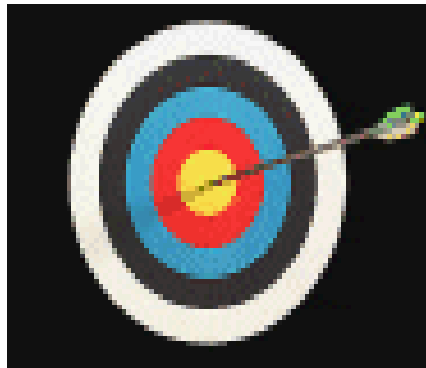


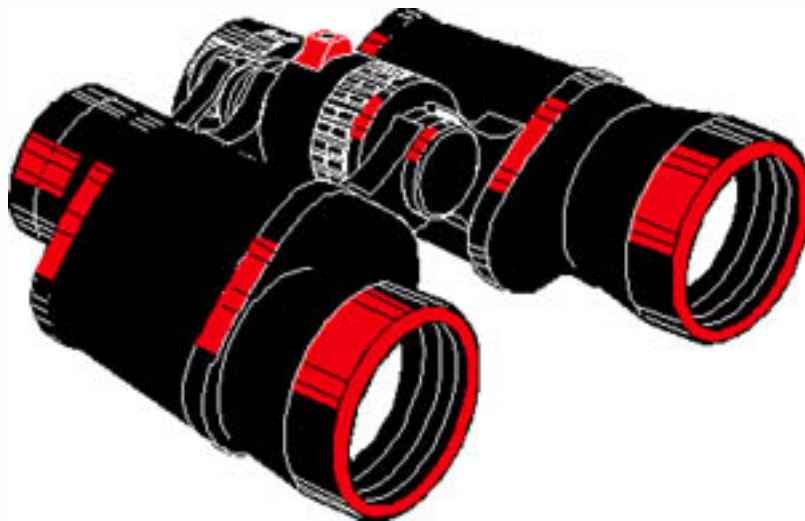
Infrastructure for P2P

A P2P Platform with Multimodal Interfaces



June 11, 2001
Raghavendra K S

Agenda



- **Vision**
- **Approach**
- **Applications**
- **Value**
- **Roadmap**

VISION: What is it?



➤ What is it ?

- ✓ framework for p2p applications
- ✓ Agents that support multimodal interfaces

➤ What is it meant to be ?

- ✓ Community of specialized agents
- ✓ A rich user experience

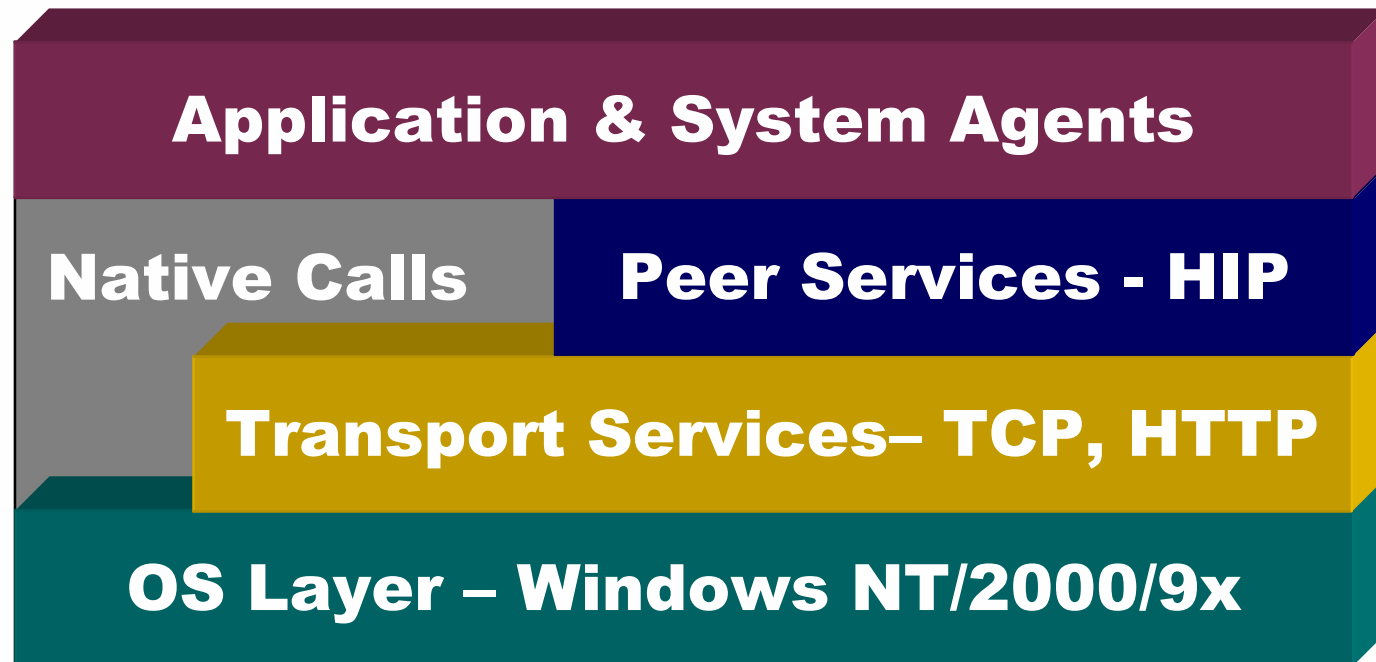
APPROACH

- A p2p application framework
- Communication platform
- Agents specialize in activities
 - Multimodal
 - Other services

A Typical Scenario of Usage

1. Look up for the 'address' of a service
2. Contact the service provider and avail the service.

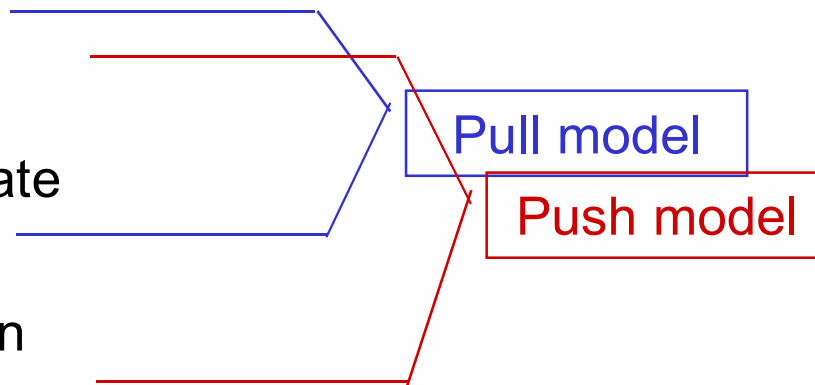
The Core



- A thin service layer built over TCP.
- Provides functionality for the agents to communicate.
- Typically will be a dll file on Windows.

Primitives

- Data exchange
 - Connect/disconnect
 - Send/receive
 - Multicast
 - String based messages (for the initial phase)
- Status exchange
 - Enquire
 - Notify
- Status update
 - Set
- Subscription
 - Subscribe
- Logical name mapping
 - Map



Few issues

- Connections
 - Stateless
 - State aware
 - Synchronous
 - Asynchronous
 - Notify
 - Fire and forget
- Lookup agent
 - Lookup
 - Register
 - Unregister

Feature List

A complete suite of multimodal interfaces

- Faxing agent
- SMS agent
- E-mail agent
- WAP agent

Other features

- Active Speech Recognition engine
- Text to speech
- Natural language processor

The Dream

Our Platform



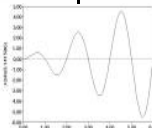
MIC
agent



Caller
recognition
agent



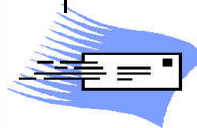
Keyboard
agent



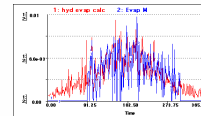
NLP
agent



Printer
agent



E-mail
agent



Text to
Speech
agent



Speech
recognition
agent



Web
agent



Fax agent



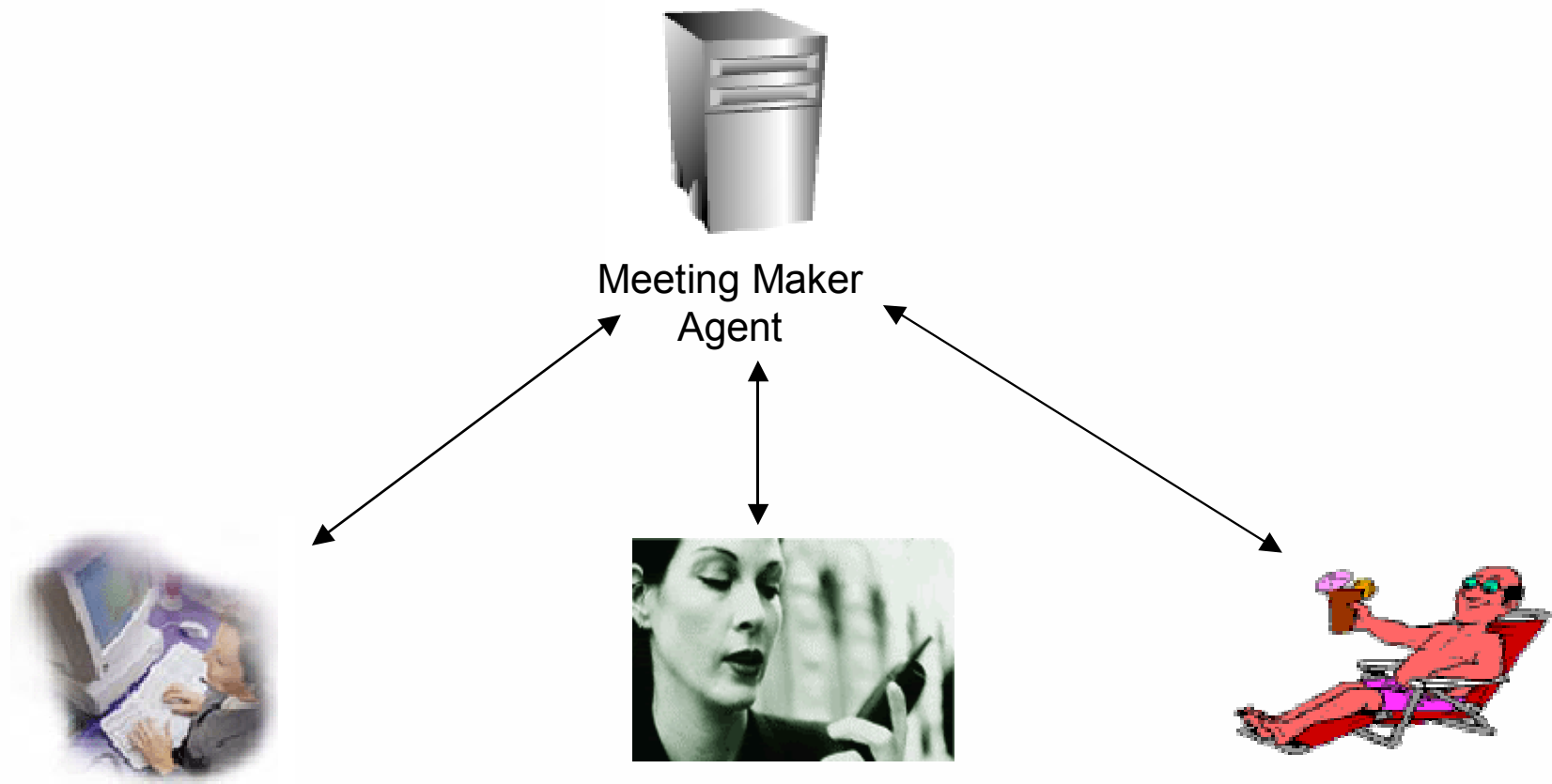
Calendar
agent

Killer Apps

- What can be built on this platform ?
 - ✓ Service Providing Agents
 - ✓ Service Consuming Agents
 - ❖ The ease and speed with which multimodal applications can be built on HIP.

- Identified Applications
 - ✓ Meeting Maker

Meeting Maker



COMPETITION: How are we better?

HIP is positioned as a P2P application development platform with multi-modal capabilities

Middleware & CRM Packages: Siebel, Oracle, TIBCO, Weblogic

- Centralized architectures
- Expensive - highly resource intensive
- One size does not fit all

P2P Frameworks: Groove, JXTA

- Barebones framework
- No reusable multi-modal components

Research Prototypes: OAA, KQML, FIPA

- Non traditional implementations using languages like Smalltalk, Lisp, Prolog
- Lack scalable, commercial-grade implementations
- Do not interoperate with “popular” architectures like J2EE, .NET

Activities Involved

Framework Development:

Communication protocols and formats

Service primitives

System Agents for registration & lookup, security, failure handling & recovery, health monitoring, etc.

Agent Development:

Email

Fax

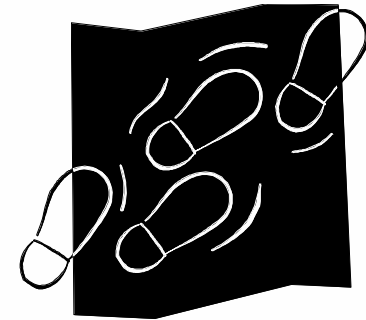
Speech Recognizer

Text-to-Speech Converter

WAP Provider

SMS Notifier

Natural Language Interpreter



Feedback, Discussion & Next Steps