

Development of Speech Translation for Hand-held Devices

September 25, 2003

Akitoshi Okumura

NEC Corporation

Outline

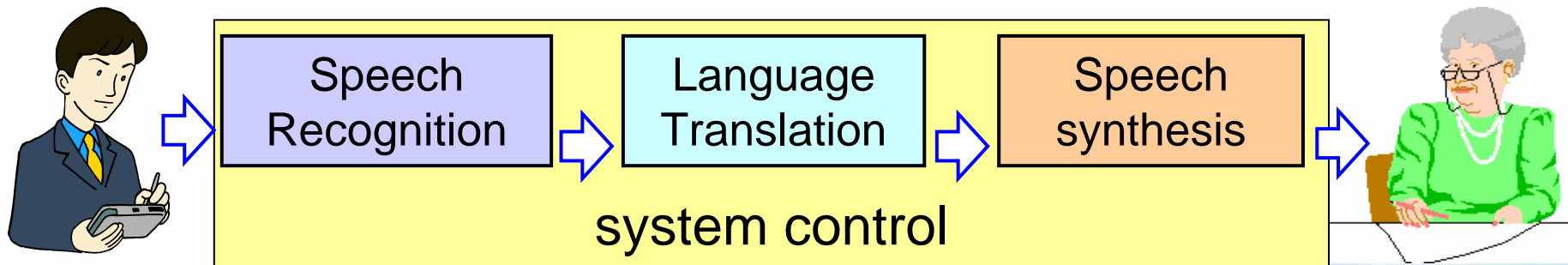
- What is speech translation?
- Why do we make the challenge?
- What has been done?
- What are the upcoming challenges?
- Summary

What is speech translation ?

- Definition

- To translate orally from one language into another, mediating between two parties of different languages, who would otherwise have difficulty communicating with each other.

- System Components



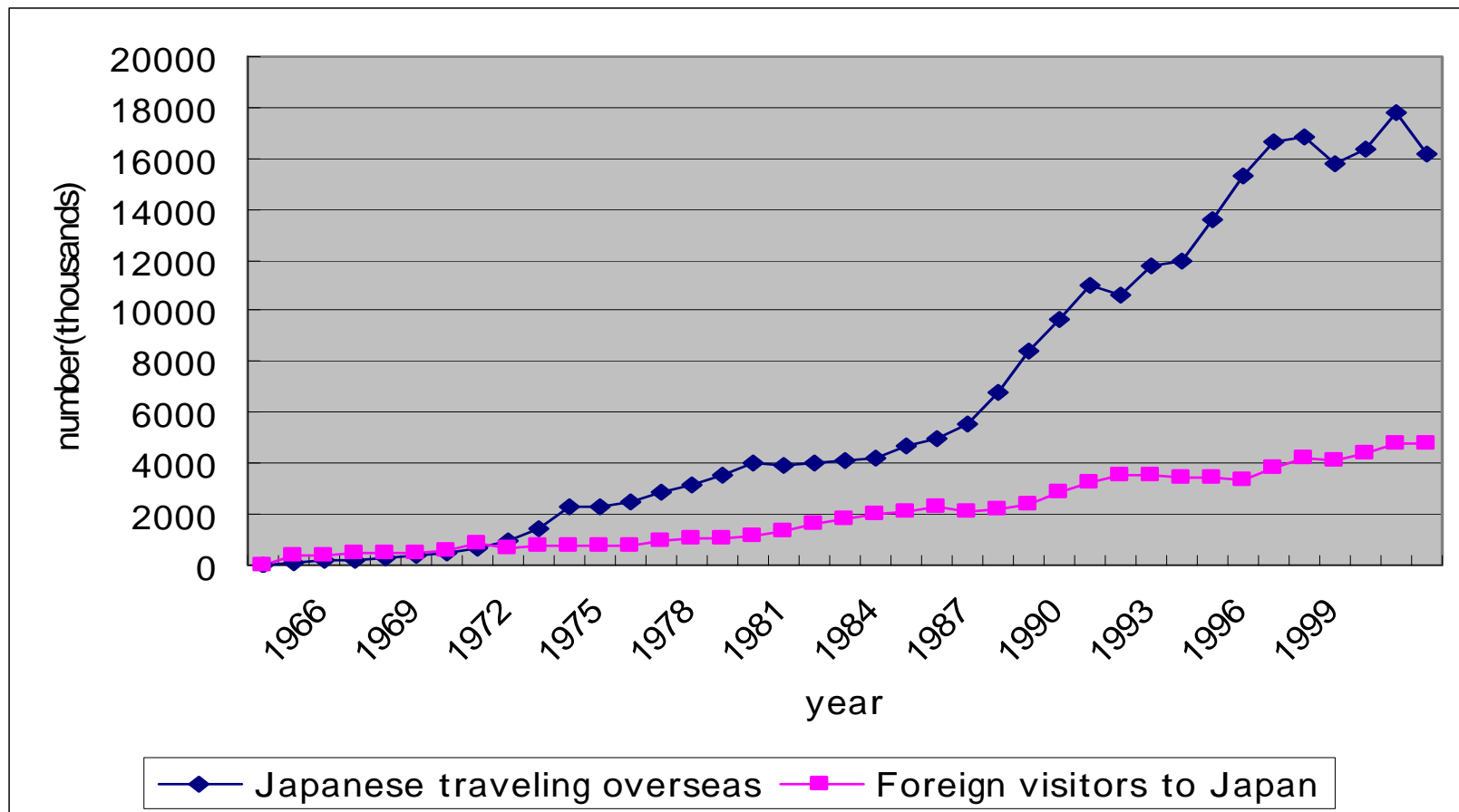
All three still need some improvement.

One of the most challenging areas

Why do we make the challenge ?

- It is a big dream.
 - Tower of Babel
 - A language barrier has been one of the biggest challenge from ancient days.
- It is there.
 - Language barrier is higher than Mt.Everest.
- It cultivates a big market.

Travelers to and from Japan



From White Paper on travel by Ministry of Land, Infrastructure and Transport

The number of potential users will increase significantly.

What has been done ?

NEC English-Japanese speech translation

- 1983
Proposed the concept of speech translation telephone at Telecom'83 in Geneva
- 1991
Exhibited a prototype system on WSs and dedicated hardware at **Telecom'91**
- 1999
Exhibited prototype software on a mobile PC at Telecom'99
- 2001
Produced **TABITSU**, commercial software on mobile PC
- 2002
Developed **PDA software** for user trial at Narita Airport
- 2003
Developed a prototype translator, **NEC Travel Interpreter**



TABITSU



PDA

What are the upcoming challenges?

- Robustness in real environments
 - Various speaking styles, false starts, interruptions, etc.
 - Auditory scene analysis
- Convenience for users
 - Simultaneous utterance by multiple speakers
 - Hands-free speech input
- High quality
 - Topic detection and adaptation
 - Portability in different domains

Summary

- What is speech translation?
 - It is a big dream and challenge.
- Why do we make the challenge?
 - Because it is there.
 - Because it cultivates a big market.
- What has been done?
 - The dream is gradually becoming a reality.
- What are the upcoming challenges?
 - Stop getting “Lost in Translation”
 - We want to be saved by good translation.