Throughout his four years as chairman of the Federal Communications Commission, Michael K. Powell zealously touted a future filled with technologies competing to provide new ways to communicate and get information, from souped-up wireless devices to online access via power lines.

Some of these are now coming to pass. As a result, whole industries are being upended. Cable companies are now also phone companies, phone companies want to provide video, and an entire regulatory scheme is in flux.

But many analysts say Powell -- who yesterday announced his resignation -- is leaving before many crucial details have been worked out. Those details will affect the choices consumers are likely to have and the prices they will have to pay.

Those tasks will fall to Powell's successor and a reconstituted FCC. Already, the agency is grappling with several initiatives and federal court disputes that include whether cable companies must open their lines to competing Internet providers and how much nudity and profanity is appropriate on television and radio.

In addition, new leaders of House and Senate oversight committees have said they want to reexamine the nation's telecommunications and media laws. They have not, however, laid out specifics.

The coming period will see "a legislative and administrative donnybrook" because of all the unresolved issues, predicted Mark N. Cooper, legislative director for the Consumer Federation of America.

During Powell's term, the FCC rolled back rules that required telephone companies to share their networks at discounted rates with firms providing competing local telephone service.

The phone companies want the FCC to go further, freeing them from requirements that allow competing Internet providers to use phone networks to provide high-speed online access over telephone lines, a service called DSL.

That would put the phone companies on equal footing with cable operators.

But FCC rules giving cable such freedom were overturned by a federal court. The FCC has appealed to the U.S. Supreme Court, which will hear the case in March.

Consumer groups argue that the FCC and Congress need to confront the cable and telephone companies' growing power over Internet connections. The groups fear that network operators could begin to play favorites with what content can move across their networks, at the expense of competitors.

Several groups want Congress or the FCC to insist on "network neutrality." Powell supported the concept
but stopped short of seeking rules. The companies say that they have no such intentions and that less regulation produces more competition.

After the infamous Super Bowl incident involving singer Janet Jackson's exposed breast, the FCC and many in Congress have called for a crackdown on indecency and nudity.

Major radio and television studios have been fined, and there have been calls for more aggressive action.

The issue is among several that will be the focus of Rep. Joe Barton (R-Tex.), who heads the House Energy and Commerce Committee, according to spokesman Larry Neal.

Both houses of Congress crafted laws upping indecency fines from a maximum of $32,500, to up to $500,000 in one version. Although both measures stalled before last session ended, one is likely to pass this year.

Last year, the FCC issued new rules that relaxed restrictions on how many media outlets companies could own while tightening others.

But the rules were attacked by many in Congress who said they would allow more media to be dominated by fewer players, and the regulations were challenged in court.

A federal appeals court put the rules on hold, determining that the FCC used flawed methodology. The agency has yet to decide if it will appeal.

In the meantime, Congress changed one of the rules, limiting ownership of television stations by saying a big television network such as Fox or ABC cannot own a group of stations that reach more than 39 percent of the national audience.

In the old days, there was one phone company for both local and long-distance calling. When a separate long-distance business grew up, the FCC developed rules for how much the local phone companies could charge to let long-distance calls reach an individual.

Now, a host of calling technologies, including wireless and voice-over-Internet using cable-television lines, need that same access to the local networks.

For the fledgling voice-over-Internet industry and other new technologies, the cost of that access will be crucial. Some phone companies support minimizing or eliminating all charges between companies for carrying voice and data traffic.

Verizon, however, supports freeing network owners to negotiate whatever rates between each other that the market will bear.

In rural areas, the cost of providing telephone service can be prohibitive, with miles and miles of territory with few residences to pay the bills.

So Congress and the FCC set up universal service charges, which are assessed to all local-telephone users to help subsidize rural telephone companies.

But as more people have migrated away from land lines and to wireless or Internet telephone service, the fund has been depleted. Initiatives to wire schools for Internet access also tapped the fund, which has a shortfall of close to $2 billion.
Sen. Ted Stevens (R-Alaska), the new chairman of the Senate Commerce Committee, plans a series of town meetings to listen to businesses and consumers before deciding how extensively he will want telecommunications laws reviewed.

The FCC has for years pushed the broadcast networks to convert their free, over-the-air stations to digital signals, which offer higher-quality video and audio.

More important to regulators, it would free up valuable spectrum used by the stations, which could be sold at auction or used for public safety purposes.

Broadcasters have been slow to change, and some, including Barton, say the FCC needs to set a firmer deadline.

Staff writers Yuki Noguchi and Frank Ahrens contributed to this report.

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