

Measurement Canada's Marketplace Intervention Model

*Measurement Canada
Marketplace Intervention Model
July 1998
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INTRODUCTION

- In order to better fulfill its mandate, Measurement Canada has developed an assessment tool to determine the level of intervention required to ensure equitable and accurate trade measurement of goods and services in specific trade sectors in Canada. This intervention may range from periodically checking and confirming that existing metrological controls are adequate and appropriate, to direct intervention by Measurement Canada to ensure device accuracy and enforce compliance requirements.
- Measurement Canada contracted KPMG to assist in the development of an intervention model to facilitate the assessment of the marketplace.

INTRODUCTION (Cont'd)

- For several years now, Measurement Canada has been continually asking itself “Are We Doing Things Right?”. This has resulted in the implementation of many efficiencies and the launching of accreditation programs for device inspection.
- With the introduction of the intervention model concept, Measurement Canada will also be addressing the question “Are We Doing The Right Things?”, which is the more fundamental issue for Government to address.

**MEASUREMENT CANADA'S STRATEGIC DIRECTION - FIRST
ELEMENT**

“Measurement Canada will fulfill its mandate by periodically assessing measurement in all trade sectors, intervening only where necessary to ensure accuracy and equity in the marketplace, and developing criteria for determining its level of intervention in trade measurement.

Stakeholders' informed views will be a key element in these decisions.”

Time Frame:

Measurement Canada will phase in its intervention activities so as to fully exercise its mandate by 2011.

PURPOSE OF THE INTERVENTION MODEL

- **Determine which sectors to intervene in.** Traditionally, Measurement Canada has focused on specific sectors, such as electricity, gas, retail food, petroleum, grain, pulp and paper, and transportation. The emergence of new trade sectors and new measurement technology applications have resulted in a need to reassess the type and level of resources dedicated to the various trade sectors.
- **Focus resources on high priority sectors.** The model will help identify the measurement activities where resources should be spent; that is, those sectors where the highest level of intervention is deemed necessary and where metrological controls are required.
- **Clarify Measurement Canada's role vis-à-vis all sectors.** The model will help clarify what role Measurement Canada should play

vis-à-vis each sector of the marketplace, in light of the level of intervention required and the role(s) that may be played by industry groups and/or other regulatory agencies.

GUIDING PRINCIPLES FOR MODEL

1. **Ensure marketplace equity and fairness.** The application of the model will result in an overall improvement of marketplace equity. The model will indicate sectors where further intervention is required to provide for marketplace equity, and identify other sectors where less intervention may be needed, within a reasonable risk, to maintain marketplace equity. The result will be a justifiable basis for allocating Measurement Canada resources to the various sectors, a better balance in the level of government intervention in the marketplace, and an improved capability for Measurement Canada to fulfill its mandate.
2. **Ensure that consumer interests are recognized and relative dependency considered.** The interests of all stakeholders in a trade sector, including consumers, will be considered in the application of the model. Broad based consultations will be undertaken to engage consumers more fully in the entire process,

thereby improving consumer awareness and protection.

GUIDING PRINCIPLES FOR MODEL (Cont'd)

3. **Develop partnerships where industry has capability.**
Measurement Canada should not become involved, beyond a minimal level of intervention, where it has been determined that other organizations or mechanisms are in place to provide for marketplace equity. Ideally, industry should play a lead role in this area. Alternatively, provincial and municipal agencies may already have metrological controls in place, or be in a position to provide this service on a more cost-effective basis than Measurement Canada.

4. **Apply one set of criteria to all sectors.** All sectors will be rated against the same set of criteria. This is intended to ensure uniformity in comparing the levels of intervention required from one sector to another. Similarly, weights attached to each criterion to reflect their relative importance will be uniformly applied across all sectors. A uniform approach to determining the necessary level of intervention by Measurement Canada will result in more equitable and fair treatment of the various sectors, thereby fostering industry acceptance of decisions

made following consultation.

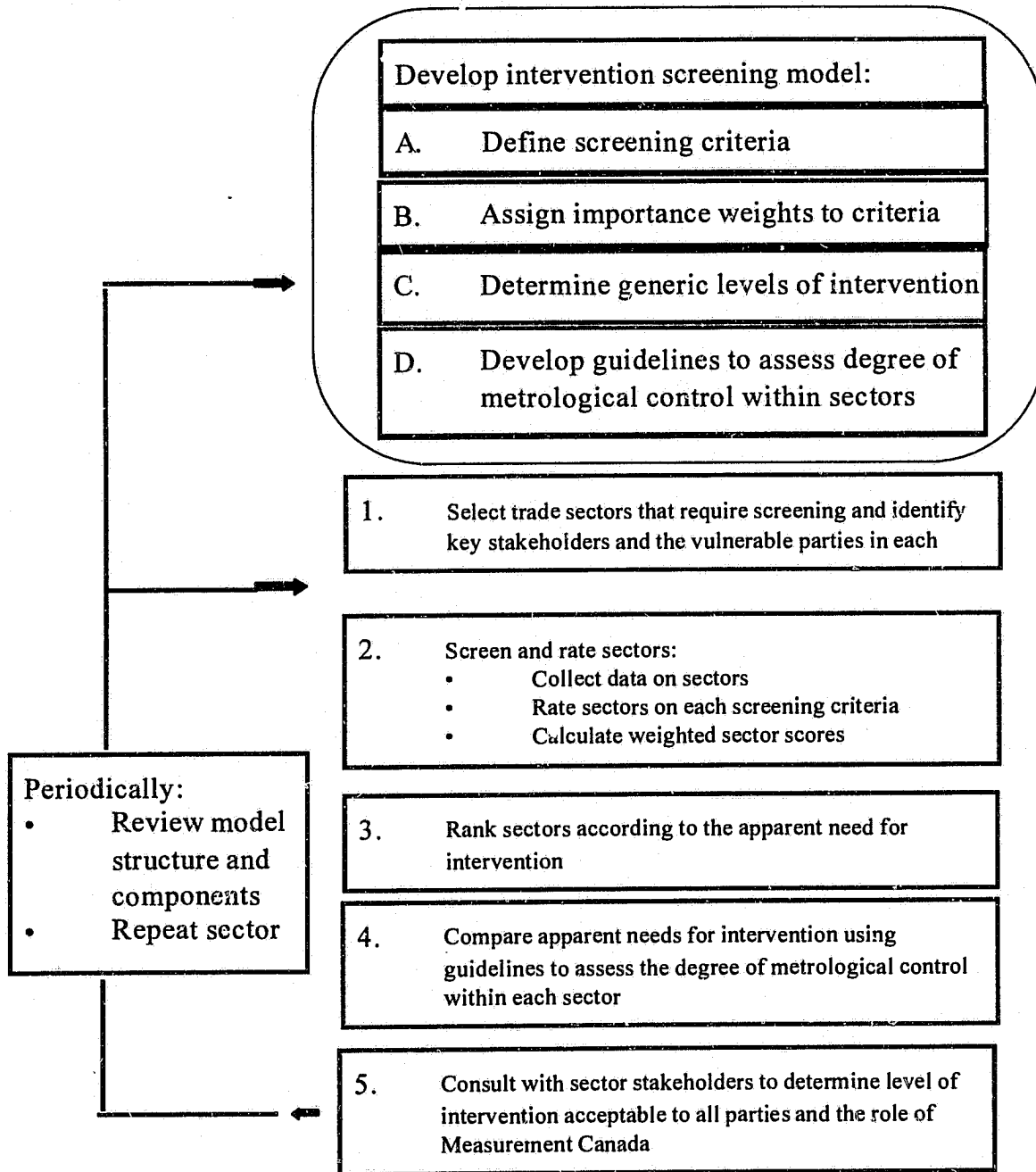
GUIDING PRINCIPLES FOR MODEL (Cont'd)

5. **Flexibility to change over time.** The model will allow for changes in the factors determining the level of intervention required, such as advances in technology, increased amount of self-regulation, or changes in the supply chain.

6. **Measurement Canada has a role to play in all sectors.** A key premise is that Measurement Canada will be prepared to intervene to ensure trade measurement is accurate and consistent within each sector. At the very minimum, Measurement Canada will play a role in monitoring and periodically assessing the appropriateness of the metrological controls that are in place in each trade sector. Depending on the outcomes of these two activities, other activities may be undertaken, either by Measurement Canada directly or through alternative service delivery arrangements, (e.g. accredited

inspection organizations).

OVERVIEW OF CONCEPTUAL MODEL



KEY ELEMENTS OF THE MODEL

- Screening Criteria (6)
- Importance Weights for Each Screening Criteria
- Generic Levels of Intervention (6)
- Guidelines to assess degree of metrological control within sectors

SCREENING CRITERIA

1. Reliance on trade measurement as the basis for commercial transactions
2. Economic significance of the sector in the Canadian economy
3. Potential economic risk to the vulnerable party in trade sector transactions
4. Dependency of the vulnerable party on the counter-party to ensure accurate measurement
5. Compliance rates
6. Measurement consistency and device conformance with established standards

EXAMPLE

2. Economic Significance of the Sector in the Canadian Economy

a) Definition

The relative size of the sector within the Canadian economy, based on the value of sales revenues.

b) Rating Methodology

Sector ratings would be assigned according to the following scale:

1. \$1 billion or less in annual sales
2. \$1 - 5 billion
3. \$5 - 10 billion
4. \$10 - 15 billion
5. More than \$15 billion

OTHER DEFINITIONS OF CRITERIA

1. Reliance on trade measurement as the basis for commercial transactions

Extent to which commercial transactions in a trade sector are dependent on reliable measurements and measurement devices.

2. (Example given)

3. Potential economic risk to the vulnerable party in trade sector transactions

Significance of transactions in a given sector to the vulnerable party stated as a percentage of total expenditures.

OTHER DEFINITIONS OF CRITERIA (Cont'd)

4. Dependency of the vulnerable party on the counter-party to ensure accurate measurement

Balance of power between vendors and customers, in terms of their respective abilities to verify the accuracy of the measurement devices used in trade transactions.

5. Compliance rates

Overall accuracy of measurement devices in use in a sector or the accuracy of commodity measurements in sector.

OTHER DEFINITIONS OF CRITERIA (Cont'd)

6. Measurement consistency and device conformance with established standards

Extent to which devices in use conform to recognized standards for device design and performance. The standards in question may be those developed by Measurement Canada or by other recognized authorities in Canada or internationally.

IMPORTANCE WEIGHTINGS FOR SCREENING CRITERIA

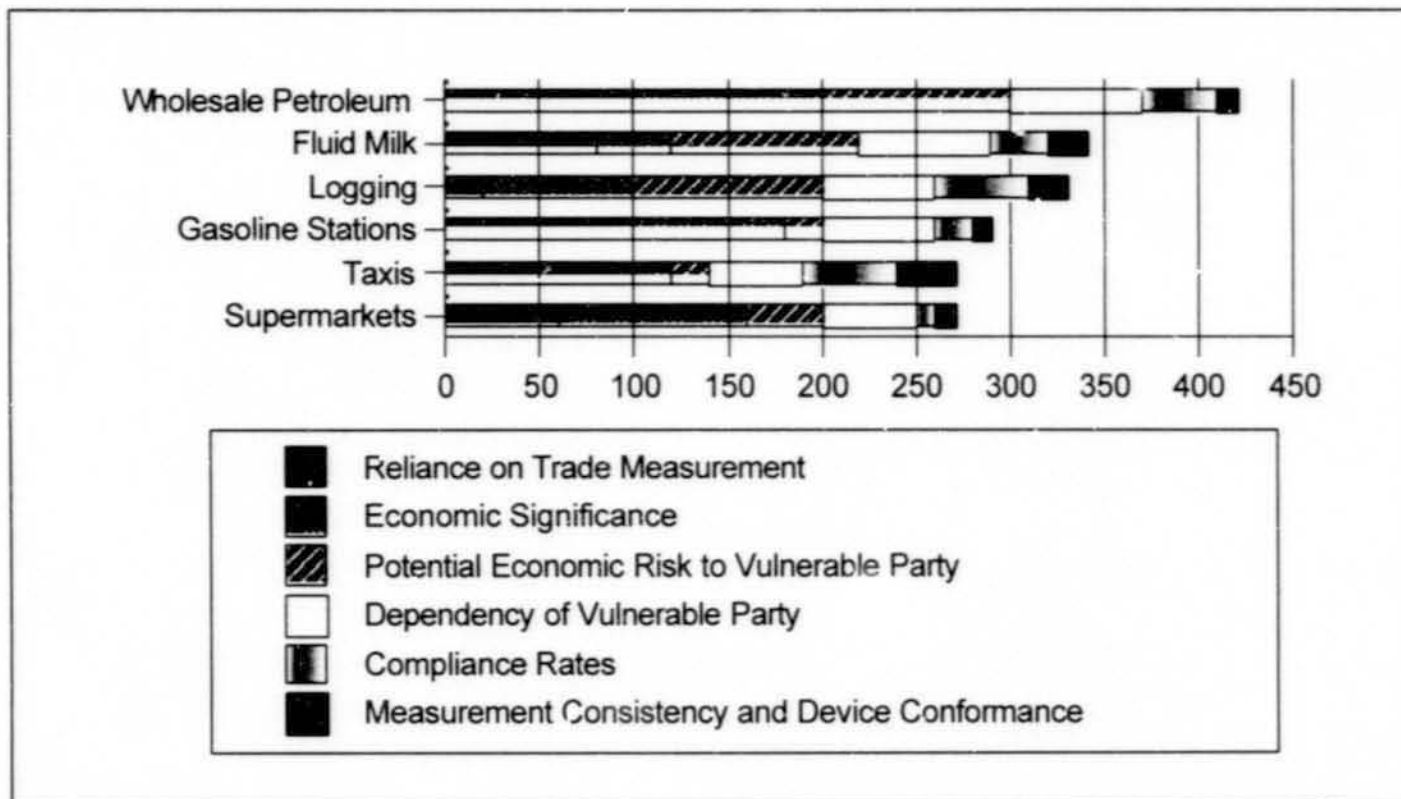
1. Reliance on trade measurement as the basis for commercial transactions	20
2. Economic significance of the sector in the Canadian economy	20
3. Potential economic risk to the vulnerable party in trade transactions in the sector	20
4. Dependency of the vulnerable party on the counter-party to ensure accurate measurement	20
5. Compliance rates	10
6. Measurement consistency and device conformance with established standards	10
total	100

For each sector assessed, multiply the rating scores on each criterion by their respective importance weights and then sum them to produce an overall score (out of a maximum of 500). The end result from the sector screening process would then be a rank ordering of the sectors, based on their total weighted scores.

EXAMPLE - APPLICATION OF THE SECTOR SCREENING CRITERIA

Sector	Screening Criteria						Total Weighted Ratings Scores
	Reliance on Trade Measurement	Economic Significance of Sector	Potential Economic Risk to Vulnerable Party	Dependency of Vulnerable Party	Compliance Rates	Measurement Consistency and Device Conformance	
Weights •	(20)	(20)	(20)	(20)	(10)	(10)	
Logging Industry (SIC: 041)	1 20	4 80	5 100	3 60	5 50	2 20	330
Fluid Milk Industry (SIC: 1041)	4 80	2 40	5 100	3.5 70	3 30	2 20	340
Taxi Services (SIC: 4581)	5 100	1 20	1 20	2.5 50	5 50	3 30	270
Wholesale Petroleum (SIC: 5111)	5 100	5 100	5 100	3.5 70	4 40	1 10	420
Food Stores (groceries) (SIC: 6011)	3 60	5 100	2 40	2.5 50	1 10	1 10	270
Gasoline Stations (SIC: 633)	5 100	4 80	1 20	3 60	2 20	1 10	290

**EXAMPLE - APPLICATION OF THE SECTOR SCREENING CRITERIA
(Cont'd)**



GENERIC LEVELS OF INTERVENTION

- The potential levels of intervention table summarizes the recommended approach to “packaging” the varying types of intervention that Measurement Canada may undertake.
- These levels are presented in order of the amount of direct intervention that may be needed to ensure fair trade measurement.
- A key characteristic of the approach is the cumulative nature of the intervention levels, whereby more fundamental requirements for accurate and reliable trade measurement are addressed first.
- If trade measurement is important in a sector - that is, it has a high score on the sector screening process - then, as a minimum, it is necessary that the measurement standards in use should be traceable to a recognized Canadian or international standard.

GENERIC LEVELS OF INTERVENTION (Cont'd)

- In addition, depending on the characteristics of trade measurement used in that sector and the expressed needs of sector stakeholders, it may be necessary to ensure that either some or all of the following types of intervention are applied:
 - Rules for fair product/service measurement are in place.
 - These rules are enforced, either reactively or proactively.
 - Rules for device performance are in place.
 - These rules are enforced, either reactively or proactively.
 - Redress mechanisms are established and enforced.

POTENTIAL LEVELS OF INTERVENTION TABLE

Minimum Level of Intervention - Periodic Screening of the Sector

Determine which trade sectors have measurement activities that fall within Measurement Canada's mandate.

Periodically assess each selected trade sector against the screening model:

- Inform key sector stakeholders that screening will be undertaken.
- Collect data and conduct sector screening.
- Document the existing metrological controls in the sector to demonstrate that no further intervention is required or that further intervention is required and the form such intervention might take.
- Inform stakeholders of the screening outcome.

Address complaints and disputes on an as-required basis.

Level 1 - Establish Traceability of Measurement Standards					
Establish traceability of measurement standards to recognized international standards.					
1. Traceability of Measurement Standards	Level 2 - Establish Rules for Accurate Product / Service Measurement, and Enforce Reactively <ul style="list-style-type: none"> • Establish rules for accurate measurement of products and services traded in the sector. • Reactively enforce these rules. 				
1. Traceability of Measurement Standards	2. Establish Product/Service Measurement Rules; Enforce Reactively	Level 3 - Proactive Enforcement of Rules for Accurate Product / Service Measurement Establish mechanisms to proactively enforce rules for accurate measurement of products and services traded in the sector.			
1. Traceability of Measurement Standards	2. Establish Product/Service Measurement Rules; Enforce Reactively	3. Proactive Enforcement of Product / Service Measurement Rules	Level 4 - Establish Mechanisms to Resolve Products / Service Disputes Establish mechanisms to resolve product and service measurement disputes.		
1. Traceability of Measurement Standards	2. Establish Product/Service Measurement Rules; Enforce Reactively	3. Proactive Enforcement of Product / Service Measurement Rules	4. Establish Mechanisms to Resolve Product / Service Disputes	Level 5 - Establish Metrology Rules for Trade Measurement Devices Establish metrology-related rules for trade measurement devices used in the sector, and proactively enforce these rules, to ensure devices: <ul style="list-style-type: none"> • Are designed to measure accurately and prevent fraudulent use (Type Approval). • Measure accurately prior to trade use (Initial Verification/Inspection). • Continue to measure accurately and are used correctly (Reverification). 	
1. Traceability of Measurement Standards	2. Establish Product/Service Measurement Rules; Enforce Reactively	3. Proactive Enforcement of Product / Service Measurement Rules	4. Establish Mechanisms to Resolve Product / Service Disputes	5. Establish Metrology Rules for Trade Measurement Devices	Level 6 - Establish Mechanisms to Resolve Device Performance Disputes Establish mechanisms to resolve disputes relating to measurement device performance.

POTENTIAL LEVELS OF INTERVENTION - BREAKDOWN OF LEVELS
(Cont'd on subsequent pages)

Minimum Level of Intervention - Periodic Screening of the Sector

Determine which trade sectors have measurement activities that fall within Measurement Canada's mandate.

Periodically assess each selected trade sector against the screening model:

- Inform key sector stakeholders that screening will be undertaken.
- Collect data and conduct sector screening.
- Document the existing metrological controls in the sector to demonstrate that no further intervention is required or that further intervention is required and the form such intervention might take.
- Inform stakeholders of the screening outcome.

Address complaints and disputes on an as-required basis.

POTENTIAL LEVELS OF INTERVENTION

LEVEL 1 - Establish Traceability of Measurement Standards

Establish traceability of measurement standards to recognized international standards

LEVEL 2 - Establish Rules for Accurate Product / Service Measurement, and Enforce Reactively

1. Establish traceability of Measurement Standards
2. Establish rules for accurate measurement of products and services traded in the sector. Reactively enforce these rules.

POTENTIAL LEVELS OF INTERVENTION (cont'd.)

LEVEL 3 - Proactive Enforcement of Rules for Accurate Product / Service Measurement

- | |
|--|
| 1. Establish traceability of Measurement Standards |
| 2. Establish Product/Service Measurement Rules; Enforce Reactively |
| 3. Establish mechanisms to proactively enforce rules for accurate measurement of products and services traded in the sector. |

LEVEL 4 - Establish Mechanisms to Resolve Products / Service Disputes

- | |
|--|
| 1. Establish traceability of Measurement Standards |
| 2. Establish Product/Service Measurement Rules; Enforce Reactively |

3. Proactive Enforcement of Product / Service Measurement Rules

4. Establish mechanisms to resolve product and service measurement disputes

POTENTIAL LEVELS OF INTERVENTION (cont'd.)

LEVEL 5 - Establish Metrology Rules for Trade Measurement Devices

1. Establish traceability of Measurement Standards

2. Establish Product/Service Measurement Rules; Enforce Reactively

3. Proactive Enforcement of Product / Service Measurement Rules

4. Establish Mechanisms to Resolve Product / Service Disputes

5. Establish metrology-related rules for trade measurement devices used in the sector, and proactively enforce these rules, to ensure devices:
 - Are designed to measure accurately and prevent fraudulent use (Type Approval)
 - Measure accurately prior to trade use (Initial Verification/Inspection)
 - Continue to measure accurately and are used correctly (Reverification).

POTENTIAL LEVELS OF INTERVENTION (cont'd.)

**LEVEL 6 - Establish Mechanisms to Resolve Device
Performance Disputes**

1. Establish traceability of
Measurement Standards
2. Establish Product / Service
Measurement Rules; Enforce
Reactively

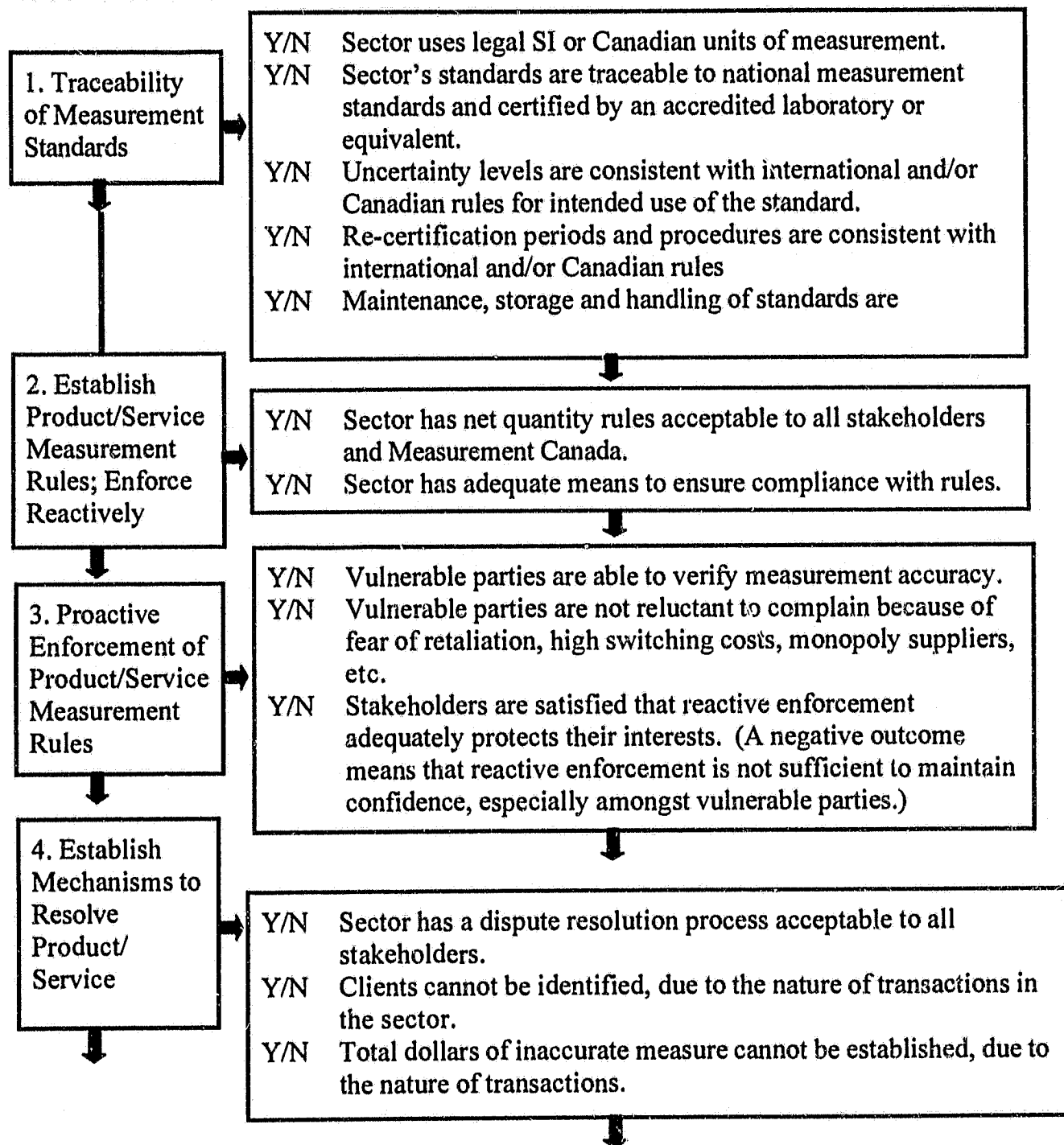
3. Proactive Enforcement of Product / Service Measurement Rules
4. Establish Mechanisms to Resolve Product / Service Disputes
5. Establish Metrology Rules for Trade Measurement Devices
6. Establish mechanisms to resolve disputes relating to measurement device performance

GUIDELINES TO ASSESS METROLOGICAL CONTROL WITHIN SECTORS

- The appropriate level of intervention within any sector depends on the outcome of the sector screening, rating and ranking process, the existing degree of metrological control within the sectors, the characteristics of trade in the sector, stakeholders perceived needs for measurement equity and third party monitoring and/or intervention.
- The guidelines, presented in the form of a series of “yes/no” check lists, summarize the key criteria that Measurement Canada proposes to use for determining the existing degree of metrological control and formulating proposals for the appropriate level, or form, of intervention in the sector.
- As part of this process, information on the characteristics of current trade intervention activities within sectors will need to be collected to

enable current controls to be compared to these guidelines.

CRITERIA TO ASSESS CURRENT LEVELS OF INTERVENTION



CRITERIA TO ASSESS CURRENT LEVELS OF INTERVENTION (Cont'd)

5. Establish Metrology Rules for Trade Measurement Devices

Ensure devices are designed to measure accurately and prevent fraudulent use (Type Approval):

- Y/N Acceptable standards for device design, composition and construction that are used throughout the sector.
- Y/N Sector has a device approval process acceptable to all stakeholders and Measurement Canada.
- Y/N No evidence of excessive measurement degradation resulting from device design & manufacture.

Ensure devices measure accurately prior to trade use (Initial Verification/Inspection):

- Y/N Sector has an initial verification process acceptable to all stakeholders and Measurement Canada.
- Y/N No evidence of measurement performance errors resulting from:
 - Installation of the device
 - Calibration of the device
 - Device suitability for application
 - Marking and sealing of the device
 - Non-approved device types
 - Inappropriate/non-intended use of the device

Ensure devices continue to measure accurately and are used correctly (Reverification):

- Y/N Sector has a reverification process acceptable to all stakeholders and Measurement Canada.
- Y/N No evidence of excessive measurement performance errors resulting from:
 - Device design

6. Establish Mechanisms to Resolve Device Performance Disputes

- Y/N Sector has a dispute resolution process acceptable to all stakeholders.
- Y/N Clients cannot be identified, due to the nature of transactions in the sector.
- Y/N Total dollars of inaccurate measure cannot be established, due to the nature of transactions.

STAKEHOLDER CONSULTATION TO DETERMINE WHAT LEVEL OF INTERVENTION IS ACCEPTABLE

- The suggested levels of intervention identified in the previous step should be viewed as a starting point for consultations with sector stakeholders, not as a structured prescription for Measurement Canada action.
- Feedback on the preliminary version of the model from a sample of sector stakeholders consulted during the summer of 1997 showed consistent support for the use of the marketplace screening and intervention model as an aid for resource planning but not as a substitute for consultation with stakeholders.
- The question of *who* would undertake the intervention activities (e.g., Measurement Canada, industry groups, accredited measurement compliance organizations, other levels of government, etc.) would be resolved in sector-specific negotiations between Measurement Canada and industry

and customer groups.

**STAKEHOLDER CONSULTATION TO
DETERMINE WHAT LEVEL OF INTERVENTION
IS ACCEPTABLE (Cont'd)**

- The output from the intervention model - that is, the combination of the sector rankings and analysis of intervention characteristics - will provide the initial focus for such negotiations.
- Finally, once negotiations are complete, the applicable statutes and/or regulations may need revision to support the level of intervention judged to be appropriate.

NEXT STEPS

- A group (Business Scope Leadership Team) has been formed to pilot and validate the model so adjustments can be made as necessary.
- The group has gathered data on the various trade sectors through Statistics Canada (SIC codes).
- The group's preliminary findings will be assessed by Measurement Canada's senior management by the end of 1998-99.

MEASUREMENT CANADA'S STRATEGIC DIRECTION - SECOND ELEMENT

"Measurement Canada will fulfill its mandate by using alternate service delivery mechanisms for:

- Device Approvals
- Device Inspections
- Installation Inspections
- Standards Calibration."

Time Frame:

This transition will be completed by 2007.