Enabling Speech Recognition in Noisy Environments

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UmeCobra in a Blackhawk Helicopter
Introduction

- Umevoice founded in 1995
- Focused on voice recognition for trading
- Customers:

  ![Goldman Sachs](image1)
  ![Merrill Lynch](image2)
  ![UBS](image3)
  ![Credit Suisse](image4)

Typical statement “IBM offer 1 million at 156 and three quarters”

Typical sale: $1 M+
Serendipitous Invention

• Trading rooms are noisy places
• Exchange floors are much noisier
• Babble noise is much tougher than other noise to eliminate
• UmeVoice **accidentally** invented the worlds best noise canceling microphone technology!
Evolution of theBoom technology

• Design of theBoom (Frog Design – Industrial Designers of Original Macintosh Computer)
• Creation of multiple products
• Creation of multiple markets: Consumer, Military, Fortune 500 Companies, Auto Racing, Aviation
UmeVoice Noise Canceling Technology

What Sets UmeVoice Apart

• Acoustic approach - eliminates need for power
• Proven in 100db+ noise
• “Whisper and be heard” capability

A unique noise canceling technology based upon a physical approach.

UmeVoice outperforms our competition in most cases without a need for electronics!
Military Environment

Noise is Ubiquitous
• Flight lines, Helicopters, Control Rooms, Any Combat Theatre

Clarity of Communication is Critical:
• Ground Personnel, Special Ops, Pilots

Example of UmeVoice products in use in the military:
• Flight lines, Helicopters with open door flights, Search and Rescue, Oil rigs, Control Rooms, Various combat scenarios, Ground personnel, Tactical headsets
Benefits of Clear Audio for speech recognition

- Accuracy of recognition is dramatically better
- Elimination of errors, enhanced productivity
- User experience is often make or break
Successful voice applications that were inconceivable recently

- Inside noisy manufacturing plant
- Handheld applications
- Communication in a helicopter
- Communication outside a helicopter
- Trucking
Benefits of applications

• Dramatic improvement in tracking and planning of trucking operation
• Significant productivity enhancement during machinery inspection and operation
• Enhanced safety
• Saving lives
• Enhanced customer service
Other Domains where UmeVoice technology has been proven

- Emergency rooms
- Call centers
- In the car
- Nascar, Indy and other racing circuits
- Wall Street
Benefits of using UmeVoice’s approach to speech recognition

- Safe clear communication is possible in the noisiest of places
- The ability to “Whisper and be heard” and not have private data be overheard in call center settings
- Retrofit existing technology quickly
- New customized solutions can be designed fast
UmeCobra™ - a plug n play approach to aviation headsets and helmets

- **Military Grade/Industrial Strength**
- **Easy to retrofit** with David Clark style headsets and Gentex helmets
- **Dramatic Noise Reduction**
  UmeCobra™ has an average 10 dB improvement over the M-87 with a maximum of 30 db improvement in average speech bandwidth.

- **The Best Speech Intelligibility**
  UmeVoice's technology improves intelligibility scores to 82% in noise levels of 105 dB compared to 72% intelligibility for the M-87 noise canceling microphone.

(Source: US Air Force Research Laboratory)
theBoom E: Tactical

- Thin tube makes it very light and comfortable for many hours of use
- Loud induction speaker with a bulbous ear gel that blocks out other noise
- Universal connectivity (cell phones, laptops, landlines etc.)
- Whisper and be heard capability

TheBoom E: Tactical can be customized for different users and is available with one or two speakers

- The top choice for noisy manufacturing floors, executives and military personnel
Summary

• Noise is ubiquitous in military environments and in many manufacturing environments
• Clarity of communications impacts safety, readiness and effectiveness and allows accurate speech recognition
• Many industrial applications that have hitherto not been speech enabled can now be speech enabled since we have a simple approach to delivering clear audio.
• theBoom mic is the best for high noise voice recognition applications

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