opinion Search Inc.

Q.A We are doing a study of terminology in Canadian businesses and organizations.

Are you the person responsible for this function in your organization?

If necessary, define "terminology".

Terminology systematically studies how concepts are designated in the various areas of human endeavour, by collecting and analyzing terms in context. Terminology aims to provide users with vocabulary proper to a field.

- Yes..... 1 **CONTINUE**
- No..... 2 **ASK TO SPEAK TO THE PERSON RESPONSIBLE: _____ (name and title)**

We are trying to assess the terminology function's economic impact on the language process. We have already done several studies. We have reached the validation phase.

Would you be prepared to take part in a focus group next week? Several specialists, such as yourself, will be invited to discuss this subject.

Q.B To help us ensure that the function is well represented, can you tell me which statement best describes your organization? (READ)

- (1) A public or government organization, such as a department, Crown corporation or government agency **QUOTA 25% PER GROUP**
- (2) A private firm with in-house terminology activities
- (3) A private firm that contracts out these terminology activities
- (4) A language firm **QUOTA 25% PER GROUP**

My questions thus aim to invite you to a focus group meeting that we plan on
March 29, 2004 (Ottawa)
March 30, 2004 (Montreal)

This meeting will let us obtain your feedback on terminology's value in your organization.
The meeting will last about 90 minutes.

Do you wish to take part? Your opinion is very important to our project's success. In return,
you will be paid \$50 to cover travel and other expenses.

- Yes..... 1 **REGISTER THE RESPONDENT**
- No..... 2 **SAY THANK YOU AND END THE CALL**
- Don't know..... 3 **OFFER TO CALL BACK LATER**

REGISTER THE RESPONDENT'S NAME: _____

TELEPHONE NUMBER: /_/_/_/_/-/_/_/_/_/

Name of firm: _____

E-mail address: _____

MENTION WHERE THE MEETING WILL BE HELD:

Ottawa

**Opinion Search Inc. is located at:
160 Elgin Street, Suite 1800, Ottawa K2P 2P7
Tel: 613-230-9109 Fax: 613-230-3793**

Montreal

***Opinion Search Inc. / Centre de recherche Décima*
630 Sherbrooke West, Suite 1101, 11th Floor
514-288-0037**

Thank you for your cooperation. We look forward to seeing you.

DISCUSSION GUIDE

1. Introduction (10 minutes)

- Introduce the facilitator.
 - Mention that the study is confidential.
 - Indicate that there are microphones, a video camera and a two-way mirror.
 - Introduce the respondents:
 - First name
 - Company name
 - Estimated volume (number of words, number of staff and so on)
 - Type of firm
- (5) A public or government organization, such as a department, Crown corporation or government agency **QUOTA 25% PER GROUP**
- (6) A private firm with in-house terminology activities
- (7) A private firm that contracts out these terminology activities
- (8) A language firm **QUOTA 25% PER GROUP**

2. **Tools that the organization uses in its terminology function (10 minutes)**

Terminology records
Terminology records/banks
In-house directories
External directories and sources (OQLF [*Office québécois de la langue française*],
TERMIUM[®], others)
Work tools (term extraction, machine translation)
General and specialized dictionaries

Advantages and disadvantages of the tools mentioned
Needs poorly served by existing tools

3. **Advantages and benefits of terminology (20 minutes)**

In what sectors is terminology involved? What roles and functions does it play?

Language management
Risk management
Management of service to the clientele
Others

Where, when and how is terminology involved in the language function?

Unilingual, bilingual, multilingual
Before, during, after
Writing, revision, translation

What benefits do you see in terminology?

Qualitative:

[Reduces] risk of error
Language quality
Stakeholders' understanding of language
Image, service to the clientele
Time savings
Cost savings

Quantitative

Have people previously examined terminology's quantitative impact on the language process?

Ex. ROI [return on investment]
% time savings
% cost savings
% increased productivity

4. **Assessment of quantitative impact (45 minutes) - Board**

We are going to try to assign a quantitative value to terminology.

This is not easy but, as a group, we can come up with something. It will not necessarily be a consensus or an average. If anyone sees things differently, say so. This is a collective effort. There are no right or wrong answers. And we'll do this very gradually.

4.1 Cost and role of terminology (20 minutes)

Let's choose a few types of activities.

Terminology record:

What does a record include?

How many minutes does it take to create a new record?

How many minutes does it take to update an existing record?

Terminology activity in a text

Let's say we have a 1,000-word text.

How many words will require terminology work? What type of work? Let's be precise: reading / revision, terminology research, contextual search, correction of a terminology record/bank, correction of the text ...

How many minutes are spent on this terminology work? How is this time allocated by type of work?

Is there a difference among unilingual, bilingual and multilingual activities?

Is there a difference among activities in a writing, translation or revision environment?

Writing, revision and translation time

If a writer spends 60 minutes on a text, how many minutes are spent on terminology?

If a translator spends 60 minutes on a text, how many minutes are spent on terminology?

If a reviser spends 60 minutes on a text, how many minutes are spent on terminology?

4.2 Benefits of terminology (20 minutes)

Where, when and how are terminology's economic benefits seen?

- Revenue – billable services (in-house or external) – HOW DOES THIS WORK? Hourly rate – how much? Rate per word – how much? % added to writing, translation – what %?
- Increased productivity
- Cost reduction
- Reduced risk of error
- Other – specify

How can we quantify the benefits of knowledge gained via the terminology function?

Activity in a text

Let's go back to our 1,000-word text.

We said that XXX words require terminology work.

Does this terminology work affect the next 1,000-word text on the same subject?

- Increased productivity – by what %?
- Reduced writing/translation costs – by what %?
- Impact on revision (measure impact on revision)

Terminology record

Does consulting a terminology record/bank reduce writing time? By how many minutes out of, say, an hour's work?

Does it reduce revision time? By how many minutes out of, say, an hour's work?

Writing, revision, translation time

If a writer devotes 60 minutes to a text, what impact does terminology have on writing time?

If a reviser devotes 60 minutes to a text, what impact does terminology have on revision time?

If I have \$100 to invest in various language functions – tools, human resources, glossaries, contracting-out – what will increase revenue, cost reduction and productivity most?

- Writing
- Revision
- Terminology
- Translation

Why?

How do the percentage (%) increases compare?

4.3 Other costs and benefits of terminology (5 minutes)

- Training of human resources
- Standardization of terms
- Service to the clientele
- Web site localization
- Financial risks
- Legal risks
- Others – specify

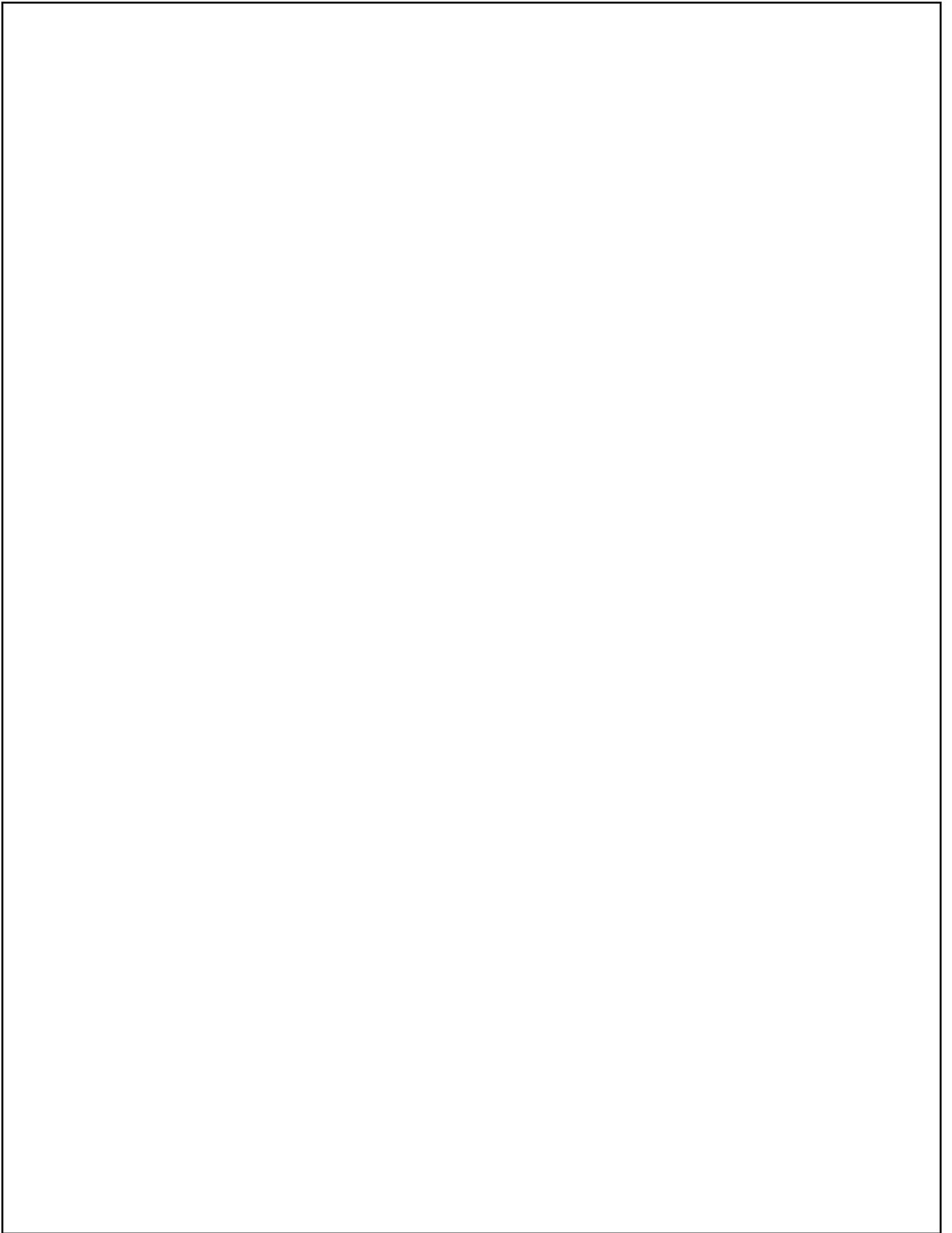
Have you seen the impact of your work on:

- the number of calls to customer services
- the number of calls to technical services
- legal proceedings
- losses due to poorly run organization

5. Conclusion (5 minutes)

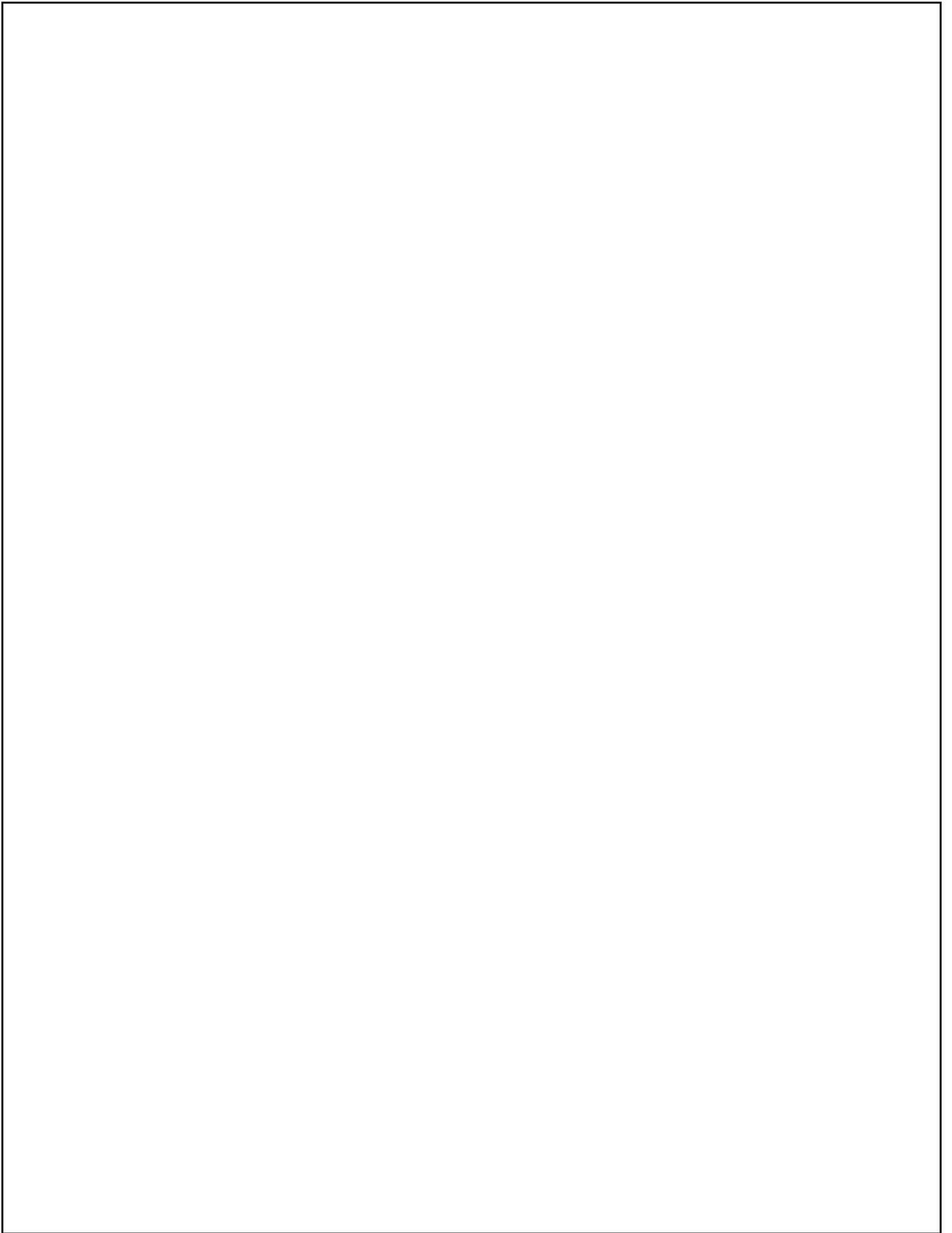
Final comments on the profession and terminology's future

Thanks



APPENDIX 3

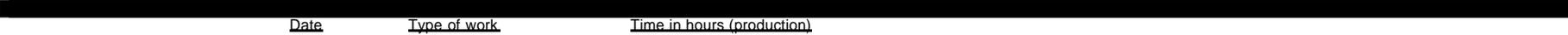
FOLLOW-UP GRID



Year

STATISTICS PER ASSIGNMENT

<u>Date</u>	<u>Initial number of words</u>	<u>Number of words revised for terminology</u>	<u>% of words revised out of initial words</u>	<u>Revision/translation time (in minutes)</u>	<u>Number of records (new)</u>	<u>Number of records (updated)</u>
<u>Writing (unilingual)</u>						
Assignment _____						
Assignment _____						
<u>TOTAL</u>						
<u>Translation (bilingual/multilingual)</u>						
Assignment _____						
Assignment _____						
<u>TOTAL</u>						
<u>Revision</u>						
Assignment _____						
Assignment _____						
<u>TOTAL</u>						
<u>GRAND TOTAL</u>						



<u>Date</u>	<u>Type of work</u>	<u>Time in hours (production)</u>
<u>Language advice</u>		
Query _____		
Query _____		
<u>TOTAL</u>		



Information documents
Language information bulletin
Language information bulletin

Language advice
Language advice

Reminders – memorandums – e-mails
Reminders – memorandums – e-mails

<u>Date</u>	<u>Creation (new) (time in hours)</u>	<u>Minor update (time in hours)</u>	<u>Major update (time in hours)</u>
-------------	---------------------------------------	-------------------------------------	-------------------------------------

Records
Record _____
Record _____

