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4 HEARING ON PROMOTING BROADBAND, JOBS AND ECONOMIC GROWTH

5 THROUGH COMMERCIAL SPECTRUM AUCTIONS

6 WEDNESDAY, JUNE 1, 2011

7 House of Representatives,

8 Subcommittee on Communications and Technology

9 Committee on Energy and Commerce

10 Washington, D.C.

11 The Subcommittee met, pursuant to call, at 12:03 p.m.,  
12 in Room 2123 of the Rayburn House Office Building, Hon. Greg  
13 Walden [Chairman of the Subcommittee] presiding.

14 Members present: Representatives Walden, Terry,  
15 Stearns, Bilbray, Blackburn, Scalise, Latta, Guthrie,  
16 Kinzinger, Eshoo, Matsui, Barrow, Rush, DeGette, Dingell, and  
17 Waxman (ex officio).

18 Staff present: Caroline Basile, Staff Assistant; Ray

19 Baum, Senior Policy Advisor/Director of Coalitions; Nicholas  
20 Degani, FCC Detailee; Neil Fried, Chief Counsel,  
21 Communications and Technology; Debbie Keller, Press  
22 Secretary; Carly McWilliams, Legislative Clerk; Andrew  
23 Powaleny, Press Assistant; David Redl, Counsel, Telecom;  
24 Charlotte Savercool, Executive Assistant; Alex Yergin,  
25 Legislative Clerk; Roger Sherman, Democratic Chief Counsel;  
26 Shawn Chang, Democratic Counsel; Jeff Cohen, Democratic FCC  
27 Detailee; Sarah Fisher, Democratic Policy Analyst; Phil  
28 Barnett, Democratic Staff Director; and Alex Reynolds,  
29 Democratic Legal Intern.

|  
30           Mr. {Walden.} I would like to call the Subcommittee on  
31 Communications and Technology to order, and begin our hearing  
32 on Promoting Broadband, Jobs, and Economic Growth Through  
33 Commercial Spectrum Auctions, and welcome all of our  
34 witnesses who are here today.

35           Spectrum legislation presents a tremendous opportunity  
36 to promote wireless broadband to spur economic growth, to  
37 create jobs, and generate significant revenue for the  
38 American taxpayer. This hearing will focus not only on how  
39 we might advance our goals by auctioning currently available  
40 spectrum, but also how we might create a marketplace where  
41 licenses can voluntarily return spectrum for broadband in  
42 exchange for a share of auction proceedings.

43           The communications industry in America is in a time of  
44 massive change. Americans' voracious appetite for mobility  
45 has made wireless service an overwhelmingly popular way for  
46 Americans to stay connected. In fact, nearly one in four  
47 Americans has cut the cord, as it were, relying solely on  
48 wireless for their voice communications needs. Similarly,  
49 wireless is the fastest growing area of broadband  
50 connectivity. The convenience of mobility that moved us  
51 towards wireless voice is having the same effect in the  
52 broadband arena.

53           Last week we had our hearing on public safety spectrum,  
54 and I continue to have concerns that reallocating the D-block  
55 rather than auctioning it may be a mistake. The Advanced  
56 Wireless Services 3 spectrum is another block already  
57 available for auction, although many believe it would best be  
58 paired with spectrum currently occupied by federal users.  
59 All of this spectrum needs to be part of the discussion.

60           Another avenue for consideration is voluntary incentive  
61 auctions, something that both the FCC's National Broadband  
62 Plan and the President's budget identify. Current license  
63 holders, such as some television broadcasters and satellite  
64 operators, might be willing to relinquish spectrum and use  
65 the auction proceeds to fund operations of new innovative  
66 ventures. For example, the DTV transition has allowed  
67 broadcasters to transmit in high-definition and add  
68 additional over-the-air channels. Additional funding could  
69 help pay for expanded mobile, Internet, and even broadband  
70 offerings. We can, and should, act to preserve and promote  
71 this important service.

72           I support incentive auctions. But any incentive auction  
73 in which a licensee forfeits spectrum rights must be  
74 voluntary. This is not only good spectrum policy, it is good  
75 economic policy. Incentive auctions help match willing  
76 buyers and willing sellers. If a broadcast station values

77 its spectrum more than a potential wireless broadband  
78 provider is willing to pay, the station will not be forced  
79 off the air. However, as Mr. Ellis will attest in his  
80 testimony today, there are broadcasters interested in  
81 participating in incentive auctions.

82 This opportunity for broadcasters presents opportunities  
83 for our Nation's economy, as well. Broadcasters who agree to  
84 surrender their licenses through an incentive auction, or  
85 those who choose to only return a portion of the license and  
86 channel share with another broadcaster, could provide the  
87 U.S. government with the opportunity to re-auction their  
88 licenses to wireless providers who desperately need  
89 additional spectrum to meet consumer demand. Those auctions  
90 will generate revenue for the Treasury for debt reduction.  
91 Moreover, they will help create badly needed jobs. Build out  
92 of wireless networks is an infrastructure project that  
93 requires the labor of Americans across a broad cross-section  
94 of geography, education, and skill levels. And of course  
95 increased wireless broadband will boost productivity and  
96 create new and innovative lines of business.

97 The wireless industry's track record for innovation is  
98 second-to-none. But wireless is not the sole venue for  
99 innovation. As we move forward with additional changes to  
100 the broadcast television service, we should work with

101 broadcasters to identify regulations that are hindering  
102 additional innovation within their service. Over-the-air  
103 broadcasting remains a vital and important part of the  
104 communications infrastructure of America—fostering its  
105 innovation is in everyone’s interest.

106 I remain confident that a properly crafted incentive  
107 auction can benefit broadcasters, whether they participate or  
108 not, as well as wireless providers, the U.S. Treasury, and  
109 the American economy. So today’s hearing is designed to help  
110 explore how the auctions can be structured to ensure a  
111 positive outcome for everyone involved.

112 I thank the witnesses for their participation today. I  
113 look forward to your testimony and your responses to the  
114 questions that our subcommittee has.

115 [The prepared statement of Mr. Walden follows:]

116 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
117           Mr. {Walden.} And with that, I would yield back my--  
118 well, I will yield--I only have 36 seconds left. I will  
119 yield back the time and will go to Ms. Eshoo for an opening  
120 statement.

121           Ms. {Eshoo.} Thank you, Mr. Chairman, and good  
122 afternoon everyone. Thank you to all the witnesses that are  
123 here today. I am looking forward to your testimony and to  
124 the Q&A.

125           Today's hearing continues our in-depth examination on  
126 spectrum reform. As we evaluate ways to promote broadband,  
127 jobs, and economic growth, we should be guided by, I think, a  
128 simple principle. Use spectrum to its maximum efficiency,  
129 and be fiscally responsible in the plan that we commit to.

130           Thirty years ago, most Americans relied on over-the-air  
131 broadcasting as their only means for news, information, and  
132 entertainment. Then cable and satellite established an  
133 alternative vehicle for delivering television into the home,  
134 giving consumers access to hundreds of channels.

135           The world is changing once again, and today, broadband  
136 is enabling a new set of programming options like Hulu,  
137 Amazon Instant Video, Netflix, that can be watched at home or  
138 on the go. Voluntary incentive auctions are one such way to  
139 address the growing demand for wireless while providing a

140 financial incentive for broadcasters wishing to give back  
141 spectrum.

142         Legislation developed in this subcommittee I think  
143 should incorporate feedback from impacted stakeholders and  
144 provide the FCC with sufficient flexibility to carry out an  
145 auction and handle the repacking process. We should also  
146 consider the significant benefits of dedicating spectrum for  
147 unlicensed use. Unlicensed spectrum has unlocked tremendous  
148 innovation, and in the coming years will drive the growth of  
149 smart grid, access to patient records in hospitals, and much,  
150 much more. By one estimate, unlicensed applications could  
151 generate between 16 to \$37 billion per year in economic value  
152 for the U.S. economy over the course of the next 15 years.

153         The TV white spaces and 5 megahertz band are two areas  
154 which I hope today's witnesses will address. Our panel  
155 provides a broad range of views, and I look forward to  
156 hearing their thoughts on how best to structure a voluntary  
157 incentive auction while providing fair compensation to  
158 broadcasters who chose to relinquish their spectrum or must  
159 relocate as part of the repacking process.

160         And with that, I will yield the balance of my time to  
161 Representative Matsui.

162         [The prepared statement of Ms. Eshoo follows:]

163 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
164 Ms. {Matsui.} Thank you very much, Ranking Member  
165 Eshoo, for yielding to me, and I would also like to thank the  
166 witnesses for being with us today. Thank you very much.

167 We all know there is a looming spectrum crisis and we  
168 must get additional spectrum into the marketplace. The FCC  
169 should have the flexibility to structure and conduct  
170 incentive auctions that would truly maximize the economic and  
171 social values of the spectrum.

172 I also believe that comprehensive spectrum policy moving  
173 forward should offer our innovators and entrepreneurs an  
174 opportunity to be creative and have a forum to develop  
175 advanced technologies and applications.

176 To help spur greater innovation, I am working on  
177 spectrum legislation that incentivizes R&D efforts and  
178 promotes unlicensed spectrum use, not only for emerging  
179 wireless technologies and applications, but also as a way to  
180 support and further advance American leadership in existing  
181 unlicensed technologies. It is important that we continue to  
182 promote policies that lead to greater innovation and the  
183 ever-evolving telecommunications and technology sectors.

184 And with that, I yield my time to--I yield back the  
185 balance of my time.

186 [The prepared statement of Ms. Matsui follows:]

187 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
188           Mr. {Walden.} Gentlelady yields back the balance of the  
189 time, and now I would recognize the gentleman from Nebraska,  
190 the vice-chair of the subcommittee, Mr. Terry.

191           Mr. {Terry.} Thank you, Mr. Chairman. It is our  
192 responsibility to ensure that the process by which we  
193 allocate the lifeblood of wireless information delivery,  
194 spectrum, promotes the needs of broadband carriers while  
195 simultaneously recognizing the value of this spectrum to the  
196 existing license holders, not only for existing critical  
197 uses, but for the future innovations. This process must be  
198 fair, economically sound, and provide certainty and  
199 predictability to existing holders of spectrum licenses. By  
200 doing so, economic growth will lead to job creation,  
201 innovation can flourish, and critical broadcast resources  
202 will remain secure and available.

203           This hearing is a great opportunity for us to learn more  
204 about how to best structure this process. Any spectrum  
205 auction must be--must account for several important factors.  
206 First, we must ensure that we are not coercing existing  
207 license holders into giving up spectrum they wish to continue  
208 to utilize. If and when existing holders do choose to  
209 participate in either an auction or reallocation, not only  
210 must we compensate them fairly and be consistent with the

211 spectrum's value to the existing holder; any repacking of  
212 spectrum should be done in such a way that the consumer's  
213 access to critical information and resources is not adversely  
214 affected by interference or signal degradation.

215         With these goals in mind, I look forward to working with  
216 my colleagues in crafting solutions. Our witnesses today  
217 here bring much expertise from across stakeholder community,  
218 and I look forward to listening and learning from them here  
219 today.

220         I yield back.

221         [The prepared statement of Mr. Terry follows:]

222         \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
223 Mr. {Walden.} Mr. Stearns, do you have comments?

224 Mr. {Stearns.} Thank you, Mr. Chairman. I will just  
225 take a little over a minute.

226 Last October, the FCC estimated that a spectrum deficit  
227 approaching 300 megahertz is likely by the year 2014, not  
228 very far away. Simply the benefit of releasing additional  
229 spectrum is unlikely to provide \$100 billion to the Treasury,  
230 not a very small figure, in fact. So I think we should, Mr.  
231 Chairman, act quickly to draft legislation that provides the  
232 FCC with authority to conduct commercial auctions so that by  
233 2014 we will not face this crisis of shortage.

234 We know that the convergence of the smartphones and  
235 tablets and TVs and broadband is continuing onward, and we  
236 see that day to day. They continue to guzzle up the  
237 broadband. So the demand for these devices is increasing,  
238 and we need to get more spectrum. I would like to emphasize  
239 that the incentive auctions is the way to go, so it is truly  
240 voluntary, and when broadcasters are repacked, they should be  
241 able to maintain the same service areas that they originally  
242 held, and be compensated for switching channels.

243 So I look forward to our testimony, and I think  
244 everybody on the panel should provide some recommendation of  
245 what type of flexibility the FCC should have. Should

246 Congress specify to the FCC on how to do the auction, or  
247 should the FCC be unfettered? I think that is the key  
248 question we have today.

249 I thank you, Mr. Chairman, for the opportunity to have  
250 my opening statement.

251 [The prepared statement of Mr. Stearns follows:]

252 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
253           Mr. {Walden.} Mr. Latta or Mr. Guthrie, do you have any  
254 comments?

255           Mr. {Latta.} Thank you very much, Mr. Chairman, I  
256 appreciate it.

257           Just real briefly, I thank you very much for having  
258 these hearings today. I recently introduced legislation for  
259 a voluntary incentive auction, and the revenue sharing, and  
260 we are looking at the jobs and the technology out there that  
261 we can be moving forward. Also, additional revenue then to  
262 the Treasury to reduce the deficit. I applaud you for the  
263 hearings today. Thank you.

264           [The prepared statement of Mr. Latta follows:]

265 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
266 Mr. {Walden.} Thank you. Ms. Blackburn, do you have an  
267 opening statement you wanted to share?

268 Mrs. {Blackburn.} Thank you, Mr. Chairman. I do, and I  
269 will submit my full statement for the record.

270 I just wanted to say, I think that when it comes to  
271 spectrum and that we have to make some bold, tough decisions.  
272 I think also one thing that we should all be focusing on a  
273 bit is the FCC has demonstrated that what they call a  
274 spectrum deficit approaching 300 megahertz is likely by 2014.  
275 We need to be looking at that and be serious in how we go  
276 about approaching this and resolving that need for spectrum.

277 I was visiting with someone last week and they were  
278 talking about how we will soon have 1 trillion devices  
279 attached to the broadband, and why it is so important for us  
280 as we look at the use of the spectrum to think in terms of  
281 how we accommodate whether it is through the line or  
282 wireless, all of the use that is coming toward us.

283 So I thank you for the hearing, and I yield back.

284 [The prepared statement of Mrs. Blackburn follows:]

285 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
286           Mr. {Walden.} Thank you. All time is expired for  
287 opening statements--no, we go to Mr. Waxman. I almost did  
288 that again, I am sorry. Mr. Waxman?

289           Mr. {Waxman.} Thank you, Mr. Chairman.

290           Since April 12, the Communications and Technology  
291 Subcommittee has held three hearings on the spectrum policy.  
292 Last week, we focused on public safety spectrum and needs for  
293 public safety spectrum, while this week we will examine how  
294 we might make additional spectrum available for commercial  
295 broadband through incentive auctions. I am pleased that  
296 Chairman Walden and Ranking Member Eshoo are working together  
297 to focus the subcommittee's attention on spectrum matters.

298           Smart spectrum policy can help improve public safety,  
299 promote broadband, create jobs, and reduce the deficit. I  
300 know members on both sides of the aisle recognize what a rare  
301 opportunity we have to accomplish several important policy  
302 goals by enacting legislation in this area.

303           Incentive auctions are not the only element of smart  
304 spectrum policy that we need to address. We also should  
305 consider how to utilize federal spectrum resources better,  
306 how to encourage spectrum sharing, how to maximize spectrum  
307 efficiency across all spectrum bands, and how to balance our  
308 mix of licensed and unlicensed spectrum. By authorizing the

309 FCC to conduct incentive auctions, that should be the  
310 foundation of our spectrum policy efforts. This is a concept  
311 that has bipartisan, bicameral support. At the Energy and  
312 Commerce Committee, Representatives Barrow and Latta have  
313 both introduced measures that would grant the FCC the ability  
314 to conduct incentive auctions. It is also backed by economic  
315 experts. In April, more than 100 prominent economists with  
316 varying political perspectives wrote to President Obama to  
317 endorse incentive auctions as a good way to repurpose  
318 spectrum while minimizing transaction costs. Notably, these  
319 economists believe that Congress should give the FCC great  
320 flexibility to design appropriate auction rules to maximize  
321 the benefits of incentive auctions. They note that in 1993,  
322 Congress took the then-controversial step of authorizing  
323 spectrum auctions and allowing the FCC flexibility to design  
324 how spectrum auctions should work. The result was a huge  
325 success.

326         Since Congress authorized spectrum auctions, the  
327 increase in consumer welfare has been dramatic, and the  
328 economic benefits to our Nation substantial. The system  
329 implemented by the FCC has been replicated around the world.

330         As we move forward towards authorizing incentive  
331 auctions, and I hope we will do so soon, we need to be wary  
332 about limiting the FCC's flexibility to design an efficient

333 auction. We should take full advantage of the FCC's world-  
334 class expertise on auction design, and give the Agency the  
335 ability to work with auction experts to set up the best  
336 possible incentive auction. We should not micromanage the  
337 Agency in this area.

338 I recognize some are concerned about whether we can  
339 ensure that incentive auctions are truly voluntary. I remain  
340 confident that we can find a way to avoid unfairly  
341 disadvantaging broadcasters in this process, and I appreciate  
342 that broadcasters stated willingness to work with us to  
343 figure this out. Broadcasters provide vital services that  
344 should not be interrupted or degraded. Our job should not be  
345 to focus on the specific legislative language that would  
346 provide--our job should be to focus on the specific  
347 legislative language that would provide assurances to  
348 broadcasters that they are not being forced to sell spectrum  
349 in the voluntary auction.

350 We have an excellent panel today. I look forward to  
351 hearing testimony from them. Thank you, Mr. Chairman, for  
352 recognizing me for this opening statement.

353 [The prepared statement of Mr. Waxman follows:]

354 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
355           Mr. {Walden.} Thank you, Mr. Waxman. We look forward  
356 to working with you and others on both sides of the aisle on  
357 this issue.

358           Now I think all members have had a chance for opening  
359 statements, so we will now go to start with Mr. Todd Schurz,  
360 who is the Chief Executive Officer, President, and Director  
361 of Schurz Communications, Incorporated. We look forward to  
362 your testimony, and thank you for coming today.

363           You may want to push that microphone button, and just  
364 for everybody on the panel, these microphones, for those in  
365 broadcasting, you actually have to work very closely. If  
366 they float away we don't hear as well, and then the little  
367 button should light up, I think. Then the little boxes in  
368 front of you should light up and tell you as your time is  
369 running out, you will get a yellow and then a red, and then I  
370 can't tell you what happens after that. It is not pleasant.

|  
371 ^STATEMENTS OF TODD SCHURZ, CHIEF EXECUTIVE OFFICER,  
372 PRESIDENT, AND DIRECTOR, SCHURZ COMMUNICATIONS, INC.; BURT  
373 ELLIS, PRESIDENT, TITAN BROADCAST MANAGEMENT; CHRISTOPHER  
374 GUTTMAN-MCCABE, VICE PRESIDENT, REGULATORY AFFAIRS, CTIA -  
375 THE WIRELESS ASSOCIATION; MICHELLE P. CONNOLLY, ASSOCIATE  
376 PROFESSOR OF THE PRACTICE, DEPARTMENT OF ECONOMICS, DUKE  
377 UNIVERSITY; DEAN BRENNER, VICE PRESIDENT, GOVERNMENT AFFAIRS,  
378 QUALCOMM INCORPORATED; AND HAROLD FELD, LEGAL DIRECTOR,  
379 PUBLIC KNOWLEDGE

|  
380 ^STATEMENT OF TODD SCHURZ

381 } Mr. {Schurz.} Thank you very much. Good afternoon,  
382 Chairman Walden, Ranking Member Eshoo, and members of the  
383 subcommittee. My name is Todd Schurz, and I am the President  
384 and CEO of Schurz Communications, based in Mishawaka,  
385 Indiana. I am testifying today on behalf of the National  
386 Association of Broadcasters.

387 Schurz Communications began broadcasting in 1922, which  
388 makes me a fourth generation broadcaster. Today, we have 10  
389 televisions stations and my company has a presence in 14  
390 States, including Michigan, California, Florida, Georgia, and  
391 Pennsylvania.

392           The beauty of television broadcasting is its one-to-many  
393 architecture. For high demand programming, like the Super  
394 Bowl, there is no limit to how many viewers can tune in. The  
395 same programming delivered on a broadband system would  
396 overload the network. The transition to digital television  
397 has thrown open the doors of opportunity and innovation.  
398 Whereas in analog, I can only provide a single stream of  
399 programming; today with digital, I can provide that same  
400 programming in high definition, and at the same time, offer  
401 additional multicast channels and mobile DTV.

402           Hundreds of broadcasters are taking advantage of new  
403 multicast opportunities, providing viewers with niche foreign  
404 language programming, religious programming, emergency local  
405 weather information, and even high school sports. The Bounce  
406 TV network recently launched by majority owners Martin Luther  
407 King, III, and Andrew Young is the country's first broadcast  
408 network aimed at African American audiences. It is set to  
409 debut this fall on many multicast channels.

410           Going digital has also delivered on the promise of  
411 mobile television. With mobile DTV, viewers can tune in to  
412 live local news, emergency information, weather, sporting  
413 events, or entertainment programs from the convenience of  
414 their car, at the beach, wherever they may be. Today, over  
415 70 stations are offering mobile DTV service, and hundreds

416 more are moving forward with the nationwide rollout of mobile  
417 DTV.

418         Since the digital television transition, our company has  
419 added local news in high definition, multilingual newscasts,  
420 and expanded weather programming in our Tornado Alley  
421 stations. All of this is available for free.

422         The future offers additional possibility, such as data  
423 casting and 3D TV. Broadcasters want to make sure that  
424 viewers continue to be the beneficiaries of broadcast  
425 innovation, and innovation is necessary for us to stay  
426 competitive with an ever-growing number of new competitors.

427         Now remember, it was just 2 years ago that television  
428 broadcasters completed the digital television transition. As  
429 part of the DTV transition, television broadcasters returned  
430 108 megahertz of spectrum, nearly 30 percent of our spectrum.  
431 This freed up spectrum for both public safety and new  
432 commercial wireless services. But as part of that give-back,  
433 the FCC repacked broadcasters under fewer channels, which is  
434 complex and disruptive for our viewers.

435         Now, just a couple of years later, the FCC has returned  
436 to broadcasters, asking us to do it again and asking for  
437 another 40 percent of our spectrum. We are committed to  
438 being a part of the broadband solution, but there is only so  
439 much that the laws of physics will allow us to do without

440 crippling our ability to serve our local communities, now and  
441 in the future.

442         Broadcasters have never objected to truly voluntary  
443 incentive auctions, but we do feel strongly that protections  
444 need to be built into the spectrum legislation to ensure the  
445 future competitiveness and viability of local television  
446 broadcasting.

447         Here are four important safeguards.

448         One, no broadcaster should be forced to relocate to an  
449 inferior spectrum band. Two, any repacking by the FCC is to  
450 protect viewers by maintaining the current reach of a  
451 broadcaster's signal. Three, no station should be subjected  
452 to increased interference, and four, broadcasters should be  
453 held harmless from the cost of repacking.

454         Importantly in the drive to advance broadband and relief  
455 network congestion, you cannot and should not focus only on  
456 the spectrum supply. There also needs to be a comprehensive  
457 examination of how we can capture more efficiencies from  
458 wireless carriers in the consumer electronics industry,  
459 including cell splitting and wi-fi technology, improved  
460 receivers, and--to voice over Internet protocol. We all know  
461 that the pace of technology is unrelenting, and tomorrow's  
462 innovations will help solve many of the anticipated wireless  
463 capacity issues.

464           In conclusion, we appreciate the committee's thoughtful  
465 and deliberate approach to the spectrum issue. Remember,  
466 once we reallocate the spectrum, once broadcasters who want  
467 to continue to provide service are repacked in a harmful way,  
468 there is no going back. We get only one shot at this. We  
469 need to do it right to ensure that viewers do not lose access  
470 to the news, entertainment, and vital emergency programming  
471 that broadcasters provide.

472           I am as excited about broadcasting's future as we are  
473 proud of our heritage. Our company has no plans to return  
474 our spectrum. For that reason, I ask that any spectrum  
475 legislation crafted to protect our ability to continue to  
476 serve the viewers of our local communities.

477           Thank you, and I would welcome any questions.

478           [The prepared statement of Mr. Schurz follows:]

479           \*\*\*\*\* INSERT 1 \*\*\*\*\*

|  
480           Mr. {Walden.} Mr. Schurz, thank you for your testimony,  
481 and for your family's long history of serving your  
482 communities.

483           Now I would like to go to Mr. Burt Ellis, who is  
484 President of Titan Broadcast Management. Mr. Ellis, we  
485 welcome you here today and look forward to your testimony as  
486 well.

|  
487 ^STATEMENT OF BURT ELLIS

488 } Mr. {Ellis.} Good afternoon, Congressmen and  
489 Congresswomen. My name is Burt Ellis, and I am the President  
490 of Titan Broadcasting. We currently own and/or operate 13  
491 television stations.

492 The FCC would like us broadcasters to repack down to  
493 channels 14 to 30 to free up an additional 120 megahertz of  
494 spectrum. There are several major problems with this  
495 proposal.

496 First, there are just too many broadcast signals  
497 currently on the air and primarily, the top 10 to 20 markets,  
498 to repack into these 17 remaining UHF channels.  
499 Consequently, some small number of television stations, 75 by  
500 my count, must be purchased and shut down, presumably through  
501 a voluntary incentive-based auction. Now if Dr. Connolly and  
502 the FCC can design a reserve auction system that is to their  
503 advantage, so be it, so long as the broadcaster's decision to  
504 sell or repack is still totally voluntary. Voluntary means  
505 the FCC cannot set the selling price for these stations via  
506 cap, via percentages, or any other such valuation  
507 restriction, only via market forces.

508 As the chairman said, my company is under certain

509 circumstances willing to sell the spectrum for some of our  
510 stations. We are open to this consideration. However, the  
511 FCC still needs to repack all the remaining stations, such  
512 that the stations are not impaired financially or via signal.  
513 Mr. Schurz has already addressed this, so I will not rehash  
514 that, but I stand by those concerns as well.

515 But finally, in my view, the FCC needs to use this whole  
516 process to provide a win/win for the broadcast industry and  
517 for Americans in general. Fortunately, the FCC and Congress  
518 does have the power to offer up two very powerful incentives  
519 to the industry that also advance the national broadband  
520 plan.

521 Option number one, the FCC and Congress can either  
522 mandate or use their bully pulpit to convince the wireless  
523 carriers and the handset tablet manufacturers to incorporate  
524 mobile tuners into all new handsets and tablets. This would  
525 help the broadcast industry fast launch mobile services, and  
526 not just mobile services for personal entertainment, but also  
527 mobile services that could be the basis for a national  
528 emergency alert communications network. We have incorporated  
529 plans for just such a national emergency network into the  
530 mobile 500 rollout plans that were announced only yesterday.

531 Now I have been told over and over and over again that  
532 this tuner option is DOA, but I just don't believe it. It

533 would seem very simple to me to make this a condition of the  
534 wireless companies participating in the spectrum auctions, as  
535 well as in the AT&T/T-Mobile merger approval. I am sure  
536 Qualcomm, to my left, would gladly make these new chips.

537       Option two, the FCC can finance and facilitate the  
538 transition from our current 8 BSB broadcast modulation  
539 technology to OFDM. A new OFDM broadcast standard would come  
540 with three huge advantages for the FCC, the broadcast  
541 industry, and the consumer. One, the FCC--OFDM would the FCC  
542 to much more densely repack broadcast stations, allowing more  
543 channels in each market to be used. Two, the broadcast  
544 industry--it will allow one broadcast channel to broadcast  
545 almost twice the current capability of 19.4 megabits. This  
546 would enable broadcasters to support a national LTE-based  
547 emergency alert network. Mobile broadcasting offers the best  
548 and fastest means for the U.S. to create such a national  
549 emergency network.

550       Third, to the consumer, OFDM allows broadcast signals on  
551 any device to be picked up by one chip. Consequently, this  
552 chip can be manufactured in large numbers very cheaply and  
553 can be imbedded in handsets, tablets, computers, and  
554 televisions. This will allow a seamless mobile viewing  
555 methodology. A person can watch a newscast, a ballgame,  
556 anything on their handset, then their tablet, then their

557 television, in a seamless manner. They will not miss a frame  
558 of viewing. This is the holy grail of future mobile. This  
559 is what the consumer wants.

560 Broadcasters have a great deal to offer, but much of the  
561 current thinking seems to want to relegate us to the  
562 technology trash bin. We want to be part of the emerging  
563 digital future. The four--soon to be three, maybe--major  
564 wireless carriers already control 90 percent of the available  
565 mobile spectrum. You want to sell more of our broadcast  
566 spectrum to these wireless guys and give us broadcasters the  
567 opportunity to fully compete with them on the mobile front.  
568 If they want to go down in numbers, let us get in the game  
569 with them. Do not let them close us out of the mobile--from  
570 the mobile consumer.

571 All of us in the media business want to be in the mobile  
572 video business in order to survive and thrive in the future.  
573 The more competition is better for the consumer. The FCC  
574 needs to compensate broadcast stations to repack. By their  
575 own estimate, it will cost about \$1 million per station,  
576 about \$1 billion. For about \$2 billion, \$2 to \$3 billion,  
577 the stations cannot only be repacked, but can also switch  
578 over to this new OFDM technology that can support a broadcast  
579 overlay for LTE, as I said. This is the time to do both,  
580 repack and upgrade our technology, and also mandate the

581 mobile DTV chips. Then we can have a totally mobile  
582 broadband enabled population.

583         With such a system in place, we broadcasters can and  
584 will create an immediately accessible mobile video network  
585 for instantaneous communications to all of our citizens in  
586 the event of a local, regional, or national emergency.  
587 Mobile broadcasting was the technology that worked in Japan  
588 during their crisis. The one-to-one architecture of the  
589 cellular system failed, but mobile broadcasting worked.

590         There is a win-win agenda here. I support such. Thank  
591 you.

592         [The prepared statement of Mr. Ellis follows:]

593 \*\*\*\*\* INSERT 2 \*\*\*\*\*

|  
594           Mr. {Walden.} Mr. Ellis, thank you for your  
595 suggestions, your testimony, and your service.

596           Now we will go to Mr. Christopher Guttman-McCabe, who is  
597 Vice President for Regulatory Affairs of CTIA - The Wireless  
598 Association. We appreciate your testimony today, and look  
599 forward to it. Thank you for being here.

|  
600 ^STATEMENT OF CHRISTOPHER GUTTMAN-MCCABE

601 } Mr. {Guttman-McCabe.} Sure, thank you. Good afternoon,  
602 Chairman Walden, Ranking Member Eshoo, and members of the  
603 subcommittee. On behalf of CTIA, thank you for the chance to  
604 speak to you today about promoting broadband, jobs, and  
605 economic growth through commercial spectrum auctions. CTIA  
606 believes these objectives are achievable, and mutually  
607 reinforcing. For that reason, we urge you to act at the  
608 earliest possible date to enact legislation that will  
609 authorize incentive auctions and allow additional license  
610 spectrum to be made available for commercial wireless use.

611 Today, we are the world's clear leader in wireless  
612 broadband. Although the United States is home to less than 5  
613 percent of the world's population and just shy of 6 percent  
614 of global wireless subscribers, the U.S. claims more than 20  
615 percent of global high speed wireless broadband subscribers.  
616 This leadership helps to create a competitive advantage to  
617 the United States.

618 But to maintain this advantage, we need to ensure that  
619 there is a sufficient pipeline of spectrum available to meet  
620 the exploding demand for wireless broadband services. We  
621 urge you to address this with dispatch. A delay puts at risk

622 not only our world leadership in this critical industry, but  
623 also lost or delayed investment, innovation, and productivity  
624 that are critical to our Nation's economy.

625         The growth and the demand for mobile broadband and the  
626 corresponding need for additional spectrum has been well-  
627 documented both by the government and respective private  
628 sector parties. Even conservative estimates project U.S.  
629 mobile data traffic to grow by a factor of more than 20  
630 between the end of last year and 2015. This demand is being  
631 driven by consumer's migration from feature phone to  
632 smartphone and tablets that while employing advances in  
633 spectral and computing efficiency, allow consumers to demand  
634 more and thus strain wireless networks to an unprecedented  
635 manner. The evolution of machine to machine communications  
636 will only exacerbate this challenge. Efficiency gains and  
637 infrastructure investment will help, but neither will be  
638 sufficient to answer the challenge we face in delivering the  
639 critical infrastructure for the economy of the 21st century.

640         The good news is that there are ways to help meet the  
641 need for additional spectrum. By authorizing incentive  
642 auctions and repacking the bands allocated for television  
643 broadcasting, by directing NTIA to facilitate access to bands  
644 currently occupied, but often underutilized by government,  
645 and by enacting improvements to the spectrum relocation

646 process, Congress can provide the wireless industry with a  
647 path to help America stay ahead of its Asian and European  
648 competitors in this critical industry.

649         Taking these steps will produce manifest benefits to our  
650 Nation. The last two auctions produced more than \$32 billion  
651 for the United States Treasury. While I cannot project what  
652 future auctions might produce, the bands discussed in my  
653 testimony have significant value and would likely be highly  
654 desired at auction. Auction revenues, however, are just one  
655 of the benefits that flow from facilitating the movement of  
656 spectrum to its highest and best use. Once spectrum is in  
657 the hands of those who value it, significant investment,  
658 entrepreneurial activity, and productivity will result.

659         Since 2006, CTIA's carrier members have been directly  
660 responsible for nearly \$111 billion in network investment.  
661 Because a dollar invested in wireless deployment is estimated  
662 to result in as much as \$7 to \$10 in expanded GDP, this past  
663 investment has contributed to keeping the U.S. economy afloat  
664 during a difficult economic period.

665         Going forward, wireless investment and this multiplier  
666 will be critical to helping create sustainable economic  
667 growth in the United States. Perhaps more importantly,  
668 unlocking additional spectrum can help to create new  
669 employment opportunities, from the forging of steel for new

670 towers and the construction of additional cell sites to the  
671 development of new network equipment, and the writing of our  
672 next must-have application. Bringing spectrum to market will  
673 create thousands of American jobs. Some economists estimate  
674 that the job growth related to the investment in next  
675 generation wireless technologies could be as high as 200,000  
676 new positions, and that estimate does not account for  
677 positions in adjacent fields, as wireless becomes a key input  
678 into areas such as healthcare, energy, education,  
679 transportation, and logistics.

680       Enabling the next generation of service and ensuring our  
681 world leadership in wireless should be a national imperative.  
682 Done properly, we can make needed spectrum available for  
683 ubiquitous mobile broadband, treat relocated broadcasters and  
684 government users fairly, produce significant revenue for the  
685 U.S. Treasury, and help grow the U.S. economy.

686       CTIA looks forward to working with you to achieve these  
687 objectives, and I look forward to your questions. Thank you.

688       [The prepared statement of Mr. Guttman-McCabe follows:]

689 \*\*\*\*\* INSERT 3 \*\*\*\*\*

|  
690           Mr. {Walden.} Thank you, Mr. Guttman-McCabe. We  
691 appreciate your testimony.

692           We are now going to turn to Dr. Michelle P. Connolly,  
693 who is an Associate Professor of the Practice, Department of  
694 Economics, at Duke University. We look forward to your  
695 comments, Dr. Connolly, and thank you for being here today.

|  
696 ^STATEMENT OF MICHELLE P. CONNOLLY

697 } Ms. {Connolly.} Thank you Chairman Walden and Ranking  
698 Member Eshoo, and other members of the subcommittee. My name  
699 is Michelle Connolly. I am an associate professor of The  
700 Practice at the Department of Economics at Duke University.  
701 I also served as the chief economist at the FCC from 2006 to  
702 2007, and then again in 2008 to 2009. I would like to note  
703 that I was serving under a Republican Administration, so my  
704 support for this proposal has nothing to do with my political  
705 affiliation. It is simply because as an economist, I believe  
706 that this as a great gain economically and socially for our  
707 economy, and it is in that capacity that I am testifying  
708 today.

709 From this perspective, when everyone is looking at  
710 policy, I want to make sure that the gains of choosing this  
711 new policy outweigh any costs to our economy and to our  
712 society, and specifically, we are concerned about the cost to  
713 the broadcasters, and the costs to the people who rely on  
714 over-the-air broadcasts.

715 So when I am looking at this, I wanted to bring a little  
716 bit of information to the discussion. Firstly, we know that  
717 over-the-air viewing is done by less than--10 percent or less

718 of the current TV-viewing population, so we are talking about  
719 a small and declining population. Secondly, the--two of the  
720 three options that would be provided to broadcasters do not  
721 involve cessation of over-the-air broadcasting, so this would  
722 minimize any impact on television viewers. And thirdly, with  
723 an incentive auction, broadcasters will only participate if  
724 the benefits to them outweigh the costs. And to that extent,  
725 I think this will help minimize any costs to implementing  
726 this plan. And by costs, I mean welfare costs.

727 In terms of the benefits, there has been a lot of  
728 macroeconomic evidence that suggests that information can  
729 lead to technology has a great benefit to our macroeconomy.  
730 In the late 1990s, several studies confirmed that between 56  
731 to 67 percent of labor productivity growth could be  
732 attributed to information communications technology. And  
733 then from 2000 to 2006, that estimate was about 38 percent.

734 One thing to note is that when firm level studies have  
735 been done, the gains in terms of productivity are not equally  
736 spread, so gains in terms of productivity are specific to  
737 certain communities who are able to take advantage to certain  
738 industries and certain communities who are able to take  
739 advantage of broadband. That is on the production side.

740 On the consumption side, of course, this is nothing--all  
741 the gains are to consumers equally and there is no region

742 specificity to it.

743 I also want to talk a little bit about incentive  
744 auctions, simply because this is an area that is very  
745 complicated. I still don't understand it entirely, and I  
746 thought it might be useful to give a little bit of background  
747 on what is really being proposed here.

748 So the idea is that there would first be what economists  
749 would call a reverse auction for broadcasters, and in this,  
750 the FCC would specify certain actions that could be taken,  
751 they can discuss before, and the broadcasters would offer  
752 bids for being willing to undertake these different auctions,  
753 should the bid be accepted. So if the bid is accepted, they  
754 would be required to then undertake that action. If the bid  
755 is not accepted, they would not be required to take one of  
756 those three actions. And I think that this is useful for the  
757 broadcasters, because this is what makes it a voluntary  
758 action.

759 I was asked by the committee to try and estimate a  
760 possible range of bids that broadcasters might make. I am  
761 smart enough to know that my estimate will be incorrect, but  
762 I would estimate based on the fact that they have these  
763 options that the range might be in the range of about \$0.05  
764 per megahertz POP at the low end, to maybe .08 megahertz POP  
765 on the high end. This is assuming that there is sufficient

766 competition in the auction, and this is, I think, a key  
767 point. So there will be markets where there may not be--  
768 there might be a broadcaster in a channel that is in the key  
769 area that we need to have continuous spectrum. The FCC must  
770 be allowed to move people involuntarily out of that spectrum  
771 to another location, because otherwise, you will get  
772 holdouts. There won't be enough competition. Someone knows  
773 that they are placed strategically, and they can bid five  
774 times their valuation in an attempt to extract that extra  
775 money because then they know if they don't get their bid,  
776 they won't be able to be moved, and then the whole auction  
777 will serve no purpose.

778         So the reason why the FCC is requesting that after the  
779 bidding process occurs that they be allowed to relocate  
780 people who are still located in that key region, and  
781 compensate them economically for the cost of the move so that  
782 they aren't burdened by that is because without that, you  
783 will not get a true auction. You will not get a true  
784 competition. There--even with that, there may be other  
785 things that might interfere with the bids, but if we don't  
786 have that bidding we will get true valuation bids. There are  
787 no two ways about that, so I think that is a crucial thing to  
788 mention.

789         The last thing is the forward option. Once this occurs,

790 we can estimate a supply curve that we would need to generate  
791 the amount of spectrum, conceded spectrum that the FCC would  
792 want. At that point, there is the forward option. I assume  
793 that the range of values would be at least on par with the  
794 700 megahertz spectrum auction that we had recently, so the  
795 range might be anywhere from \$0.03 per megahertz POP to up to  
796 \$3.86 per megahertz POP. That is a huge range which shows  
797 you that markets matter. But one keeping is the more rules  
798 that are imposed on the usage for the winning bids, the lower  
799 the valuation will be, and any rules that increase  
800 uncertainty over the usage will lower the value.

801         So overall, I think the revenue resources to the  
802 government can be large, but dwarfing any revenue to the  
803 government I think is the economic value to our economy, and  
804 I think that will outweigh any of the gains that the  
805 government will have in revenue, but those are also greater  
806 costs.

807         [The prepared statement of Ms. Connolly follows:]

808 \*\*\*\*\* INSERT 4 \*\*\*\*\*

|  
809           Mr. {Walden.} Thank you, Dr. Connolly. We appreciate  
810 your comments.

811           Mr. Brenner, we are going to go to you next, Vice  
812 President of Government Affairs for Qualcomm, Incorporated.  
813 Thank you for being here, and proceed with your testimony,  
814 sir.

|  
815 ^STATEMENT OF DEAN BRENNER

816 } Mr. {Brenner.} Good afternoon, Chairman Walden--

817 Mr. {Walden.} Okay, now you got to push the button and  
818 bring the mic closer. There you go.

819 Mr. {Brenner.} Good afternoon, Chairman Walden, Ranking  
820 Member Eshoo, and members of the subcommittee. It is a  
821 special honor for me to testify here this morning. Thirty  
822 years ago to the day, I began working as an intern for this  
823 very subcommittee. What a great experience that was for a  
824 college student.

825 I am here today, along with my colleagues, Alice  
826 Turnquist and John Cozin on behalf of Qualcomm, a company  
827 that didn't exist 30 years ago. Five years after my  
828 internship here, Qualcomm was formed. Today, Qualcomm is the  
829 world's leading manufacturer for cell phones, smartphones,  
830 and other wireless devices.

831 The policies pursued by this subcommittee, in  
832 particular, the move to spectrum auctions in the early 1990s,  
833 the reallocation of spectrum for the first PCS auctions, and  
834 the DTV transition have helped fuel the enormous growth in  
835 the American wireless industry. At Qualcomm, we spend over  
836 \$2 billion each year in research and development to invent

837 the most spectrally efficient technologies, to achieve the  
838 greatest capacity and best performance from every sliver of  
839 spectrum, licensed and unlicensed.

840 We know that spectrum is precious and expensive, based  
841 on our own experience with spectrum auctions. Although our  
842 main business is developing wireless technologies, licensing  
843 them to other companies, and selling chips based on those  
844 technologies, we purchased licensed spectrum at auctions held  
845 in the United States, the United Kingdom, and India to  
846 facilitate the deployment of our new technologies.

847 Qualcomm's technologies are used in the 3G and 4G  
848 devices that Americans just can't get enough of. We all want  
849 our mobile devices to work all the time and wherever we  
850 happen to be, and that requires the use of licensed spectrum.  
851 Let me explain why I say that.

852 We make chips that support wi-fi, Bluetooth, and other  
853 unlicensed technologies to provide wireless connectivity in  
854 local areas, such as inside homes or on college or corporate  
855 campuses. In those settings, these chips enable wireless  
856 traffic to be offloaded from the licensed spectrum that  
857 wireless carriers use for their 3G and 4G networks.

858 This is an important growing business for vendors like  
859 Qualcomm, and we are excited about it. Just this week we  
860 announced the new line of wi-fi chips using spectrum in the

861 2.4 gigahertz, 5 gigahertz, and 60 gigahertz bands. But to  
862 provide ubiquitous wide area wireless coverage all over the  
863 Nation on a cost effective and interference-free basis,  
864 licensed spectrum is required.

865         And that brings me to the topic of today's hearing,  
866 because there isn't enough licensed spectrum available to  
867 keep pace with the exploding demand for mobile broadband.  
868 The FCC's October 2010 report found that by 2014, total U.S.  
869 mobile data traffic is likely to be 35 times the 2009 level.  
870 We are working on many new wireless technologies, but we  
871 don't have any technology on the drawing board that can  
872 increase capacity 35 times. More licensed spectrum is  
873 needed. The FCC doesn't have nearly enough new spectrum in  
874 its inventory to meet this gap. To promote broadband jobs  
875 and economic growth, we have got to close this gap.

876         A number of steps must be taken and are being taken in  
877 parallel to help solve the spectrum crunch. These steps  
878 include things that the private sector is doing, such as  
879 developing and deploying new technologies, and things the  
880 government is working on, such as as reallocating  
881 underutilized U.S. Government spectrum. But these steps  
882 won't be nearly sufficient to solve the spectrum crunch. To  
883 do that, it is crucial that Congress enact legislation to  
884 allow the FCC to conduct voluntary incentive auctions to

885 reallocate more licensed spectrum for mobile broadband.

886         The legislation that we support would allow the FCC to  
887 conduct a two-sided auction, composed of sellers who  
888 voluntarily decide to sell their spectrum because they think  
889 it would be worth more to a mobile broadband provider, and  
890 buyers who want to use the spectrum for mobile broadband. No  
891 one would be forced to participate as a seller or a buyer in  
892 a voluntary incentive auction, but under current law, there  
893 is no way for the FCC to get the spectrum out of the hands of  
894 the sellers who are willing to sell and into the hands of the  
895 mobile broadband buyers.

896         Current law permits a TV station owner to sell its  
897 spectrum only to someone else who would use the spectrum to  
898 run a TV station. A TV station owner cannot sell its  
899 spectrum to a buyer so that the buyer can use it to provide  
900 mobile broadband. The legislation would allow the FCC to run  
901 a two-sided auction with all the station owners who want to  
902 sell on one side, and all the mobile broadband providers and  
903 new entrants who want to buy on the other.

904         Qualcomm, both on our own and as a member of a group of  
905 companies who sell wireless equipment, including Alcatel  
906 Lucent, Apple, Cisco, Ericsson, Intel, Nokia, and Research in  
907 Motion, urges Congress to pass legislation to give the FCC  
908 authority to conduct voluntary incentive auctions to free up

909 much-needed additional licensed spectrum for mobile  
910 broadband. Now, our group includes companies that compete  
911 against one another in the marketplace all the time. We make  
912 equipment using both licensed and unlicensed spectrum, but we  
913 all agree on three points. First, the spectrum crunch is  
914 real. Second, more licensed spectrum is necessary to solve  
915 the spectrum crunch. And third, authorizing the FCC to  
916 conduct voluntary incentive auctions is essential to solving  
917 the spectrum crunch.

918       Passage of legislation authorizing voluntary incentive  
919 auctions would be a win-win-win-win. The first win would be  
920 for the sellers in a voluntary incentive auction, those who  
921 decide that their spectrum is more valuable for mobile  
922 broadband than in its current allocation will win because the  
923 legislation would allow them to sell. The second win is for  
924 the buyers. The buyers will win because they are going to  
925 get the additional licensed spectrum from mobile broadband so  
926 they can keep pace with consumer demand. They need the  
927 certainty and speed of an FCC-conducted incentive auction in  
928 which the auction itself efficiently and quickly aggregates  
929 spectrum. The third win would be for the U.S. Treasury.  
930 Voluntary incentive auctions will raise significant revenues  
931 without raising anyone's taxes or cutting any programs.  
932 Finally, the fourth win is the most important win of all.

933 The real winners will be the American public. Mobile  
934 broadband has the potential to improve so many facets of  
935 American life. Giving the FCC authority to conduct voluntary  
936 incentive auctions is essential. Thank you.

937 [The prepared statement of Mr. Brenner follows:]

938 \*\*\*\*\* INSERT 5 \*\*\*\*\*

|  
939           Mr. {Walden.} Thank you, Mr. Brenner, both for your  
940 testimony and for your internship, although I was not here to  
941 enjoy that.

942           We are going to go now to Mr. Feld. Harold Feld is the  
943 Legal Director for Public Knowledge. We appreciate your  
944 input in this matter. We look forward to your testimony.

|  
945 ^STATEMENT OF HAROLD FELD

946 } Mr. {Feld.} Thank you, Mr. Chairman--

947 Mr. {Walden.} Before you start, I am just going--they  
948 are going to ring bells here for a vote, a 15-minute vote.  
949 We are going to have you finish your testimony, and then when  
950 you are done we will plan to resume at about 1:25. So that  
951 will give everybody a little break here before we go into  
952 Q&A.

953 Mr. Feld, please continue.

954 Mr. {Feld.} My thanks to you, Mr. Chairman, Ms. Ranking  
955 Member, the subcommittee. I am the Legal Director of Public  
956 Knowledge. I am pleased to speak to you this morning on  
957 behalf of the Public Interest Spectrum Coalition about  
958 buttons and buttonholes.

959 Buttons are tangible objects. They are things that  
960 people easily understand and think about. Buttonholes are  
961 designated empty space. Most people don't think about the  
962 importance of buttonholes when they are buttoning their  
963 clothes, but without those empty spaces, you are not going to  
964 keep your coat closed. You need both. That is what I am  
965 here to talk about in terms of spectrum policy, which is the  
966 empty spaces in the spectrum, the white spaces, particularly

967 in the broadcast spectrum.

968         The policy objectives that we have all talked about here  
969 today of encouraging innovation, increasing economic activity  
970 which helps to reduce the deficit, as well as improving all  
971 of our lives, all of these things are critically important  
972 and we can achieve them, but we must not look at this just  
973 through the lens of a Congressional Budget Office score. In  
974 fact, I will state further that if we focus only on raising  
975 revenue or more precisely, what we think sitting here now,  
976 years out from an auction, a very complicated structure that  
977 we think will raise revenue. The spectrum prices will become  
978 a spectrum Armageddon, resulting in higher costs, stifled  
979 innovation, and reduced global competitiveness. The worst  
980 thing that could happen is what if they gave an incentive  
981 auction and nobody came because we structured it poorly?

982         White spaces are unique in spectrum policy. They have  
983 been enthusiastically supported by Republican FCC chairmen  
984 and commissioners, and today's Democratic chairmen and  
985 commissioners. White spaces exist without preconceived uses,  
986 and so are open to any entrepreneur technologist with a good  
987 idea. They are the most deregulatory approach to spectrum  
988 policy we have. As FCC Commissioner McDowell said, ``The  
989 Commission's actions of proving TV white spaces help to bring  
990 more broadband to consumers as quickly as innovation, rather

991 than as quickly as government will allow.''

992         The results have been spectacular for the U.S. economy.  
993 The short history of unlicensed spectrum has allowed the  
994 development of what were considered junk bands to yield tens  
995 of billions of dollars in economic gains and activities. The  
996 unlicensed spectrum now being considered in the prime  
997 broadcast bands promises to surpass that previous success.  
998 This is truly unlicensed 4G.

999         Allowing for additional allocation of national  
1000 unlicensed spectrum under the 1 gigahertz band with its  
1001 superior characteristics of penetration in long distance  
1002 allow for the creation of gigabit capacity wireless LANs in  
1003 offices, schools, high density residential areas, mesh  
1004 networks capable of many miles of coverage at a fraction of  
1005 the cost of current wi-fi technology. Such gains don't show  
1006 up in a CBO score, but they result in increased revenues for  
1007 the Federal Government through investment, job creation, and  
1008 economic productivity on an annual basis.

1009         Rural areas will be able to be served with high capacity  
1010 wireless broadband service. Low barriers to entry for  
1011 unlicensed allow these rural providers to serve their  
1012 communities without winning licenses at auction, which they  
1013 cannot afford to do. Indeed, areas that cannot be profitably  
1014 served with licensed spectrum because of the cost of winning

1015 licenses are now being served with existing wi-fi without  
1016 universal service subsidies, and will be better served and  
1017 more broadly served with white spaces spectrum.

1018         Already we are starting to see the fruits of projects  
1019 like these in places as diverse as Claudville, Virginia, with  
1020 a population of 916 to the much larger city of Houston.

1021         In order for this future to come about, for there to be  
1022 a spectrum for smart grid coordination, machine to machine  
1023 communication, inventory tracking and the rest, Congress has  
1024 to make certain that the white spaces are protected by giving  
1025 the FCC discretion in structuring and conducting auctions.  
1026 The investors and companies that are building this technology  
1027 today must believe there is a future for this here in the  
1028 United States. United Kingdom is also looking at white  
1029 spaces technology, as are China and Brazil, and its investors  
1030 and companies do not believe there is a future here for this  
1031 innovative new technology. They will take their investment  
1032 and their jobs elsewhere.

1033         Providing the FCC flexible authority to conduct  
1034 incentive auctions and allowing the Agency to pursue a broad  
1035 approach to spectrum policy that is not exclusively tied to  
1036 raising revenue will be the most effective means of promoting  
1037 broadband, job creation, and economic growth. I just want to  
1038 add that this is not an either/or. Rarely in policy do we

1039 have a chance to have it all. We can keep broadcasting as a  
1040 vital service for this country. We can have significant new  
1041 licenses for auction, and we can have a vibrant white spaces  
1042 which will provide us with exciting new technologies for the  
1043 benefit of all Americans.

1044           Mr. Brenner just said he doesn't have the technology  
1045 right now that would allow them to increase their capacity by  
1046 35 times. I don't have one either, but by creating a test  
1047 bed, a place where these technologies can develop at very low  
1048 cost and be deployed quickly and effectively, such as the  
1049 white spaces, I have a very good suspicion of where that  
1050 technology will come from.

1051           Thank you, and I look forward to your questions.

1052           [The prepared statement of Mr. Feld follows:]

1053 \*\*\*\*\* INSERT 6 \*\*\*\*\*

|  
1054           Mr. {Walden.} Mr. Feld, thank you very much for your  
1055 comments as well. We appreciate the testimony of all our  
1056 witnesses.

1057           We are in the middle of a vote now, so again, please  
1058 plan to return no later than 1:25, and we will resume the  
1059 hearing at that point for questions from the members.

1060           With that, we stand in recess.

1061           [Recess.]

1062           Mr. {Walden.} We will call the subcommittee back to  
1063 order, and I think we had concluded testimony from all of the  
1064 witnesses prior to our recess for the vote on the House  
1065 floor. We anticipate another vote in about 45 minutes or so.

1066           I am going to start with the first round of questions,  
1067 and I want to address the first questions I have to Mr.  
1068 Schurz and Mr. Ellis.

1069           I would ask if you could elaborate on some of the  
1070 efforts by broadcasters to bring new and innovative services  
1071 to the broadcast spectrum. One of the purposes of this  
1072 hearing was really to evaluate since DTV conversion, you  
1073 know, what is happening out there in the marketplace? What  
1074 are you able to do? I know Mr. Ellis, you touched on this a  
1075 bit, but I would also like to explore what the hurdles are in  
1076 the way of innovation in the spectrum that you have going

1077 forward.

1078           So if you could each take a minute or so just to kind of  
1079 address what you are doing with it now, and what you think  
1080 you could do with it.

1081           Mr. {Schurz.} I think what we have done with it now in  
1082 almost all of our markets, we have multitasked channels,  
1083 serving different audiences. We have three stations, two are  
1084 right in the middle of Tornado Alley, one is on the edge.  
1085 All of them do a 24/7 weather channel with regular forecasts  
1086 so people who are very interested in the weather can always  
1087 get that.

1088           What has also happened--the DTV transition happened 2  
1089 years ago. Mobile television, the standard was developed  
1090 with that. Both Mr. Ellis and I are involved in those  
1091 efforts. And so you are seeing that just starting now. A  
1092 little over 70 stations are in mobile television.

1093           But I think the other thing is I don't want to not talk  
1094 about high definition in terms of the clarity and the quality  
1095 of the picture and what that means for our constituents.  
1096 High definition local news takes a lot of bandwidth, but is  
1097 also a great consumer value proposition.

1098           Mr. {Walden.} Mr. Ellis, do you want to use a minute or  
1099 so to comment on new technologies?

1100           Mr. {Ellis.} The company we are putting together this

1101 time--this is my third broadcast group. The first couple  
1102 groups I bet on the emergence of new programming. That was  
1103 the trend I was trying to follow. This time, we are betting  
1104 on the emergence of new technologies. The mobile technology  
1105 is the most unique and different technology for broadcasters.  
1106 That is where--you know, use the sports analogy, go where the  
1107 puck is going. Mobile is where it is going. We are spending  
1108 an awful lot of time on that, and the inhibitions of that  
1109 business is the ability to get, you know, a signal into the  
1110 mobile device. This is where the consumer is going we want  
1111 to be able to access that device.

1112 Mr. {Walden.} All right. Mr. Brenner, I want to go to  
1113 you, because Mr. Ellis I believe mentioned OFDM and the  
1114 ability to put chips in. Tell me what that would take and  
1115 whether there would be acceptance of that in the market?

1116 Mr. {Brenner.} Yeah, I am not exactly sure what Mr.  
1117 Ellis is referring to, Chairman Walden. OFDM refers to an  
1118 interface that is at the core of long term evolution, LTE,  
1119 which is the 4G technology. OFDM is also used in wi-fi.  
1120 OFDM is a modulation technique, and so it can mean all kinds  
1121 of different things.

1122 I think what Mr. Ellis was suggesting is that Qualcomm  
1123 would incorporate some kind of mobile DTV capability into our  
1124 chips. Obviously, we look very hard at the business pros and

1125 cons of adding a new capability to our chips. Our chips  
1126 support multi-frequency bands, multiple technologies, and we  
1127 strive to pack the most power into our chips at the least  
1128 cost.

1129 Mr. {Walden.} Is that capability you have now today to  
1130 put mobile TV in a chip?

1131 Mr. {Brenner.} No, we have looked at it. We are--  
1132 mobile DTV has been talked about--I looked back through my e-  
1133 mail--since at least 2007 was the first announcement about  
1134 it. We have looked at it extensively. We haven't seen a  
1135 business case for it in our end. Whenever we consider  
1136 putting a new technology into our chips, Chairman Walden, it  
1137 is a very interactive process. We go back and forth with the  
1138 device manufacturers, with the carriers and with application  
1139 providers. We don't just make that decision in a vacuum, and  
1140 we--it is not mature. We just don't see demand.

1141 Mr. {Walden.} All right. Mr. Ellis, do you want to  
1142 comment briefly on that?

1143 Mr. {Ellis.} In essence, if the carriers are not going  
1144 to pay Qualcomm to put this thing in their chip, he is not  
1145 going to make it.

1146 Mr. {Walden.} Mr. Brenner?

1147 Mr. {Brenner.} That is a little too simple, quite  
1148 frankly. So it is true, someone is going to have to give us

1149 a return on our investment when we put a new capability into  
1150 our chips, but there is a web of relationships. There are  
1151 folks who make devices, there are folks who come up with  
1152 applications. We are also in a highly competitive market.  
1153 If I don't put a capability--I shouldn't say I. When  
1154 Qualcomm decides to pass on a capability, we consider very  
1155 carefully the competition. Qualcomm is the leading chip set  
1156 manufacturer, but it is hyper-competitive, so it is a little  
1157 too simple to just say the carriers won't pay us. We have to  
1158 see a business case to make a rate of return.

1159 Mr. {Walden.} I want to go to Dr. Connolly now on a  
1160 different issue. I am trying to get a rough range of what  
1161 this spectrum is worth.

1162 You say in your testimony that similar spectrum was sold  
1163 for between 3 cents and \$3.86 per megahertz POP, as I  
1164 understand it. Is this correct?

1165 Ms. {Connolly.} Yes.

1166 Mr. {Walden.} With approximately 300 million people in  
1167 the country, that means that even on the low end, each  
1168 megahertz of a licensed spectrum could raise \$9 million, and  
1169 on the high end, each megahertz could raise \$1 billion. Is  
1170 that correct?

1171 Ms. {Connolly.} Yes.

1172 Mr. {Walden.} Okay, all right.

1173 My time has expired. I would turn to the gentlelady, my  
1174 ranking member, Ms. Eshoo, for 5 minutes.

1175 Ms. {Eshoo.} Thank you, Mr. Chairman, and I want to  
1176 thank each one of the witnesses. I think you did a terrific  
1177 job coming from where each of you is coming from, but it was  
1178 really valuable, valuable testimony.

1179 To Mr. Feld, I loved your button and buttonhole analogy.  
1180 I think we will remember that one for a long time. In your  
1181 view, how much spectrum is needed to make the white spaces  
1182 commercially viable for applications like smart grid and RFID  
1183 tagging?

1184 Mr. {Feld.} Well, the most important thing is to ensure  
1185 that there is white spaces available, particularly in the  
1186 largest urban markets, because that is what is going to drive  
1187 economies of scale is the ability for people to put this into  
1188 their laptops and their wi-fi routers.

1189 In terms of an amount, the National Broadband Plan said  
1190 we would like to have 20 megahertz of continuous pure  
1191 unlicensed spectrum. That would be real nice, but the beauty  
1192 of unlicensed is it is a technology. You don't need that.  
1193 As long as you have at least one or two available channels in  
1194 the largest urban markets and sufficient--by which I mean not  
1195 directly next to a broadcaster so you could use full power,  
1196 and then sufficient in the rest of the country, which I think

1197 is not where the challenge is. There will be interest in  
1198 developing and investing in this technology.

1199 Ms. {Eshoo.} Thank you.

1200 To Mr. Ellis, is Titan Broadcasting planning to offer  
1201 mobile broadcasting, and what is your assessment of the  
1202 potential market demand for this type of service?

1203 Mr. {Ellis.} Yes, we do intend to offer mobile  
1204 broadcasting in our assessment. You know, it depends on  
1205 whether the consumer can actually see our signal on a mobile  
1206 device.

1207 So we have to figure out whether it is--you know,  
1208 whether you are going to start with the handset, which is  
1209 controlled by the wireless carriers. If you go to laptop,  
1210 you go to the N-card device, how do you get the mobile  
1211 consumer to actually see our signal?

1212 Ms. {Eshoo.} You stated in your testimony as a--you are  
1213 testifying as a broadcaster that may sell of the spectrum of  
1214 some of your stations under the right conditions. Can you  
1215 tell us what the right conditions are, in your view?

1216 Mr. {Ellis.} The right price.

1217 Ms. {Eshoo.} There you go. Everybody has their price,  
1218 right? And to Mr. Guttman-McCabe, Thank you for your  
1219 testimony and the work that CTIA does.

1220 The DTV transition freed up spectrum in the 700

1221 megahertz band that has been auctioned. But in some cases,  
1222 has yet to be deployed on a commercial basis. I think it is  
1223 Mr. Barrow that has legislation that also mentions as part of  
1224 the bill that there has to be an inventory done.

1225 I am concerned about those who have purchased spectrum  
1226 and have yet to use it, 3 years after the auction is  
1227 completed. So while we know that the wireless usage is  
1228 growing at an exponential rate, how do we determine future  
1229 spectrum needs when there is still spectrum sitting unused?

1230 Mr. {Guttman-McCabe.} Sure. Thank you, Congresswoman.

1231 So it is--that is sort of a broad question and I will  
1232 take it piecemeal, if you don't mind.

1233 First of all, while the 700 megahertz auction was  
1234 completed a little while back, it wasn't cleared until about  
1235 a year ago. It takes time to, you know--Mr. Brenner and  
1236 Qualcomm and companies like that, and Ericsson that do the  
1237 infrastructure need to make sure that this spectrum is  
1238 available and clear, then they begin the process of  
1239 developing technology to implement on the network side and on  
1240 the--

1241 Ms. {Eshoo.} What is the average length of time to  
1242 prepare the spectrum that is bought to bringing it to making  
1243 use of it on the market?

1244 Mr. {Guttman-McCabe.} Sure. I guess it depends upon if

1245 their standards have been developed, but it could be, you  
1246 know, a year to 3 to 4 years. Let us keep in mind that these  
1247 companies spend tens of billions of dollars the last two  
1248 auctions and raised \$33 billion, so they need to answer to  
1249 Wall Street. They need to have a return on their investment,  
1250 and they do move forward, and they move forward, you know,  
1251 really quickly. In the last 10 years since I have been at  
1252 CTIA, we have gone from analog to digital to third generation  
1253 and now we are looking at fourth generation deployments, all  
1254 in a 10-year period.

1255         As far as your question about how do we determine what  
1256 the future need is in terms of spectrum, whether it is Kline  
1257 Perkins in your area or the folks in Silicon Valley or the  
1258 Informa Group, or you could sort of go on and on. They have  
1259 all suggested that there will be upwards of a 35 times  
1260 increase in demand. We have tried to simplify that. I have  
1261 tried to simplify that in my mind, and the simplest example I  
1262 have is if someone came to you and said that California was  
1263 going to experience a 35 times increase in the amount of cars  
1264 on its roads, after you have picked yourself up off the  
1265 floor, I think we would think okay, what can we do in terms  
1266 of driving efficiencies? What do we have in terms of new  
1267 roads planned? And that is what we are asking Congress is we  
1268 can work on the efficiency side of the equation. We can

1269 implement PICO cells and FEMTA cells. We need help with the  
1270 roads, and our roads are spectrum. We need help preparing  
1271 for that tremendous increase, which is happening. I mean,  
1272 you say preparing, data traffic doubled from '09 to '10, so  
1273 we are seeing that.

1274 Ms. {Eshoo.} Thank you very much.

1275 Mr. {Walden.} Thank you. We now go to the vice chair  
1276 of the subcommittee, Mr. Terry.

1277 Before I do that, Mr. Kinzinger has a document he would  
1278 like to put into the record with unanimous consent from Radio  
1279 Inc. regarding radio stations involved in helping residents  
1280 in Joplin after the tornadoes, Clear Channel especially, so--

1281 Mr. {Kinzinger.} Thank you.

1282 Mr. {Walden.} --Mr. Kinzinger, without objection that  
1283 will be in the record.

1284 [The information follows:]

1285 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
1286 Mr. {Walden.} Mr. Terry?

1287 Mr. {Terry.} Thank you.

1288 So Mr. Schurz, despite your affinity for Notre Dame--

1289 Mr. {Schurz.} Yes, sir.

1290 Mr. {Terry.} I think Mr. Ellis probably answered this  
1291 very bluntly, but I think a case has been made that more  
1292 spectrum is needed. TV stations have spectrum and as I said  
1293 in my opening, it is important that there is not a taking of  
1294 your spectrum, that it has to be voluntary. But what will it  
1295 take to get you--I am not negotiating here, but you on behalf  
1296 of others, generally. Define voluntary for me. What is it  
1297 going to take so that you would volunteer to give up some of  
1298 your spectrum?

1299 Mr. {Schurz.} The definition of voluntary means that  
1300 there are no negative ramifications for participating or for  
1301 not participating. So I think the FCC can design such an  
1302 auction. My concern principally is that for those people who  
1303 choose not to participate, that you--and kind of the things I  
1304 chatted about in my statement in terms of no one being forced  
1305 to relocate to an inferior spectrum band that all viewers can  
1306 keep, seeing the channels and stations I see now. No station  
1307 is subject to increased interference and that broadcasters  
1308 should be held harmless from the cost of repacking.

1309 I never heard the term win-win-win-win before today's  
1310 hearing, and I like that term. I think what we are looking  
1311 for is people want to stay in the business. It is don't  
1312 lose. And really, it is not the broadcasters, it is the  
1313 viewers in our communities.

1314 Let me also add to the don't lose, that if there are  
1315 spectrum fees and other costs, I think that is probably not  
1316 in the spirit of voluntary.

1317 Mr. {Terry.} Such as?

1318 Mr. {Schurz.} Such as that if we choose not to  
1319 participate in the auction, repacking is involuntary. We  
1320 understand that. We like to have the safeguards and  
1321 protections on a going forward basis so there is no harm to  
1322 the business and to the viewers in communities, but we would--  
1323 --we certainly don't expect or want to see increased fees--  
1324 spectrum fees if we choose not to participate.

1325 Mr. {Terry.} And how do you answer Dr. Connolly's  
1326 statement that if there isn't some mechanism for--to force  
1327 holdouts, that it will actually degrade the value of the  
1328 spectrum that may be auctioned off?

1329 Do you agree that that could happen?

1330 Mr. {Schurz.} From all the discussions I have seen  
1331 about the way the auction is being considered, and there is  
1332 no definitive auction yet, but there is a lot of discussion.

1333 My expectation is I think that they will probably find a way  
1334 that will be equitable and maybe you would limit the  
1335 holdouts.

1336 The question is, no one is--Mr. Ellis is here because  
1337 they said GU might sell, and he said that--people ask how  
1338 much spectrum, who is selling? No one knows the answer to  
1339 that question.

1340 Mr. {Terry.} Dr. Connolly, why don't we work though  
1341 this a little bit more. How do we--how do you see that we  
1342 can provide enough incentives to win-win-win or not lose-win-  
1343 win, and not have a situation where we have to engage in a  
1344 taking?

1345 Ms. {Connolly.} If the incentive--I mean, if the  
1346 reverse auction is correctly designed, the broadcasters will  
1347 only participate if they win. No one is going to participate  
1348 and not win, because--and that is by definition. And they  
1349 can list different prices of which they are willing to do  
1350 different things so they may be willing to do one thing and  
1351 they offer a certain price. They may be completely unwilling  
1352 to do other things, so they offer, you know, a every  
1353 exorbitant price that they know won't be accepted, or simply  
1354 refuse to participate in that auction.

1355 The costs of any new packaging are, at least from what I  
1356 hear, the FCC is offering to cover those. And so as long as

1357 what they are bidding on is well specified, then by  
1358 definition, if their bid is accepted, they will win.

1359 Mr. {Terry.} Right. But we are talking about--and you  
1360 look at any development and you always see that one little  
1361 old house on the corner, because that person wouldn't sell  
1362 out.

1363 Ms. {Connolly.} And that is why we do need the ability  
1364 to relocate, because they will hold out. And even--well,  
1365 there is a possibility of hold out. There is also the  
1366 possibility that if you--I mean, when you are bidding within  
1367 a market, you are competing against the other broadcasters in  
1368 that market, so if someone is not in the range that they know  
1369 they are trying to empty, they are not true competitors to  
1370 those in the range that they are trying to vacate.

1371 So by making relocation possible, you might have someone  
1372 say on channel 21 who is willing to give up their location--  
1373 their spectrum, go off the air or share or go somewhere else,  
1374 and if someone on channel 40 is unwilling to, then 21 can  
1375 sell their spectrum, you know, their rights to that spectrum  
1376 and then we can move someone to channel 21.

1377 So it means that more broadcasters within a given market  
1378 will be competing for these bids to vacate spectrum, and by  
1379 having that forced relocation, then the other people outside  
1380 that key band become competitors. So not only is it an issue

1381 of hold out, but just general competition. The more  
1382 competition there is, the more the bids are going to become  
1383 true valuations for the broadcasters themselves. So it is  
1384 not just for the one hold out, it is a general statement of  
1385 overall competition in the bids.

1386 Mr. {Walden.} Thank you. Mr. Dingell, Chairman  
1387 Emeritus of the committee, we turn to you now for 5 minutes.

1388 Mr. {Dingell.} Thank you for your courtesy, and I want  
1389 to thank the distinguished gentlewoman from California, Ms.  
1390 Matsui, thank you.

1391 This is not the first time we have visited this  
1392 question. In earlier hearings, I have expressed my strong  
1393 doubt that such auctions can, in fact, be truly voluntary. A  
1394 great source of my alarm comes from the National Broadband  
1395 Plan itself, where it states at page 79 that ``The  
1396 government's ability to reclaim, clear, and reauction  
1397 spectrum is the ultimate backstop against market failure and  
1398 is an appropriate tool when the voluntary process stalls  
1399 entirely.'' I would note that we are looking at this against  
1400 a lot of actions by the Commission and the Office of  
1401 Management and Budget, which have taken place without us  
1402 having a real understanding of what spectrum is going where  
1403 and being used by who, and sat upon by who else.

1404 So this seems to imply that the Commission's action

1405 could be forcefully taking this spectrum away from  
1406 broadcasters if too few or none at all participate in the  
1407 voluntary spectrum auctions.

1408 Now to all witnesses, starting with Mr. Schurz, yes or  
1409 no. Would you support such action by the Commission, yes or  
1410 no?

1411 Mr. {Schurz.} Which action?

1412 Mr. {Dingell.} Picking and taking the spectrum  
1413 forcefully from broadcasters.

1414 Mr. {Schurz.} No.

1415 Mr. {Dingell.} Mr. Ellis?

1416 Mr. {Ellis.} No.

1417 Mr. {Guttman-McCabe.} We support voluntary auctions.

1418 Mr. {Dingell.} Ma'am, yes or no?

1419 Ms. {Connolly.} Yes.

1420 Mr. {Dingell.} You, sir?

1421 Mr. {Brenner.} I always talk about voluntary incentive  
1422 auctions.

1423 Mr. {Dingell.} And sir?

1424 Mr. {Feld.} Voluntary auctions.

1425 Mr. {Dingell.} All right. Now to all witnesses again,  
1426 do you agree that broadcasters who are willing to participate  
1427 in an incentive auction should be committed to do so in  
1428 exchange for a fair share of such auctions proceeds, and set

1429 the reserve price of the spectrum it wishes to auction, yes  
1430 or no? Mr. Schurz?

1431 Mr. {Schurz.} Yes.

1432 Mr. {Dingell.} Mr. Ellis?

1433 Mr. {Ellis.} Yes.

1434 Mr. {Guttman-McCabe.} Yes.

1435 Mr. {Dingell.} Ma'am, yes or no?

1436 Ms. {Connolly.} Who defines fair proceeds?

1437 Mr. {Dingell.} Well, I am not quite sure I can, but--

1438 Ms. {Connolly.} That is the question, so I would say no  
1439 because I don't think anyone can define that, other than by  
1440 the bid value.

1441 Mr. {Dingell.} Thank you. Next witness?

1442 Mr. {Brenner.} I am sorry to just raise a quibble here,  
1443 but the use of the term reserve price, I don't quite  
1444 understand.

1445 Mr. {Dingell.} Well, I am assuming the reserve price is  
1446 the price that is fixed by the Commission as the price below  
1447 which no auction would take place and no sale would take  
1448 place. Yes or no?

1449 Mr. {Brenner.} Okay. Just--can I just clarify,  
1450 Congressman Dingell? The reason why I am asking is normally  
1451 I have the same understanding of a reserve price. I bid in  
1452 three auctions over the years, and there is an aggregate

1453 price for the entire auction that the auctioneer sets. It  
1454 has nothing to do with the individual bid--

1455 Mr. {Dingell.} Time is limited, please, yes or no? I  
1456 will put you down as a no.

1457 Mr. {Brenner.} I am not sure.

1458 Mr. {Dingell.} Next witness.

1459 Mr. {Feld.} Depends on what result you want.

1460 Mr. {Dingell.} All right. To all witnesses, in other  
1461 words, if the FCC is overly restrictive in how reauctioned  
1462 spectrum can be used, we will end up with a fine mess on our  
1463 hands, just like the auction of the D Block. Am I correct in  
1464 that? Starting with you, Mr. Schurz.

1465 Mr. {Schurz.} Yes.

1466 Mr. {Dingell.} Mr. Ellis?

1467 Mr. {Ellis.} Yes.

1468 Mr. {Dingell.} Next witness?

1469 Mr. {Guttman-McCabe.} Yes, you are potentially correct.

1470 Mr. {Dingell.} Ma'am, if you please?

1471 Ms. {Connolly.} Yes.

1472 Mr. {Dingell.} Sir?

1473 Mr. {Brenner.} Yes.

1474 Mr. {Dingell.} Next witness?

1475 Mr. {Feld.} Yes.

1476 Mr. {Dingell.} Thank you, ladies and gentlemen.

1477 Now to all witnesses again, similarly, the goal of any  
1478 incentive auction, in addition to fairness to those who  
1479 surrender the spectrum should be to maximize the revenue to  
1480 the Treasury. Yes or no, starting with Mr. Schurz?

1481 Mr. {Schurz.} Yes.

1482 Mr. {Dingell.} Mr. Ellis?

1483 Mr. {Ellis.} No.

1484 Mr. {Guttman-McCabe.} That should be a significant part  
1485 of it, yes.

1486 Mr. {Dingell.} Ma'am?

1487 Ms. {Connolly.} No.

1488 Mr. {Dingell.} Sir?

1489 Mr. {Brenner.} Yes, a significant part.

1490 Mr. {Dingell.} Last witness?

1491 Mr. {Feld.} Absolutely not.

1492 Mr. {Dingell.} All right. Now I would like to explore  
1493 this channel relocation just a bit more. Now to Mr. Schurz  
1494 and Ellis, both of you have considerable technical experience  
1495 as broadcasters. Are my concerns about shifting from UHF to  
1496 VHF valid? And I want to say that I have fears that doing so  
1497 might restrict geographic reach of a given broadcaster.  
1498 Second, I think going from UHF to VHF will impair the  
1499 broadcaster's ability to transmit digital signals.

1500 So are my concerns about shifting from UHF to VHF valid,

1501 yes or no?

1502 Mr. {Schurz.} Yes, I know our company has had specific  
1503 incidences of that, no question.

1504 Mr. {Dingell.} Mr. Ellis?

1505 Mr. {Ellis.} Yes, VHF does not work.

1506 Mr. {Dingell.} Now, again to Mr. Schurz and Mr. Ellis.  
1507 Further, do you believe that reducing a broadcaster's ability  
1508 to transmit digital signals puts it at a disadvantage vis-à-  
1509 vis the other content provider, yes or no?

1510 Mr. {Schurz.} Yes, I would agree with that.

1511 Mr. {Dingell.} Mr. Ellis?

1512 Mr. {Ellis.} Digital means over the air broadcasting  
1513 only, yes, we are at a disadvantage to the wireless  
1514 providers.

1515 Mr. {Dingell.} All right, to all of the witnesses, with  
1516 Mr. Schurz's and Mr. Ellis's response and mine, do you  
1517 believe it is fair to broadcasters to require that they move  
1518 from the UHF band to the VHF band, yes or no, starting with  
1519 our next witness?

1520 Mr. {Guttman-McCabe.} I think there is a difference  
1521 between the upper and lower VHF bands, a pretty significant  
1522 difference, and I think, you know, that is a difficult  
1523 question that we can work through as part of this process.  
1524 There are a large number of broadcasters currently operating

1525 in both bands.

1526 Mr. {Dingell.} You can't say that it is--you can't say  
1527 sitting there that it is fair at this time?

1528 Mr. {Guttman-McCabe.} Well, Congressman, there are a  
1529 large number of broadcasters operating in both of those bands  
1530 at this moment and doing well.

1531 Mr. {Dingell.} But if they have already shifted--well,  
1532 we will put you down as a no. Next witness, please.

1533 Mr. {Walden.} Did you have another witness, Mr.  
1534 Dingell, that was going to--

1535 Mr. {Dingell.} I don't--

1536 Mr. {Walden.} --dare answer, because we are over the  
1537 clock here.

1538 Mr. {Dingell.} Well, I am willing to forego--I just  
1539 want everybody to know that we are not walking into any tea  
1540 party here. Thank you for your courtesy.

1541 Mr. {Walden.} Although some of us have a time or two.

1542 Mr. Stearns, we are going to yield to you for 5 minutes.

1543 Mr. {Stearns.} Let me ask each of you, and I think this  
1544 is kind of basic to start the question off, and I will just  
1545 start with Mr. Schurz. Do you think before we do any auction  
1546 off the spectrum that we should do an inventory? Just right  
1547 on down.

1548 Mr. {Schurz.} As a businessman, before we determine

1549 where we need to go, we always start with where we are.

1550 Yeah, I think an inventory is a good idea.

1551 Mr. {Stearns.} Mr. Ellis, we should do a spectrum  
1552 inventory first?

1553 Mr. {Ellis.} Yes, but I think it can be done in a  
1554 weekend.

1555 Mr. {Stearns.} In a weekend, okay. Next.

1556 Mr. {Ellis.} Yes, sir, this is not that complicated.

1557 Mr. {Stearns.} Okay. Next?

1558 Mr. {Guttman-McCabe.} I don't think it needs to be done  
1559 prior to an incentive auction process.

1560 Mr. {Stearns.} So your answer is no, okay. Dr.  
1561 Connolly?

1562 Ms. {Connolly.} My answer would be no.

1563 Mr. {Stearns.} No. Mr. Brenner?

1564 Mr. {Brenner.} No.

1565 Mr. {Stearns.} No. Mr. Feld?

1566 Mr. {Feld.} No.

1567 Mr. {Stearns.} Okay. Now let us say we do have a  
1568 spectrum inventory, and you find out, you know, who has what  
1569 and what they use. Do you think it is important in this  
1570 layout that we determine how effectively this spectrum that  
1571 they have is being used and what bands aren't yet deployed,  
1572 and how long until deployment? Is that an important--I mean,

1573 some of you don't think we should do a spectrum, but it seems  
1574 to me that if we do the spectrum inventory, we could find out  
1575 how efficiently it is being used. I think members of  
1576 Congress want to know that. Mr. Schurz, do you agree with  
1577 that, that if we did a spectrum inventory we would want to  
1578 find out how efficiently it is being used and what bands  
1579 aren't yet deployed and how long until they are deployed?

1580 Mr. {Schurz.} I think that what we are looking at right  
1581 now is not only the total amount of spectrum, but no question  
1582 how efficiently it is used. I think there is a question on  
1583 how one would define that. Broadcasters have 6 megahertz.  
1584 We use the 6 megahertz. So there could be a lot of quibbling  
1585 over the details, but yeah, I think it is a good idea.

1586 Mr. {Stearns.} Mr. Ellis?

1587 Mr. {Ellis.} As a prudent business man, I think you  
1588 should always know what--how you are using your product, yes.

1589 Mr. {Stearns.} Okay.

1590 Mr. {Guttman-McCabe.} Yes, our concern with an  
1591 inventory is that you would--a suggestion that you might need  
1592 to do it before you move forward with incentive auctions, and  
1593 so--

1594 Mr. {Stearns.} That is what I am asking.

1595 Mr. {Guttman-McCabe.} Yeah, so we believe a solid  
1596 legitimate inventory of the government side of the equation,

1597 the commercial side is fine--

1598 Mr. {Stearns.} Which would include how effectively it  
1599 is being used.

1600 Mr. {Guttman-McCabe.} Yes, although I think we would  
1601 all share concerns about who would define that and how it  
1602 would be defined. I mean, in our case--

1603 Mr. {Stearns.} Is it hard to define?

1604 Mr. {Guttman-McCabe.} Yes.

1605 Mr. {Stearns.} Okay. Dr. Connolly?

1606 Ms. {Connolly.} I agree complete that I have nothing  
1607 against doing an inventory and trying--

1608 Mr. {Stearns.} You folks have said no, but--

1609 Ms. {Connolly.} No, but I disagree with conditioning--

1610 Mr. {Stearns.} I think it is axiomatic, trying to  
1611 decide how efficiently it is being used and what bands are  
1612 yet deployed and how long. I think those are important  
1613 questions we should know.

1614 Ms. {Connolly.} But I would not condition the incentive  
1615 auctions on doing that first, because I know that that can  
1616 take years, and the value of the spectrum to our economy--

1617 Mr. {Stearns.} Mr. Ellis says it can take a weekend.

1618 Ms. {Connolly.} Well, I don't know if he has worked in  
1619 the government.

1620 Mr. {Ellis.} I am definitely not working in government.

1621 Mr. {Stearns.} Touché. All right, Mr. Brenner?

1622 Mr. {Ellis.} If I could--

1623 Mr. {Stearns.} Mr. Brenner first.

1624 Mr. {Brenner.} So I want to be clear, Congressman  
1625 Stearns, there should be an inventory and we should know--

1626 Mr. {Stearns.} But you said no.

1627 Mr. {Brenner.} I don't think we should hold up the  
1628 auction process waiting because I am concerned that it will  
1629 take forever, but just--

1630 Mr. {Stearns.} How can you auction off something you  
1631 don't know anything about?

1632 Mr. {Brenner.} Well, we know--we are going to auction  
1633 off spectrum that we know--

1634 Mr. {Stearns.} But don't you want to know how  
1635 efficiently it is being used, by whom, and what bands aren't  
1636 yet deployed and how long until--wouldn't you want to know  
1637 that?

1638 Mr. {Brenner.} So Congressman, when I advise our  
1639 management, I give them a presentation once a quarter or once  
1640 every two quarters on new spectrum bands, what they are being  
1641 used for, what the likely time period would be for an  
1642 auction, so I think those facts are known. What isn't known  
1643 is there are hundreds of thousands of FCC licensees across a  
1644 whole range of services, ranging from private radio services,

1645 trucking companies, taxi cab companies, and we should find  
1646 out if they are using the spectrum on an ongoing basis, and  
1647 if they are not, let us get it back. I totally agree with  
1648 you on that.

1649 Mr. {Stearns.} Okay, Mr. Feld?

1650 Mr. {Feld.} Just to clarify, because of the properties  
1651 of the broadcast bands, it is pretty easy to say getting more  
1652 of this stuff out there for use--for a number of different  
1653 uses is a good thing. I don't need an inventory to tell me I  
1654 would love some of that stuff. The inventory, however, is  
1655 extremely useful both on saying where else is there useful  
1656 spectrum, and where are the other services that are in the  
1657 band, which just aren't the unlicensed. It is also wireless  
1658 microphones, low power television translated, a whole bunch  
1659 of things. Where are those going to land if we start to  
1660 repack the band? So don't need it to tell me I want more  
1661 spectrum out there, but I do need it for spectrum planning.

1662 Mr. {Stearns.} Thank you, Mr. Chairman.

1663 Mr. {Walden.} Thank you, Mr. Stearns. Now we will go  
1664 to the gentlelady from California, Ms. Matsui for 5 minutes.

1665 Ms. {Matsui.} Thank you, Mr. Chairman.

1666 As I mentioned in my opening statement, I believe the  
1667 FCC should have the flexibility to structure and conduct  
1668 incentive auctions. Dr. Connolly, you stressed in your

1669 testimony that the FCC must have a great deal of flexibility  
1670 to design and implement incentive auctions. In granting FCC  
1671 this new authority, how should Congress balance the need for  
1672 FCC flexibility while providing some legislative certainty to  
1673 ensure that there is enough participation from existing  
1674 licensees to ensure successful auctions, and these auctions  
1675 would bring about the maximum value and public interest  
1676 benefits for our consumers?

1677 Ms. {Connolly.} That is a very interesting question. I  
1678 am not sure that there is anything that Congress could do to  
1679 guarantee that people will come to the table. They will come  
1680 to the table if it is in their incentive, and I think that  
1681 that is why the FCC should be allowed to have these incentive  
1682 auctions. I can't imagine that putting restrictions on the  
1683 auction would somehow increase the interest in selling off--  
1684 or being willing to vacate certain spectrum. I think if  
1685 anything, it would decrease it. So I cannot imagine what  
1686 Congress could put in there that would somehow increase the  
1687 desire of the broadcasters to sell these rights.

1688 Ms. {Matsui.} So you are essentially saying that the  
1689 marketplace would take care of this, and that therefore even  
1690 though we have oversight, that you believe we should be a  
1691 light touch, some principles, and that is it?

1692 Ms. {Connolly.} Yes, but moreover, I think that if the

1693 goal is to make sure that the auction is as efficient as  
1694 possible, any touches are going to make it less efficient.

1695 Ms. {Matsui.} But could you balance out, though, the  
1696 value as far as dollar value plus the public interest?

1697 Ms. {Connolly.} I think what would maximize the dollar  
1698 value is also what maximizes the public interest in this  
1699 case. Now there are tradeoffs. For example, when it is  
1700 decided what are the bids that win on both sides, the revenue  
1701 is based on the different demand curves, how much the  
1702 clients--and how much demand. They are not going to choose a  
1703 price that clears everything 100 percent, right, so that is a  
1704 decision that will affect how much megahertz is repurposed,  
1705 and it will also affect how much revenue is given to the  
1706 government.

1707 So that will be a call to the extent that they have a  
1708 target of 120 megahertz, I think that gives a certain amount  
1709 of a restriction there in terms of how far they are likely to  
1710 go. But I have had enough experience with auctions to see  
1711 that, you know, anytime additional conditions are put on the--  
1712 --there are very strong consequences, and I would say D Block  
1713 is a very good example of that.

1714 Ms. {Matsui.} Okay, thank you.

1715 President Obama set out a plan to create a wireless  
1716 innovation fund of \$3 billion funded through spectrum

1717 proceeds, which would go towards research and development of  
1718 emerging wireless technologies and applications. This  
1719 question is for Mr. Guttman-McCabe and Mr. Brenner. We all  
1720 know that R&D is essential to keeping America competitive.  
1721 In the context of spectrum, what does this mean for your  
1722 industry and its ability to develop the next wireless  
1723 technologies and applications?

1724 Mr. {Guttman-McCabe.} Sure. Thank you, Congresswoman.

1725 CTIA has a large number of members who invest billions,  
1726 if not tens of billions of dollars each year, and Mr. Brenner  
1727 will talk a little bit about his company who is a member. We  
1728 tend to try to do our best to facilitate that in the private  
1729 sector, and we believe there are probably two ways that  
1730 Congress could significantly help that. One is the purpose  
1731 of this hearing today, to talk about getting more spectrum to  
1732 market and funding the network infrastructure, such that  
1733 people want to feel comfortable putting R&D dollars to work.  
1734 The second is--and it is something that has been proposed by  
1735 you and Ranking Member Eshoo and Congressman Stearns, and  
1736 that is taking the R&D tax credit and making it permanent.  
1737 Providing the ability for companies like Qualcomm and others  
1738 to say hey, we have got a future that we understand that  
1739 makes sense, and we are not revisiting this every couple  
1740 years. And for us, that sort of making that tax credit

1741 permanent will provide a heck of an incentive for our  
1742 industry.

1743         The last thing that I would add, which we have just  
1744 discovered recently at CTIA, is we talk a lot about R&D  
1745 within the United States, and I think we focus on U.S.  
1746 companies, which is key and important, companies like  
1747 Qualcomm. But what we have learned is because we have become  
1748 the hub, the epicenter of wireless, whether it is the apps  
1749 world or the network world or the device world, we are  
1750 finding foreign companies are moving their R&D facilities  
1751 here into the United States, and we are finding more and more  
1752 foreign-based companies with R&D facilities in California, in  
1753 Texas, and in other States. And we think that is because we  
1754 have the right ecosystem to facilitate that.

1755         Ms. {Matsui.} Right. I am sorry, Mr. Brenner, I am out  
1756 of time, but a quick comment from you?

1757         Mr. {Brenner.} Well, research and development is  
1758 synonymous with Qualcomm. As I said in my testimony, we  
1759 spend \$2 billion every year on research and development, over  
1760 20 cents of every dollar that we make in revenue, so we are  
1761 constantly researching new technologies. It is essential.

1762         Ms. {Matsui.} Thank you very much, and I know I have  
1763 really run out of time. Thank you, Mr. Chairman.

1764         Mr. {Walden.} It is all right, we want to get the

1765 answers. Thank you, Ms. Matsui.

1766 We will go now to Ms. Blackburn. Thank you for being  
1767 here, and we look forward to your questions.

1768 Mrs. {Blackburn.} Thank you, Mr. Chairman, and thank  
1769 you to our witnesses, and thank you for your patience.

1770 I love hearing you all talk about the innovation, and I  
1771 am glad we just touched on the R&D tax credit, because the  
1772 innovators that I am talking to in Tennessee, some of them I  
1773 have been working with for years because I ran the Tennessee  
1774 Film, Entertainment, Music and Interactive Technologies  
1775 component of our State government at one point in my career,  
1776 and innovators want that certainty, and regulatory  
1777 uncertainty right now is just a bear, and they talk about it  
1778 to us quite a bit.

1779 Listening to you all, I would imagine each and every one  
1780 of you knows somebody who is innovating some new application  
1781 or attachment for the broadband, and they are waiting to see  
1782 what is going to happen with spectrum. So let us just say  
1783 Congress sits on their hands and that nothing is done. So  
1784 what would be--Mr. Brenner, let me just throw this to you.  
1785 What do you think would happen if we see this spectrum crunch  
1786 get worse, because we know that capacity demand is outpacing  
1787 the capacity, and if Congress doesn't free up some of the  
1788 spectrum for commercial broadband, what do you see that

1789 impact being on the economy and on jobs?

1790           Mr. {Brenner.} It would be extremely detrimental impact  
1791 on the economy and jobs, Congresswoman Blackburn. I don't  
1792 think that there is--the world is going to end tomorrow or  
1793 the next day, but I think the FCC and the broadband plan did  
1794 a very good job of laying out short-term, medium-term, and  
1795 long-term steps and I think they have pretty much proven in  
1796 a--their white paper that by 2014, we are going to have a  
1797 serious problem.

1798           What could happen? We could have basically the effect  
1799 of brownouts. The devices won't work all the time. Your  
1800 devices won't work wherever you go. That is obviously a  
1801 problem today. The carriers are spending a fortune, billions  
1802 of dollars every year. We almost take for granted to provide  
1803 better service and better coverage. We are spending, as I  
1804 say, billions of dollars inventing more technologies. That  
1805 whole ecosystem will slow down and will ultimately stop, and  
1806 then also, from an international point of view, I was in  
1807 Canada yesterday. We are actually ahead of the Canadians,  
1808 which we weren't 2 years ago. We are ahead of the Europeans  
1809 with our mobile systems and the Asians, and we won't be if we  
1810 don't have enough licensed spectrum coming online.

1811           Mrs. {Blackburn.} You know, I find it so interesting  
1812 when you equate it to the brownouts, because so many of our

1813 entertainment industry innovators in the spectrum have become  
1814 financial service innovators and healthcare delivery system  
1815 innovators, and we are seeing a tremendous amount of  
1816 parallels, if you will, in those industries. And I know that  
1817 is something that they bring forward to us all the time is  
1818 wanting the certainty of the availability of that spectrum.

1819 Mr. Guttman?

1820 Mr. {Guttman-McCabe.} Yes, Congresswoman, just--I would  
1821 point you to an article, a kind of timely article in the Wall  
1822 Street Journal this week that talked about India and the  
1823 impact of not bringing enough spectrum has had on the Indian  
1824 market. I think we all think of India as a really rapidly  
1825 emerging market, and yet in the last 2 years, because of the  
1826 failure to bring additional spectrum to market, their capital  
1827 expenditures have gone down 42 percent, and they said that by  
1828 2015 they will not be able to serve 1/3 of their mobile  
1829 broadband customers, which could have a 1 percent impact on  
1830 Indian GDP.

1831 So the article ties it directly to not bringing spectrum  
1832 and not allowing these companies to really--to move forward.  
1833 And that is a macro level, but I think it is illustrative.

1834 Mrs. {Blackburn.} Okay. Mr. Ellis?

1835 Mr. {Ellis.} I do not think it is a spectrum problem; I  
1836 think it is an architecture problem. The one-to-one

1837 architecture of the wireless industry, you know, is always  
1838 going to have a problem, no matter how much spectrum. If  
1839 you--if eventually you do run out of spectrum, either because  
1840 they don't get it now or they don't get the next load they  
1841 are going to need later, what is going to--the solution to  
1842 this is a partnership between broadcasters and wireless. We  
1843 have a very efficient methodology for delivering, you know,  
1844 high content video. They have a very inefficient  
1845 methodology. The two of us could work some great things  
1846 together.

1847 Mrs. {Blackburn.} Okay. Dr. Connolly, I want to come--  
1848 I have got just 30 seconds left. You have talked around the  
1849 issue of the auctions, the incentive auctions, and I agree  
1850 with your comment about the D Block. We put so many  
1851 restrictions on that by the time the FCC finished, nobody  
1852 wanted it. I mean, it is lying fallow.

1853 So in your perfect world, what would those conditions  
1854 for a spectrum auction be to see revenue to the Treasury, and  
1855 then affordability to the private sector so that innovation  
1856 is carried forward on this spectrum? So if you were  
1857 designing it, what would you say it needed to be?

1858 Ms. {Connolly.} I would not put conditions.

1859 Mrs. {Blackburn.} No conditions?

1860 Ms. {Connolly.} That is my personal.

1861 Mrs. {Blackburn.} Okay, and I appreciate that because  
1862 that is what we need to hear, because that is what we want to  
1863 do.

1864 I think we all agree that in a 21st century economy,  
1865 making certain that the creative economy has the space in  
1866 which to work and expand, and knowing that what you all are  
1867 sitting here talking about and representing today touches  
1868 every economic sector in this country.

1869 When you look at my district in Tennessee, the  
1870 efficiencies that have been derived for small business  
1871 manufacturing primarily have come through looking at the  
1872 advances that have taken place around spectrum. The auto  
1873 industry, the entertainment industry, the healthcare  
1874 industry, the financial services industry, the defense  
1875 technologies, the list goes on and on and on. So I  
1876 appreciate that, and I am over my time and I yield back.

1877 Mr. {Walden.} Thank the gentlelady.

1878 Now go the gentleman from Illinois, Mr. Rush, for 5  
1879 minutes.

1880 Mr. {Rush.} Thank you, Mr. Chairman. I have only a few  
1881 minutes to ask questions, so I am going to ask questions of  
1882 all the panelists. If you could respond by a yes or a no,  
1883 then I have a second question I would like to ask you also.

1884 The FCC's record on auctions as it relates to minority,

1885 women, and small business success has left much to be  
1886 desired. In fact, that record has led former FCC  
1887 Commissioner Edelstein to conclude that auction results have  
1888 been appalling in terms of gains that minority, women, and  
1889 rural carrier-owned businesses have made as wireless  
1890 licensees. During the AWS 3 auctions, for example, large  
1891 incumbents with deep pockets walked away with almost 70  
1892 percent of the licenses. Can the FCC design incentive  
1893 auctions in a way using benefit credits or other mechanisms  
1894 to increase these appalling numbers and indemnify  
1895 broadcasters who relocate? A simple yes or no, beginning  
1896 with Mr. Schurz.

1897 Mr. {Schurz.} That is a complicated question. I think  
1898 you will see less diversity in terms of ownership, and I  
1899 think you will also see--I think you will see as a part of  
1900 the repacking the Hispanic community, one in three watches  
1901 television over the air, so viewers will be hurt--

1902 Mr. {Rush.} You can't give me a yes or a no?

1903 Mr. {Schurz.} I will go with yes.

1904 Mr. {Rush.} Yes. Mr. Ellis?

1905 Mr. {Ellis.} Was the question can they design it so--

1906 Mr. {Rush.} Yes.

1907 Mr. {Ellis.} Yes.

1908 Mr. {Guttman-McCabe.} I think that is possible, and I--

1909 Congressman, I don't know if you saw this morning, but a  
1910 letter came in from the NAACP and Rainbow Push and a number  
1911 of Hispanic groups all supporting--10 organizations in total  
1912 supporting incentive auctions.

1913 Mr. {Rush.} Dr. Connolly?

1914 Ms. {Connolly.} May I ask clarification? You are  
1915 asking can it be done to help diversity among licensees or  
1916 among those who are receiving the services?

1917 Mr. {Rush.} The licensees, expand the pool of  
1918 licensees.

1919 Ms. {Connolly.} It can be done, but it can be done very  
1920 poorly, and we have had evidence of that before.

1921 Mr. {Rush.} It can be done better?

1922 Ms. {Connolly.} I would argue that it is--

1923 Mr. {Rush.} My time--

1924 Ms. {Connolly.} Scale matters here. Scale matters  
1925 here. I don't know that that should be the goal.

1926 Mr. {Rush.} Can you give a yes or a no? Mr. Brenner?

1927 Mr. {Brenner.} I think it is possible. I think Dr.  
1928 Connolly's point, which I think is a fair one, is this is a  
1929 very capital-intensive business for wireless business, so  
1930 access to capital is a huge determinant in who can bid in an  
1931 auction and who can win, but is it possible? Yes.

1932 Mr. {Rush.} It can be done?

1933 Mr. {Brenner.} It can be done.

1934 Mr. {Rush.} Yes.

1935 Mr. {Feld.} One of the great advantages of the white  
1936 spaces is that it allows women and minority-owned businesses  
1937 to get access to spectrum, which is why so many civil rights  
1938 organizations supported us and white spaces. With that said,  
1939 I absolutely agree, the FCC can and should do a better job in  
1940 making sure that women and minority-owned businesses have  
1941 greater opportunity in licenses at auction.

1942 Mr. {Rush.} Okay. Well, let me ask you this other  
1943 question. Can the FCC, in a different manner, design  
1944 incentive auctions in a way to increase minority, women,  
1945 rural ownership and use enough broadcasters to relocate and  
1946 also generate sufficient funds to pay for a national public  
1947 safety network? Yes or no?

1948 Mr. {Schurz.} I think the answer to that is yes. I  
1949 mean, you are talking about auction design.

1950 Mr. {Ellis.} Yes.

1951 Mr. {Guttman-McCabe.} I think it is possible, and I  
1952 think the question about funding a public safety network is  
1953 going to be one that is hashed out with you and others in  
1954 this committee, and I think that is a difficult question that  
1955 is going to take a lot of thought.

1956 Ms. {Connolly.} It is a possibility to do.

1957 Mr. {Rush.} All right.

1958 Mr. {Brenner.} Yes, it is possible.

1959 Mr. {Feld.} Yes, and they ought to.

1960 Mr. {Rush.} All right. Could incentive auctions create  
1961 additional unintended problems?

1962 Mr. {Schurz.} Yes, no question about it.

1963 Mr. {Ellis.} Yes. Solvable, but yes.

1964 Mr. {Guttman-McCabe.} Not if done properly.

1965 Ms. {Connolly.} I think they would be minor, relative  
1966 to potential--well, they would be inconsequential, relative  
1967 to the gains.

1968 Mr. {Brenner.} I think that they will be a huge  
1969 success.

1970 Mr. {Feld.} I think that they are complicated. We  
1971 don't know what the best model is, which is why we need to  
1972 proceed cautiously and give the experts flexibility.

1973 Mr. {Rush.} All right. Mr. McCabe, give me some  
1974 examples of some unintended problems that might occur if the-  
1975 -under the incentive auctions?

1976 Mr. {Guttman-McCabe.} Well, I think we have talked at  
1977 length about making sure that we don't try to overly dictate  
1978 what the FCC can and should do here. I think we have seen  
1979 that it is not just the D Block. We have seen it with the C  
1980 Block and other bands of spectrum that have been auctioned,

1981 so I think that is an unintended consequence for the auction  
1982 as a whole.

1983 I think with regard to broadcasters, I think we just  
1984 have to be considerate and think through the process and make  
1985 it something that incentivizes them. It is in our interest  
1986 on the wireless side for the broadcasters to have an  
1987 incentive to participate, and that is what we want. We want  
1988 them to participate. We believe it can be wildly successful,  
1989 and we believe we can't miss this opportunity. We have seen  
1990 Germany and United Kingdom and France and Italy and Spain and  
1991 South Korea and Japan have all identified spectrum for  
1992 commercial mobile purposes and are bringing it to market. We  
1993 can't fall behind.

1994 Mr. {Rush.} Mr. Chairman, I thank you. You have been  
1995 very generous with your time.

1996 Mr. {Walden.} Thank you, Mr. Rush, for your questions,  
1997 and panelists for your answers.

1998 We go now to Mr. Latta for 5 minutes.

1999 Mr. {Latta.} Thank you very much, Mr. Chairman. I  
2000 appreciate it. To our panel, thanks very much for being here  
2001 today. Some of the questions I would just like to follow up  
2002 to some of the other members who were already asked today.

2003 If I could, Mr. Guttman, if I could start. We were  
2004 talking a little bit about the ramifications if there isn't a

2005 voluntary auction out there, and you were talking about what  
2006 happened in India. In this country, how many jobs would be  
2007 affected or how many jobs do you predict that wouldn't be  
2008 created if we didn't have this auction?

2009 Mr. {Guttman-McCabe.} Sure. So we have seen numbers  
2010 between 100,000 and 200,000 new jobs if we can move forward  
2011 with incentive auction legislation, and that is sort of  
2012 direct employment that we looked at and viewed. But I think  
2013 if you look at sort of what we call the verticals, healthcare  
2014 and smart grid, intelligent transportation and education and  
2015 areas like that, you are talking about a ripple effect that  
2016 is almost immeasurable. We really do strongly believe, you  
2017 know, no matter who you look at who is measuring this, that  
2018 the change that is going to happen in this ecosystem is  
2019 staggering. Two years ago, 3 years ago the hottest selling  
2020 handset was the Motorola Razr. We didn't have application  
2021 stores. We barely had third generation, certainly not fourth  
2022 generation. We didn't have tablets. I think when we looked  
2023 at--Kliner Perkins study looked at the first three quarters  
2024 after the launch of the iPod, and they went from zero to one  
2025 million, the first three quarters after the launch of the  
2026 iPhone went from zero to four million. The first three  
2027 quarters of the iPad went from zero to 14 million. And so we  
2028 are seeing a ramp up that is almost vertical, and I--it is

2029 almost impossible to put a number on the value and the jobs  
2030 and the money that will flow to the economy--

2031 Mr. {Latta.} That is going to be my next question. Is  
2032 there any way to predict what that value would be in dollars?

2033 Mr. {Guttman-McCabe.} Well, we have seen numbers that  
2034 have come out of the Administration from Mr. Summers that  
2035 have said for every dollar that goes in in terms of  
2036 investment, it results in \$7 to \$10 in increased GDP. And so  
2037 that is a multiplier that we think is probably a legitimate  
2038 number. Dr. Connolly might know--she just gave me that look.  
2039 But you know, there clearly is a multiplier effect, and we  
2040 have seen it measured at 7 to \$10 for every dollar in  
2041 investment that--

2042 Mr. {Latta.} I see that Mr. Ellis would like to make a  
2043 statement on this.

2044 Mr. {Ellis.} I am just wondering if anybody is going to  
2045 hold him to these numbers.

2046 Mr. {Latta.} I beg your pardon?

2047 Mr. {Ellis.} Is anybody going to hold him to these  
2048 numbers?

2049 Mr. {Guttman-McCabe.} Every time we see them, they go  
2050 up, and so I will say yes. I will be willing to suggest--I  
2051 mean, Cisco put out its networking numbers today, and they  
2052 went up again. We have got a company here that sells

2053 solutions to spectrum problems saying we need to bring more  
2054 spectrum to market. If that isn't the greatest illustration  
2055 that we need some help, I am not sure what is.

2056 Mr. {Latta.} Well I know Dr. Connolly--Mr. Chairman had  
2057 asked initially what that value might be, and you had thrown  
2058 out a low end and a high end. Could you say what those are  
2059 again?

2060 Ms. {Connolly.} Well, I had--the megahertz POP values  
2061 that I was looking at were between .03 and \$3.86 per  
2062 megahertz POP. That is purely based on the 700 auction, but  
2063 if you aggregate that up, that means that based on a 700  
2064 megahertz auction, 1 megahertz at the lowest end would  
2065 generate \$9 million and at the highest end could generate \$1  
2066 billion, approximately.

2067 Mr. {Latta.} Mr. Brenner? Please turn on your mic.

2068 Mr. {Brenner.} We need to multiply that by the number  
2069 of megahertz that would be auctioned, so if we are auctioning  
2070 120 megahertz, Dr. Connolly's high number is tens of billions  
2071 of dollars, 30, 40, \$50 billion in auction revenues. I don't  
2072 know if that is going to happen, but you know, there is no  
2073 question that there is huge demand for spectrum, and if there  
2074 is an auction, there will be people with a lot of money  
2075 bidding to get more spectrum.

2076 Mr. {Latta.} Mr. Schurz?

2077           Mr. {Schurz.} The 120 megahertz number has been thrown  
2078 around, and I just want to give a little perspective. That  
2079 was in the National Broadband Plan, but that plan did not  
2080 envision Canada or Mexico, and so the amount of spectrum that  
2081 you will successfully get out of broadcast spectrum I would  
2082 argue is significantly less. There are some issues with the  
2083 plan, and so there are a lot of numbers going around. I just  
2084 want to make certain that Canada and Mexico do impact  
2085 spectrum in the United States.

2086           Mr. {Latta.} Mr. Feld?

2087           Mr. {Feld.} I just want to emphasize, we can't know  
2088 today how many broadcasters will want to participate in  
2089 voluntary auction, but when we talk about both meeting our  
2090 spectrum demand and the value that is being contributed to  
2091 the economy, it is important to consider the value of the  
2092 unlicensed and the white spaces as well. There are a lot of  
2093 uses that individually don't take up a lot of bandwidth, are  
2094 a poor fit with licensed, and when we are thinking about how  
2095 we are going to meet the spectrum demand and the spectrum  
2096 crunch, particularly when we are talking about machine to  
2097 machine, smart grid, other uses where it is really not  
2098 necessarily a good fit with a licensed service. The ability  
2099 to offload all that traffic to the unlicensed and save the  
2100 licensed space with the higher bandwidth uses that people are

2101 looking at is critical to meeting our spectrum needs.

2102 Mr. {Latta.} Thank you. Mr. Chairman, I see my time  
2103 has expired and I yield back.

2104 Mr. {Walden.} I thank the gentleman from Ohio.

2105 I would now recognize the gentleman from Illinois, Mr.  
2106 Kinzinger.

2107 Mr. {Kinzinger.} Thank you, Mr. Chairman. It is good  
2108 to be last, always, because you guys know you get to go home  
2109 maybe, unless somebody else shows up.

2110 I don't have a whole lot to ask because most of it has  
2111 already been asked, but to me, in a way as I am kind of  
2112 really getting to figure this out, it seems like not having  
2113 the voluntary auctions would kind of be a lose-lose. It  
2114 really reduces flexibility for everybody, really, on all  
2115 sides of this debate.

2116 Let us say we don't move on anything like a voluntary  
2117 auction, we just keep status quo. I know this has been asked  
2118 in different ways, but just very briefly, I will give all six  
2119 of you a chance just to say, you know, what do you see as a  
2120 scenario? So you know, typical Congress, let us say we don't  
2121 do anything and we find ourselves where we are now. What is  
2122 kind of the long-term--and I know there was discussion about  
2123 brownouts, you know, and--where do we see this? We can start  
2124 over here at the--my left.

2125           Mr. {Schurz.} I think there is no question that demand  
2126 is growing. I will say that we are in smaller markets, and  
2127 the capacity crunch really does not exist in our markets. So  
2128 in the smaller and rural markets, you won't--it is not a  
2129 pressing issue. I think what you will see is you will see  
2130 great innovation by broadcasters. You are seeing it today.  
2131 It is 2 years since the digital transition. You will see  
2132 more.

2133           Mr. {Ellis.} About half my stations are in small  
2134 markets. Same answer as Todd. Half of our stations are in  
2135 major markets, Los Angeles, San Francisco, Boston, New  
2136 York/Philly corridor. I think if there is no auction, you  
2137 know, and we are allowed to do so, we will approach the  
2138 wireless companies to create partnerships where they can  
2139 offload some of their high bandwidth content, you know, their  
2140 broadcasting type content--

2141           Mr. {Kinzinger.} So you are saying--

2142           Mr. {Ellis.} --and make partnerships out of that. Yes,  
2143 indeed.

2144           Mr. {Guttman-McCabe.} You know, I think there will be  
2145 partnerships. There are partnerships. But I don't think we  
2146 should take away from this notion that the broadcast  
2147 architecture is a perfect architecture. It is great if you  
2148 want to watch the Super Bowl when the broadcasters want to

2149 deliver the Super Bowl, which I do, and that is one of the  
2150 times I do. But all of you and all of our customers want  
2151 their content when they want it, and so whether it is large  
2152 or small, I disagree strongly with the notion that--I mean,  
2153 some of our most active members on the spectrum issue are  
2154 smaller carriers who want wider channels, who want to be able  
2155 to deliver in rural areas what the large carriers want to  
2156 deliver in urban areas. They want broad, wide channels to  
2157 deliver the video content, to deliver the Powerpoints and  
2158 things like that. So I strongly, strongly urge, with all due  
2159 speed that Congress consider incentive auctions. I don't  
2160 see--

2161       Mr. {Kinzinger.} Well, and it seems like it would be  
2162 creating kind of a--as I see it, it creates a market  
2163 mechanism for broadcasters or anybody really to make a  
2164 decision which best suits them at that moment, is just kind  
2165 in general how it seems.

2166       Dr. Connolly?

2167       Ms. {Connolly.} I agree. This--the incentive auction  
2168 is, I think the most expedient way that I see in front of us  
2169 to achieve something that almost everyone believes has huge  
2170 value. So not doing it, then you are delaying any gains that  
2171 your economy could have, and as a broadcaster, I would worry  
2172 that other mechanisms might be used to get that spectrum that

2173 would not be as advantageous to them, which is something that  
2174 the broadcasters--I think is why the incentive auction is  
2175 good for them, because they can win from it.

2176       Mr. {Brenner.} So to round out my prior answer where I  
2177 referred to brownouts, I mean, what is going to happen if  
2178 Congress doesn't pass the legislation is the folks who do  
2179 have spectrum are going to continue to face this exploding  
2180 demand, and they are going to have to ration capacity. They  
2181 are going to have to assign the bandwidth in some way, and  
2182 there are only two ways to do it. That is to raise prices,  
2183 and so it just goes to the customers who are willing to pay  
2184 more, and that is a bad thing for the economy, or there will  
2185 be this diminution in service. I don't think there is a  
2186 third alternative.

2187       Mr. {Kinzinger.} Okay, and just quickly?

2188       Mr. {Feld.} There is a fine line between taking a  
2189 problem seriously and panicking. I don't think we need to  
2190 panic here. I do not believe we are going to have  
2191 significant brownouts if we don't pass legislation, and I  
2192 believe that--we have seen a lot of innovation. We have seen  
2193 a lot of cleverness that has gone on as people have  
2194 confronted technical challenges. That is one of the things  
2195 that actually makes this country innovative and great is that  
2196 when we hit things like what looks like a wall on spectrum

2197 capacity, we find ways around that.

2198           Mr. {Kinzinger.} Yeah, we are pretty good at that,  
2199 aren't we? We are good at being innovative, that is what is  
2200 amazing. I also, just to wrap up, I serve a fairly rural  
2201 district, and you know, one of the things I am obviously  
2202 concerned about is continuing to deploy broadband to those  
2203 folks that are underserved, just simply by fact that they  
2204 don't live around a lot of other people. With that, I yield  
2205 back.

2206           Mr. {Walden.} Thank the gentleman for his questions. I  
2207 thank the panelists for their answers. Your testimony has  
2208 been very helpful to our committee to hear from all of you.

2209           I have asked unanimous consent to submit three letters  
2210 to the record, a letter from 112 leading economists,  
2211 including Dr. Connolly, to President Obama supporting  
2212 incentive auctions, a letter from 10 groups representing  
2213 minority interests supporting incentive auctions, and a  
2214 letter from 33 IT equipment innovators supporting incentive  
2215 auctions. Without objection, they will be entered into our  
2216 record.

2217           [The information follows:]

2218 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

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2219           Mr. {Walden.} Again, I thank all of our witnesses today  
2220 and in the past panels. We intend to tackle this issue head-  
2221 on and in a bipartisan and thoughtful way. I appreciate your  
2222 input and that of others in the audience, and others  
2223 watching. We intend to get this right, not only for our  
2224 country to grow jobs and innovation, but also for public  
2225 safety, to make sure that they have an interoperable network  
2226 taxpayers can afford and that they can always rely upon.

2227           So thank you all for your participation. We stand  
2228 adjourned.

2229           [Whereupon, at 2:35 p.m., the Subcommittee was  
2230 adjourned.]