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The Business Problem:

Sales Reps don't like using CRM systems.

So often they don't, and Managers don't get full benefits of CRM systems.

Introducing Oracle Voice

Speech to Text and Text to Speech conversion

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Cloud

Identity Management

Natural Language Processing Engine

YOUR COMPANY'S OPPORTUNITIES

YOUR OPPORTUNITES

Sales Data

The Usability Engineering Problem

Cool…

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Business Requirements

- Acquire commercial license for speech recognition and text-to-speech
    - Enterprise domain vocabulary, proper names, industry jargon
    - Multiple mobile platforms usage
    - Multiple deployments (Oracle sales force, various customers)
    - Multiple languages
    - Multiple application platforms
    - Wide variety of usage environments and contexts
    - Potentially millions of users, hundreds of job profiles
    - SLA: flawless operations, high accuracy, fast performance

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Factors to consider:
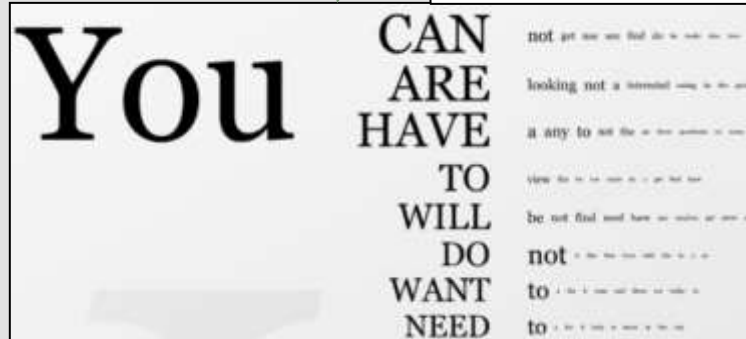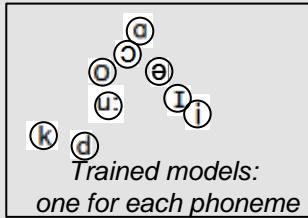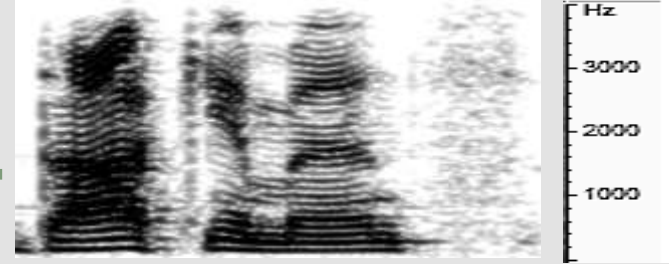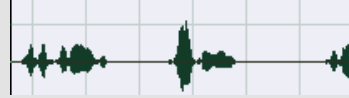
- Features and functions
- Expected usage patterns
- Speech recognition accuracy
- Performance optimization
- Languages, dialects, accents
- Security of customer data
- Best practices

Trained models: one for each phoneme

Phoneme lattice: likelihood vs time

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What application features and functions to support?

Context of Use →

Task Analysis →

User Profile
Development →

→ Usage Patterns

→ User
Requirements

→ Technology
Requirements

Usage Patterns

- How much will they use the product?
  - Vendor royalties
  - Support
  - SLA
  - Pricing
  - Customization
  - Languages
  - Performance
- Usability Lab Studies
- Sales Field Studies

Speech recognition accuracy

- Standard corpus development for testing
- SDK out of the box vs. with Oracle app
- Measuring through phone microphone
- Speech expert evaluations
- Vendor comparisons

- Adding vocabulary to existing toolkits
- Natural language processing
- NIST SCLITE method: WER
- Final acceptance testing

Acceptance Testing Set-up

Laptop playing recordings separated by 5 seconds of pause

monitor

Attenuator to reduce sound level

Special cable for handset MIC. input

Speech product Exerciser
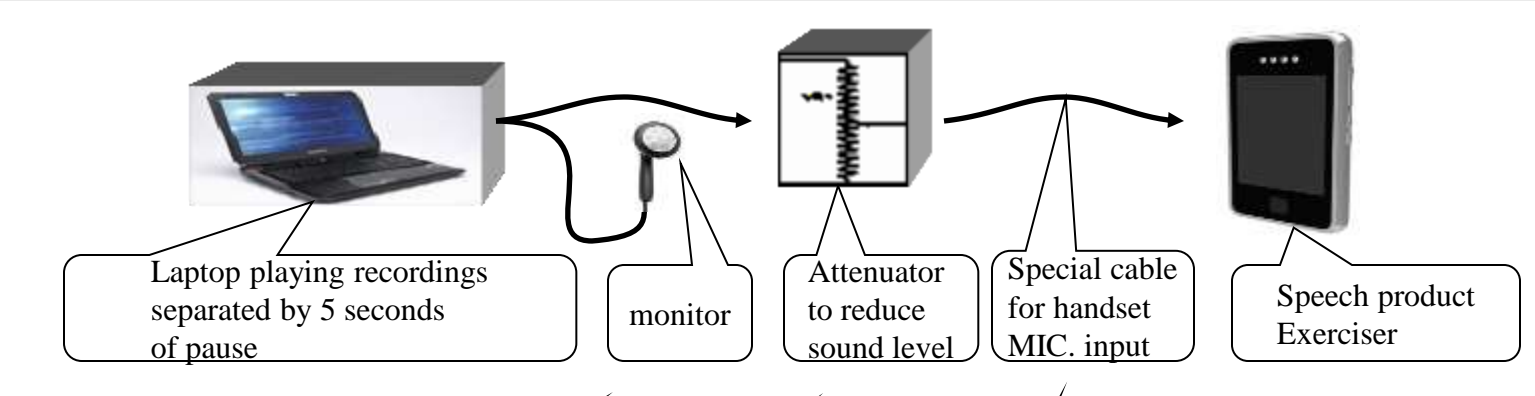
Performance criteria

- How will speech technology work under production conditions
- Delay in text response after speech input
- Delay in speech output after text input
- Speech on server vs. on smartphone
- Simulating user loading conditions
- App crashes
- Data loss

Related Article: Smartphone and Tablet Users Are Still Frustrated with Slow Mobile Download Speeds

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Languages, dialects, accents

ORCL Language	ORCL Code	Vendor Code/Lang1	Vendor Code/Lang2	Vendor Code/Lang3	Notes
Arabic	ar	ara-EGY			
Chinese (Simp)	zh-CN	cmn-CHN (Mandarin)			
Chinese (Trad)	zh-TW	cmn-TWN(Taiwan-Mandarin)			
Dutch	ne	nld-NLD/Dutch			
French	fr	fra-FRA (French(EU)			
German	de	deu-DEU (German)			
Italian	it	ita-ITA (Italian)			
Japanese	ja	jpn-JPN (Japanese)			
Korean	ko	Kor-KOR (Korean)			
Portug-BR	pt-BR	por-BRA (Portuguese-BR)			
					Referred to translation group to choose
Spanish	es	spa-ESP (Spanish EU)	spa-MX (Span-Mexico)	spa-USA (Span-US)	
Czech	cs	ces-CZE (Czech)			
Danish	dk	dan-DNK (Danish)			
Finnish	fi	fin-FIN (Finnish)			
French (Canadian)	fr-CA	fra-CAN (French (CAN)			
Hebrew	he	NONE			
Hungarian	hu	hun-HUN (Hungarian)			
Norwegian	no	nor-NOR (Norwegian)			
Polish	pl	pol-POL (Polish)			
Russian	ru	rus-RUS (Russian)			
Swedish	sv	swe-SWE (Swedish)			
Turkish	tr	tur-TUR (Turkish)			
Romanian	ro	ron-ROU (Romanian)			

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Security of customer data

- Speech vendor must match Oracle standards.

- Multiple levels of security reviews

- Offsite speech data causes risks.

- Special arrangements for timely parsing, extraction, and deletion

Engineering for the Future

- Center of Excellence
  - Developer guidelines
  - Competitive analyses
  - Social networking
  - Code samples
  - Collateral
  - Improvements
- Expansion into product families
- Expansion into application platforms
- Testing speech recognizer alternatives

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Thank you!