A Look Inside the U.S. Federal Communications Commission (FCC)

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US Regulation Landscape Overview

Characteristics of the US Regulatory Landscape –

- Complex structure and difficult to navigate
  - Multiple agencies working various aspects of the same issue
- Rule Making Proceedings are time consuming and complicated
- Adoption does not guarantee (immediate) implementation
- Often maintain outdated and/or obsolete requirements/mandates
Congress sets laws that enact regulations

Venue for legal challenges to FCC rules; e.g., 6GHz, Net Neutrality, etc..

15 Agencies
Dept. of State
Dept. of Defense
Dept. of Justice
Dept. of Transportation
Dept. of Energy
Dept. of Commerce
...

Interagency Spectrum Advisory Council formed under NSS-2023
Consumers drive Demands which fosters innovation

Congress est. laws taking into account consumer interests & Industry constraints

Executive Branch defines government priorities and funds research

Regulators define operational/safety parameters and enforces requirements

Industry develops solutions to meet consumer demands in accordance with (government & industry) requirements

U.S. ICT Regulatory & Policy
The FCC, established by the Communications Act of 1934, is an independent federal regulatory agency responsible directly to Congress.

Charged with regulating interstate and international communications by radio, television, wire, satellite, and cable.

Oversee the allocation & management of nonfederal (or commercial) spectrum. Was granted authority in 1981 to assign licenses using a lottery. In 1993, Congress granted authority to assigned licenses using competitive bidding.

**The Federal Communications Commission: Structure, Operations, and Budget, May 3, 2022**
Federal Communications Commission (FCC) Structure

FCC Leadership – 5 Commissioners

- The FCC leadership, by law, comprises a “bipartisan” panel of five commissioners appointed by the President and confirmed by the Senate for (staggered) five-year terms
- The President designates one of the commissioners as the chairperson
- Only three commissioners can be of the same political party (of the President)

Jessica Rosenworcel, Chair (D)
Geoffrey Starks (D)
Anna M. Gomez (D)
Brendan Carr (R)
Nathan Simington (R)

Source: FCC – About the FCC
Federal Communications Commission (FCC) Structure

FCC Initiatives defined under current leadership

- **5G Leadership** – taking steps to enable US global leadership in wireless 5G. Addressing spectrum availability (high-band, mid-band, low-band & unlicensed), infrastructure policy, and modernizing regulations.

- **Digital Discrimination** – established a cross-agency Task Force to create rules and policies towards enabling access to all regardless of location, sex, age, race, etc. (ensure digital diversity).

- **Rural Broadband** – ensure dollars collected by FCC are properly invested and produce new broadband services in rural areas to bring connectivity to consumers in areas lacking access to broadband.

- **Homework Gap** – looks to establish programs to address students left offline because they can’t access or afford broadband services.

- **National Broadband Data** – effort to update dataset of broadband availability to identify the unserved and underserved communities most in need of funding for high-speed internet infrastructure investments.

- **Privacy and Data Protection** – established a Task Force to coordinate across the agency on the rulemaking, enforcement, and public awareness needs in the privacy and data protection sectors.

- **Combatting Robocalls** – working to combat the illegal spoofing, robocalls and robotexts through stronger enforcement actions and policies. U.S. consumers receive approximately 4 billion robocalls per month.

- **Telehealth** – engaging with the healthcare community to implement initiatives to keep Americans connected to critical healthcare services.
Federal Communications Commission (FCC) Structure

Comprised of 7 Bureaus & 12 Offices

Bureaus

Bureaus & offices develop & maintain regulatory requirements, issues/process licensing applications, foster development of new services, conduct investigations, set rules to ensure public safety, and distribute consumer information to educate.

**Consumer & Governmental Affairs** - Develops consumer-related regulations/policies; e.g., people with disabilities and those affecting tribal nations

*Enforcement* - Enforces FCC rules

**Media** - Oversees broadcast radio and television, as well as cable and satellite services

**Public Safety & Homeland Security** - Engages on initiatives surrounding public safety and emergency responses; e.g., natural disaster, pandemic or terrorist attack. Oversees CSRIC & maintains the Covered List

**Space** – Engages on policy and licensing matters related to nonfederal satellite and space-based communications and activities. Established in April 2023, formerly the International Bureau.

*Wireless Telecommunications* - Regulates domestic wireless telecommunications programs and policies, including licensing

**Wireline Competition** - Develops and recommends wireline telecommunications policy goals, objectives, programs and plans

* We will take a deeper dive into these areas of greater interest
Federal Communications Commission (FCC) Structure

Wireless Telecommunications, comprised of 4 divisions (broadband, mobility, competition & infrastructure, and technologies), oversees policies and procedures surrounding licensing of all wireless services, from fixed microwave links to amateur radio to mobile broadband services. Also produce an annual assessment of the wireless industry -- the Mobile Wireless Competition Report and is attempting to run the FCC Spectrum Dashboard – it has issues.

Mobility Division develops policy and rules around wireless communications. Areas of interest: 3.5GHz/CRBS, DSRC, ITS, SMR, & spectrum caps

Broadband Division develop & maintains rules and regulations for services including AWS, 600 MHz, Broadband Radio Service, Fixed Point-to-Point Microwave (wireless backhaul), and Broadcast Auxiliary Services (such as wireless microphones), and the Upper Microwave Flexible Use Service (UMFUS).

Competition & Infrastructure Policy Division develops competition and infrastructure policies to promote competition & the rapid deployment of wireless communications services

FCC’s biannual Communications Marketplace Report aims to assess the competitive state of the communication marketplace. Areas covered include:

- Fixed Broadband Service | Mobile Wireless | Satellite | Radio (audio) | TV (video)

For speed test, FCC uses Ookla which cannot specify which is unable to distinguish the technology that the test taker is using.

Disclaimer -Data based on Wi-Fi-using devices are included in these results.
Federal Communications Commission (FCC) Structure

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Offices

Administrative Law Judges - The Office composed of judges who preside over hearings and issue decisions

Communications Business Opportunities - Office supports opportunities for small, women-owned, and minority-owned communications businesses.

*Economics and Analytics* - Responsible for expanding the use of economic analysis into Commission policy making, for enhancing the development and use of auctions, and for implementing consistent and effective agency-wide data practices and policies.

*Engineering & Technology* - OET advises the FCC on technical and engineering matters and develops and administers Commission decisions regarding spectrum allocations – also grants equipment authorizations

General Counsel - Commission's chief legal advisor and representative

Inspector General - Independent entity whose mission is to detect and deter waste, fraud, abuse, and misconduct in FCC

International Affairs - Responsible for the FCC's engagement of foreign and international regulatory authorities

Legislative Affairs – Serves as liaison between the FCC and Congress & other federal agencies.

Managing Director - Manages the FCC

Media Relations - FCC's main point of contact with the media.

Secretary - Oversees the receipt and distribution of documents filed by the public through electronic and paper filing systems

Workplace Diversity - Oversees the FCC employment opportunities

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Federal Communications Commission (FCC) Structure

Office of Economics and Analytics (OEA), established in 2018, is tasked with performing economic analyses of rulemakings, adjudications, and transactions. OEA is split in several divisions overseeing (1) spectrum auctions and auctions for universal service support, (2) data practices and policies, (3) economic analysis and (4) industry analysis.

FCC Auction Authority
Congress created FCC in 1934, in part, to manage and allocate nonfederal (or commercial) use of spectrum and granted the FCC authority to assign licenses.

FCC grants licenses to nonfederal/commercial entities (on a random basis) to use specific frequencies.

FCC also sets terms and conditions for use of the spectrum to “serve the public interest, avoid interference among users, and promote the most efficient use of spectrum.”

In 1997, FCC was granted authority to conduct spectrum auctions

Auctions Division (AD) serves as the FCC resource for all auction design and implementation

- Last completed auction was Auction 108 offering county-based geographic overlay licenses for spectrum in the 2.5 GHz band (2496–2690 MHz).
- Auction 108 net proceeds: ~$419 million USD
- High auction net proceeds: $81 billion USD (Auction 107 - 3.7GHz)
- FCC’s authority to auction spectrum lapsed in March 2023 and has NOT been renewed. (First time in 30 years.)

Source: CRS, The Federal Communications Commission’s Spectrum Auction Authority: History and Options for Reinstatement, Updated September 12, 2023

Source: CRS.
Federal Communications Commission (FCC) Structure

**Policy and Rules Division** conducts proceedings to develop policy and rules on spectrum allocation and use, equipment authorization, and unlicensed devices (e.g., 6GHz, TVWS, & DSRC). Represents the Commission on NTIA’s Interdepartmental Radio Advisory Committee (IRAC) and coordinates Federal and non-Federal frequency assignments in shared frequency bands.

**Electromagnetic Compatibility Division** plans and conducts studies on RF propagation and communications systems characteristics, as well as develops analytical techniques and models to improve spectrum utilization. Also studies broadband and Internet technologies, developed SAR requirements, and evaluates broadband services (speed test). Convenor of the Technological Advisory Council (TAC).

Maintains list of the **Radio Spectrum Allocation**

**Office of Engineering and Technology (OET)** - Organization Chart

OET advises the FCC on frequency allocation and spectrum usage, maintains the Table of Frequency Allocations, represents the agency on relevant issues with NTIA and the Interdepartmental Radio Advisory Committee and directs the FCC’s Equipment Type Approval program. OET advises and participates with other bureaus on proceedings regarding spectrum management, emerging technologies and technical standards.

**Laboratory Division** is responsible for the FCC test lab & evaluates RF devices and related technologies to determine their interference risk potential and technical operating parameters. In the case of new RF technologies, develop technical standards and recommend appropriate actions. Manages the Equipment Authorization program; MRAs; and publishes guidance documents via the Knowledge Database (KDB).

Source: FCC

FCC Rulemaking Process

Administrative Procedure Act (APA) governs the process by which many federal agencies develop and issue regulations, which includes the public comment process.

Source: GAO. | GAO-19-483
FCC Rulemaking Process

Rulemaking Origin
There are several reasons why the FCC may decide to initiate the rulemaking process:

- **Statutory mandate** - Congress specifically require a rule or the initiation of the rulemaking process
- **Agency identification of a problem** - FCC identifies a problem such as industry behavior; difficulties enforcing existing rules; requests for interpretations of or exemptions from existing rules; or changes in technology causing an update to a rule
- **Petition for rulemaking** – Petition for the FCC to issue, modify, or rescind a rule

**Rulemaking Procedure (minimum)...**

**Issue a notice-and-comment period for a rulemaking** – FCC issues a notice of proposed rulemaking (NPRM) and provide an opportunity for public comment on the proposal before issuing a final rule.

NPRM approval and appeal elaborate procedure:
- NPRM Issued
- Public comment period
- Reply comments
- Ex parte presentations/comments
- Further NPRM
- Final rule (Report & Order)
- Congressional Review
- Petition for Recon
- Request for Waiver
- Court of Appeals

**Other steps the FCC may take:**
- Notices of Inquiry (NOIs). Release an NOI prior to the issuance of an NPRM to get early public comments/insights
- Public Notices (PNs). Issued to typically get comment or data on more limited issues
- Further Notices of Proposed Rulemaking (FNPRMs). Use a FNPRM to solicit public comment on a new or modified proposal and/or additional comments to focus decision or to address new/changing information
- Public meetings or hearings. Use public meetings or hearings to ask questions

**Under the APA, rules can be challenged in court on the basis that it is arbitrary, capricious, an abuse of discretion; contrary to the Constitution or a statute; or the agency failed to follow required legal procedures. Even if a court does not overturn an agency's rule for one of these reasons, it may send the matter back for further consideration or explanation by the agency. The agency can also be sued to “compel action unlawfully withheld or unreasonably delayed.”

**Under the Congressional Review Act, agencies must submit final rules to Congress. After submission, Congress can begin a process to overturn the rule. Congress can also use a variety of processes as part of its oversight of agency action, including holding hearings, issuing reports, or adopting legislation.**
FCC Type Approvals

FCC OET administers the U.S. FCC equipment authorization program. RF devices sold in or imported into the U.S. must demonstrate compliance to FCC rules in Title 47 of the Code of Federal Regulations (CFR) | 47 CFR

Incidental (AC/DC motors), Intentional (transmitter), & Unintentional (digital circuitry) radiators under Part 15; Industrial, Scientific & medical equipment under Part 18; licensed radio services under Parts 22, 25, 27, 90, 95, 96, 97, etc...

Typically, an intentional radiator (transmitter) is required to be approved using the certification procedure. Unintentional radiators (digital circuitry) are approved using the SDoC procedure.

SDoC requires the party responsible for compliance ensure that the equipment complies with the appropriate technical standards. Responsible party must be located in the U.S.

Certification requires testing be performed by an FCC-recognized accredited testing laboratory with the cert issued by an FCC TCB based on doc and test results.

Devices with an integrated screen, may display the required information on the screens in lieu of a physical label. Proposed Cybersecurity label is intended to be voluntary...

Changes to a product design may require an additional approval. Three different types of permissive changes are accepted. Class I - changes that do not degrade radio characteristics; Class II - changes that do degrade radio characteristics; Class III – software change to SDR that changes frequency range, modulation or max. power

Source: FCC Equipment Authorization
**FCC Enforcement**

Division responsible for enforcing the provisions of the Communications Act and FCC rules & regulations

**Divisions and Offices**
- Enforcement comprises 7 divisions/offices
- Telecommunications Consumers Division
- Investigations & Hearings Division
- Fraud Division
- Market Disputes Resolution Division
- Office of the Field Director
- **Spectrum Enforcement Division** - takes enforcement actions against complaints primarily involving wireless equipment matters, such as electronic devices that are advertised, sold, or operated without proper authorization under the FCC’s.

**General Enforcement Areas**
- Equipment Authorization, Marketing, and Importation
- Unlicensed Operation or Operation at Variance with License
- Interference Resolution
- Unwanted Communications
- Privacy (Protection of consumer data)
- Pirate radio
- Etc....

**Informal Consumer Complaints related to radio (2023)**
- 37% - Interference
- 19% - Availability
- 17% - Pirate Radio
- 16% - Indecency
- 5% - Commercial/Promotions
- 4% - Billing
- 3% - Equipment
- Total complaints: 3,742 (2% of all complaints)

**Post-market Surveillances**
One of the responsibilities of a Telecommunication Certification Body (TCB) is to perform appropriate post-market surveillance activities in accordance with ISO/IEC Guide 65 or ISO/IEC 17065. **TCB POST-MARKET SURVEILLANCE**
2017: FCC Issues Notice of Inquiry

2017-2018: Early Discussions and Proposals
- Industry stakeholders begin discussions about the potential for unlicensed use in the 6GHz band.
- Technology companies advocate for more unlicensed spectrum to support Wi-Fi and other technologies.

2018: FCC Begins Formal Proceeding
- Stakeholders submit comments and reply comments on the NPRM.

2020: FCC Adopts New Rules
- April 23, 2020: The FCC adopts new rules to make 1,200 megahertz of spectrum in the 6GHz band available for unlicensed use.
- The decision includes creating a new unlicensed category called Automatic Frequency Coordination (AFC) to prevent interference with incumbent services.

2020-2022: Further Developments and Challenges
- Various stakeholders, including incumbent users, express concerns about potential interference and initiate court challenges against the FCC’s order.
- FCC addresses various petition: Petition for Stay, Petition for Recon

2023: Expansion and Litigation
- The FCC may have further proceedings to refine rules and address ongoing concerns.
- Legal challenges to the FCC’s order continue to play out in court.
- Deployment of AFC-enabled devices and services expands, pending resolution of legal and technical issues.
Note: Information contained in this submission was taken from the Federal Communications Commission’s (FCC) website at www.fcc.gov and other publicly available sites. URLs are provided throughout the document for easy access to referenced sources.