Industry, Science and
Technology Canada

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TRAINING NEEDS ANALYSIS

OF

COMMERCE OFFICERS

Canada

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Training Needs Analysis of Commerce Officers

March 1991

A report from

EJ ERNST & YOUNG
MANAGEMENT CONSULTANTS

Industry, Science and Technology Canada

Training Needs Analysis of Commerce Officers

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1. Executive Summary

Objectives and Methodology

The overall objective of this assignment was to conduct a comprehensive training needs analysis for the more than 800 employees of ISTC belonging to the Commerce Officer (CO) occupational group located at both headquarters in Ottawa and regional offices across Canada.

The study involved an extensive research program including reviews of job descriptions and of previous studies, 35 interviews with senior management, 16 focus groups with approximately 160 COs across Canada, and a voluntary self-administered questionnaire of 829 Commerce Officers which received a 43% response rate.

We were also highly cognizant of a number of related initiatives such as the Public Service 2000; the ISTC Task Force on the Advancement of Women, etc. The study was conducted between November 1990 and March 1991.

Findings

Commerce Officers are one of the main groups of individuals charged with the task of fulfilling ISTC's extensive mandate and serving the Department's many clients. As such, they have many areas of expertise and perform a diverse range of tasks from sector to sector within industry and with other agencies.

There are some 829 Commerce Officers in ISTC who account for about 35% of the Department's total staff. The CO population is split approximately 63% in headquarters and 37% in regions across Canada. Most COs are a seasoned group who, on average, have been in their current job for close to 5 years, with the Department nearly 8 years, with other government departments almost 6 years and in industry more than 6 years.

Based on the questionnaire, COs indicated that an average of 25% of their job functions have changed as a result of the new Departmental mandate. Only 38% of COs interact with the same clients as they did three years ago which suggest that the new mandate has had a reasonably strong impact on the client interaction aspect of the officer's job.

The CO perspective is that their individual job functions and needs vary widely from each other. Many felt that a major priority was "keeping on top of industry developments and sectoral knowledge", while others felt that communication within and outside ISTC was a priority need. As such, the training needs analysis was viewed with some caution particularly that the scope of our analysis was perceived to be too narrowly focussed on developing formal classroom type training programs which are only a part of their training needs.

COs currently receive approximately 3.3 days of training per year. It is estimated that the CO portion of the training budget is approximately

$800,000,[1] or approximately $1,000 per person. Slightly over half of this training (1.9 days) is microcomputer training. ISTC also sponsors a number of professional development courses such as a 3 day Management of Technology seminar which account for one-third (1.2 days) of CO training.

Based on the survey, COs identified the following activities, skills and knowledge areas as being new or as having increased substantially under the new mandate:

Job Activity, Skill or Knowledge	% of COs Identifying as New or Increased Substantially Under the New Mandate
Promoting international competitiveness	38%
Promoting technological development	37
Word processing skills	34
Forming strategic alliances	33
Converting mandate to action	31
Networking and advocacy	31
Facilitating technology transfer	31
Promoting R&D	30
Analyzing competitiveness issues	29
Knowledge of environmental legislation	29

The main types of training offered by ISTC include computer training and professional development type courses in areas such as management of technology. Some of these courses have been recently developed and are similar to what officers have identified as a need on the survey. In this regard, officers do not feel that they have a reasonable level of awareness of existing training. Also, there is not any training which is directly oriented to the 'how to' of assisting the officer in converting the new competitiveness mandate directly into a plan of action. This training would potentially focus on the commerce officer's role in analyzing sectoral intelligence, industry issues, strategic alliance building, consulting, networking, problem solving and teamwork, etc.

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[1]Estimate of CO training days are based on CO share (33%) of the total person day utilization in ISTC. Exact training costs allocated to officers are not available.

The following are the activities, skills and knowledge areas which officers designated as being both important and requiring upgrading or training:

Job Activity, Skill or Knowledge	% of COs Giving Activity Rating of Some/Great Importance as Well as Some/Great Need for Training/Upgrading
Promoting international competitiveness	52%
Speaking and presentation skills	45
Analyzing key industry issues	45
Knowledge of other government programs/services	44
Analyzing competitiveness issues	44
Promoting technological development	42
Networking and advocacy	42
Forming strategic alliances	42
Total quality management techniques	41
Knowledge of ISTC programs/services	41
Word processing skills	40
Strategic business and planning skills	40
Knowledge of industry sectoral issues	40
Technology and business strategy	40

These skills sets are analogous to those identified by senior management in the department.

The skills and knowledge identified for career development purposes were broadly similar to the above. An exception was french language training which tended to be regarded as more important for career development purposes.

Officers held several views regarding training related findings:

- 62% favour support for COs providing training
- 60% of COs support a mentoring system
- 43% have been refused training for either a financial or non-financial reason
- 68% of COs favour a personal discretionary training budget
- 47% favour frequent one-day modules
- About three-in-four are willing to upgrade on their own time
- COs are interested in industry exchanges and government secondments

- 74% favour longer term industry exchanges and two-thirds favour secondments within ISTC
- 80% want more freedom to attend conferences

Recommendations

Training Linked to ISTC Culture and Organizational Issues

The shift in skills caused by the new mandate is consistent with some of the changes which are facing a number of private sector organizations and to a large extent consistent with many of the changes arising as a result of PS 2000. These changes, which are affecting organizations in the private sector, are emerging to encourage companies to be more flexible and client oriented. The shift in ISTC's mandate away from program administration and towards client service has many analogies in the private sector as companies attempt to implement more flexible management structures that can respond to the issues of client service and quality. For the commerce officer who is used to job specific tasks, he or she will have to become more accomplished at generic skills such as analytical and research skills, communications, strategy development and quality issues.

As such, training becomes a strategic rather than a job specific issue. Training must therefore become a strategic priority within the Department. On this level, training is closely linked with an organization's culture. ISTC's training initiative should ideally be supported by other cultural and organizational change such as improved communications, which we understand is occurring to some extent.

Increase Level of Training Required

COs currently receive 3.3 days of training per year. It is difficult to determine what should be the ideal level of training, recognizing that funds allocated to training resources are necessarily limited. While most in our management interviews indicated that they considered the level of funding to be adequate, fully 43% of COs indicated they had been denied training which they requested. These results must also be

examined from the perspective that many COs said that most training is identified during the performance review process and in many cases, this is rarely acted upon.

The current level of training we believe should be at least doubled. This figure is still considerably lower than the training levels many companies in industry provide. The main cost of training is in course development. The Department could achieve more training at similar costs through increased use of in-house resources including COs as much as possible.

Improve Marketing of Existing Training

Awareness of existing training was not high. Indeed, many identified training which is already offered or under development. A number of recommendations have been made to improve the marketing of existing training.

Training Should be Largely Voluntary

We have not recommended that any training be made mandatory. However, we would suggest that some of the training be 'strongly' recommended, or could be designated as 'core' training. The difference in terminology may seem like semantics, but it is an important distinction in terms of influencing people's attitudes to training and upgrading.

Maximize COs' Control Over Their Training

We advocate that the Department should seek to maximize CO control over their own training. However, there may be cases where managers may wish to encourage individuals to attend some of the 'core' CO training courses. The Department could, for example, pilot a project which allows COs some control over their own discretionary training budget and monitor the results of this experiment.

Use COs and Successful Cases

COs expressed considerable support for having experienced COs deliver training. Clearly, this represents respect for and confidence in

their own peers, many of whom also have experience in delivering training. The Department should take advantage of these experienced COs in developing its training programs. 'Train the trainer' type courses should also be developed to assist in this initiative.

The training which is recommended below should be provided using a variety of instructional materials and media. Courses should draw on successful cases to illustrate how the Department's mandate is being fulfilled.

Involve Industry as Much as Possible

Industry should be encouraged to attend courses and participate where possible. This strategy has been successfully adopted by the Department in the past and COs tend to appreciate 'real' industry examples and the discussion engendered. Inviting industry to attend relevant training sessions is also a way of promoting other ISTC goals and is a good way of networking with industry.

The Issue of Industry and Sectoral Knowledge

COs have indicated in the study that they have highly specific knowledge areas which they see as an area requiring personal upgrading. We believe that it is the responsibility of each CO to maintain his or her knowledge of an industry through a variety of mechanisms. There is an opportunity to view the acquisition of industry knowledge as a set of research and consulting skills which can be learned in relatively short time periods. The consulting industry itself is based in part on the experience of individuals but also on the ability to learn industry issues quickly to address a variety of different problems. The new ISTC mandate is encouraging COs to operate more like consultants. Therefore in proposing training for COs, we will address the question of industry knowledge from the perspective of consulting skills which can be developed to achieve this knowledge. We therefore recommend that the Department develop courses in consulting and advocacy which will be central to the officers' training program.

Courses Recommended for COs

The main types of skills training which COs and managers have identified in this study can broadly be grouped into the following categories:

1. Orientation to Government and ISTC
2. Communications Skills (writing, presentations, etc.)
3. Business Skills (e.g., marketing, finance, production, strategic planning, etc.)
4. Computer Skills (e.g., word processing, spreadsheets, data base, searches, etc.)
5. Competitiveness Issues (e.g, Management of Technology, Product/Process Technologies, Strategic Alliances, etc.)
6. Policy Development
7. Consulting and Advocacy Skills
8. Supervisory Skills
9. Language Training

A considerable amount of this training is available from existing sources. The report provides details of the intent, target audience, content, sourcing and sequencing of new courses which have been recommended.

Industry Exchanges and Secondments

There are other ways of increasing knowledge of industry, science and technology in addition to training. COs were interested in both industry exchanges and secondments within government. We would support a greater level of industry exchange at all levels. This could include increased uses of exchanges with industry, and secondments within government and ISTC.

Mentoring

We would encourage the Department to adopt some form of mentoring framework to assist new COs and younger staff. The idea of promoting mentoring for COs was raised as an issue during most of the focus group discussions, and was generally well-received. Typically, such a concept could be quite formal for new recruits, and less formal for experienced COs.

Articulate the Department's Training Philosophy

The Department should formally articulate its training philosophy which should include many of the principles outlined above.

Role of Management

In order for the training to be successful, it will be necessary for the Department to receive the support from management, particularly if they are faced with reduced staff time from officers who will be taking or providing training programs. Management may also be required to assist in delivering training. Management must also take responsible for follow-up on the PREA process to ensure that training identified is initiated.

Training Resources

While it has been our intention to minimize the costs of new training development, the recommendations in this report will have increased cost implications for the training budgets and person-years associated with developing new training courses and implementing the training and related recommendations. It is our view that these costs must come to be regarded as an integral part of the Department's long term investment in the achievement of its mandate and the growth of the Canadian economy.

2. Study Objectives

Bill C - 3, enacted in February, 1990 provided for the integration of the Ministry of State for Science and Technology (MOSST) and the Department of Regional Industrial Expansion (DRIE) to create the Department of Industry, Science and Technology (ISTC). As a result of the Department's new mandate "to promote international competitiveness and excellence in Canadian industry, science and technology," more emphasis has been accorded to policy advocacy and less on administration of funded programs. Also, the Department is faced with the ongoing challenge of renewing the industrial awareness of its employees. There are currently 829 Commerce Officers (CO) who are the Department's front-line of communication with clients in industry, research and training institutions and elsewhere in government.

Specifically, as an outward-looking Department, ISTC now requires a new knowledge and skill mix which encompasses industry specific knowledge of science and technology; skill in marketing and delivery of local and national service products; advocacy; intelligence gathering and analytical skills; and networking skills. The new ISTC Commerce Officer will often have to be both a deeply knowledgeable person in a particular industry, science and technology area, and also a generally-skilled facilitator.

In view of the new knowledge and skill mix required of its personnel, the Department has undertaken this Training Needs Analysis of the Commerce Officer occupational group to identify new tools required to implement ISTC's mandate and to provide appropriate training and development.

The overall objective of this assignment was to, "conduct a comprehensive training needs analysis for employees of ISTC belonging to the Commerce Officer classification located at both headquarters in Ottawa and regional offices across the country".

This report examines the changes in training which are needed to support both basic and ongoing activities, as well as the new skills and knowledge which may be required. Ernst & Young, Management Consultants, was engaged to conduct the analysis of the training needs of ISTC's Commerce Officers, based on the changed mandate and activities.

INDUSTRY, SCIENCE AND TECHNOLOGY CANADA

TRAINING NEEDS OF COMMERCE OFFICERS

Phase I - Initial Training Diagnostic
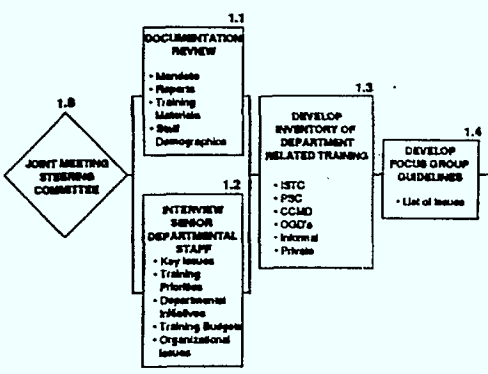
Phase II - Scoping Out of Key Training Issues
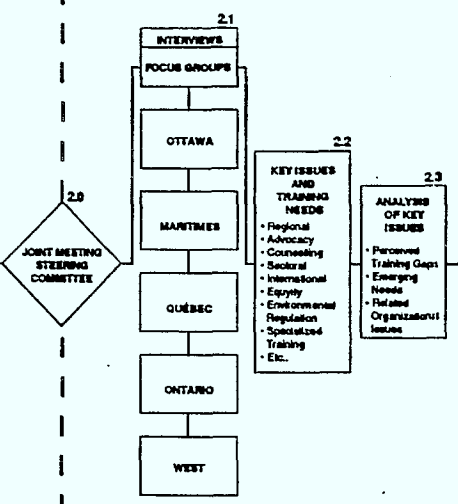
Phase III - Identification of Commerce Officer Needs
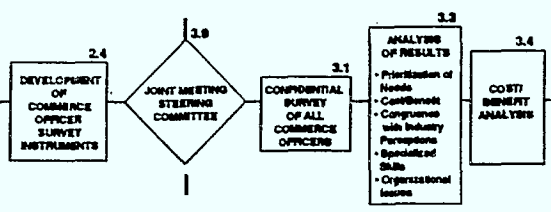
Phase IV - Development of Training Plan

1.0
JOINT MEETING STEERING COMMITTEE

1.1
DOCUMENTATION REVIEW
- Mandate
- Reports
- Training Materials
- Staff Demographics

1.2
INTERVIEW SENIOR DEPARTMENTAL STAFF
- Key Issues
- Training Priorities
- Departmental Initiatives
- Training Budgets
- Organizational Issues

1.3
DEVELOP INVENTORY OF DEPARTMENT RELATED TRAINING
- ISTC
- PSC
- CCMD
- OGD's
- Informal
- Private

1.4
DEVELOP FOCUS GROUP GUIDELINES
- List of Issues

2.0
JOINT MEETING STEERING COMMITTEE

2.1
INTERVIEWS
FOCUS GROUPS
- OTTAWA
- MARITIMES
- QUÉBEC
- ONTARIO
- WEST

2.2
KEY ISSUES AND TRAINING NEEDS
- Regional
- Advocacy
- Counselling
- Sectoral
- International
- Equity
- Environmental Regulation
- Specialized Training
- Etc.

**2.3**
ANALYSIS OF KEY ISSUES
- Perceived Training Gaps
- Emerging Needs
- Related Organizational Issues

2.4
DEVELOPMENT OF COMMERCE OFFICER SURVEY INSTRUMENTS

3.0
JOINT MEETING STEERING COMMITTEE

3.1
CONFIDENTIAL SURVEY OF ALL COMMERCE OFFICERS

3.3
ANALYSIS OF RESULTS
- Prioritization of Needs
- Cost/Benefit
- Congruence with Industry Perceptions
- Specialized Skills
- Organizational Issues

3.4
COST/ BENEFIT ANALYSIS

4.0
JOINT MEETING STEERING COMMITTEE

4.1
DRAFT REPORT
COMMERCE OFFICER TRAINING NEEDS ANALYSIS
- Segmentation of Training
- Objectives
- Training Needs
  - basic skills
  - ongoing skills
  - new skills
- Training Priorities
- Delivery Mechanisms
- Timing
- Quality Control
- Evaluation

4.2
JOINT MEETING STEERING COMMITTEE

4.3
FINAL REPORT

3. Approach and Methodology

In conducting this assessment, we have followed four phases, each of which led to a reporting session to the Steering Committee which was formed to oversee this study (Appendix I). The methodology is illustrated in the flowchart opposite. Phase I involved the review of a wide range of existing documents and studies (Appendix IV). These studies addressed a range of training and human resource issues. Many of these were conducted as part of ISTC's previous reorganizations, or addressed specific issues such as communications, corporate culture or related matters.

Phase II of the work encompassed approximately 35 personal interviews (see Appendix I, Steering Committee members, and Appendix II, Persons Interviewed) and 16 focus groups (Appendix III) which included approximately 150 COs. The interviews canvassed the views of most of the Department's senior management, while the focus groups brought together Commerce Officers from various Ottawa branches and Regional Offices. Senior managers were also interviewed while in the regions. The focus groups and interviews were used to obtain qualitative information and to address issues which were incorporated in the design of a voluntary mail survey of CO training needs.

Phase III involved distribution of a voluntary bilingual questionnaire to all Commerce Officers in the Department. A total of 353 questionnaires were received yielding a 43% response rate.

In view of the complexity of the questionnaire and the short time frame required for responding (approximately 1 week), this is a very good response rate. Based on a sample size of 353, this yields a precision rate in interpreting the data for all COs of ±4%, 19 times out of 20.

The questionnaire and the basic frequency responses are presented in Appendix V. The questionnaires received closely resembled the profile of Commerce Officer categories in the Department. This profile of the COs is presented in Appendix VI. The skills priorities identified by CO population segments are profiled in Appendix VII. Appendix VIII presents the details of the recommended courses for COs.

Throughout our study, in addition to our primary focus on the training needs analysis of COs, we also were highly cognizant of a number of environmental and 'collateral factors' which have an impact on training. These include the Public Service 2000; the ISTC Task Force on the Advancement of Women; employment equity issues; the initiatives of the External Consultations Directorate and the Corporate Development Secretariat, as well as the individual needs of officers within different groups and responsibility sectors throughout the Department.

The final phase of the work involved the development of recommendations based on the study results.

4. Profile of Commerce Officers

Overview of Job Activities

The Department has a mandate deriving from Bill C - 3 very broadly to include jurisdiction over:

(a)   industry and technology in Canada
(b)   trade and commerce in Canada
(c)   science in Canada

The legislation provides that the Department will perform duties relating to strengthening the national economy; increasing the international competitiveness of Canadian industry; encouraging the effective use of science and technology; fostering entrepreneurship; promoting tourism in Canada; encouraging the pursuit of scientific knowledge; fostering the development of the scientific community; expanding science intellectual resources; advocating science in national policies; promoting economic development in areas where low incomes prevail; and emphasize long term economic development.

Commerce Officers are one of the main groups of individuals in the Department charged with the task of fulfilling the Department's extensive mandate and serving the Department's many clients. As such, it is important to bear in mind that they have many areas of expertise and perform a diverse range of tasks from sector to sector within industry and with other agencies.

The CO is often the most direct link with industry and other clients, particularly in the regions. His or her role is likely to be very different depending on sector served and the economic base in each region of Canada.

The COs many job activities[1] include:

Business service and intelligence	32%
Program Delivery	31
Policy Development	11
Advocacy	7
Special Projects	7
Other	12

Approximately one-third of COs are still engaged primarily in program delivery and are less affected by the ISTC mandate than the other officers. However, those officers engaged in program delivery may now be delivering new programs, some may be delivering programs for the first time as well as a range of other services and may need better training and support.

Departmental clients can include:

- Companies
- Associations
- Academic institutions
- Scientific and research organizations
- Labour organizations
- Other federal departments
- Provincial governments
- Foreign governments
- etc.

The Commerce Officer must be broadly knowledgeable in areas such as industry, government and science. He or she must also be a source of expert advice on a particular industry, science, or technology. Often the CO will have a business functional specialty as well as expertise within an industry sector.

There was a perception among many in the Department that those most directly affected by the new mandate are the Commerce Officers in Industry and Technology, particularly those in the regions, who are being asked to adopt a strong advocacy role with respect to implementing the Departmental mandate. It is our view that all COs are affected in the longer term, regardless of their current job function.

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[1]Source: Ernst & Young questionnaire survey of COs.

For example, the new mandate calls for a "closer integration of science, technology development and diffusion, market intelligence, entrepreneurship, and human skills development in all of the Department's industry sector policies, programs and services."[1]

This integration of the Department's services through communications, technology, organizational change, knowledge sharing and skills development will increasingly be required in order to provide the services which are required by the Department's clientele.

Job Descriptions

We reviewed 64 job descriptions for COs. These job descriptions usually define CO responsibilities very broadly and extensively and, even though they may predate the new mandate, they are generally consistent with it. This finding is also consistent with the view expressed by some officers in our focus groups that the Department has always had an orientation toward increasing Canada's international competitiveness.

The following sections profile the current CO skills and demographics. The main sources of data are the survey of Commerce Officers and the ISTC Human Resources Information System.

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[1]ISTC, *Corporate Planning Priorities, Core ISTC*, February 23, 1989, p. 12.

Distribution of COs by Classification
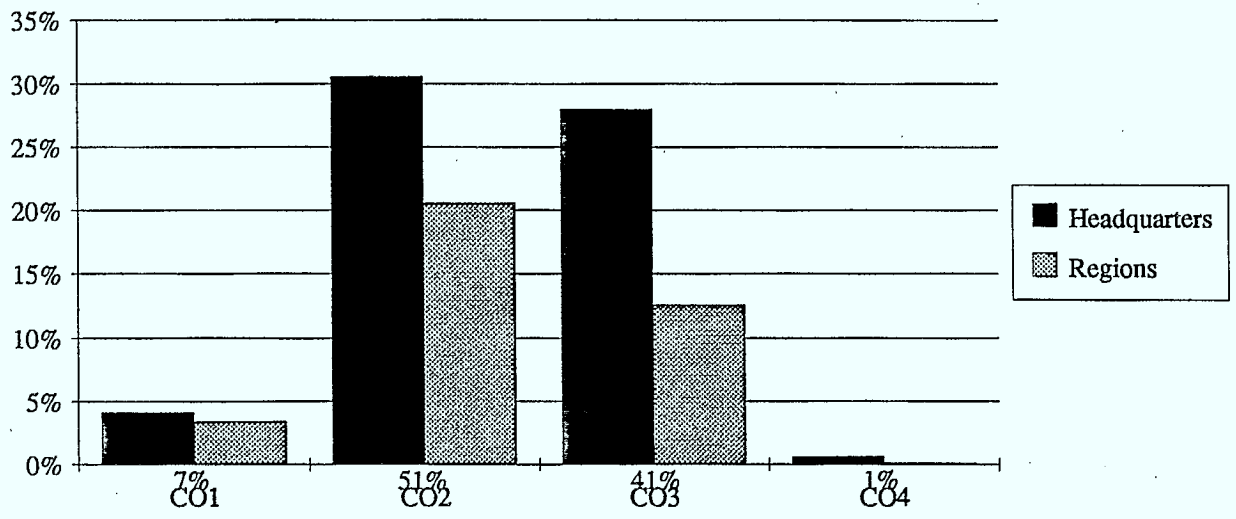
Location and Sector

There are some 829 Commerce Officers in ISTC who account for about 35% of the Department's total staff.

The CO population is split approximately 63% in headquarters and 37% in regions across Canada. The headquarters and regional CO populations are distributed as follows:

	No. of COs	% of CO Population
Headquarters[1]		
Industry & Technology	314	38%
Operations	81	10
Tourism	47	6
Policy	40	5
Science	24	3
Other	20	2
HQ Total	526	63
Regions[2]		
Industry & Technology	127	15
Regional Development	67	8
Aboriginal Economic Development	45	5
Trade	42	5
Other	22	3
Regions Total	303	37
ISTC Total	829	100

Note: Percentages may not add exactly due to rounding.

Slightly more than half of the COs are in the Industry and Technology group either at headquarters or in the regions.

CO Classifications, Age and Sex Profile

- There are four levels of COs with the majority being in the CO2 (51%) and CO3 (41%) categories.

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[1]Headquarters totals based on Human Resource Information System.
[2]Regional totals estimated based on questionnaire.

Attrition Rate of COs by Classification

Bar chart showing attrition rates for Headquarters (black) and Regions (shaded):

Classification	Headquarters	Regions	Total
CO1	~12%	~21%	16%
CO2	~10.5%	~10%	10%
CO3	~8%	~5%	7%
CO4	0%	0%	0%
Total	~9%	~9%	9%
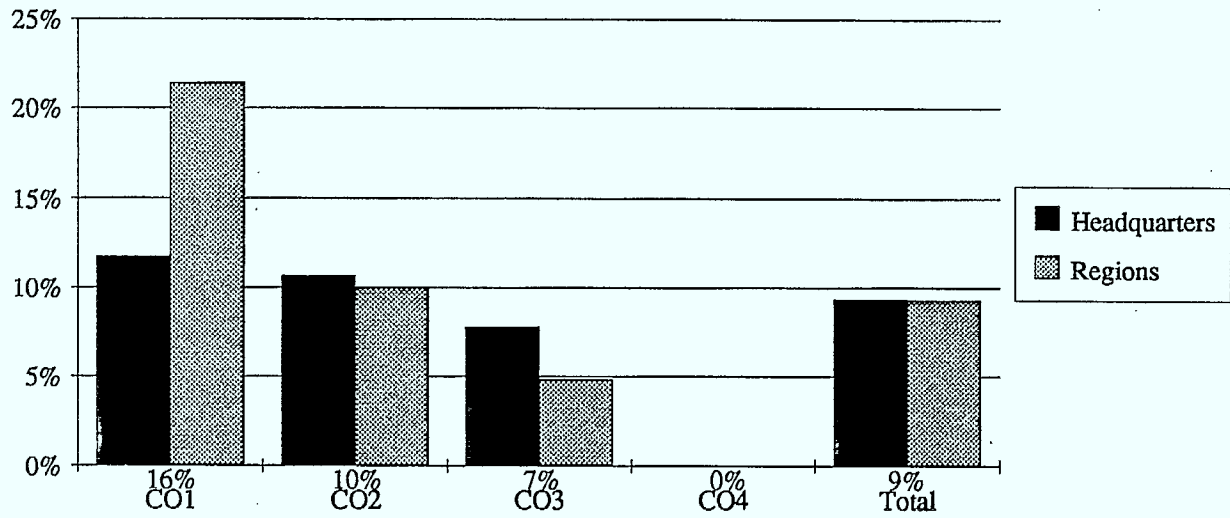
- One-quarter of the COs are supervisors; each supervising an average of 3.1 staff.

- Most COs (77%) are male. Male COs are considerably older (ave. 46.7 years) than their female counterparts (38.5 years).

- The proportion of women is highest in the headquarters 'other' (non-I&T) group[1] (30%) and the regions 'other' group[2] (24%). About two-thirds of women are in the CO1-2 level and one-third are in the CO3-4 levels. This compares with a more even split of males in the CO1-2 and CO3-4 categories. 14% of supervisors are women.

- The officers' average age is 45.1 with 18% between 55 and 64. The Department will be faced with a large component of its CO ranks retiring in the next 10 years. The industry and technology groups at headquarters and in the regions are older and have 22% of their COs over age 55.

- The CO1 and 2's have an average age of 43.7 which is very close to the CO3 and 4's whose average age is 46.6.

- Attrition rates for COs leaving ISTC are relatively low, averaging 9% per year. Attrition rates are highest in the CO1 category (16%) and drop to 10% for CO2s and 7% for CO3s.

Training Implications

The relatively mature age of the Department is a concern since many of the most knowledgeable COs, particularly those in the industry and technology group, will be retiring in the next 10 years and the Department must replace the skills and knowledge gap which it will be confronted with. This will require a concerted succession planning and training system to replace these officers.

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[1]HQ 'Other' includes Operations, Tourism, Policy, Science and Other
[2]Regions 'Other' includes Regional Development, Aboriginal Economic Development, Trade and Other

Comparison of CO Industry & Government Experience Profiles

Years

Legend:
- ■ Previous Industry
- ▨ Other Govt. Depts.
- ▦ Other ISTC
- □ Current CO Job

Categories (x-axis): All COs, CO1-2, CO3-4, HQ I&T, HQ Other, Region I&T, Region Other, Females, Males

Y-axis: 0, 5, 10, 15, 20, 25
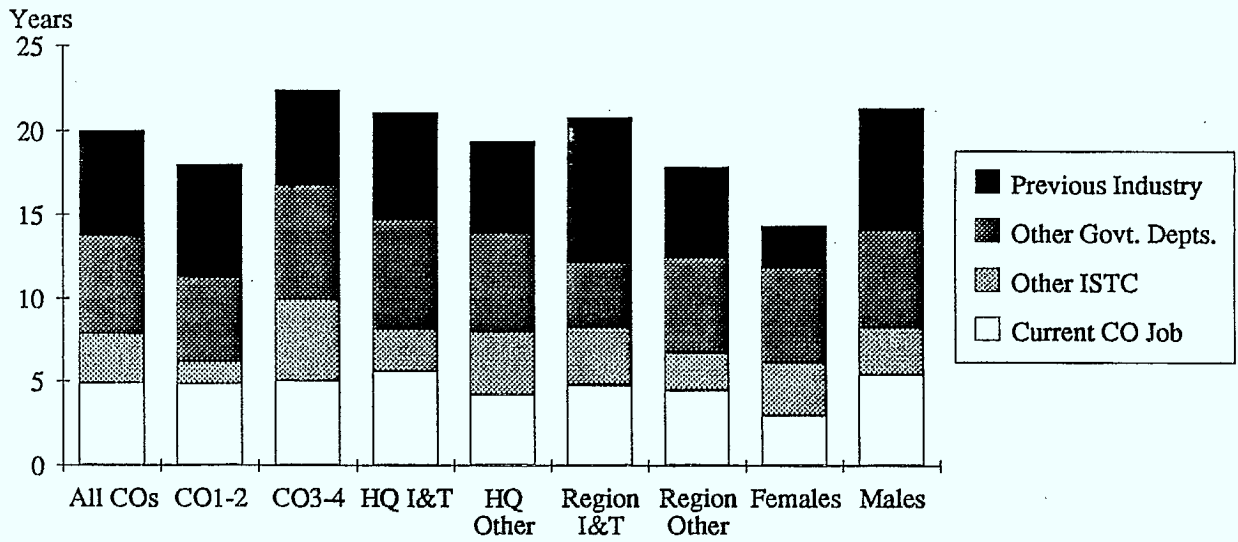
Further, the comparable average age of the CO1 and CO2s indicates a lack of promotional and career development possibilities which was a problem reiterated by some COs in our interviews and in the questionnaire.

Existing CO Skills and Experience

The CO population is a highly educated one. Fully 84% have a university degree, including 37% who have a masters or doctoral degree. The major fields of study are commerce, business, accounting and economics (58%); and science and engineering (22%). Approximately 40% of the COs have one or more professional accreditations. These professional credentials are indicative of a highly professional and intelligent group of individuals, who likely are comfortable with the concept of constant upgrading.

One-third of women have degrees in commerce, business, accounting, economics or science or engineering. This compares with 15% for the male COs. Approximately 10% of the headquarters CO staff and 3% of the regional COs require some upgrading to meet the bilingual requirement associated with their job classification.[1]

Training Implications

Most COs are a seasoned group who, on average, have been in their current job for close to 5 years, with the Department nearly 8 years, with other government departments almost 6 years and in industry more than 6 years. There are slight variations for the various CO categories in their experience profile which is illustrated opposite.

Some of the more seasoned officers may have different needs than the younger ones. Some of these older groups may have been reorganized and in need of training because of a new sector they are expected to be knowledgeable of. Some may have let their technical and business skills slip over the years. These officers also could be invaluable as a training resource and mentors for the younger officers.

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[1]Source: ISTC Human Resource Information System.

Both CO1-2's and CO3-4's have been in their current job for an average of 5 years. As indicated above, this would suggest relatively few promotional opportunities.

Women in the Department tend to be more highly educated than their male colleagues. One-third of these degrees are in fields other than business, accounting, economics, science or engineering. While we do not suggest that these credentials are less valuable than business or science degrees, it could be a concern for some if the lack of these degrees prevents promotional opportunities in the longer term. 44% of women COs have post-graduate degrees as compared with 35% of men. Because most have been hired relatively recently, they are younger than the men and have fewer years of government and industry experience.

Profile of the Older COs

The Department has relatively high proportion of its CO population in older age categories. Half are over age 45. Since many in this age grouping will be retiring over the next decade, it will be important to conduct appropriate succession planning to replace the skill sets of those who will be retiring. The following provides a profile of the older age groups within I&T and other sectors.

Profile of CO Population Aged 45 and Older

	HQ I&T	HQ Other	Regions I&T	Regions Other
Base	149	86	50	66
Age 45 - 54	32%	28%	34%	24%
Age 55 and older	22%	17%	22%	6%

Note: 'Base' is the number of respondents in each category from the questionnaire survey.

As can be seen from the above table, the industry and trade groups in headquarters and in the regions have the majority of COs in the 55 and older age groupings. The above table indicates that the retiring COs in

the next decade will be primarily the sector officers in industry and technology. Many of these individuals are well respected authorities by industry. They have acquired extensive knowledge, contacts and a sense of history of their department.

The following is a profile of the skills of the 'older' COs aged 45 to 64 years.

- The Divisions with higher proportions of 'older' COs include Transportation and Machinery Branch, Aerospace and Defence Branch, Service Industries Branch, Operations Branch, while the 'younger' (aged 25 - 44) Divisions would include Tourism, Science, Policy and Information Technologies Branches.

- Not surprisingly, COs over age 45 have 6.7 years of experience in their current job compared with 3.1 years for younger COs. Also, older COs have 10.3 years of experience with the Department and its predecessors as compared with only 5.4 years for the younger group. This indicates that older COs have more knowledge of the Department, its history, and the experience of having dealt with industry over the years.

- The older COs have 10 years of previous industry experience compared with only 3 years for the younger group. This clearly indicates that the older COs will be leaving with extensive industry knowledge and contacts.

- Older COs are more likely to be engineering and science graduates (28% with 25% having engineering or science professional accreditation) compared with only 14% of those younger than age 45 who are engineering and science graduates with only 9% holding related professional accreditations. This indicates that the Department is losing its technical expertise when the technologies are advancing as quickly as at any time over the post war period.

- There is not much difference in terms of those older COs with experience in giving training, although the older group tends to go back many years (to the '50s and '60s) for this experience.

Training Implications

Clearly, the Department will be losing many COs with extensive industry experience, contacts and a sense of history. Many of these are also trained in sciences and engineering and the Department may well have to recruit in these areas over the longer term. These officers are well respected by industry and many are authorities in their fields of expertise. The replacement of this experience, skills and knowledge is not a matter that can be dealt with by the provision of short training programs. It would be more appropriate to encourage these older COs to function in more of a journeyman - apprenticeship or mentoring relationship with younger staff over a longer period of time. At the same time, older COs could be encouraged to provide some training to younger COs in more formal training settings. The Department will also have to recruit to provide replacements for these skills, particularly since many younger staff do not have the same skills and training in sciences and engineering.

Experience in Delivering Training

The existing CO population has a considerable amount of experience in delivering training. Approximately one-third have been involved in delivering training in the past (with one-in-ten delivering training in the past five years). Further, 46% of supervisor COs have experience in delivering training.

As we discuss later in this report, the experience of COs in delivering training is a resource that the Department should capitalize on to develop and deliver future training for COs.

COs Most Affected by Mandate

Based on the questionnaire, COs indicated that an average of 25% of their job functions have changed as a result of the new Departmental mandate. Only 38% of COs interact with the same clients as they did three years ago which suggest that the new mandate has had a

reasonably strong impact on the client interaction aspect of the officer's job.

The group which is most affected by the change in mandate is the Industry and Technology group of COs within the regions. This finding is supported by our interviews and focus groups. This group comprises approximately 15% of the CO population and indicated that an average of 45% of their job activities have changed as a result of the new mandate. It is interesting to note that, while the nature of their jobs has changed, 55% are dealing with the same clients as three years ago. This may suggest that COs in the regions are interacting with smaller companies, with fewer layers of management than are COs in the headquarters.

Conversely, the group least affected by the new mandate are other (non-I&T) COs in the regions whose job functions have changed only 12%. Over half of this group indicated that it deals with the same clients as three years ago.

It is interesting to note that overall, 37% of COs do not perceive their jobs as having changed *at all* as a result of the new mandate.[1] In this regard, the Department still administers $600 million in program spending and many are still engaged in traditional program delivery. Alternatively, some argue that they have always been proactive and, in this respect, they may not perceive their jobs as having changed relative to three years ago. Only 18% of the regions I&T group indicated their job had not changed at all, and 52% of those in the regions 'other' group said their jobs had not changed at all. About one-third of the headquarters groups (both I&T and other) say that their jobs have not changed at all.

[1]These respondents answered 0% to the question, "What percentage of your job activities would you say have changed as a direct result of ISTC's new mandate?"

Ave. Percent Job Change as a Result of Mandate and Percent Interacting with Same Clientele as 3 Years Ago

Legend:
- ■ Ave. % of Job Activities Changed as a Result of New ISTC Mandate
- ▦ % Interacting with Same Clientele as 3 Yrs Ago

Categories (x-axis): All COs, CO1-2, CO3-4, HQ I&T, HQ Other, Region I&T, Region Other, Females, Males
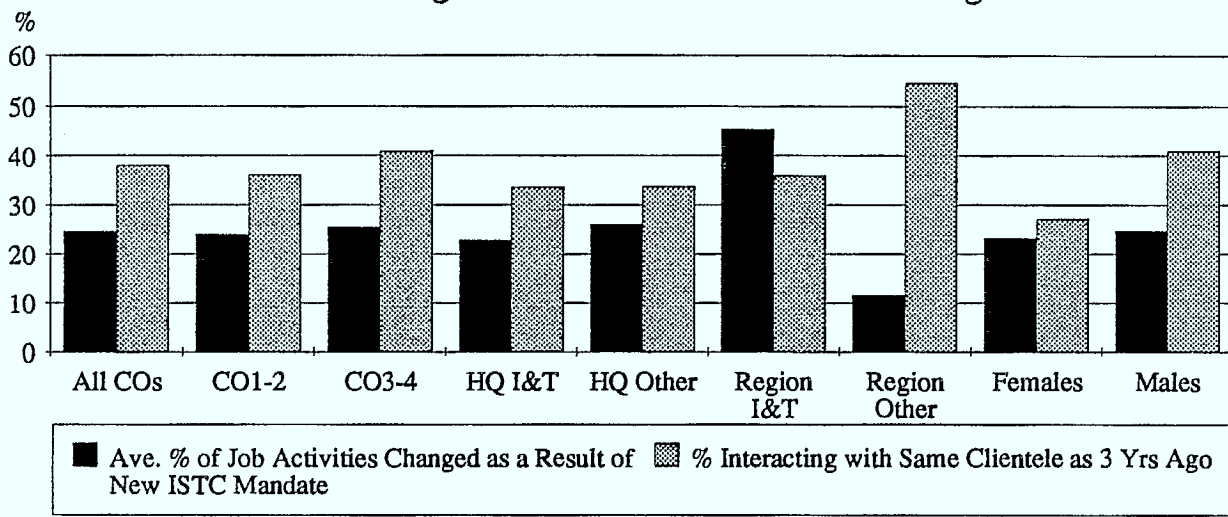
5. Existing CO Training

In this section, we address the amount and type of formal training which COs are taking; the training selection process; their awareness of training offered by the Department and views on existing training.

Amount and Type of Training

The Department will spend about $2.6 million on training for all of its employees in Fiscal Year (FY) 1990-91. Training expenditures are controlled 61% by Responsibility Centre and 39% by Corporate.

COs currently receive approximately 3.3 days of training per year. It is estimated that the CO portion of the training budget is approximately $800,000,[1] or approximately $1,000 per person. Slightly over half of this training (1.9 days) is microcomputer training. ISTC also sponsors a number of professional development courses such as a 3 day Management of Technology seminar. Professional development type courses account for one-third (1.2 days) of CO training. These courses, which are offered for all the Department's staff, include:

- Introduction to the Management of Technology   2 days
- Technology and the Business Strategy   3
- Advanced Manufacturing Technology & Strategy   3
- Strategic Partnering   2
- New Product/Process Technology Development   3
- Consultation Skills (Interviewing & Presentation)   2
- Financial Analysis   5
- International Marketing and Trade Development   5
- ISTC Policy Development   5
- Effective Writing   3

Generally, these courses have been offered with a duration of 2 to 3 days, since it is difficult for COs to take more time off. Development costs associated with a 3 day module are approximately $25,000 to $30,000 and delivery costs are generally $10,000 to $13,000 for each

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[1]Estimate of CO training days are based on CO share (33%) of the total person day utilization in ISTC. Exact training costs allocated to officers are not available.

3 day session. Where courses are developed, they are generally tendered to outside suppliers.

The remainder (0.2 days) was management training which is given primarily through the PSC and outside suppliers. The Department also makes a number of training programs available on a voluntary basis such as communications type training and is in the process of designing a mandatory orientation program.

There is considerable attention paid to encouraging client input to the design of new courses. There is a steering committee with CO representation which oversees the development of new courses. Training suppliers also work closely with managers in the development of new course materials. Courses are then pilot-tested before they are delivered on a wider basis. Evaluations of courses are conducted following completion and, generally, these evaluations have been quite favourable.

The main types of training available for COs have been computer training and a number of professional development type courses which have recently been developed such as the Introduction to the Management of Technology program. There have generally not been courses oriented to providing training in the 'how to' aspects of providing consulting and advocacy skills, such as how to develop sectoral intelligence, analytical skills, consulting, networking, problem solving and teamwork, etc.

Training Selection Process

The training selection process which applies in most areas of ISTC involves the identifying and choosing of relevant training during the annual appraisal session. Our focus group discussions suggest that the result, in most cases, is that the Manager and CO then 'shut the book' on training until the evaluation session one year later.

Our research makes it evident that COs are displeased with the present training selection process for the individual officer, primarily because

it is viewed as 'not leading to anything'. A more flexible, ongoing, and interactive selection process is the preferred alternative.

Awareness of Training

It is not clear that COs have much awareness of training that is available to them. Indeed, only 38% felt they had enough awareness of training which is offered to them. The Department has circulated a copy of the course calendar to all COs, although in some instances this is not received prior to the training selection session, or it is viewed as too cumbersome to be useful.

Views of Existing Training

While dissatisfaction was expressed regarding the selection process, there was also a level of displeasure directed toward the type, length, content, and follow-up of existing training courses. Courses administered by the Public Service Commission have not been particularly satisfactory to the COs[1] - with focus group commentary describing such courses as too long, too general, and not sufficiently pertinent to the ISTC context. Focus group commentary also suggested that the follow-up to training activities is insufficient and irregular - that essentially no formal mechanism exists to 'spread the word' about good or bad training courses.

There is a view expressed by COs, particularly in the regions, that centrally developed and delivered training was not especially relevant to their needs. The training was often perceived to be too general for their needs.

The following are some comments on existing training which were provided on the open-ended section of the questionnaire.

> *There is very little training specific to the sector a CO is active in. Each area should develop educational programs of seminars, reading lists, guest lecturers, and*

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[1]Only 32% described such courses as satisfactory.

*programmed learning. Right now training covers
general office and bureaucratic skills.*

*Public service and Departmental training are
stereotypical; they take a long time to develop a course
and before implementation they are out of date.*

6. Management Perspective on CO Skills and Training Needs

A central perspective of the Department's senior management is that ISTC is in the process of merging several different cultures. As such, COs perform a great variety of different activities and bring a broad range of skills, interests and experience to their jobs. The majority of COs are generally very committed and quite professional. However, many have a need for training because:

- they may have been been transferred into new areas of expertise;
- they have allowed their skills to slip for different reasons;
- they require upgrading as a result of the new mandate.

Essentially, the new mandate requires that COs be more proactive. In addition, it is having the effect, particularly in the Industry and Technology groups of placing relatively less emphasis on functional skills (e.g., production technologies in a specific sector) and more emphasis on general business knowledge of the sector as a whole. Further, many officers lack knowledge of advanced technologies. Generally, management sees it as the job of COs to stay knowledgeable about their industry sector through such activities as reading, attending conferences, networking with industry, etc.

Generally, it was their view that COs had reasonably good business functional skills. A number of COs were hired usually with some functional and/or industry sector expertise. However, they may not have a sense of how to develop strategies for a sector and analyze more complex business issues.

Management believes that while many in government pay lip service to advocacy and the importance of trade development, that these messages must be conveyed by the Department more forcefully to COs and to industry. Once conveyed, it is the view of management

that individual COs must 'take command' of their areas, becoming informed and respected advocates.

During our discussions with senior management, two related items became evident. First, that some doubt existed on the part of senior management as to the extent that COs yet fully understood the linkage between ISTC's mandate and the day to day activities of COs. One manager estimated that perhaps 25% of COs were already performing the new mandate, that 50% were committed to the idea and needed some assistance, and the remainder were 'turned off' for whatever reason.

Management's view is that these day to day activities, once fully understood, would entail a significant increase in the area of advocacy (and related concepts such as 'marketing', 'consulting', etc) and a corresponding increase in the need for training and upgrading in this area. Senior management also expressed the view that these individuals who already have been performing the advocacy role could serve as 'role models' (or 'best practices') for other COs. Such a role would entail CO involvement in training design and delivery.

The following is a selection of areas in which they perceive that COs would benefit from training:

- Expansion of Trade
- Strategizing for Sectoral Development
- Marketing and Advocacy
- Technology Acquisition and Diffusion
- Production and Process Technologies
- Analytical and Conceptual Skills
- Computer Skills (e.g., word processing, spreadsheets, data base management, etc.)
- General business skills (e.g., marketing, production, sources of financing, financial analysis, human resources, etc.)
- Professional upgrading (e.g., upgrading of economics, engineering skills, etc.)
- Communications Skills (e.g., verbal, written, presentation, listening, etc.)

7. Environmental Factors Affecting Performance

There are a number of 'environmental' issues which have had some impact on the COs' job performance and training needs. These have been documented in a number of previous studies and were raised in our focus group discussions and interviews. It is not our intention to go over well trod ground; however, these are documented briefly from the perspective of how these issues have an impact on CO skills and training needs. The issues addressed include understanding the ISTC mandate; communications; internal orientation; management effectiveness; and organizational issues.

Understanding the ISTC Mandate

Departmental studies[1] have concluded that there needs to be more attention paid to the communication of ISTC's mandate and what the implications are for the Department's staff. As discussed, management does not believe that the mandate concept has entirely been communicated to the CO population. Part of the problem, quite apart from how well it is communicated is that the concept of advocacy or consulting is considerably more abstruse than program administration and does not easily lend itself to a set of tasks or outputs, which the officer can easily visualize.

Advocacy or consulting needs are considerably different from sector to sector and from region to region. The concept of increasing Canada's competitiveness also suggests that one must think more strategically about a sector which entails having broader business and analytical skills than purely a functional specialty. The advocacy concept can also involve a hierarchy of skills ranging from purely

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[1] See, for example, ISTC's Mandate: Report on the Mandate Survey, September 1990, in which the majority of employees did not feel they understood the mandate well and fewer than 10% felt the mandate was well explained.

reactive information brokering (which in itself can involve both effective utilization of skills and knowledge) to proactive strategic sector management.

In our focus groups, individuals tended not to want to discuss the implications of the Departmental mandate in too much detail. Some felt that this was just another of many reorganizations.

> *They give you another sweater and throw you on the ice.*

They seemed to want to skip in the discussion directly to their skills training needs. Some indicated that the mandate had been communicated in a vague way or as one individual expressed it:

> *It's not a question of training versus how to carry the football. Hell, we don't know where the goalposts are.*

A few of the comments in the questionnaire were also oriented to the need for the Department to communicate its mandate more effectively.

> *In the apparent absence of new job descriptions and officer level mission statements and objectives reflecting the new mandate, I am very surprised to be asked to complete a needs analysis, surely this comes after my job functions have been made clear to me.*

When asked directly in the questionnaire 31% of all COs (and 46% of the regions industry and technology group) designated, 'analyzing how the ISTC mandate can be converted to a plan of action' as an area which they viewed as both important and requiring improvement through upgrading or training.[1]

Communications

The issue of Departmental communications has been examined in other Departmental studies. However, the issue was raised frequently in our focus groups where one of the 'training needs' commonly discussed revolved around communication and the importance of each

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[1]Designated some or great importance as well as some or great need of improvement through training and upgrading.

individual CO becoming a valued 'communicator of information'. An observation which arose in many focus group discussions is that 'communication' should be the theme that runs beneath all Departmental activities, and that ISTC will not adequately fulfill its mandate until the mindset that 'knowledge sharing is power' (rather than 'knowledge is power') becomes pervasive throughout the Department.

A number of comments were also made in the regions, that there was inadequate dissemination of sector knowledge from headquarters to the regions. The following is a comment from the questionnaire:

> *Sector officers in Ottawa should meet more frequently with regional officers to share and improve regional knowledge, similarly with EAITC and trade officers. We do not have sufficient exchanges with other regions Ottawa re: geographic or sector-specific basis.*

The development of sector teams was viewed as an improvement; however, most COs felt that there was not a sufficient flow of information from headquarters to the regions and that this interfered with their ability to perform their mandates. It is possible that the advent and more widespread use of computers throughout the Department will have the effect of improving communications and information management in the longer term.

Our focus groups with Industry and Technology officers in the regions reflected a frustration with the communication skills of the Policy and Science groups, and so on.[1]

Stemming from the communications issues, then, would be a need to develop skills such as teamwork, listening, networking, information filtering, soliciting of opinions, interacting with other COs, interacting with OGDs and mentoring exchanges between manager-CO and senior-junior COs, among others.

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[1]Similarly, many of those who are familiar with the operations of EAITC and ISTC have the sense that communications between the two Departments are not yet "where they should be" and that problems in the communications area are hindering the flow of information from posts abroad to firms in Canada.

Interestingly enough, when asked directly about communications training, the questionnaire results did *not* reflect a strong belief on the part of COs that they required upgrading in 'communication skills'. The respondents clearly viewed related communications areas as important, particularly 'interacting with industry', 'interacting with OGDs and ISTC officials', 'speaking and presentation skills', and 'report writing skills'.

Internal Orientation

There was also a considerable number of COs in the focus groups who expressed the view that they devote an inordinate amount of time to internal issues. It is inevitable that large organizations have to spend time responding to internal matters; however, many expressed the view that the Department was excessively responding to internal issues and yet still not communicating effectively.

The converse of this problem is that they then direct insufficient time to their industry clientele. While the subject of balancing internal demands (such as responding to anticipated oral questions, or responding to the needs of a DG preparing for a meeting) with external demands is within the nature and definition of a public service job,there are still a great number of COs who feel that an adequate balance has yet to be reached between the two.

Management Effectiveness

As expected, the focus groups identified a selection of issues which are not *directly* related to training, but which may impede the Department's ability to best fulfill its mandate.

As discussed above, there was a strong sentiment expressed in most focus groups and interviews that the Department communicates poorly. This view holds not so much in the formal communications (e.g., 'Keeping Posted', etc.) but rather in the area of insufficient personal interaction amongst COs, ISTC management and OGDs.

It is arguable that the 'communication problem' runs deeper than that which can be addressed simply through a training solution. Indeed, the input which we received suggests that action is also required in the managerial and organizational areas.

It was argued, for example, that ISTC may wish to examine the role of Departmental management, specifically addressing matters such as: whether there are quite simply too many layers of management; whether important Departmental messages are being transferred smoothly from top management levels down to the CO levels and vice versa; whether management levels take a sufficient personal interest in the career development of its employees; and whether management encourages COs to communicate directly with each other, or whether are they asked to communicate through their respective superiors.

There was also a view expressed by senior management, that information flow is being blocked or impeded at mid management levels. Also, there were a number of comments made in the open ended section of the CO questionnaire pertaining to perceived deficiencies in management.

There were also approximately a half dozen comments in the questionnaire commenting on perceived problems with management by COs.

> *Training is not a real problem. The problem is management style and organizational structure which does not encourage apprentice type opportunities for COs to acquire so-called 'management skills'.*

> *Skills and knowledge upgrading, to be successful, requires a symbiotic shift of management thinking. Management must be able to communicate in new languages and technologies.*

Organizational Issues

There are also a selection of organizational matters which have arisen during focus groups and interviews. For example, it was argued that ISTC should examine the current policy makeup, which maintains

separate policy groups for science and industry and technology policy. More specifically, whether it makes sense to have science policy and technology policy centered in different groups; whether these groups currently work in concert or at cross purposes; and whether the 'marriage of MOSST and DRIE' would be better or worse served through formally marrying the respective policy groups.

In addition, it was suggested on more than one occasion that ISTC should examine the current Regional Office division of 'trade' and 'industrial development' responsibilities. Many COs have suggested to us that there is often a fine line between these two activities and that it is frequently very confusing for corporate clients to 'talk to' one person in the office for trade matters, and to someone else (same sector) for industrial development matters, when these two items go hand in hand.

More specifically, it was suggested that ISTC should examine whether the COs could better serve industry if they assumed full trade and industrial development responsibilities across a narrower range of sectors. This approach would also be consistent with the view of some officers in the regions who felt that it was easier to advocate on behalf of industry in a narrow segment as opposed to a broad economic base.

It was pointed out that the current system is confusing to ISTC's industry and government clients and may also inhibit effective advocacy in the longer term. One approach may be to form sectoral teams in the regions which would combine sector specific with functional skills. The newer COs could be hired with functional expertise and would develop sector specific expertise over time. The introduction of a teamwork environment would also require some training to assist in performing these duties.

8. CO Perspective on Skills and Training Needs

In this section, we address COs views on the importance of formal training; their identification of skills and knowledge areas which have changed substantially under the new mandate; skills training needs for all COs and by CO segment; and career development training needs.

Caution About Role of Formal Training

The CO perspective is that their individual job functions and needs vary widely from each other. Many felt that a major priority was "keeping on top of industry developments and sectoral knowledge", while others felt that communication within and outside ISTC was a priority need. As such, the training needs analysis was viewed with some caution particularly that the scope of our analysis was perceived to be too narrowly focussed on developing formal classroom type training programs which are only a part of their training needs. COs pointed out on several occasions that staying current in industry, science and technology involved such activities as communicating with industry through networking, attendance at conferences, seminars, etc. in addition to formal training.

In addition, many COs believed that there was more opportunity to improve informal training (which some do not see as 'training' in the more narrow sense) through better communications within the Department, more use of buddy systems, mentoring, attendance at meetings with more experienced COs etc.

Formal training was sometimes viewed as too narrow an instrument to help them meet their highly specific upgrading needs. Other approaches such as improved communications, attendance at seminars, better use of ISTC resources, better networking, more teamwork and on-the-job training were viewed as equally, if not more

important. Formal training, particularly in the regions, was viewed from historical experience as being too 'centralist' and therefore not relevant to local, sectoral, industry or individual needs.

It is interesting to observe that many COs do not appear to be demanding high levels of training. In this respect, in most of the skill/knowledge areas, it appears that a fairly steady proportion of 50% to 60% of COs feel that they require upgrading in the particular area. Despite these caveats, COs identified a number of training needs in focus groups and in the questionnaire that have common characteristics.

In addressing skill and training needs, we have analyzed questionnaire data using a number of different criteria. These include CO perspectives on:

- Substantially increased activity, skill and knowledge areas

- Activities, skills, knowledge COs designate as being both important and in which they require training

- Career development training needs

Substantially Increased Activity, Skill and Knowledge Areas

Based on the survey of COs, the activities, skills and knowledge areas in which they perceive have changed substantially under the mandate are:

Job Activity, Skill or Knowledge	% of COs Identifying as New or Substantially Increased
Promoting international competitiveness	38%
Promoting technological development	37
Word processing skills	34
Forming strategic alliances	33
Converting mandate to action	31
Networking and advocacy	31
Facilitating technology transfer	31
Promoting R&D	30
Analyzing competitiveness issues	29
Knowledge of environmental legislation	29
Providing information services to business	29
Analyzing key industry issues	28
Total Quality Management techniques	27
Data base searches	27
Facilitating industry, university, scientific agency collaboration	26
Knowledge of successful advocacy practice	26
Knowledge of ISTC programs, services	26
Technology and business strategy	26
Advanced technologies in the manufacturing, service sectors	26

The above responses seem reasonably consistent with the new mandate. It is interesting to note the high numbers of officers who identified computer type skills as being new as a result of the new mandate.

CO Skills Deemed Both Important and Requiring Upgrading

We analyzed these activities, skills, and knowledge by the proportions of officers who gave an activity a rating of 'some' or 'great 'importance as well as 'some' or 'great' need for training and upgrading.[1] The following are the results for all officers:

Job Activity, Skill or Knowledge	% of COs Giving Activity Rating of Some/Great Importance as Well as Some/Great Need for Training/Upgrading
Promoting international competitiveness	52%
Speaking and presentation skills	45
Analyzing key industry issues	45
Knowledge of other government programs/services	44
Analyzing competitiveness issues	44
Promoting technological development	42
Networking and advocacy	42
Forming strategic alliances	42
Total quality management techniques	41
Knowledge of ISTC programs/services	41
Word processing skills	40
Strategic business and planning skills	40
Knowledge of industry sectoral issues	40
Technology and business strategy	40
Advanced technologies in the manufacturing/service sector	39
Developing an industry knowledge base	39
Research and information management skills	39
Personal development and career planning	39

These priorities are not substantially different from the training priorities as identified by management or by COs in the focus groups.

Training Needs by CO Segment

The emphasis tended to vary somewhat by CO group. A detailed listing of skills which each group considered important and in need of

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[1]Responses are those who answered 'great' or 'some' to both, "How important is the performance of this activity in your current job function?" as well as 'great' or 'some' to, "How much training do you now need through training or upgrading?"

training/upgrading is contained in Appendix VII. The following is a brief profile of some of these differences for each officer segment.

Headquarters Industry and Technology Group (N = 149)

- Profile broadly resembles total training needs for all officers
- Training needs directly related to mandate: relatively higher emphasis on promoting international competitiveness, promoting technological development and promoting export and trade development than other groups
- More emphasis on financial analysis than other groups
- Less emphasis on obtaining industry knowledge through training
- Computer type skills (word processing, data base skills) ranked lower, probably because they are reasonably facile on these skills although interested in newer computer skills like graphics
- Considerably more emphasis on French language than average, likely viewed as necessary in day to day job and for career development purposes

Headquarters Other Group (N = 86)

- Less interested in training than other groups (highest score 45% interested in training on knowledge of ISTC programs/services)
- Only 13 skill sets where more than one-third identified training needs (compares with 35 areas for all officers)
- Interest in generic consulting type skills such as speaking and presenting, project management, developing teamwork, time management
- French language training also ranked relatively high

Regions Industry and Technology Group (N = 50)

- Most interested of any group in training
- Most skill sets strongly linked to new mandate, also considerable interest in computer type training
- Relatively more interest in training in converting mandate to action
- Strong interest in total quality management relative to other sectors
- Only group which did not have speaking and presentation in their top 10 skills ratings

Regions Other Group (N = 66)

- Strong interest in computer skills (spreadsheets, data base skills, client data base management); possibly because some of those still engaged in program delivery (Aboriginal economic program, regional development) are using these skills
- Strong interest in legislation (e.g., environmental, tax, trade, etc.); some of the groups (e.g., policy) are expected to write about the impacts of these issues

- Relatively more interest in knowledge of ISTC and OGD programs
- More interest in client service training than Regions industry and technology group
- Strong interest in personal development and career planning

Women (N = 70)

- Generally similar to profile of all COs
- Generally a strong interest in training; interested in training related to mandate issues
- More emphasis on knowledge issues (e.g., industry knowledge base, OGD programs, sources of financing, ISTC programs, tax, trade, environmental legislation, etc.) possibly because of their relatively younger age, and need to be aware of these in policy development or program delivery roles
- Higher interest in career development issues than other groups

CO1-2's (N = 194) Versus CO3-4's (N = 156)

- Training profiles broadly similar to each other
- CO3-4's more interested in total quality management
- CO3-4's more interested in computer type skills (e.g., data base skills, word processing)
- CO1-2's more interested in report writing skills
- CO1-2's more interested in client service training than CO3-4's
- Somewhat more interested in knowledge type issues (e.g., ISTC programs, OGD programs, industry knowledge base, etc.)

Supervisors (N = 91)

- Very strong interest in training oriented to their supervisory activities such as managing, supervisory training, strategic planning, project management, developing teamwork and time management
- Strong interest in data base skills
- Relatively lower interest in industry and government knowledge type issues

COs Age 25 - 44 (N = 170) Versus Age 45 - 64 (N = 167)

- Younger COs generally show a stronger interest in training than older COs
- Younger COs more interested in knowledge type issues than older COs
- Need for training in word processing and data base skills rated very highly by older group; many are likely to have encountered computers relatively recently in their careers and may not have had the exposure which younger COs may have had
- Younger COs require more training in speaking and presentation skills

- Client service training rated more important for the younger group
- Younger group more interested in training on negotiating with others
- Older group more interested in receiving training on total quality management; it is possible that the older group has a better feel for the potential of TQM as an all encompassing productivity improvement tool as compared with the younger COs

Training Needs Shared by All CO Groups

ISTC Mandate and Promoting International Competitiveness

Of the 83 activities listed, this activity was identified most often by COs as an area for needed improvement and upgrading. Training issues related to the fulfillment of the Department's mandate also were identified in other forms, such as promoting technological development, forming strategic alliances, etc. Also, a number of comments in the open ended section of the questionnaire identified the ISTC mandate as a top training priority.

As presented in our recommendations, we believe that such a need must be met through some form of training which addresses how the competitiveness issue can be converted into action. The extent to which such a program could draw upon existing material and in-house (or EAITC) personnel is a subject for discussion.

EAITC has been engaged in developing a training program for its own officers and a number of officers in ISTC who are involved in trade development activities have taken this training. The EAITC training program has been evolving somewhat, but essentially involves a case study method using examples from the Department's own files of companies seeking assistance in export and trade development. Using the cases, officers are given a number of modules which are designed to teach various skills such as interviewing, networking, sources of information and how to develop strategies for export and trade development.

Industry Knowledge Issues

Issues relating to increasing industry and government knowledge are one of the highest priorities. These include sector specific knowledge, knowledge of ISTC programs and services, knowledge of other government programs, and knowledge of sectoral issues. It is worth distinguishing knowledge or facts themselves from the acquisition and usage of the same. There is some lack of clarity about how industry knowledge should be acquired. Some expressed the view that because such knowledge is highly sector specific, that it could not really be taught or that it could only be gained through industry experience. In our view, while industry experience is unquestionably useful, knowledge and its acquisition is also a skill that can be learned and not something that exists in the abstract. There are skills to learning how to research a sector or gain knowledge about an industry and determine what its key issues and concerns are. These research skills can be learned and developed with training and experience.

The responses to other questions, as well as the focus group commentary, suggests quite clearly that upgrading in this area is associated with a range of activities,[1] including seminar and conference attendance, the availing of more time to visit companies, the organizing of ISTC activities with industry participation and the frequent invitation of industry speakers to ISTC offices.

In line with our recommendation regarding the increased use of in-house personnel, it is evident that ISTC's library staff could also play a central role in this important area. We believe that interaction between COs and the library staff could be increased for both gaining access to industry knowledge and other information requests.

Analytical Skills

Although COs were unlikely to identify analytical skills in the abstract as a need, a variety of skill areas required are essentially analytical in

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[1]One of the senior management interviewees expressed the view that the building of industry sector knowledge is the individual COs responsibility and clearly should involve evening and weekend hours.

nature. These are also related to the achievement of the ISTC mandate and include analyzing key issues, analyzing competitiveness issues, and developing an industry knowledge base. Further, many of the consulting and advocacy skills will require excellent analytical skills.

Consulting, Networking and Advocacy Skills

The enhancement of advocacy skills emerged directly and indirectly through designation of related skills and activities such as forming strategic alliances and research and information management skills.

This skill set applies most directly to COs in the Industry and Technology group, whether in Ottawa or in the regional offices, although other groups are also affected. It stems directly from ISTC's mandate of 'promoting international competitiveness', subsets of which encompass such actions as 'acting as an advocate', 'encouraging innovation', 'supporting efforts of Canadian businesses', 'championing the growth of science', and 'fostering excellence'.

Acting as an advocate requires a broad range of skills and knowledge, including: a knowledge of ISTC and what it offers; a knowledge of the industry sector and key issues; the ability to research, analyze and communicate effectively; the ability to network and draw upon pertinent contacts, and so on.

In general, COs view the above skill/knowledge areas as important to their daily functions. For example, a requirement for some upgrading was recognized by a relatively large number of COs in the areas of 'analyzing key industry issues', 'networking and advocacy skills', 'partnering', and 'consulting skills'.

Computer Skills

The emphasis on the need to upgrade computer skills through training is also of interest since the Department has made a concerted effort to upgrade these skills independently of this training initiative. The Human Resources Branch reports that there is not a considerable

excess demand for the training which is available through the Department.

From our focus group discussions, it would appear that many COs have a basic understanding of the computer but need assistance in using its more advanced capabilities and in understanding how the computer will fit into their officer role as advocates and consultants. In this respect, some of the skill sets which they will require will include data base searches, data base management, networking, etc.

Knowledge of ISTC Programs/Services

Of the 83 inter-related areas identified in the questionnaire, the 'knowledge of ISTC programs and services' was the highest ranking skill/knowledge in terms of importance. The fact that a significant proportion of COs also expressed the need for upgrading in this area, and the focus group commentary that many COs felt ill-equipped in this area, clearly suggests the requirement for action on ISTC's part.

As discussed in the recommendations, we believe that this area could be enhanced through the use of ISTC personnel, without incurring great cost. Suggestions from the CO group indicate that an orientation program for all new COs, and a refresher program for existing COs, would increase COs 'comfort level' in this area.

Career Development Training

In addition to their immediate skills training needs, COs identified a number of skills in which they feel they require training for their long term career development. The main activities and skills identified were:

Job Activity, Skill or Knowledge	% of COs Identifying
Promoting international competitiveness	45%
Providing information services	36
Promoting technological development	36
Speaking and presentation	36
Facilitating technology transfer	34
French language training	35
Forming strategic alliances	34
Networking & advocacy	33
Promoting export & trade	33
Promoting industrial development	33
Analyzing competitiveness	33
Managing/supervising people	33
Strategic and business planning	33
Personal development & career planning	32

It is interesting to note that the list of skills identified for longer term career development needs is not considerably different than the types of skills which were identified on the previous lists of short term training needs. The exceptions are french language training, managing and supervising and personal development and career planning. There are possibly many in ISTC who do not see an immediate need for language training, but view it as essential for longer term advancement.

In our focus groups, several COs expressed the view that with the exception of language training, career development training needs tend to drop to the bottom of the list of training priorities, since there are always more immediate short term training needs. The problem, is that this short term focus may create problems in the longer term, particularly since there will be a large number of retirements in the next ten years, and individuals will need some upgrading to replace these positions.

A number of COs in our focus groups also expressed the need for career development type training which might allow them to move to another sector within ISTC. In this context, the move may or may not be viewed as a promotion. With limited promotion possibilities in the longer term, COs may wish to take some training in an area which may not now be of immediate relevance to them.

9. CO Perspectives on Training Delivery

COs also raised a number of other interesting comments relating to training delivery. Many of the comments reinforce the belief that formal training is only one part of an individual's approach to training and keeping on top of industry developments and knowledge requirements. COs are also interested in other methods such as mentoring, industry exchanges, secondments, and attending conferences.

Support for COs Providing Training

- When asked whether experienced COs should train or contribute to training of other COs, only 7% expressed disagreement. (62% 'yes' and 30% 'depends'). This indicates a high level of respect for COs as trainers and has the advantage of being a relatively inexpensive way of providing training.

- 62% believe that the Department could make more effective use of its own personnel for training.

Support for a Mentoring System

- COs indicated broad support for a mentoring system which pairs experienced COs with inexperienced COs. (60% support outright, and 25% 'depends'.)

- In addition, 68% would be willing to serve as mentors for more junior staff.

Several COs Have Been Refused Training

* 30% of COs indicated they had been refused training for financial reasons, and 29% had been refused training for non-financial reasons. 16% indicated they had been refused training for both reasons and 43% of all COs claim to have been refused training for either a financial or a non-financial reason.

* The relatively high number of COs which have been refused training would suggest that there is a latent demand for training which is not being met and could be provided with more resources.

COs Favour a Personal Discretionary Training Budget

* For the reasons identified above, 68% of COs are in favour of some form of personal discretionary training budget.

Short Term Courses Are Preferred

* 47% would favour frequent one day modules over infrequent five day courses.

About Three in Four are Willing to Upgrade on Their Own Time

* 75% of COs are willing to upgrade their skills during evening and weekend hours. 74% would not attend lunchtime and evening sessions.

COs are Interested in Industry Exchanges and Government Secondments

* COs were very supportive of either short-term less than 3 months (68% favour) or longer-term (74%) industry assignments and exchanges. Further, 68% of officers feel that they would benefit from international assignments with foreign corporations.

* Almost two-thirds would benefit from secondments within ISTC or with other government departments.

COs Want More Freedom to Attend Conferences, Trade Shows, etc.

- Fully 80% feel there should be more opportunity to attend conferences and seminars as part of their training. In addition 60% of COs favour attending some kind of conference of COs with a national conference being preferred over regional conferences.

- It is evident through the focus groups and questionnaire results that Commerce Officers, in general, favour attending trade shows, conferences, seminars, association meetings, and public talks which feature the involvement of industry. Attendance at such activities was felt to be a beneficial activity for COs who are attempting to enhance their industry knowledge and their contact base. Similarly, in those instances where ISTC is organizing such activities, the view was expressed that industrial players should be active both as attendees and as deliverers/participants.

10 Recommendations

10.1 Training a Strategic Priority Linked to ISTC Culture

With the globalization of industry, modern industrial concepts view training as less linked to providing competence in narrow job specific activities, which historically has been the emphasis, and more oriented to the achievement of the organization's overall strategic objectives. As such training is increasingly viewed as a strategic investment rather than a job specific cost. This training tends to be more generic and oriented to provision of analytical and problem solving skills as well as the inculcation of teamwork. This trend has been fostered by the movement away from a manufacturing environment with long production runs and highly repetitive tasks. In a service organization, the need for technical training is not eliminated, but is linked to the achievement of the organization's overall mandate. As such, some organizations are promoting the idea of a learning organization which is heavily based on continual investments in training and upgrading of their employees. In this context, training is therefore intimately linked to organizational culture.

The shift in skills caused by the new mandate is consistent with some of the changes which are facing a number of private sector organizations and to a large extent consistent with many of the changes arising as a result of PS 2000. These changes which are affecting organizations in the private sector are emerging to encourage companies to be more flexible and client oriented. Compared with a decade ago, companies are now using fewer workers to deliver a product; demand is being driven by shorter product life cycles which have shorter lead times. In order to survive, organizations now require more flexible forms of work organization, have flatter hierarchies and have decentralized responsibility for decision making. In order to survive, companies must become learning organizations.

From the perspective of employees, their skills are increasingly becoming less job or task specific, more flexible, more analytical and problem solving. This is particularly the case in service companies where the organization's front line employees must be oriented to customer satisfaction. Employees must rely on high levels of communication and team work. Training must also be driven by the demands and capabilities of new technologies, but should not solely be oriented to development of technical competence.

The shift in ISTC's mandate away from program administration and towards client service has many analogies in the private sector as companies attempt to implement more flexible management structures that can respond to the issues of client service and quality. For the commerce officer who is used to a job specific task, he or she will have to be more oriented to generic skills such as problem solving, teamwork and communications skills.

Training must therefore become a strategic priority within ISTC in order for the Department to accomplish its mandate and corporate priorities.

10.2 Organizational Implications

Training within such an environment is becoming less job specific (e.g., learning import duties for specific manufactured commodities, etc.) and more generic, oriented to the development of analytical and research skills, communication, strategy development and quality issues. As such, training becomes a strategic rather than a job specific issue. On this level, training is closely linked with an organization's culture. ISTC's training initiative must be supported by other cultural and organizational change which to some extent is occurring:

- These training recommendations are largely consistent with the thrust of PS 2000 which is devolving responsibility to lower levels of staff and giving responsibility centres more control over their own budgets

- There is an opportunity for ISTC to make better use of its own resources, as COs have implicitly or explicitly stated throughout the study process. This involves:

  - better interdepartmental communication
  - more opportunities for teamwork in a consulting and advocacy framework
  - more opportunities for informal on-the-job training (e.g., attendance at meetings, conferences, lunch and learn sessions, mentoring, etc.)

- There is broad support amongst COs for giving them a greater measure of control over their own training decisions through allocating some discretion over training expenditures and some flexibility with respect to use of other discretionary funds for training.

- ISTC needs to give more thought to the organizational implications of moving more into the field of advocacy and consulting. In particular:

  - There should to be more opportunities for teamwork amongst existing CO staff.
  - Specifically, there is a need to form teams to make better use of functional specialists (e.g., production, finance, etc.) with industry, science and other specialists. This could be tied to career development within ISTC, perhaps through starting an individual as a functional specialist and encouraging them to become industry specialists in the longer term.
  - Departmental initiatives in activities such as training, communications, career development, advancement of women, etc. need to be coordinated to enhance problem solving and consulting skills.
  - Industry exchanges and secondments should be encouraged to the extent possible.

Based on our research, we see many analogies between the training issues which are confronting the private sector and those which are currently affecting ISTC.

10.3 Level of Training Required

COs currently receive 3.3 days of training or approximately $1,000 per year. It is difficult to determine what should be the ideal level of training, recognizing that funds allocated to training resources are necessarily limited. While most in our management interviews indicated that they considered the level of funding to be adequate, fully 43% of officers indicated they had been denied training which they requested. In addition, many COs said that most training is identified during the performance review process and is rarely acted upon.

We recommend ISTC should double its training target. These levels are consistent with training in our own sector and below other training intensive organizations such as IBM and Northern Telecom.[1] Training should be steady and ongoing rather than being provided sporadically.

The main cost of training is in course development. The Department could achieve more training at similar costs through increased use of in-house resources including COs as much as possible.

10.4 Improve Marketing of Existing Training

The survey showed that only 38% of COs felt they were aware of training which is currently available to them. The awareness of the existing course calendar could be improved through a more professional packaging (e.g., the new ISTC Directory type binder), the addition of an introductory section on the Department's philosophy of training stating the importance of lifelong learning, constant skills upgrading and the the importance of training as a fundamental Departmental value. The manual could also include a 'How to Use' the course calendar section, and a better organization of the table of contents to show courses recommended for specific skills and sectors.

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[1]Northern Telecom has a target of 10 days per year for professional staff, which is monitored on an ongoing basis.

The awareness of the courses could be reinforced with the circulation of additional communications materials closer to the training delivery date and a list of a few individuals who could act as references who have taken the courses. There is also a need to provide an inventory of individuals who are a source of departmental expertise on the subject area once the training has been taken. The Department should also publish or communicate on a regular basis some kind of inventory of relevant courses available through other sources (OGDs, universities, associations, etc.) Successes in the areas of training and development should be lauded to encourage and motivate others to attend relevant training.

The marketing of information on conferences and seminars could also be encouraged since officers expressed a high level of interest in increasing their attendance at these functions. An inventory of conferences and seminars could be assembled and included with the course calendar or circulated using other media.

10.5 Training Should be Voluntary

In the following discussion, we have recommended that training not be made 'mandatory'. However, we would suggest that the certain 'core' training be 'strongly' advised, particularly for COs who are at the CO1-2 level and who are not engaged in program delivery. The difference between 'core' and 'mandatory' training may seem like semantics; however, it is not our view that individuals, many of whom are seasoned at their jobs, should be forced unwillingly to take training. The difference between voluntary and mandatory training is an important distinction in terms of influencing people's attitudes to training and upgrading. Having recommended voluntary training, it will still be important for relevant training in some cases to be 'sold' to both officers and managers.

10.6 Maximize COs' Control Over Their Training

We essentially view our recommendations as providing a balance between centrally developed and delivered training and some training which is developed and delivered on a more decentralized basis and over which officers would have their own control.

We advocate that, subject to the previous recommendation regarding the importance of 'core' training, the Department should seek to maximize CO control over their own training. However, there may be cases where managers wish to encourage individuals to attend some of the 'core' CO training courses. Training should be identified on a more informal, ongoing and interactive basis. The instances (many of which were cited) where a particular training course is refused because it was not identified five months previous during the evaluation period strike us as an inefficient and overly bureaucratic approach to the issue.

In keeping with allowing officers to determine their own training requirements, there should also be flexibility to move resources from conference and travel budgets into training (and vice versa) where this meets Departmental corporate objectives. Where officers have recently been to conferences, they should be encouraged to share the results of relevant conferences informally with other officers through lunch and learn sessions or other informal venues.

One of the responsibility centres could pilot the concept of a discretionary training budget for one year. The training would have to require management approval, in so far as it would be consistent with improving the Department's ability to perform its own mandate effectively. There are many ways some form of discretionary training budget could work and certain sectors in the Department are currently experimenting with these ideas.[1]

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[1]For example, the International Affairs Branch allocates its professional staff a budget of $1,000 each for training.

10.7 Use COs to Deliver Training and Successful Cases

The training which is recommended in the following section should be provided using a variety of instructional materials and media. They should utilize COs to the extent possible to deliver training. Courses should draw on successful cases to illustrate how the Department's mandate is being fulfilled.

The Department has an extensive array of expertise residing within individual Commerce Officers, within library resources, within individual ISBs, and within line branches. COs hold the view there is an impressive collection of internal 'brainpower' that is not being used to the fullest extent possible. There are pockets of sectoral, scientific, economic, human resource, research, analytical, policy, operational, and trade expertise that should be tapped to a greater degree, including in the design and delivery of ISTC's future 'training' activities. Given that 36% of COs already have previous experience in giving training, such an approach may be an efficient and cost-effective training option, without requiring extensive preparation.

It should be recognized that not all officers who are good at what they do are necessarily going to be good instructors. There may be a need to introduce some 'train the trainer' courses to assist those who are required to teach. Also, it is important that managers of officers who are called upon to provide training be fully supportive of the officers who are asked to provide training. Officers who provide training also should be recognized in some way. This kind of contribution should be rewarded with the appropriate recognition in the officer's performance appraisal.

10.8 Maximize Industry Involvement

Industry should be encouraged to attend courses and participate where possible. This strategy has been adopted by the Department in the past and COs tend to appreciate 'real' industry examples and the discussion engendered. Inviting industry to attend relevant training

sessions is also a way of promoting other ISTC goals and is a good way of networking with industry.

10.9 Establish a System to Monitor Individual CO Training Plans

ISTC should establish a system to monitor COs' training progress after training objectives have been established. While training needs are often identified through the Performance Appraisal process, we are concerned that much of this training is not acted upon, once identified.

The development of a training monitoring system could essentially be based on the current training and human resource information systems. It would be necessary to input course participant data into one of the existing systems to provide on-going reports to the human resources department. These should be returned to managers in responsibility centres on a regular basis. The use of this data base would also allow individuals interested in taking specific courses to contact course participants for feedback.

10.10 The Issue of Industry and Sectoral Knowledge

Many COs have indicated in the study that they have highly specific knowledge areas which they see as an area requiring personal upgrading. We believe that it is the responsibility of each CO to maintain his or her knowledge of an industry through a variety of mechanisms which have been addressed.

Current trends in training are to focus not so much on the acquisition of 'hard' job-specific knowledge per se, which is highly discreet for each CO functional and industry specialty, but more on the process of acquiring knowledge, deciphering what is critical, and acting on it. Industry and functional knowledge in Canada today has a very short 'shelf-life' and requires constant upgrading. It is the responsibility of COs and all industry to upgrade constantly. While there is truth to the belief that nothing beats direct industry experience, this may be more

valuable in terms of the networks of individuals and relationships one forms rather than the hard knowledge about a specific business one is likely to pick up on the job.

There is an opportunity to view the acquisition of industry knowledge as a set of research and consulting skills which can be learned in relatively short time periods. The consulting industry is based in part on the experience of individuals but also on the need to learn industry issues quickly to address a variety of different problems. The new ISTC mandate is encouraging COs to become more like consultants. Therefore in proposing training for COs, we will address the question of industry knowledge from the perspective of consulting skills which can be developed to achieve this knowledge. We therefore recommend that the Department develop courses in consulting and advocacy which will be central to the officers' training program. These are addressed in more detail in the following section.

10.11 Training Courses and Sequencing

It is useful to group the main types of skills which officers and managers have identified into the following broad categories:

1. Orientation to Government and ISTC
2. Communications Skills (writing, presentations, etc.)
3. Business Skills (e.g., marketing, finance, production, strategic planning, etc.)
4. Computer Skills (e.g., word processing, spreadsheets, data base, searches, etc.)
5. Competitiveness Issues
6. Policy Development
7. Consulting and Advocacy Skills
8. Supervisory Skills
9. Language Training

The following sections address the training needs from the perspective of an officer who has joined the Department and progresses in a career with the Department. For an individual who already has considerable experience with ISTC, the courses would be available 'as required' by the individual officer. The Exhibit opposite shows the

ISTC COMMERCE OFFICER TRAINING NEEDS ANALYSIS

Course	Duration	Core	Timing	Prerequisite	Sourcing
ORIENTATION					
*Orientation to Gov't & ISTC Mandate	2 days	New COs	1st month		ISTC
COMMUNICATIONS	2 - 3 days	New COs	6m - 1yr		PSC, ISTC
•Consultation Skills	2 days	New COs			
•Effective Writing	3 days	New COs			
•Interviewing Skills	2.5 days	New COs			
•Presentation Skills	2.5 days	New COs			
*Train the Trainer	1 day	Trainer COs	As required		ISTC
BUSINESS FUNCTIONAL SKILLS					External
•Financial analysis	5 days				
Other (marketing, strategic planning, etc.)					External
COMPUTER TRAINING					
•Existing Computer Training	2 - 3 days	All COs‡	1st month		ISTC
COMPETITIVENESS & MANDATE ISSUES			6m - 1yr		
•Intro to Mgmt of Technology (IMOT)	2 days	All COs			ISTC
•Technology & Business Strategy	3 days	I&T COs		IMOT	ISTC
•Advanced Technologies in Mfg. & Services	3 days	I&T COs		IMOT	ISTC
•Strategic Alliances/Partnering	2 days	I&T COs		IMOT	ISTC
•New Products/Process Dev't	3 days	I&T COs		IMOT	ISTC
•International Marketing & Trade Dev't	5 days	I&T COs			ISTC
*Total Quality Management	1 - 2 days	I&T COs			ISTC
*Intro to Environmental Legislation	1 - 2 days	I&T COs			ISTC
POLICY DEVELOPMENT					
•ISTC Policy Development	5 days	Policy COs			
CONSULTING AND ADVOCACY TRAINING			2 years		
*Intro to Consulting, Advocacy & Mkting	5 days	All COs‡	1 to 2 years		
*Promoting International Competitiveness	3 - 4 days	I&T COs	2 years	IMOT	
SUPERVISORY TRAINING	2 - 3 days	Promoted COs			PSC
•Existing PSC Courses					
LANGUAGE TRAINING					
•Existing PSC Training					
•Existing course					
*New Course					
‡Depending on Skills					

sequencing of the courses. Appendix VIII provides details of the course content, its target audience and duration.

1.   Orientation to Government and ISTC

The Department is currently involved in developing this orientation program which will provide new COs with information on ISTC, its mission, organization as well as information which officers would find useful on other aspects of government. The program would also provide COs with an opportunity to meet senior departmental staff and would be provided as soon as possible after recruitment.

2.   Communications Skills

All officers should have some formal training in skills such as interviewing (personal and telephone), writing and presentation skills, which should be provided shortly after joining the Department. There may also be a need to upgrade these from time to time over the course of one's career. Since we have recommended that officers be involved in training, we have also included Train the Trainer type training under this section. Also, senior officers may require some training in group facilitation.

3.   Computer Training

The Department currently offers a number of computer type training courses such as word processing, spread sheets, data base management and so on. We have not recommended the addition of any new courses. However, in addition to keyboard literacy, officers need to learn how the computer can support them in the consulting and advocacy process through such techniques as data analysis, literature searches, and client management. It is likely that some officers, possibly the more junior ones, may become somewhat specialized in certain computer skills such as data analysis and data base searches. With more of a team operating environment, these officers could assist other officers where specialist computer expertise is required. This training should be provided within one month after joining the Department.

4. Business Functional Skills

All officers interacting with industry should possess basic business skills such as finance, accounting, marketing , production and strategic planning. The Department currently officers a 5 day course in financial analysis for those officers who are engaged in administration of financial programs. We do not recommend the addition of additional basic business training. However, officers should be encouraged to upgrade these skills at external institutions and at seminars if necessary.

5. Competitiveness Issues

The Department currently offers a number of courses under its heading, 'Professional Development,' including:

- Introduction to Management of Technology
- Technology and Business Strategy
- Advanced Technologies in the Manufacturing and Service Industries
- Strategic Alliances and Partnering
- New Products/New Process Technologies
- International Marketing

Many of these types of training were requested in the Training Needs Analysis. Based on the survey, we have recommended the addition of the following courses:

- Total Quality Management
- Environmental Legislation

All the above courses are focused on providing an overview of some of the key trends in the market, particularly on the role of technology and trade on improving competitiveness. The officer should have access to these courses within 6 months to one year after recruitment, with the Introduction to Management of Technology course being 'core' for all COs. The I&T COs should also take at least the International Marketing program and one other technology course.

6. Policy Development

This training is available as a 5 day course through the current ISTC course offering and is oriented to the needs of COs both who specialize in Policy as well as others in the Department. It would be available to individuals between 6 months and one year after starting.

7. Consulting and Advocacy Skills

There is a clear need to tie all the training together and to focus on how the commerce officer, through consulting and advocacy skills, can become the catalyst who over time can contribute to increasing the competitiveness of Canadian industry. We are recommending two new courses which are oriented exclusively toward the 'how to' of consulting and advocacy.

The first, Introduction to Consulting, Advocacy and Marketing would be given after approximately 1 to 2 years of an officer's training. The second, Promoting International Competitiveness and Trade, would be given to officers after approximately 2 to 3 years on the job. The latter is, in essence, a more advanced version of the former and concentrates on how the officer can improve competitiveness through applying many of the lessons learned from the Competitiveness Issues type training outlined above. We see the emphasis being on the discussion of successful case approaches and the 'how to' of successful consulting as opposed to Competitiveness Issues type training which focuses more on 'what' makes industry competitive. The training will concentrate on practical applications of the officer's role as a catalyst in promoting international development through industry analysis, through promotion of export development, technology transfer, R&D, interagency cooperation, strategic alliances, etc.

8. Supervisory Training

This training would be given to COs who are promoted to supervisory positions and is available through existing course offerings.

9. Language Training

Language training would continue to be offered to officers as it has in the past through existing suppliers.

Priorities

The Department should focus on the following areas as priorities in terms of developing new courses:

1. Introduction to Consulting, Advocacy and Marketing

2. Train the Trainer

3. Promoting International Competitiveness and Trade

4. Total Quality Management

5. Environmental Legislation

10.12 Industry Exchanges and Secondments

COs were interested in both industry exchanges and secondments within government. We would support a greater level of industry exchange at all levels. This would include increased uses of exchanges with industry, and secondments within government and ISTC.

Such an arrangement may be a useful both in its own right and as a stimulant for many including several who perceive they lack career development opportunities. There were a considerable number in the questionnaire who expressed their support for this concept.

> *The only way to do it is to have more exposure to 'real live' industry through increased use of interchange with the private sector and also much more transfer of staff to the regions. Staff at HQ must regularly have stints in the regions to get a strong dose of reality and serving our clientele on the front-lines.*

The current level of exchanges and secondments for COs are as follows:

	COs	Total ISTC
Secondments out of ISTC	26	44
Secondments within ISTC	18	42
Secondments into ISTC	8	41
Interchanges from ISTC to industry	9	19
Interchanges from industry to ISTC	4	13

There are currently 26 COs involved in secondments out of ISTC, the majority of these with External Affairs. Only 9 COs (or about 1%) are currently involved in interchanges from the Department to industry.

If exchanges are to be encouraged, there will need to be support from the Department in terms of assisting in the development of opportunities, marketing the concept and facilitation of these exchanges. In order for exchanges and secondments to work, management must be flexible and support exchange opportunities which the Department or officers on their own initiative develop. The support could be either logistical or financial in nature.

10.13 Mentoring

We would encourage the Department to adopt some form of mentoring framework to assist new COs and younger staff. The idea of promoting mentoring for COs was raised as an issue during most of the focus group discussions, and was generally well-received. This was reinforced in the questionnaire results, where fully 60% supported the usefulness of a mentoring system between junior and senior COs, and a further 25% expressed what we interpret as conditional support for such an initiative.

The more qualitative commentary of the focus groups suggested that mentoring, or a buddy system, would assist new COs and provide useful training and career development support to new or more

experienced COs. Typically, such a concept could be quite formal for new recruits, and less formal for experienced COs.

The idea of a mentoring system pairing COs with managers (not with their own 'boss') was also raised and explored in the questionnaire, although not supported as enthusiastically.[1] Perhaps, it is viewed by COs as being more difficult to establish and to make workable, or perhaps its potential merits and objectives require more detailed explanation to COs.

There was a high level of interest in mentoring by COs. We recommend that mentoring be encouraged to the extent possible. Mentoring can have a number of benefits for both the mentor and the individual being mentored. Typically, such a system could be fairly formal for new staff and more informal with less frequent contact for experienced COs.

Mentoring is potentially a useful mechanism for learning over the longer term. It should be acknowledged that mentoring will not always work and can depend to a large degree on chemistry. Mentoring need not be a formal concept, but would have to be encouraged at the level of each responsibility centre. However, there is considerable respect for some of the senior officers and COs have indicated they would be willing to perform as mentors for more junior staff.

In this respect, newcomers to government and CO1s and CO2s should be aligned with a senior CO3 such that matters relating to ISTC, to OGDs, to specific job requirements, to training needs, and to personal needs could be discussed with the mentor.

Senior CO3s should be formally aligned with a Departmental Manager or Director such that work and personal matters could be discussed and resolved. Such a liaison should not involve the COs immediate

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[1]39% felt that it would be useful, 35 percent felt that its usefulness 'depends', and 23% felt that it would not be useful.

manager, but should rather be with management in other branches such that uninhibited discussions could take place.

10.14 Articulate the Department's Training Philosophy

As part of its initiative to develop and market training throughout the Department, it will be necessary for the Department to articulate its training philosophy which, in essence, should include the elements referred to in this section. The philosophy needs a mechanism to encourage more training to take place and should have as its underlying principles the following:

- The Department has a fundamental commitment to the principles of life-long learning and views training and professional development as being essential to the fulfillment of its mission and corporate goals.

- Training and development is primarily through on-the-job training supplemented by attendance at courses, seminars, conferences, etc.

- While it is the Department's policy to develop its own staff, the onus is on the individual to develop his or her skills and knowledge in keeping with the demands of the profession and the needs of the Department's clients.

- While training is essentially voluntary, the Department has a policy of encouraging a minimum of training for each individual and has structured a series of 'core' courses for new recruits, recently promoted individuals and individuals in certain specified occupations and sectors.

- The Department is willing to make reasonable funds available to offset costs incurred or provide non-financial support to facilitate access to training or development which is likely to improve the effectiveness of the Department.

- The Department may from time to time set training and development objectives and allocate training and development resources in such a way to facilitate its overall mission and achievement of corporate goals.

10.15 Role of Management

It is very important that not only officers, but also senior and middle levels of management be committed to supporting the Department's investment in training. Managers must be flexible and supportive of officers' requests for training or for their involvement in development and delivery of training. Managers must be willing to be flexible and adapt workplans to accommodate officers who are involved in development or delivery of training as this is likely to be a time consuming commitment. They must also provide recognition of officers who are engaged in training activities. Management must also take responsibility for follow-up on the PREA process to ensure that training identified is initiated. It is also worth noting that many of the training needs identified may equally well be training needs of the managers. As such, managers should also be encouraged to attend relevant courses. Managers should also be encouraged to deliver training where appropriate.

10.16 Training Resources

While it has been our intention to minimize the costs of new course development, the recommendations in this report will have increased cost implications for the training budgets and person-years associated with developing these courses and implementing the training and related recommendations. The current split between the headquarters and the responsibility centres should be maintained.

It is our view that these costs must come to be regarded as an integral part of the Department's long term investment in the achievement of its mandate and the growth of the Canadian economy.

Appendices

Appendix I
Steering Committee Members

Chairman

Robert Joubert, DG, Human Resources Branch

Members

Bruce Deacon, DG, Entrepreneurship and Small Business Office
Morton Hersh, DG, Business Development, AEP
Tim Garrard, DG, Aerospace, Defence & Industrial Benefits
John Banigan, DG, Surface Transportation and Machinery
Bob Russell, EXD, ISTC Nova Scotia
Anne-Marie Willis, EXD, ISTC Quebec
Bill Cram, EXD, ISTC Ontario
Rainer Andersen, EXD, ISTC Manitoba
Allan Cobb, DG, University Affairs
Guy Bédard, DG, Product Development
Jean Van Loon, DG, Services to Business
Richard Bower, DG, International Affairs Branch
Germain Simard, DG, Central Regions (Quebec)
Dan McDonald, DG, Ontario Regional Development
Carl Taylor, EXD, External Consultations Directorate
Robert Morin DG, PS 2000 Plus Secretariat

Specialist Staff

Sylvie Dufresne, Director, Employee Development
Alain Corriveau, Special Advisor and Manager, Training and
    Development
Cliff Pierce, ISTC Project Manager
Pauline Bernier-Racicot, Administrative Assistant

Appendix II
Persons Interviewed

Harry Rogers, Deputy Minister
Tony Reynolds, ADM, Aboriginal Economic Programs
Roberto Gualtieri, ADM, Science
Claude Huot, ADM, Operations
David Hoye, A/DG, Planning, Coordination and Regional Affairs
Robert Blackburn, ADM, Policy
Cliff Mackay, ADM, Industry and Technology
Astrid Prud'Homme, Mgr, Business Services Development
Doug Heath (CO union)
Allan Cocksedge, Tourism Branch
Lyse Houle, Quality Assurance and Systems Analyst
Bob McCook, Operations Branch
Guy Leclaire, Manager of Business Service Industries Division
Rise Segall, Manager of Library Services
Lucie Bailey, Small Business Directorate

ISTC Persons Interviewed in Regions

Victor Lotto, ED, ISTC British Columbia
Donald Hannah, RD, Aboriginal Programs, B.C.
David McDougall, ARD, Aboriginal Programs, B.C.
Lynn Gates, RD, Aboriginal Program, Manitoba
Dave Elgie, AARD, Aboriginal Program, Manitoba
Michael Clark, Sr. Trade Commissioner, Manitoba
Charlotte Murray, ISTC Nova Scotia
Jean Grandmaison, ISTC Quebec

Interviews and Contacts with External Agencies

David Knowles, External Affairs and International Trade
Dr. Jugal Sharma, Statistics Canada
Employment and Immigration
PSC
CCMD
Robert Donnolly, DVS Communications

Appendix III
Focus Groups

In total, 16 focus groups were conducted with the following Commerce Officer groups. Average group size was about 10 persons per group.

Montreal	'I' Group
	Reg. Dev.Group
Quebec City	Quebec, Rimouski, Alma, Amos COs
Toronto	Toronto COs
Halifax	Halifax, Moncton COs
Vancouver	Vancouver COs
	Aboriginal COs
Winnipeg	Aboriginal COs
	Trade COs
	Sectoral COs
	Policy COs
Ottawa	Science
	Tourism
	Operations (International Affairs)
	Industry & Technology
	Policy

Appendix IV
Documents Reviewed

- CO Job Description - total 64
- ISTC Corporate Plan 1990-91
- Bill C-3
- ISTC Corporate Planning Priorities, February 23, 1989
- ISTC Training Course Calendar 1990-91
- ISTC Consultation Guide
- Need for Corporate Development, Corporate Development Secretariat, November 1989
- COs 1984 Survey
- COs 1986 Survey
- Deputy Ministers Task Force on Departmental Directions (Reynolds Study), February 24, 1986
- Industry Marketing Study, Human Resources, January 25, 1988
- Sector Specialist Study, January 1988
- SM/EX Conference 1989 - Discussion Reports
- Training Needs, Industrial Development Officers, June 22, 1989
- Preliminary Report from the Public Service 2000 Task Force on Staff Training and Development, July 23, 1990
- ISTC's Review on the Advancement of Women - Extracts from Reports/Recommendations
- Corporate Development Working Groups - Extracts from Reports/Recommendations
- Training for ISTC Officers on Government Services and Programs to Business
- Service Industries and Consumer Goods (SICG) Officer's Roles under ISTC's new Mandate

Appendix V

Questionnaire and Frequency Distributions

TRAINING NEEDS ANALYSIS — ISTC COMMERCE OFFICERS

January 1991

Introduction

The Human Resources Branch of ISTC is currently engaged in a comprehensive Training Needs Analysis. This initiative is an extension of the Department's current training program which includes both corporate training programs and training sponsored by responsibility centres. As a result of Bill C - 3 and the Department's new mandate "to promote international competitiveness and excellence in industry, science and technology in all parts of Canada", more emphasis must be accorded to policy advocacy and less on funded programs. Also, the Department is faced with the ongoing challenge of renewing the industrial awareness of its employees.

Specifically, as an outward looking Department, ISTC now requires a new knowledge and skill mix which encompasses industry specific knowledge of science and technology; skill in marketing and delivery of local and national service products; advocacy; intelligence gathering and analytical skills; and networking skills. The new ISTC officer will often have to be both a deeply knowledgeable person in a particular industry, science and technology area, and also a generally-skilled facilitator.

In view of the new knowledge and skill mix required of its personnel, the Department has undertaken this Training Needs Analysis to identify new tools required to implement ISTC's mandate and to provide appropriate training and development. The analysis will examine the changes in training which are needed to support both basic and ongoing activities, as well as the new skills and knowledge which may be required.

A Steering Committee with senior management representation from ISTC's regional, sectoral, policy and special interest areas has been established to oversee the project. The Commerce Officer (CO) Classification has been chosen for this phase of the project. Our firm, Ernst & Young Management Consultants, has been engaged by ISTC to conduct the Training Needs Analysis of Commerce Officers.

To date, we have reviewed relevant documentation, conducted approximately fifteen focus groups in Headquarters and in the regions, as well as a number of senior management interviews, in order to identify some of the issues which should be addressed in this questionnaire. In preparing this questionnaire, we have attempted to respond to the valuable suggestions which have been made and to convey an interpretation of "training and development" which extends well beyond simply a traditional "formal classroom" type approach, and which would potentially include seminars, exchanges, in-house training, and other forms of upgrading.

We are distributing this questionnaire to all of ISTC's Commerce Officers and we hope that you will find a quiet 15 - 20 minute timeframe to respond to it. To ensure full confidentiality, we ask that you not put your name on the survey form. Ernst & Young will only report on the data in aggregate form. Questions may be directed to Greg Young of Ernst & Young at (416) 365-5339 or to Paul Stothart of Ernst & Young at (613) 232-1511. **Please return the questionnaire to Ernst & Young in the enclosed envelope by February 6, 1991.** Thank you for your cooperation.

Attention: Greg Young
Ernst & Young
P.O. Box 251
Toronto Dominion Centre
Toronto, Ontario
M5K 9Z9

It is emphasized that participation in this survey is voluntary and that the information provided will be treated in accordance with the provisions of the Access to Information Act. Access to this information is also governed by the same act. This collection has been officially registered with Statistics Canada as registration number IST/IST-927-04292.

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CODE _____

Section One: Identification

(Please circle appropriate response) (N = 353) English responses 85%; French 15%

1. What is your CO level? (N = 353)

CO1	7%
CO2	48
CO3	43
CO4	1

2. Do you supervise any staff? (N = 353)

Yes	26%
No	74

(If yes) How many staff do you directly supervise? (N = 91) Ave. = 3.1 staff

3. Where do you work? *(Please circle appropriate response)*

Headquarters	67%
Region	33

4. If you work in the Headquarters, with which Group? *(Please circle appropriate response)* (N = 235)

Tourism	7%
Science	4
Policy	7
Operations	13
Industry and Technology (Branch:)	64
Special Projects	2
Surface Transportation and Machinery	17
Information Technologies Industry	7
Aerospace, Defence and Industrial Benefits	15
Resource Processing Industries	9
Service Industries and Consumer Goods	11
Planning, Coordination and Control	3
External Consultations	0
Finance, Personnel and Administration	3
Aboriginal Economic Programs	0
Other (Specify _____)	3

5a. If you work in the Regions, with which Group? *(Please circle one response only)* (N = 118)

Industry and Technology	42%
Trade	14
Policy	2
Regional Development	22
Aboriginal Economic Development	15
Other (Specify _____)	3

5b. If you work in the Regions, in which office?. *(Please circle one response only)* (N = 118)

Newfoundland	5%
Prince Edward Island	1
Nova Scotia	6
New Brunswick	6
Quebec	14
Quebec Regional Development	14
Ontario	14
Ontario Regional Development	5
Manitoba	14
Saskatchewan/Territories	7
Alberta	6
British Columbia	8

6. What city is your job located in?
(Specify_____)

Ottawa	62%
Other	33

7. What is your age? (N = 353)   Ave. = 45.1 years

8. Sex:

Male	79%
Female	20

9. How many years experience do you have in: (N = 353)

Your current Commerce Officer job?	Ave. =	4.9 years
The Department or its predecessors?		7.9 years
Other government departments/agencies?		5.9 years
Previous industry experience?		6.3 years

10. Highest level of education achieved *(Please circle appropriate response)*

University masters or doctorate degree	37
University bachelor's degree	47
Some university	5
Other non-university certificate or diploma	6
Secondary school graduation certificate	2
Less than secondary school certificate	0
Other (specify _____)	2

11. What was the major field of study of your highest degree, certificate or diploma?

Commerce/business/accounting/economics	58%
Science/engineering	22
Other (Specify _____)	18
Not applicable	1

12. Professional Accreditations and Memberships *(Circle appropriate response)*

Accounting (Specify _____)	15%
Engineering/Science (Specify _____)	16
Other Professional Memberships:	
(Specify _____)	14
Not applicable	49

13. Which of the following ISTC 'product groups' primarily describes your current job activities? *(Please circle one only)* (N = 353)

Policy	11%
Advocacy	7
Business Service and Intelligence	32
Special Projects	7
Program Delivery	31
Ministerial Support	1
Other (Specify _____)	11

14. What percentage of your job activities would you say have changed as a direct result of ISTC's new mandate? Ave. = 25%; Zero% = 37%; 100% = 7%

15. Please list any experience you may have in giving training or instruction? (Specify course and year course given)

Have experience in giving training	36%
Have experience in giving training since 1987	11
Have no experience in giving training	64

16. Would you be willing to be involved in or assist in design or delivering training for COs based on your own experience? *(Please circle appropriate response)*

Yes	38%
No	31
Perhaps	28

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Section Two: Need for Training

How important are the following activities, skills and knowledge to your job and how great is your need for improvement through training and upgrading? *(Please indicate most appropriate response in each column. If the skill/activity is likely to be useful for you in the longer term, check the box on the right side of the table.)*

Job Activity	Importance of this Activity						Degree of Improvement Needed					Career Development	
	Check if this activity is new or has increased substantially under the new mandate	How important is the performance of this activity in your current job function?					How much improvement do you now need through training and upgrading?					Check if you require training in this activity as an important part of your long term career development	
	(Check if relevant)	*(Circle one response)* Level of Importance					*(Circle one response)* Level of Need					*(Check if relevant)*	
		Great (3)	Some (2)	Little (1)	None (0)	Mean$_1$	Great (3)	Some (2)	Little (1)	None (0)	Mean$_2$		Mean$_1$xMean$_2$
ACTIVITIES RELATED TO ISTC MANDATE													
17. Promoting export & trade development	22%	25%	24%	16%	36%	1.38	13%	28%	15%	44%	1.09	33%	1.50
18. Promoting international competitiveness	38	48	21	8	23	1.94	20	39	11	30	1.48	45	2.87
19. Promoting industrial development	23	37	26	10	28	1.72	11	25	21	42	1.06	33	1.82
20. Providing information services to business	29	37	26	11	27	1.72	12	24	19	45	1.02	36	
21. Promoting technological development	37	33	25	14	27	1.64	22	25	19	34	1.35	36	
22. Facilitating technology transfer	31	25	23	19	33	1.39	18	26	15	40	1.23	34	
23. Promoting research and development	30	24	26	16	35	1.38	13	24	18	45	1.05	25	
24. Developing/delivering ISTC programs/services	23	42	21	10	27	1.78	7	26	21	46	0.94	23	
25. Developing/delivering other programs/services	11	12	19	24	45	0.97	3	14	25	57	0.63	11	
26. Developing industry policy	14	14	20	20	46	1.02	10	22	16	52	0.89	26	
27. Developing science and technology policy	14	8	13	19	60	0.68	9	14	15	62	0.68	18	
28. Delivering science/technology programs/services	16	15	16	16	52	0.95	8	14	17	61	0.69	14	
29. Providing financial support to clients	11	26	18	14	42	1.28	6	14	19	61	0.64	13	
30. Other (specify_____)	4	5	1	0	94	0.18	2	3	1	94	0.12	11	

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Job Skill or Knowledge	Importance of Skill or Knowledge					Degree of Improvement Needed					Career Development
	Check if this skill or knowledge is new or has increased substantially under the new mandate *(Check if relevant)*	How important is the performance of this skill or knowledge in your current job function? *(Circle one response)* Level of Importance				How much improvement do you now need through training and upgrading? *(Circle one response)* Level of Need					Check if you require training in this skill/knowledge area as part of your long term career development *(Check if relevant)*
		Great (3)	Some (2)	Little (1)	None (0) $Mean_1$	Great (3)	Some (2)	Little (1)	None (0) $Mean_2$		$Mean_1 x Mean_2$
CONSULTING/ADVOCACY SKILLS RELATED TO JOB ACTIVITIES											
31. Analyzing how the mandate can be converted to a plan of action	31	26	23	16	34 1.42	10	25	18	47 0.97		21
32. Analyzing key industry issues	28	43	24	7	27 1.82	11	36	15	38 1.20		30
33. Acting once the plan is established	15	30	24	8	37 1.48	5	19	24	52 0.78		9
34. Developing teamwork skills	21	33	26	12	29 1.64	10	23	22	45 0.97		20
35. Project management skills	21	36	23	12	29 1.65	12	25	19	44 1.04		31
36. Networking and advocacy skills	31	44	24	9	23 1.88	15	30	20	35 1.25		33
37. Forming strategic alliances and partnering	33	33	21	16	30 1.58	23	26	15	37 1.35		34
38. New product/new process development	16	20	20	17	42 1.18	9	19	19	53 0.84		17
39. Consulting skills	23	35	27	10	29 1.67	13	26	19	43 1.08		27
40. Developing and managing your client base	20	37	20	11	32 1.61	11	23	17	50 0.95		18
41. Client service skills	18	38	21	10	31 1.66	8	23	22	47 0.92		18
42. Developing an industry knowledge base	23	48	17	8	27 1.86	14	27	19	41 1.14		27
43. Building a key contact base	20	47	18	6	29 1.83	11	19	22	48 0.92		17
44. Analyzing competitiveness issues	29	41	23	8	27 1.79	16	31	15	38 1.25		33
45. Facilitating industry/university/scientific agency collaboration	26	23	23	15	39 1.29	14	21	16	49 0.99		20
46. Other (specify_____)	1	1	0	0	99 0.04	0	0	1	99 0.02		1
KNOWLEDGE RELATED TO JOB ACTIVITIES											
47. Knowledge of successful advocacy practice	26	21	27	13	39 1.29	16	26	15	43 1.14		27

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Job Skill or Knowledge	Importance of Skill or Knowledge — Check if this skill or knowledge is new or has increased substantially under the new mandate (Check if relevant)	How important is the performance of this skill or knowledge in your current job function? (Circle one response) Level of Importance					Degree of Improvement Needed — How much improvement do you now need through training and upgrading? (Circle one response) Level of Need					Career Development — Check if you require training in this skill/knowledge area as part of your long term career development (Check if relevant)
		Great (3)	Some (2)	Little (1)	None (0)	Mean$_1$	Great (3)	Some (2)	Little (1)	None (0)	Mean$_2$	Mean$_1$xMean$_2$
48. Knowledge of industry sectoral issues	25	47	22	6	26	1.88	12	30	18	40	1.15	30
49. Knowledge of tax, trade legislation, etc.	21	16	35	19	31	1.35	14	29	17	40	1.17	27
50. Knowledge of environmental legislation	29	19	30	18	32	1.36	15	27	17	42	1.14	25
51. Knowledge of ISTC programs/services	26	43	30	9	19	1.96	11	31	24	33	1.20	24
52. Knowledge of other gov't programs/services	25	31	37	8	23	1.78	16	29	22	33	1.28	24
53. Country-specific knowledge	18	19	25	18	38	1.25	12	22	18	48	0.99	17
54. Knowledge of gov't policy dev't process	16	17	24	22	38	1.20	9	21	20	50	0.90	20
55. Sources of financing	17	25	28	17	31	1.47	12	25	19	45	1.04	24
56. Management of technology	29	25	28	13	35	1.42	15	26	16	43	1.12	27
57. Technology and business strategy	26	28	25	12	35	1.47	18	25	16	41	1.20	30
58. Advanced technologies in the manufacturing and service sector	26	28	24	11	36	1.45	17	24	16	43	1.15	26
59. Knowledge of science, R&D policy programs, tax issues	22	20	26	16	38	1.29	14	23	18	45	1.06	24
60. Total quality management techniques	27	25	25	17	33	1.42	20	27	16	37	1.28	31
61. Government procurement process	13	10	23	21	46	0.98	5	19	20	56	0.74	13
62. Other (specify_____)	0	1	0	1	98	0.02	1	0	1	99	0.03	1
BUSINESS SKILLS												
63. Marketing and sales skills	14	22	26	13	39	1.32	8	24	23	45	0.94	21
64. Strategic and business planning skills	20	34	26	10	30	1.65	15	30	20	37	1.22	33
65. International marketing	19	29	20	15	36	1.42	16	24	19	41	1.16	30

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Job Skill or Knowledge	Importance of Skill or Knowledge						Degree of Improvement Needed					Career Development
	Check if this skill or knowledge is new or has increased substantially under the new mandate *(Check if relevant)*	How important is the performance of this skill or knowledge in your current job function? *(Circle one response)* Level of Importance					How much improvement do you now need through training and upgrading? *(Circle one response)* Level of Need					Check if you require training in this skill/knowledge area as part of your long term career development *(Check if relevant)*
		Great (3)	Some (2)	Little (1)	None (0)	$Mean_1$	Great (3)	Some (2)	Little (1)	None (0)	$Mean_2$	$Mean_1 x Mean_2$
66. Financial analysis skills	14	28	31	15	27	1.60	12	23	24	41	1.05	27
67. Commercial lending practices	11	15	24	22	39	1.15	7	22	22	50	0.86	18
68. Helping organizations secure financing	11	15	22	18	45	1.07	8	17	22	52	0.81	17
69. Developing a literate, skilled workforce	12	11	18	16	54	0.86	7	15	17	62	0.67	11
70. Other (specify_____)	1	0	1	0	99	0.01	1	0	0	99	0.02	0
SUPERVISORY SKILLS												
71. Managing/supervising people	10	14	18	18	50	0.97	11	24	15	51	0.95	33
72. Training others	8	7	19	20	54	0.78	6	17	17	60	0.69	18
73. Other (specify_____)	1	1	0	0	99	0.03	0	1	0	99	0.02	0
COMMUNICATION SKILLS												
74. Interacting with industry	20	55	13	5	28	1.94	6	26	24	44	0.95	24
75. Interacting with international/foreign org'ns	19	25	21	14	40	1.32	9	24	19	48	0.93	20
76. Interacting with university and science officials	18	14	20	20	47	1.01	5	16	23	56	0.69	10
77. Interacting with ISTC officials	18	37	31	8	25	1.79	5	18	28	49	0.78	13
78. Interacting with other federal government dept's	19	35	33	9	23	1.80	2	22	28	49	0.77	14
79. Interacting with other non-federal government dept's	14	30	29	12	29	1.60	3	19	29	49	0.76	12
80. Personal and telephone interviewing	12	34	20	14	32	1.56	4	17	24	55	0.71	12
81. Negotiating with others	15	34	28	9	30	1.66	14	24	19	44	1.08	29
82. Conflict resolution	9	19	22	21	38	1.22	9	22	18	51	0.89	18
83. Speaking and presentation skills	21	37	31	8	24	1.82	19	28	18	35	1.32	36
84. Developing report writing skills	15	44	28	4	24	1.92	10	27	21	42	1.05	28

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Job Skill or Knowledge	Importance of Skill or Knowledge — Check if this skill or knowledge is new or has increased substantially under the new mandate (Check if relevant)	How important is the performance of this skill or knowledge in your current job function? (Circle one response) Level of Importance					Degree of Improvement Needed — How much improvement do you now need through training and upgrading? (Circle one response) Level of Need					Career Development — Check if you require training in this skill/knowledge area as part of your long term career development (Check if relevant)	Mean₁xMean₂
		Great (3)	Some (2)	Little (1)	None (0)	Mean₁	Great (3)	Some (2)	Little (1)	None (0)	Mean₂		
85. Cross cultural awareness skills	12	13	17	22	48	0.96	7	14	22	57	0.71	13	
86. Other (specify_____)	0	0	0	0	100	0.01	0	0	0	100	0.00	0	
COMPUTER SKILLS													
87. Word processing skills	34	46	27	5	22	1.97	19	24	21	36	1.25	29	
88. Spreadsheet skills	22	24	29	15	32	1.44	20	22	17	41	1.20	29	
89. Data base searches	27	25	31	15	29	1.52	22	25	14	39	1.31	29	
90. Client data base management	24	26	24	12	38	1.38	21	19	14	46	1.15	26	
91. Research & information management skills	22	26	27	11	36	1.42	20	23	12	45	1.17	26	
92. Graphics Skills	16	11	26	20	43	1.05	15	19	15	51	0.97	20	
93. Other (specify_____)	1	1	0	0	99	0.05	1	1	0	98	0.04	1	
LANGUAGE TRAINING													
94. English language training	3	32	4	3	61	1.08	2	3	8	87	0.19	7	
95. French language training	12	20	18	17	45	1.15	24	16	8	53	1.10	35	
96. Other (specify_____)	1	1	0	2	97	0.05	2	1	1	97	0.07	1	
OTHER TRAINING													
97. Time management	11	32	24	7	38	1.50	16	20	16	47	1.05	22	
98. Personal development and career planning	14	24	24	16	37	1.34	21	25	14	39	1.29	32	
99. Stress management techniques	12	18	24	10	49	1.10	18	18	13	52	1.02	24	
100. _____	1	1	1	0	98	0.04	1	0	1	98	0.03	0	

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Which types of training and upgrading do you feel are the highest priorities for you?

101. First priority: _____

102. Second priority: _____

103. Third priority: _____

Section Three: Training Related Issues

(Please circle the most appropriate response for each of the following questions) (N = 353)	Yes	No	Depends	NA
104. Do you have enough knowledge of training offered through the Department?	38%	40%	20%	2%
105. Should experienced COs train or contribute to training other COs?	62	7	30	1
106. Have you been refused training because of ISTC budget shortages?	30	64	3	4
107. Have you been refused training for non-financial reasons? (If yes, specify _____)	29	62	3	5
108. Should there be more opportunity to attend relevant conferences and seminars as part of training?	80	7	11	2
109. Should there be more opportunities to purchase training from non-governmental training suppliers?	68	8	16	1
110. Do you believe there is an opportunity for the Department to make more effective use of its own personnel for training purposes?	62	8	25	5
111. Would you be in favour of some form of personal discretionary training budget?	68	9	17	4
112. In general, would you prefer frequent one-day modules over infrequent five-day courses?	47	27	24	3
113. Do you believe some form of case study/best practices method would be an effective way of delivering your training needs?	47	14	35	4
114. Would programmed instructional modules allowing you to learn at your own rate of speed be effective?	39	25	30	5
115. Are you willing and able to upgrade pertinent skills and knowledge during evening/weekend hours?	46	25	26	2
116. Would you attend lunchtime training sessions?	54	26	17	1
117. Should ISTC implement a CO entry-level testing procedure for new recruits?	45	22	26	6
118. Would a mentoring system which pairs experienced and inexperienced COs be useful?	60	12	25	2
119. Would a mentoring system which pairs junior COs with Managers other than their own be useful?	39	23	35	2
120. Would you be willing to serve as a mentor for more junior staff?	68	13	15	4

Ernst & Young

		Yes	No	Depends	NA
121.	Are you aware of Public Service Commission courses?	64%	19%	13%	3%
122.	In general, do you find Public Service Commission courses to be satisfactory?	32	30	32	5
123.	Would you benefit from a short-term (less than 3 months) exchange with industry?	68	15	14	3
124.	Would you benefit from (and be willing to participate in) longer industry exchanges?	74	11	12	3
125.	Would you benefit from international assignments to foreign corporations?	68	14	13	3
126.	Do you interact with the same clientele today as you did three years ago?	38	44	6	10
127.	Would you benefit from (and be willing to participate in) secondments within ISTC?	64	11	22	1
128.	Would you benefit from (and be willing to participate in) secondments with other government departments?	67	9	21	1
129.	Should senior COs be called upon to provide orientation training to new COs?	57	12	26	2
130.	Would you be interested in some form of annual conference of COs?	60	22	16	1
131.	(If yes) Would you prefer: National conference (N = 211)	66	27	5	1
132.	Regional conference (N = 211)	43	46	7	1

Section Four: Other Comments

133. Do you have any other comments about training and skills upgrading or its delivery that you wish to add?

Appendix VI
Profile of COs

The following is a profile of the 353 questionnaire respondents. Based on the distribution of the responses, the sample is highly representative of the CO population as a whole.

1.   What is your CO level? (N = 353)

	Questionnaire	Actual
CO1	7%	8%
CO2	48	51
CO3	43	41
CO4	1	1

2.   Do you supervise any staff? (N = 353)

Yes	26%
No	74

(If yes) How many staff do you directly supervise? (N = 91)

Ave. = 3.1 staff

3.   Where do you work?

	Questionnaire	Actual
Headquarters	67%	63%
Region	33	37

4.   If you work in the Headquarters, with which Group? (N =235)

	Questionnaire	Actual
Tourism	7%	9%
Science	4	5
Policy	7	8
Operations	13	15
Industry &Technology	64	60
Special Projects	2	
Surface Transportation	17	
Information Technologies	7	
Aerospace, Defence	15	
Resource Processing	9	
Service Industries & CGoods	11	
Planning, Coord & Control	3	
Finance, Personnel & Admin	3	1
Other	3	2

5a.   If you work in the Regions, with which Group? (N = 118)

Industry and Technology	42%
Trade	14
Policy	2
Regional Development	22
Aboriginal Economic Dev't	15
Other	3

5b.   If you work in the Regions, in which office? (N = 118)

	Questionnaire	Actual
Nfld	5%	4%
PEI	1	2
Nova Scotia	6	4
New Brunswick	6	5
Quebec	14	21
Quebec RDev	14	17
Ontario	19	18
Manitoba	14	11
Sask/Territories	7	8
Alberta	6	4
British Columbia	8	6

7.   What is your age? (N = 353)
Questionnaire Ave. = 45.1 years; Departmental Ave. = 46.

25 to 34	12%
35 to 44	36
45 to 54	30
55 to 64	18
Refused	5

Appendix VII

Skills Priorities of CO Population Segments

% of CO's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	Total 353
1.	Promoting international competitivness	51.6%
2.	Speaking & Presentation	45.0%
3.	Analyzing key industry issues	44.8%
4.	Knowledge of other gov't programs	43.9%
5.	Analyzing competitiveness issues	43.6%
6.	Promoting tech development	41.6%
7.	Forming strategic alliances and partnering	41.6%
8.	Networking & advocacy	41.6%
9.	Total quality management techniques	41.4%
10.	Data base skills	41.1%
11.	Knowledge of ISTC programs/services	40.5%
12.	Word processing skills	40.2%
13.	Strategic & business planning	39.9%
14.	Knowledge of industry/sectoral issues	39.9%
15.	Technology & business strategy	39.7%
16.	Advanced tech. in manufacturing, service	39.1%
17.	Developing an industry knowledge base	39.1%
18.	Research and information management	39.1%
19.	Personal development and career planning	39.1%
20.	Management of technology	38.2%
21.	Knowledge of environmental legislation	38.0%
22.	Facilitating tech transfer	36.5%
23.	Client data base management	36.5%
24.	Knowledge of successful advocacy	36.0%
25.	Knowledge of tax, trade legislation	36.0%
26.	Consulting skills	35.7%
27.	Spreadsheet skills	35.7%
28.	Report writing skills	35.7%
29.	Time management	35.1%
30.	Negotiating with others	34.8%
31.	Project management skills	34.8%
32.	Promoting industrial development	34.0%
33.	International marketing	34.0%
34.	Knowledge of science, R&D issues	33.7%
35.	Sources of financing	33.4%
36.	Providing info services to business	32.6%
37.	Stress management techniques	32.0%
38.	Country specific knowledge	31.4%
39.	Promoting export & trade development	31.4%
40.	Promoting R&D	31.2%
41.	Developing & managing your client base	31.2%
42.	Interacting with industry	30.9%
43.	Converting ISTC mandate to action	30.9%
44.	Delivering ISTC programs, services	30.9%
45.	Financial analysis skills	30.6%
46.	Developing teamwork skills	30.0%
47.	Facilitating ind., uni., sci. collaboration	29.7%
48.	Client service skills	29.2%
49.	Building a key contact base	28.6%
50.	Marketing and sales skills	28.0%
51.	Coflict resolution	28.0%
52.	French language training	27.5%
53.	Interacting with foreign corporations	26.3%
54.	Graphics skills	26.9%
55.	Knowledge of govt policy process	25.5%
56.	New product, process development	25.2%
57.	Commercial lending practices	24.6%
58.	Acting once the plan is established	22.7%
59.	Developing industry policy	22.4%
60.	Interacting with other govt. depts.	22.4%
61.	Managing, supervising people	21.8%

% of Headquarters Industry Technology CO's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	HQ Ind & Tech 149	Total 353
1.	Promoting international competitivness	55.7%	51.6%
2.	Promoting tech development	47.0%	41.6%
3.	Analyzing competitiveness issues	45.6%	43.6%
4.	Analyzing key industry issues	44.3%	44.8%
5.	Advanced tech. in manufacturing, service	44.3%	39.1%
6.	Speaking & Presentation	41.6%	45.0%
7.	Knowledge of other gov't programs	41.6%	43.9%
8.	Forming strategic alliances and partnering	41.6%	41.6%
9.	Networking & advocacy	41.6%	41.6%
10.	Technology & business strategy	41.6%	39.7%
11.	Management of technology	40.9%	38.2%
12.	Facilitating tech transfer	40.3%	36.5%
13.	Knowledge of successful advocacy	40.3%	36.0%
14.	Promoting industrial development	39.6%	34.0%
15.	Knowledge of environmental legislation	38.9%	38.0%
16.	Total quality management techniques	38.3%	41.4%
17.	Developing an industry knowledge base	38.3%	39.1%
18.	Client data base management	38.3%	36.5%
19.	Knowledge of tax, trade legislation	38.3%	36.0%
20.	Research and information management	37.6%	39.1%
21.	Report writing skills	37.6%	35.7%
22.	Data base skills	36.9%	41.1%
23.	Spreadsheet skills	36.9%	35.7%
24.	Strategic & business planning	36.2%	39.9%
25.	Word processing skills	35.6%	40.2%
26.	Promoting export & trade development	35.6%	31.4%
27.	Financial analysis skills	35.6%	30.6%
28.	Knowledge of industry/sectoral issues	34.9%	39.9%
29.	Personal development and career planning	34.2%	39.1%
30.	Stress management techniques	34.2%	32.0%
31.	Promoting R&D	34.2%	31.2%
32.	French language training	34.2%	27.5%
33.	Graphics skills	34.2%	26.9%
34.	Time management	33.6%	35.1%
35.	Negotiating with others	33.6%	34.8%
36.	International marketing	33.6%	34.0%
37.	Knowledge of science, R&D issues	33.6%	33.7%
38.	Sources of financing	33.6%	33.4%
39.	Knowledge of ISTC programs/services	32.9%	40.5%
40.	Consulting skills	32.2%	35.7%
41.	Project management skills	31.5%	34.8%
42.	Country specific knowledge	31.5%	31.4%
43.	Converting ISTC mandate to action	31.5%	30.9%
44.	Providing info services to business	30.9%	32.6%
45.	Interacting with industry	30.9%	30.9%
46.	Facilitating ind., uni., sci. collaboration	30.9%	29.7%
47.	Knowledge of govt policy process	28.9%	25.5%
48.	Interacting with foreign corporations	28.2%	26.3%
49.	Developing industry policy	28.2%	22.4%
50.	Developing & managing your client base	26.8%	31.2%
51.	Delivering ISTC programs, services	26.2%	30.9%
52.	Building a key contact base	26.2%	28.6%
53.	New product, process development	25.5%	25.2%
54.	Commercial lending practices	25.5%	24.6%
55.	Coflict resolution	24.8%	28.0%
56.	Acting once the plan is established	24.8%	22.7%
57.	Developing teamwork skills	24.2%	30.0%
58.	Client service skills	23.5%	29.2%
59.	Marketing and sales skills	22.8%	28.0%
60.	Govt. procurement process	22.8%	19.8%
61.	Developing literate, skilled workforce	22.8%	19.8%

% of Headquarters Non-Industry Tech CO's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	HQ Other 86	Total 353
1.	Knowledge of ISTC programs/services	45.3%	40.5%
2.	Speaking & Presentation	43.0%	45.0%
3.	Analyzing key industry issues	41.9%	44.8%
4.	Knowledge of other gov't programs	41.9%	43.9%
5.	Forming strategic alliances and partnering	40.7%	41.6%
6.	Project management skills	39.5%	34.8%
7.	Developing teamwork skills	39.5%	30.0%
8.	Personal development and career planning	38.4%	39.1%
9.	Analyzing competitiveness issues	37.2%	43.6%
10.	Strategic & business planning	37.2%	39.9%
11.	Time management	37.2%	35.1%
12.	Promoting international competitivness	36.0%	51.6%
13.	Consulting skills	36.0%	35.7%
14.	Word processing skills	32.6%	40.2%
15.	French language training	31.4%	27.5%
16.	Data base skills	30.2%	41.1%
17.	Developing an industry knowledge base	30.2%	39.1%
18.	Negotiating with others	30.2%	34.8%
19.	Networking & advocacy	29.1%	41.6%
20.	Report writing skills	29.1%	35.7%
21.	Client service skills	29.1%	29.2%
22.	Total quality management techniques	27.9%	41.4%
23.	Knowledge of industry/sectoral issues	27.9%	39.9%
24.	Delivering ISTC programs, services	27.9%	30.9%
25.	Providing info services to business	26.7%	32.6%
26.	Converting ISTC mandate to action	26.7%	30.9%
27.	Building a key contact base	26.7%	28.6%
28.	Stress management techniques	25.6%	32.0%
29.	Country specific knowledge	25.6%	31.4%
30.	Developing & managing your client base	25.6%	31.2%
31.	Managing, supervising people	25.6%	21.8%
32.	Research and information management	24.4%	39.1%
33.	Knowledge of successful advocacy	24.4%	36.0%
34.	Knowledge of tax, trade legislation	24.4%	36.0%
35.	International marketing	24.4%	34.0%
36.	Marketing and sales skills	24.4%	28.0%
37.	Coflict resolution	24.4%	28.0%
38.	Interacting with ISTC officials	24.4%	21.5%
39.	Management of technology	23.3%	38.2%
40.	Sources of financing	23.3%	33.4%
41.	Promoting industrial development	22.1%	34.0%
42.	Knowledge of govt policy process	22.1%	25.5%
43.	Knowledge of environmental legislation	20.9%	38.0%
44.	Facilitating ind., uni., sci. collaboration	20.9%	29.7%
45.	Technology & business strategy	19.8%	39.7%
46.	Promoting tech development	18.6%	41.6%
47.	Financial analysis skills	18.6%	30.6%
48.	Interacting with foreign corporations	18.6%	26.3%
49.	Developing industry policy	18.6%	22.4%
50.	Interacting with other govt. depts.	18.6%	22.4%
51.	Personal and telephone interviewing	18.6%	19.8%
52.	Client data base management	17.4%	36.5%
53.	Knowledge of science, R&D issues	17.4%	33.7%
54.	Promoting R&D	17.4%	31.2%
55.	Interacting with industry	17.4%	30.9%
56.	Graphics skills	17.4%	26.9%
57.	Acting once the plan is established	17.4%	22.7%
58.	Interacting with other non-federal govt.	17.4%	20.7%
59.	Commercial lending practices	16.3%	24.6%
60.	Facilitating tech transfer	15.1%	36.5%
61.	Spreadsheet skills	14.0%	35.7%

% of Regions Industry Tech CO's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	Region I&T 50	Total 353
1.	Promoting international competitivness	70.0%	51.6%
2.	Facilitating tech transfer	68.0%	36.5%
3.	Networking & advocacy	66.0%	41.6%
4.	Promoting tech development	64.0%	41.6%
5.	Total quality management techniques	64.0%	41.4%
6.	Advanced tech. in manufacturing, service	64.0%	39.1%
7.	Technology & business strategy	62.0%	39.7%
8.	Data base skills	60.0%	41.1%
9.	Word processing skills	58.0%	40.2%
10.	Management of technology	58.0%	38.2%
11.	Knowledge of industry/sectoral issues	56.0%	39.9%
12.	Research and information management	56.0%	39.1%
13.	Speaking & Presentation	54.0%	45.0%
14.	Developing an industry knowledge base	54.0%	39.1%
15.	Analyzing key industry issues	52.0%	44.8%
16.	Promoting R&D	52.0%	31.2%
17.	Analyzing competitiveness issues	50.0%	43.6%
18.	Strategic & business planning	50.0%	39.9%
19.	Knowledge of other gov't programs	48.0%	43.9%
20.	Forming strategic alliances and partnering	48.0%	41.6%
21.	Knowledge of ISTC programs/services	46.0%	40.5%
22.	Client data base management	46.0%	36.5%
23.	Knowledge of successful advocacy	46.0%	36.0%
24.	Knowledge of science, R&D issues	46.0%	33.7%
25.	Converting ISTC mandate to action	46.0%	30.9%
26.	Promoting export & trade development	44.0%	31.4%
27.	Developing & managing your client base	44.0%	31.2%
28.	Interacting with industry	44.0%	30.9%
29.	Personal development and career planning	42.0%	39.1%
30.	Promoting industrial development	42.0%	34.0%
31.	International marketing	42.0%	34.0%
32.	Knowledge of environmental legislation	40.0%	38.0%
33.	Report writing skills	40.0%	35.7%
34.	Sources of financing	40.0%	33.4%
35.	Delivering ISTC programs, services	40.0%	30.9%
36.	Facilitating ind., uni., sci. collaboration	40.0%	29.7%
37.	Marketing and sales skills	40.0%	28.0%
38.	New product, process development	40.0%	25.2%
39.	Spreadsheet skills	38.0%	35.7%
40.	Negotiating with others	36.0%	34.8%
41.	Providing info services to business	36.0%	32.6%
42.	Consulting skills	34.0%	35.7%
43.	Delivering science, tech. programs	34.0%	17.6%
44.	Project management skills	32.0%	34.8%
45.	Country specific knowledge	32.0%	31.4%
46.	Time management	30.0%	35.1%
47.	Stress management techniques	30.0%	32.0%
48.	Financial analysis skills	30.0%	30.6%
49.	Client service skills	30.0%	29.2%
50.	Interacting with foreign corporations	30.0%	26.3%
51.	Interact with university, science officials	30.0%	17.6%
52.	Developing teamwork skills	28.0%	30.0%
53.	Building a key contact base	28.0%	28.6%
54.	Graphics skills	28.0%	26.9%
55.	Knowledge of govt policy process	28.0%	25.5%
56.	Developing literate, skilled workforce	28.0%	19.8%
57.	Knowledge of tax, trade legislation	26.0%	36.0%
58.	Coflict resolution	26.0%	28.0%
59.	Acting once the plan is established	26.0%	22.7%
60.	Developing industry policy	26.0%	22.4%
61.	Govt. procurement process	26.0%	19.8%

		Region Other	Total
Rank	Base	66	353
1.	Spreadsheet skills	57.6%	35.7%
2.	Knowledge of environmental legislation	54.5%	38.0%
3.	Knowledge of industry/sectoral issues	53.0%	39.9%
4.	Knowledge of tax, trade legislation	53.0%	36.0%
5.	Data base skills	50.0%	41.1%
6.	Client data base management	50.0%	36.5%
7.	Promoting international competitivness	48.5%	51.6%
8.	Speaking & Presentation	48.5%	45.0%
9.	Knowledge of other gov't programs	47.0%	43.9%
10.	Total quality management techniques	47.0%	41.4%
11.	Knowledge of ISTC programs/services	47.0%	40.5%
12.	Research and information management	47.0%	39.1%
13.	Personal development and career planning	47.0%	39.1%
14.	Word processing skills	45.5%	40.2%
15.	Strategic & business planning	43.9%	39.9%
16.	Knowledge of science, R&D issues	43.9%	33.7%
17.	Analyzing key industry issues	42.4%	44.8%
18.	Promoting tech development	42.4%	41.6%
19.	Technology & business strategy	42.4%	39.7%
20.	Advanced tech. in manufacturing, service	42.4%	39.1%
21.	Consulting skills	42.4%	35.7%
22.	Analyzing competitiveness issues	40.9%	43.6%
23.	Negotiating with others	40.9%	34.8%
24.	Sources of financing	40.9%	33.4%
25.	Providing info services to business	40.9%	32.6%
26.	Developing an industry knowledge base	39.4%	39.1%
27.	Time management	39.4%	35.1%
28.	International marketing	39.4%	34.0%
29.	Country specific knowledge	39.4%	31.4%
30.	Client service skills	39.4%	29.2%
31.	Coflict resolution	39.4%	28.0%
32.	Networking & advocacy	37.9%	41.6%
33.	Stress management techniques	37.9%	32.0%
34.	Delivering ISTC programs, services	37.9%	30.9%
35.	Commercial lending practices	37.9%	24.6%
36.	Forming strategic alliances and partnering	36.4%	41.6%
37.	Report writing skills	36.4%	35.7%
38.	Promoting export & trade development	36.4%	31.4%
39.	Developing & managing your client base	36.4%	31.2%
40.	Interacting with industry	36.4%	30.9%
41.	Management of technology	34.8%	38.2%
42.	Project management skills	34.8%	34.8%
43.	Financial analysis skills	34.8%	30.6%
44.	Building a key contact base	34.8%	28.6%
45.	Marketing and sales skills	34.8%	28.0%
46.	Knowledge of successful advocacy	33.3%	36.0%
47.	Cross cultural awareness	33.3%	17.8%
48.	Facilitating tech transfer	31.8%	36.5%
49.	Promoting industrial development	31.8%	34.0%
50.	Developing teamwork skills	31.8%	30.0%
51.	Interacting with other govt. depts.	30.3%	22.4%
52.	Helping organizations secure financing	30.3%	21.8%
53.	Facilitating ind., uni., sci. collaboration	28.8%	29.7%
54.	New product, process development	28.8%	25.2%
55.	Interacting with other non-federal govt.	28.8%	20.7%
56.	Interacting with foreign corporations	27.3%	26.3%
57.	Promoting R&D	25.8%	31.2%
58.	Interacting with ISTC officials	25.8%	21.5%
59.	Providing financial support to clients	25.8%	17.0%
60.	Managing, supervising people	24.2%	21.8%
61.	Personal and telephone interviewing	24.2%	19.8%

% of Women CO's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	Female 70	Total 353
1.	Promoting international competitivness	60.0%	51.6%
2.	Knowledge of ISTC programs/services	52.9%	40.5%
3.	Speaking & Presentation	51.4%	45.0%
4.	Developing an industry knowledge base	51.4%	39.1%
5.	Knowledge of other gov't programs	50.0%	43.9%
6.	Analyzing key industry issues	48.6%	44.8%
7.	Analyzing competitiveness issues	47.1%	43.6%
8.	Promoting tech development	47.1%	41.6%
9.	Forming strategic alliances and partnering	47.1%	41.6%
10.	Networking & advocacy	47.1%	41.6%
11.	Personal development and career planning	47.1%	39.1%
12.	Knowledge of tax, trade legislation	47.1%	36.0%
13.	Negotiating with others	47.1%	34.8%
14.	Technology & business strategy	45.7%	39.7%
15.	Knowledge of environmental legislation	45.7%	38.0%
16.	Project management skills	45.7%	34.8%
17.	Knowledge of industry/sectoral issues	44.3%	39.9%
18.	Client data base management	42.9%	36.5%
19.	Data base skills	41.4%	41.1%
20.	Strategic & business planning	41.4%	39.9%
21.	Research and information management	41.4%	39.1%
22.	Promoting industrial development	41.4%	34.0%
23.	Facilitating ind., uni., sci. collaboration	41.4%	29.7%
24.	Management of technology	40.0%	38.2%
25.	Knowledge of successful advocacy	40.0%	36.0%
26.	Report writing skills	40.0%	35.7%
27.	Sources of financing	40.0%	33.4%
28.	Facilitating tech transfer	38.6%	36.5%
29.	Consulting skills	38.6%	35.7%
30.	Knowledge of science, R&D issues	38.6%	33.7%
31.	Delivering ISTC programs, services	38.6%	30.9%
32.	Client service skills	38.6%	29.2%
33.	Advanced tech. in manufacturing, service	37.1%	39.1%
34.	Promoting export & trade development	37.1%	31.4%
35.	Developing teamwork skills	37.1%	30.0%
36.	Country specific knowledge	35.7%	31.4%
37.	Promoting R&D	35.7%	31.2%
38.	Interacting with industry	35.7%	30.9%
39.	Coflict resolution	35.7%	28.0%
40.	Spreadsheet skills	34.3%	35.7%
41.	Providing info services to business	34.3%	32.6%
42.	Financial analysis skills	34.3%	30.6%
43.	New product, process development	34.3%	25.2%
44.	Stress management techniques	32.9%	32.0%
45.	Total quality management techniques	31.4%	41.4%
46.	Word processing skills	31.4%	40.2%
47.	International marketing	31.4%	34.0%
48.	Developing & managing your client base	31.4%	31.2%
49.	French language training	31.4%	27.5%
50.	Time management	30.0%	35.1%
51.	Converting ISTC mandate to action	30.0%	30.9%
52.	Graphics skills	30.0%	26.9%
53.	Commercial lending practices	30.0%	24.6%
54.	Building a key contact base	28.6%	28.6%
55.	Interacting with foreign corporations	27.1%	26.3%
56.	Marketing and sales skills	25.7%	28.0%
57.	Acting once the plan is established	25.7%	22.7%
58.	Helping organizations secure financing	25.7%	21.8%
59.	Knowledge of govt policy process	24.3%	25.5%
60.	Developing industry policy	22.9%	22.4%
61.	Interacting with other govt. depts.	22.9%	22.4%

% of Supervisor CO's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	Supervisors 91	Total 353
1.	Speaking & Presentation	49.5%	45.0%
2.	Data base skills	47.3%	41.1%
3.	Managing, supervising people	47.3%	21.8%
4.	Promoting tech development	46.2%	41.6%
5.	Total quality management techniques	45.1%	41.4%
6.	Promoting international competitivness	44.0%	51.6%
7.	Strategic & business planning	42.9%	39.9%
8.	Stress management techniques	41.8%	32.0%
9.	Word processing skills	40.7%	40.2%
10.	Time management	40.7%	35.1%
11.	Project management skills	40.7%	34.8%
12.	Analyzing competitiveness issues	39.6%	43.6%
13.	Knowledge of industry/sectoral issues	39.6%	39.9%
14.	Technology & business strategy	39.6%	39.7%
15.	Spreadsheet skills	39.6%	35.7%
16.	Research and information management	38.5%	39.1%
17.	Consulting skills	38.5%	35.7%
18.	Analyzing key industry issues	37.4%	44.8%
19.	Networking & advocacy	36.3%	41.6%
20.	Knowledge of other gov't programs	35.2%	43.9%
21.	Knowledge of ISTC programs/services	35.2%	40.5%
22.	Personal development and career planning	35.2%	39.1%
23.	Facilitating tech transfer	35.2%	36.5%
24.	Client data base management	35.2%	36.5%
25.	Forming strategic alliances and partnering	34.1%	41.6%
26.	Advanced tech. in manufacturing, service	34.1%	39.1%
27.	Management of technology	34.1%	38.2%
28.	Knowledge of environmental legislation	34.1%	38.0%
29.	Knowledge of science, R&D issues	34.1%	33.7%
30.	Developing teamwork skills	34.1%	30.0%
31.	Providing info services to business	33.0%	32.6%
32.	Promoting R&D	31.9%	31.2%
33.	Knowledge of tax, trade legislation	30.8%	36.0%
34.	Promoting industrial development	30.8%	34.0%
35.	International marketing	30.8%	34.0%
36.	Facilitating ind., uni., sci. collaboration	30.8%	29.7%
37.	Developing an industry knowledge base	29.7%	39.1%
38.	Converting ISTC mandate to action	28.6%	30.9%
39.	French language training	28.6%	27.5%
40.	Training others	28.6%	15.3%
41.	Report writing skills	27.5%	35.7%
42.	Negotiating with others	27.5%	34.8%
43.	Coflict resolution	27.5%	28.0%
44.	Developing & managing your client base	26.4%	31.2%
45.	Delivering ISTC programs, services	26.4%	30.9%
46.	Financial analysis skills	26.4%	30.6%
47.	Marketing and sales skills	26.4%	28.0%
48.	Interacting with foreign corporations	26.4%	26.3%
49.	New product, process development	26.4%	25.2%
50.	Sources of financing	25.3%	33.4%
51.	Promoting export & trade development	25.3%	31.4%
52.	Interacting with industry	25.3%	30.9%
53.	Client service skills	25.3%	29.2%
54.	Graphics skills	25.3%	26.9%
55.	Acting once the plan is established	25.3%	22.7%
56.	Knowledge of successful advocacy	24.2%	36.0%
57.	Country specific knowledge	24.2%	31.4%
58.	Building a key contact base	24.2%	28.6%
59.	Knowledge of govt policy process	23.1%	25.5%
60.	Interacting with ISTC officials	20.9%	21.5%
61.	Developing literate, skilled workforce	20.9%	19.8%

% of CO1-2's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	CO1-2 194	Total 353
1.	Promoting international competitivness	53.1%	51.6%
2.	Knowledge of other gov't programs	46.9%	43.9%
3.	Analyzing key industry issues	46.4%	44.8%
4.	Analyzing competitiveness issues	45.4%	43.6%
5.	Speaking & Presentation	44.3%	45.0%
6.	Forming strategic alliances and partnering	44.3%	41.6%
7.	Developing an industry knowledge base	44.3%	39.1%
8.	Knowledge of ISTC programs/services	42.8%	40.5%
9.	Networking & advocacy	41.8%	41.6%
10.	Report writing skills	41.8%	35.7%
11.	Strategic & business planning	41.2%	39.9%
12.	Personal development and career planning	41.2%	39.1%
13.	Client data base management	41.2%	36.5%
14.	Promoting tech development	40.7%	41.6%
15.	Knowledge of industry/sectoral issues	40.7%	39.9%
16.	Advanced tech. in manufacturing, service	40.2%	39.1%
17.	Time management	39.7%	35.1%
18.	Knowledge of environmental legislation	39.2%	38.0%
19.	Knowledge of successful advocacy	39.2%	36.0%
20.	Project management skills	39.2%	34.8%
21.	Sources of financing	39.2%	33.4%
22.	Total quality management techniques	38.7%	41.4%
23.	Knowledge of tax, trade legislation	38.7%	36.0%
24.	Promoting industrial development	38.7%	34.0%
25.	Word processing skills	38.1%	40.2%
26.	Research and information management	38.1%	39.1%
27.	Technology & business strategy	37.6%	39.7%
28.	Management of technology	37.6%	38.2%
29.	Delivering ISTC programs, services	37.6%	30.9%
30.	Data base skills	37.1%	41.1%
31.	Negotiating with others	37.1%	34.8%
32.	Developing & managing your client base	37.1%	31.2%
33.	Facilitating tech transfer	36.6%	36.5%
34.	International marketing	36.1%	34.0%
35.	Consulting skills	35.6%	35.7%
36.	Country specific knowledge	35.6%	31.4%
37.	Providing info services to business	35.1%	32.6%
38.	Financial analysis skills	35.1%	30.6%
39.	Spreadsheet skills	34.5%	35.7%
40.	Promoting export & trade development	34.5%	31.4%
41.	Knowledge of science, R&D issues	33.5%	33.7%
42.	Converting ISTC mandate to action	33.5%	30.9%
43.	Client service skills	33.5%	29.2%
44.	Building a key contact base	33.0%	28.6%
45.	Promoting R&D	32.5%	31.2%
46.	Interacting with industry	32.5%	30.9%
47.	Developing teamwork skills	32.0%	30.0%
48.	Marketing and sales skills	30.4%	28.0%
49.	Stress management techniques	29.9%	32.0%
50.	Facilitating ind., uni., sci. collaboration	28.4%	29.7%
51.	French language training	27.8%	27.5%
52.	Interacting with foreign corporations	27.8%	26.3%
53.	Commercial lending practices	27.8%	24.6%
54.	Coflict resolution	27.3%	28.0%
55.	Knowledge of govt policy process	27.3%	25.5%
56.	New product, process development	25.3%	25.2%
57.	Interacting with other govt. depts.	25.3%	22.4%
58.	Helping organizations secure financing	25.3%	21.8%
59.	Graphics skills	24.7%	26.9%
60.	Interacting with other non-federal govt.	24.7%	20.7%
61.	Personal and telephone interviewing	24.2%	19.8%

% of CO3-4's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	CO3-4 156	Total 353
1.	Promoting international competitivness	50.0%	51.6%
2.	Speaking & Presentation	46.8%	45.0%
3.	Data base skills	46.2%	41.1%
4.	Total quality management techniques	45.5%	41.4%
5.	Analyzing key industry issues	43.6%	44.8%
6.	Promoting tech development	43.6%	41.6%
7.	Word processing skills	42.9%	40.2%
8.	Technology & business strategy	42.9%	39.7%
9.	Analyzing competitiveness issues	41.7%	43.6%
10.	Networking & advocacy	41.7%	41.6%
11.	Knowledge of other gov't programs	41.0%	43.9%
12.	Research and information management	41.0%	39.1%
13.	Management of technology	39.7%	38.2%
14.	Forming strategic alliances and partnering	39.1%	41.6%
15.	Strategic & business planning	39.1%	39.9%
16.	Knowledge of industry/sectoral issues	39.1%	39.9%
17.	Advanced tech. in manufacturing, service	38.5%	39.1%
18.	Knowledge of ISTC programs/services	37.8%	40.5%
19.	Spreadsheet skills	37.8%	35.7%
20.	Personal development and career planning	37.2%	39.1%
21.	Facilitating tech transfer	37.2%	36.5%
22.	Consulting skills	36.5%	35.7%
23.	Knowledge of environmental legislation	35.9%	38.0%
24.	Stress management techniques	35.3%	32.0%
25.	Knowledge of science, R&D issues	34.6%	33.7%
26.	Developing an industry knowledge base	32.7%	39.1%
27.	Knowledge of successful advocacy	32.7%	36.0%
28.	Knowledge of tax, trade legislation	32.7%	36.0%
29.	Negotiating with others	32.1%	34.8%
30.	International marketing	32.1%	34.0%
31.	Facilitating ind., uni., sci. collaboration	32.1%	29.7%
32.	Client data base management	31.4%	36.5%
33.	Time management	30.1%	35.1%
34.	Providing info services to business	30.1%	32.6%
35.	Promoting R&D	30.1%	31.2%
36.	Project management skills	29.5%	34.8%
37.	Managing, supervising people	29.5%	21.8%
38.	Report writing skills	28.8%	35.7%
39.	Promoting industrial development	28.8%	34.0%
40.	Interacting with industry	28.8%	30.9%
41.	Coflict resolution	28.8%	28.0%
42.	Promoting export & trade development	28.2%	31.4%
43.	Converting ISTC mandate to action	28.2%	30.9%
44.	Developing teamwork skills	28.2%	30.0%
45.	French language training	27.6%	27.5%
46.	Graphics skills	27.6%	26.9%
47.	Sources of financing	26.9%	33.4%
48.	Country specific knowledge	26.9%	31.4%
49.	Financial analysis skills	25.6%	30.6%
50.	Marketing and sales skills	25.6%	28.0%
51.	New product, process development	25.6%	25.2%
52.	Interacting with foreign corporations	25.0%	26.3%
53.	Developing & managing your client base	24.4%	31.2%
54.	Client service skills	24.4%	29.2%
55.	Delivering ISTC programs, services	23.1%	30.9%
56.	Building a key contact base	23.1%	28.6%
57.	Knowledge of govt policy process	23.1%	25.5%
58.	Acting once the plan is established	21.8%	22.7%
59.	Developing industry policy	21.2%	22.4%
60.	Commercial lending practices	20.5%	24.6%
61.	Interacting with ISTC officials	20.5%	21.5%

% of CO's Age 25 to 44 Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	Age 25-44 170	Total 353
1.	Promoting international competitivness	55.3%	51.6%
2.	Speaking & Presentation	53.5%	45.0%
3.	Personal development and career planning	51.2%	39.1%
4.	Knowledge of other gov't programs	50.6%	43.9%
5.	Analyzing competitiveness issues	50.6%	43.6%
6.	Developing an industry knowledge base	50.6%	39.1%
7.	Analyzing key industry issues	50.0%	44.8%
8.	Knowledge of ISTC programs/services	50.0%	40.5%
9.	Knowledge of industry/sectoral issues	48.2%	39.9%
10.	Networking & advocacy	47.6%	41.6%
11.	Strategic & business planning	45.9%	39.9%
12.	Promoting tech development	45.3%	41.6%
13.	Research and information management	44.1%	39.1%
14.	Negotiating with others	44.1%	34.8%
15.	Time management	43.5%	35.1%
16.	Project management skills	42.9%	34.8%
17.	Forming strategic alliances and partnering	42.4%	41.6%
18.	Technology & business strategy	42.4%	39.7%
19.	Advanced tech. in manufacturing, service	41.2%	39.1%
20.	Consulting skills	41.2%	35.7%
21.	Sources of financing	40.6%	33.4%
22.	Developing & managing your client base	40.6%	31.2%
23.	Data base skills	40.0%	41.1%
24.	Management of technology	40.0%	38.2%
25.	Knowledge of environmental legislation	40.0%	38.0%
26.	Total quality management techniques	39.4%	41.4%
27.	Promoting industrial development	39.4%	34.0%
28.	Client service skills	39.4%	29.2%
29.	Knowledge of tax, trade legislation	38.8%	36.0%
30.	International marketing	38.8%	34.0%
31.	Stress management techniques	38.8%	32.0%
32.	Report writing skills	38.2%	35.7%
33.	Providing info services to business	38.2%	32.6%
34.	Building a key contact base	38.2%	28.6%
35.	Delivering ISTC programs, services	37.6%	30.9%
36.	Word processing skills	37.1%	40.2%
37.	Interacting with industry	37.1%	30.9%
38.	Developing teamwork skills	36.5%	30.0%
39.	Coflict resolution	36.5%	28.0%
40.	Knowledge of successful advocacy	35.9%	36.0%
41.	Facilitating tech transfer	35.3%	36.5%
42.	Country specific knowledge	35.3%	31.4%
43.	Financial analysis skills	35.3%	30.6%
44.	Spreadsheet skills	34.7%	35.7%
45.	Promoting export & trade development	34.1%	31.4%
46.	Client data base management	33.5%	36.5%
47.	Facilitating ind., uni., sci. collaboration	33.5%	29.7%
48.	Converting ISTC mandate to action	32.9%	30.9%
49.	French language training	32.4%	27.5%
50.	Promoting R&D	31.8%	31.2%
51.	Marketing and sales skills	31.2%	28.0%
52.	Interacting with foreign corporations	28.8%	26.3%
53.	New product, process development	28.8%	25.2%
54.	Knowledge of govt policy process	28.2%	25.5%
55.	Commercial lending practices	28.2%	24.6%
56.	Graphics skills	27.1%	26.9%
57.	Acting once the plan is established	25.9%	22.7%
58.	Interacting with other govt. depts.	25.9%	22.4%
59.	Interacting with ISTC officials	25.3%	21.5%
60.	Helping organizations secure financing	24.7%	21.8%
61.	Personal and telephone interviewing	24.7%	19.8%

% of CO's Age 45 to 64 Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	Age 45-64 167	Total 353
1.	Promoting international competitivness	50.3%	51.6%
2.	Word processing skills	44.9%	40.2%
3.	Total quality management techniques	44.3%	41.4%
4.	Data base skills	43.1%	41.1%
5.	Forming strategic alliances and partnering	41.3%	41.6%
6.	Analyzing key industry issues	40.7%	44.8%
7.	Promoting tech development	39.5%	41.6%
8.	Client data base management	39.5%	36.5%
9.	Speaking & Presentation	38.9%	45.0%
10.	Knowledge of other gov't programs	38.3%	43.9%
11.	Knowledge of successful advocacy	38.3%	36.0%
12.	Advanced tech. in manufacturing, service	37.7%	39.1%
13.	Facilitating tech transfer	37.7%	36.5%
14.	Technology & business strategy	37.1%	39.7%
15.	Knowledge of environmental legislation	37.1%	38.0%
16.	Analyzing competitiveness issues	36.5%	43.6%
17.	Networking & advocacy	36.5%	41.6%
18.	Management of technology	36.5%	38.2%
19.	Spreadsheet skills	36.5%	35.7%
20.	Strategic & business planning	35.3%	39.9%
21.	Knowledge of tax, trade legislation	35.3%	36.0%
22.	Report writing skills	34.7%	35.7%
23.	Knowledge of science, R&D issues	32.9%	33.7%
24.	Knowledge of industry/sectoral issues	32.3%	39.9%
25.	Consulting skills	31.1%	35.7%
26.	Promoting R&D	31.1%	31.2%
27.	Promoting industrial development	29.9%	34.0%
28.	Promoting export & trade development	29.9%	31.4%
29.	Knowledge of ISTC programs/services	29.3%	40.5%
30.	International marketing	29.3%	34.0%
31.	Providing info services to business	29.3%	32.6%
32.	Time management	28.1%	35.1%
33.	Country specific knowledge	28.1%	31.4%
34.	Converting ISTC mandate to action	28.1%	30.9%
35.	Financial analysis skills	27.5%	30.6%
36.	Developing an industry knowledge base	26.9%	39.1%
37.	Sources of financing	26.9%	33.4%
38.	Personal development and career planning	26.3%	39.1%
39.	Negotiating with others	26.3%	34.8%
40.	Project management skills	25.7%	34.8%
41.	Facilitating ind., uni., sci. collaboration	25.7%	29.7%
42.	Stress management techniques	25.1%	32.0%
43.	Interacting with industry	25.1%	30.9%
44.	Marketing and sales skills	25.1%	28.0%
45.	Developing teamwork skills	24.6%	30.0%
46.	Interacting with foreign corporations	24.0%	26.3%
47.	Graphics skills	24.0%	26.9%
48.	Research and information management	23.4%	39.1%
49.	Delivering ISTC programs, services	23.4%	30.9%
50.	Knowledge of govt policy process	22.8%	25.5%
51.	French language training	22.2%	27.5%
52.	Commercial lending practices	22.2%	24.6%
53.	Developing industry policy	22.2%	22.4%
54.	Developing & managing your client base	21.6%	31.2%
55.	New product, process development	21.6%	25.2%
56.	Coflict resolution	21.0%	28.0%
57.	Managing, supervising people	21.0%	21.8%
58.	Helping organizations secure financing	21.0%	21.8%
59.	Developing literate, skilled workforce	19.8%	19.8%
60.	Acting once the plan is established	19.2%	22.7%
61.	Client service skills	18.6%	29.2%

% of Business Service Intelligence CO's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	Bus Service Intelligence 113	Total 353
1.	Promoting international competitivness	65.5%	51.6%
2.	Analyzing competitiveness issues	54.9%	43.6%
3.	Analyzing key industry issues	53.1%	44.8%
4.	Networking & advocacy	53.1%	41.6%
5.	Strategic & business planning	51.3%	39.9%
6.	Data base skills	50.4%	41.1%
7.	Word processing skills	49.6%	40.2%
8.	Speaking & Presentation	48.7%	45.0%
9.	Facilitating tech transfer	46.9%	36.5%
10.	Client data base management	46.9%	36.5%
11.	International marketing	46.9%	34.0%
12.	Forming strategic alliances and partnering	46.0%	41.6%
13.	Advanced tech. in manufacturing, service	46.0%	39.1%
14.	Developing an industry knowledge base	46.0%	39.1%
15.	Promoting tech development	45.1%	41.6%
16.	Total quality management techniques	45.1%	41.4%
17.	Technology & business strategy	45.1%	39.7%
18.	Management of technology	45.1%	38.2%
19.	Knowledge of successful advocacy	45.1%	36.0%
20.	Knowledge of other gov't programs	44.2%	43.9%
21.	Providing info services to business	43.4%	32.6%
22.	Country specific knowledge	43.4%	31.4%
23.	Research and information management	42.5%	39.1%
24.	Personal development and career planning	42.5%	39.1%
25.	Stress management techniques	42.5%	32.0%
26.	Promoting export & trade development	42.5%	31.4%
27.	Developing & managing your client base	42.5%	31.2%
28.	Time management	41.6%	35.1%
29.	Project management skills	41.6%	34.8%
30.	Knowledge of ISTC programs/services	40.7%	40.5%
31.	Knowledge of industry/sectoral issues	40.7%	39.9%
32.	Converting ISTC mandate to action	40.7%	30.9%
33.	Marketing and sales skills	40.7%	28.0%
34.	Consulting skills	38.9%	35.7%
35.	Report writing skills	38.9%	35.7%
36.	Promoting industrial development	37.2%	34.0%
37.	Interacting with industry	36.3%	30.9%
38.	Developing teamwork skills	35.4%	30.0%
39.	Client service skills	35.4%	29.2%
40.	Interacting with foreign corporations	35.4%	26.3%
41.	Spreadsheet skills	34.5%	35.7%
42.	Sources of financing	33.6%	33.4%
43.	Building a key contact base	33.6%	28.6%
44.	Knowledge of tax, trade legislation	32.7%	36.0%
45.	Negotiating with others	32.7%	34.8%
46.	Knowledge of science, R&D issues	32.7%	33.7%
47.	Promoting R&D	32.7%	31.2%
48.	Financial analysis skills	32.7%	30.6%
49.	Facilitating ind., uni., sci. collaboration	31.9%	29.7%
50.	French language training	31.9%	27.5%
51.	Delivering ISTC programs, services	30.1%	30.9%
52.	New product, process development	30.1%	25.2%
53.	Coflict resolution	26.5%	28.0%
54.	Knowledge of govt policy process	26.5%	25.5%
55.	Developing industry policy	26.5%	22.4%
56.	Graphics skills	25.7%	26.9%
57.	Acting once the plan is established	25.7%	22.7%
58.	Interacting with other govt. depts.	25.7%	22.4%
59.	Developing literate, skilled workforce	23.9%	19.8%
60.	Knowledge of environmental legislation	23.0%	38.0%
61.	Managing, supervising people	23.0%	21.8%

% of Program Delivery CO's Rating Activity as Some/Great Importance as well as Some/Great Need for Training

Rank	Base	Program Delivery 108	Total 353
1.	Knowledge of environmental legislation	50.0%	38.0%
2.	Total quality management techniques	47.2%	41.4%
3.	Knowledge of other gov't programs	46.3%	43.9%
4.	Spreadsheet skills	46.3%	35.7%
5.	Promoting international competitivness	43.5%	51.6%
6.	Speaking & Presentation	43.5%	45.0%
7.	Data base skills	43.5%	41.1%
8.	Knowledge of industry/sectoral issues	43.5%	39.9%
9.	Analyzing key industry issues	42.6%	44.8%
10.	Knowledge of ISTC programs/services	42.6%	40.5%
11.	Analyzing competitiveness issues	41.7%	43.6%
12.	Knowledge of tax, trade legislation	41.7%	36.0%
13.	Sources of financing	41.7%	33.4%
14.	Delivering ISTC programs, services	41.7%	30.9%
15.	Developing an industry knowledge base	40.7%	39.1%
16.	Promoting tech development	39.8%	41.6%
17.	Personal development and career planning	38.9%	39.1%
18.	Client data base management	38.9%	36.5%
19.	Knowledge of science, R&D issues	38.9%	33.7%
20.	Advanced tech. in manufacturing, service	38.0%	39.1%
21.	Word processing skills	37.0%	40.2%
22.	Consulting skills	37.0%	35.7%
23.	Client service skills	37.0%	29.2%
24.	Networking & advocacy	36.1%	41.6%
25.	Time management	36.1%	35.1%
26.	Negotiating with others	36.1%	34.8%
27.	Technology & business strategy	35.2%	39.7%
28.	Facilitating tech transfer	35.2%	36.5%
29.	Report writing skills	35.2%	35.7%
30.	Providing info services to business	35.2%	32.6%
31.	Strategic & business planning	34.3%	39.9%
32.	Management of technology	34.3%	38.2%
33.	Project management skills	34.3%	34.8%
34.	Promoting industrial development	34.3%	34.0%
35.	Financial analysis skills	34.3%	30.6%
36.	Coflict resolution	34.3%	28.0%
37.	Commercial lending practices	34.3%	24.6%
38.	Forming strategic alliances and partnering	33.3%	41.6%
39.	Research and information management	33.3%	39.1%
40.	Developing & managing your client base	33.3%	31.2%
41.	Interacting with industry	32.4%	30.9%
42.	Building a key contact base	32.4%	28.6%
43.	Stress management techniques	31.5%	32.0%
44.	Promoting R&D	30.6%	31.2%
45.	Developing teamwork skills	29.6%	30.0%
46.	New product, process development	29.6%	25.2%
47.	Country specific knowledge	28.7%	31.4%
48.	International marketing	27.8%	34.0%
49.	Knowledge of successful advocacy	26.9%	36.0%
50.	Promoting export & trade development	26.9%	31.4%
51.	Helping organizations secure financing	26.9%	21.8%
52.	Facilitating ind., uni., sci. collaboration	25.9%	29.7%
53.	Marketing and sales skills	25.9%	28.0%
54.	Providing financial support to clients	25.0%	17.0%
55.	Graphics skills	24.1%	26.9%
56.	Acting once the plan is established	24.1%	22.7%
57.	Interacting with other non-federal govt.	24.1%	20.7%
58.	Converting ISTC mandate to action	23.1%	30.9%
59.	Knowledge of govt policy process	23.1%	25.5%
60.	Managing, supervising people	23.1%	21.8%
61.	Interacting with ISTC officials	23.1%	21.5%

Appendix VIII

Training Courses
Recommended for COs

The main types of skills training which COs and managers have identified in this study could be broadly grouped into the following categories:

- Orientation to Government and ISTC
- Consulting, Advocacy and Marketing
- International Competitiveness and Trade
- Technology Transfer and Diffusion
- Total Quality Management
- Environmental Legislation
- Computer Training
- Communications and Interpersonal Skills
- Supervisory Management
- Business Functional Skills

In the following outline of each of the courses, we have assigned suggested time guidelines for each of the courses. To some extent, these reflect the reality that resources for training are limited and as such, many of courses can only provide overviews of many of the topics. It will be necessary to support many of the courses with additional readings, further contacts, etc. to allow officers to further develop these skills, and to modify these courses over time based on experience and changing needs. Also, with time, it may well be advisable to develop more intermediate and advanced versions of the courses outlined below, such as the courses on Technology Transfer and Diffusion and on Consulting, Advocacy and Marketing. The Department should also look for creative ways of going beyond the traditional two or three day course modules.

It should be emphasized that these are broad guidelines and that many have the potential to be extended

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Each of these is discussed below:

Course: Orientation to Government and ISTC

Intent

To orient new COs to the Department and to the public sector. Brief one-day updates to the Department's programs could be given every couple of years thereafter.

Target Group

New COs - Core course

Suggested Duration

2 day orientation to Department

Content

- Introduction to ISTC mandate, policy, programs and services
- Policy development process
- Government programs of relevance to COs
- Government procurement process
- TB submissions
- Cabinet submissions
- Talks and discussion with DM, ADMs and senior management

Commentary

The course can logically be segmented into an introduction to the Department and a general introduction to government. TB and Cabinet submissions is currently offered in a 2.5 day format by the PSC which could be accessed by those who require this more detailed course. It is suggested that this be reduced for the purposes of this orientation. Information on the Department's own programs and services could be provided by a 'reverse trade show' with the various groups in the Department providing presentations on their own services.

Course: Introduction to Consulting, Advocacy and Marketing

Intent

To introduce COs to the ISTC mandate and how it translates into success.

Target Group

Core for CO1-2s not engaged in program delivery. Primarily oriented towards COs in industry and technology. CO3-4's may also be involved or help with program delivery.

Suggested Duration

4 to 5 days. There are a number of modules which could be stretched into two segments of 3 to 4 days each depending on the amount of material covered.

Content

Internally Research Oriented:
- Translating ISTC mandate to action
- Data gathering
- Researching an industry sector
- Analyzing competitiveness issues
- Overview of trade issues
- Using information sources

Externally Consulting Oriented:
- Personal and telephone interviewing skills
- Forming strategic alliances
- Networking and client management
- Client service techniques
- Use of ISTC teams
- Use of ISTC, OGD programs
- Project management
- Time management
- Developing an industry strategy
- Presentation skills

Sourcing

The development of this training should involve extensive input of Departmental personnel. The Department may wish to develop this training internally or use outside suppliers to manage the development of the training.

Commentary

The course would be segmented into a number of modules. It would benefit highly from the addition of 2 or 3 good case studies with considerable discussion of the strategies involved. It will be important to draw out distinctions between the advocacy and consulting concept as it applies to different sectors (e.g., manufacturing, service, growing, declining, etc.) The Department may wish to segment the course into two segments of Internally Oriented Research for CO1s

and Externally Oriented Consulting for higher levels of COs. Role playing and other training media (videos, strategizing, etc.) could be introduced to demonstrate interviewing and negotiating skills, etc. The course should emphasize the use of the computer and information technology in achieving each of the modules.

Course: Promoting International Competitiveness and Trade

Intent

To provide officers with a more advanced level of consulting and advocacy focusing on techniques for improving international competitiveness from previous training and the use of successful case studies. To provide interaction with EAITC and ISTC.

Target Groups

Core for all COs in Industry and Technology and Trade. Recommended for other COs.

Suggested Duration

3 to 4 days

Content

- Techniques for analysis of trade issues and impacts on sectors
- The officer's role in analyzing and improving international competitiveness
- Identification of competitive advantages and strategies
- Case studies: improving competitiveness through technology acquisition and transfer
- Case: improving competitiveness through increasing R&D
- Case: improving competitiveness through facilitation of joint venturing and strategic partnerships
- Case: improving competitiveness through promotion of interagency cooperation (universities, research organizations, etc.)
- Strategies to develop trade
- Sources of financing including relevant funded programs and services
- Group facilitation skills

Sourcing

As with the Introduction to Consulting, Advocacy and Marketing course, this course could be developed by the Department or by outside suppliers with extensive advisory input from Departmental personnel.

Commentary

The course is closely linked with the Consulting course outlined above. This course deals in more detail with trade related issues. The COs engaged in trade development should be actively involved in course design and delivery, as should EAITC personnel to the extent possible.[1] The case study method should be used throughout.

Course: Train the Trainer

Intent

To provide COs with training to improve their own training skills.

Target Groups

Officers who will be giving training.

Suggested Duration

1 to 2 days

Course Content

- Researching the course objectives
- Researching the audience
- Alternative styles of course delivery
- Presentation skills
- Group facilitation
- Adding 'spice'
- Feedback techniques

Sourcing

The course would be purchased from existing sources or developed primarily by outside suppliers.

Commentary

The course is intended to be provided to assist officers who will be involved in delivering some of the training courses outlined above.

Course: Total Quality Management

Intent

To introduce COs to TQM techniques.

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[1]In designing this course, ISTC should consult with EAITC concerning their training programs for trade officers.

Target Groups

All COs

Suggested Duration

1 to 2 days

Course Content

- time based management
- poor-quality cost
- improvement process
- quality in marketing and production
- the improvement process
- workplace organization
- problem solving
- cycle time reduction

Sourcing

This course would have to be sourced from outside the Department.

Commentary

There was modest interest expressed by industry in TQM training. The TQM concept is being examined very extensively in industry and could potentially be useful to increase industry productivity, to improve COs' skills as well as provide a vehicle for COs to invite industry to these sessions.

Course: Environmental Legislation

Intent

To provide COs with an overview of legislation and regulations in relevant industry sectors.

Target Groups

COs involved in environmentally sensitive industries.

Duration

1 to 2 days

Course Content

- federal environmental legislation
- provincial environmental legislation

- implications for industry

Sourcing

Training would be sourced from outside suppliers.

Commentary

This type of course may be difficult to develop and deliver since it will vary from province to province. It is suggested that those who are interested should seek out relevant training at the local level. Such courses are likely to be available through local law associations, academic institutions and government agencies.

Other Training Identified

There were a number of other courses and areas which COs identified as requiring training and upgrading. To a large degree, these courses are available within the current program offering of ISTC and other suppliers. The following lists some of the course and subject areas which were identified. COs should be encouraged to take advantage of the relevant courses as much as possible.

- Computer Training

  - word processing
  - spreadsheet skills
  - data base searches
  - graphics
  - use of the computer to support advocacy and consulting

- Communications and Interpersonal Skills

  - writing
  - speaking
  - running meetings
  - negotiating
  - group facilitation
  - presentations
  - leadership training

- Supervisory Management

  - leadership training and styles
  - participative management and team building
  - employment equity issues
  - facilitator training
  - conflict resolution
  - project management and control
  - accountability

- conducting performance appraisals

• Introduction to Business Functional Skills

- strategic planning
- total quality management
- time based management
- commercial lending and financing
- joint ventures and strategic alliances
- production
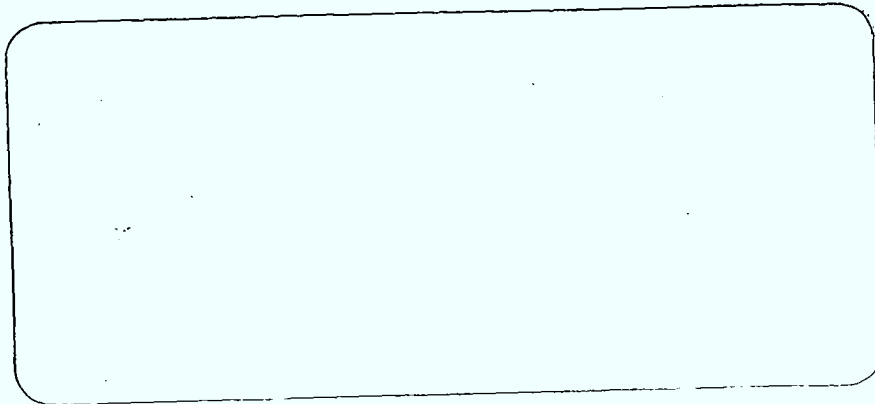- skills development
- marketing

Language Training

There was considerable interest in language training especially amongst younger officers, those in Ottawa and for career development opportunities. The Department is currently engaged in upgrading the language skills of its staff in the longer term and should continue to do so.