

**SCTE CABLE-TEC**  
**EXPO'13**  
OCTOBER 21-24 / ATLANTA, GA

**BRIDGING THE USABILITY GAP IN  
CONNECTED DEVICES WITH  
INTELLIGENT CONVERSATIONAL  
INTERFACES**

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# What is the Usability Gap?

## us·abil·i·ty

- ▶ 1 : capable of being used
- ▶ 2 : **convenient** and **practicable** for use
- ▶ Learnability, easy, efficient, satisfaction



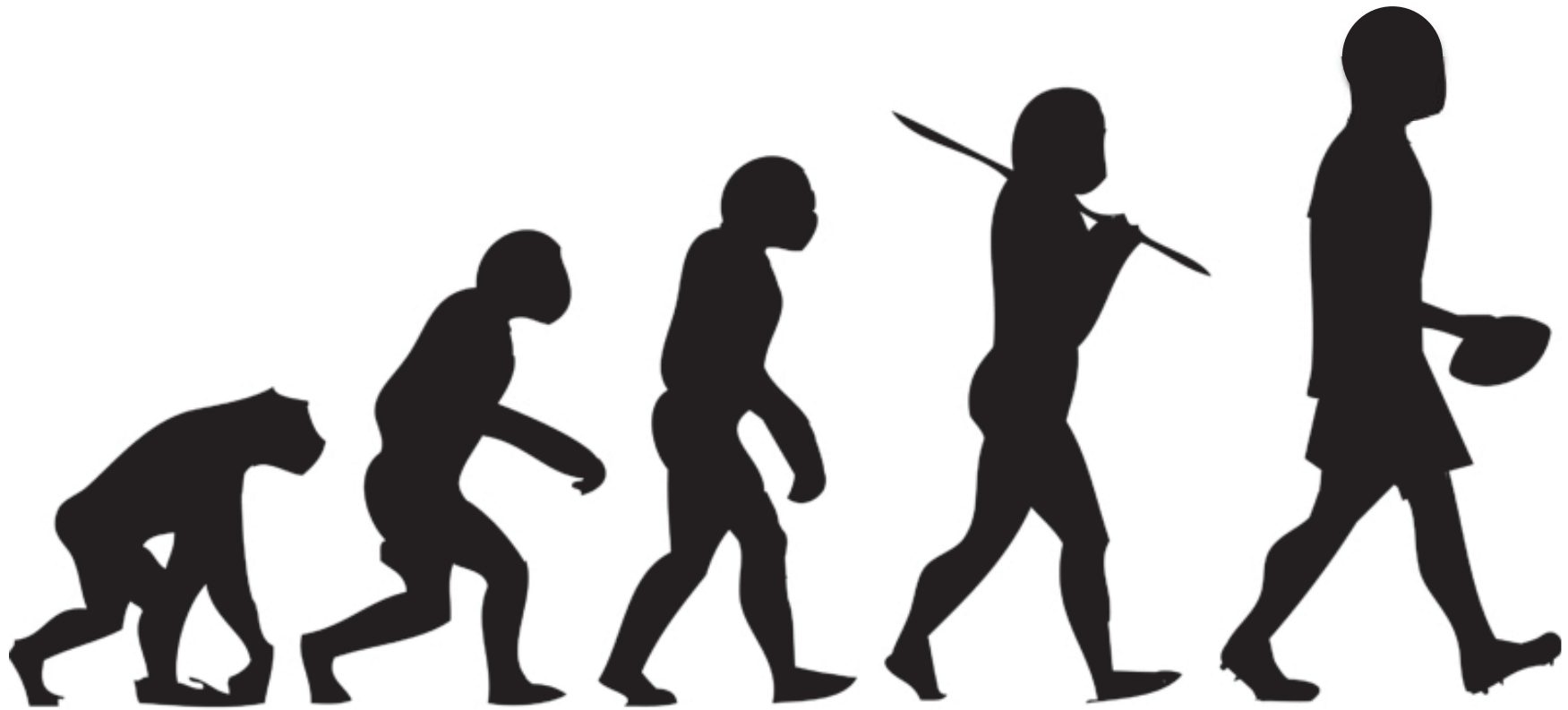
# Who Decides What Usability Is?



Joe the Consumer



# Evolution of the Consumer



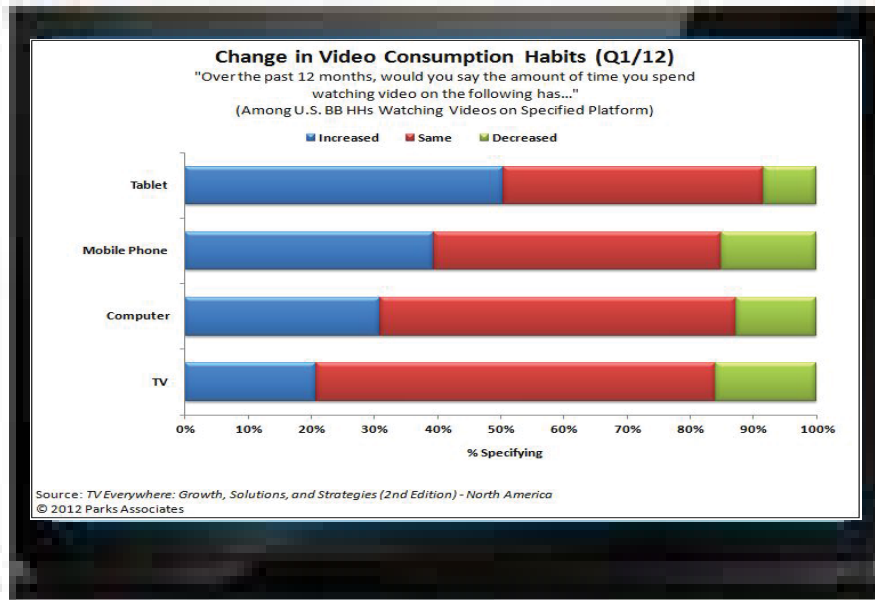




# Video sources are proliferating



# Consumer Access to Video Programming







Choice is good, but also confusing

What is available

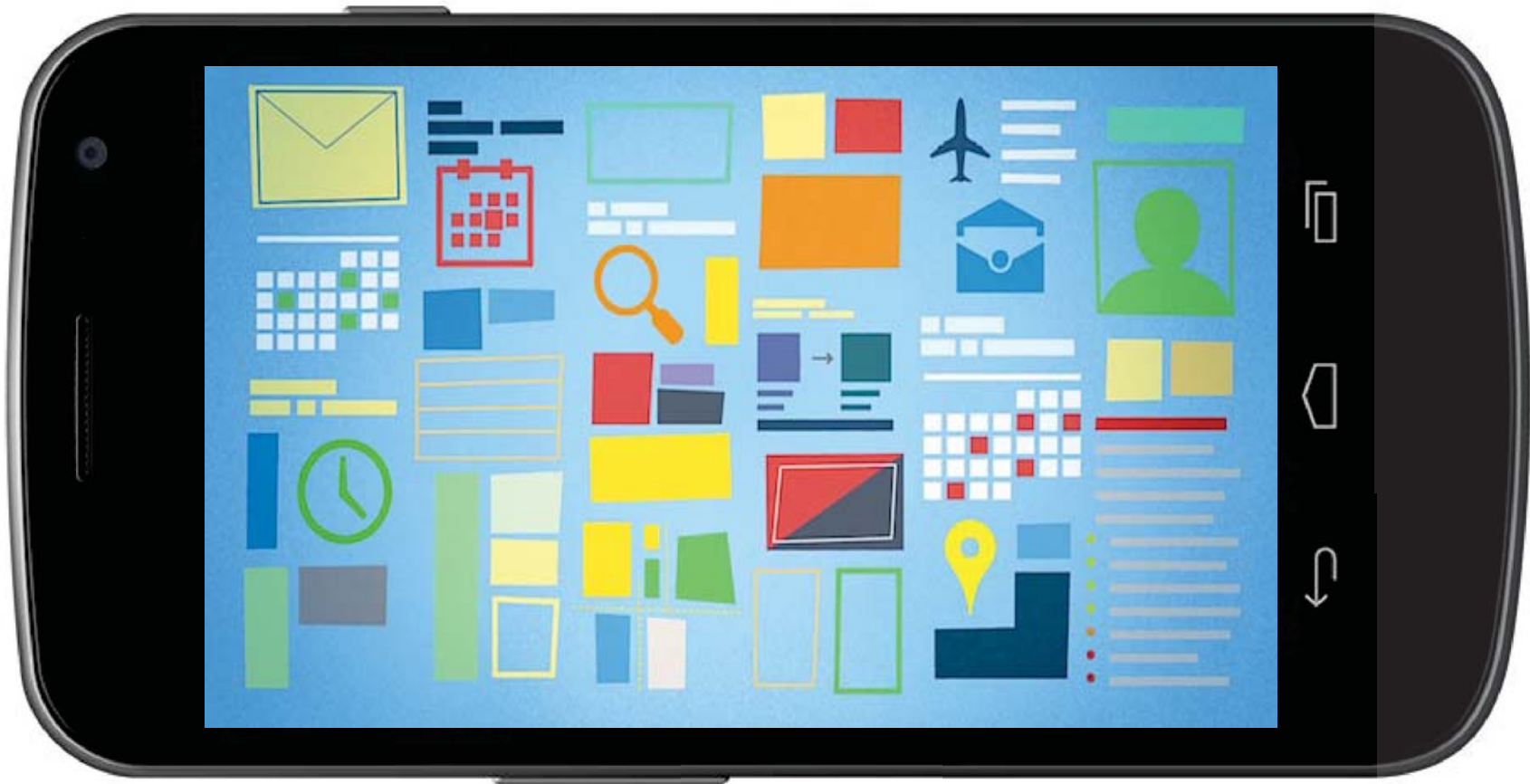
Where is it available from

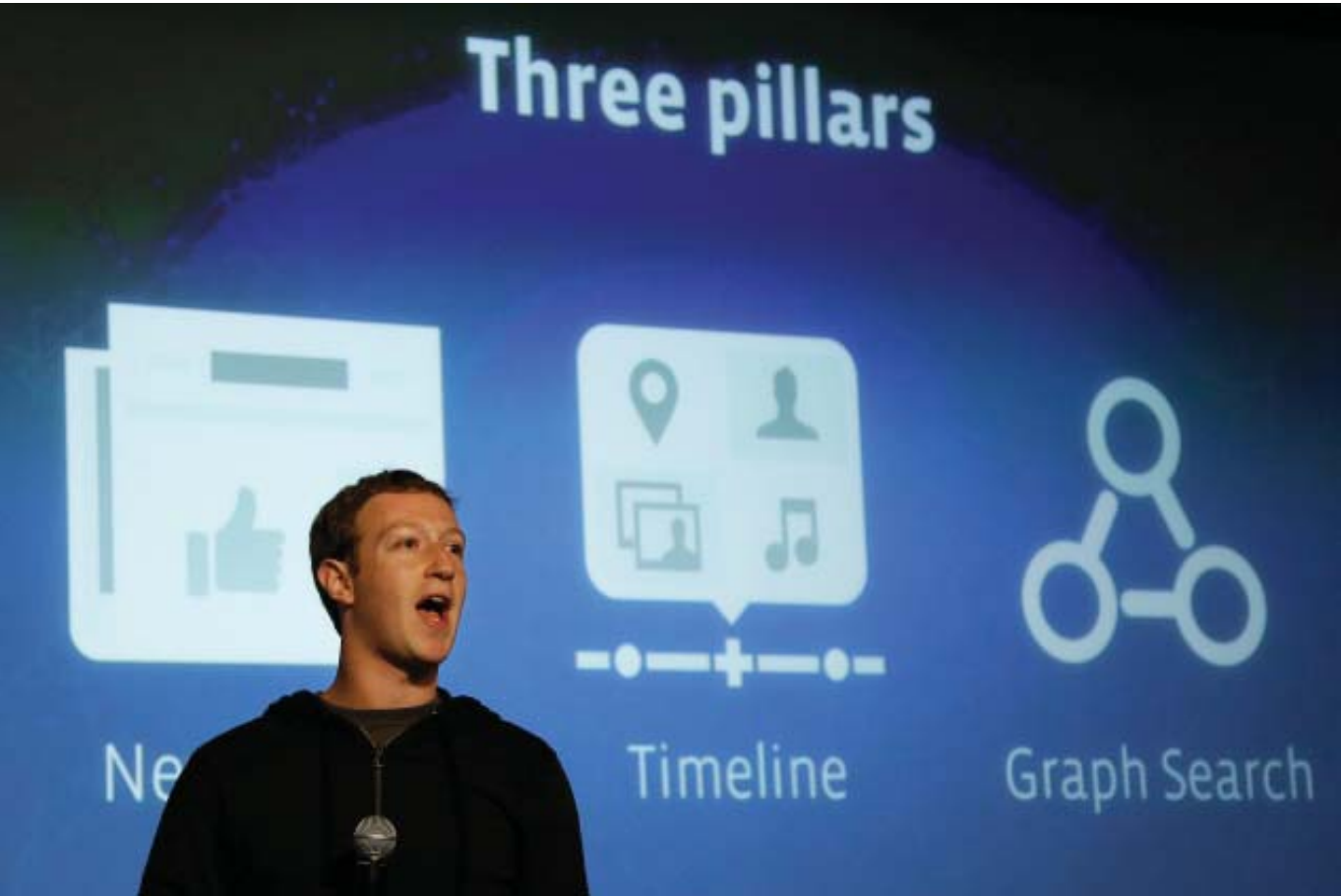
What screen can it be seen on

# Why the Television Usability Gap is Getting Wider

- ▶ Explosion of Content (Online + OnDemand + Linear)
- ▶ Fragmentation
- ▶ Demise of Appointment Based Viewing
- ▶ Changing Consumer Expectations







# Making Data Intelligent

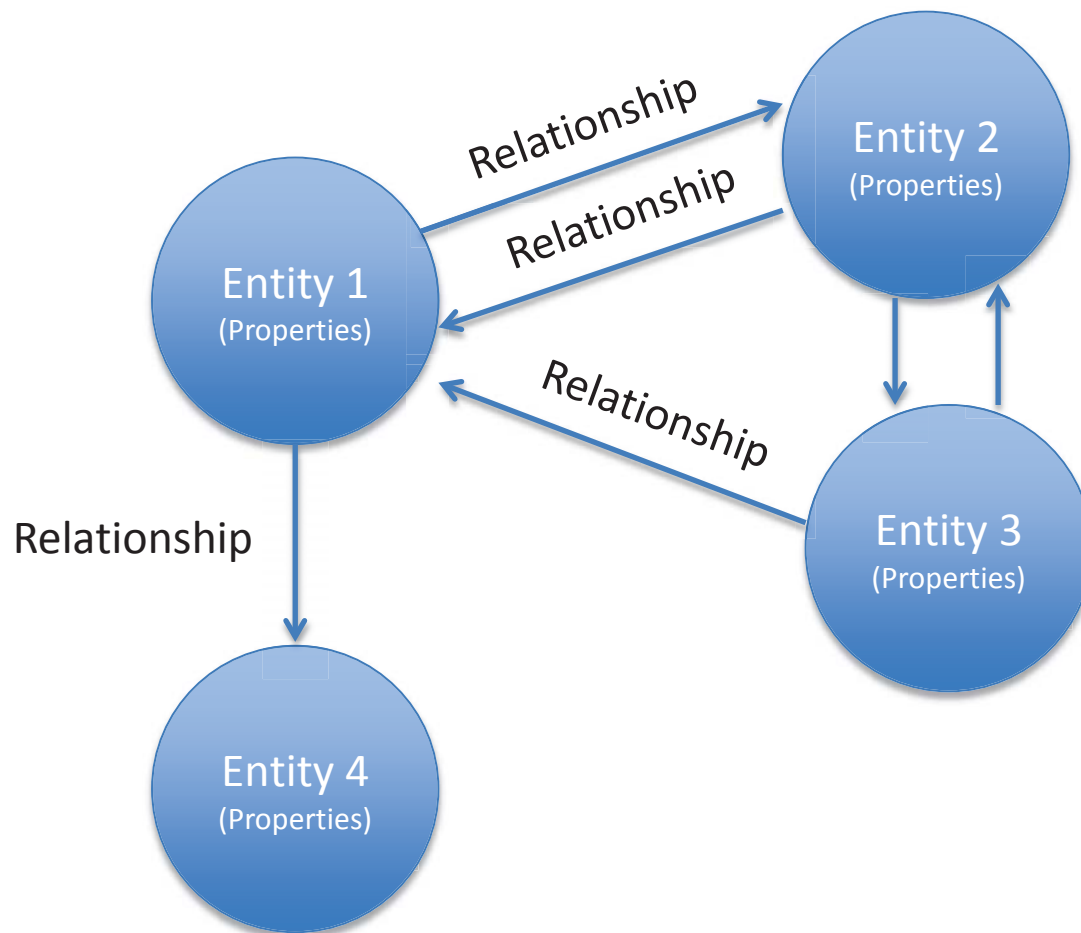
- ▶ Contextual
- ▶ Personalized
- ▶ Agile



# Making Data Semantic



# Graph Databases



# Key Properties of Graphs

- ▶ Index-free Adjacency
- ▶ Relationships attached to a node provide a direct connection to other related nodes of interest
- ▶ Graph queries literally traverse the graph, chasing pointers
- ▶ Graph operations can be carried out with extreme efficiency, traversing millions of nodes per second, in contrast to joining data through a global index





# Graph-Based Usability

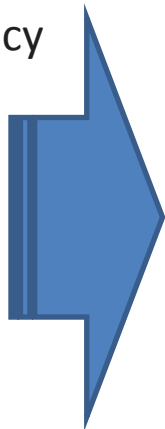
## Graph Elements

Index Free Adjacency

Nodes (Entities)

Properties

Relationships



## Dynamic Relevancy (weights)

Temporal



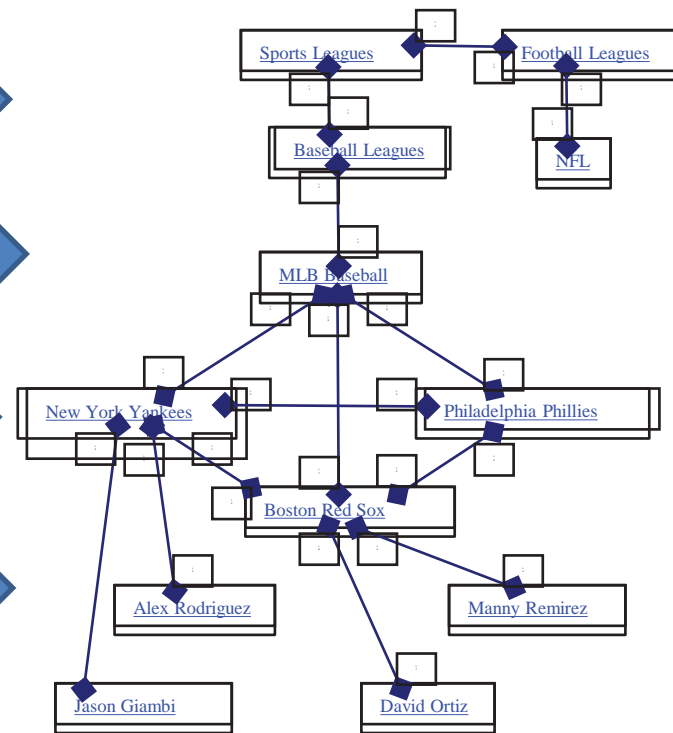
Spatial



Social



Personal



# Advantages of Graph-Based Technology

- Faster operations for associative data sets
- Scale more naturally for large data sets
- Manage ad-hoc and changing data

‘Intelligent’. Efficient. Agile...  
... and Semantic

Modeling word meaning is easier when a given word is understood in terms of related words



# Key Advantages in Usability and Discovery

Predictive



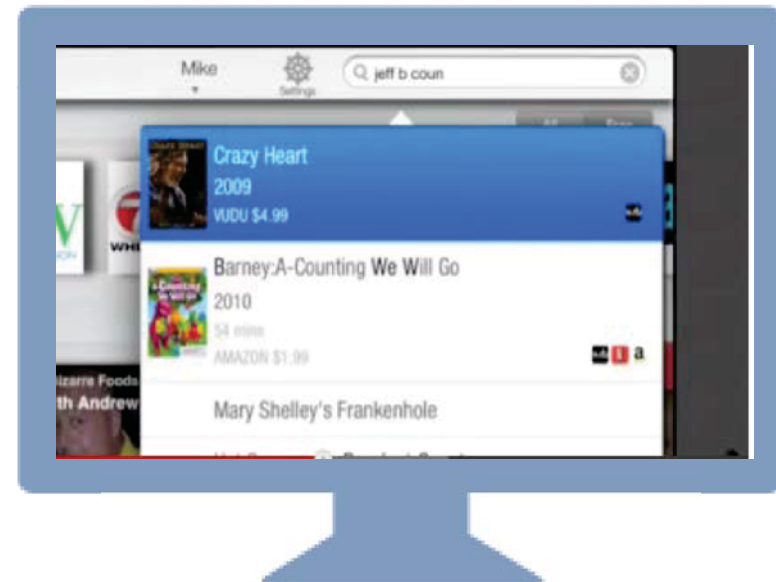
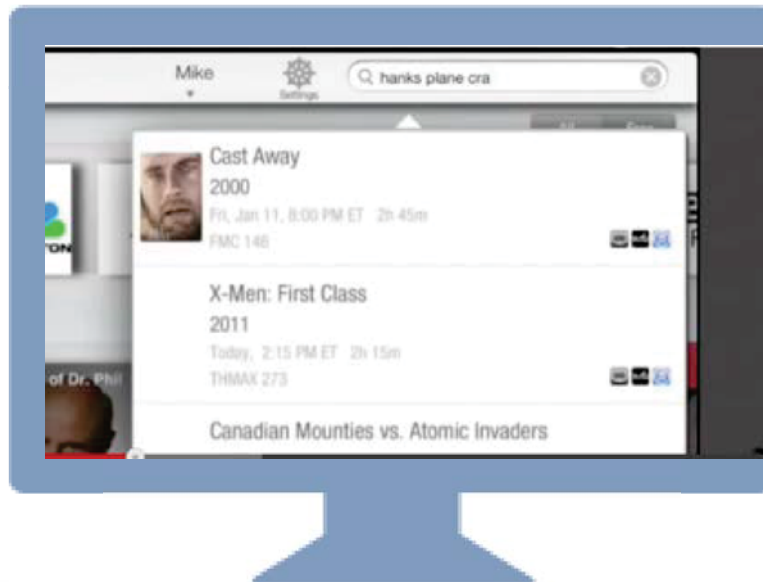
Natural Language



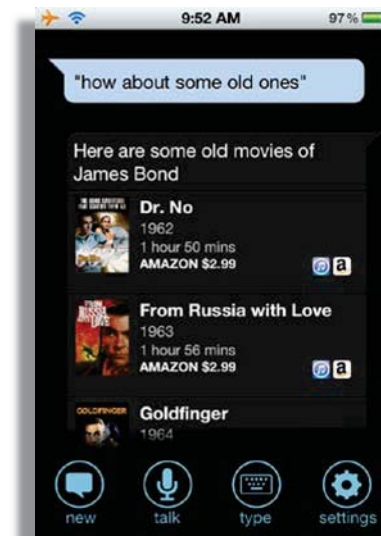
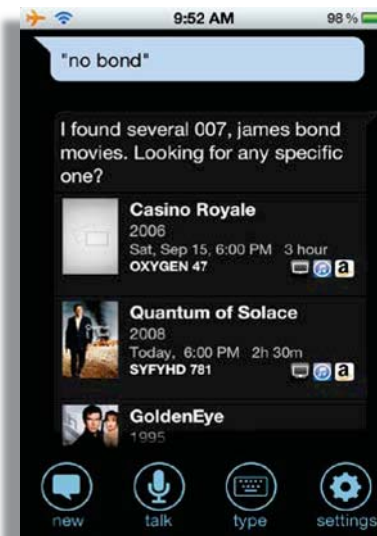
Conversational Interfaces



# Examples



# Examples



# Summary

- Usability is constantly outmoded
- Web, social and mobile are advancing to semantic graph-based technologies
- Television usability is similarly outmoded and needs technology paradigm shift
- Graph-based technologies are the answer
  - Intelligent, efficient and agile compared to lexical metadata based solutions
- Semantic technologies allow implementation of natural language and conversational interface usability
- Usability must be: #predictive # personalized #contextual



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## Questions?

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