



Siri: A Virtual Personal Assistant

An Ontology-driven Application for the Masses

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cofounders, Siri

It was imaginable 20 years ago.

**Apple's Visionary Video:
Knowledge Navigator (1987)**



from www.open-video.org

Interaction with the Assistant

- **Touch screens** and cinematic animation
- **Global network** for info and collaboration
- Awareness of **temporal** and **social context**
- **Continuous Speech** in and out
- **Conversational Interface** - assistant talks back
- **Delegation of tasks** to the assistant
- Assistant use of **personal data**

How Close are we Today?



- Touch screens
- Cinematic effects
- Global network
- Location and time awareness
- Speech out, on demand
- Isolated speech to text

But where is the interface for assistance?

What is needed is to put it all together.

Conversational Interface

Location Awareness

Speech to Text

Semantic Data

Time Awareness

Text to Intent

Services APIs

Task Awareness

Dialog flow

Task & Domain
Models

Access to Personal Information



A Virtual Personal Assistant

The Assistant Paradigm For Human-Computer Interaction

- focus on **task** completion
- intent understanding via **conversation** in **context**
- learns and applies **personal information**

A VPA helps you **get things done**

TIRED



"what do you want to read?"

WIRED



"at your service(s)"

TownMeGeo TradeSports TravelFusion Trendrr Trim TringMe TrueKnowledge
Trulia TrustedPlaces Trvnt Tumblr TutorialGarden Tweetmeme Twilio

The Ecosystem of APIs and Online Data

Veoh ViaMichelin Viddler Videodetective VideoSurf Vidoop Vimeo
VirtualEarth Vodpod WatchMouse WeatherBug WeatherByCity
WeatherChannel WeatherUnderground WebAPIforBiology Weblogs
WebPurify WebShots WebThumb WeFeelFine WhatTheTrend
WHERE Where2GetItSlippyMap Whereis WhitePages Widgetbox Wigle
Wikipedia WindowsDesktopGadgets WindowsLiveContacts
WindowsLiveData WindowsLiveDomains WindowsLiveExpo

Over 1600 APIs
growing at accelerated rate...

YahooImages YahooInternetLocationPlatform YahooLive
YahooLocal YahooMail YahooMapImage YahooMaps
YahooMessenger YahooMusic YahooMusicEngine
YahooMyWeb YahooPlacemaker YahooQueryLanguage
YahooRelatedQuery YahooSearchMarketing YahooShopping
YahooSiteExplorer YahooTerms YahooTraffic
YahooTravel YahooUpdates YahooVideo YahooWidgets Yelp
YesBroadcastDB YourMapperAPI YouTube YouTXT Zanox
Zazzle ZeeMaps Zemanta Zillow Zixxo Zoho ZoomIn ZoomInfo
Zoomr Zvents

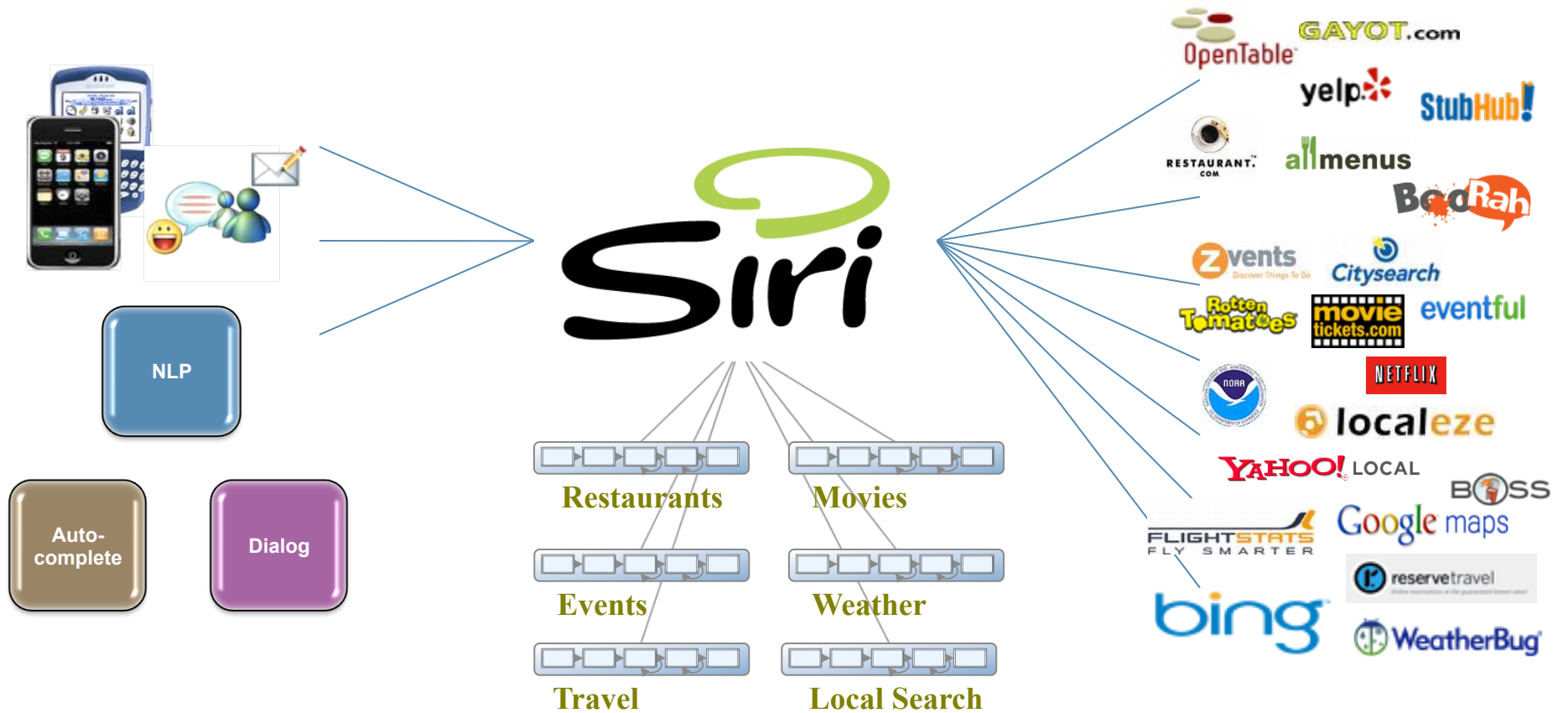


Virtual Personal Assistant

Interface Intelligence

Domain & Task Models

Service Orchestration

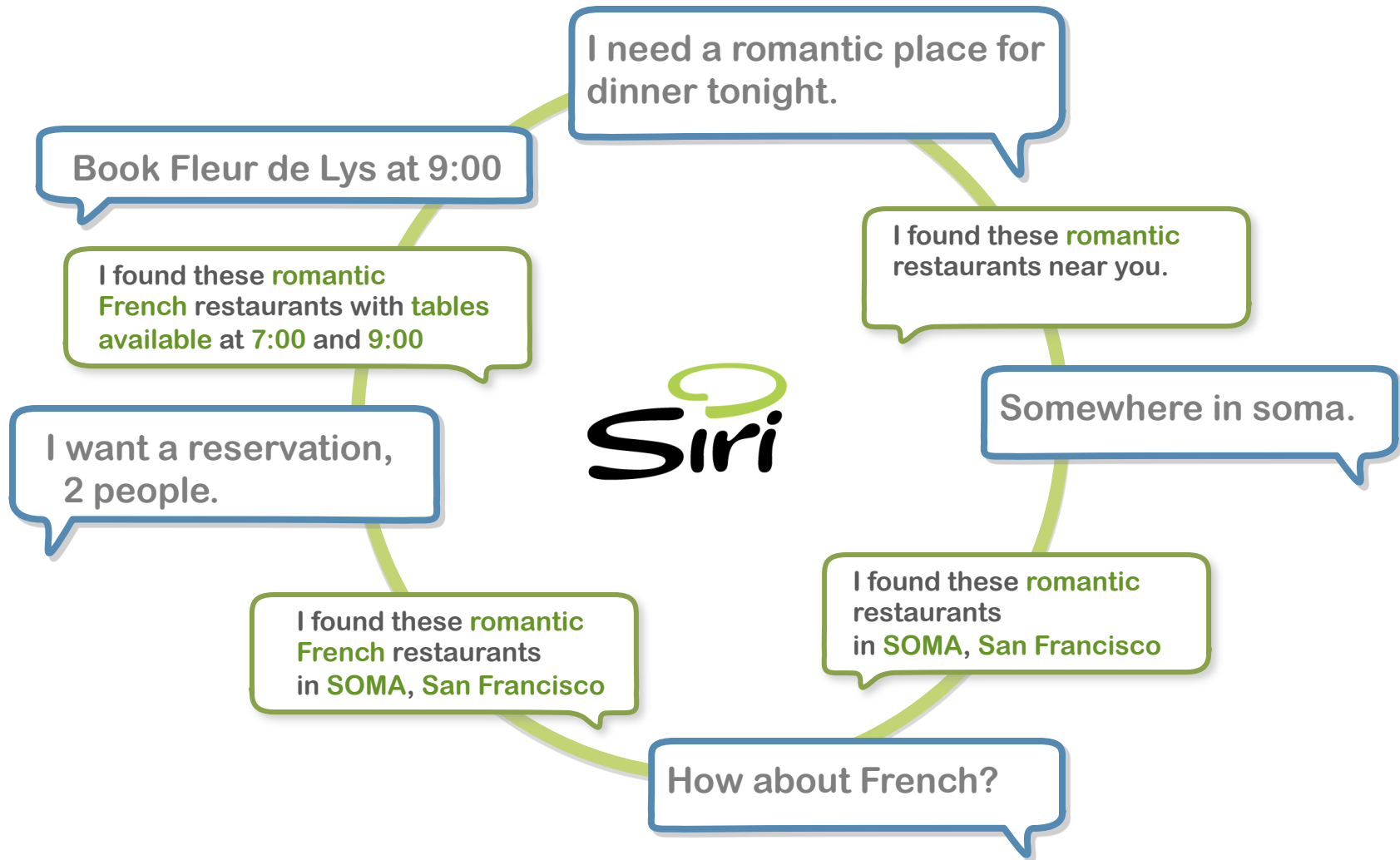


Siri Demo



Video: <http://siri.com/about/product>

The Interface is a Conversation



Example Task Automation

I found the following **Italian** restaurants that reviews say are **romantic** near **your home**

E & O Trading Com... ★★★★★
96 South First Street 408-938-4100
San Jose 0.1 miles

Reserve: 5:45p 6:00p more...

P.F. Chang's China ... ★★★★★
98 S 2nd St 408-961-5250
San Jose 0.2 miles

Koji Sake Lounge ★★★★★
48 S 1st Street 408-287-7199
San Jose

Your table is **reserved** for 2
Saturday night at 8:00pm.

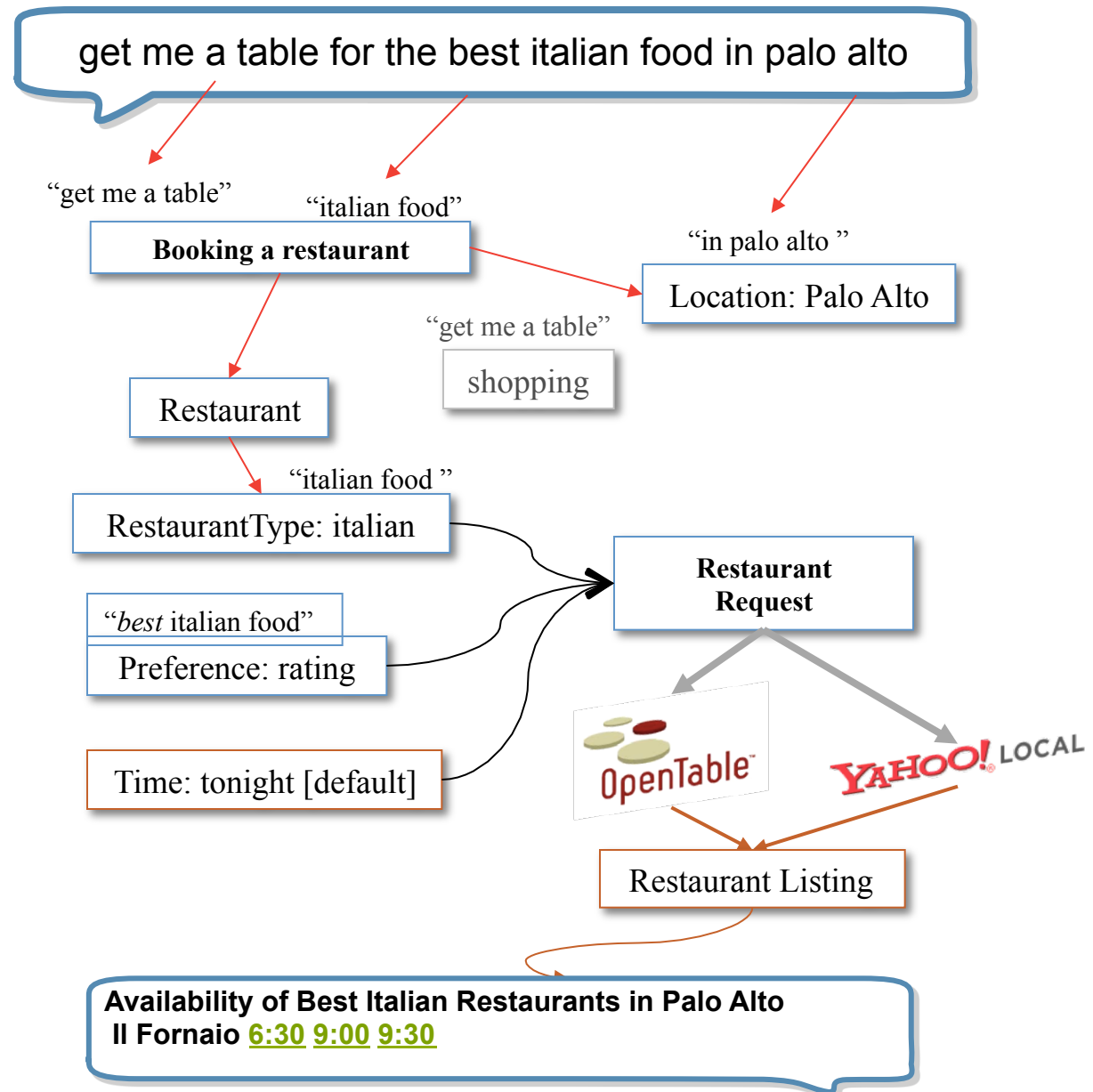
Party Size: for 2 people
Date: Mon Jun 15
Time: 6:15 PM
Name: Tom Gruber

E & O Trading Com... ★★★★★
96 South First Street
San Jose 408-938-4100
15 miles

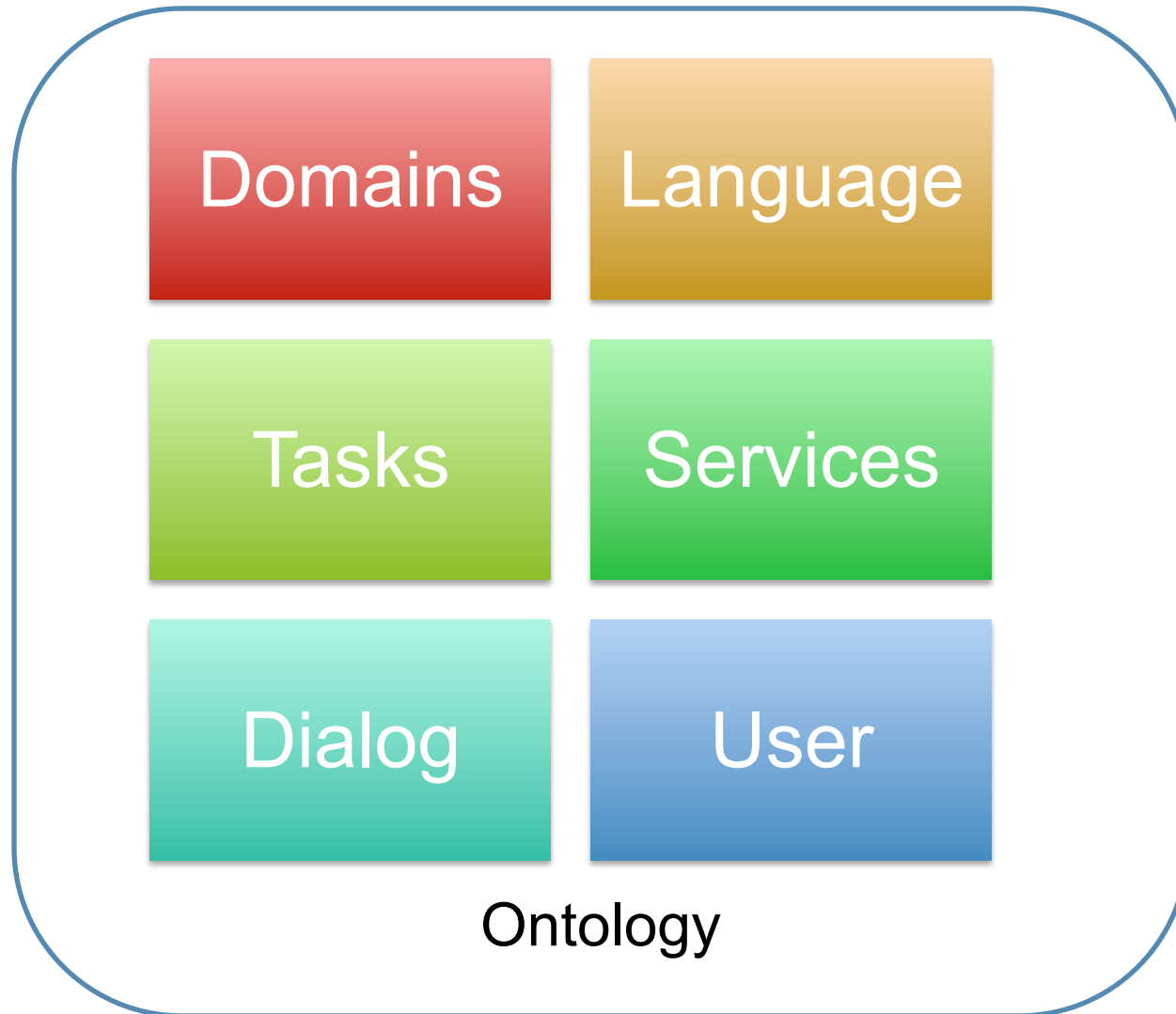
Your **invitation** has been sent
to friend@email.com

- Multiple-criteria vertical search
- combining multiple sources of information
- with integrated transactions
- and social communication

Task-oriented NL Understanding

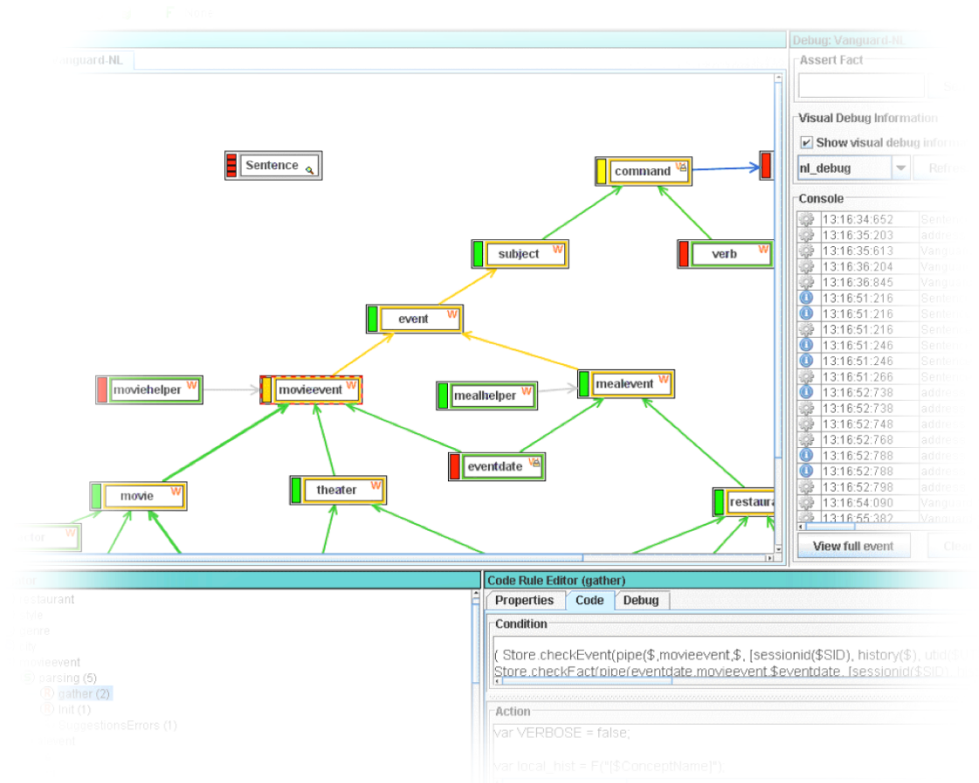


Ontology Unifies all Models

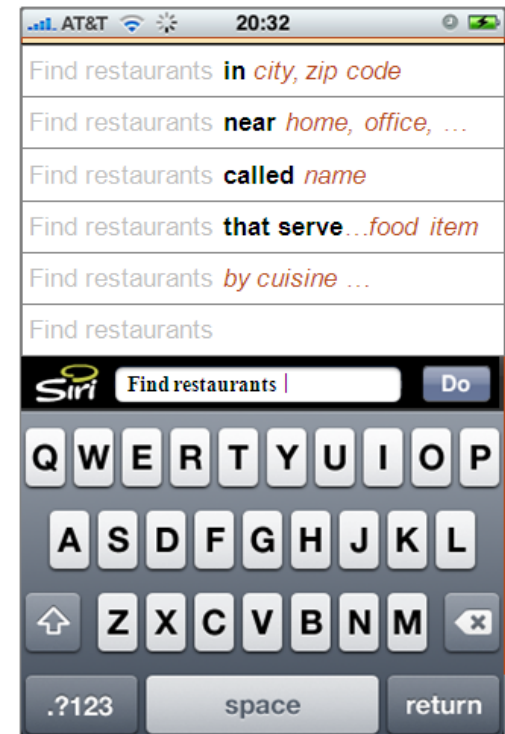
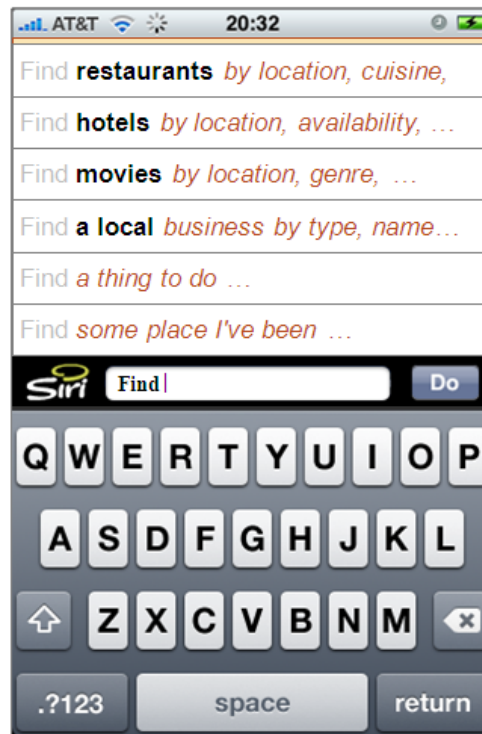
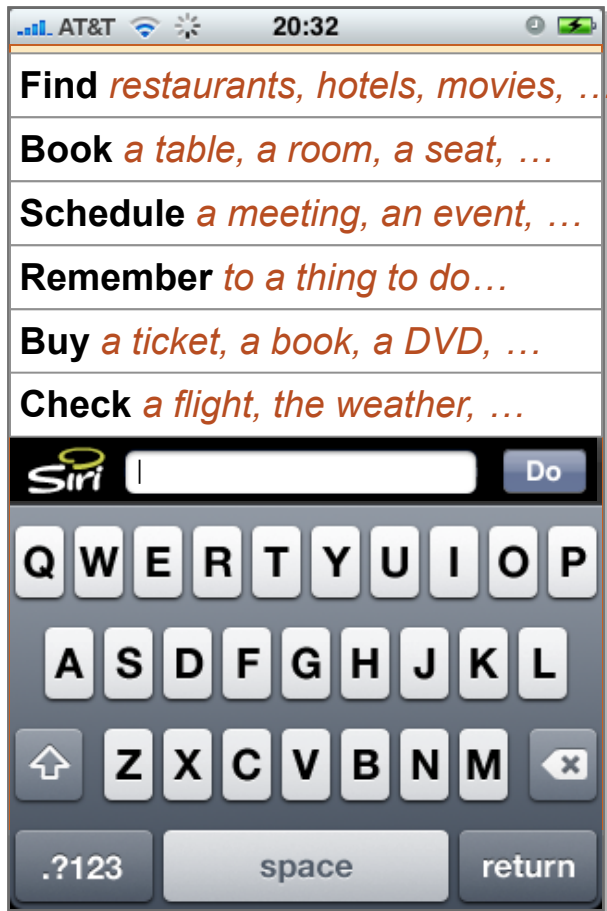


Ontology and Modeling Tools

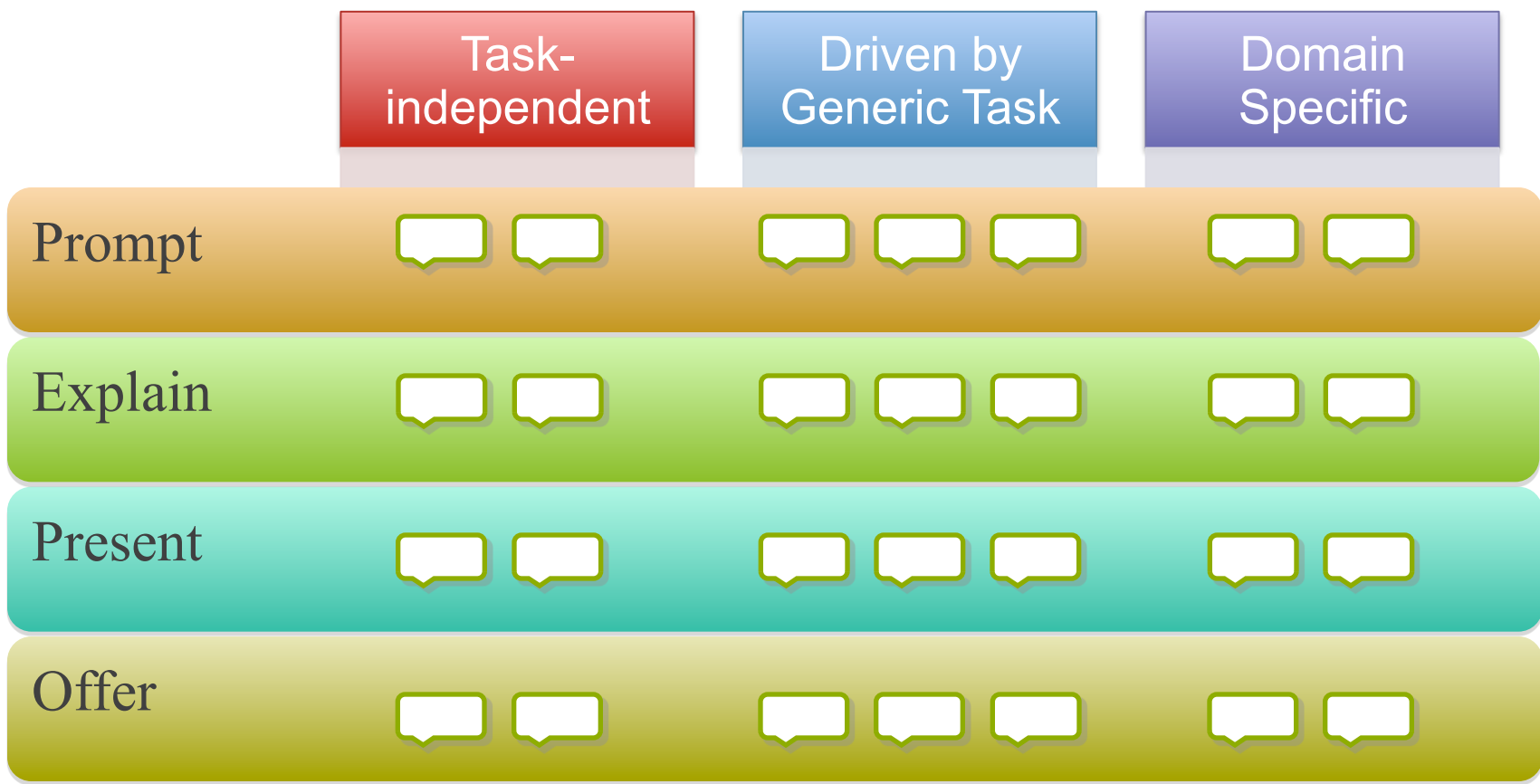
tool demo



Semantic Autocomplete



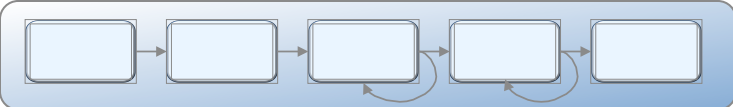
Dialog modules organized by generic task and domain



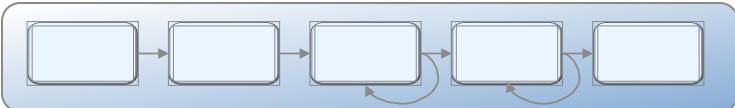
Task Models



Plan a Meal



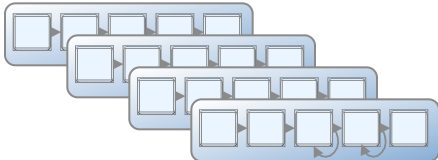
Find something to do



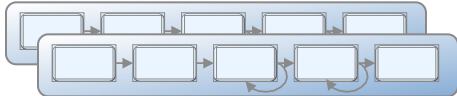
Go to the movies



Find a store



Plan a trip



...

Model-driven Service Orchestration

Restaurants tonight

Best lasagna in SF

Menu Item >+ Reviews >+ Preference >+ Rating > Location

Availability >+ Hours >+ Preference >+ Ratings



Conclusion

- Building an assistant requires the integration of a lot of technology.
- But it's no longer an art.
- Using ontologies and declarative models transform the problem into (knowledge) engineering.
- And it works.

For More Information

www.siri.com



Download: <http://itunes.apple.com/us/app/siri-assistant>