



Market and technical issues for ATC

FCBA brown bag lunch panel

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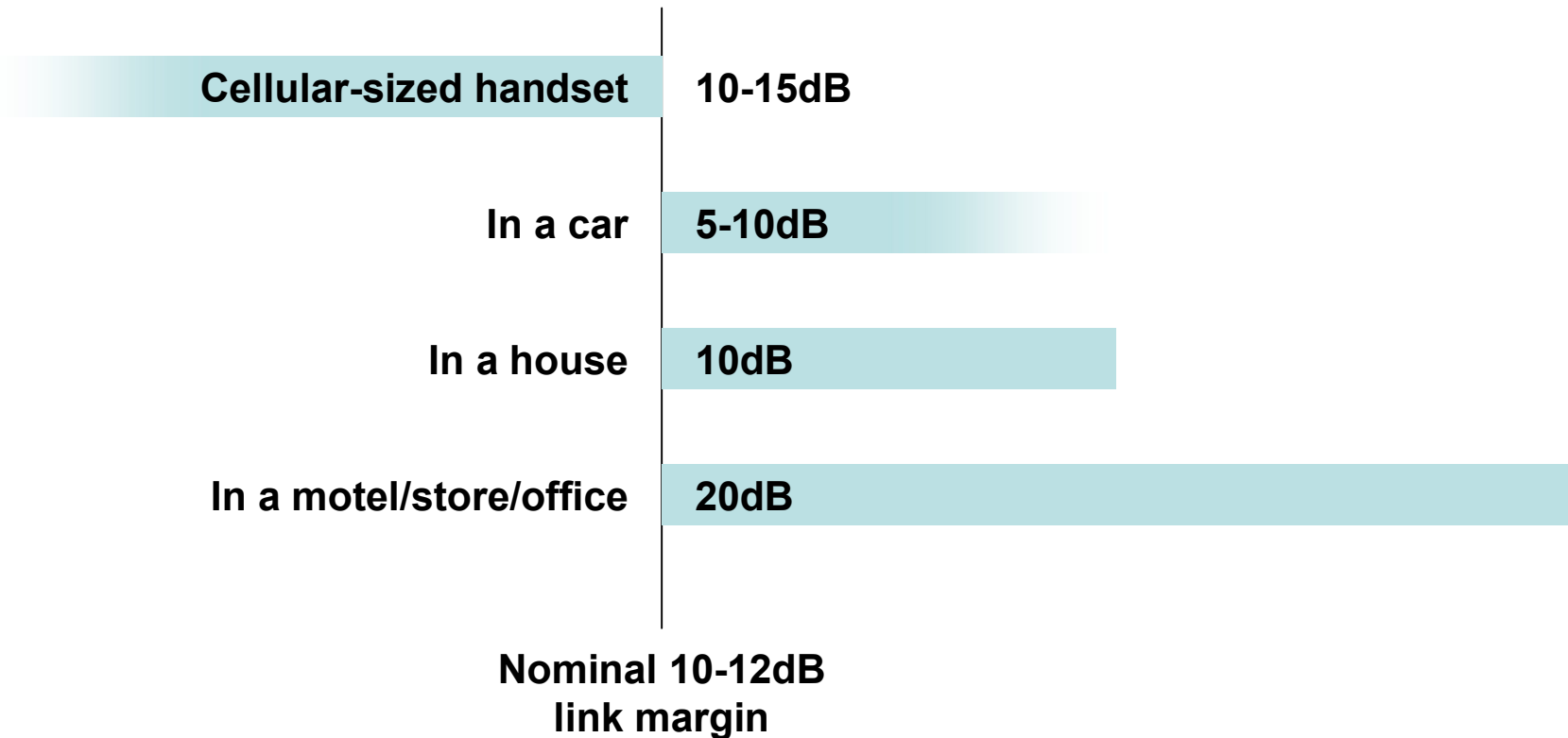
What is the promise of ATC?

- “Dual mode cellular handsets, capable of receiving both terrestrial and satellite signals initially may cost \$5 to \$10 more than a regular terrestrial-only cellphone, but shouldn’t be heavy or bulky”¹
- “MSV’s goal is to provide ubiquitous cellphone service nationwide and ‘blazingly fast’ Internet access at ‘reasonable cost anywhere you are’”¹
- The keys to potentially creating a successful ‘mass market’ MSS business (i.e. one capable of justifying the \$1B+ needed to build a new satellite system) are:
 - a handset with no size penalty
 - a service which works ‘like a cellphone’
- Even then an MSS-ATC operator has to compete in the market with at least four well-established terrestrial cellular businesses

¹Gary Parsons, Chairman of MSV, quoted in Barron’s, June 2005



How much extra satellite power is needed to reach these goals compared to first generation MSS?



It will almost certainly be optimal to prioritize handset size over link margin, since service quality within the ATC network will be comparable to cellular

Source: Goldhirsh & Vogel (1998), TMF Associates estimates



So how good will the service quality actually be?

- What does “ubiquitous” mean?
 - different things to different people!
 - will people expect it to work inside a car or a building?
- What about cars and buildings outside the ATC network?
 - XM’s MyFi may be reasonably representative of the service quality to be expected from the satellite component of MSS-ATC
 - Sirius delayed launching an equivalent handheld device precisely because its terrestrial repeater network is very limited (and its newly announced product only works in a car or home dock)
 - cellular roaming is a critical addition (you can’t build ATC base stations everywhere)
- Is “satellite backup” a better description than “ubiquitous coverage”?



Why has the reaction of capital markets been so favorable?

- MSV has raised \$430M (for MSV and Terrestar) in the last year
- ICO raised \$600M last month
- Inmarsat's stock price has appreciated over 30% since its IPO in June 2005
- Analyst reports emphasize the value of L-band and S-band spectrum against terrestrial benchmarks
 - haircuts may be taken for the additional cost of satellite deployment, but differences in service quality have not really been considered in detail
 - these differences haven't been an issue since their focus is on new spectrum for cellular services rather than the benefits of extended coverage
- Cellular spectrum is more valuable to an incumbent than to a new entrant
 - it is assumed that MSV and ICO will probably be acquired by a cellular operator
 - given the limited number of purchasers, will the availability of 3 or 4 separate ATC plays drive down the potential acquisition price?



Possible outcomes

- Given the high valuation attached to MSV (and by implication other ATC licensees) at present, cellular operators may not want to buy the whole company
- A plausible outcome would be:
 - the satellite operator builds and operates the satellite (and back-up)
 - a cellular operator pays an annual ‘royalty fee’ and builds ATC base stations as a capacity expansion for its cellular network
 - tri-band (cellular, ATC, satellite) handsets include the satellite component as an ‘emergency backup’, for use when outside both cellular and ATC coverage (so users are aware of the limitations on where satellite service can be used, but don’t often need it)
 - the satellite operator retains the right to sell satellite-only services and to resell the integrated service (e.g. within vertical markets)

Background

- Tim has over 12 years consulting experience across the satellite and telecom industries, having worked for leading technical and strategy consultancies in both the UK and US. He has an M.A. and a Ph.D. from the University of Cambridge, UK and runs his own consulting company, Telecom, Media and Finance Associates, Inc. (www.tmfassociates.com), based in Menlo Park, CA, which specializes in the technical and financial analysis of telecom ventures
- Over the last decade, Tim has worked with almost all of the leading players in the MSS sector, developing business plans and assisting in optimization of the technical design for new systems. Having observed many of the mistakes made in development of the first generation MSS systems, he has recently been working to ensure that the appropriate lessons are learnt in development of new MSS-ATC systems



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