



A Communications and Messaging Evolution

1960s

1970s

1980s

1990s

2000

2005
and beyond

Voice Mail

- Answering services provide early solution
- Gordon Matthews invents voicemail

- VMX pioneers early installations
- Voicemail becomes one of first computer/telephony developments
- First digital switch 1976

- Digital switches & PBX's allow integration
- Enterprise market takes off
- Centrex stimulates service provider voicemail

- Notification develops with outcall options
- First one number services
- Becomes standard business tool and wireless option
- 900M voicemail messages are exchanged every work day

- Over 100M mailboxes in US by 2000
- Average office worker sends or receives 23 voicemail messages daily

- Markets continue to evolve.
 - True competition in local markets through VoIP
 - Cable and pure VoIP telephony providers emerge
 - 1M VoIP subscribers in January 2005 growing to over 20M by 2008
 - Wireless subscribers to surpass 200M in US in 2005
 - Internet Users > 75% of households
 - Connections faster; Broadband now > 50% of connections
 - Since 1985 wireless has passed wireline in penetration of BTNs
 - Convergence of Wireless, Local and LD Providers

Fax

- Prior to 60's mainly used for transmission of news photos
- First fax standards developed (RS-328)
- Xerox manufactures their first fax machines

- Still only 100k faxes in US by 1975

- First plain paper fax machine in 1987 for \$7,500.00
- First faxes under \$1,000.00
- 2.5M in US by end of the 80's
- First 14.4 fax in 1989
- 90B pages faxed worldwide

- Fax machines break \$200 barrier
- 300B fax minutes worldwide by 1998
- Average office worker sends or receives 14 faxes per day

Unified Communications

- Convergence of all messaging media

- Accessible by many devices
- Including real-time communications control

- Many combinations of benefits for different markets

Internet

- First paper on packet switching 1961
- ARPA (Advanced Research Projects Agency) sponsors first trials
- First attempt at sending packet data 1969

- Email application invented in 1970
- First international connections to Arpanet
- X25 protocol developed
- Still only 188 hosts at end of 70'

- TCP/IP standards developed
- Domain name system developed
- Hosts grow to 130k

- Arpanet becomes WWW in 1991
- First ISP's appear
- White House goes online in 1993
- Real audio developed 1995
- MP3 invented 1999

• TMIA launched in 1998