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FCC Seeks Innovative Ideas on Innovation

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The FCC is bracing itself for an onslaught of comments under the heading “Fostering Innovation and Investment in the Wireless Communications Market”, following the recent Notice of Inquiry (NOI) on that subject.

The NOI praises innovation (as do we all), and points to wireless technology as an important driver of innovation. No argument there – just count the people on the street hunched over their BlackBerrys. But that is innovation of the past, while the FCC very much looks to the future.

The NOI casts a wide net, seemingly asking every question that anyone at the FCC could think of relating to the terms “wireless” or “innovation”. A complete list would run almost as long as the NOI itself. Below we provide just a sampling to convey the flavor.

But before we go there, we must observe that the fundamental problem facing the FCC does not require a 35-page NOI. It’s Economics 101: the demand for radio-based services is increasing fast, while the supply of spectrum suitable for most of these services is not. Industry has found clever ways of packing more users into the same amount of spectrum: narrow-banding, spectrum leases, various spread spectrum technologies, ultra-wideband, cognitive radio, and more. The FCC wants to encourage these techniques and, indeed, addresses many of them among the specific questions in the NOI.

High on the FCC’s list – and we heartily commend them for raising it – is the issue of regulatory delay as an obstacle to innovation. Perhaps this is an idea whose time has finally come. (We ourselves wrote on it just recently in the September issue of *IEEE Spectrum* magazine, an article titled “Radio’s Regulatory Roadblocks.”) The NOI frankly acknowledges that FCC processes can hinder the progress of innovation. “At times,” it says, “we have seen innovators subjected to lengthy regulatory processes . . . that can be an obstacle to progress in the wireless arena.” No kidding. Nowadays most rulemakings take at least three or four years, and even a simple technical waiver takes a year or two. A company has to think hard before investing resources in a new radio-based technology,

knowing the first revenue dollars will be a long way off.

To its credit, though, the FCC now seeks a dialogue with interested parties on how to remove unnecessary impediments. In our own experience, regulatory delays have three common sources. One is court-imposed, in the form of legal due-process requirements that make sense for rulemakings that have large social consequences, but just get in the way of the technical adjustments often needed for innovation. A second results from opening rulemakings to the public via the Internet – a noble idea in principle, but one that in practice often draws tens of thousands of largely clueless contributions. A third source of delay is the FCC’s internal procedure designed to address the first two: every contribution is even-handedly weighed, considered, and responded to, including the ones seemingly emailed in from Mars.

After regulatory delay, which takes up just a few sentences, these are some of the issues raised in the NOI:

In general

- Metrics for evaluating innovation and investment in the wireless sector
- The FCC’s role in supporting and encouraging innovation and investment
- High-level trends driving innovation and investment in the “wireless ecosystem”
- How wireless services are used in innovative ways (as in health care, energy conservation, education, and public safety)

Managing spectrum

- “Repurposing” spectrum for innovative uses
- Mechanisms for access to spectrum (licensing procedures, unlicensed use, etc.)
- Alternative auction schemes for spectrum
- Mechanisms for secondary markets in spectrum
- How to assess “harmful interference” in protecting one service from another
- Alternative dispute resolution techniques or negotiated rulemaking for speeding interference disputes over new technologies
- Whether the FCC should regulate receiver performance
- Measurements of spectrum efficiency

Spectrum sharing

- Whether the FCC should issue secondary/underlay licenses
- Promoting dynamic spectrum sharing
- “Cap and trade” for rights to cause interference (up to some limit)
- Whether a publicly accessible database should give technical details of a licensee’s operations to facilitate sharing

- Whether impending technical advances can promote spectrum sharing
- Whether the FCC should try to reduce the noise floor and, if so, how

Networks and devices

- Whether new network architectures can spur innovation
- Whether different procedures for tower siting could speed deployment
- Whether distributed antenna systems can make innovation easier
- Whether new kinds of devices will cause unexpected regulatory problems
- Whether the FCC should alter the equipment certification process to promote innovation
- How technical standards affect innovation

The NOI is an ambitious undertaking. It remains to be seen whether the proponents of “business as usual”, who are both numerous and well-funded, will try to derail these ideas into the yawning pit of needed reforms that just never happen.

Comments are due on September 30 and reply comments on October 15.