VUI in Wearables and the IoT possibilities and challenges

Wolf Paulus, Intuit
Canary absorbs and analyzes what’s happening at home to keep you safer and more connected.
**Sentri** provides complete and simple home monitoring and automation solution, in one beautiful display.
Available at beonhome.com

BeON  Preventative Home Security

Mobile Voice Conference 2015 - Wolf Paulus  wolfpaulus
Jewelry
Opening Ceremony x Intel White Snakeskin MICA Smart Bracelet
Fitness / Health

BRAGI - The Dash

Imagine the Dash ...
- as a live Fitness Coach
- as a discrete Health Monitor
- calling for help in case of Emergency
- used as a Walkie Talkie
- as a prompter during presentations
- translating on the fly
- as your personal Sightseeing Guide ...

Mobile Voice Conference 2015 - Wolf Paulus wolfpaulus
No Cables.
The Dash has absolutely no cables. And there is a good reason for that: cables get in the way, tangle, break.
The Dash uses Next Generation Bluetooth Technology, so you can do what you like the most. With total freedom of movement. Sounds great. Feels great.

Wearing Comfort & Secure Fit
We made three dimensional scans of hundreds of ears and tested different shapes. Finally three shapes developed that provide comfort and fit for a broad range of ears.

Why The Dash will fit perfectly:
- Three different sized silicone sleeves to fit your ear
- Ergonomic design
- No cables pulling on the headphones
- Lightweight – a Dash earphone weighs less than 13.8 grams
- Three Point Secure Fit
The **BitBite** ear clip is worn every time you eat. Contains a microphone and additional sensors that record and perform initial processing of the incoming sounds.
INTRODUCING

Amazon Echo

Voice Training

Introduction

Voice training can help Amazon Echo recognize what you say better. In this short session you'll be reading 25 phrases out loud, speaking to your Echo. For the best results:

- Speak normally; Echo will not respond.
- Sit or stand where you intend to primarily use Echo.
- Every phrase you say is used, even if you don't complete a training session.
- Misspoken words, coughs, pauses or other disruptions will be ignored.
- Do not use your Echo remote.

Start
7 Microphones
Echo is always ready, connected, and fast. Just say the wake word, "Alexa," for:

- **News, weather, and information:** Hear up-to-the-minute weather and news from a variety of sources, including local radio stations, NPR, and ESPN from TuneIn.
- **Music:** Listen to your Amazon Music Library, Prime Music, TuneIn, and iHeartRadio.
- **Alarms, timers, and lists:** Stay on time and organized with voice-controlled alarms, timers, shopping, and to-do lists.
- **Questions and answers:** Get information from Wikipedia, definitions, answers to common questions, and more.
- **More coming soon:** Echo automatically updates through the cloud with new services and features.
the ubi

- Two Microphones
- Two Speakers
- Multi-Color Lights
- Sensors for Temp, Light, Humidity, Air-pressure
- WiFi
- 1 GB RAM + 4GB Storage
- 1.2 GHz dual core ARM Cortex A9
- Android 4.1
The always-listening Ubiquitous Computer

KEEP THE LOVE ALIVE
Send handsfree voice messages to loved ones.

GET THE WORD... IN
Send announcements into your home while you’re out.

REMEMBER BETTER
Just ask the Ubi to remind you about something.

MAKE LONG DISTANCES SHORT
Send messages Ubi to Ubi, and from anywhere.

SAY HELLO
Speak notes to friends when they come to mind.

LIVEN THINGS UP
Set the mood with FREE music streaming by voice.

CONTROL YOUR HOME
Set the temperature, turn on the lights... just by asking

DO MUCH MORE
Connect by voice to many new services and devices.
Raspberry Pi

Easy as Pie?
The Raspberry Pi computer doesn’t look like much, but it has all the ports you need to make various gadgets.

Source: Adafruit
CMUSphinx is specifically designed for low-resource platforms

PocketSphinx simplifies accessing speech recognizer functionality

- Sphinx is written in ANSI C89, i.e. can be compiled w/ GCC, MSC
- BSD-like license allows commercial distribution
- Uses acoustic model, phonetic dictionary, language model
- Frames (10 milliseconds long) produce 39-dimensional feature vector
Input
Okay Pi
Open Garage
Start Translator
Shutdown
What is the weather in Ramona
What is the time

Pronunciation Dictionary

Language Model

\end\
Translation

Record and encode voice sound, send it to Google for transcription.

Use Google to **synthesize** the transcription.

Use Microsoft's **translation** service to translate the transcription into the target language.

Use Google's Speech Synthesizer again, to **synthesize** the translation.
Summary

The Machine to Machine IoT doesn’t care much about VUI, but the consumer space does:
- Security / Home Automation
- Jewelry, (Bracelets, Smart Watches, ..)
- Health and Fitness

Personal Assistant and Security / Home Automation merge
- Amazon Echo
- The Ubi
- Raspberry Pi
  - CMU Sphinx
  - Recognizer, Translator, and Synthesizer