Du "Text-to-Speech" au multilinguïsme

Isabel Meurisse
Babel Technologies

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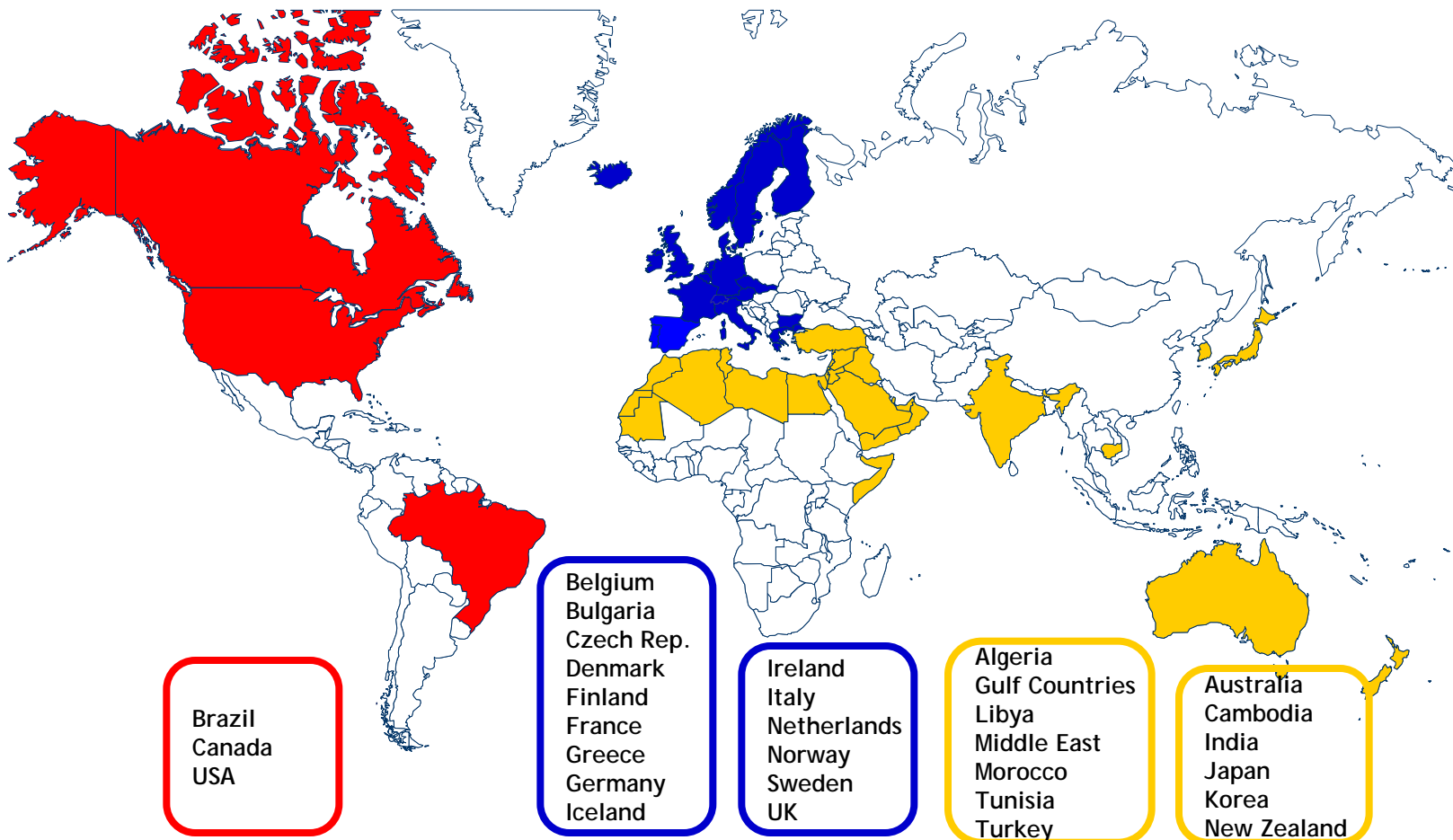
Who we are

- **Provider of Speech Solutions since 1997**
  - Text-To-Speech
  - Speech Recognition
  - Professional Services
- **Expertise in 6 market segments :**
  - Telecommunications
  - Assistive technologies
  - Multimedia
  - Mobile Devices
  - Automotive
  - Industrial

Geographical perspective:
19 languages; > 25 countries

BABEL
Technologies
INFOVOX

Brazil
Canada
USA

Belgium
Bulgaria
Czech Rep.
Denmark
Finland
France
Greece
Germany
Iceland

Ireland
Italy
Netherlands
Norway
Sweden
UK

Algeria
Gulf Countries
Libya
Middle East
Morocco
Tunisia
Turkey

Australia
Cambodia
India
Japan
Korea
New Zealand

Current ASR & TTS market offering

Technology	Market	Telecom	PC/MM	Embedded		
				Ind	Auto	Mobile
TTS	Formant	(		x	x	x)
	Diphone	(x)	x	x	x	x
	Unit Selection	x	x	x	x	
ASR	Small vocab. C&C			x	x	x
	Medium vocab. C&C	x	x	x	x	
	Large vocab.	x	x			
	Dictation		x			x

X	**General market coverage**
	Babel's offering

Babel's approach towards TTS

Data = language dependent!

Data		Process
Set of Rules	▶	Text Preprocessor
Dictionary based	▶	Tagger
Phonetic tree + Dictionary	▶	Phonetizer
Prosodic Patterns	▶	Prosody
Diphone database (Voice)	▶	Speech Synthesizer
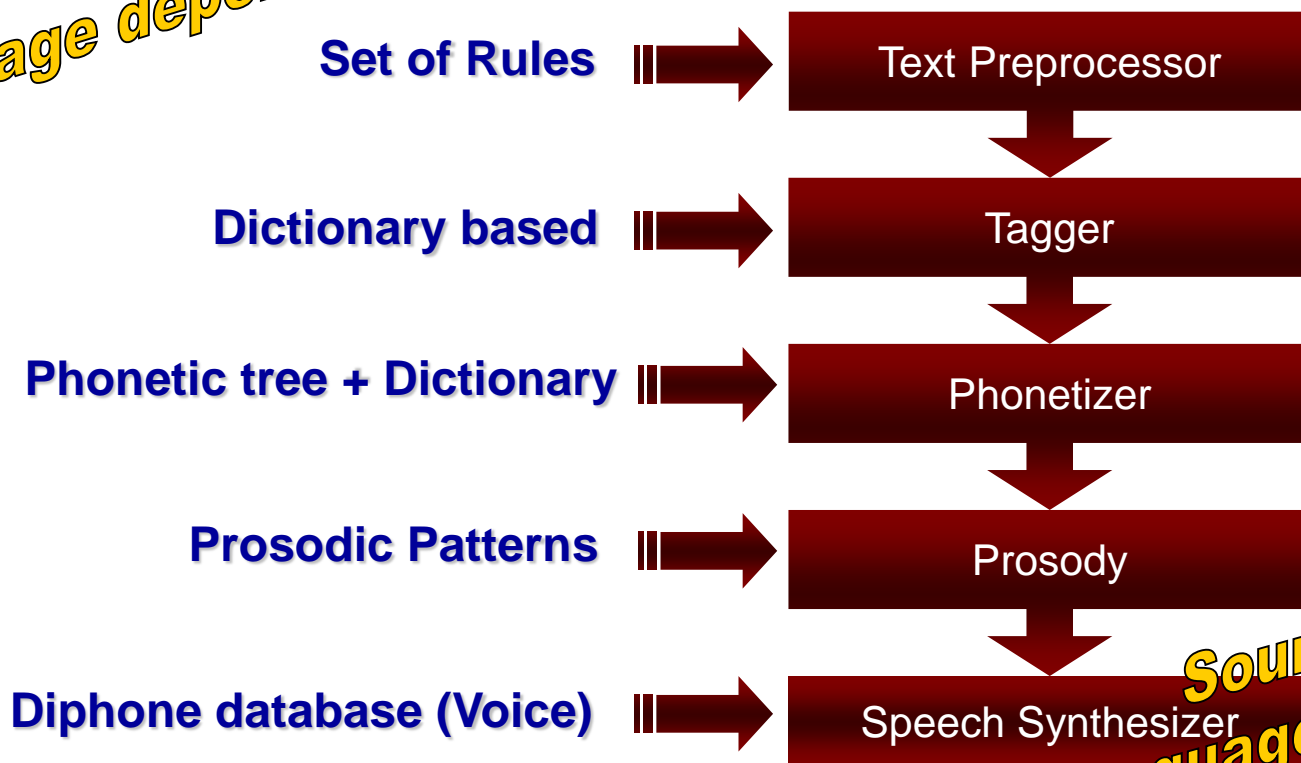
Source Code: Language Independent

Challenges of Current TTS Systems

- ## Application-specific text preprocessing

  - "CO-2" = Colorado 2
  - "CO-RD 239" = County Road 239
  - "CO-PILOT LN" = Co-pilot Lane
  - "I-195 EAST/SR-112 WEST/AIRPORT EXPY" = complex text with slashes, abbreviations, etc.

- ## Pronunciation of proper names

  - "Thibodaux" = French origin, English language rules will fail
  - "Eichelbergertown" = long difficult name

Challenges of current TTS Systems

- ## Voice quality & natural intonation
  - Traffic announcements, advertising, natural stress,…

- ## Phonetisation & proper names
  For ASR systems
  - "Belen" = Spanish origin, English language rules fail
  - "Raton" = French origin, English language rules fail
  - "Bourbonnais" = French origin, English language rules fail
  - "Pesce Pasta Tre" = "Tre" is Italian

Opening up new markets & applications

- **Automotive – Navigation Technologies**
  - Customer Problem :
    - Accurate Text-To-Speech and Speech Recognition for Navigation systems
  - Solution :
    - Development of production tools for efficient phonetization of proper names
    - Multiple pronunciations
    - Manual check of each proper name
  - Result :
    - Hundreds of thousands names manually checked
    - Demonstrations presented in Frankfurt, Madrid, etc.

Opening up new markets & applications

- **Public Announcements – Fulltec**
  - Customer Problem :
    - Broadcast of variable, repetitive messages
  - Solution :
    - High quality Text-To-Speech
    - Corporate voices
    - Combined use of recorded prompts and TTS
  - Result :
    - First deployments in supermarkets

Opening up new markets & applications

- **Language Learning – Franklin**
  - Customer problem :
    - Needed low-footprint TTS for various platforms & languages
  - Solution :
    - Advanced TTS model for low footprint; adapted to various platforms
    - Developed most optimal solution with specific Franklin data & Babel TTS
  - Result :
    - Homogenous product series of talking dictionaries on large number of platforms

Opening up new markets & applications

- **SMS2Speech**
  - Customer problem :
    - Convert text SMS into speech to expand the usage of SMS.
    - No solution handling the "SMS language"
  - Solution :
    - Specific dictionaries ("CU") & Text Preprocessor ("HAND") frequently updated
    - Automatic Language Recognizer
  - Result :
    - Deployment of the solution on December 1, 2003
    - "Bj rdv ce soir 20h. S ke tu viens seul? A+"

Thank you for your attention!