Episode 1,076: Liberty, the Radio Spectrum, and Wireless Technology

Guest: Thomas Hazlett

WOODS: I've just read out the full title of your book, *The Political Spectrum*. Great book. Very clever title, by the way. That's actually a very clever title. I wonder if some people looking at it were expecting one thing and got another. But I think this radio spectrum issue starting when we think about the 1920s, I can understand how a layman would think that you would need government allocation here, because it seems — it's hard I think for the average person who doesn't really understand the technology to see how this could be worked out on some kind of common law basis. It seems like you probably need somebody "in charge," because otherwise wouldn't you have chaos? In fact, I bet the average person who's never thought about this would assume that the prevailing situation was chaotic and then the state brought order to the chaos. But this is more or less the opposite of the truth?

HAZLETT: So yeah, so really we get the question about rules of the road in wireless, in the radio spectrum in an important way for the first time in the 1920s in the United States when radio broadcasting kicks in. It's a new business model for radio. Radio had been around for 25 years, but now with broadcasting sending lots of emissions blasting out from a high spot in all directions to try to go one way to receivers — that was the broadcasting innovation. And it starts in Pittsburgh, Pennsylvania, KDKA, November 2nd 1920. 500 stations on the air within two years. Now there really are important conflicts, and so somebody has to figure out where the right to broadcast for one bumps into the right to receive emissions for others.

And this actually gets worked out pretty expeditiously by existing rules that allow the U.S. Department of Commerce under the Secretary of Commerce, Herbert Hoover before he was president, to actually have first-come, first-serve rules. And so the real growth, spectacular growth of the new industry in the 1920s, '23, '24, '25, millions of people buying very expensive radio receivers and radio being the killer app. I mean, this was absolutely revolutionary. All the buzz about iPhones or any other device you could name today, that was really the first taste of the mass market for electronic devices for communications. The wireless world is growing under those rules, and it worked pretty expeditiously.

But it had a political problem in that it did not stop new entry. And really, the first successful commercial stations didn't like that, and in fact, a lot of the political leaders, including Herbert Hoover, didn't like that. They wanted more control over that market. And that's what we got in the 1927 Radio Act and what we've had for 90 years, a much more political system rather than allowing the economics to play out and competition to get full reign to devote radio spectrum resources to where consumers and innovators want them to be, we had a political "mother, may I?" system develop under the licensing scheme of 1927.

WOODS: From the point of view of the average consumer of radio, what have been specific examples of negative consequences of that? Couldn't somebody say, *Maybe I missed out on this or that innovation, but by and large it worked out okay*?

HAZLETT: Well, you could have that attitude. I don't think that really does justice to what we see. And almost immediately after the '27 Radio Act, there were stations that had specific points of view that were punished by regulators. The Federal Radio Commission, which gets replaced by the Federal Communications Commission in '34, is already in 1929 saying in particular to left-wing stations — there was WCFL in Chicago, owned by a labor union. There was WEVD in New Jersey, owned by a socialist, Eugene V. Debs was the honorary inspiration for the group that bought that station. They were literally called propaganda stations and punished in their renewals for licenses and essentially driven off their point of view. It was thought to be wrong for a station to have a point of view, and so homogeneity and really least-common-denominator programming and a lack of political debate was enforced by regulation. That comes instantly under the Federal Radio Act.

You also over time do have innovations that are suppressed. A classic example is 1933-34, a great American inventor who was important with the AM radio invents a new-and-improved system called FM radio, Edwin Howard Armstrong, professor at Columbia and later a major in the U.S. Army because he was very patriotic and worked in both World Wars to develop radio for U.S. and Allied Forces. Anyway, Armstrong, it takes years for him to get access to radio waves for his new technology, which the regulators first claim doesn't work. And then when FM demonstrates its great, high-fidelity sound, it is given access briefly. But at the end of World War II, it is completely uprooted. The entire allocation is obliterated. All 500,000 radios that have been sold to consumers are made worthless, obsolete and the entire industry is destroyed for basically a generation.

It wasn't until the 1960s that FM got a fair chance to compete with AM. Of course, then within a few number of years, it completely dominated the competition because, in fact, like Edwin Armstrong said, it had high fidelity and was technologically superior in many ways. By then, by the 1970s when AM gets surpassed by the new FM technology, Edwin Armstrong is long gone. He committed suicide in his frustration over the entire situation, having his technological baby literally being thrown out by the FCC. He commit suicide in the early 1950s.

So there's a whole pattern of this, the suppression of the DuMont network in television and using a massive allocation of radio waves for television to be put in place from the late '30s to the early '50s, but yet very little competition. Only the network triopoly — ABC, CBS, NBC — being allowed to exist in the '50s and '60s. Then cable TV tried to come in to compete, cable being suppressed in the '60s and '70s. And you get a whole succession of missed opportunities that really with regularity say that the public interest is in protecting the past and going very slow into the future.

And that, fortunately to some extent in very limited parts of the marketplace, has been relieved and there has been a relaxation over the last 30 years or so that has allowed particular parts of the market to open up, and that really has come with full force in mobile, cellular. And so starting in the 1980s, we got a very distinct relaxation of the rules issued to market participants for how cellular licenses could be used.

And you can see the results today. The Apple iPhone is able to get into the marketplace without asking permission from the Federal Communications Commission. They literally go to the carriers, competing among themselves, having liberal rights to use spectrum to create new networks, to use new devices, often that interfere with other devices. I mean, the Apple iPhone is a spectrum hog. It interferes tremendously with other uses of the spectrum, but the planning and the engineering and the optimization of that whole system is handled by the market, not by the government. And so what happens is you literally get a million different ways to use radio spectrum, because we now have millions of applications that ride on our iPhones or on competing ecosystems that depend on Android, sponsored by Google, of course, and you get a whole evolving marketplace that is tremendous in the force of its dynamic innovation.

That world, I think it's absolutely clear from the history, would be literally impossible under the old system, the tight system of mandating particular technologies and services and radios and networks under the old "Mother, may I?" system from 1927, again, the Herbert Hoover-led Radio Act, which was very tight and micromanaged the spectrum. We've gotten away from it with a lot of liberalization, but we have so much farther to go because, today as we sit here, the great majority of the important and valuable spectrum is still socked away, walled off for applications that were set aside 40, 50, 60 years ago for things that looked like good ideas at the time to regulators but which are now completely moribund, and we really have to have better mechanisms for releasing spectrum to get more of this pretty amazing new stuff. We have the proof of concept. We've seen sort of the tip of the iceberg with mobile markets evolving and the smart phone revolution giving us whole new worlds of commerce and social media, but that's the direction we need to go in the future.

WOODS: You spend a little bit of your time in your book, *The Political Spectrum*, on the Fairness Doctrine. Now, as I recall — and this is very vague in my mind — but that was simply a threat. That never actually went anywhere. But I don't recall the details.

HAZLETT: Yeah, so the Fairness Doctrine was a formal policy that was issued about the time that TV licenses were coming in in the late '40s. But it actually goes back to something I've already mentioned, and that is that there were fairness considerations in licensing radio stations from the very beginning of the Federal Radio Act, the late 1920s. And controversial language was discouraged and in fact suppressed, demonstrably suppressed. That is to say that it was a chilling effect. When the government says that controversial viewpoints are subject to free equal time requests, that's a tax on controversy.

And so what happens is you get this least-common-denominator programming, where stations, television as well as radio — television is subject to the same rules to get and keep a license as an obligation for fairness — then any time that there's something controversial, the station is subject to having to give away free time, not charge for it at an equal price, but actually subsidize that response. Well, that tells the news directors to avoid any situation where they would have to grant such requests, and you can see what happens because it's a controversial policy.

And finally in 1987, the FCC under the Reagan administration and Reagan appointees — first Mark Fowler and then Dennis Patrick actually was the chairman of the FCC when this happens August 1987 — withdraws the Fairness Doctrine. And in fact, there is an outpouring, particularly on radio, of new formats for news, talk, news talk, and public affairs programming on both AM and FM radio. You can see the jump statistically, very pronounced

shift in programming. There was really much more speech, open free speech after the abolition of the Fairness Doctrine.

And so the threat was always there. There were very few cases — there were a lot of cases where there was free time ordered, but there were very few license revocations based upon the lack of programming. And so that was sort of the sword of Damocles; people in the industry talked about it was the threat rather than the actual execution. But there are lots of such threats.

And in fact, even during the Nixon administration, a somewhat famous episode was that the Nixon administration went after the license of the Washington Post Company, as per the problem they were having on Watergate reporting in the newspaper. And indeed, Katherine Graham wrote that the value of the stock market valuation of the broadcast properties plummeted, and that was a huge financial problem for the Washington Post Company at the time. And this was not because licenses were revoked, but because hearings were scheduled and the threat of revocation actually shifted millions of dollars in capital values.

WOODS: You know, I apologize; what I was thinking of when I was talking about it being a threat was more recently under President Obama. I feel certain that there were some Democrats who were suggesting some — or maybe this was just scare tactics by right-wing talk radio. I don't know. But there was a suggestion that the Fairness Doctrine ought to be revived on the presumptive basis that there's just too much right-wing radio out there. Now, was that in anybody's imagination or was that a real thing?

HAZLETT: Well, certainly in the 1990s, you had a lot of this, after the abolition of the Fairness Doctrine, which was very controversial — and by the way, certainly Democrats in Congress were very strong to override the FCC. And in fact, there was legislation to legislate the Fairness Doctrine to put it in over the objections of the regulatory agency. And legislation was vetoed by Ronald Reagan, a former broadcaster himself. There were Republicans, including Newt Gingrich and Senator Jesse Helms, that at the time were in favor of overriding the Reagan veto. The conservatives wanted a Fairness Doctrine.

You fast forward through the '90s, Democrats in Congress are talking about legislation. They don't like talk radio on the conservative side developing. They put forward a law called the Hush Rush Law. Then in I believe 2000, as late as 2000, the Democratic national platform actually had a plank advocating reinstatement of the Fairness Doctrine through statute. And then by the time we get to Obama, Senator Obama's campaign in 2008, there is some discussion of the Fairness Doctrine, but Obama says he's against it and Democrats in recent years have said they're against it and that it's not realistic and that the conservatives are just trying to scare people with this, as you suggest.

So I mean, it's never clear how serious the policy is when people talk about it or discuss it and how practical it is. I would hope certainly that it's not practical. It doesn't seem to be in the public interest in terms of promoting free speech or competition in these media markets.

WOODS: And of course, with the Internet, it would be virtually impossible to do. But certainly with radio, they could try, I suppose. But I guess I want to know two things here that are related, but let's do one of them at a time. The first is: what would be your proposed reform of the whole spectrum issue? What would it look like? And then after we get to that, how

would our lives be different or improved if your reforms were implemented? So first, what would you recommend we do as of this moment?

HAZLETT: Well, the real target here is to get spectrum to where consumers want it and entrepreneurs and innovators can best use it. And the problem is that we still, as I said, have most of the valuable spectrum walled off. Here's a way to think about it. Literally in 1939, the U.S. government started setting aside frequencies for over-the-air broadcast television, a brand-new technology. And we still have a very sizable chunk of those frequencies — in fact, more than half of the allocation is still there. As we sit here, we've got about 50 over-the-air TV channels just sitting there waiting for over-the-air television when everything has migrated to cable, satellite, and over-the-top broadband distribution for video in addition to mobile. That's the way kids get their television today, with a Netflix stream on their handheld or their iPad.

So the customers want to be able to get this spectrum out in the marketplace, so we want a system where some entrepreneurs can go to the TV stations or the FCC or someplace and actually buy spectrum to move it to where it's really needed so we can get more bandwidth, faster speeds, and more pretty amazing new stuff, including supported 5G, fifth generation cellular. And to support all of those new applications, we need systems where there actually are the rights in the marketplace that people can deal with. Right now, it's against the law for a TV station to say I want to stop being a TV station, and basically allocate the spectrum that's used for broadcasting here, I want to allocate that to Verizon's network or a new startup network that just does cellular mobile transmission or a satellite or anything else. That's literally against the law. So we want to relax the rules and allow transactions to take place.

And in fact, there's a very good scheme that the U.S. government has used in a number of situations called the overlay right, where new rights are put in the marketplace that leave all of the existing applications in place, grandfather all the existing uses, but allow new deals to be made where there are transactions, there are migrations where old systems can basically get out of their old and traditional wireless application and give their customers for that system some alternative — of course, we already have cable, satellite, and over-the-top for the broadcasting applications — and then cooperate in exchange for money — that's usually the way these business deals work — cooperate with new entrepreneurs that are using the spectrum for some different applications.

And so that framework, the overlay framework is in place, and that can be applied generally. It can be in the TV band to migrate television services. It can be applied on the massive spectrum set aside for the U.S. government, including military applications. Leave all the existing military or government applications in place in terms of what they can do, but you allow private companies to come in and make deals with those agencies. The agencies get upgrades, they get better radios, maybe the used different spectrum, maybe they used fixed networks, maybe they use some software or satellite fixes that are different than what they're doing now. And then you allow that spectrum to be reused in a much more productive way. That's a basic overlay concept that's been developed. I talked about it in the book. And it actually is an off-the-shelf technology. It has to be tweaked for particular purposes, but it's a standard form or reform that has been used in the United States and has been very, very successful.

WOODS: More to come with Professor Hazlett after we thank our sponsor.

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So as the average person — let's say I embody just the — I'm the average person. What's better? How is my life better? How is my experience with these technologies better because people listened to Thomas Hazlett?

HAZLETT: Well, I mean, you know, we just had this big fantastic CES show with all of the fancy electronics on display in Las Vega. It's now called technology, by the way, not electronics. "Electronics" is too dated a word. But the applications that are there today wherever you look, whether they be drones or the wearables or the augmented reality systems, our lives are already getting better. Crime rates are going down because people have cell phones. Health monitoring of course is going up, but we've only seen the tip of the iceberg.

In fact, one of the real opportunities that's just over the horizon is tremendously enhanced health applications, including what they call mHealth, mobile health, where we have these very powerful computers on our bodies 24/7 — we generally call them smart phones — but we use them right now in very, very limited ways for health. And of course, there are tremendous — one of the applications is to monitor your kids' activity now. You can find out exactly what their vital signs are, how much exercise they're getting. Obviously, you can keep track of where they are geographically with GPS. That's all part of the system.

But with more spectrum, more data can flow, more intelligence, and more big data can be accumulated. Now, there are privacy issues and other problems that have to be solved and they are being solved, but there's tremendous, tremendous advantage now to having more information, both as a customer — you get to monitor your own health and see where you are and see what signs look like you might fix something through different exercise or some health intervention — but also the accumulation of better information — big data, if you will — that tells us exactly how people are performing and how their health results are affected. And with more radio spectrum, all of our aspects of our life, from personal security, talking about crime rates declining, or personal health — obviously social media has been a revolution.

It's not an unmixed blessing. There are always challenges that develop with all of these breakthroughs, but there's tremendous advance, tremendous new efficiencies, and tremendous opportunities for society. And getting more spectrum in the market, this wonderful, ubiquitous, non-depletable resource, to get out there, to allow it to be used in a more efficient, more productive way, not to be blocked by the old barriers of the political spectrum, that's really a wonderful task for policymakers to think about and really for people who are interested in the advance of society and the importance of freedom and open markets to really take an active interest in.

WOODS: Well, it's a tremendous book filled with interesting historical anecdotes and analysis we don't typically get in the mainstream. It's *The Political Spectrum: The Tumultuous Liberation of Wireless Technology from Herbert Hoover to the Smartphone*. But before I let you go, first of all, we're going to link to that book on the show notes page. This is Episode 1,076, so it'll be TomWoods.com/1076 where we'll link to that.

But you're just going to have to forgive me; I need to ask you one more thing. You wrote a book in 2011 called *The Fallacy of Net Neutrality*, and as you know, not too long ago, people

were going hysterical over the issue of net neutrality. And not everybody in the world has the attention span for a three-hour presentation on it, so I'm sure as the author of a book on it you have perfected your two-minute sales pitch as to why people should not be going berserk about net neutrality and maybe should oppose it. If so, can you share that with us?

HAZLETT: [laughing] I'll take my best shot.

WOODS: All right, I know it's hard. I'm asking you the impossible here, but then people can always read your book afterward.

HAZLETT: Oh, yeah. And I'll give you the short version. I mean, what net neutrality has become as a phrase is a proposal to regulate broadband providers, the companies that link you to the Internet, whether they be a wireless or a fixed-line company, and sometimes they're big companies and sometimes they're smaller. There are small wireless companies that are, by the way, violently opposed to net neutrality regulation.

Now, net neutrality has also morphed with a particular regulatory structure that we're very familiar with called Title II under the 1934 Communications Act. And this was the system that was used famously to regulate AT&T for about six decades, and quite unsuccessfully according to the U.S. Department of Justice. It actually filed a big lawsuit, an antitrust suit in the 1970s, saying that under Title II common carrier rules, AT&T and the regulators did not do a good job of promoting competition. In fact, they sabotaged competition.

And so what people often don't know is that tremendous history we've had where, in fact, to get the explosion of innovation that came through the evolution of networks, also known as the Internet — to get that evolution, we've had fortunately a very pronounced liberalization where we've peeled off Title II requirements. So companies like America Online get to get out in the marketplace in the 1990s and push an alternative to the old phone system by being what's called an ISP, an Internet service provider. We had to eliminate common carrier rules under Title II for AOL to exist.

To get voiceover Internet — the Skype application we're talking on right now — had a very important liberalization. You could not — it used to be the case that only a phone company could deliver voice services, and a company like Skype, which is an application that rides over the broadband network, was literally illegal. And so there was an order in 2004 at the Federal Communications Commission, the Poehler Order, that in essence eliminated Title II regulations for voiceover Internet. That was a huge breakthrough for innovation and consumers.

If you want to go back to the old system, you've got to take all that regulatory baggage with you. It doesn't mean that all of it's going to operate in exactly the same manner, but the same challenges will come. What we want to do going forward that we have an antitrust regime — or anti-competitive foreclosure, which is the technical antitrust term for what people allege will happen with broadband providers if we don't have regulation — that's already illegal under the Sherman Antitrust Act, and we already have a legal backstop for that. The fact is that there has been tremendous innovation and it's not all neutral, and we don't want blanket rules that say that any deals between edge content or application developers and Internet providers like AOL, for example, are inherently anti-competitive. They're not. In many cases, they're very pro-competitive.

By the way, one of the great deals that Google had as a startup search engine competing with the establish search engines in the early 2000s was to do a deal with AOL, the world's biggest ISP at the time, where Google the startup actually paid to be the default search engine for AOL users on the startup page. That was a huge event in the history of Google, getting them to where they are today as a preeminent application, probably the preeminent and most successful application on the web.

But the blanket rule against certain business models is not what we want. We want a competition of business models, and that's what we get by stripping away those Title II common carrier rules, and that's where we are today with the innovation that we really all benefit from.

WOODS: I was tempted, because of the level of hysteria about net neutrality, and coming from major institutions plus many individuals, and on social media there was much gnashing of teeth about it, I wanted to lay out what would be some way we could have a wager about the consequences of this move, because people were predicting all kinds of terrible things and exploitation of consumers and that some forms of content would be downgraded in some way. And I was trying to think of what would be a metric that we could all agree on that we could say, look, one or two years from now, we're going to revisit this question and see how it actually turned out and see whether the hysterics were right or whether the people who counseled calmness were right. Is there a metric we could use to measure how the market has proceeded?

HAZLETT: Well, there are, but there's no one metric that everyone will agree on, because you can't do the so-called counterfactual. You can't run the world under one set of rules —

WOODS: Right.

HAZLETT: — run the exact same world under the opposing set of rules. Now, in social science, you're always trying to find, in essence, experiments where things change and you try to follow the results of that change. And indeed, there have been papers published — I've done research in past years — that compare the common carrier regulatory systems to deregulated systems that are operating either successively in time or competing with each other contemporaneously in the market.

And we had such a situation, by the way, and this is the precursor to the net neutrality rules, was a thing called open access. That was regulation of the telephone companies' data offerings, which were initially DSL, digital subscriber line service. And in the late '90s, early 2000s, cable modem service came in. In fact, cable modem service led the broadband market in the United States — and therefore the world, really, introduced the mass market broadband Internet — because, in part, it was unregulated. It did not have common carrier obligations as part of the telephone company business model. They could just offer unregulated pricing, unregulated service. And in fact, DSL, the offering of the phone company, was regulated, and they had to have certain common carrier rules and they had to make their facilities available for competitors to use.

And cable competes very successfully; in fact, becomes two-to-one dominant over DSL in terms of numbers of subscribers in the early 2000s. DSL is then deregulated between 2003 and 2005, and when DSL gets deregulated, its subscriber growth jumps relative to cable. Now, this is very strong evidence, in fact, that the common carrier rules were not helping consumers,

were not promoting efficiency. We've already done that test with respect to these open access rules.

And indeed, a market for Internet services boomed as a result of this tremendous expansion of broadband across the United States and literally across the world with the technologies that in large measure were developed and the applications that were developed in the burgeoning U.S. market. Certainly it's an international and global marketplace. That's one of the great things about the scale of the Internet, so it's not like it all comes from the U.S. by any measure. But the fact is that these markets developed very well. We had the experiment. The unregulated market, the cable modem market, actually did very well from the get-go. DSL, the telephone market for data, it actually increases when it gets deregulated. It has parity with cable.

And so now people look back; they misinterpret that. You see a lot of misunderstanding about that time period and that episode. People are interested, they should read my 2011 book or go back and find the paper I wrote on this with a very good economist, Anil Caliskan, in *The Review of Network Economics*. And it shows we had run these experiments. So I like your idea, Thomas. Going forward, we should look to see what happens. Is the Internet going to be destroyed? I don't think so. But there will always be debates and there will always be alternative approaches to the empirical reality.

WOODS: Well, Professor Hazlett, I appreciate your time, your books, and your willingness to go on that net neutrality tangent toward the end. I don't think I would have been forgiven if people had found out you'd written a book on this and I hadn't asked you. But the primary book we've been talking about is *The Political Spectrum: The Tumultuous Liberation of Wireless Technology from Herbert Hoover to the Smartphone*. I'll link to everything at TomWoods.com/1076, and thanks so much again.

HAZLETT: Thank you, Thomas.