IBM Lotus® Sametime®

Technical Architecture and Roadmap

Your Name

You Title

Today's Agenda

§ **Where we are**

  ⁴ Mobile IM Clients

  ⁴ Lotus Sametime Gateway

§ **Where we're going**

  ⁴ Lotus Sametime 7.5 Update

  ⁴ Lotus Notes® / Domino® Version 8 Support

  ⁴ FIPS-140 Compliance

  ⁴ Enhancements to Web Conferencing

  ⁴ Unified Communications

  ⁴ Organizational Collaboration
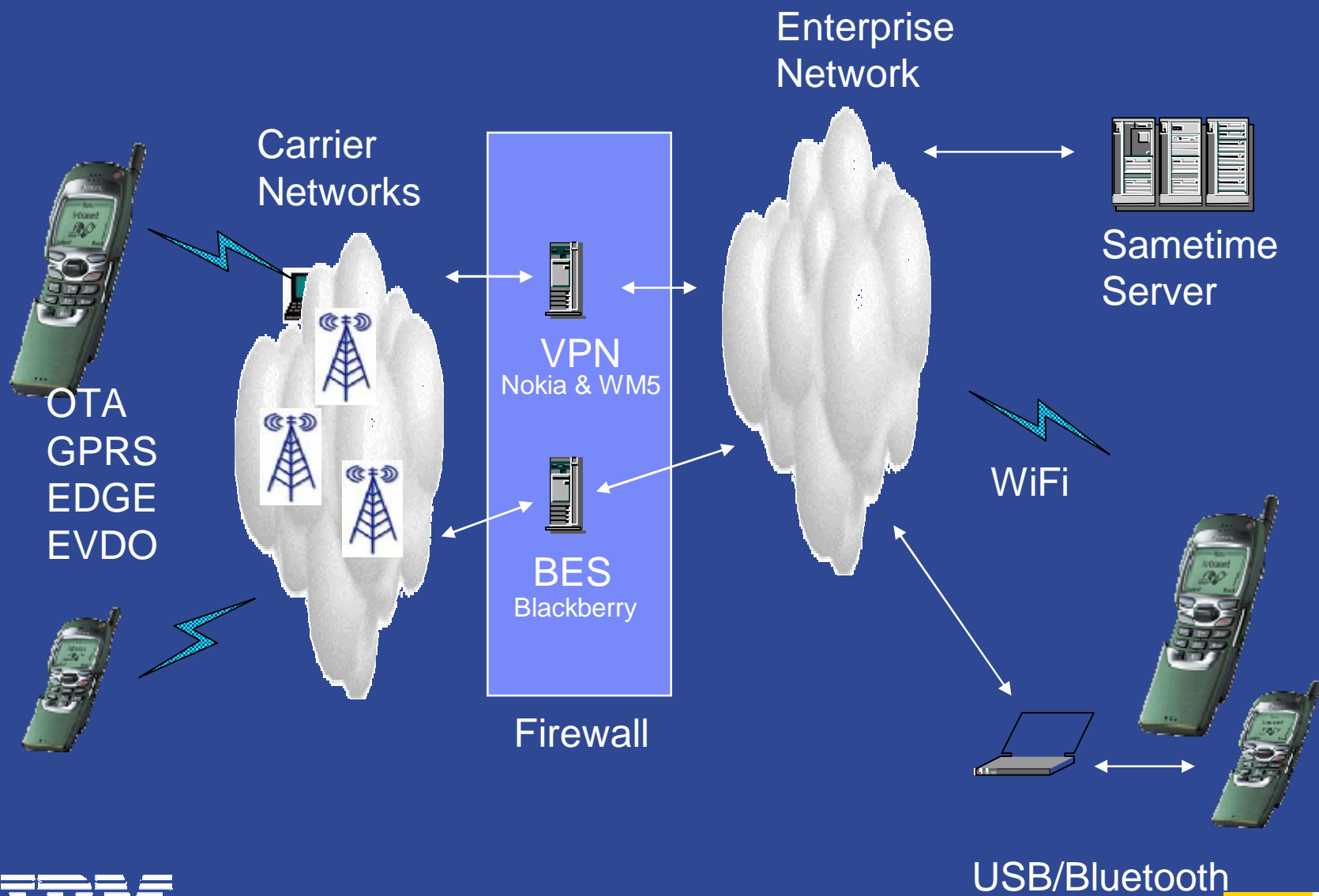
§ Early Glimpse: Unified Meeting Technology

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Lotus Sametime Mobile client

§ Automatic saved Chat History and Retrieval

§ Alert me when user becomes active

§ Sound/Vibrate alerts for incoming chats and responses

§ Emoticon support

§ Support across variety of platforms and devices

  4 Windows Mobile 2003 (e.g., HP iPaq H6315)

  4 Windows Mobile v5 (e.g., Sprint / HTC 6700, HP iPAQ hx2790, Dell Axiom x51v, Motorola Q)

  4 RIM Blackberry (4.0+ RIM platform)

  4 Symbian (e.g., Nokia E61/E70, Sony Ericsson P990i)

§ External Buddy support for public IM services

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Connection Topology

Enterprise
Network

Carrier
Networks

Sametime
Server

VPN
Nokia & WM5

OTA
GPRS
EDGE
EVDO
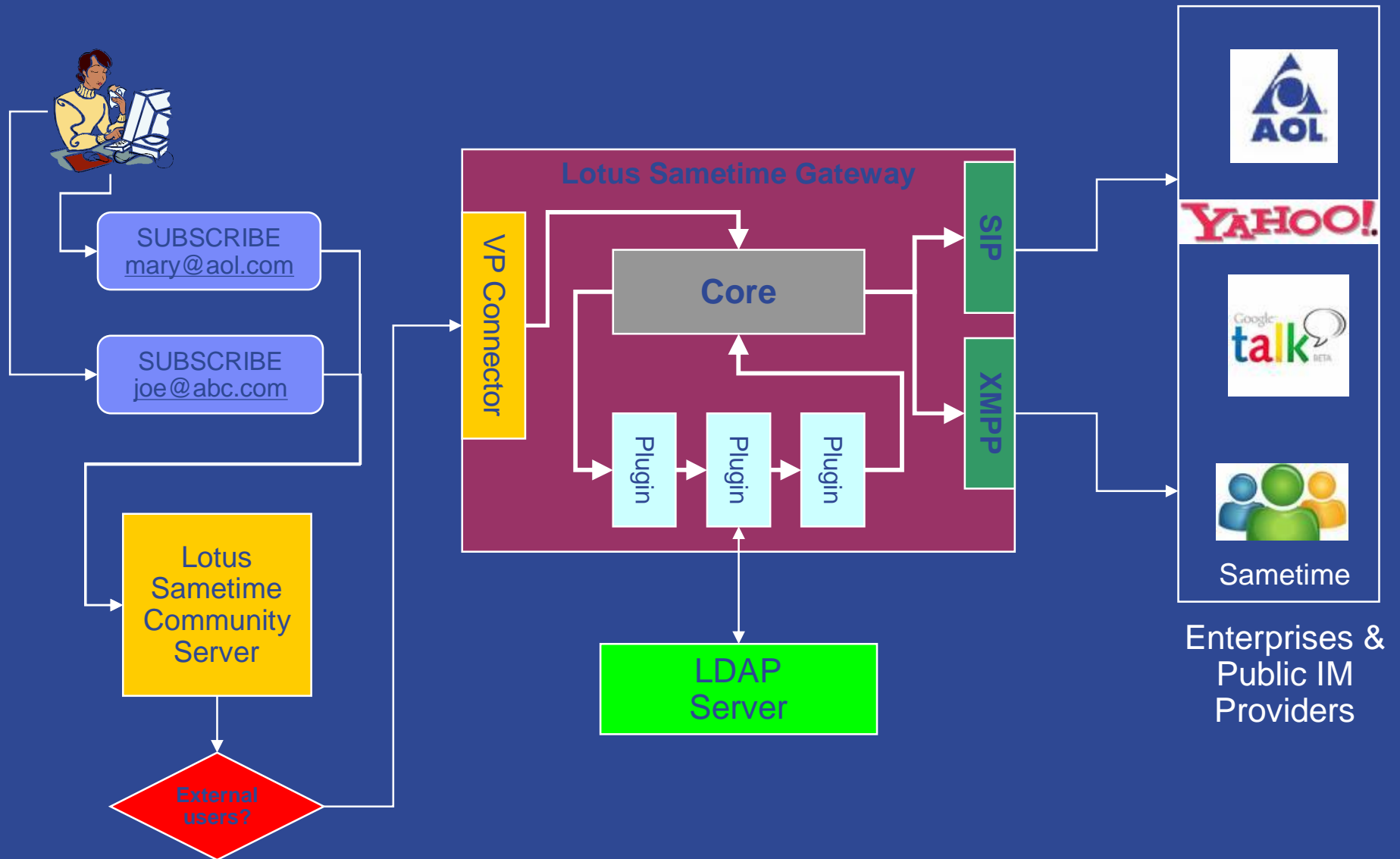
BES
Blackberry

WiFi

Firewall

USB/Bluetooth

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Lotus Sametime Gateway

§ A new Lotus Sametime system component ...

§ Written in Java™ and running in WebSphere® system environment ...

§ Provides *Federation* among external IM communities and your local Lotus Sametime deployment ...

  4 Public IM communities, and other instances of Lotus Sametime itself

§ *Extensible* via different types of plug-ins ...

How does it work?

SUBSCRIBE
mary@aol.com

SUBSCRIBE
joe@abc.com

Lotus
Sametime
Community
Server

External
users?

Lotus Sametime Gateway

VP Connector

Core

SIP

XMPP

Plugin

Plugin

Plugin

LDAP
Server

AOL

YAHOO!

Google
talk BETA

Sametime

Enterprises &
Public IM
Providers

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Lotus Sametime integration into Microsoft Office, Outlook

§ **Microsoft Outlook (Office XP and higher)**

  4 View Lotus Sametime presence from within Microsoft Outlook

   § Directly utilizes the Lotus Sametime 7.5 client for presence, chat, voice, etc.

  4 Schedule and launch a Lotus Sametime Web Conference from the Microsoft Outlook calendar

§ **Microsoft Office (Office XP and higher)**

  4 View Lotus Sametime presence from SmartTags in Microsoft Office

   § Directly utilizes the Lotus Sametime 7.5 client for presence, chat, voice, etc.

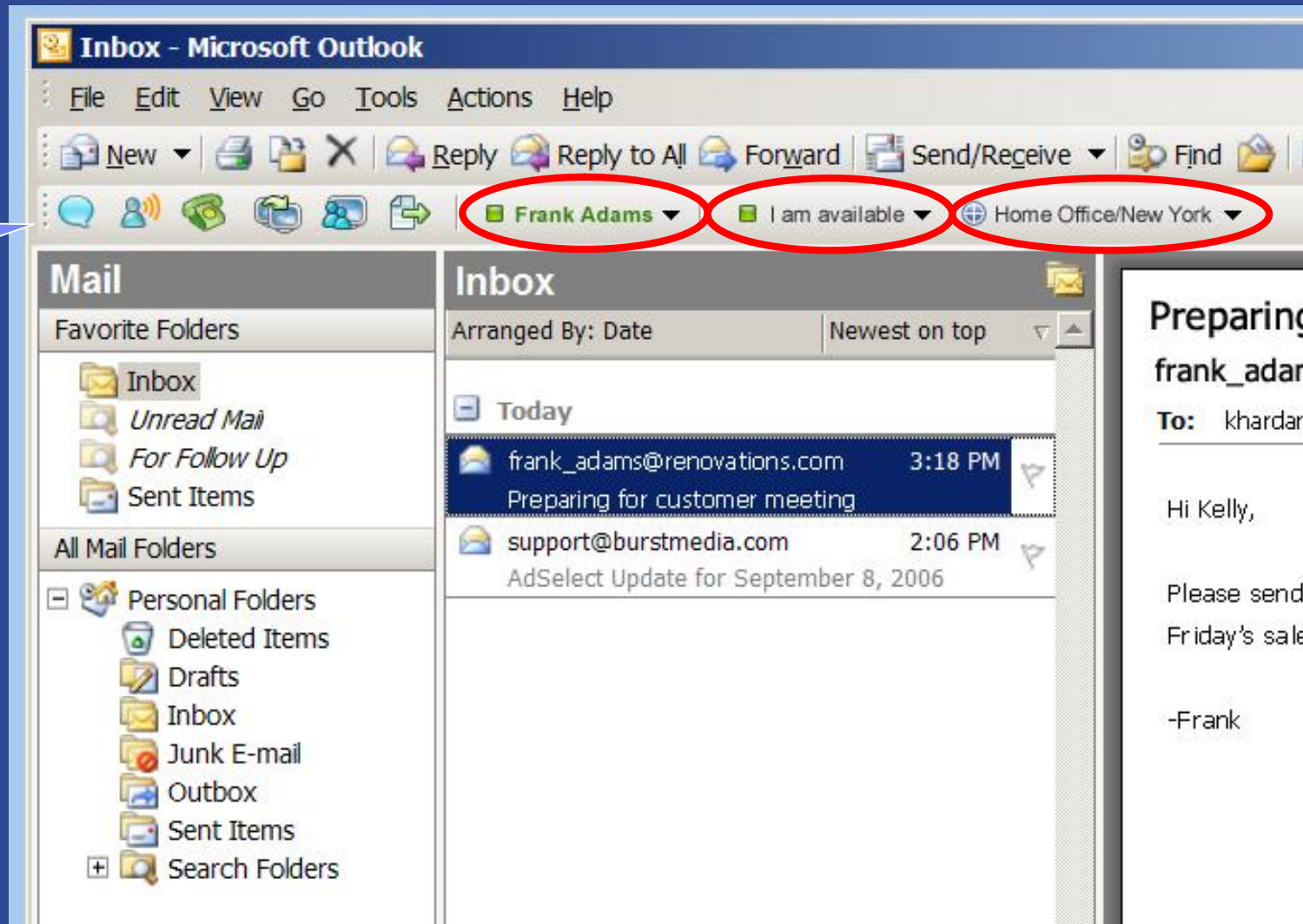 4 Launch a Lotus Sametime Web Conference directly from Microsoft Office

§ **Microsoft Sharepoint**

  4 Continued support for presence enabling Sharepoint sites (or any web application), through Lotus Sametime toolkits. Deeper levels of integration are being explored
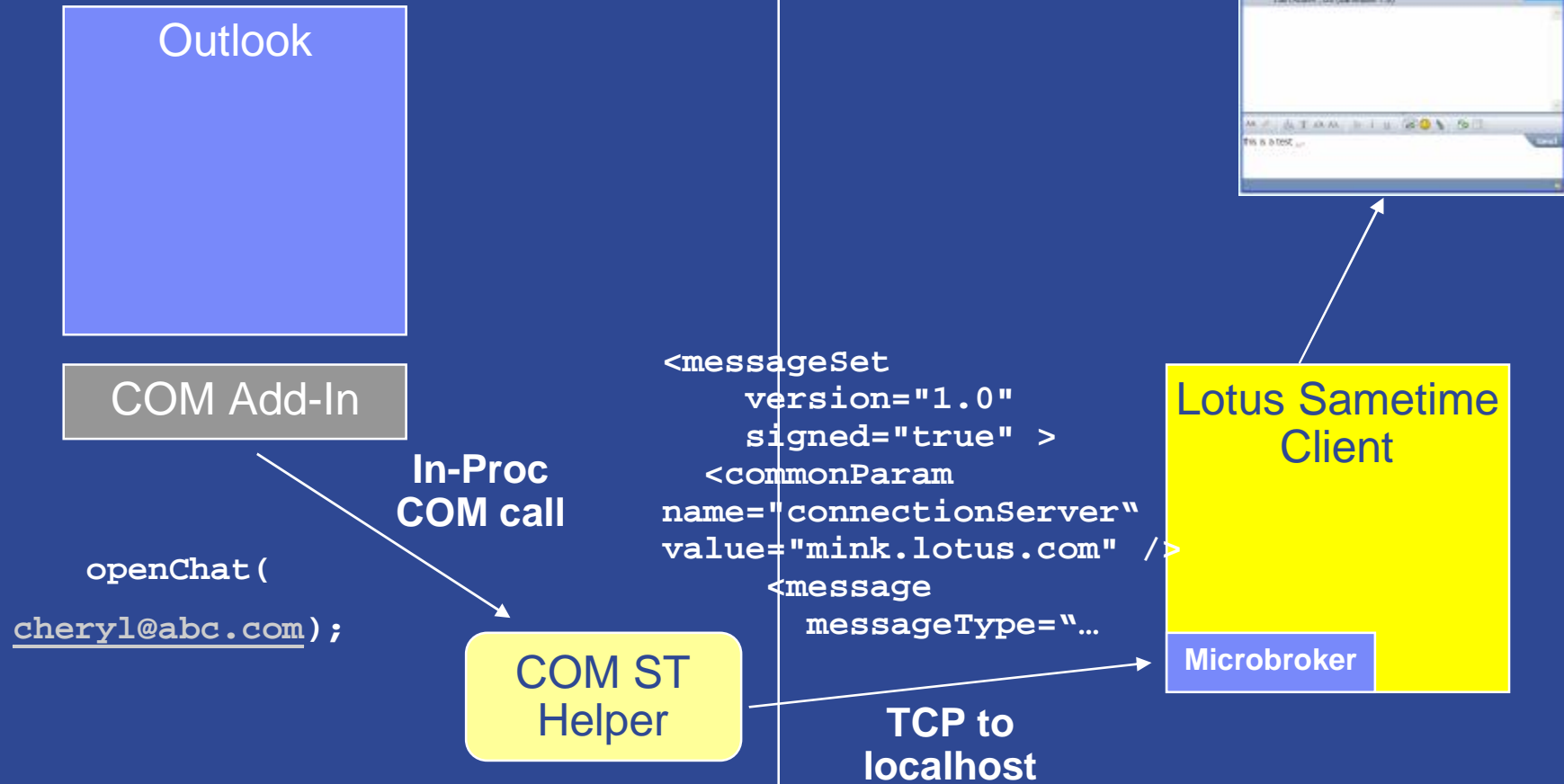
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Lotus Sametime – Office Integration : Outlook

Technical Approach

Outlook

COM Add-In

In-Proc COM call

`openChat(`

`cheryl@abc.com);`

COM ST Helper

TCP to localhost

```
<messageSet
    version="1.0"
    signed="true" >
  <commonParam
name="connectionServer"
value="mink.lotus.com" />
    <message
      messageType="…
```

Lotus Sametime Client

Microbroker

Lotus Sametime – Office Integration : Outlook

Technical Approach

Outlook

COM Add-In

createMeeting(…);

In-Proc COM call

COM Meetings Helper

Lotus Sametime Server

```
POST HTTP/1.1
Server: …

<data>
```

HTTP to Server

HTTP Response

`200 OK`

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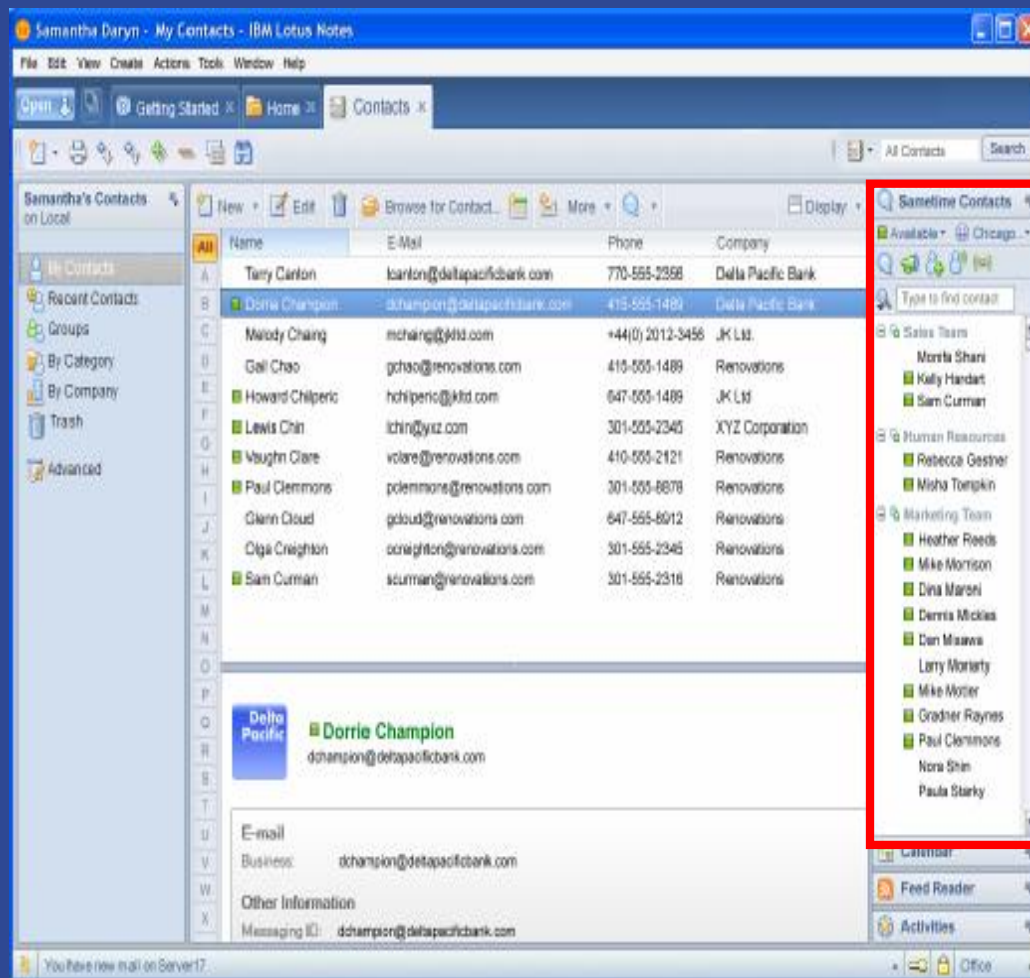# Lotus Sametime – Office Integration : SmartTag
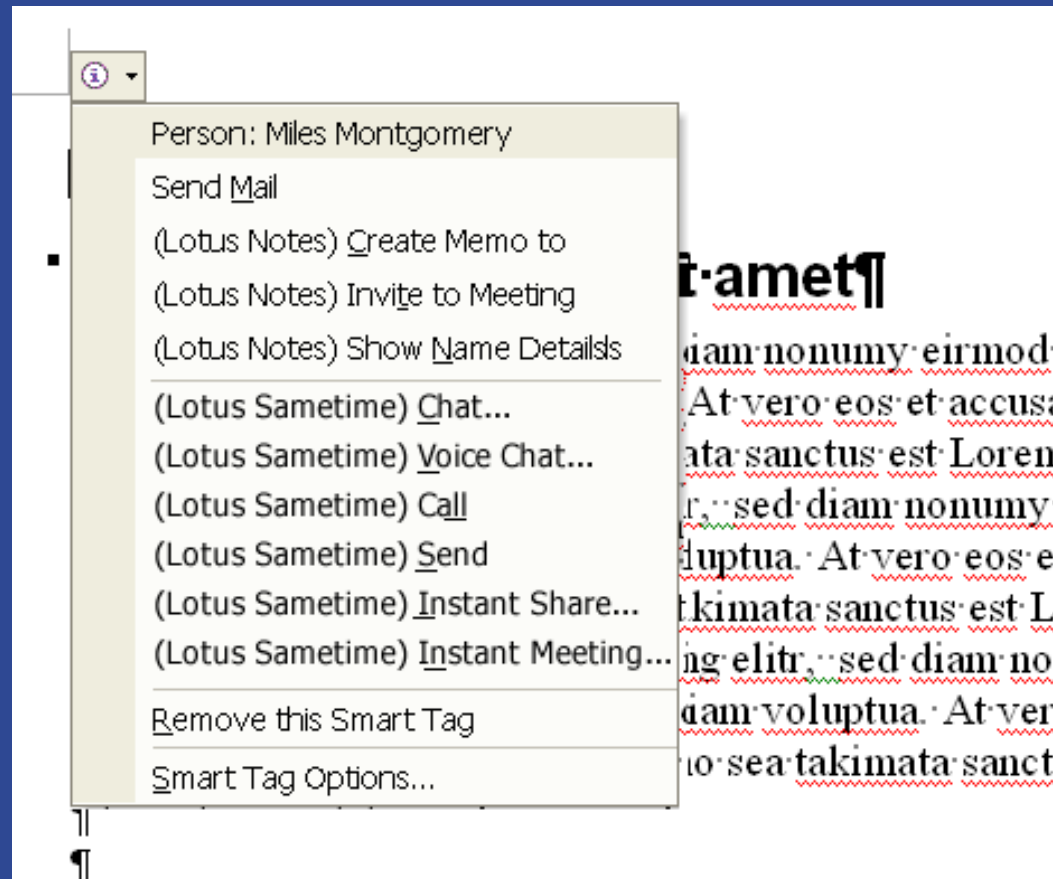
Lotus Sametime & Lotus Notes / Domino Version 8

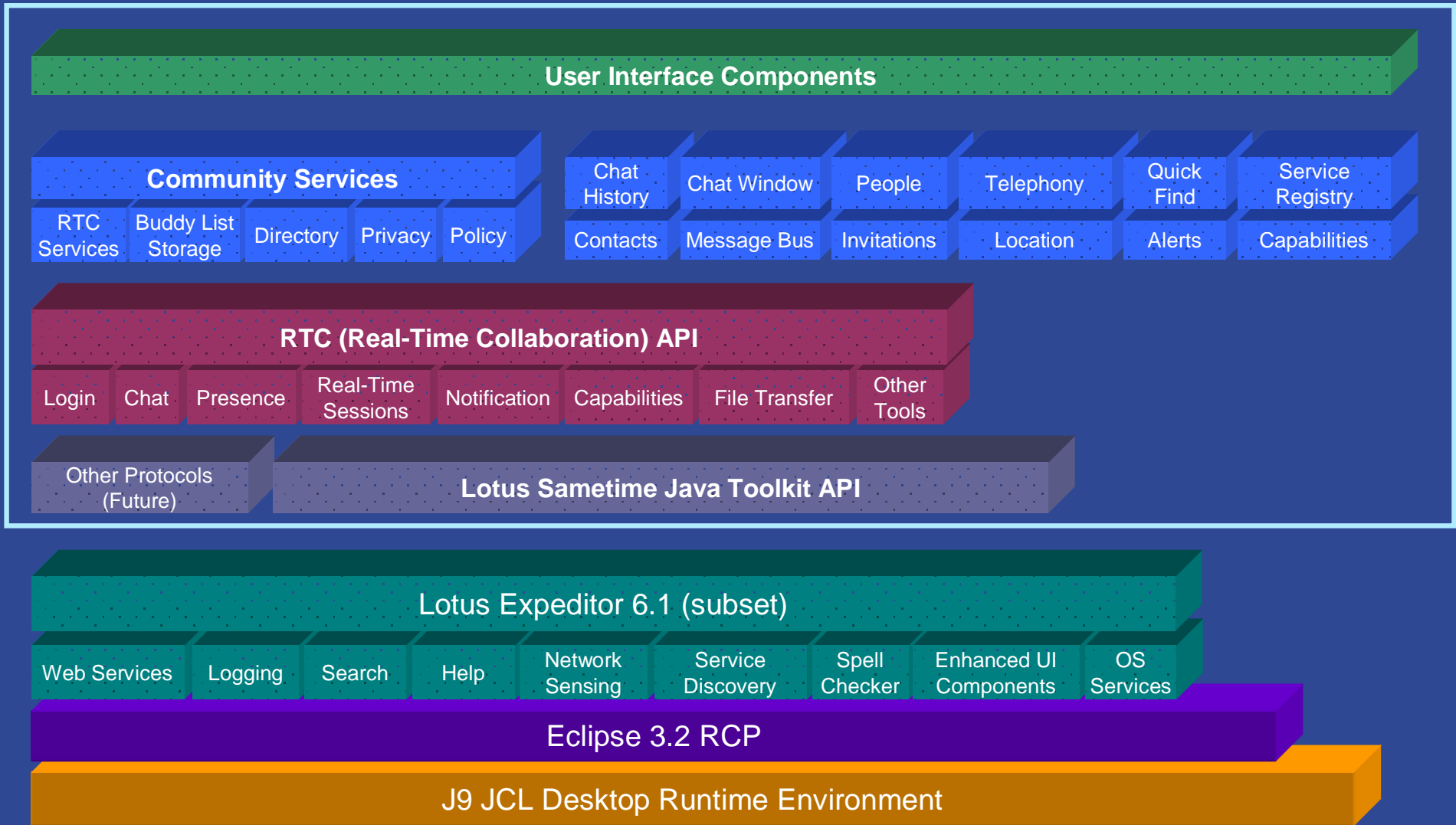§ **Lotus Notes 8 will include a compatible version of Lotus Sametime**

4 Limited use license

4 Ex: presence, IM, rich text, emoticons

§ **Advanced Lotus Sametime capabilities can be enabled by Policy**

4 Ex: file transfer, voice chat, multiple communities, screen capture

Lotus Sametime Connect Architecture

User Interface Components

Community Services

| RTC Services | Buddy List Storage | Directory | Privacy | Policy |

| Chat History | Chat Window | People | Telephony | Quick Find | Service Registry |
| Contacts | Message Bus | Invitations | Location | Alerts | Capabilities |

RTC (Real-Time Collaboration) API

| Login | Chat | Presence | Real-Time Sessions | Notification | Capabilities | File Transfer | Other Tools |

| Other Protocols (Future) | **Lotus Sametime Java Toolkit API** |

Lotus Expeditor 6.1 (subset)

| Web Services | Logging | Search | Help | Network Sensing | Service Discovery | Spell Checker | Enhanced UI Components | OS Services |

Eclipse 3.2 RCP

J9 JCL Desktop Runtime Environment

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FIPS-140 Compliance

§ **FIPS-140 is a U.S. Government standard for security**
  - ◢ Specifies acceptable security profiles for applications
  - ◢ Covers both "data at rest" and "data in motion"

§ **Lotus Sametime is not currently FIPS-140 compliant due to the use of non-approved security algorithms**
  - ◢ Lotus Sametime uses MD5 for one-way hashing
  - ◢ Lotus Sametime uses RC2 for encryption (with a 128 bit key)

§ **To become compliant, two things must change**
  - ◢ Lotus Sametime must use approved algorithms, such as SHA and AES
  - ◢ Lotus Sametime must use certified implementations of these algorithms

§ **As always, backward compatibility will be maintained**
  - ◢ Configurable by the administrator

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Planned Enhancements to Web Conferencing

§ Lotus Sametime web conferencing will be enhanced to address many of the remaining customer issues

§ Improved ability to manage the Java execution environment

  4 Use JVM loaded by Lotus Sametime Connect, or load one if necessary

§ Upgraded audio/video, equivalent to Lotus Sametime Connect

§ Recording of meetings in standard MPEG-4 format

  4 Can be downloaded and played in standard players, suitable for podcasting

§ Higher fidelity presentations

  4 Better conversion and dynamic scaling

§ Better calendar / email integration

Unified Communications & Collaboration (UC^2)

§ **Complementing Lotus Sametime, these features will provide out-of-the-box connectivity to many existing telephony systems**

Presence. Aggregated presence indications that show both IM system & telephony system..

Telephony integration. Out-of-the-box support for virtually any corporate PBX or audio conferencing system.

Incoming call control. Get notification on your PC of incoming calls and be able to take action to answer or redirect the call

Advanced Audio Conferencing. Reads user's calendars and provides them with a single phone number and pass code to call to dial into any meeting; provides least call routing and PBX/Audio Bridge optimization.

Unified Messaging. Receive voice mail in your inbox and be able to listen to, delete, or forward voicemail from your e-mail client.
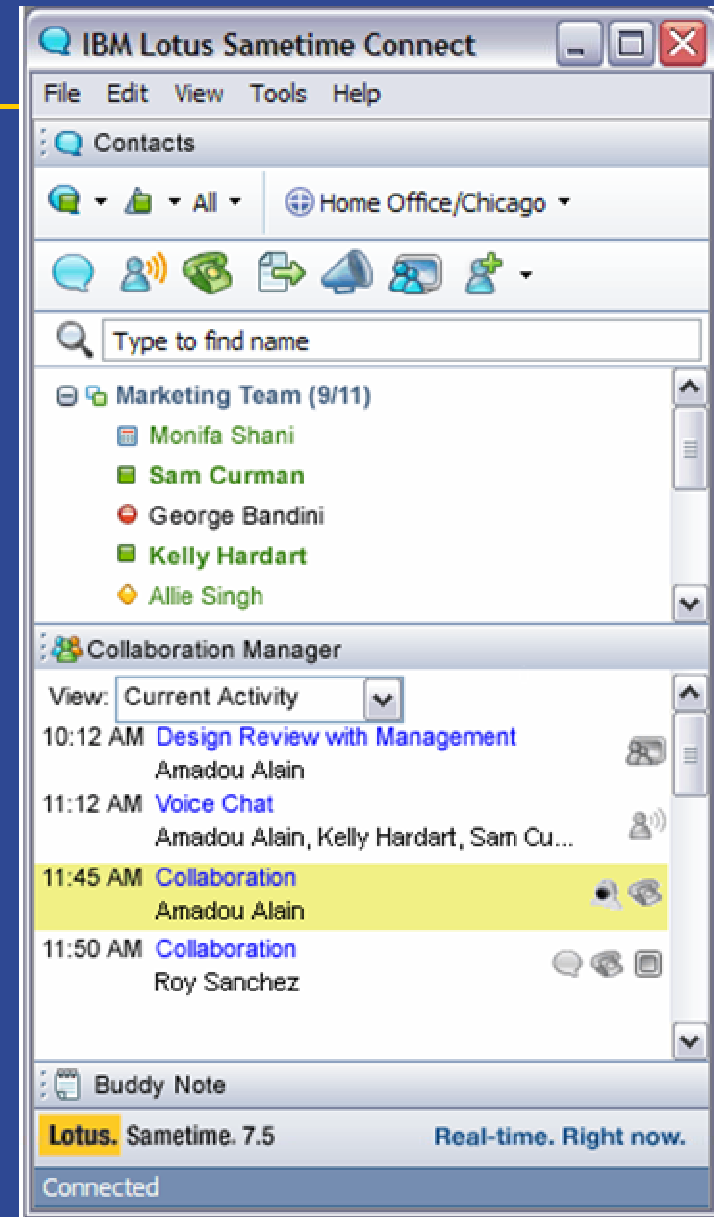
Soft phone. Software application that allows you to receive phone calls or make phone calls from your PC. A visual representation of the phone keypad.
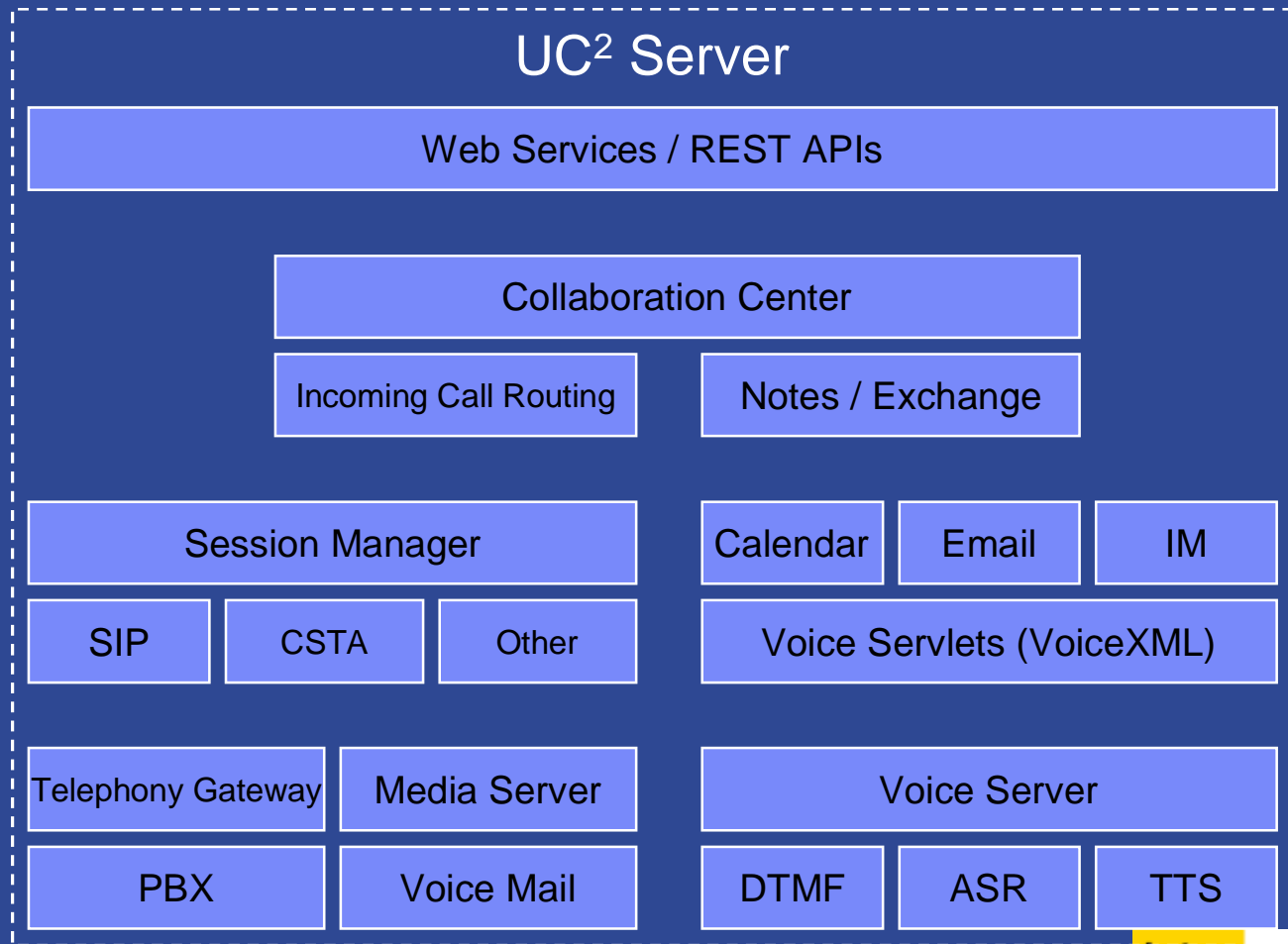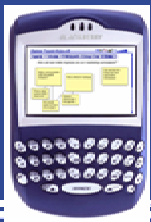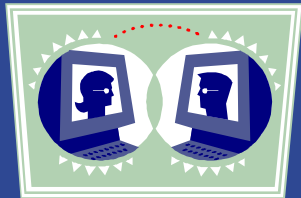
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Common UC² Client

§ Provide Eclipse plug-ins for:

- ◢ Voice mail
- ◢ Recent communications into history
- ◢ Soft phone (audio / video)
- ◢ Hard phone control
- ◢ Out-of-the-box support for many audio bridges
- ◢ Enhanced presence
- ◢ Location-e.911

UC² Server Architecture

UC² Server

Web Services / REST APIs

Collaboration Center

Incoming Call Routing

Notes / Exchange

Session Manager

Calendar | Email | IM

SIP | CSTA | Other

Voice Servlets (VoiceXML)

Telephony Gateway | Media Server

Voice Server

PBX | Voice Mail

DTMF | ASR | TTS

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Automated Assistant / Unified Meeting Access

Prototype

How it works...

2 Meeting Information is pushed to Lotus Sametime Connect

Lotus Sametime Server

TCSPI

1 Meeting information is scraped from calendar

3 User joins conference

4 Audio Control / Status

Audio Bridge

Web / Audio Conference

Audio-only Conference

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Organizational Collaboration

§ **Building on the foundation of Lotus Sametime, these features push real-time collaboration beyond Presence, IM & Web Conferencing**

Persistent chat. Keep a continuous chat discussion running on a specific topic. As new users join, they see the chat history.

Moderated chat. For large or public multiparty chats, allow a designated moderator to control which messages are posted publicly for everyone to see. Users can submit questions or responses privately to the moderator.

Broadcast tools

- **Alerts.** Connect users to Persistent and Moderated chats via realtime events.

- **SkillTap.** Broadcast questions, let experts volunteer to help within a specific community. Expertise rating. Ability to archive responses for future searches or FAQ creation

- **InstantPoll.** Gather answers and opinions to polling questions

Location services. Find people or resources based on location (IP, RFID, GPS, Cell, calendar or other applications) or receive real-time alerts on people or resource locations.

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Persistent & Moderated Chat
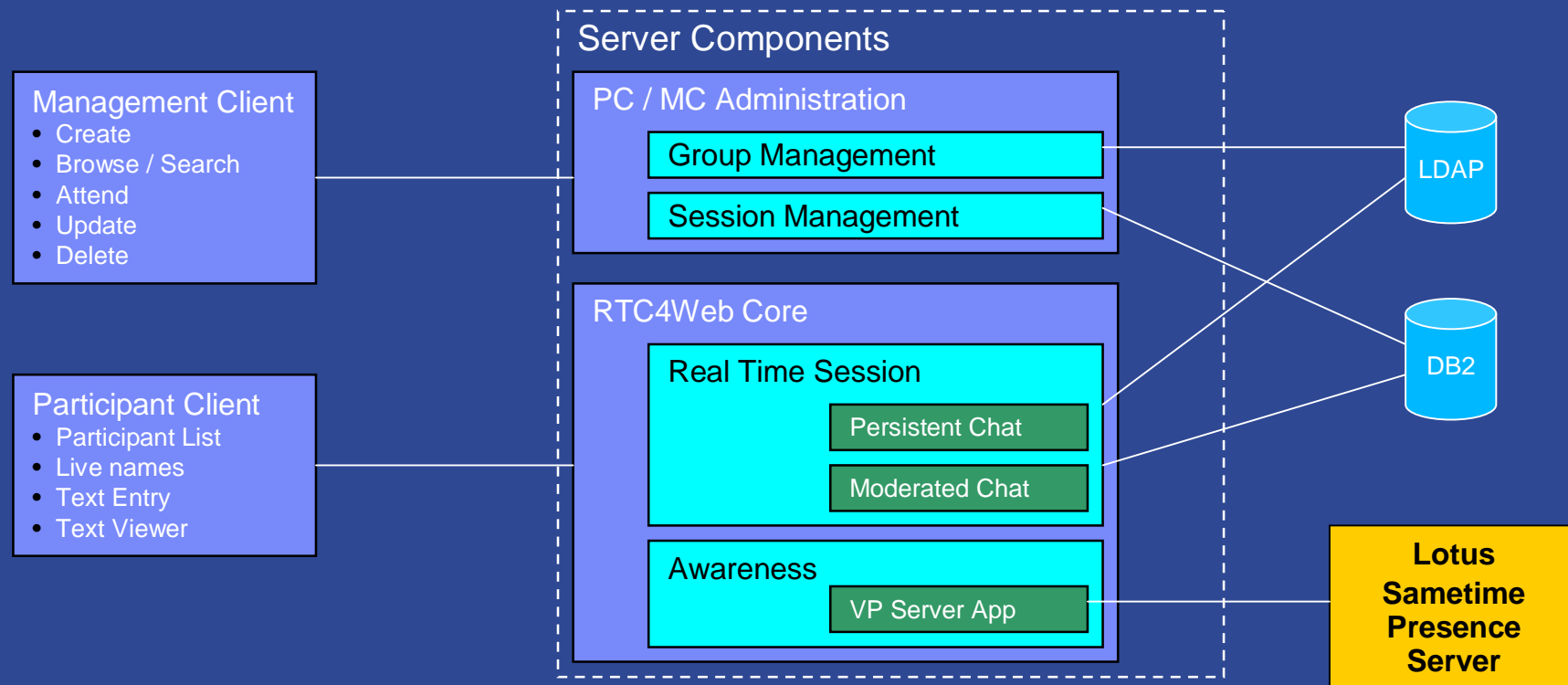
§ **Persistent Chat**

- 4 An N-Way chat with open-ended lifetime. As users join, chat, leave, the history of the chat is maintained in server-based storage
- 4 Accessible by both the Lotus Sametime Connect client and browsers
- 4 Other key features: See catalog of chats; classify/tag chats; see active chats; join chats; search chats

§ **Moderated Chat**

- 4 Special case of persistent chat; includes Speaker, Moderator and Participant roles
- 4 Tend to be 1-time events; but also can be re-started
  - § Example: A moderated chat that is active same time every week

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Persistent / Moderated Chat Architecture

Management Client
- Create
- Browse / Search
- Attend
- Update
- Delete

Participant Client
- Participant List
- Live names
- Text Entry
- Text Viewer

Server Components

PC / MC Administration
- Group Management
- Session Management

RTC4Web Core

Real Time Session
- Persistent Chat
- Moderated Chat

Awareness
- VP Server App

LDAP

DB2

Lotus Sametime Presence Server

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Broadcast Tools

§ Realtime interactions based on *topics* or *channels*.

- Provides a means for users to direct requests for collaboration at groups of users likely to respond.

§ These topics can be *open*, or *private*; either can be *moderated*.
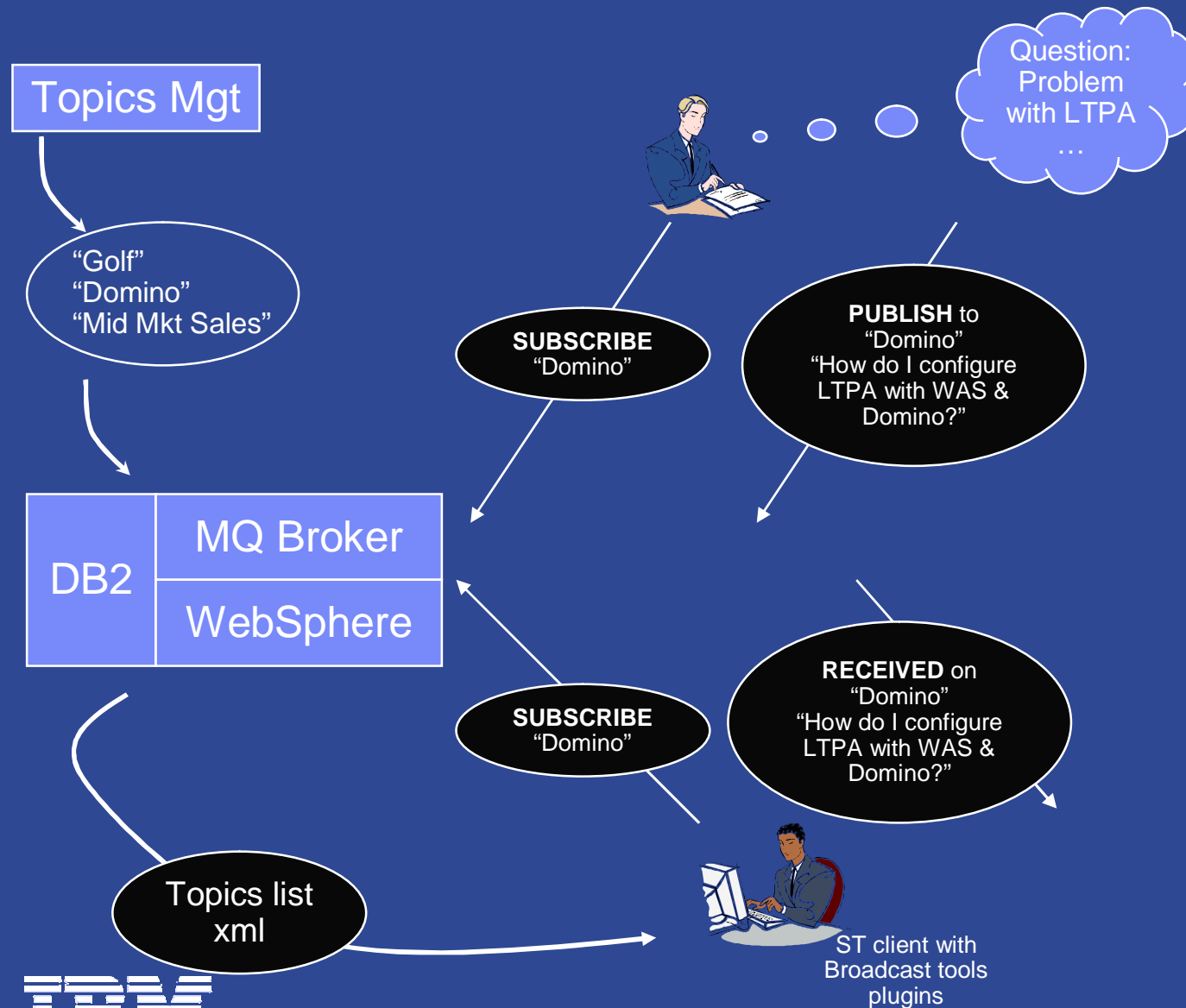
- Open: anyone can subscribe.
- Private: Only specified users can subscribe.
- Moderated: Only specified users can publish.

§ The tools:

- **SkillTap**: Send a question to all subscribers of topic. Process and rate responses; promote responses to FAQ storage.
- **InstantPoll**: Send a poll question to a topic; Process responses.
- **FreeJam**: Initiate an N-Way chat with topic subscribers.

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How do the Broadcast Tools Work?

Topics Mgt

"Golf"
"Domino"
"Mid Mkt Sales"

DB2 | MQ Broker
| WebSphere

Topics list xml

Question: Problem with LTPA …

SUBSCRIBE "Domino"

PUBLISH to "Domino" "How do I configure LTPA with WAS & Domino?"

SUBSCRIBE "Domino"

RECEIVED on "Domino" "How do I configure LTPA with WAS & Domino?"

ST client with Broadcast tools plugins

- At this point, clients communicate via new broker channels for this specific request.

- Can escalate to ST chats as desired.

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Early Glimpse: Unified Meeting Technology

§ **Simple**

 4 Effortless to join, easy to use, and fun to explore. Has the tools you need, when you need them, in a flexible, extensible, and personalized interface

§ **Integrated**

 4 Audio and video are completely integrated in the experience, so you can take advantage of whatever communication tools you have available

§ **Rich tools**

 4 Provides the tools you need to have the meetings you want to have, with reservation-less and ad-hoc meeting spaces that are available whenever they are needed

§ **Break-through in effective meetings**

 4 Draw on IBM's expertise in real-time capabilities, collaborative tools, and community-based solutions to satisfy your requirements for all online meetings

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Joining a Meeting

§ **Reminders just before the meeting**

§ **Automatic joining – phone and online conference tools**

§ **Meeting 'assistant' knows where to call and preferences**

§ **Awareness of who has joined, who will join, and who won't**

Attending – The Meeting Space

§ **Extensible array of tools to support effective meetings**

  4 E.g., Participants, Slides, Sharing, Whiteboard, Minutes, File drawer, Agenda w/links to slides

§ **Some tools are shared space, some are private**

§ **Manages focus and tool real estate**

§ **Easy distribution tool for anything in repository**
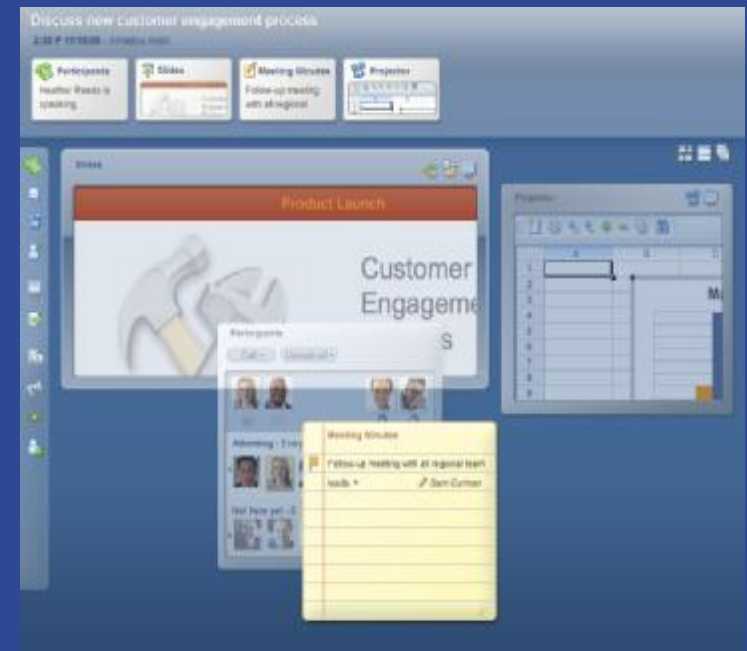
Attending – Participant tool

§ **Reinforce social nature of meetings**
  ⏷ Pictures, business cards
  ⏷ Previous chats, IMs, meetings

§ **Know who is speaking and who wants to speak**

§ **Live names everywhere – access to person info**

§ **If camera, then use video for thumbnail and drag out to desktop**
  ⏷ Drag new participants in to join them
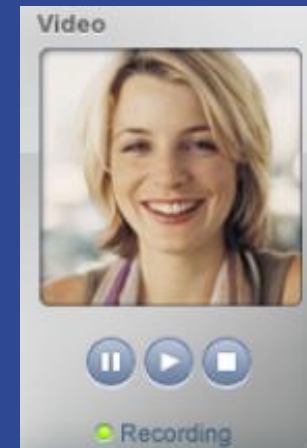
Discuss new customer engagement process

2:30 P 11/15/06 - Amadou Alain

Participants
Heather R...
is speaking.

Projector

Meeting Minutes
Follow-up meeting
with all regional

Screen Sharing

> Live thumbnail views of open tools

Projector

> Add tools from extensible palette

oduct Launch

> Hi image quality at small sizes

> Shared space

RENOVATIONS
Customer
Engagement
Process

Screen Sharing

File Edit View Create Actions Tools Window Help

Open | Getting Started | Home | New Spreadsheet

	A	B	C	D
1	20	20		
2	30			
3	45			
4	75			

Main Title

Column A   Column B

Participants

Call ▼   Unmute all ▼

Attending - Everyone is muted

Not here yet - 3

Meeting Minutes   2:30 P
11/15/06
Follow-up meeting with all regional team
leads. ▼   ✎ Sam Curman

Video

> Set transparency of windows that float (user's focus is independent of layering)
>
> +/- transparency

⬤ Recording

Unified Meeting Architecture

Legend:
- Existing IBM Technology
- Unified Meeting Components
- IBM Business Partner Technology

Lotus Sametime Client
- **Core Features (Presence, IM)**
- **SIP-compliant Audio / Video Soft Phone**

Web Client
- **Web-based collaboration tools**
- **Embedded Audio / Video Soft Phone**

TCSPI
- TCSPI Adapter

Telephony Equipment

Lotus Sametime Server

Unified Meeting Server
- **Web 2.0 Collaboration**
- **Session Manager**
- **SIP Proxy / Registrar**
- **WebSphere SIP**
- **Media Server (software) (Audio / Video)**
- **Automated Assistant (calendar, conference call routing)**
- **WebSphere Voice Enabler**

Gateways
- **Lotus Sametime Gateway**
- Telephony Gateway

External Networks

Lotus Notes / Exchange

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Lotus Sametime – Planning for the Future

§ Unified Communication Client
  4 Rich collaboration
  4 Open extensible platform

§ Fully integrated audio/video
  4 Both Lotus Sametime Connect and web client integration
  4 Software only media server, with support for external hardware media servers

§ Web 2.0 / AJAX web collaboration
  4 Javascript only, wherever possible
  4 HTTP-based protocols (including RTC4Web)

§ SIP Proxy / Registrar
  4 Manage SIP devices within the Lotus Sametime domain
  4 Handle call routing both within and external to the Lotus Sametime domain

§ SIP / VP Presence Server

§ Voice application server
  4 Automated assistant for call routing
  4 Platform for other voice applications (e.g. IM-to-speech, speech-to-IM)

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Lotusphere 2007