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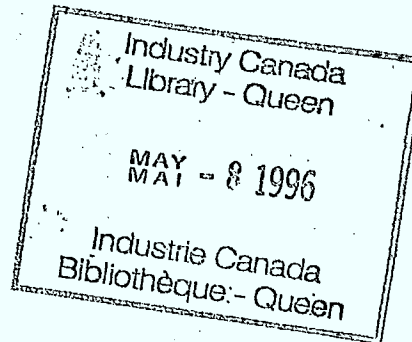


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**TOTAL QUALITY MANAGEMENT:  
REPORT ON CONSULTATIONS WITH  
REPRESENTATIVES OF SMEs**

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REPORT ON CONSULTATIONS WITH  
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## **EXECUTIVE SUMMARY**

- This report presents the results of five consultations held in Kitchener, Halifax, Vancouver, Calgary, and Québec City with representatives of small and medium-sized manufacturing companies and of two groups held in Toronto and Montréal with service industry representatives to determine the specific needs in the area of quality.
- These results are not meant to be conclusive but rather to provide qualitative information on certain issues.

## **THE ROLE OF QUALITY**

### **The Importance of Quality as a Competitive Issue**

#### **Findings**

- Quality is definitely a competitive weapon. Many firms do not necessarily recognize that quality is essential. However, several of the factors which they consider critical to the competitive success of their organization are important components of a quality orientation. For example, a service orientation, focus on the customer, and timely delivery were all frequently mentioned factors.
- It is noteworthy that small and medium-sized firms view innovation or constant research and development as a major competitive advantage but not large ones. This seems to stem from the fact that since smaller firms have more difficulty being price competitive, they earn their reputation by being ahead of the competition with new or improved products or services. This is also substantiated by the lack of smaller firms indicating that price was an important competitive factor for them.

#### **Implications**

- The first step towards quality has been taken. Organizations realize the importance of quality and its components in making them better able to compete on a local, provincial, national and international basis.
- The group results also indicate that regardless of size, companies consider quality to be fairly important. As well, even though one must be careful not to interpret these results as being representative of Canadian companies in the various regions of the country, since quality was mentioned as being an important competitive factor in most groups, one can generally conclude

that quality is considered to be equally important across the country.

- These results are of significant importance to the department in that they not only confirm that quality has become a competitive weapon, but also that Industry, Science and Technology Canada does not need to educate Canadian manufacturing and service companies as to the importance of quality in today's society.

## Requirements Regarding Quality Assurance Standards

### Findings

- Quality Assurance Standards such as ISO 9000, Z299 and AQAP are not currently widely used. The most used standards are those particular to a specific industry, standards of such organizations as the Canadian Standards Association, and government requirements (Canadian and U.S.). Some companies also follow the rigorous standards set by Ford, whereas one company devised its own in-house standards.
- Several organizations expect to be required to meet some standards in the future. The most likely "standards of the future" are the ISO standards. As well, even though firms may not expect to be required to meet these standards, the ISO standards are by far the most widely known among all standards discussed.
- It is also interesting that even though representatives of some of the companies were aware that certain standards were in place, there was a certain amount of confusion as to which ones were being used.
- It is also noteworthy that several organizations find that obtaining certification for these standards is an extremely expensive proposition, especially if one is obtaining certification from a Canadian source.

### Implications

- The findings discussed in this section have three major implications for ISTC. First, there is strong indication that firms need assistance in becoming aware of the standards, understanding them, and identifying the ones which are most appropriate to their organization.
- Second, there is a need to build the image of the Canadian organizations which provide certification services. ISTC could therefore play a role in first identifying the underlying causes to the problem, in helping the appropriate organizations improve their services and possibly in helping build the confidence of manufacturing firms in these organizations.



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- Third, ISTC could investigate the reasons for the higher certification costs in Canada and as appropriate assist in finding ways to lower these costs.

## A DEFINITION OF QUALITY

### Challenges to Improving Quality

#### Findings

- **Acceptance by the people within the organization is the first and foremost challenge to improving quality in the organizations participating in the groups.** This includes acceptance from staff and management. It includes issues related to cultural change, commitment from all levels within the organization, and many others. It is noteworthy that this category includes many who indicated that the main issue was the lack of motivation or the poor work ethic of employees.
- **Finding and keeping the right people is the second most important challenge.** This not only includes finding qualified, well educated personnel, but also keeping and training these people.
- **Money related issues are the third most important challenge.**
- **Commitment to quality by suppliers and other parties working with the organization is the next most important challenge in that it is extremely difficult to maintain quality if suppliers do not realize the importance of quality.** "Garbage in, garbage out" summarizes the concerns of organizations in this regard.
- **Balancing quality with another factor, such as price or time, is another important concern of organizations.** This also includes the ability to control the manner in which a quality system is implemented.
- **Another important challenge is finding quality "quality" consultants.** That is finding consultants with previous experience in the implementation of quality systems, who understand the industry and who will ensure that the organization is self-sufficient in managing the quality systems once implemented.

#### Implications

- The results presented in this section illustrate that ISTC could play a strong role in helping organizations deal with the issue of quality. Assistance is most required in the very early stages of setting up a system (getting management commitment, planning stage and early

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implementation stage), and providing information on the management of change (to help deal with the issue of acceptance). Such assistance could be provided through currently existing programs such as the Manufacturers Visits Program where a firm contemplating a quality system could "visit" an organization which has recently undertaken such a change.

- ISTC could also definitely play a role in helping companies deal with suppliers. This could also be accomplished through such programs as the MVP where "visitors" would discuss during a "quality visit" how the "host" organization has dealt with suppliers. It could also be accomplished through an MVP for suppliers, that is where suppliers visit another supplier who has benefited by incorporating quality in his operations. Another way could be through testimonials or case studies from organizations who have worked with suppliers to help them achieve quality. Supplier testimonials or case studies could also be used.
- Another important role for the department could be in preparing a directory of quality consultants.

### Tools Used To Assess Quality

#### Findings

- Even though several organizations did not mention any tools used to assess quality in their company, for those who did, customer feedback is by far the most used tool. This includes some very sophisticated follow-up mechanisms and some much less formal mechanisms. The two next most frequently used tools are: some form of measurement to test the product **before** it leaves the company; and some form of measurement to keep track of problems with the product **after** it has left the company (after sales tracking). Statistical Process Control (SPC) was mentioned by very few organizations.

#### Implications

- The results presented in this section demonstrate that there is a need for educating many companies as to the tools available for assessing quality. Many did not mention using any tools, while several others, while understanding that such concepts as customer feedback are important, do not have formal mechanisms in place. The knowledge of the tools available also seems extremely limited.
- The implication for the department is that, based on these results, one can see that ISTC could play a major role in raising firm awareness of tools available to assess quality.

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## Who is Responsible for Quality

### Findings

- The most frequent response to this question is that everyone is responsible for quality in organizations. The positions of individuals who are assigned responsibility for quality are scattered. People of all levels of management, in all areas of expertise are assigned this responsibility.

### Implications

- These findings demonstrate that there is a fairly good understanding among Canadian firms that quality is everyone's responsibility or that it needs to start at the top.

## Reaction to TQM Definition?

### Findings

- Most agreed with the definition presented during the groups. Some recommended adding or expanding the definition.

### Implications

- The definition proposed in the ISTC Quality Strategy Discussion Paper seems generic enough to be applied to firms of all sizes involved in any type of business. There was a consensus and common understanding of the definition.

## QUALITY IN CANADA

### Findings

- The results from the discussion groups with Canadian SMEs indicate that the great majority of companies represented at the groups rate their products as being of equal or superior quality not only to products of other Canadian competing firms but of firms in their industry globally.

### Implications

- These results indicate that Canadian companies do not truly realize the problem which they face. According to international studies, Canadian products and services are consistently rated poorer



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relative to other countries. It could be that ISTC should assist companies in finding ways of constantly being aware of the important quality attributes for their clients, and then to assist them in finding reliable ways of comparing their quality to their competitors (e.g. "Gap analysis", positioning techniques, etc.).

## WHO IS INVOLVED IN CANADA

### Private Sector

#### Findings

- There are three types of private sector assistance currently used by organizations: partnering arrangements, courses or seminars offered by private sector organizations, and consulting services. None of these are widely used at present.

#### Implications

- The companies which are currently offering partnering arrangements are very large. ISTC could therefore possibly encourage, by playing a facilitator role, an increase in these types of arrangements and try to bring smaller firms into the picture.
- Participants were not aware of many private sector courses or seminars. ISTC may have a role to play in this area.
- As mentioned previously, there is definitely a role for ISTC in preparing a directory of quality consultants.
- An important benefit of these private sector endeavours is the networking which takes place among those attending the various activities. "Quality" networking could therefore be an activity which ISTC facilitates.

### Associations

#### Findings

- Associations are used mostly for awareness activities such as seminars and workshops. The most active association seems to be ASQC, although associations per se are not mentioned that extensively. In fact, most companies did not mention the assistance of associations in the area of quality.

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Implications

- Since associations do not seem to be widely used or known, ISTC could find a role to play by possibly preparing a directory of associations involved in quality activities.
- As for the private sector activities, it seems that networking is an important aspect of the activities offered by associations.

**Academia**

Findings

- The quality activities of academic institutions are not widely known and are used even less.

Implications

- The results of the groups are fairly inconclusive in that even though it is clear that the current activities are not well known, it is not clear that there is a need for more from academic institutions.

**Provincial Governments**

Findings

- Companies are aware of very few activities undertaken by the provincial governments in the area of quality.

Implications

- The results of the groups are fairly inconclusive in that even though it is clear that the current activities are not well known, it is not clear that there is a need for more from the provincial governments.

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## Federal Government

### Findings

- The group results indicate that the activities of the federal government in quality are not widely known.

### Implications

- The results of several previously discussed sections have indicated that directories may be necessary. It may therefore be more appropriate to have an overall quality directory which would provide lists of federal government programs in quality, provincial ones, associations, consultants, etc.

## ISTC

### Findings

- No one in any of the groups was able to identify any of the services offered by ISTC in quality except one individual whose firm had used ISTC. However, once described, these programs were generally well received.

### Implications

- ISTC needs to provide more information to more organizations about its services in quality.

## ROLE OF ISTC

### Findings

- The gaps identified and areas where ISTC could play a role are in the networking or information brokering area.
- Very few firms indicated that they required assistance in the implementation of TQM, nor in actual consultant accreditation, nor in specific TQM information.

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Implications

- The results discussed in this section strengthen those of previous sections, in that ISTC's role with regards to quality is viewed as being more of a broker, networker, or facilitator. This is extremely encouraging as it reflects the direction in which the department has been moving recently. There is however evidence that the department will have to work on the effective delivery of these services, that is, the department is not effectively reaching its target population through its current quality services.

## 1.0 INTRODUCTION

This report presents the results of consultations held across the country with representatives of small and medium sized companies. Through previous consultations with business, ISTC determined that there is a perceived need for more information and services in the area of quality. The Department therefore decided to consult with its clients to determine their specific requirements in this area. Specifically, ISTC's aim was to determine:

- what SMEs think of ISTC's proposed strategy and some of its main features;
- what they think an appropriate role is for ISTC;
- what type of services and information they require and what the most effective delivery mechanisms would be for these proposed services;
- the nature of their current relationships with other organizations providing services or information; and,
- the importance with which they view quality as a competitive factor.

In total, seven consultative sessions were held in seven Canadian cities with 54 representatives of businesses of all sizes (primarily SMEs) and from a broad range of industrial sectors. The summary table presented below shows how the sessions were distributed:

Date	City	# of participants	Size of companies	Type of business
March 20	Kitchener	8	10	Rough terrain forklift for construction
			100-105	Custom injection moulding operation
			49	Manufacturer of electronic system for communications sound systems
			11	Specialized multi-layered circuit boards
			150 full-time and 100 part-time	Sales of fertilized eggs for turkey breeding

Date	City	# of participants	Size of companies	Type of business
March 20	Kitchener (continued)	8	20	Scientific instrumentation, motion analysis instrumentation
			6	Software business
			35	Manufacturer of tool pouches, industrial leather products
March 21	Halifax	6	NA	Machinery and sheet metal work for fishing and aircraft industry
			NA	Manufacturer of insulation
			300-350	Manufacturer of boxes of corrugated paper
			37	R&D of instrumentation for ocean science community
			18	Engineering and manufacturing of electrical control panels
250	Products for submarines			
March 25	Vancouver	9	114	Hydraulic components and products, rain steering systems, valves, pumps, cylinders, various special pumps for fuel control and hydraulics
			65	Manufacturer of high end bicycles
			100	Produce sausages
			15-20	Produce suits for deep sea diving
			110	Lingerie manufacturer
130	Industrial chemical manufacturer for pulp and paper and other resource based industries			



Date	City	# of participants	Size of companies	Type of business
March 25	Vancouver (continued)	9	120	Mattress manufacturer
			35	Manufacturer of medical devices for use in surgery
			35-45	Scientific and industrial electronics
March 26	Calgary	10	10	Industrial ceramic systems
			55	Digitizing and scanning
			50	Thermo electric generators
			40	Manufacturing parts for the telephone industry
			24	Bakery manufacturer, food processor, specialty products especially crumpets and English muffins
			300	Springs and related products for a broad range of heavy duty trucks, automotive and trailer parts
			130	Engineering for the telecommunications industry
			12	Manufacturer of contact lenses
			40	Design and service of audio communication systems
March 27	Toronto	3	20	Manufacture plastic houseware and do injection moulding
			NA	Dry cleaning franchise
			11	Lawn care franchise

Date	City	# of participants	Size of companies	Type of business
April 2	Québec City	7	200	Manufacturer of sound systems
			100	Technical textiles
			100	Electronics
			100	Manufacturer of base heaters
			73	Plastic household goods
			375	Door and window manufacturer
			60	Garage door manufacturer
April 3	Montréal	11	15	Import-export of all types
			200	Actuarial services
			12	Industrial vehicle exportation
			4,000	Pharmacies
			80	Informatics consulting
			5,000	Sales of electrical products to business and industry
			6	Import-export, more exports than imports
			52	Import-export of seafood products
			75	Servicing of software products
			600	Multidisciplinary consulting services
65	Technical informatics service and distribution of peripherals			
		54	6 to 5,000	A broad range of company types

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Participants were selected from lists provided by the ISTC regional offices where groups were being held or from Ottawa ISTC. Officers had been asked to provide names of representatives of companies which would be considered ISTC target companies. They were also asked to ensure that some of the names provided were from companies which had used ISTC services and that some were from companies which had never used the services of the Department.

One of the intended goals of the study was to determine whether or not the needs of service industry companies were different from those of manufacturing firms. However, it was extremely difficult to obtain a sufficient number of names of companies in this sector which could also be considered target companies. In Toronto, only three companies sent a representative. In Montréal, eleven people attended, however selection problems still prevailed. For example, three were from large organizations. As well, several were in direct competition with each other.

All sessions were held in the evenings, after work hours, and lasted approximately two hours. After each group, there was a session of between one half hour and one hour where ISTC representatives were available to provide additional information on ISTC services and to answer any queries, except in Halifax where no Departmental representative was available. Participants were offered an incentive of sixty dollars to attend the sessions.

This report presents the findings as they relate to the study objectives presented earlier. It is written to follow the format used in the ISTC Quality Strategy Discussion Paper since it is meant to provide valuable input to this paper.

Section 2.0 therefore discusses the role of quality as it was seen by the participants. Section 3.0 provides input into a definition of quality, and more precisely, Total Quality Management. Section 4.0 presents the perspective of industry with regards to quality in Canada. Section 5.0 talks about who is involved in Canada, as seen by the participants. Finally, Section 6.0 discusses the role SMEs would like ISTC to play with regards to quality.

The reader should be extremely careful when interpreting the results presented in this report in that groups such as these are meant to provide qualitative information and should not be regarded as conclusive. However, when similar issues are raised from one city to the next, one can be fairly confident that the issue is a valid one.

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## 2.0 FINDINGS - THE ROLE OF QUALITY

The ISTC Quality Strategy Discussion Paper presents the role of quality as follows:

Quality has become a competitive weapon. With the advent of Europe 1992, it will become difficult to do business in the EEC without meeting the ISO 9000 series of quality standards (International Standards Organization guidelines for quality assurance procedures). Large customers are demanding that their suppliers meet certain quality accreditation standards to relieve them from having to inspect their supplies. These demands are certain to become more stringent and wide-spread.

The consultations addressed the role of quality in the following manner:

- What are the most important factors to companies in becoming more competitive?
- Are companies currently, or do they expect to be required to meet any Quality Assurance standards?

### 2.1 The Importance of Quality as a Competitive Issue

#### Question asked

What do you consider to be the three most important factors in becoming more competitive?

#### Findings

Quality is definitely a competitive weapon. Many firms do not necessarily recognize that quality is essential. However, several of the factors which they consider critical to the competitive success of their organization are important components of a quality orientation. For example, a service orientation, focus on the customer, and timely delivery were all frequently mentioned factors.

It is noteworthy that small and medium-sized firms view innovation or constant research and development as a major competitive advantage but not large ones. This seems to stem from the fact that since smaller firms have more difficulty being price competitive, they earn their reputation by being ahead of the competition with new or improved products or services. This is also substantiated by the lack of smaller firms indicating that price was an important competitive factor for them.

Supporting evidence

The table below summarizes the responses to the above mentioned question for each city.

FACTOR	Kitchener	Hallfax	Vancouver	Calgary	Toronto	Québec City	Montréal	Total
Quality	5	3	4	0	1	3	4	20
Focus on customers	1	8	2	0	0	2	2	15
Service orientation	6	2	0	0	0	1	5	14
Innovation/ R&D	5	1	0	0	0	5	1	12
Competent labour	0	0	0	9	3	0	0	12
Product related features	2	4	2	0	0	2	0	10
Price/cost effectiveness/ value for money	2	1	1	0	0	2	3	9
Timely delivery	4	0	1	0	0	1	1	7
Features of production capabilities	0	0	1	0	0	4	0	5
Ability to compete globally	0	0	0	5	0	0	0	5
Marketing/ Exposure of firm	2	0	1	0	0	1	0	4
Ability to protect market	0	0	0	2	0	0	0	2
Ability to move fast	1	1	0	0	0	0	0	2
Dealer education	0	0	1	0	0	0	0	1

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Listed below are series of quotes which will help the reader better understand why companies feel the above mentioned features are considered to be competitive weapons.

Quality

"We sell a quality product. We look at ourselves as a custom manufacturer as opposed to mass production type manufacturing. With that viewpoint, your quality is always very good. You look at mass produced products and make sure you have better raw material basis." (Kitchener - small company)

"Heavy equipment is frequently sold by the salesmen in the kitchen with the small business operator of the company making a deal on a hand shake. But to enable him to do that the product has to be of quality and in addition, the perception of quality and perception of back-up." (Kitchener - small company)

"Probably you deal in aiming towards zero defect. We also have to try and sell quality. We sell someone 100,000 turkey eggs, he is expecting that they are not cracked when he gets them. I assume it would be like that in your company." (Kitchener - large company)

"Quality of the product. The demands are far greater now than they were 3 years ago." (Halifax)

"Quality is meeting the requirements in the eyes of the customer." (Halifax)

"The quality systems, which are in place and which have to be in place in order to sell our product to the U.S., are absolutely critical. The product design and reliability, pre-production quality assurance, must be in place at the outset. We have seen increased service activity for some components, which may have been due to the design of the product. The pre-production quality assurance aspects are becoming important." (Vancouver)

"Quality in the workmanship and fabrication is very important, especially in the garment industry." (Vancouver)

"The overall quality as perceived by the customer is the most important factor, ..." (Vancouver)

"As a bicycle manufacturing company, we have an advantage in that we assemble our products on site. Therefore, our level of error is very low, and we have control over quality before shipment." (Vancouver - medium-sized company)



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"Now under these circumstances, to be more competitive, is to try to make your service of better quality and to attract more business." (Toronto - service industry)

"We have moved ahead of our competition thanks to the quality of our product, the quality of our service. Everything we do, we try to do it well. We were in a market that was not very well organized. We therefore organized this market in such a way that we produce quality." (Québec - medium-sized company)

"For us, quality is a factor on which everything is related. When we are with engineers, professionals, architects, these people are willing to pay. Although when we sell directly for residential construction projects, then quality is less important. Price is! ... But each year, we get some good contracts with the army. With them it's the quality that counts." (Québec - medium-sized company)

"We are recognized for our top of the line, top quality products." (Québec - large company)

"For us, there are three things: first, the best quality, second, ..." (Montréal - medium-sized company)

"The search for quality is very important." (Montréal)

"The quality/price relationship." (Montréal - small company)

"The quality, the service, that's obvious!" (Montréal - large company)

"Our mandate, it is to become a partner to the success of our clients. Therefore, from the very start, we must ensure a total service and to bring it to a point where a high quality and a high level of productivity will be maintained. We also go through the whole process with them. It is our strength." (Montréal - medium-sized company)

#### Service Orientation

"In the moulding business we don't do any up-front designing. Our customer comes to us with a pre-made tool with particular specifications. We're doing what they want us to do. We're not at a design advantage that way. But they are constantly looking at things like cost reduction, service ... service throughout the whole organization, and on-time delivery." (Kitchener - medium-sized company)

"Another good point to stay competitive is support. Our system is very generic, that is, anybody can use it whether it's bionic or clinical work, bio-mechanic or bio-medical.

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That's very important because you can't develop a product or system that is the most accurate on the market meant for clinical and then meant for industrial work, such as wind tunnel." (Kitchener - small company)

"We are also very different. We deal in what we call concept sales. We sell for the long term. We sell repeat business. When we sell to a customer, we expect to sell again to them in about 6 months. So service is very key to our industry. That is what sets us apart from our competition. ... But service is probably the number one thing setting us aside." (Kitchener - large company)

"...we have to warrant them 6 months to a year and we are very lucky if there are no warranty costs in the first year. It's an acceptable thing to have problems and the client is reasonably happy if the problems are minor and some distance in between. It's usually relating to application." (Kitchener - small company)

"Another important point is the question of service." (Québec - large company)

"In our case it's the service. Electrical products are sold by several distributors. Therefore the service to clients, especially with the current economy, is very important for us." (Montréal - large company)

"I would also say that it's the service." (Montréal - small company)

"For us, there are three things: first, ..., second, a better service, and third, ..." (Montréal - medium-sized company)

#### Focus on Customer

"We know almost all our customers personally. We have very good relationships with all our customers." (Kitchener - small company)

"I think customer satisfaction, meeting the customers requirements is very important." (Halifax)

"One of our customers is the U.S. Navy and they presently have 3 suppliers and they are cutting down to two. Well, if you want something that will make you jump through a fence and through hoops and stand on your head and spit nickels, just consider yourself being the one that is going to be cut out. It's scary. So all of a sudden you find you can produce to your customer's requirements. And find out it doesn't cost that much. There is less hassle. The interface with the customer is better, there's better cooperation. It's worth remembering that they are paying you and it's very important.

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It goes right back to the design, the implementation of the concept stage. The closer you can get to your customer, the better the relationship, the better the business will be at the end." (Halifax)

"Customer satisfaction." (Halifax)

"It's consistency too. To be able to meet the requirements of our customers on a consistent basis." (Halifax)

"We need customer education. A lot of people do not understand quality. Responsiveness to customers is very important." (Vancouver)

"We are very much a market driven industry. Most times it is difficult to be proactive, we try to solve customers' problems. Our products usually arise in response to a customer problem. In terms of quality, defining what the customer really needs is one of the most difficult things to do. We are dealing with very educated customers in that they are all very large manufacturers. However, our business is a problem-oriented business, therefore, it is often very difficult for our customers to define their problems." (Vancouver)

"For products made to specifications, we must be able to take a product and to manufacture according to customer specifications. Or to simply take the performance quotes and to put a team on it to develop and build the product. This product must meet all requirements." (Québec - medium-sized company)

"In our case, an important competitive factor is our intimate knowledge of our clients. We are in the business of software service. The client expects that the person who will meet him knows what he is talking about. That the person knows the client's needs, his current problems. The client expects that we are able to, maybe not always bring the solutions, but listen." (Montréal - medium-sized company)

"Another important competitive factor is the fact that we want to bring our clients to such a high level of satisfaction that they will become our marketing force." (Montréal - medium-sized company)

#### Innovation/R&D

"In our business, there are only 70 companies worldwide. It is therefore difficult to be competitive. Less than 1% of the Canadian market is by Canadian companies. You therefore have to have name recognition, strong marketing, good product and be up to date. There you must have continuous R&D." (Kitchener - small company)

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"The key to a lot of businesses these days is staying very competitive through leading edge technology. In our business, we don't have a lot of competitors, you can count them on one hand those that are involved in motion analysis. We are continuously updating our product. Every model that goes out has changes every couple of months." (Kitchener - small company)

"Right now in our industry when we go to trade shows, we follow each other around to all the shows because we are targeted towards a very broad base of people. A lot of our competitors have stopped really making changes. We've noticed that in the last three years. They have almost become stagnant, they simply market the product. And there are so many changes that need to be done. Everybody is asking for something different. As research is getting more complicated, they want better instrumentation. We poured all our money back ever since we've been producing our very first product into the R&D of this product, and we are just noticing that our competitors have lost their edge. There is one company that has not made changes in the last 10 years. That's the key to getting ahead, and we are lucky because our competitors are standing still. It takes at least three years to get ahead." (Kitchener - small company)

"For us being a small company, innovation is very important. We have to come up with good ideas and get out to the market before the big companies." (Halifax - small company)

"For us, first of all, it's the strength that we have given to Research and Development. For the four sectors we are involved in, we really develop products to measure. Our clients therefore perceive us in that manner. We connect the client with R&D and together, the two develop a product." (Québec - medium-sized company)

"In the electro-optical environment, the price has a certain importance, but there is also technological advancement. Our clients expect that we will follow the evolution of their instruments." (Québec - medium-sized company)

"Our company has worked a lot in R&D. This has caused us to produce a product which is superior to our average competitor in terms of quality. We have a lot of competition in our sector, about 165 in the province of Québec. There is also a lot of competition in other provinces." (Québec - medium-sized company)

"The client feels he is supported, that we can see more than the machine, that we can help him manage change. Because, often we arrive with informatics innovation, or a new generation. The client is therefore confident." (Montréal - medium-sized company)

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Competent Labour

"The most difficult thing we find in terms of competing on this international market, well, is virtually endless. The quality of our people, we train our own people and we don't rely on anybody. Our employees start out as labourers and now they run part of the plant. Because you cannot get people. I think there has been a lot of emphasis placed on highly educated people, engineers, lawyers and doctors and so on, but there is absolutely no emphasis put on trades and manufacturing relies on trades people period." (Calgary)

"I think you have hit a prime topic and I'm sure that we could discuss this for two hours. It's the quality of people that we, as the builders in the country, have to deal with. It is absolutely disgusting what we are putting up with today. Nobody can make a decision or nobody will make a decision. It's hard to find decision makers. When you lack that ability to make decision, nothing happens. Education is a prime subject and dollars should be spent on how we can improve the quality of people that are available to the builders of the economy." (Calgary) [Everyone in the group agrees that finding good people is a major problem in their organization.]

"Labour is [too expensive]." (Calgary)

"... also our labour. It's one of the highest in North America. We don't have the advantage of living close to the Mexican border..." (Calgary)

"I'm going to give you an example of how big business and big labour in the U.S. is kicking the hell out of us in Canada. We saw two of the largest steel companies in Canada faced with a devastating strike this last year, Stelco and Algoma. They were out for six months. Now which country in the industrialized world will allow a strike to progress for 6 months, I don't know. But they did it here in Canada. The union allowed it and the government allowed it." (Calgary)

"Well certainly in the service business at the consumer level, labour is the number one issue. Reliable labour, also with a work ethic, and especially in the smaller communities out there, is playing a role. It does have an impact on the availability of labour. From our role as a franchiser, what influences are competitiveness internationally, is our creativity and again labour and the training of our staff in our office. There is a problem there, that what we need is key people who are well trained with experience and they are very few and far between in this country." (Toronto - large company)

"In my business, labour. Labour is one thing that we depend a lot on when we look at the competition which is outside Canada." (Toronto - small company)



"We have started franchising now instead of hiring employees for our branch stores. They don't mind working a couple more hours a day or 10 hours more a week. At least they know that it's their own business and they are in to get something." (Toronto)

Product Related Features

"In electronics design, we have 3 major competitors in North America. All in the USA. What makes our product unique is the software design which allows for easier installation. It is also easier to service. We can service diagnostically off-site, over the telephone and I think that makes a bigger difference than just being a cheaper product or system. There is value plus there." (Kitchener - small company)

"... Of course product performance is also as important [as service]. They have a good ability within our industry to evaluate us on product performance. Within that there's a whole gamut of different things as to what the product does and what can set us aside from our competition." (Kitchener - large company)

"Our frame design is also an important factor to our success." (Vancouver - medium-sized company)

"What makes us competitive is first of all the different design, not the cosmetic design, but the engineering design - the acoustics." (Québec - large company)

Price/Cost Effectiveness/Value for Money

"In the moulding business .... they are constantly looking at things like cost reduction ... " (Kitchener - medium-sized company)

"... whereas price considerations would be number two. Sales have been lost from foreign competition based on price." (Vancouver)

"... we know when we go to meet a client that our product will meet his needs, that this product is often of superior quality, at a lower price." (Québec - medium-sized company)

"In general, even with a quality product which is a little better, the client is not willing to pay the difference, because to start with, it's the price that counts!" (Québec - large company)

"For us, there are three things: first, ... and third, the best seafood prices." (Montréal - medium-sized company)



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"In the retail business, price is important." (Montréal - large company)

Timely Delivery

"In the moulding business ... they are constantly looking at things like ... on-time delivery." (Kitchener - medium-sized company)

"Our delivery is good." (Kitchener - small company)

"On-time delivery is an important factor in the bicycle industry. The orient tends to over-accept orders. Then the problem becomes how big you are." (Vancouver - medium-sized company)

"Another important point is the delivery. Compared to the others, we can deliver in small quantities specific products. Where we will take a week to deliver a product, our competitors will take 4 to 13 weeks, often because they do not keep the primary materials in stock. This advantage brings us additional costs, higher inventories. But to respond to the demand more quickly and if we don't want to start a price war, we must make war on service, that is fast delivery." (Québec - large company)

"There was a product that had arrived for Bombardier. It had to be delivered that same night, since a production line was stopped. The product was arriving at Mirabel. One employee was at the airport to bring the product to our centre-town office, and from there another employee brought the product to Valcourt, the same night. Bombardier found this to be an excellent service. That is quality service - to respect the order." (Montréal - small company)

Features of Production Capabilities

"As a bicycle manufacturing company, we have an advantage in that we assemble our products on site." (Vancouver - medium-sized company)

"Third, it is our flexibility at the production stage." (Québec - medium-sized company)

"We offer non-standard sizes." (Québec - medium-sized company)

"... we manufacture the product to the specifications of the clients." (Québec - medium-sized company)

"For the food containers, in order to be different from the competition, we try to provide different arrangements of containers, different sizes, in a package deal." (Québec)

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Ability to Compete Globally

"By terms of making it competitive, then you're getting into costs. Are you cost-effective? Are you cost-effective compared to your American counterpart in light of Free Trade? We've been exporting products to the U.S. for about 11 years now and this year we quit, we stopped. It's much more to our advantage to sell the equipment to an American processor and let him have all the headaches than us having it here and trying to sell it down there. We made a decision and sent the equipment to L.A. and the next Thursday we were in production in L.A. producing products for the American market under our name. We have no financial connections to it any more, but we sold the equipment and the opportunity to the Americans, because we couldn't do it anymore. We weren't competitive." (Calgary)

"I think we've got the technology here and we're exporting that technology and letting them build it and then buying that technology back. And paying a hell of a price for it!" (Calgary)

Marketing/Exposure of Firm

"Marketing the product is a main ingredient for success. We need to know who our target market is, and market accordingly." (Vancouver)

"In energy management, it is exposure that we give to our products, the presentation that we make to engineering consultants, that is important." (Québec - medium-sized company)

Ability to Protect Market

"The interesting part is if you look at what happened to the so called successful countries in the world, Japan, West Germany. At one point in their lives someone in the government said we're going to protect those sales. And I don't know if you know the story but even Honda who was making motorcycles wasn't allowed to make cars. The government wouldn't allow them to get in there, because they wanted to make sure that Toyota and Nissan could get strong first. When they get strong enough and can compete on the world market then we open up the borders to some extent at least to let work people get into it. We go exactly the opposite direction. We keep tearing down our barriers, in other words, the protection that we had and let people bring in as much as they want and sell it for as cheap as they want to. We are at a disadvantage in Canada because everything we buy has to come from long distance and this especially in Western Canada..." (Calgary)

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"... Up until recently we had a certain tree protection of 13.5% for furniture into Canada. That was the duty. What can I do now, I can't get it any cheaper so you still have to do your research and development but it makes it harder and harder to do that."  
(Calgary)

Ability to Move Fast

"Our whole basis for doing the business was to embark on something that wasn't available that was incredibly fast turnaround compared to what the market was offering at the time. It is still our key component, what makes us go." (Kitchener - small company)

Dealer Education

"Dealer education is considered important. Annual technical seminars across Canada are held with the dealers. This information is intended to be passed on to customers."  
(Vancouver - medium-sized company)

Implications

The first step towards quality has been taken. Organizations realize the importance of quality and its components in making them better able to compete on a local, provincial, national and international basis.

The groups results also indicate that regardless of size, companies consider quality to be fairly important. As well, even though one must be careful not to interpret these results as being representative of Canadian companies in the various regions of the country, since quality was mentioned as being an important competitive factor in most groups, one can generally conclude that quality is considered equally important by firms across the country.

These results are of significant importance to the department in that they not only confirm that quality has become a competitive weapon, but also that Industry, Science and Technology Canada does not need to educate Canadian manufacturing and service companies as to the importance of quality in today's society.

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## 2.2 Requirements Regarding Quality Assurance Standards

### Question asked

Are you currently, or do you expect to be required to meet any Quality Assurance standards such as Z299, ISO 9000, AQAP or others?

### Findings

Quality Assurance Standards such as ISO 9000, Z299 and AQAP are not widely used at present. The most used standards are those particular to a specific industry, standards of such organizations as the Canadian Standards Association, and government requirements (Canadian and U.S.). Some companies also follow the rigorous standards set by Ford, whereas one company devised its own in-house standards.

Several organizations expect to be required to meet some standards in the future. The most likely "standards of the future" are the ISO standards. As well, even though firms may not expect to be required to meet these standards, the ISO standards are by far the most widely known among all standards discussed.

It is also interesting that even though representatives of some of the companies were aware that certain standards were in place, they was a certain amount of confusion as to which ones were being used.

It is also noteworthy that several organizations find that obtaining certification for these standards is an extremely expensive proposition, especially if one is obtaining certification from a Canadian source.

### Supporting evidence

This question was only asked to the representatives of the five manufacturing groups. The next few tables present the results to the above mentioned question for each standard, by city.

**ISO 9000**

Company's position	Kitchener	Halifax	Vancouver	Calgary	Québec	Total
Currently manufacturing to these standards	0	0	0	0	1	1
Expects to manufacture to these standards in the future	1	1	4	0	1	7
Is aware of these standards but did not mention expecting to manufacture to these standards in the future	3	1	4	0	0	8
Is not aware of these standards	4	5	1	10	5	25
<b>Total</b>	<b>8</b>	<b>7</b>	<b>9</b>	<b>10</b>	<b>7</b>	<b>41</b>

**Z299**

Company's position	Kitchener	Halifax	Vancouver	Calgary	Québec	Total
Currently manufacturing to these standards	0	1	0	0	2	3
Expects to manufacture to these standards in the future	0	0	0	0	0	0
Is aware of these standards but did not mention expecting to manufacture to these standards in the future	0	2	0	0	0	2
Is not aware of these standards	8	4	9	10	5	36
<b>Total</b>	<b>8</b>	<b>7</b>	<b>9</b>	<b>10</b>	<b>7</b>	<b>41</b>

**AQAP**

Company's position	Kitchener	Halifax	Vancouver	Calgary	Québec	Total
Currently manufacturing to these standards	0	0	1	1	0	2
Expects to manufacture to these standards in the future	0	0	0	0	1	1
Is aware of these standards but did not mention expecting to manufacture to these standards in the future	0	2	1	0	0	3
Is not aware of these standards	8	5	7	9	6	35
<b>Total</b>	<b>8</b>	<b>7</b>	<b>9</b>	<b>10</b>	<b>7</b>	<b>41</b>

**OTHER STANDARDS**

Company's position	Kitchener	Halifax	Vancouver	Calgary	Québec	Total
Currently manufacturing to these standards	1	1	2	5	2	11
Expects to manufacture to these standards in the future	2	0	0	1	0	3
Is aware of these standards but did not mention expecting to manufacture to these standards in the future	0	0	2	0	0	2
Is not aware of these standards	5	6	5	4	5	25
Total	8	7	9	10	7	41

Listed below are series of quotes which will help illustrate the use/non-use of various standards. There are also some quotes to illustrate the confusion regarding standards, as well as some where the exorbitant price of certifications are discussed.

Use/non-use of standards

"We're getting to the ISO 9000 standards. We are looking at gearing up our system to meet that within the next couple of years. Right now we have basically a generic type of quality system that would satisfy most of our customers." (Kitchener - small company)

"I am not as familiar with those standards [ISO]. What we are gearing towards is more the safety standards CSA. I know CSA is heading towards matching Europe, because Europe is a very strict standard..." (Kitchener)

"Our trade association keeps us informed of the action in the Europe 92 and the standards they are adopting. In general, we've all been working to the American National Standards Institute standards in the construction equipment business. The European seem to be even more safety conscious, more protection of the worker, more protection of the equipment operator and his environment. Of course our organization is dominated by big guys like Caterpillar, John Deere, Case, so they try to influence the Europeans, to the degree that they can with their European plants, to have their standards closer to American standards. But in general, they seem to have gone overboard on safety devices and gimmicks, which gives the perception that the product is safer." (Kitchener - small company)



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"CSA approved panel shop electronics products are built under quality control Z299.3."  
(Halifax - small company)

"We recognize that there isn't that much business in the Maritimes and if you want to grow you must expand your horizons. The problem with that is meeting all the different requirements of the different countries. They all have a set of requirements that they feel are the best. With the ISO 9000, the Europeans have put some teeth in that spec and there are no Canadian companies who would not be able to reach the requirements if we knew what they were and how we are going to get certified. I think that we all could eventually reach the world market by getting our mitts on this ISO 9000 and meet the requirements." (Halifax)

"The ISO 9000 spec is nowhere as stringent as AQAP." (Halifax)

"We wanted to improve the image of our white board, to compete with styrofoam is mega bucks. We generally have a poor reputation with people because of poor quality. People trying to produce a cheap board with no certification or nobody looking over our shoulder. So we went to CGSB to help them to work with us. We found them really helpful in putting a certification program into effect. I think we are one of the few insulation products that are certified." Question: "Do you advertise your certification?" Answer: "Yes we do. But we don't feel that it does a lot of good. CGSB advertises it too and tries to make the consumer aware of the benefits of buying, same as CSA. The public awareness is a big factor." (Halifax)

"I may be giving my age away, but I helped write Z299." (Halifax)

"For our firm, having a documented, certified, maintained and audited quality program, is positively outstanding. I have worked in other companies three or four times larger than the one I am working for, and most of them had problems keeping their human resources and administrative policies documented. To my knowledge, we are the only one in the electronics industry which has this designation. International markets are geared to ISO quality standards, but once people understand our program, and our commitment to the program, they accept our standards. In terms of international quality standards, we are keeping abreast of the impacts of EC 1992. We do sell our product in European markets." (Vancouver - small company)

"Ford has excellent quality assurance programs. We were invited to attend a seminar in Memphis on Ford practices. Those invited were informed that if they wanted to be Ford suppliers in the next three years, they would need to be Q101 certified, and continue to improve. We had already started on our statistical process control program. We have a good influence from our parent corporation and we had some resources to

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work on the program. But the Ford program gave us a highly quantifiable program on benchmarking, questionnaires, and evaluation where you could bring a Ford inspector, independent inspector, or anyone from our company to score and upgrade the company accordingly. We were the first manufacturing company in Western Canada to receive Ford Q101 standards last year. We are now aiming to receive the Ford Q1 standards, which are very high, by June of this year. I strongly recommend this program." (Vancouver)

"A large part of our business is in pulp and paper. We are concerned with EEC 1992, anything entering the EEC must be ISO certified. That filters back to the suppliers." (Vancouver)

"There are ISO standards, but a company can have their own equivalencies if the customer agrees with the standards. In some cases, standards are mandatory but it is still at the customer's discretion whether they will accept the standards used by a company." (Vancouver)

"In the medical manufacturing sector, there is no need in Canada to have quality assurance standards. However, companies manufacturing medical supplies generally sell to the U.S. which does have standards which companies have to meet. Canada is thinking of implementing standards." (Vancouver)

"There are so many quality standards programs: ISO, Ford, government programs. Yet, they are almost identical, there are only minor differences between them." (Vancouver)

"I think you are going to find that people are going to move to the standards. People used to develop their own software they couldn't find but now they would rather go out and buy a package because in order to develop something worthwhile having, it would cost them a lot more to build and to maintain. It's the same with quality systems. People adopt ISO because ISO is looking after it. We are talking about mammoth corporations who right now have the ability and resources to generate their own quality programs. But most of us don't have that luxury." (Vancouver)

"You were saying some other stuff. For example, this CSA vs UL. We are talking about quality. The first time that we started to work with UL, naturally I was new to the game, and I had a few problems. And people from UL called us in and told us what the problem was and what to do about it and helped us. From CSA, it's a yes or no answer and that's it! You don't get any service whatsoever." (Calgary)

"In the aviation industry, quality has to be No. 1. Currently, we follow some quality manuals as dictated to us by Transport Canada. When we're getting into manufacturing

and supplying equipment to the military we can say to them: we make a quality product and here it is. And then they are going to come back and say: that looks fine but what else can you show us? That's why we are starting to implement a quality program AQAP-1. With that it will give us the ability to standardize a system that can be audited at any time by the industry. That's very important." (Calgary)

Question: "Do you have a quality program in your company?" Response: "Yes we do. We use Ford's Q1." (Calgary)

"We are doing a job for Hydro-Québec and we must conform to Z299.4." (Québec)

"We work with ISO because we must sell to Europe." (Québec)

#### Confusion regarding standards

Question: "What sort of standards are ISO 9000?" Answer: "All sorts of standard, I think." Question: "Are they applicable to any industry?" (Kitchener)

"I think our problem is being aware of these things and not being afraid of them. I don't believe quality is free." (Halifax)

Question: "The point that I was trying to raise is who certifies? What assurance does your client have that you are running a good shop?" Answer: "None." Response: "None, exactly." (Halifax)

"But would it not be useful if there was an agency that was worldwide recognized that he could go to. And that agency has had a look at your company and is prepared to say yes we know that company and we know they have a good quality assurance program?" Response: "This is what this AQAP and these other sorts of international standards can do for you." (Halifax)

"Take CGSB. Now, they have a little thing on the little square that says it's going to be recognized all over Canada, and if you see this on a product it's CGSB certified. But we're trying now to get into the world market and that little mark that's known by 10% of the people in Canada is not going to mean much to someone in Mexico or something. But if there was some kind of a world or, within limits, an international certification program that would send people around to certified plants on a pay as you go basis, as we pay CGSB, which is quite a bit of money." Response: "Well, that's where the ISO comes in. But the ISO 9000 is mainly the European market, but it's a lot of countries." (Halifax)

"The question is the future of Q101 now. And also we do some military work and I don't remember the number but we have military standards to comply with." Question: "Was it AQAP-1 or AQAP-4?" Response: "I'm trying to remember!" (Vancouver)

"We have to meet Z299 standards, but we are also trying to keep our quality assurance program so that it can conform to AQAP-4. However, AQAP-4 is a program for which I am asking myself some questions. We are wondering if, with time, AQAP-4 will not balance with ISO. We are therefore wondering whether we should keep AQAP and bring in ISO. But if AQAP falls with ISO, what will happen to Z299? We therefore have a lot to think about in that area. Right now, the client demands Z299. The fact that there are these 3 norms, we wonder if at one point, it won't lean one way or if we won't be stuck having to live with all 3. If we want to go to the European market, we have to think seriously of ISO. ..." (Québec City - large company)

"Our product meets the standards of CMHC which has different levels: B1, B2, B3, B4. In order to always be ahead, we are working towards new ones: B5, B6." (Québec - large company) *Note: There was a need to clarify the standards the person was referring to (SCHL - the French acronym for CMHC). It was uncovered that CMHC does not have standards. The CMHC building code however indicates that the CSA (B1 to B6) standards must be met. One should therefore assume that this individual was referring to CSA standards.*

#### Cost of obtaining certifications

"... The one challenge with getting all these international standards is that there are so many different standards and they cost a lot of money because they have to be approved by a certified group within our continent to do that kind of testing. Some of the testing costs \$10,000, just to get one stamp on them. If you are considering competing in the international market and you look at all the different standards you need to meet just to ship them over to that country, it comes to a lot of money." (Kitchener)

"Because our industry is supplying large telephone companies and the military and so on, we need to have CSA approval and a UL. Because of the United States market we concentrated on UL. CSA wasn't that important to us because lots of local telephone companies do their own testing. Now they came out with a regulation that we must have a CSA approval. You have certain norms to meet and take it to be approved and tested. They tell us we can't do that, we must go to the states to do that, you have to fly out people so they can watch your test. I asked how much is that going to be? He said \$65,000. The same test in UL cost me \$35,000. Now, starting companies, who can afford it? So how can you stay in business?" (Calgary - small company)

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"In the food processing industry, we seem to have set up a lot of good government food labs and technology centres and even federal centres here in Calgary. But when it comes to a problem, we ran into a problem with FDA when it came to the testing. It's far cheaper for me to have the product shipped to the U.S. and have it tested because there is nobody here that can do it with the speed and accuracy and other factors that you want done in that testing. You just can't get it done here." (Calgary - small company)

### Implications

The findings discussed in this section have three major implications for ISTC. First, there is strong indication that firms need assistance in becoming aware of the standards, understanding them, and identifying the ones which are most appropriate to their organization.

Second, there is a need to build the image of the Canadian organizations which provide certification services. ISTC could therefore play a role in first identifying the underlying causes to the problem, in helping the appropriate organizations improve their services and possibly in helping build the confidence of manufacturing firms in these organizations.

Third, ISTC could investigate the reasons for the higher certification costs in Canada and as appropriate assist in finding ways to lower these costs.

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### 3.0 FINDINGS - A DEFINITION OF QUALITY

The ISTC Quality Strategy Discussion Paper presents a definition of quality as follows:

Total Quality Management, is a management practice, or "philosophy", that means involving all aspects of the organization in an orientation toward the customer, defining quality in terms of the value that the end user perceives, building partnerships with both suppliers and customers, and managing the organization to support the goals of quality and its effort to ensure customer satisfaction. Involvement of all employees, visionary leadership, team orientation and human resource development are all critical to the success of TQM. In its simplest terms TQM means to find out exactly what your clients want and deliver it to them with the least amount of waste; the ultimate combination of efficiency and effectiveness.

The groups dealt with the issue of defining quality in the following manner:

- What are the challenges to improving quality?
- What tools are used to assess quality?
- Who is responsible for quality in their organizations?
- What is the reaction to the paper's TQM definition?

### 3.1 Challenges to Improving Quality

#### Question asked

What are the top three challenges to improving quality in your company?

#### Findings

Acceptance by the people within the organization is the first and foremost challenge to improving quality in the organizations participating in the groups. This includes acceptance from staff and management. It includes issues related to cultural change, commitment from all levels within the organization, and many others. It is noteworthy that this category includes many who indicated that the main issue was the lack of motivation or the poor work ethic of employees.



**Finding and keeping the right people** is the second most important challenge. This not only includes finding qualified, well educated manpower, but also keeping and training these people.

**Money related issues** are the third most important challenge.

**Commitment to quality by suppliers and other parties working with the organization** is the next most important challenge in that it is extremely difficult to maintain quality if suppliers do not also realize the importance of quality. "Garbage in, garbage out" summarizes the concerns of organizations in this regard.

**Balancing quality with another factor, such as price or time, is another important concern of organizations.** This also includes the ability to control the manner in which a quality system is implemented.

Another important challenge is **finding quality "quality" consultants.** That is finding consultants with previous experience in the implementation of quality systems, who understand the industry and who will ensure that the organization is self-sufficient in managing the quality systems once implemented.

#### Supporting evidence

The following table summarizes the responses to the above mentioned question for each city.

Challenge	Kitchener	Halifax	Vancouver	Calgary	Toronto	Québec	Montréal	Total
Cultural/ attitudinal change/mind set issues	2	4	2	4	1	3	1	17
Training issues	0	4	5	1	1	0	0	11
Money issues	2	1	1	0	0	3	1	8
Issues with suppliers	3	0	2	0	0	1	1	7
Qualified people	0	0	2	3	0	0	1	6
Staff empowerment issues	0	1	2	0	0	0	2	5
Morale/ turnover issues	3	0	1	0	0	0	0	4



Challenge	Kitchener	Halifax	Vancouver	Calgary	Toronto	Québec	Montréal	Total
Management commitment	0	2	0	1	0	1	0	4
Finding quality consultants	0	0	0	4	0	0	0	4
Price/quality balance	0	0	0	0	0	3	0	3
Prevention vs detection	3	0	0	0	0	0	0	3
Controlled implementation	0	0	0	0	0	2	0	2
Growth issues	1	0	1	0	0	0	0	2
Internal coordination	1	0	0	0	0	1	0	2
Having objective measures	0	2	0	0	0	0	0	2
Time/quality balance	0	0	1	0	0	0	1	2
Consistency	0	0	1	0	0	0	0	1
Getting a system in place	0	0	1	0	0	0	0	1
Time consuming	0	0	1	0	0	0	0	1
Providing the right tools	0	0	0	0	0	1	0	1
Adapt system to Canadian culture	0	0	0	0	0	1	0	1

Note: The total number of responses in each group may add up to more than the total number of participants. This is due to the fact that each participant could provide more than one challenge.

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Listed below are series of quotes which will help the reader better visualize why, or in what ways, companies feel the above mentioned are challenges to quality in their organization.

Cultural/attitudinal change/mind set issues

"One of the biggest things that we run into within our own organization is convincing everybody of the need for quality. There is still that mentality that if they do it wrong they can always catch it later. Sometimes, that's a barrier and the whole thing has to be supported. Everybody within the industry has to overcome that barrier. Quality is everybody's job." (Kitchener)

"I found that there was a better quality when we didn't call the end of the line as a quality control department. Everybody is their own quality control. At the end of the line we have final tests. As the product goes down the line it's in different assembly stages and people sign off on certain jobs. If there is an area that fails it comes back to that person. That eliminates a lot of problems. Psychologically, the whole secret of the thing is to make everyone quality control conscious." (Kitchener)

"You have to invest up front. The benefits at the back far exceed your investment, not only a cash investment but an attitude investment and a philosophy investment. You have to accept it and you, as leaders of the company, have to be able to say it doesn't meet the specifications." (Halifax)

"Mind set or getting the person on the floor to react to that requirement is critical." (Halifax)

"The cultural attitude change that has to take place and making sure it takes place is one of the biggest challenges. In our business, we mass produce cartons and it has to meet a certain specification plus or minus a certain variation. And we make waste, and the attitude has always been to see if we can peddle it at 10% cheaper. That's a lot of crap! You can't do that anymore. ..." (Halifax)

"One of the more important things I have to strive for is to get my staff proud of what they are producing or involved in the same attitude that I have about being proud of the product that is going off the floor." (Vancouver)

"Being a start up company, if you come in with a quality assurance program right off the bat, I think your chances of getting a good grasp of it and making things work are much better than for some of us old buggers who are putting out fires and then have to decide to do it. Number one, your people are adverse to change. No matter what you want to do, they fight back. But this comes back to our education system. In Japan,

if that employee is told that this is going to change, they accept it. Here, they threaten to form a union because they don't like what you're doing." (Calgary)

"It's an attitude question." (Calgary)

"We find the same problem too when you try to implement it from day one. We have people who work for us that have been working in the industry for a long time and just trying to get them to change from day one is difficult." (Calgary)

"Our quality is really a big issue because we have difficulty sometimes with our franchisees and the kind of quality that they give. People who are franchisees do not have the same attitude as the franchise or the businessman. They want to be an entrepreneur but they need that safety net. ..." (Toronto - large company)

"For us, the biggest problem with quality is the sensitization of the personnel. The resistance to change. It is there that we must start. ... It is the sensitization because there are people working for us who should never work for us. It is hard to tell employees to pay attention for this reason. The boys are just there for their unemployment insurance stamps! That is our biggest problem." (Québec)

"There is always the question of resistance to change. It is hard to tell someone who has been doing it a certain way for 15 years that he needs to do it a different way. Often half my job is psychology, and the other half technical." (Québec)

"I agree that there is a need for change in philosophy where employees are concerned." (Québec)

"Everything is based on the quality of service and on how to make employees become conscious of this. We are in a sector where turnover is extremely high, 40% of our employees will work for us for less than two years. We must therefore, in a very short period of time, give them a quality approach, a client approach which will permit them to produce at their maximum in a very brief period of time." (Montréal - large company)

#### Training issues

"Everybody recognizes that we must do more training and more continuous training. We have a pretty well trained work staff as it is but they have to be trained in a lot of the quality issues, the SPC and that sort of thing. There is a very good feeling amongst the workforce about this. ..." (Halifax)

"We're basically in the same boat. It's more difficult to train in unionized shops and that's because you are crossing over job descriptions that have been signed off by the company and the union. And you get into all sorts of arguments." (Halifax)

"We are also looking at training for our customers and for people who work for our customers. Some of our products may seem complicated for some people in the field. Therefore we have to educate our customers and educate the people so we can eliminate 90% of the complaints." (Halifax)

"Training." (Vancouver)

"I have to support the idea of staff education." (Vancouver)

"We wanted to start with the manpower program to train the people." (Vancouver)

"And then training the people into this [QA] system. It's been such a free spirited thing for the last three years, it'll be very difficult." (Vancouver - small company)

"We're getting close to 100% quality output and basically I agree with some of the things mentioned as far as basic training in this country for people on the level that we have to rely on for the workforce. We have to concentrate more on training within our area and more school, more education and more disciplines and the focus of specific types of training. That's lacking and especially in Western Canada." (Calgary)

"In manufacturing you really can only train the people. If the government had the training for everybody like in Europe and have apprenticeship, it would be different. But it doesn't exist for every job in this country." (Toronto - small company)

#### Money issues

"One area where we also have problems is the capital intensive nature of catching a lot of the problems. Our equipment is extremely accurate and to purchase equipment with similar accuracy to test the optics out and to test a lot of the mean components in the system is very capital intensive. That's a big burden when the margins aren't that high because you're dealing with other people from the states and their part costs are a lot less." (Kitchener - small company)

"Capital is a big concern for us. We're a highly intensive research type company, we need a lot of dollars." (Kitchener)

"Ours is a funny case. Every piece of equipment is custom calibrated and we are the ones that are coming up with the equipment to calibrate this kind of instrumentation because the tools used to test and check with are of the same accuracy as our systems. So we have to use a lot of tools that are better than the tools that are available and that's where all the capital comes in. It's very expensive not knowing what you have to do to achieve that result. You have to put out a lot of money into it. And we do this with a lot of our suppliers of custom parts. We help them define the measuring standards."  
(Kitchener)

"Capital costs." (Vancouver)

"The biggest difference between the small and the large enterprise is that the large enterprise has unlimited funds. Money has no importance to them. Therefore, if they need professionals, they hire some. And if they make a mistake, it's not that bad. They don't have profitability problems. The SME has to be profitable. We have shareholders, bankers, unions watching us. Everyone is watching us! We can therefore not engage ourselves as much in quality control or even in new product development. We have two engineers working full time for this. We spend in total \$200,000. That is a lot of money for us!" (Québec)

"It is at this stage that we need government. For example, I have often used CRIQ and CRIQ is very important to us. We have used other subsidy programs. We have also often used the CEGEP, they have people in electronics. I think that it is this type of resources that are important; for what the large enterprise can pay but which we can't."  
(Québec)

"Therefore, more and more, all along the line, we ensure that the products are reliable. Pair reviews must be continually made. It is not obvious that we always have the time or the budget, but it is our wish to do it." (Montréal)

#### Issues with suppliers

"Their vendors who were supplying them the parts caused it to fail. We were buying that part and it was failing in our product." (Kitchener)

"We also have problems with our suppliers of material, especially fabrics. They know it's quite common in the garment industry. One is delivery, almost never on time. Another is flaws in the fabrics." (Vancouver - large company)

"The ongoing problem we are encountering is supplier education and particularly in the Orient. We're really quality conscious here, the workers in the Orient are paid not on

quality but on volume. They don't care if the welding is dented or the degree of alignment is out. ... It's an ongoing education process where we have our designer go to the Orient and educate them." (Vancouver - medium-sized company)

"We have suppliers. If I want total quality, my suppliers must conform to our standards. We therefore provide our suppliers with our requirements. We use a lot of vinyl. It is unbelievable to see the companies in this sector. They have no quality!" (Québec)

"We export merchandise. We deal with other parties, like banks, insurers, transporters. If these other parties are not up to our high standards. If, for example my bank takes three days to respond to a letter of credit, I then cannot give my client the quality he expects from me, because it is out of my hands. I can't change the bank procedures. The insurer takes three months or three years to pay a claim. We can always change the insurer, but usually we have long term contracts with them. These are therefore things we cannot improve, we know there are problems, and all we can do is scream!" (Montréal -small company)

#### Qualified people

"Our biggest problem are the qualified people." (Vancouver)

"My opinion of it is that quality is hard to implement in our society in some ways. There isn't the education for it, there isn't the pride of workmanship that there is in other countries and that certainly comes across in their products." (Calgary)

"A lot of the lack of education in the hard sciences and the lack of education in the trades, well, if it wasn't glamorous [in the Trudeau years]. It was a lot more glamorous to spend your youth bouncing around youth hostels than spending your time in school. That's the price we're paying today and we're paying very dearly." (Calgary)

"For us it's the technical competence of our professionals. The big challenge is to have the technical competence which is up-to-date, because our services are offered to the management of companies." (Montréal - large company)

#### Staff empowerment issues

"The issue here is making sure the staff feels in power and will have the backup, that if they make a change it's been thought through and they're congratulated for it." (Halifax)



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"Our biggest problem, and it's been mentioned before, is integrating quality back in the whole thing. We are fortunate enough that no product goes out the door unless it meets our specifications. And we have the ability and luxury to do that, and we have the ability to rework some of the products. However, it's the awareness in really getting the quality responsibility out of the hands of the few and into the hands of the many, and have people really understand that. That is our biggest challenge." (Vancouver)

Morale/turnover issues

"When you're rushed for a delivery, it's not always easy to keep your workers' attitude 100%. Keeping the morale up in the factory is very important to keep quality high. You can't always be rushing them so you must keep a really good tempo everyday and you shouldn't be fast one week and slow another. With a very constant flow, we find that our quality remains high." (Kitchener)

"You have to have the happy people on the floor because I've been in so many places where I've seen these guys that are paid peanuts or don't get a decent raise, or whatever management does to aggravate them. And if management just stood back and said, I didn't give the guy the \$300 raise he wanted, but then the guy destroys \$500 worth of product one day and the manager doesn't even know about it. Let's communicate in that respect. That's very important." (Kitchener)

"That [happy people] will not only produce quality but also productivity. And productivity is the real key which will allow you to produce higher wages for the people. That can in fact be a circle, not a vicious circle but the other type of circle." (Kitchener)

"Staff turnover is a real problem. It's really hard to find good people whether they are trained or not. If they're trained, it's a bonus. If they're not, you have to train them so they understand the concept of quality and so that everybody speaks a common language. That costs money. You just have to hope that you are getting long term employees and that they are going to stick around for a while." (Vancouver)

Management commitment

"... The supervisors and some of the management have to take a hit pretty soon and tell the people in the plant that we mean business. The operators want this. They've been asking for this kind of leadership for a long time and being able to take part in decision making. Give them the tools to work with, give them the specifications and let them run their machines and they'll do a good job. But people are getting in the way of that, the supervisory group and some at top management." (Halifax)



"... The downside is that there is some scepticism on their [employees] part. Is management really going to do something about it this time? It's not a terrible challenge. It's not hard to do, it's not terribly expensive, it's necessary. It should be the last that you should cut if you're in a budget cutting situation. As a matter of fact, you should never cut if you are going to stay in business. So I think our management group has recognized that!" (Halifax)

"We're a small manufacturing company for 14 years set up in a very small town. Rumours fly around faster than news come out of the paper. So you have a lot of the attitudes from the small towns as well. But we started this program with a very conscious eye to this attitude, of every worker and every person. We focused intensely on the president and next down, next down; we worked from the top down. We hit a point where we accelerated too fast and the thing we noticed is that people want more job satisfaction. Going back to our managers, they really don't know the rules of quality and they don't know where to turn to find out." (Calgary)

"... But I think that the biggest change needs to take place at the management level, at the level of the owners, of the CEOs." (Québec - medium-sized company)

#### Finding quality consultants

"We are currently trying to implement a quality program and once you go through the hoops to decide that, yes, you want or don't want quality, you soon arrive at: what are we going to put in? How does it look? And, what do we need to do? And at that time we decided we needed help, we want some consulting expertise. We found one outfit that was quite helpful but we were unable to find locally somebody who had put in a program in a company similar to ours. So in other words we are sort of the guinea pigs for this consultant. He is doing a very good job but, it's hard to judge because you've never gone through this process before." (Calgary - medium-sized company)

"We found the same problem as you did. First you have to find a consultant to assist you with it and then you have to find a good consultant as well. We have a Canadian QA [consulting firm] in Calgary. They haven't been established in the market place but they have good reputable people working with them and they developed our program with us and we feel we have a very strong program." (Calgary)

"We really don't know what we are talking about when we want to put something together. Therefore we go out and hire consultants. Are we really able to tell if we are getting good advice or if we are getting a snow job from that consultant?" (Calgary)

"You see, usually you cannot afford it. For example, our problem was that we started thinking about quality control and so on but we are a unique industry. There are only two companies in the country that produce our product. So, where do you turn for these things. We don't really want to deal with our competition, so we go to the U.S. to get the help. Because here, in Western Canada, a lot of the consultants you find are related to oil or some other industry that has nothing to do with manufacturing. So you have two choices, Toronto or the U.S. For us here it's California, it's a lot closer and cheaper." (Calgary)

Price/quality balance

"What is difficult in our area, is that you have buyers who buy for the price and others who buy for the quality. You can't make two types of windows. When you are developing and investing in R&D, you don't have a choice. At one point, you must sell for a price and for a quality." (Québec - large company)

"Right now in the construction market it is extremely difficult. We have some competitors who had a price difference of 18% lower than us, it [quality] therefore becomes extremely difficult." (Québec - medium-sized company)

"There is always the question of profitability. That's normal. That's why the price becomes more important than the quality." (Québec)

Prevention vs detection

"I must admit, I keep saying that we must get out of this detection mode and more into a prevention mode. But we're not there yet! We're still in a detection mode. We are trying to change that though." (Kitchener)

"You try to plan your manufacturing in a preventive manner. But when you're manufacturing something that you've never done before and you don't know whether your equipment is capable of doing it. For us especially since we do deal with the R&D sector. There's nothing we can plan, all we can do is try to keep our own present processes as fine tuned as possible and then try to apply that to what we are dealing with. Then you go through a learning curve." (Kitchener)

"I think the key thing you said was the learning curve. You develop something and it takes time to find problems. ... It takes time for problems to come out. Another issue is that you expect the people who do the job for us to be up to that level of technology and sometimes that can be frustrating because you are searching for help outside the company. And that's a learning curve as well, you go to somebody, they are learning

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at the same time with your product." (Kitchener)

#### Controlled implementation

"These quality programs are not things we can develop on our own. We do not have in our firms, like the big ones such as Hydro-Québec, professionals who can establish programs and prepare action plans. Us, the smaller ones, we rely on 1 or 2 people already working for us. We send them to seminars in Montréal, given by the Japanese. We therefore find a way to start, but we always start on the wrong foot because we do not have any planning and we trust people. It is not that the people have bad intentions, but we start and go to total exaggeration." (Québec)

"When we have a new program, whether it's the just-in-time, total quality, etc, I find that we jump in too quickly in all that, we have not planned anything, we have no organization." (Québec)

#### Growth issues

"We noticed a big difference in our quality when our company grew. It's so easy to manage and make sure you've got a good quality product going out the door when it is small, because everybody has a sense of pride in every part. I think once we went over about 15 people quality started going down. The sense of responsibility goes down and then you have different perceptions of quality, and that's hard to manage once you grow." (Kitchener - small company)

"I'll tell you, your best bet is to get that thing documented and get it now! Because if your products are good and you start to take off, you think it's hard to put that [QA] system in now, wait till you're 5 times as big. You're in for real trouble." (Vancouver)

#### Internal coordination

"We sometimes talk about internal and external customers and that every division of the company is an internal customer, a customer of someone else within the company. All too often we direct everything towards the external customer but we forget about the people on the floor and that the research department is a customer of the breeding [turkey] program, etc." (Kitchener - large company)

"What people are not always conscious of is the internal coordination between the departments. Sometimes we have problems getting purchasing to remember that a less expensive part may give us problems. It is hard to explain to production that if they want to change something in the design, they should speak to engineering. ..." (Québec)

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Having objective measures

"That power has to be in the hands of the people that are running the machines. They must have judgement of course. One of the problems now is we're in sort of a catch up situation with getting the proper specifications to them and in limitations that they can live with. There is a lot of subjectivity in our company right now and we must get rid of that and put objective things in front of them that they can measure by." (Halifax)

Time/quality balance

"... But now, we are trying to keep our inventory to the minimum without hurting the production or the good response times that we have. We have a quality control department and one thing they do is, basically trying to balance the situation by checking the output from production and returning everything to be fixed on their own time. Again, it's the whole story of trying to balance this. On one hand you're trying to push to get things out faster but keep the quality as high as possible." (Vancouver - large company)

Consistency

"One of the things that has been a struggle for us, is in the early days, when we started with nothing and then worked up to answer our customer requirements and pass our supplier audits, it was great going. But keeping the drive going and making sure in the face of restructuring and new staff and additions, just keeping that going is enough of a chore in itself. People forget that with quality that's just the first stepping stone and the companies that are successful are able to keep on maintaining this." (Vancouver)

Getting a system in place

"Our challenge is to get a system in place. A recognized system which would help us right from the design. Because we're a young company, we need that whole system. We have the documents and records, they're just scattered all over the place. ... So a QA system would help us get things organized so things would cost us much less to build." (Vancouver - small company)

Time consuming

"Don't kid yourself about the amount of time and effort it can take to set up a system like that [QA]. The system was virtually in place when I joined the company but I reviewed all of the records that it took to actually put the system in place. I would say about one to two man years went into documenting all that stuff. We've got procedure

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manuals for every department for sales, human resources, production which has a procedure for everything that you can imagine." (Vancouver - small company)

Providing the right tools

"One of our problems is that we expect a lot of the quality department. But we are not always prepared to provide the right tools, to make the efforts which are required. We are prepared to make the efforts we feel are suitable, but not necessarily the required efforts." (Québec)

Adapt system to Canadian culture

"The problem with total quality for a lot of Québec companies is that it was a philosophy, a management principle which came from Japan, with a Japanese culture. Nobody took the time to adapt this principle to the North American culture. The boss was therefore required to change his philosophy and so were the employees. We ask two groups to radically change at the same time, instead of adapting this principle to the North American culture. It is good to have quality principle, but we cannot integrally apply everything that is done in Japan here." (Québec)

Implications

The results presented in this section illustrate that ISTC could play a strong role in helping organizations deal with the issue of quality. Assistance is most required in the very early stages of setting up a system (getting management commitment, planning stage and early implementation stage), and providing information on the management of change (to help deal with the issue of acceptance). Such assistance could be provided through currently existing programs such as the Manufacturer Visit Program (MVP) where a firm contemplating a quality system could "visit" an organization which has recently undertaken such a change.

ISTC could also definitely play a role in helping companies deal with suppliers. This could also be accomplished through such programs as the MVP where "visitors" would discuss during a "quality visit" how the "host" organization has dealt with suppliers. It could also be accomplished through an MVP for suppliers, that is where suppliers visit another supplier who has benefited by incorporating quality in his operations. Another way could be through testimonials or case studies from organizations who have worked with suppliers to help them achieve quality. Supplier testimonials or case studies could also be used.

Another important role for the department could be in the preparation of a directory of quality consultants.

### 3.2 Tools Used To Assess Quality

#### Question asked

What tools do you use to assess quality in your company?

#### Findings

Even though several organizations did not mention any tools used to assess quality in their company, for those who did, customer feedback is by far the most used tool. This includes some very sophisticated follow-up mechanisms and some much less formal mechanisms. The two next most frequently used tools are: some form of measurement to test the product before it leaves the company; and some form of measurement to keep track of problems with the product after it has left the company (after sales tracking). Statistical Process Control (SPC) was mentioned by very few organizations.

#### Supporting evidence

The following table summarizes the responses to the above mentioned question for each city.

Tools	Kitchener	Halifax	Vancouver	Calgary	Toronto	Québec	Montréal	Total
Customer feedback	4	4	0	1	3	2	3	17
Production testing measures	1	0	1	0	0	4	1	7
After sales tracking	1	0	2	2	0	2	0	7
SPC	1	1	0	0	0	1	0	3
Quality audits	0	0	0	0	0	1	0	1
Cannot do it	0	0	0	1	0	0	0	1
Don't know how to do it	0	0	0	1	0	0	0	1
No tools mentioned	1	2	6	7	0	0	7	23



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Listed below are series of quotes illustrating the use of the above mentioned tools.

Customer feedback

"We have used surveys that worked excellent for us to find out what our customer thinks of our quality. We did one that was specific to our company itself asking, what do you think of our service, what do you think of our people, quality, defect levels. It was very good. I think someone mentioned benchmarking before, and blueprinting and gap methods of what you think and what is actually happening in the field." (Kitchener)

"Every time we send our customers a shipment, we ask our customers to send us back a reply within the first week with regards to specific things about our product." (Kitchener - large company)

"With my customers, I ask for constant feedback. Good or bad, because I want to find out about it as soon as possible. Because if I have a problem but I don't know about it, I can't do anything about it." (Kitchener)

"Our attitude is, we have to have satisfied customers and that, by the way, is how we judge quality. Our customers are satisfied." (Kitchener - small company)

"Customer feedback. It's informal." (Halifax)

"When something is shipped, the quality manager has to send a shipping release form. In so doing, he then triggers something in his daytimer to call that customer about the shipped product. And there is a standard list of questions to be asked over the phone or fax. He then takes that and the results and, if there is anything that needs follow up he does it then passes it back to Marketing with the report of how satisfied the client was." (Halifax)

"What we do is contact the customer by phone or fax and ask if there are any problems. I would like to improve on that system in order to get more feedback, use a questionnaire." (Halifax)

"... We do customer satisfaction surveys. We come out extremely well in our business. I think 80% of our products are considered the best available in North America. And a lot of the time what's available in North America is also available world wide because it comes from every corner of the world. So we have lots of ways of measuring." (Calgary)



"Our customers will tell us if we offer a good or bad quality service. We hear from the buyers and retailers, etc. We do get feedback from them. We also have private people calling in, that buy these things from department stores, and say, you make excellent products, which stores carry it now, and so on. That's how we find out if we're doing something wrong with our product." (Toronto - small company)

"It's only been the last couple of years that we've introduced something really formal. The first step was focus groups, kind of similar to this, with customers. We started on our corporate franchise and gradually, to pick regions and do focus groups. Another level that we have is customer cards. We leave them with the dealers and they hand them out with the service and it's just how do you like the service, were the people friendly, etc. The only other mechanism that we've put in is spot checks at the franchisee level. With that, we request that they call, but it's not formal or anything, and we spot the customer. They do all the complaint calls themselves, then delegate it to their managers for follow-up." (Toronto - large company)

"Actually our return customers are a sign of our quality. We do get complaints once in a while. Sometimes we ask our customers that if there is anything that they are not happy about they let us know. Because if we don't know, we will not be able to correct the problem. We do get compliments once in a while and these customers will refer relatives or friends to come to our stores for their cleaning and alterations. This is how we know that our quality is good or that we are improving or we are having problems." (Toronto)

"Outside, normally once every two years, there is a perception study done by an independent firm. They uncover the selection criteria of the client and how the client evaluates our competition. This gives us exactly the selection criteria of the client." (Québec - medium-sized company)

"It is more from the customer comments, their expectations that we will see a need to improve." (Québec - medium-sized company)

"We have quality circles with our customers. We bring them together for a cup of coffee. We ask them what we are doing well, less well and what we can do to do better. Sometimes this is unpleasant, but sometimes we receive compliments which do us good." (Montréal - large company)

"In fact, the contact with the customer is extremely important. In our field, we pay a lot of attention to asking our clients if they are satisfied with our service." (Montréal - large company)

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"Our clients tell us. Our volume of business." (Montréal - small company)

Production testing measures

"It's something that we can't easily do. Assessing quality of software is interesting because you can't tell when you are going to find a bug in it. Some can get very obscure. Essentially you are going to produce a program that is going to work and then you test it for some period of time during which time you find bugs and after that you put it in service and hope that nobody else will find any bugs. So quality comes with bug finding. I can't put my finger on what I use for doing it." (Kitchener - small company)

"We use X-rays, measurements and pressure testings. So it's easy to check our stuff." (Vancouver)

"We have tools of measure. We measure a lot of things. We measure our scrap, our labour, we measure our labour constantly, and almost to the penny for most of our products. We measure the yield of every work order out of the plant. ..." (Calgary - large company)

"For the quality, we have people responsible for that who go to the warehouses, take a product and bring it to us. We have machines to do checks. We can create wind, rain, cold or heat. Since we have been doing these checks, we have improved tremendously." (Québec - medium-sized company)

"We produce in large quantities. When we put a mould on a press, it is for a minimum of 250,000 units. Therefore, the control is done at the start of production, until the product is perfect. Once this break in period is over, and the product is perfect, there are no more controls. Once the production of 250,000 units starts, there are very few controls in place." (Québec)

"We have two reports, production rejects, and complaints." (Québec)

"We also have several quality measures which are reported to the management. We try not only to look at scrap, but to also look at the accomplishments, like how a catastrophe was avoided. For example, one of the boys sees something wrong on the line. He stops the batch and we save 2,000 products. Now that's an accomplishment! We try to post the number of accomplishments." (Québec)

"The government inspectors tell us. They came to visit us and they told us that they did all the U.S. and that we were the neatest. We are therefore satisfied with that."

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(Montréal - medium-sized company)

After sales tracking

"It's the final test area. It used to be called the quality control but it is the final test area. Nothing goes out the area without them seeing it and final testing it. Also if there is a customer complaint, they get the problem and they deal with them in the service department. And it's registered and tracked back into production if in fact it is a production problem." (Kitchener)

"But there is always some problem and end up rejecting 60%. There's been so many arguments about this, is this good enough? Those are the hardest ones to deal with. If it's a measurement issue, it's black and white, no problem." (Vancouver)

"... We do warranty analysis ..." (Calgary - large company)

"We have the after-sales service because for the first year, our services are warranted. We therefore have a lot of information that comes from there. ... Every time we have an after sale service, everything is entered on a computer. Therefore, each month, a report is provided. Then after sales service, production and R&D meet and from that products are improved." (Québec - medium-sized company)

"... For our complaints, there is a scale of 0% to 100%. All our complaints are classified with the problem encountered. In production, we always work from the biggest problem to the smallest. Take for example if 40% of complaints are for one problem. The next year, this will usually go down to 2%. We rotate and that is how we can improve." (Québec)

SPC

"I think one of the tools of the trade today to ensure quality is the use of SPC - Statistical Process Control. From there you can see where you are in your process. You can monitor two ways. You can monitor product or process parameters. And the name of the game today is to reduce any variation that you get and SPC will help you do that. You can also fine tune your processes as well. An SPC is more of a production tool, it's not a quality tool per se. To me quality is not making the best part that you can make, to me, quality is to make a repeatable part, time after time again in the cost that you are allowed to do it with, and to try and shrink that variability, your range. So that the customer is always getting a constant product." (Kitchener)

"We have been around a while and we have some suppliers now that were with us the very first year. We are under TQM, SPC, continuous improvements, and all those buzz word programs and we are at a point where we want the suppliers to provide us with SPC charts so that when the material comes in it goes straight into stock rather than a full blown receiving inspection. And some suppliers that we have been with for a long time are saying that it's going to cost us more. There are too many businessmen from the old school." (Halifax)

"For our products, we have a quality control system with a Statistical Process Control, etc." (Québec - medium-sized company)

Quality audits

"We do our own internal quality audits. We also submit to some by our clients." (Québec)

Cannot do it

"But that's what I was saying. In our field you can't do that [measure], because we don't deal with man made materials, we deal with natural materials. The quality of our material varies from day to day. ... It doesn't work that way because it's not man made material, you can do that with a sheet of steel but you can't do that with an oak tree. There's no control as to where the knot is or the crack is or how big the board was." (Calgary)

Don't know how to do it

"I don't know how you measure that." (Calgary)

Implications

The results presented in this section demonstrate that there is a need for educating many companies as to the tools available for assessing quality. Many did not mention using any tools, while several others, while understanding that such concepts as customer feedback are important, do not have formal mechanisms in place. The knowledge of the tools available also seems extremely limited.

The implication for the department is that, based on these results, one can see that ISTC can play a major role in assisting firms become aware of the tools which are available.

### 3.3 Who is Responsible for Quality

#### Question asked

Who is responsible for quality in your company?

#### Findings

The most frequent response to this question is that everyone is responsible for quality in organizations. The positions of individuals who are assigned responsibility for quality are scattered. That is, people of all levels of management, in all areas of expertise are assigned this responsibility.

#### Supporting evidence

The table below shows the distribution of responses to the above mentioned question for each city.

Responsible	Kitchener	Halifax	Vancouver	Calgary	Toronto	Québec	Montréal	Total
Everyone	2	4	1	1	1	2	5	16
Production/ operations mgr	0	0	0	0	0	3	1	4
Quality mgr	0	2	0	0	0	0	1	3
Plant mgr	1	0	0	0	0	1	0	2
Account representative	0	0	0	0	0	0	2	2
Engineering department	1	0	0	0	0	0	0	1
Owner	0	0	0	0	1	0	0	1
Control people	0	0	0	0	1	0	0	1
R&D mgr	0	0	0	0	0	1	0	1
Management	0	0	0	0	0	0	1	1
Personnel director	0	0	0	0	0	0	1	1
Customer service mgr	0	0	0	0	0	0	1	1

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Since most responses only served to identify the position of the person responsible for quality, the above table is self explanatory. However, the following quotes are interesting.

"In my organization the person responsible for quality is the foreman that runs the machines, it's the managers as it reflects back on them, and then it reflects back on me, the owner. Therefore, I go around myself, checking, constantly." (Toronto - small company - owner)

"I am the person responsible. In operations like ours it is fundamental. That is why I took over the responsibility of quality at the organizational level. More specifically in the operations, we go through the production manager and the manager of R&D. They are also responsible for quality control. The two managers work together. We don't really have anybody who is specifically responsible for quality. It is management and all the employees who are responsible for quality, because we really involve them. But fundamentally, people know that I am responsible for quality. I am a Chartered Accountant by profession." (Québec - medium-sized organization - general manager)

"According to our organizational chart, I have the authority where quality is concerned. Practically speaking, however, I try to say that it is the employees, the people at the bottom of the chain who are responsible for quality. I only show what a good job they are doing. In general, I try to be transparent, except when things are not going the way I would want them to. I have the last word in terms of quality, but I never say it unless it needs to be said. I am an electronics technician by education, I have no quality training." (Québec - medium-sized organization - Quality Assurance manager)

#### Implications

These findings demonstrate that there is a fairly good understanding among Canadian firms that quality is everyone's responsibility or that it needs to start at the top.

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### 3.4 Reaction to TQM Definition?

#### Question asked

Total Quality Management (TQM) has been defined as "a management practice, or philosophy, that means involving all aspects of the organization in, in simple terms, finding out exactly what clients want and delivering it to them with the least amount of waste; the ultimate combination of efficiency and effectiveness." How do you react to that?

#### Findings

Most agreed with the definition presented during the groups. Some recommended adding or expanding the definition.

#### Supporting evidence

The following series of quotes illustrate the level of agreement with and understanding of the above mentioned definition. They also show how some participants would like to expand or add to the definition.

#### Understanding of definition

"I guess what it means is that it encompasses everything from every part of your business, from answering the telephone to shipping the product out and that quality should be like a feeling that everybody has." (Kitchener)

"I agree with that basically. It's a company wide thing. It's a philosophy and attitude. It has a lot to do with waste reduction and serving the customer." (Halifax)

"We have a phrase in our company which says TQM is answering the phone before the 3rd ring. When the product guys are thinking about that it gives you a concept that goes throughout the building, from the person at the reception desk right through." (Halifax)

"Absolutely! It's essential! Just one thing to give you an example. We're a job shop and because of that, we have just worked out one area that was causing us a lot of grief. The salesmen of course are always eager to book sales so they'll go out and solicit customers and the customer will come back and say, OK we'd like you to quote on this, and they'll give us a DOC pack. We'll go through it, we'll come up with the building material, the labour and parts estimates, our own margin, give them back a quote and we'll quote 25 weeks after receiving the order. Now that can change a little bit, given



the state of the market, how long it takes them to reply, but a lot of customers will come back and say, well, the price is good and I know you make good quality, but I really need it in 20 weeks. And of course the salesman will jump in and say, sure, 20 weeks, no problem! But the materials people are saying no, I'm sorry, there's three part ones here that are 25 weeks and you can't change that. But the salesman has already accepted the order and it puts you between a rock and a hard place because if one measure of vendor performance is on time delivery or if they have a critical market window and they miss it, this creates all kind of grief. So Total Quality Management has to involve everything, even marketing guys have to buy into the quality system." (Vancouver)

"There's all the soft costs too. Total quality means everything. How many times did you have to retype that letter. You wrote it out, gave it to the secretary, but she couldn't read your handwriting so it came back wrong. Now it has to be corrected. That's a non conformance, that's a waste of productivity." (Vancouver)

"Total quality, in its infancy; is to do your work well. Sure, the first time, that's ideal. But before you can get to it, there are a lot of steps to take. Everyday we must move ahead, gain time." (Québec)

"In your definition, only the first sentence is important: a management philosophy to satisfy a client. The rest is not really applicable to the North American management style, because this style places more importance on quantity, cost and profits." (Québec)

"High quality entails high costs." Other participant: "No, not at all. When you say that, it is like comparing a Mercedes to a Volkswagen. With the Mercedes, you pay for excellence. Whereas with the Volkswagen, you pay for a lot at a low price. But that is what the client wants, a car of very good quality." (Québec)

#### Additions to definition

"It's a philosophy that has to begin with the top dog down. If it's not supported at the top you are not going to get anywhere." Other participant: "Yes, that is critical as well. That really has to be shown too." (Kitchener)

"It should be added: to the customer's satisfaction." (Halifax)

"There is an element missing in the definition. If we distinguish between quality management and quality control, then to quality management or to the definition you just gave, we must add that the quality manager is the one who must put in place the procedures, because the procedures are very important, no matter what the organization

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is and no matter how it's done. This can be done at any level. Quality management is to put in place procedures. After that, you must control quality. To have procedures will not make it better, but we will be able to blame someone who has not respected the procedures. But if we do not have procedures, everything is done lightly. It is therefore important to add this to the definition." (Montréal)

Implications

The definition proposed in the ISTC Quality Strategy Discussion Paper seems generic enough to be applied to firms of all sizes involved in any type of business. There was a consensus and common understanding of the definition.

#### 4.0 FINDINGS - QUALITY IN CANADA

The ISTC Quality Discussion Paper presents the results of a number of international studies. These studies indicate that, with a number of notable exceptions, Canada, and particularly our SMEs, is not very advanced with respect to the quality of its products and services compared with other international competitors.

##### Question asked

How does your company compare to others in your sector regarding quality?

##### Findings

The results from the discussion groups with Canadian SMEs indicate that the great majority of companies represented at the groups rate their products as being of equal or superior quality, not only to products of other Canadian competing firms, but of firms in their industry globally.

##### Supporting evidence

Not everyone was willing to discuss this question. In Calgary and Montréal, no one answered the question adequately (i.e. the answers they provided were not directly related to the question but served more to illustrate success stories in their companies, or problems the organizations were facing). The table below therefore summarizes the answers of those few who were willing to discuss this issue.

Self evaluation	Kitchener	Halifax	Vancouver	Toronto	Québec	Total
The best/better than our competition	4	1	1	2	2	10
As good as our competition	1	2	0	0	0	3
Average	0	1	0	0	0	1
There is room for improvement	0	1	0	0	0	1
Don't know	1	0	0	0	1	2

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The following quotes illustrate why respondents categorized their companies as such.

The best/better than our competition

"I would like to think that we're better than our competition in Canada. I have no doubt in my mind that we are superior to our American competitors. We have to be." (Kitchener)

"I believe our workmanship quality is superior to our competition throughout North America because we are a very small company. We don't have assembly line techniques. We have very qualified individuals who take the product from the ground up. They become quality conscious of the parts leading up to them, and of course we do inspect parts from our vendors. The quality of our finished products is a function of what we do plus what our vendors supply us." (Kitchener)

"Our firm, in the insulation line is considered to be the best in Canada. Part of the reason is that we don't have to cheapen our product because if you're shipping, we are at an advantage. ..." (Halifax)

"For our firm, having a documented, certified, maintained and audited quality program, is positively outstanding. I have worked in other companies three or four times larger than the one I am working for, and most of them had problems keeping their human resources and administrative policies documented. To my knowledge, we are the only one in the electronics industry which have this designation." (Vancouver)

"There isn't a problem, internally in Canada, with competition. We really are the only true national company in our business. Certainly as far as the expertise in the field, we even do consulting with the University of Guelph which is the only college in Canada that does a significant amount of turf research. So when all is said and done, I think we are probably the best lawn care company in Canada if not in North America." (Toronto)

"In our sector, there are two types of quality that we must look at. The quality of the appearance of the product is superior to that of our competitors. As for the technical quality, we are much more advanced." (Québec)

As good as our competition

"Comparing with other Canadian companies, it's difficult to tell. The fact is we couldn't stay in business at all unless we were [as good as the best]." (Kitchener)

"We are probably in the top 10. But in terms of productivity, we are probably in the top 5. Being a small firm in this business we will probably get ahead as we don't have all the red tape and bureaucracy the big companies have. We can move a lot quicker and make decisions faster. I'm pretty pleased with our progress so far and it should pick up from here." (Halifax)

"... As far as the insulation business goes we are top of the line but with the fibreglass products, we haven't been at them that long, so other companies are just as good or better." (Halifax)

Average

"I would say that we are probably average. When we were a smaller firm with limited resources, we ran a R&D stage. A lot of emphasis was on that but now that the product is starting in the market, we are starting with distributors and turning more attention to customer service and quality control. We are average, but we are looking to be better than average." (Halifax)

There is room for improvement

"We believe in the adage that there is always room for improvement in our products." (Vancouver)

Don't know

"The problem, often, is to define quality. According to certain schools of thought, quality is respecting the contractual agreements. Therefore, in this case, everyone does quality since if they don't meet contractual agreements they will close. Sometimes however, quality is what we consider important. If I consider it important that when my client calls, I have immediate and competent technical support, then I can say that I have better quality than my competitor. However, maybe it's because my competitor does not consider this to be important. The problem is that we are not certain if the client considers this quality factor important. Therefore, when I look at what I consider important as quality factors, I think that we are better or equal to our competitors. The problem is that I would like to know what my competitors think?" (Québec)

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Implications

These results indicate that Canadian companies do not truly realize the problem which they face. According to international studies, Canadian products and services are consistently rated poorer relative to other countries. As indicated by the last quote presented, it could be that ISTC should assist companies in finding ways of constantly being aware of the important quality attributes for their clients, and then to assist them in finding reliable ways of comparing their quality to their competitors (e.g. "Gap analysis", positioning techniques, etc.).



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## 5.0 FINDINGS - WHO IS INVOLVED IN CANADA

The following sections describe the activities of each of the following types of organizations:

- Private Sector;
- Associations;
- Academia;
- Provincial Governments;
- Federal Government; and,
- more precisely, ISTC.

Each section describes what is presented in the ISTC Quality Strategy Discussion Paper, then describes the group participants' knowledge of the activities undertaken by these groups.

The questions asked were:

- What is your relationship with customers regarding quality requirements? any partnering arrangements? any quality improvement assistance?
- Customers aside, who else has played a role in providing you with information or assistance with respect to quality? What role have they played? Have you been satisfied? Why/why not?

### 5.1 Private Sector

#### Discussion paper

One of the most effective drivers of quality improvement is the influence large corporations have on their suppliers. This has been particularly true in the automotive, aerospace and telecommunications sectors. Corporations are building closer relationships with fewer suppliers based on dependable quality. Many of these same corporations are working closely with their suppliers to assist them in implementing quality programs. Opportunities may exist to share their methodologies with others through case study reports, speaking engagements at conferences and seminars, "Quality Partnering" and visitation programs.

Findings

There are three types of private sector assistance currently used by organizations: partnering arrangements, courses or seminars offered by private sector organizations, and consulting services. None of these are currently widely used.

Supporting evidence

The table below summarizes the use of private sector assistance for each city.

Service used	Kitchener	Hallfax	Vancouver	Calgary	Toronto	Québec	Montréal	Total
Partnering arrangement	1	2	2	0	0	2	2	9
Courses or seminars	1	0	0	1	0	1	0	3
Consulting services	2	0	0	5	2	1	1	11
No private sector assistance mentioned	4	5	8	4	1	3	8	33

Listed below are series of quotes illustrating the use of each type of assistance.

Partnering arrangement

"If you deal with the automotive as a second tier supplier. So the people that come in and audit us on our system and quality, don't only come in to have a look at your products and your systems without suggesting ways to improve upon your system. They'll say fine, what you're doing is OK but maybe you could be doing it a better way. One time it used to be that they played the cop and robbers approach with their supplier. But now they are willing to work with the supplier because the end result is that you will get a better product." (Kitchener)

"My biggest help came from Stone Containers Corp. in Chicago. They've been at this type of quality systems since 1981. They're actually third owner of our company. They have enormous resources in terms of education and training and all kinds of stuff and I was fortunate enough to spend several weeks with them in the Chicago area and visit some plants. I went through SPC training, they had a full-time quality manager. That's where I got my biggest boost. And we correspond with each other all the time as well

as with other people I met on the same course. This networking type of thing has been enormously helpful. Saves a lot of time and it's very supporting." (Halifax)

"We're in pretty much the same boat as you except it's not one of our owners it's one of our customers. Like I said, we're implementing this TQM system and I see it as a 5 to 6 year program. They've hired a U.S. consultant and this guy comes into our company on Monday morning and leaves for back home on Saturday morning. He's paid by our customer, once a month for a week. And he is driving a program for us like you wouldn't believe. It's fantastic! Again, supplied by our customer, the U.S. Navy. But everybody else is benefiting. We build buoys for the Canadians, they get the spin offs. Otherwise whenever we hear of anything we send out for it. Literature, magazines, new programs." (Halifax)

"Ford has excellent quality assurance programs. We were invited to attend a seminar in Memphis on Ford practices. Those invited were informed that if they wanted to be Ford suppliers in the next three years, they would need to be Q101 certified, and continue to improve. We had already started on our statistical process control program. We have a good influence from our parent corporation and we had some resources to work on the program. But the Ford program gave us a highly quantifiable program on benchmarking, questionnaires, and evaluation where you could bring a Ford inspector, independent inspector, or anyone from our company to score and upgrade the company accordingly. We were the first manufacturing company in Western Canada to receive Ford Q101 standards last year. We are now aiming to receive the Ford Q1 standards, which are very high, by June of this year. I strongly recommend this program." (Vancouver)

"We do sell to a company called Freightliner Corporation which produces large trucks. It is a fairly large company, about \$300M in Burnaby and \$600M in Portland. We service the Burnaby branch and for the third year in a row we have won its quality assurance award. It means quite a bit to our company. Winning this award results in a newspaper publication for our company. The company is very large, and we have been one of three Canadian companies which has been able to attain this award." (Vancouver)

"One of our large customers, we're actually quite lucky, because most of what we make will eventually go through an additional process. This customer has a lot of resources and what we are finding is that they're actually partners in quality with us. That's the approach they want and the approach I wanted too. On a weekly basis I get faxed reports of any failures. The [electrical] boards, after we've discussed the problem, will be sent back where our internal process can look over them to see if maybe our test is not quite as thorough as theirs, maybe there is something we need to change to improve

our process. They will also send me detailed statistics and pie charts. Every month, I get this big report. It's fantastic, because I can use that as a tool. SPC is great but sometimes it's a little more difficult until people have had the training to implement it. And this is probably the best form of motivation and process control. Because from this customer, you can see the failure rate. It started last fall at about 12%, it's now less than 1% and it's heading for zero. And I put that one up on the wall. They gave me that historical graph and I just went, WOW, there you go people! And they were just walking on air for weeks. Very useful." (Vancouver)

"GM, Mercedes, etc. have worked with us on a regular basis, 3 or 4 time a year. Even the Japanese come and we discuss their problems. We also do it with our suppliers." (Québec - large company)

"People like Hydro Québec come to see us. They know that we can do something, but sometimes they don't like a little something. They therefore ask us to fix it. We do it. We do the same thing with our suppliers." (Québec - medium-sized company)

"We follow the procedures of these clients. Because the procedure which Domtar has imposed on us, we now impose it on all our clients. We therefore have a better follow-up with each one." (Montréal - small company)

#### Courses or seminars

"I attended a couple of seminars through GR Technologies in Toronto. One of these was Total Quality Management systems. You develop a contact base to keep your fingers in the pie." (Kitchener)

"The reason we got started on quality was that I attended a seminar a couple of years ago called Manufacturing in the Nineties. I thought, well this will be great, I'll go see what's what in production and how to get out more generators per day. Well after a couple of hours it turned out to be a meeting on quality. It was totally new, it brought up this Europe 92, I'd never heard of it before. We started talking about things like if a package says we warranty this 6 months, that's an admission to failure. Instead people want to see, this was made to a standard, so all these ideas started to come out of this thing. And I went away thinking, well now what? Soon I learned that if we were going to look into robotics, we were told that if you don't have a good system in place it doesn't matter. You automate to increase your productivity, but all you'll have is an automated mess, you'll make junk faster." (Calgary - small company)

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Consulting services

"... We have hired outside consulting groups to help us with productivity. We are presently waiting for our QA manual and procedures manual. We've also hired outside people to do training. I mentioned SPC before. We put a lot of people through in house training and also back into a retraining program with another consulting group." (Kitchener)

"We've used some outside consultants, private businesses and that sort of thing and through them they put us through other sources that help other companies. I think we've done pretty good with the people we have in house. They've had meetings together with other companies that they work with and we discussed solutions and case studies. Be we haven't really exploited any government assisted programs." (Kitchener - small company)

"We are currently trying to implement a quality program and once you go through the hoops to decide that, yes, you want or don't want quality, you soon arrive at: what are we going to put in? How does it look? And, what do we need to do? And at that time we decided we needed help, we want some consulting expertise. We found one outfit that was quite helpful but we were unable to find locally somebody who had put in a program in a company similar to ours. So in other words we are sort of the guinea pigs for this consultant. He is doing a very good job but, it's hard to judge because you've never gone through this process before." (Calgary - medium-sized company)

"We found the same problem as you did. First you have to find a consultant to assist you with it and then you have to find a good consultant as well. We have a Canadian QA [consulting firm] in Calgary. They haven't been established in the market place but they have good reputable people working with them and they developed our program with us and we feel we have a very strong program." (Calgary)

"We really don't know what we are talking about when we want to put something together. Therefore we go out and hire consultants. Are we really able to tell if we are getting good advice or if we are getting a snow job from that consultant?" (Calgary)

"You see, usually you cannot afford it. For example, our problem was that we started thinking about a quality control and so on but we are a unique industry. There are only 2 companies in the country that produce our product. So, where do you turn for these things. We don't really want to deal with our competition, so we go to the U.S. to get the help. Because here, in Western Canada, a lot of the consultants you find are related to oil or some other industry that has nothing to do with manufacturing. So you have two choices, Toronto or the U.S. For us here it's California, it's a lot closer and

cheaper." (Calgary)

"We have brought in some people from major companies who have been implementing quality assurance, major private companies. Also some consultants." (Calgary)

"Yes I have [used consultants]. Quality was part of it too, but it wasn't only for quality itself. It was very helpful. I found out how to reach them through the Federal Business Development Bank. They have the CASE program, so I found that through that program. It was very useful. In fact one of their counsellors is still working for us with different projects." (Toronto)

"A few years ago, we had a company from the States come in saying they would do a free survey of our company. What you should do and what you shouldn't do. It didn't work out. They sent a young guy that didn't have much experience. They interviewed about 10 of my staff but it turned out that the report was not very effective. But it was free, we didn't have to pay for it." (Toronto)

#### Implications

The companies which are currently offering partnering arrangements are very large. ISTC could therefore possibly encourage, by playing a facilitator role, an increase in these types of arrangements and try to bring smaller firms into the picture.

Participants were not aware of many private sector courses or seminars. ISTC may have a role to play in this area.

As mentioned previously, there is definitely a role for ISTC in the preparation of a directory of quality consultants.

An important benefit of these private sector endeavours is the networking which takes place among those attending the various activities. "Quality" networking could therefore be an activity which ISTC facilitates.



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## 5.2 Associations

### Discussion paper

Industry associations focus primarily on awareness activities such as seminars and newsletter articles. In some areas where safety standards are of particular concern, such as energy and healthcare, quality assurance initiatives are more prominent. Among professional associations the American Society for Quality Control (ASQC) is the most active and influential proponent of quality techniques and tools in North America.

### Findings

Associations are used mostly for awareness activities such as seminars and workshops. The most active association seems to be ASQC, although associations per se are not mentioned that extensively. In fact, most companies did not mention the assistance of associations in the area of quality.

### Supporting evidence

The following table summarizes the associations named during the groups for each city and for each type of activity.

Association	Kitchener	Halifax	Vancouver	Calgary	Toronto	Québec	Montréal	Total	Activities
ASQC (American Society for Quality Control)	1	2	1	0	0	0	0	4	Forums, workshops, information
CGSB (Canadian Government Standards Board)	0	1	0	0	0	0	0	1	Accreditation
ASQA (American Society for Quality Assurance)	0	1	0	0	0	0	0	1	Local branch
NBS (National Bureau of Standards)	0	1	0	0	0	0	0	1	Information
CMA (Canadian Manufacturers Association)	0	0	1	0	0	0	0	1	Not specified
Quality users group	0	0	1	0	0	0	0	1	Networking
QMI (Quality Management Institute)	0	0	0	1	0	0	0	1	Information
Industry Associations (unspecified)	0	0	0	0	0	1	2	3	Mini congress, conferences, courses
AQQ (Association Québécoise de la qualité)	0	0	0	0	0	1	0	1	Workshops

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Listed below are a few interesting quotes:

"ASQC is an organization that I belong to and there is a local chapter here in the Waterloo area. Often they put on forums and bring in lecturers, etc. and all different workshops. You can get good information out of that and also develop a good contact base." (Kitchener)

"We tried to set up an industry association for Canada. We had about 4 meetings and turnout was about 8% of the manufacturers. The idea was to find common problems and possibly common solutions. But it turned out we are such a paranoid bunch." (Kitchener)

"We've found that over the years in Canada that the average Turkey growers become so fat that they don't want to get together. Which is a big difference when you go to the U.S. where there isn't supply management systems, they are a bit more competitive and therefore stick together and work together much more." (Kitchener)

"I hadn't realized we had ASQA until recently. Why don't we have a Canadian society, our own." (Halifax)

#### Implications

Since associations do not seem to be widely used or known, ISTC could find a role to play by possibly preparing a directory of association involved in quality activities.

As for the private sector activities, it seems that networking is an important aspect of the activities offered by associations.

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### 5.3 Academia

#### Discussion paper

An increasing number of academic institutions, particularly universities with business schools and community colleges, are getting involved with quality. Their primary focus is on research and the development of business school curriculum, although some community colleges are also providing consulting services and training packages.

#### Findings

The quality activities of academic institutions are not widely known and are used even less.

#### Supporting evidence

The following incorporates all responses regarding known academic activities across all groups.

"The University of Waterloo has got an institute or a centre on quality assurance."  
(Kitchener)

"Acadia University has seminars on quality assurance." (Halifax)

"BCIT with their series of courses of greatest levels, Quality Assurance 1, Quality Assurance 2 and methods for process control. There isn't a lot of courses but they are offered in the evenings, during the days and we found that's an excellent of information. And it also allowed us to get into the networking of people that are in these very fields. There's bags of information available to you once you just look into those organizations." (Vancouver)

"At the educational level, in the schools, in the universities, and in the CEGEPs, there is no training in the area of quality." (Québec)

#### Implications

The results of the groups are fairly inconclusive in that even though it is clear that the current activities are not well known, it is not clear that there is a need for more from academic institutions.

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## 5.4 Provincial Governments

### Discussion paper

The level of activity is highly variable, ranging from awareness activities such as seminars and brochures, to cost-sharing or full subsidization of consultant studies. New Brunswick and Alberta are two of the more active. The clients for these services are primarily export-oriented businesses in the manufacturing sectors.

Provincial Research Organizations (PROs) are also active in improving the quality of manufactured products through advanced manufacturing processes and equipment or through the use of advanced materials. For the most part they focus on **quality control and quality assurance**, not on either "management" or service sector issues.

### Findings

Companies are aware of very few activities undertaken by the provincial governments in the area of quality.

### Supporting evidence

The following incorporates all mentions of known provincial government activities:

"Nova Scotia Research, they have seminars on quality assurance." (Halifax)

"BC Research has some great people." (Vancouver)

"We have CRIQ which always manages to look for and find what we need." (Québec)

### Implications

The results of the groups are fairly inconclusive in that even though it is clear that the current activities are not well known, it not clear that there is a need for more from the provincial governments.

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## 5.5 Federal Government

### Discussion paper

The federal government is active in quality through the NRC, DSS, DND, ACOA, WED, EAITC, and particularly ISTC. The primary focus is on manufacturing processes and technologies and Quality Assurance.

### Findings

The group results indicate that the activities of the federal government in quality are not widely known.

### Supporting evidence

All mentions of federal government activities in quality are listed below, by department.

#### NRC

"Are you fellows familiar with the Industrial Research Assistance Program that is offered by the federal government? We have used them for many years and it's grant money that's available to, I think, all industries. We are always working with IRAP. We have three or four on the go right now which have helped us with things that have to do with improvements through research. They support us in research which again, I think the word quality means many different things. Many things that we are working with in research are going to help us in quality in the field." (Kitchener)

"NRC used to be useful when they had money." (Halifax)

"We've had information, but it was very specific, from the NRC. They've done some work for us. One of our problems is that we deal with very sophisticated things and so when we are looking for help, it's very hard to find." (Vancouver)

"There is also the National Research Council which has large data banks." (Québec)

#### DSS

No mention was made of this department.



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DND

"The department of National Defense." (Vancouver)

ACOA

ACOA was not mentioned by any group member.

WED

"The problem is that we don't have enough of these kind of guys to go around. The problem too with a lot of the quality programs that are being looked at today, Western Diversification has this \$25,000, but it's nowhere near enough." (Calgary)

EAITC

External Affairs was not mentioned by any of the group members.

FBDB (not noted in the discussion paper)

"The FBDB has given us a hand in some of our training programs." (Québec)

Implications

There may be a lot of federal government services offered in quality, but these programs are not widely known. The results of several previously discussed sections have indicated that directories may be necessary. It may therefore be more appropriate to have an overall quality directory which would provide lists of federal government programs in quality, provincial ones, associations, consultants, etc.

## 5.6 ISTC

### Discussion Paper

ISTC has a number of existing quality services and information products. These include the Canada Awards for Business Excellence (CABE) Quality Award and the related case studies and conferences organized by the Conference Board of Canada, AMTAP, Interfirm Comparisons, and the current study of TQM practices in the Aerospace industry.

Additionally, a number of Regional Offices are involved in related activities and are building networks within their regions.

### Findings

No one in any of the groups was able to identify any of the services offered by ISTC in quality except one individual whose firm had used ISTC. However, once described, these programs were generally well received.

### Supporting evidence

One participant in Vancouver indicated that their company had used ISTC for some quality control measurements. When asked if they were familiar with the services offered in the area of quality, all the respondents said no. Listed below are a series of some of comments made by the group participants when the ISTC programs were described to them:

"they all sound very good but I don't know how in depth or general they are."  
(Kitchener)

"Until we've really seen them it's difficult to judge. The only one I am familiar with is the award. Those things do give a certain amount of motivation but we got export work and we used it very well. It was recognized internationally. Very good for the employees as well." (Kitchener)

"I think that AMTAP is a good way for consultants to make money."

"I think that's wonderful if it's the way I heard it. That very last one. [Manufacturers Visits Program]" (Halifax)

"I think it's good. My only question is, there must be someone who can come in and discuss or decide which one of these programs might suit my company." (Vancouver)

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"I have difficulty understanding how the department is organized. From what I can see, these programs are all administered by the same department. Are they also administered locally by the same office?" (Vancouver)

"I think there are too many programs. I think there's a shotgun approach there. I think that if you want to improve science, technology and manufacturing in the country you have to concentrate on the quality like the Demming prize in Japan. ..." (Calgary)

"Having the MVP program, for instance, is a one shot effort. That's not enough. The only thing that works is constant exchange of information. Something that comes in dribs and drabs just wastes money." (Calgary)

"Well, I've never heard of those services. I think they could be very useful but if I don't know about them, I'm sure many others don't know about them either. I think it's a good idea and will be helpful for the service industry as well as manufacturing industry." (Toronto)

"I think the R&D would be interesting." (Toronto)

"It's hard to tell. I'd have to read them." (Québec)

"I don't think that receiving a prize will make a company have quality." (Québec)

"This sounds like an extension of what DRIE used to do. It seems oriented towards the SME, the manufacturing enterprise. That's good because that is where we need to improve the quality of the products in Canada." (Montréal)

#### Implications

ISTC needs to provide more information to more organizations about its services in quality.

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## 6.0 FINDINGS - ROLE OF ISTC

The ISTC Quality Strategy Discussion Paper describes what clients need as follows:

The situation analysis conducted in support of this paper, plus consultation with Regional Officers has pointed to a number of **gaps** in the services and information available to ISTC clients. These gaps are primarily in the area of TQM, since QA services are widely available through other organizations such as WED, ACOA and provincial governments. Some of the key gaps identified:

1. Networking/information brokering: a means for SMEs and other economic development agencies to find out who is doing what in quality;
2. TQM implementation assistance: how to achieve results through TQM and how to identify consulting assistance with implementation;
3. Consultant accreditation: how to identify qualified consultants (both TQM and QA);
4. TQM Information: a concise and accurate explanation of the differences between TQM and QA/QC.

### Questions asked

What services or information that are not currently available would be most helpful to your company in facilitating quality improvements?

What do you see as the role of ISTC or other government agencies in facilitating quality improvement in business?

### Findings

The gaps identified and areas where ISTC could play a role are in the networking or information brokering area.

Very few firms indicated that they required assistance in the implementation of TQM, nor in actual consultant accreditation, nor in specific TQM information.

### Supporting evidence

The table below provides a summary of the response by type of gap for each city.

Gap	Kitchener	Halifax	Vancouver	Calgary	Toronto	Québec	Montréal	Total
Networking/ information brokering	2	7	6	1	0	3	1	20
TQM imple- mentation assistance	1	1	1	0	2	3	0	8
Consultant accreditation	0	0	1	0	0	0	0	1
TQM information	0	0	0	0	0	1	0	1
Other	1	2	0	1	0	1	1	6

Listed below are series of quotes illustrating each of the above mentioned gap.

Networking/information brokering

"If the government is aware that the system is changing world wide, as soon as they can feed that to the industry the better it's going to be. I found out about ISO through the back door." (Kitchener)

"[Information on] the type of measurements that are now available. The more that government can do to help us with these measurements, the better off we are." (Kitchener)

"I think that making information available through government bookstores [is required]. Because if you want to go through a certain specification you'll see many references, all different numbers and CSA this and CGSB that. But if you want to find out what that really means, where do you go? You've got to go to Ottawa now or phone and in 3 to 4 weeks you might get a copy of the standard in the mail." (Halifax)

"Even if the stuff was available here, you have to go here and there and another place for another standard. If it could all be brought together." (Halifax)

"A computer network would be good." (Halifax)

"I think the biggest gap, as mentioned, is obtaining the information quickly, readily and easily from the government. I'm not saying they don't provide the information but

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sometimes they'll provide too much information but very slowly and you have to go through a number of departments in order to get the right information you require." (Halifax)

"Another thing the government might be able to do is to advertise the success quality generates. People would hear about it including the ones that don't want to do it because they don't believe it's worth their while. You have to get some very good, credible examples, so and so did this, their bottom line went like this and this is why. And that's a very clear trail and any businessman would be stupid not to do it and it'll go by itself then." (Halifax)

"Our operation has a director of quality. It's quite useful because he makes you aware of things that are state of the art. Perhaps ISTC could have some kind of quality directorate. A one or two person directorate in each major manufacturing centre that would just circulate and help cause the networking and help cause the people to be more aware of the information." (Vancouver)

"I might have a slightly biased point of view being a member of the ASQC executive, but one of the things that I've found is that the ASQC is an excellent voluntary information organization. The people are very dedicated to getting the message of quality out and also I think that teaming up with groups like that or Quality Council, they're people who want to get the information out, they want to help others. Teaming up with organizations like that allows ISTC to get right to the people. I think that it could really be worthwhile if it wanted to make sure that its message got spread around is to work through some organizations like that." (Vancouver)

"Regarding programs, ISTC has some programs going on here and the provincial government has different programs for you in this industry, but they are all spread out, all over the place. I think it would be quite useful if they would put all the programs into one booklet so that if someone wants to find out what kind of help they can get they use that as a reference. What kind of programs they can get and where to get them from. A lot of people, at least in our industry, are not aware of the different programs that are available." (Vancouver)

"When we have specific needs they can give us references on where to look for information. But if we must have them at our place once a month and lose an afternoon, I don't think we have time for that. It must be a sort of access bureau, a data bank." (Québec)

"It's not always easy to find the service. It's not always obvious to know which door to knock at to get the information we need. I don't know if there is a sort of yellow



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pages grouping the services, they could be by topic, then by company or by government service." (Montréal)

TQM implementation assistance

"It's hard to tell with the agriculture industry. If we could have an organization within the government that would do the same thing as the private consultants, because they are very expensive, it would be wonderful. Teach us the various methods of obtaining better quality to make us more competitive with the U.S. and other countries." (Kitchener)

"I think you've probably the nail on the head. Courses would be very beneficial I think. I found it very beneficial just attending one seminar and I'm going to keep my ears and eyes open if there are any more going on, I'm going to be there. Because I think I need to learn a lot. And as you said, I want to be able to obtain information on this ISO 9000 and haven't been able to do so, so far." (Halifax)

"Everyone would like to plan ahead or to look for contingencies and to try and better their process before. That's what quality is all about. But on the other hand you're in the real business world and you don't always have that time, you make as much time as you can for planning but that doesn't include trying to beat the bushes. Worse, we got into a problem you're in a reactive mode now not a proactive. And once again now you really don't have the time to go beating the bushes because you have a client on your doorstep saying, I've got a big problem setting down my line, what are you going to do about it now! So that would be one of the biggest things that I could use because right now I know that in certain areas we are trying to improve and we could certainly use some assistance. We are in the same position you are, we have no idea what's available, absolutely none." (Vancouver)

"Well then from our point of view, something around those lines which would be interesting, however we wouldn't want to spend the money, if there was a service available where we can basically have time studies because there is no way we can afford to have a time study engineer or whatever. If there was someone in the government with that expertise in the service business who really has the combination of the knowledge in manufacturing with the idea of service culture and the aspects of marketing." (Toronto)

"What we need is training, technical training." (Québec)

"The programs are generally too short term programs. We need more time. It takes years to implement changes." (Québec)

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Consultant accreditation

"A directory of good consultants would be useful. There are all kinds of consultants that come out of the woods and claim they can teach you something but to have a central source, sort of like Yellow Pages of specialists and profiles on them." (Vancouver)

TQM information

"Instead of telling us what to do, they should come work with us. There are many companies who do not know their cost of quality. There are several who do not really know the definition of quality, how it is perceived by the client, etc. And that is expensive. The department should therefore have an expert, for example in statistics, that would be lent to work with us for a given period of time." (Québec)

Other

"Strangely, meeting European standards, I have someone every month from California calling me to bring down systems to the states to have them approved for Germany. There is a lack of agencies in Canada that can be certified in standards for Europe." (Kitchener)

"I think somebody should bring the government closer to industry somehow." (Halifax)

"At the seminar I attended, the consensus was exactly the same as what we've just mentioned here tonight. And that was from managers of the quality programs and they said just that. If they could only get through to the management or the bureaucrats of their own companies or other companies to educate and tell them what it is all about." (Halifax)

"I think I have a subject that I would like to bring forward on what we can do. I would suggest that we not only look at various ways that you're sending out people to help. I think I would look at backing off that for a while and I would look at the tax structures. You don't have to create a lot of overhead, give us some tax breaks. Like the R&D tax credit ..." (Calgary)

"If the government really want to help us, it should stop all its programs. It should help us in a concrete manner, for example through tax credits." (Québec)

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Implications

The results discussed in this section strengthen those of previous sections, in that ISTC's role with regards to quality is viewed as being more of a broker, networker, or facilitator. This is extremely encouraging as it reflects the direction in which the department has been moving recently. There is however evidence that the department will have to work on the effective delivery of these services, that is, the department is not effectively reaching its target population through its current quality offerings.



