Secrétariat du **Conseil du trésor**

Québec

**Sous-secrétariat à l'inforoute gouvernementale
et aux ressources informationnelles**

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Cultural and linguistic adaptability:

a crucial issue for the interoperability of infostructures, and a business opportunity on the Internet

Aylmer

"Web users stay twice as long and are three times as likely to buy from sites presented in their native language"

Gartner Group

CONTEXT

- **Many countries have more than one official language**

- **International languages, but local characteristics**
  - **US English ≠ UK English**

- **Commerce: more and more international agreements**

- **The challenge**
  - **The adequate use of information technology and of the Internet to fully address local requirements (cultural and linguistic)**

Software

1- Inadequate translation
example:

An American manufacturer in Miami printed T-shirts for the Spanish market which promoted the Pope's visit. Instead of "I saw the Pope" (el Papa), the T-shirts read

"I saw the Potato" (la papa)

Software (cont'd)

2- **"Weird" translations, ambiguous and full of mistakes**

    example:

      ⇨**"Usefoul tool to be use in Internet"**

Software (cont'd)

3- Inadequate cultural adaptability
example:

→ **Presentation of dates in a language**

- **08-12-2001,**
  in English "August 12th, 2001"

versus

- **08-12-2001,**
  in French "December 8th, 2001"

Metadata capture and update

- ➲ **Unequal content between versions in different languages**

- ➲ **Desynchronization problems between versions**

Search engines

➲ **Incomplete results**

➲ **Root causes of the problem?**

⇨ **Searches use character strings (words)**

→ **"watershed" versus**

"bassins hydrographiques"

⇨ **On-the-fly translation:**

→ **limited**

→ **"home made"**

… + "Semantic interoperability"

The ability of a user…

…to fully understand…

…the information received…

…in order to be able to make full use of it

How to help "semantic interoperability"?

ISO/IEC JTC 1

"CLA is the ability for a product, while keeping its portability and interoperability properties, to:

⇨ **be internationalized, that is, be adapted to the special characteristics**

→ **of natural languages and the commonly accepted rules for their use**

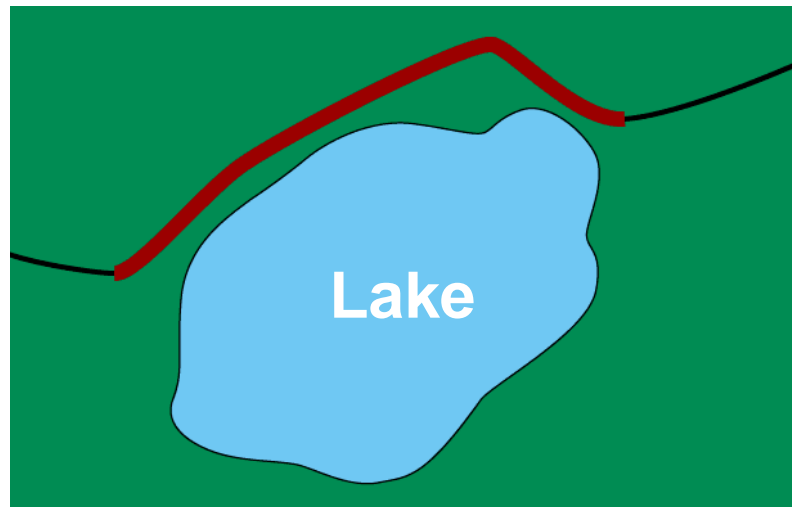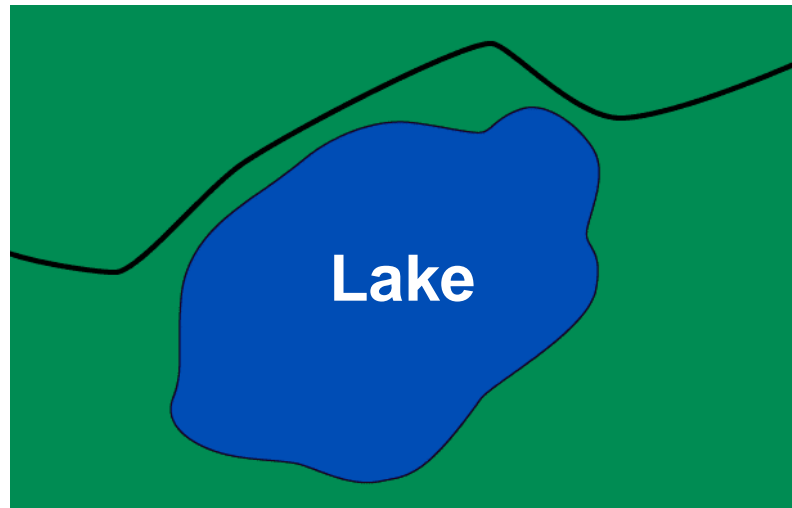→ **or of cultures in a given geographic region**

⇨ **fully take into account the needs of any category of users"**

The keywords:
"…ability … to be adapted"

"Cartographic Rendering"

IMPLEMENTING CLA:
PROVEN SOLUTIONS ARE AVAILABLE

➲ **Software**

⇨ **At the early stages of design, pay attention to CLA principles**

⇨ **Use a specialist to ensure the quality of the translation**

➲ **Metadata capture and update software**

⇨ **Use a single data structure**

+ with unambiguous and unique identifiers

+ Codified lists of permissible values ("code lists")

IT Interface		Human Interface/Linguistic Equivalent Terms			
Table ID	Code	English (en)	French (fr)	Inuktitut (ik)	
				Syllabic Equivalent	(Roman) Latin-1 Equivalent
(1)	(2)	(3)	(4)	(5)	(6)
171.3:03	BC	British Columbia	Colombie-Britannique	ᐳᓄᑎᕁ ᑲᑦ�*ᐱᐊᐊ	British Columbia
171.3:03	NB	New Brunswick	Nouveau-Brunswick	ᓂᐳ ᐳᐨᖃᑊᐃᐊᕈ	New Brunswick
171.3:03	NF	Newfoundland	Terre-Neuve	ᓂᐳᐸᐳᐊᒉᐊ	Newfoundland
171.3:03	NT	Northwest Territories	Territoires du Nord-Ouest	ᐅᐊᶜᕆᐊᔅᖸ	Nunattiaq
171.3:03	NS	Nova Scotia	Nouvelle-Écosse	ᐆᕁ ᕆᐃᕁ	Nova Scotia
171.3:03	PE	Prince Edward Island	Île-du-Prince-Édouard	ᐅᓄᐊᕁ ᐊᶜᐳᐊᕆᶜ ᐊᐃᒉᐊ	Prince Edward Island
171.3:03	QC	Quebec	Québec	ᐊᐸᐃᕈ	Quebec
171.3:03	YT	Yukon Territory	Territoire du Yukon	ᔓᑲᐊ	Yukon Territory

+ Multilingual support of "free text" fields

Excerpt from ISO 19115

Example of multi-languages occurrences on free text metadata element titled "useLimitation"

Language code (Optional)	Country code (Optional)	Character set code (Optional)	Plain text (Mandatory)
eng (English) (see Note)	826 (United Kingdom) (see Note)	017 (ISO/IEC 8859-15) (see Note)	Weight restriction on bridges. Lorries exceeding five metric tonnes gross weight are not permitted on bridges
fra (French)		017 (ISO/IEC 8859-15)	Limitation de poids sur les ponts: Les camions dont le poids total excède 5 tonnes métriques ne sont pas autorisés à circuler sur les ponts.
ara (Arabic)		011 (ISO/IEC 8859-6)	محدود النقل على الجسور ممنوع على الحافلات بمقدار أكثر من ٥٠٠٠ كيلوغرام متري العبور على الجسور
zho (Chinese)		004 (utf8)	桥梁承重限制: 卡车毛重超过五公吨不得上桥

NOTE   If "English", " United Kingdom" and " ISO/IEC 8859-15" would have been specified as default values for the entire metadata file, it would not have been necessary to specify them in this occurrence.

+ Multilingual support of "free text" fields

Plain text (Mandatory)
Weight restriction on bridges Lorries exceeding five metric tonnes gross weight are not permitted on bridges
Limitation de poids sur les ponts: Les camions dont le poids total excède 5 tonnes métriques ne sont pas autorisés à circuler sur les ponts.
محدود النقل على الجسور ممنوع على الحافلآت بمقدار أكثر من ٥٠٠٠ كيلوغرام متري العبور على الجسور
桥梁承重限制: 卡车毛重超过五公吨不得上桥

+ Code lists instead of "free text" fields

**+ Metadata elements registry
(ISO/IEC 11179-3)**

Search engines

- ➲ **Unambiguous and unique identifiers**

- ➲ **Metadata elements registry (ISO/IEC 11179-3)**

- ➲ **Multilingual thesaurus structure?**

ISO/TC 211 AND CLA:
CANADA IS "THE" LEADER

➥ **ISO/TC 211 involvement**
- ⇨ **Metadata (ISO 19115)**
- ⇨ **Encoding (ISO 19118)**
- ⇨ **Registry (new work item)**

➥ **Next targets?**
- ⇨ **Registries (ISO/TC 211)**
- ⇨ **Canadian profile on metadata (ISO 19115)**
- ⇨ **North American profile on metadata (ISO 19115)**

CONCLUSION

An infostructure…

…will be successful in as much as…

…its users will feel on familiar ground…

…thanks to cultural and linguistic adaptability

CONCLUSION (cont'd)

Canadian industry and CLA

- ➲ an undeniable business opportunity
- ➲ a challenge

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information

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Merci!