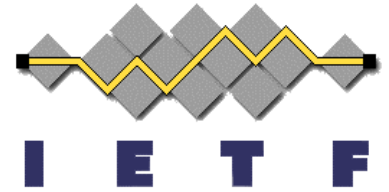




## IETF LEMONADE

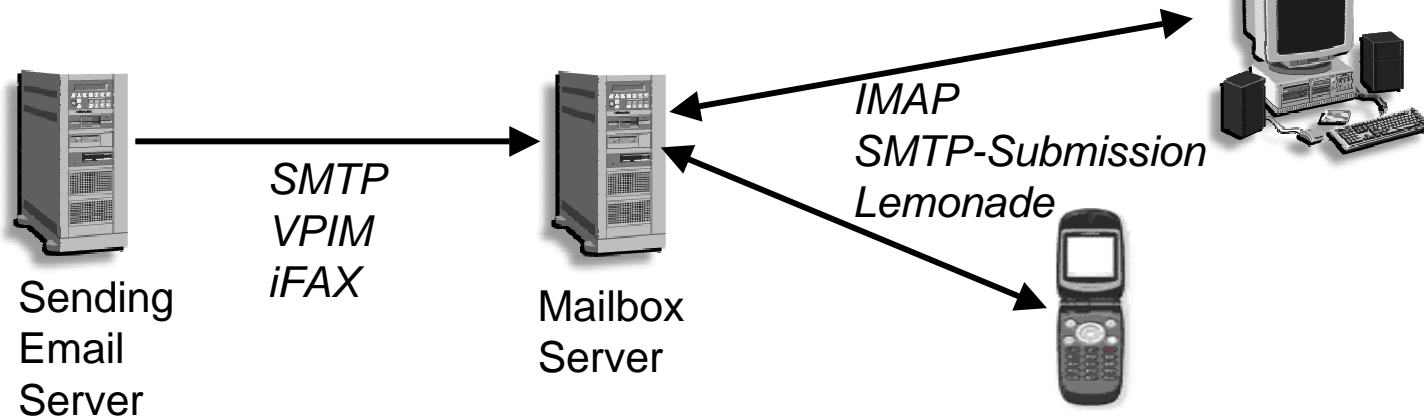
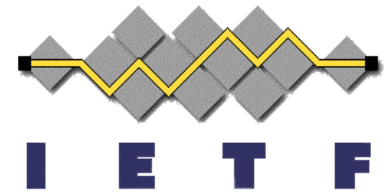
**Greg Vaudreuil**  
(630) 328-7328  
GregV@lucent.com

# What is IETF, and Why Drink Lemonade?



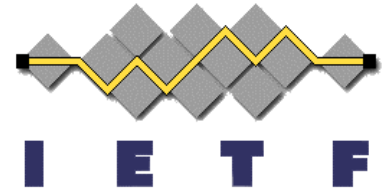
- Internet Engineering Task Force (IETF) provides forum and process for developing Internet protocols.
  - IETF is the creators of SMTP, MIME, VPIM and the rest of Internet messaging protocols
- LEMONADE working group chartered with “License to Enhanced Mobile Oriented And Diverse Endpoints”
  - Smart phones
  - Set-top boxes
  - Other memory, processor limited devices
  - Bandwidth, latency challenged networks

# What is Lemonade



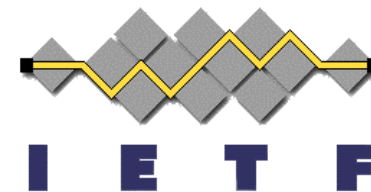
- VPIM addressed messaging server-to-server
  - Standard formats, standard audio, standard addressing
- LEMONADE addresses client-to-server needs
  - Enhance IMAP and SMTP submission
  - Streaming and conversion support
  - Forward without download, quick connect

# Motivation

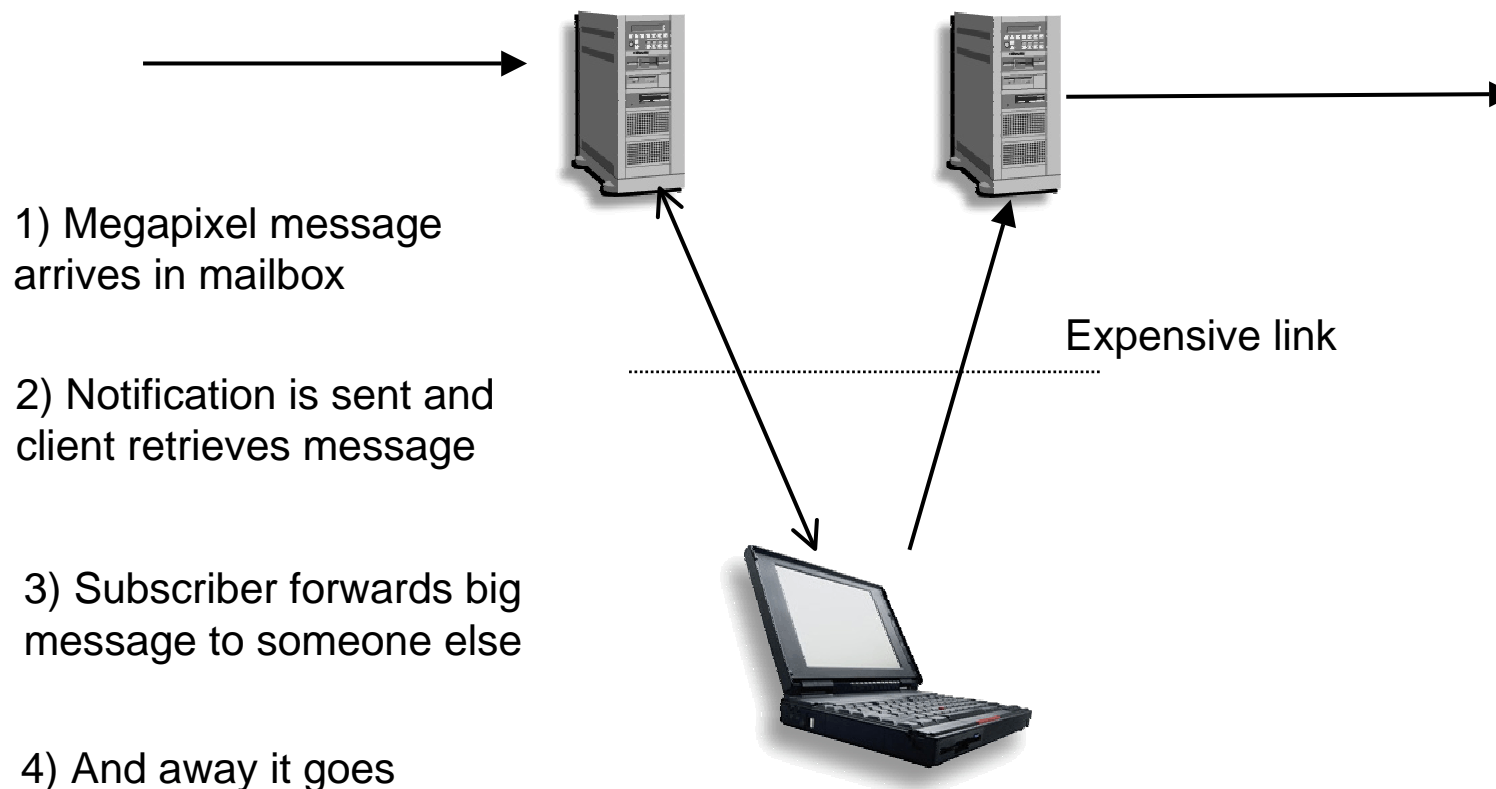


- Mobile messaging is proven market
  - SMS short text
  - MMS picture messaging
  - Blackberry text email
- Current solutions are narrowly purpose-built
  - SS7-based SMS
  - WAP-based MMS
  - Many proprietary technologies
- More powerful handsets driving need for more flexible, more unified, and more efficient solutions
  - Bandwidth efficient communication
  - Multiple clients to same mailbox, Synchronization w/ server
  - Require audio and video streaming
  - Client controlled media conversion

# Standard Email Use Case Today: Received and forward picture

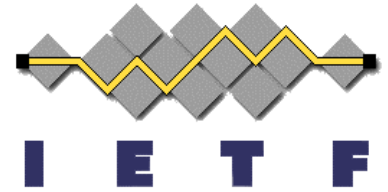


Mailbox Server      Submission Server



**Works great if you have money and patience**

# Work-around Approaches



Mailbox Server

Submission Server



Fixer-upper server



Expensive link

1) Megapixel message arrives in mailbox

2) Notification is sent to fixer-upper. Fixer retrieves and shrinks picture message

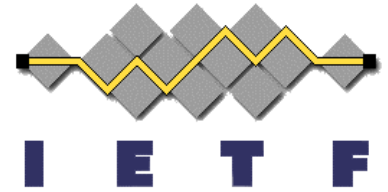
3) Notification is sent to client, client fetches shrunken message

4) Subscriber forwards message To someone else through the fixer.

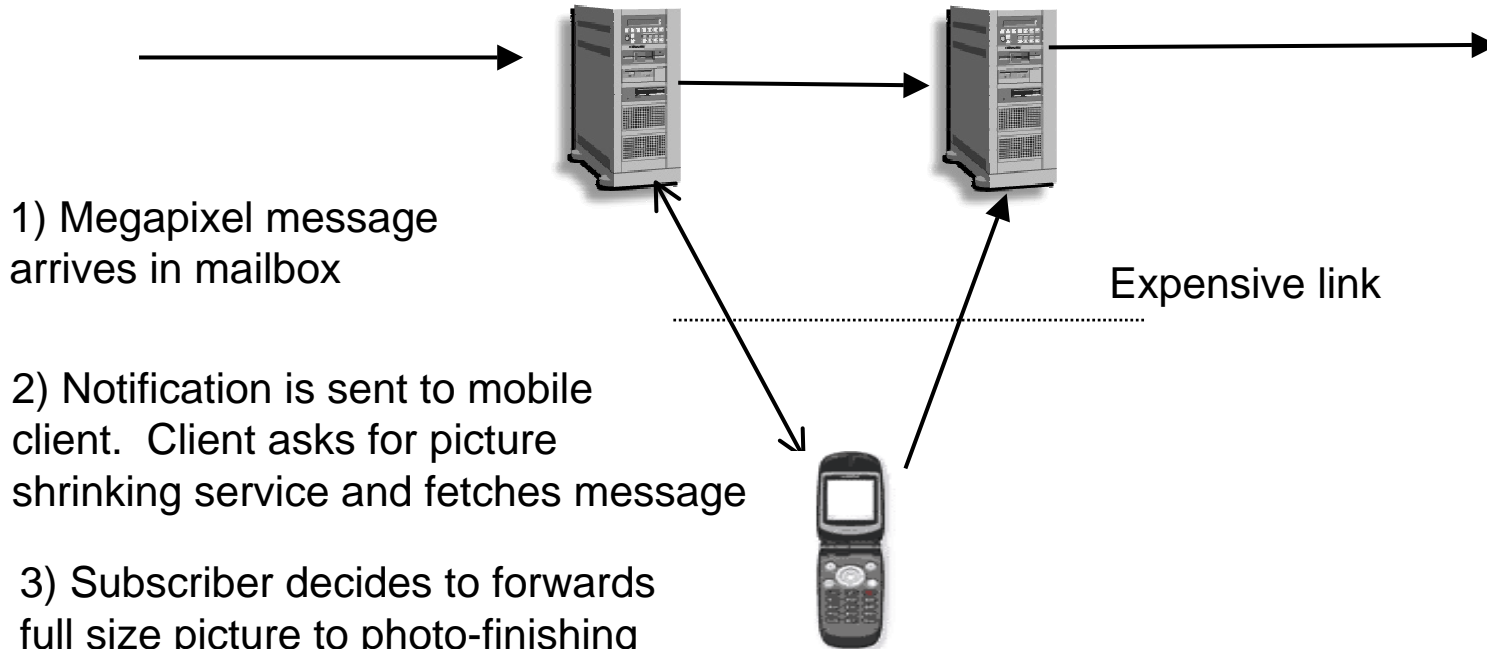
5) Away goes the small message

**Three Cheers for the make-it-work innovators!**

# Lemonade Approach



Mailbox Server      Submission Server



1) Megapixel message arrives in mailbox

2) Notification is sent to mobile client. Client asks for picture shrinking service and fetches message

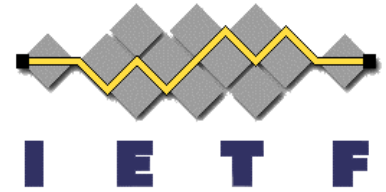
3) Subscriber decides to forward full size picture to photo-finishing service without downloading it first

4) Submission server fetches full size picture attachment and inserts into message

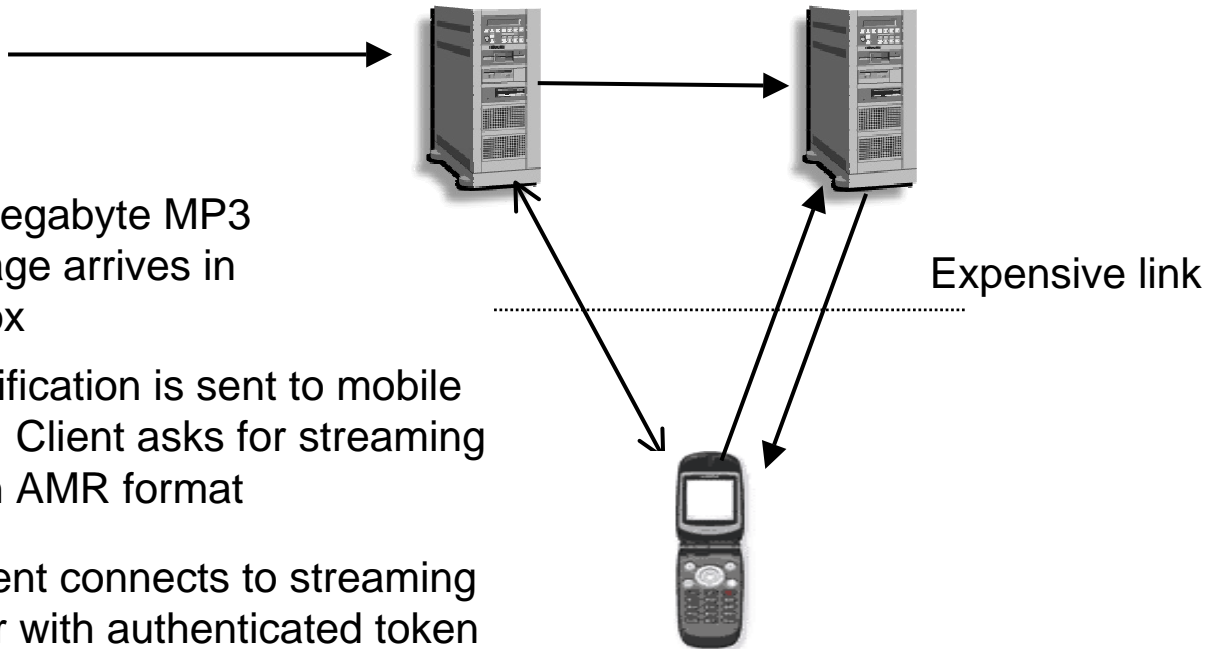
5) Away goes the full-size message

**Finally, a well engineered, standard, flexible, solution!**

# Preview MP3 Use Case



Mailbox Server      Streaming Server



1) 4 megabyte MP3 message arrives in mailbox

2) Notification is sent to mobile client. Client asks for streaming play in AMR format

3) Client connects to streaming server with authenticated token

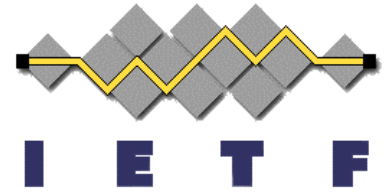
4) Streaming server grabs MP3, transcodes it, and streams to client

5) Subscriber deletes or saves song for later Retrieval by broadband computer into their iPod.

**Flexible, powerful!**



# Mobile VoiceMail



Mailbox Server



1) Caller leaves a message. Message stored in mailbox server.

2) Notification is sent to mobile client. Client retrieves message, requesting conversion into AMR.

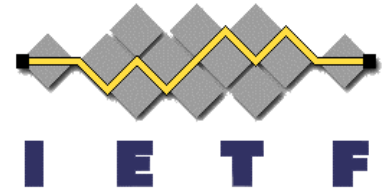
3) Message stored on handset. Subscriber reviews message at will, whether on plane, tunnel, or connected.

4) Subscriber reviews message on PC, Deletes message. Message is deleted on handset next time handset connects to server.

Expensive link

**Intuitive multi-device support**

# Mobile Corporate Email Today



Enterprise Mailbox Server

1) Message arrives in corporate email server

2) Plug-in, desktop app, or external server detects message, retrieves it, and converts it into a form that can escape the firewall. (HTTP)

3) Message is tunneled through firewall and stored on network server. Server reformats and compresses message.

4) Message notification is sent and message is delivered to mobile device using encryption if supported by proprietary client.



Adapter  
Tunneler  
Service



Mobile  
Data server

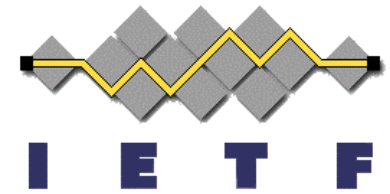


Expensive link



**Sensitive corporate data is stored on network server outside the firewall !**

# Lemonade Mobile Corporate Email Access



Enterprise Mailbox Server

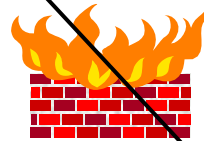
1) Message arrives in corporate email server

2) Client is directly notified of new mail and retrieves messages from server. Firewall is opened for authenticated and encrypted IMAP access.



Adapter  
Tunneler  
Server

**Sensitive corporate data stored only on the corporate server or the client**

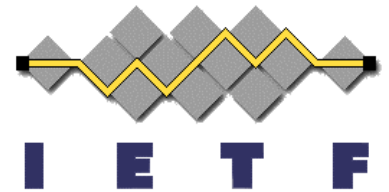


Expensive link

**Client controls conversion, And has access to full fidelity if Needed.**



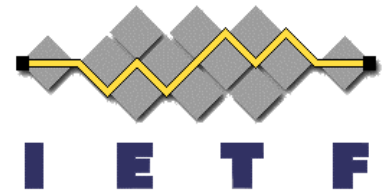
## Nerdy Stuff



Lemonade is a profile of new and existing capabilities

- URLAUTH extension to IMAP
- Catenate extension to IMAP
- BURL extension to SMTP
- Future Delivery extension to SMTP
- IMAP and SMTP Binary support required
- TLS security required
- Channel extension for IMAP transcoding
- Quick reconnect extensions or profile for IMAP

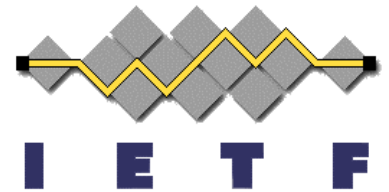
# LEMONADE: Spaceplane or Dud?



- Mobile Messaging Market Demand Established
- Current generation of standard protocols too limiting
- Proliferation of proprietary solutions to proven need
- Strong support from SP vendor community

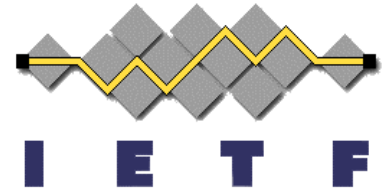


## Timing and Next Steps



- Plan for Protocol Completion: Spring 2005
- Initial Implementations Expected: mid-2005
- Marketing and Interoperability support required
  - Maybe TMIA?

## For More Information:



- Mail List:
  - General Discussion: [lemonade@ietf.org](mailto:lemonade@ietf.org)
  - To Subscribe: [lemonade-request@ietf.org](mailto:lemonade-request@ietf.org)
  - In Body: in body 'subscribe'
  - Archive: <ftp://ftp.ietf.org/ietf-mail-archive/lemonade/>
- Supplemental Work Group Page
  - <http://flyingfox.snowshore.com/i-d/lemonade/>