

Reflections on the Future of Amateur Radio

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Agenda

- **Who am I?**
- **Technology Assessment '93**
- **Technology Assessment '97**
- **Final Comments**

Who am I?

- **Chair, TAPR Regulatory Affairs Committee**
- **Member, ARRL Future Systems Committee**
- **Chair, Regulatory Affairs, Part 15 Coalition**
- **Co-PI, NSF Wireless Field Test Project**
- **Asst.. Director, ARRL Pacific Division**

Technology Assessments

- **Product of Future Systems Committee (FSC)**
- **FSC Mission**
 - Advise BoD on future technology in 5-10 year timeframe
- **Standing committee since 1992**

1993 Assessment

- **Spectrum sharing with other services will continue. We should identify good spectrum sharing partners.**
 - Little LEO 2m & 70 cm move
 - WCS Service at 2300 MHz
 - Data-PCS at 2390 MHz
 - FlashComm at 3-30 MHz
- **There will be less of a distinction between hardware and software engineering. Both groups will use many of the same tools.**
 - Software foundries

1993 Assessment (2)

- **More computing power will become available to hams at low cost, which will create new possibilities such as integrating DSP into amateur projects.**
 - TAPR DSP-93
 - AEA DSP232
 - Kachina 505DSP HF Transceiver
- **Future amateur design projects will concentrate more on software.**
 - TAPR DSP-93
 - Kachina 505DSP HF Transceiver

1993 Assessment (3)

- **Compression technology is advancing rapidly. Vast improvements will be made in voice, data and image applications. These technologies will have a major impact on amateur radio.**
 - Internet streaming multimedia protocols and products
- **Amateur-satellite technology will continue to become more sophisticated.**
 - Phase 3D

1993 Assessment (4)

- **Emerging technologies in the commercial world will make it necessary to reassess the ARS role in disaster communications, possibly placing greater emphasis on a disaster communications role in developing countries.**
 - New PCS offerings
 - Satellite based communications
- **Global Position System(GPS) receivers will become more affordable and will be integrated into amateur projects.**
 - APRS

1993 Assessment (5)

- **There will be more low power, low voltage parts available. This trend is being accelerated by new types of computing devices, such as personal digital assistants (PDA's).**
 - Palm Pilot
 - Newton
 - PCS Phones
 - PHS
- **The electronics industry will move toward shorter production cycles, on the order of six month, with product life less than two years.**

1993 Assessment (6)

- **Functions locked into application specific integrated circuits will make it more difficult to use these parts in the amateur service. Also, these parts will have shorter life cycles, which will affect their availability for amateur projects.**
- **Volume, rather than development will dictate the cost of parts.**

1997 Assessment

- **Spectrum for ARS use will continue to decrease**
 - Loss will in some cases be indirect
- **“Moore’s Law” will be replaced with a more aggressive maxim**
 - Much more function and performance for same cost
- **Use of communications technologies will become more pervasive in the general public**
 - Uniqueness of ARS will decrease
 - Family Radio Service as an example
- **Internet will be everywhere**
 - In appliances for instance

1997 Assessment (2)

- **More communications services will transit to the Internet**
 - Telephony
 - Video
 - Fax
- **Bandwidth will become cheaper but not for the general consumer**
 - Focus will be on business bandwidth
 - More intelligent use of bandwidth on demand
- **Mobile communications will become more pervasive**
 - anywhere, anytime will really arrive

Final Comments

- **ARS not seen as doing experimentation**
 - New FCC Part 5
- **New development model needed for the service**
 - R&D funding from other sources
 - TAPR's new project approach
 - Focus on experimentation
- **Current experience in Japan**
 - First time decline in number of hams
 - Internet drawing people away
 - PHS drawing people away

Final Comments (2)

- **Time to rethink the service as we move to the 21st century**
 - Nothing lasts forever
 - New, simple Part 97

Sharp's PHS System

