Spectrum scarcity, sharing, and the commercialization of DSA

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Spectrum scarcity, sharing, and the commercialization of DSA

- "Scarcity" is important, but not the only motivation for DSA
- Transition to DSA is paradigm shifting
- Future is hybrid sharing model

Scarcity → sharing → DSA

- Scarcity: demand exceeds supply
- Ergo: suppress demand (ration) or increase supply (share)
- DSA enables both
  - Ration: reallocate to higher value uses
  - Share: increase spectral efficiency
- Commercialization of DSA involves innovation (investment) in
  - Technology → CR, antennas, & other stuff...
  - AND business models and policy frameworks

DSA has is paradigm shifting

- Decoupling of network infrastructure & spectrum
  - DSA “virtualizes” the RF
- Lots of potential benefits
  - Mix-and-match componentization (like stereo components)
  - Commoditization of sub-systems (SDR on Dell Hardware)
  - Decouple business innovation (service, market, firm organization)
  - Intermodal competition and scalable entry
- Transition to DSA has positive feedbacks
  - Commercialization for one purpose makes easier for another
  - Facilitates addressing scarcity challenge...

Future of sharing is hybrid

- Mix of technologies, business models, and policies
- Legacy always with us (today's will be tomorrow's legacy)
- No one size fits all solution
- No crystal ball
- Need continuum of spectrum "property rights" options to meet varying needs for interference protection.
- DSA makes it easier to live in hybrid world.
  - Reduces need for for harmonization (CR as substitute for standardization)
  - Enables more flexible response to changing interference dynamics.