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4 ``WHERE THE JOBS ARE: THERE'S AN APP FOR THAT''

5 WEDNESDAY, SEPTEMBER 12, 2012

6 House of Representatives,

7 Subcommittee on Commerce, Manufacturing, and Trade

8 Committee on Energy and Commerce

9 Washington, D.C.

10 The subcommittee met, pursuant to call, at 9:52 a.m., in  
11 Room 2322 of the Rayburn House Office Building, Hon. Bono  
12 Mack [Chairwoman of the Subcommittee] presiding.

13 Members present: Representatives Bono Mack, Blackburn,  
14 Bass, Harper, Cassidy, Guthrie, Kinzinger, Upton (ex  
15 officio), Markey and Waxman (ex officio).

16 Staff present: Paige Anderson, Commerce, Manufacturing  
17 and Trade Coordinator; Charlotte Baker, Press Secretary; Matt  
18 Bravo, Professional Staff Member; Kirby Howard, Legislative

19 Clerk; Brian McCullough, Senior Professional Staff Member,  
20 Commerce, Manufacturing, and Trade; Gib Mullan, Chief  
21 Counsel, Commerce, Manufacturing, and Trade; Andrew Powaleny,  
22 Deputy Press Secretary; Shannon Weinberg Taylor, Counsel,  
23 Commerce, Manufacturing and Trade; Michelle Ash, Democratic  
24 Chief Counsel; Felipe Mendoza, Democratic Senior Counsel; and  
25 Will Wallace, Democratic Policy Analyst.

|  
26 Mrs. {Bono Mack.} Good morning.

27 One of the most promising areas of the U.S. economy  
28 involves the development, marketing and sale of mobile and  
29 online applications, commonly known as apps. Today we are  
30 going to take a close look at how the apps economy is shaping  
31 our future as individuals as well as a Nation, and the Chair  
32 now recognizes herself for an opening statement.

33 When it comes to mobile application software, I'm  
34 reminded of the hit song by country star Loretta Lynn:  
35 ``We've come a long way, baby.'' From the 1970's ``cave  
36 age'' concept of conducting banking or paying your utility  
37 bill by telephone, mobile apps have exploded in number and in  
38 sophistication. Today, there are apps to lose weight, quit  
39 smoking, examine your stock portfolio, review restaurants,  
40 watch videos, check up-to-date scores of your favorite sports  
41 team, witness breaking-news events worldwide, post on  
42 Facebook, Tweet to the world in 140-character bursts, and on  
43 and on.

44 According to a recent New York Times article, there were  
45 nearly 8,000 mobile apps in 2008. Today, there are more than  
46 1.3 million, and they are multiplying rapidly. Consider  
47 this: it is estimated that nearly 100 movies and about 250  
48 books get released worldwide every week. That compares to

49 nearly 15,000 apps.

50         The health industry is a good example of this  
51 astonishing growth. The Baltimore Sun recently reported that  
52 there are now more than 40,000 mobile health apps  
53 contributing to an \$800 million global business. And experts  
54 say we are only beginning to scratch the surface of a brand-  
55 new industry.

56         Apps, of course, are software programs, small in size,  
57 that users load onto their mobile devices or use layered on  
58 top of a platform such as Facebook. But times have changed  
59 in a hurry, thanks to increasingly more powerful mobile  
60 devices and higher quality networks. Today, apps are  
61 purchased typically through an app store associated with a  
62 particular platform. The main platforms in today's app  
63 economy are Apple iOS, Google Android, RIM Blackberry,  
64 Microsoft Windows, Amazon Kindle and Facebook.

65         Approximately one-third of all apps are created by  
66 individuals or businesses with fewer than five employees.  
67 But both blue chip companies and traditional brick-and-mortar  
68 stores now have an app presence as well, developed either in-  
69 house or outsourced to a contractor. App developers range in  
70 size from one-person shops to large developers such as Zynga,  
71 with nearly 3,000 employees.

72         The revenues generated by apps include the purchase of

73 the app, in-app purchases like game credits, in-app  
74 advertising, and app-enabled commerce, such as the purchase  
75 of goods and services through an app. As a result, a new  
76 term, the ``apps economy'', encompassing all such commercial  
77 activity, has now become a part of mainstream America.

78         Apple first launched the iPhone in 2007 and followed  
79 with the introduction of its App Store in 2008, which opened  
80 with 500 available apps. Four years later, Apple says its  
81 stores offer an astonishing 600,000 apps. And according to  
82 its website, Google's Play store offers a similar number.

83         Today, an estimated 90 million U.S. consumers spend  
84 approximately 60 minutes per day accessing the Internet on  
85 their smartphones, while another 24 million U.S. consumers  
86 spend 75 minutes a day accessing the Internet on their  
87 tablets, much of this access being gained through the use of  
88 mobile apps.

89         And if you think all of that sounds pretty impressive,  
90 well, consider this. Last Christmas, on December 24 and  
91 December 25, consumers downloaded a staggering 392 million  
92 apps. So as smartphone and tablet ownership continue to  
93 rapidly expand, current projections indicate the app economy  
94 will soon become a \$100-billion-a-year business.

95         In addition to the explosive growth of the apps economy  
96 in the United States, the outlook for apps as an export looks

97 bright as well. More than 20 percent of all apps downloaded  
98 in China last year were created by U.S. developers.

99       Clearly, this tremendous innovation offers high hopes  
100 for our economy. According to a study commissioned by  
101 TechNet about a year ago, there were over 44,000 app-related  
102 positions open in the United States at the time. And here's  
103 another interesting finding of that survey: researchers  
104 found that app jobs, while located in predictable places like  
105 New York and Silicon Valley, are actually dispersed  
106 throughout the country with an estimated two-thirds of all  
107 app-related employment falling outside of New York or  
108 California.

109       So with that as a background, I am very anxious to hear  
110 from today's panel. What have been the keys to the explosive  
111 growth and job creation in the mobile app economy? Are there  
112 federal policies that present a roadblock to the sector's  
113 growth and ability to create jobs? Are there policies the  
114 federal government should consider to foster further growth  
115 and job creation? And what is the outlook for both the  
116 immediate and long-term future?

117       And while we are on the subject of roadblocks, we should  
118 remember how critically important wireless spectrum is in  
119 driving innovation in the mobile app sector. Mobile is the  
120 fastest area of broadband connectivity, and Congress must

121 continue to explore ways to free up additional spectrum. I  
122 commend Chairman Walden for the important work he has already  
123 done on this issue, and I look forward to his spectrum  
124 hearing tomorrow.

125         As for today's hearing, it could not be more  
126 appropriately entitled: ``Where the Jobs Are: There's an App  
127 for that.'' Because increasingly through American innovation  
128 and ingenuity we are rapidly becoming a world where there is  
129 literally an app for everything.

130         [The prepared statement of Mrs. Bono Mack follows:]

131 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
132 Mrs. {Bono Mack.} And with that, I now recognize my  
133 good friend and my colleague from Los Angeles, Beverly Hills  
134 area--what is your name? Mr. Waxman--just kidding--for 5  
135 minutes.

136 Mr. {Waxman.} Thank you, Madam Chair. There is an app  
137 to give you my name and the description of the cities that I  
138 represent. I want to thank you for holding this hearing.

139 As we in Congress look for ways to accelerate job  
140 growth, it is essential to highlight growth industries and  
141 examine what makes them successful contributors to the  
142 national economic recovery.

143 Although they barely existed 5 years ago, mobile apps  
144 have emerged as a particularly innovative part of the  
145 information technology sector in the United States and they  
146 now play a major role in American life. More than half of  
147 Americans with cell phones own a smartphone, giving them the  
148 advanced capabilities necessary to download and utilize some  
149 of the several hundred thousand apps that exist for work,  
150 education, organization, e-commerce and entertainment. These  
151 apps produce many benefits, like making us more productive by  
152 being able to edit documents on the run, keeping us in  
153 contact with friends and family through social media, or even  
154 allowing us to carry around a whole library of good books on

155 a single device. Mobile apps also can have life-saving  
156 functions, particularly in the area of health IT, where there  
157 exist apps that help individuals check their blood pressure  
158 and/or their glucose levels.

159 One notable benefit of the booming mobile apps industry  
160 is its impact on employment. A February study commissioned  
161 by TechNet estimated that mobile app development supported  
162 460,000 jobs nationwide, including computer and mathematical  
163 jobs in tech companies, non-tech jobs in the same companies,  
164 and jobs created outside the tech industry through spillover  
165 effects.

166 These jobs have been critical to our home State of  
167 California, which has over 20 percent of the total jobs  
168 estimated by the TechNet study. I am pleased to see that  
169 mobile apps jobs are quite geographically dispersed, with  
170 benefits for many States and regions.

171 With smartphone adoption expected to keep rising both  
172 here and abroad, U.S. app developers have the opportunity to  
173 continue to grow, and continued growth in the mobile app  
174 sector should lead to more jobs.

175 This hearing can help us understand what is needed to  
176 ensure this continued growth. But one step is essential: we  
177 must continue to emphasize technical and foreign-language  
178 education so that existing and future companies in this

179 sector have the personnel needed to be successful.

180         A recent study concludes that emerging markets like  
181 Brazil, Russia, India and China will drive demand for the  
182 next 10 million apps. Our app developers need to be able to  
183 develop products for these markets. At the same time, it is  
184 important to remember that although the app economy is a  
185 bright spot, our goal as policymakers must be enduring  
186 prosperity across all economic sectors. We must promote  
187 growth that restores middle-class security and improves  
188 economic mobility for the poor. While we in Congress work to  
189 control the federal deficit, we also must continue to make  
190 targeted investments in education, innovation and  
191 infrastructure that can benefit all sectors of the economy.

192         On a day when Apple is announcing its new iPhone and  
193 more people are looking to see what is going to be available  
194 for Christmas shopping, it is appropriate that today is the  
195 day we are holding this hearing, and I thank you, Madam  
196 Chair, for convening the hearing. Thank you so much.

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

198 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
199 Mrs. {Bono Mack.} Thank you, Mr. Waxman, and I will  
200 look for the ``Where's Waxman'' app later today in the App  
201 Store.

202 The Chair now recognizes--

203 Mr. {Waxman.} It is close to ``Where's Waldo.''

204 Mrs. {Bono Mack.} I set you up good for that one.

205 The Chair recognizes Mr. Upton for 5 minutes.

206 The {Chairman.} Well, thank you.

207 You know, there are not a lot of bright spots perhaps in  
208 our overall economy, but one of the brightest is the birth  
209 and the growth of the app marketplace. It is one of the most  
210 exciting areas of technology with tremendous growth in recent  
211 years, growth that experts agree we can continue to see.

212 It is hard to imagine life before the iPhone appeared 5  
213 years ago, or the iPad which debuted just 2 years ago. Now  
214 these devices and the apps we use are an essential part of  
215 our lives for sure. The Apple store launched with only 500  
216 apps in 2008 but now offers over 600,000, while the Android  
217 store offers over 600,000 apps as well. That is growth of  
218 240,000 percent, and folks continue to buy these apps in  
219 staggering numbers. According to one industry group, there  
220 were more than 11 billion downloads of mobile apps in 2010  
221 with projections that downloads are going to grow to nearly

222 77 billion worth \$35 billion by 2014.

223           What is more exciting than the explosive proliferation  
224 of these apps are the jobs that are being created. Everyone  
225 from large companies to small businesses, to the stay-at-home  
226 mom are developing these apps and generating income.  
227 Furthermore, the wealth being generated by apps isn't locked  
228 into one or two particular geographic areas. The highest  
229 concentrations of app developers are in California and New  
230 York, but there is an app developer in nearly every town in  
231 between with approximately two-thirds of app-related  
232 employment falling outside of those two regions. So if you  
233 have the talent and you have a computer, you can develop an  
234 app and compete in the marketplace.

235           Without a doubt, this is an area of exceptional promise,  
236 but it is not without fragility. Innovation and job creation  
237 can be as easily stifled by regulations in this field as any  
238 other, if not more so. So it is in that vein that I look  
239 forward to hearing from our witnesses today. Are there any  
240 policies you would like Congress to consider? Are there any  
241 policies currently in place or under consideration that are  
242 stumbling blocks to further growth and innovation? How can  
243 we as policymakers maintain an environment that fosters the  
244 innovation, creativity, growth and economic success that this  
245 sector currently enjoys?

246           So I look forward to your testimony, and I yield the  
247 balance of my time to Marsha Blackburn.

248           [The prepared statement of Mr. Upton follows:]

249 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
250 Mrs. {Blackburn.} I thank the chairman for that, and  
251 Madam Chairman, I thank you for the hearing today. I think  
252 this is absolutely so timely and is an area where there is  
253 agreement, and I am pleased that we are putting some focus on  
254 this.

255 I think that from what you have heard today, you all  
256 know and we know that the growth of the apps economy, if you  
257 will, is truly dependent on free enterprise, the private  
258 sector. It is looking for that individual initiative for how  
259 you solve a problem, whether it is the ``Where's Waxman'' app  
260 or the ``What is New for Christmas'' app that he may want to  
261 pull down and see what he can find for Christmas. The thing  
262 is, this entire economy was not born at the altar of big  
263 government. It was borne out by individuals that have a  
264 great idea and are looking for a way to pull that through to  
265 the marketplace.

266 Now, what we do have to realize that in order to have a  
267 productive apps economy, we have got to have spectrum and be  
268 able to launch these applications whether they are for  
269 consumer shopping or for consumer health or safety, any  
270 number of things. This entire marketplace is young, it is  
271 revolutionary, it is disruptive to traditional business  
272 processes, and I think it is very exciting.

273           So thank you all for being with us. Madam Chairman,  
274 thank you for turning our attention to the issue. Yield  
275 back.

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

277 \*\*\*\*\* COMMITTEE INSERT \*\*\*\*\*

|  
278           Mrs. {Bono Mack.} I thank the gentlelady, and the Chair  
279 now turns our attention to the panel. We have one panel of  
280 witnesses joining us for today's hearing. Included on the  
281 panel are Peter Farago, Vice President of Marketing at  
282 Flurry, Inc.; Stephanie Hay, Co-Founder of Fast Customer, and  
283 Resident Mentor, 500 Startups; Rey Ramsey, President and CEO  
284 of TechNet; and Morgan Reed, Executive Director of the  
285 Association for Competitive Technology.

286           Each of our witnesses has prepared an opening statement.  
287 They will be placed in the record. Each of them will have 5  
288 minutes to summarize their statement in their remarks.

289           So good morning, and thank you all very much for coming  
290 and for being here. To help you keep track of time, if you  
291 are not familiar with it already, there should be a timing  
292 clock on the table. When the light turns yellow, you will  
293 have 1 minute to come to a conclusion--or behind us. Thank  
294 you for pointing that out. So all you have to do is make  
295 sure that you push the ``on'' button on your microphone  
296 before you start to make sure the audience at home can hear  
297 you as well.

298           So with that, Mr. Farago, you are recognized for 5  
299 minutes.

|  
300 ^STATEMENTS OF PETER FARAGO, VICE PRESIDENT OF MARKETING,  
301 FLURRY, INC.; STEPHANIE HAY, CO-FOUNDER OF FAST CUSTOMER, AND  
302 RESIDENT MENTOR, 500 STARTUPS; REY RAMSEY, PRESIDENT AND  
303 CHIEF EXECUTIVE OFFICER, TECHNET; AND MORGAN REED, EXECUTIVE  
304 DIRECTOR, ASSOCIATION FOR COMPETITIVE TECHNOLOGY

|  
305 ^STATEMENT OF PETER FARAGO

306 } Mr. {Farago.} Thank you, and good morning.

307 Chairwoman Bono Mack, Ranking Member Butterfield and  
308 distinguished members of the subcommittee, thank you for the  
309 opportunity to appear before you this morning. My name is  
310 Peter Farago and I am the head of marketing for Flurry, a  
311 high-tech startup based in Silicon Valley, specifically San  
312 Francisco.

313 In 2007, when I joined the company, I was its eighth  
314 employee. We now have over 100 employees in multiple  
315 offices. Flurry helps mobile developers build, measure,  
316 advertise and monetize their applications in the new app  
317 economy. One way to think of us is that we don't make the  
318 apps that everyone uses; we help make the apps that everyone  
319 uses better.

320 Flurry has over 75,000 customers, most of which are

321 entrepreneurs and startups. Because of that broad customer  
322 base and the over 200,000 apps using our services, Flurry has  
323 unique insight into the state of the current app economy as  
324 well as where it is headed.

325 While my written report provides numerous trends and  
326 insights about the app economy, I would like to highlight  
327 three of them. First, we are moving faster than any industry  
328 ever before; second, there are real opportunities for job  
329 growth; and third, the United States has significant  
330 opportunities to increase exports.

331 The new app economy represents the greatest, fastest  
332 adoption of any new consumer technology in the history of  
333 mankind. Smart devices are being adopted 10 times faster  
334 than the PC revolution of the 1980s, two times faster than  
335 the Internet boom of the 1990s, and three times faster than  
336 the most recent social network phenomenon. This rate of  
337 adoption outpaces that of all other notable technologies any  
338 of us can think of including electricity, radio, television,  
339 VCRs, microwaves, cell phones, dishwashers and even stoves.  
340 And Flurry estimates that the world is only about a quarter  
341 of the way into the adoption cycle of this new consumer  
342 technology.

343 Our study found that 60 percent of app startups have the  
344 majority of their employees in the United States, and a

345 recent Kaufman study concluded that the main driver of all  
346 new jobs comes from startups in their first year. There is  
347 unprecedented opportunity for America to capitalize on  
348 exploding international markets. The United States has 315  
349 million active wireless devices of which 170 million are  
350 smart devices. However, the last year, while the United  
351 States has added 30 million smart devices, China has added  
352 100 million. From our study, 70 percent of all companies  
353 surveyed already generate some revenue outside the United  
354 States and 94 percent strongly agree that the app economy will  
355 be increasingly international.

356         So how do we turn these trends into opportunities? To  
357 capitalize on these trends, Flurry believes the ecosystem  
358 needs robust infrastructure, access to an educated technology  
359 workforce, and maintained low barriers to entry. Of these, I  
360 would like to highlight access to talent.

361         At Flurry, we literally cannot find the talent we need  
362 fast enough to fill all the open positions we have. While we  
363 have 100 employees now, we have 50 open positions.  
364 Additionally, our survey shows that our customers share our  
365 pain. Only 24 percent of respondents believe that their  
366 company can recruit enough skilled software developers.  
367 Eighty-four percent of respondents strongly agree that their  
368 company's success is dependent on software development

369 talent. Unless we solve this problem, America will not be  
370 positioned to fully capitalize on this unique moment in time.

371 We in the tech industry as well as policymakers need to  
372 work hard to find creative solutions to fully realize the  
373 potential we have before us. This should include partnering  
374 to ensure better university education, better professional  
375 retraining, continuing education and easing the ability to  
376 bring and keep international talent in the United States. At  
377 Flurry, we look forward to continuing to play our role in  
378 making applications even better, help our customers growth  
379 their businesses, and provide the consumer with the best  
380 possible experience.

381 I thank you for your time, and I look forward to your  
382 questions.

383 [The prepared statement of Mr. Farago follows:]

384 \*\*\*\*\* INSERT 1 \*\*\*\*\*

|

385 Mrs. {Bono Mack.} Thank you very much.

386 Ms. Hay, you are recognized for 5 minutes.

|  
387 ^STATEMENT OF STEPHANIE HAY

388 } Ms. {Hay.} Thank you. Thank you for having me here.

389 Good morning.

390 My name is Stephanie Hay and I have been an enthusiastic  
391 leader in the tech community since moving to Alexandria from  
392 Ohio nearly 10 years ago. In 2003, while working in  
393 communications at George Mason University, I began building  
394 websites and creating templates to simplify how 30  
395 departments managed their content online. Imagine being able  
396 to publish content on the Internet instantaneously from  
397 anywhere. The speed and flexibility had me hooked. I left  
398 Mason for World Championship Sports Network where I got my  
399 first taste of startup life which included 2 a.m. working  
400 sessions from my couch, coordinating with remote teams in  
401 Manhattan and Los Angeles, changing priorities fast.

402 In 2010, after several years in project management at  
403 agencies, I started my own consultancy. I also became more  
404 involved locally, taking board positions at the Art Directors  
405 Club, speaking at DC Tech and RefreshDC, and co-organizing  
406 the DC Lean Startup Circle, which today includes 1,200  
407 entrepreneurs.

408 In short, tech is my livelihood job and I have created

409 jobs because of it too. For example, in 2010 alone, my first  
410 year in business, I hired five people as subcontractors. I  
411 co-launched Workspace Design Magazine. This monthly online  
412 publication is about the evolution of work and it now employs  
413 three people. I also founded NovaCowork, a group of nearly  
414 150 entrepreneurs who meet each Wednesday at Iota Cafe in  
415 Clarendon where companies have been launched, jobs created  
416 and partnerships are formed. You are welcome to attend.

417 In fact, the startup I co-founded in 2011, Fast  
418 Customer, came from one of those meet-ups. Paul Singh, Aaron  
419 Dragushan and I built a mobile app that with a single tap  
420 connects you directly with a human in customer service at  
421 more than 3,000 companies. We are using mobile technology to  
422 change customer service calls for the better, and we have  
423 hired eight people to help us.

424 When we decided to raise money, 500 Startups, an  
425 accelerator and fund in Silicon Valley, led our seed round.  
426 I am now a resident mentor there as well, coaching startups  
427 on everything from positioning to pitching. I mention 500  
428 Startups because it is deploying smaller sums of cash faster  
429 and it is actively working to involve more women, two  
430 characteristics that are atypical within the traditional  
431 venture capital world. Plus nearly a third of its portfolio  
432 includes women-led startups, three of the six partners at 500

433 are women, and they launched a campaign in July to bring more  
434 women into the angel investing community through coaching and  
435 educational programs.

436         That organizations like 500 Startups are committed to  
437 taking on this challenge of supporting female founders with  
438 useful apps and that I can be a part of influencing that  
439 future is invigorating. Plus with more women like Facebook  
440 Sheryl Sandberg and Yahoo's new CEO Marissa Mayer leading the  
441 way, I further my own resolve to catapult other smart women  
442 into decision-making positions within tech.

443         Of course, I am here today because I believe you can  
444 help too. Earlier this year, I spoke with Jennifer Boss, a  
445 tech-savvy woman whose job with the D.C. Mayor's office is to  
446 identify new innovations fit for public-sector applications.  
447 Fast Customer is a D.C.-founded company that already connects  
448 callers to agencies such as the IRS, which generates  
449 thousands of calls annually. Surely we could not only help  
450 agencies better connect with their people but politicians  
451 with their constituents. Again, the possibilities are  
452 endless. However, we, like Instagram, which just sold for \$1  
453 billion, operate without a dedicated enterprise sales staff  
454 so after a few promising conversations about how we could  
455 modify Fast Customer for real-world pilots in the public  
456 sector, we were then placed into the standard procurement

457 process required of any vendor who wants to do business with  
458 the government. This was startling because they had  
459 approached us yet we and they were hampered by procurement  
460 rules that couldn't accommodate new products like ours. We  
461 couldn't demo an out-of-the-box product with clear public-  
462 sector features because it didn't exist so we were forced to  
463 end discussions.

464         The contrasting reality is that we already were in talks  
465 with telecom giants in the public sector including Verizon,  
466 Comcast and Telstra. These companies recognized that  
467 innovation and agile process in which we mobile startups  
468 work, which meant we could continue building, learning and  
469 iterating at the speed of mobile, the speed of our world  
470 today. That we might expand internationally before we could  
471 meet rigid expectations in our own backyard is discouraging  
472 but we believe there are massive opportunities to be realized  
473 if government removes barriers that hinder our tech companies  
474 and brilliant people from engaging with the public sector.

475         What can we do together to find compromise and more  
476 quickly bring tech innovations into our government? Thank  
477 you.

478         [The prepared statement of Ms. Hay follows:]

479 \*\*\*\*\* INSERT 2 \*\*\*\*\*

|  
480 Mrs. {Bono Mack.} Thank you very much, Ms. Hay.

481 Mr. Ramsey, you are recognized for 5 minutes.

|  
482 ^STATEMENT OF REY RAMSEY

483 } Mr. {Ramsey.} Thank you very much. Madam Chairwoman  
484 and the committee, I applaud you for having this session and  
485 it is very important.

486 My name is Rey Ramsey. I am the CEO of TechNet. I  
487 appreciate you all mentioning the study that we put out last  
488 year. That study has sparked a lot of conversation looking  
489 at the amount of jobs. I mean, the headline from that study  
490 is that almost 500,000 jobs have been created since 2007.  
491 And so what I want to do is, since my testimony has already  
492 been submitted, I just want to talk to you about a few things  
493 that I think are really important and highlight those issues.

494 We have gotten to this place, which is a pretty good  
495 place for the country to have this number of jobs and  
496 growing. We have gotten here because it has been a wonderful  
497 confluence of several things happening. One, you have the  
498 technology itself, much of which has been proudly invented in  
499 the United States. You also have this consumer demand for  
500 ease of transaction where consumers in so many different ways  
501 are saying make this easy for me and meet me where I am, this  
502 sort of mobile sensitivity. We now have 50 percent of all  
503 the phones are smartphones. That is up from 17 percent just

504 a few years ago, so explosive growth. And so with this  
505 confluence and with entrepreneurs like Ms. Hay and others  
506 that are out there inventing and looking for economic  
507 activity, we have got several great benefits: jobs at the  
508 top of the list, economic activity. But when you look at all  
509 the advantages, you step back and you say there are two  
510 things from a policy perspective we need to focus on. One  
511 is, how do we continue to maximize what is happening, how do  
512 we continue to take advantage of this, are there things that  
513 policymakers can do. And then with your other set of eyes,  
514 take a look at, are there any threats to this, and you say to  
515 yourself, what do we need to do to mitigate potential  
516 threats, and I just want to comment on a few things.

517         One is, and I think the way to look at this from my  
518 perspective is from a policy perspective, there are two  
519 things. One would be focus on the necessary infrastructure  
520 to keep this going and then the second issue I would say is  
521 an issue of access. So I just reduce it to that. If I am in  
522 an elevator with you, I would say it is infrastructure and it  
523 is access.

524         Under infrastructure--and you have heard part of it--and  
525 it all revolves around capital. You have human capital,  
526 which you heard earlier, which is the workforce issue. One  
527 of the things that will impede the growth even in the apps

528 economy--because people tend to think of the apps economy as  
529 only the little guys, the small companies. Well, they have a  
530 need for workforce but so do large companies as well. So we  
531 are in a human-capital crunch being able to get the kind of  
532 workforce that we need and that is a string policies all the  
533 way from our school systems all the way through to college,  
534 how many engineers, how many systems programmers and even  
535 some of our targeted training programs. So I think it  
536 creates an opportunity to take a look at that human-capital  
537 ecosystem and say how is it working for this, how are we  
538 utilizing community colleges, are there training programs  
539 that could be targeted. Look at existing agencies and ask  
540 ourselves whether it is the SBA and others, have they caught  
541 up with the apps economy and then ask the fundamental  
542 question: if there is an entrepreneur out there and she is  
543 sitting at home and she is thinking I can get into this too,  
544 and that is one of the beauties of this, where could she go  
545 in our communities or in our society to get in the game, and  
546 that gets to the access issue.

547       There are segments of the population that could join  
548 this job explosion, create additional income for their homes  
549 and for their families if they knew about what existed or if  
550 we had programs that were targeted to get to them. We still  
551 need to see more women participating in this workforce and in

552 these opportunities, so that is just a question of outreach.

553           Back to the issue of infrastructure, without getting  
554 into all the details, Congresswoman Blackburn started off by  
555 saying ``spectrum.'' That is crucial. Broadband, crucial.  
556 We still have too many rural areas of the country where  
557 people aren't able to take advantage because they don't have  
558 the broadband connections, the issue of broadband adoption.  
559 So there are some infrastructure issues that from a policy  
560 perspective we need to make sure are in place along with  
561 workforce issues. There are some other issues like  
562 previously and other sorts of things. Just making sure that  
563 when we look at any of these policies that we look at them  
564 through the prism of will this continue this movement toward  
565 job creation and economic activity or will there be  
566 unintended consequences.

567           The last thing I will say is, what is exciting about  
568 this app economy is that it is not only having great benefits  
569 in the commercial sector, it is having terrific benefits from  
570 a social innovation perspective where it is helping with  
571 health care, issues like diabetes and people's drug regimens  
572 and other things like that. So it is a double win for  
573 society.

574           Thank you very much.

575           [The prepared statement of Mr. Ramsey follows:]

576 \*\*\*\*\* INSERT 3 \*\*\*\*\*

|  
577 Mrs. {Bono Mack.} Thank you, Mr. Ramsey.

578 And Mr. Reed, welcome back to the subcommittee. It is

579 nice to have you back. You are recognized for 5 minutes.

|  
580 ^STATEMENT OF MORGAN REED

581 } Mr. {Reed.} Thank you, and I have to say before I even  
582 get to my time which is that don't steal all our people for  
583 your big companies. Us small folks still need employees. We  
584 have to be able to compete.

585 Chairman Bono Mack, Ranking Member Butterfield,  
586 distinguished members of the committee, my name is Morgan  
587 Reed and I am the Executive Director of the Association for  
588 Competitive Technology, a trade association representing over  
589 5,000 app makers from around the world. Our members are on  
590 the forefront of the most exciting tech sectors to emerge in  
591 a generation. You may have already heard these numbers but  
592 they bear repeating. We are a \$20 billion industry today  
593 that didn't exist 4 years ago, and analysts expect us to hit  
594 \$100 billion by 2015.

595 Now, we all know about the rise of smartphones, and I  
596 have already seen several of you checking your email, and we  
597 know about reading maps and looking at sharing photos and  
598 managing everyday activities through wireless devices. But  
599 what we are seeing now is an apps economy that is moving  
600 beyond games and consumer tools to become a critical part of  
601 enterprise, health and financial services.

602 In order to provide the committee with new insights, we  
603 conducted a study we called Apps Across America in  
604 preparation for the hearing, and I thank several of you for  
605 quoting us on some of the numbers that we have gotten out of  
606 here, but to focus on a couple, we all know that small  
607 businesses are the engine of job creation occupying over 70  
608 percent of the top-selling apps, and we found this is even  
609 more pronounced in highly innovative activities where large  
610 revenue sources are available. This is a phenomenon  
611 happening outside of Silicon Valley, and with all due respect  
612 to California, I love the fact that we have got developers in  
613 Louisiana, in Mississippi, in Michigan, and I like the fact  
614 that we are seeing the spread move around.

615 In your briefing folder, you will find a set of baseball  
616 cards that we created to underscore this point. There is one  
617 for every district represented, and I couldn't find any of  
618 that horrible gum we all had as kids, but I tried. You know,  
619 Marsha Blackburn was here, and I want to focus on the way  
620 that these folks are looking at it. You know, from her  
621 district, we have a true MVP. They have had over 30 million  
622 downloads on apps that they have created. This company in  
623 her district, Mercury Intermedia, huge success. This is a  
624 MVP, a perennial all-star. In New Hampshire, we have Police  
625 Pad. Zco is building an enterprise app that puts iPads in

626 police cars and replaces all of those laptops that you see in  
627 cars--better battery life, more efficient, all sorts of new  
628 sensors, great tool. These guys are definitely an all-star.  
629 In Bono Mack's district, we have got a rookie card, and with  
630 Apps 111, this is a company that I am looking forward to  
631 becoming more successful. And just like any rookie card, I  
632 don't just want the card to become successful, I want the  
633 business to become successful. I would love for members to  
634 be able to trade that card. I remember when they started.  
635 Now they are 100,000 people or there are 50,000 people. So  
636 when you look at this deck of cards in front of you, this is  
637 your MVPs, this is your starting lineup of your small  
638 business community today.

639 Now, we all now about Apple's innovation and the  
640 ubiquity of Android but, you know, it is worth mentioning  
641 that it is not just those two. BlackBerry is the go-to  
642 platform for security-focused customers and earns more  
643 frankly for our developers per app than any other platform,  
644 and of course, just last week Microsoft and Nokia kind of  
645 upped the game, unveiling the Lumia 920, which featured  
646 wireless charging, which I am so happy for, and of course had  
647 near field communications so that you can actually purchase  
648 goods and services directly from your phone without having to  
649 pull out your credit card at all. And of course, today after

650 this hearing, we will see what Apple does to up the game  
651 again. They have got Passbook on there that allows mobile  
652 payments to pay for coffee at Starbucks, but what I love is  
653 it features an app that allows you to check in at the airport  
654 directly built into a secure feature on the phone.

655         So what is next? Mobile health care apps are going to  
656 change the way doctors interact with patients. Companies  
657 like AirStrip have built an app that allows doctors to  
658 monitor fetal heart rates in women in labor directly on their  
659 iPad. Enterprise will use phones and tablets at every level.  
660 Aegis Software has built an app that allows them to monitor  
661 an entire factory floor directly from the iPad.

662         And I brought this. This is July's Fortune magazine  
663 cover, and it has declared the death of cash. Well, you  
664 would say, how is that possible? But PayPal, Intuit and  
665 Square have turned a mobile phone or an iPad into a point of  
666 sale and a cash register. See those little things on the  
667 top? Swipe your card and away you go. That is your cash  
668 register.

669         You know, in the movie Princess Bride, the protagonist  
670 famously responded to the word ``inconceivable'' with the  
671 retort ``You keep using that word. I do not think it means  
672 what you think it means.'' But for the future of the apps  
673 economy, ``inconceivable'' is the most appropriate word.

674 Industry and government cannot yet conceive of the ways that  
675 apps will become part of our lives. From basic consumer uses  
676 to health, travel, education and even talking to one another,  
677 our app economy built by small businesses seeing and meeting  
678 a specific need has endless and inconceivable possibilities.  
679 We hope to keep creating never before conceived of products  
680 and we hope the government can be a partner where needed,  
681 take advantage of products where they help service the  
682 public, and take a light-touch approach everywhere else.

683 Thank you for your interest, and I look forward to your  
684 questions.

685 [The prepared statement of Mr. Reed follows:]

686 \*\*\*\*\* INSERT 4 \*\*\*\*\*

|  
687           Mrs. {Bono Mack.} Thank you very much to the panel, and  
688 the Chair will now recognize herself for the 5 minutes for  
689 questions, and I will also point out to anybody standing that  
690 there are plenty of seats available. If they say  
691 ``reserved'' they were reserved for you, so welcome.

692           I just wanted to start with something kind of shameless,  
693 and that is showing everybody this amazing photograph of my  
694 grandson, Little Sonny, and the only reason I am doing this  
695 is, I was babysitting him a few nights ago and he decided to  
696 have a crying fit, so I did anything any good grandmother  
697 would do is, I went right to the App Store and downloaded a  
698 baby soother. It didn't really work, but my point was that  
699 we are becoming habituated. You have a problem; you go to  
700 the App Store and you find a solution to any problem you  
701 might have.

702           Now, not unique to babysitting, you know, guys should  
703 baby-sit their grandbabies too, but I am going to start with  
704 you, Ms. Hay. What is the key to getting more women involved  
705 in this area of tech?

706           Ms. {Hay.} I think it is outreach. I think most women  
707 I have met have almost always had another woman or a man  
708 mentor them, myself included, bringing them into the tech  
709 scene. There are a lot of women in tech groups in D.C. I

710 know of. It is a matter of that sort of grassroots effort on  
711 the ground and at the same time making some programs that  
712 help to educate women on the opportunities that exist out  
713 there for them in tech. There is a general, I think, fear  
714 that women have that it is almost a badge of honor that men  
715 wear in Silicon Valley that they are going to be an  
716 entrepreneur, and if they fail, that is okay, and women  
717 generally tend to be more conservative. They take a more  
718 strategic approach to ensuring that they are building a  
719 business that is going to last and it is going to be  
720 fruitful. So I think, you know, balancing the programs that  
721 are available to them so that they can move a little more  
722 quickly and comfortably into the tech space I think would be  
723 a great step in the right direction.

724 Mrs. {Bono Mack.} All right. Thank you. Others have  
725 testified that apps jobs do not require being located in  
726 specific geographic locations and in fact are being created  
727 all across the United States. This is again to you, Ms. Hay.  
728 Do you see any future risk to the ability of app developers  
729 not located in the major cities producing apps because they  
730 are not part of a technology cluster?

731 Ms. {Hay.} I don't, no. In fact, Fast Customer, we  
732 have an entirely distributed team so I have a developer in  
733 Reston and then we have staff in Florida, Arizona, Hawaii and

734 one right now walking around Cambodia somewhere. So for us  
735 to be successful, I think, in the mobile economy because of  
736 its speed requires a smart team, requires resources, doesn't  
737 require a specific geographic location, and it doesn't mean  
738 that we don't get together as we do in fact every quarter  
739 some amount of time to get together because, you know,  
740 getting together in person, great ideas can happen in a way  
741 that is more organic than what you can accomplish on line but  
742 that is also not a prerequisite to success.

743 Mrs. {Bono Mack.} Thank you.

744 Mr. Farago, a number of observers have compared the  
745 growth of the app field to the tech bubble of the 1990s.  
746 Would you agree with that, and do we face a danger of a burst  
747 here, and if so, are there any steps the industry or  
748 policymakers should take to avoid that?

749 Mr. {Farago.} Yeah, we talked about this a bit. We  
750 don't feel there is a direct comparison to the Internet era  
751 and that we don't face a bubble for several reasons. I would  
752 say first if you think about the amount of broadband-  
753 connected consumers at that time, there were about, I  
754 believe, 30 million. Now there is over 1 billion, so we have  
755 a totally different size market, to begin with. Secondly,  
756 you know, in that era, the real way to make money was to  
757 collect a bunch of eyeballs and then hope that advertising

758 revenue would follow. In this era, advertising really hasn't  
759 kicked in as a revenue model and we are already seeing, you  
760 know, by our estimations, app developers last year made about  
761 \$5 billion worldwide directly to them, 80 percent of which  
762 was made from what we call premium sales selling an app, you  
763 pay \$2 before you get it, or in-app purchase or  
764 microtransaction, you buy add-on content afterward. This  
765 year we are forecasting developers directly will make about  
766 \$10 billion, double that again around 80 percent or plus.  
767 Advertising will take off and add a layer and so that will  
768 certainly help.

769         Also, if you compare the economic climates, you know,  
770 really, arguably, the app economy was built--you know,  
771 flowers have bloomed on top of the rubble of the largest  
772 worldwide financial collapse any of us can remember, and  
773 whereas, you know, it was pretty much the go-go time in the  
774 1990s where there was a lot of venture capital flowing. So  
775 you have almost what has been proven to be a really  
776 recession-proof business model to begin with, or economy,  
777 really.

778         And finally, customers are able to pay and not just  
779 willing to pay, they have demonstrated they can. Every one  
780 of these devices has a credit card or gift card associated  
781 with it on average whereas, you know, back in the Internet

782 days, you know, products, you know, all the services people  
783 assumed would be free and there wasn't that kind of payment-  
784 enabled market.

785 Mrs. {Bono Mack.} Thank you, and my time is expired so  
786 the Chair now recognizes Mr. Harper for 5 minutes.

787 Mr. {Harper.} Thank you, Madam Chair, and thank you to  
788 each of you folks for taking time out of your busy schedule  
789 to be here, and Mr. Reed, thank you for pointing out the  
790 cards, particularly Mississippi State University athletics.  
791 I don't think you had time in your testimony to say anything  
792 about State beating Auburn 28-10 Saturday, but perhaps we can  
793 cover that. Perhaps we can find some statistics on the game  
794 on that app.

795 I also want to say, Ms. Hay, thank you for the work you  
796 are doing. I have a 20-year-old daughter. I have made it a  
797 point to make sure that she has opportunities to meet with  
798 successful women. It helps her in that regard and so thank  
799 you for that effort. I think that you may be getting a call  
800 from her some time in the future when she is visiting.

801 I do want to talk to you if I can for just a second, Mr.  
802 Farago, if I may. You said in your testimony, you mentioned  
803 the recent survey that was done by Flurry which found that 71  
804 percent of the companies polled agreed with the statement  
805 that they needed more employees with technical training, and

806 I wanted to bring to your attention the work that Mississippi  
807 State University has been doing in the app field. Over the  
808 past several years, Dr. Rodney Pearson, who is a professor at  
809 Mississippi State in the Department of Management and  
810 Information Systems, I know he has worked diligently to  
811 develop courses in programming as well as business and  
812 entrepreneurial classes to prepare students for a job in the  
813 app sector or at least for an interest in the app field. Dr.  
814 Pearson and Mississippi State have been seen by many as a  
815 business and app incubator. So a few questions I have. One,  
816 is Mississippi a special case or do you see many other  
817 universities offering similar courses at this time?

818       Mr. {Farago.} Well, you know, I don't have specific  
819 anecdotes about other universities but those kinds of  
820 innovative programs are exactly what we need. I think it is  
821 a supply-and-demand issue. I think that, you know, mostly  
822 when you grow up in the United States, you think about being  
823 a doctor or a lawyer, you know, maybe go to business but the  
824 technology field, growing the awareness of technology,  
825 encouraging those to get involved, K-12, making sure the  
826 foundation of fundamentals is there enables, I think, you  
827 know, great programs like the one Dr. Pearson is leading at  
828 Mississippi State to be possible. By the time that student  
829 comes to that university, they can and will be able to take

830 advantage of, you know, what is a great, lucrative job field.

831           Mr. {Harper.} How do you see this playing into the  
832 future growth of the app sector, this being offered in this  
833 university and perhaps others? Where do you see that taking  
834 the future, meeting those needs that you see in the app  
835 sector?

836           Mr. {Farago.} Yeah, if I understand your question  
837 correctly, you know, I see it inside the United States as  
838 enabling a concept we call stake shoring. You know, it was  
839 mentioned that California and New York are the two main hubs  
840 for technology innovation and clustering of technology  
841 workforce talent. At the same time, I believe the median  
842 house costs about half a million dollars in each of those  
843 markets. You know, much like you have a match program for  
844 folks coming out of medical universities to go to all kinds  
845 of places around the United States to offer the same level of  
846 care, I think that the concept of stake shoring can really  
847 help, and as universities look to become more competitive in  
848 the education market, a lot of universities like Mississippi  
849 State can and should invest in the kinds of programs to  
850 attract that talent, and that will keep more talent in the  
851 local economy and allow that entrepreneurship to basically  
852 spread across the United States.

853           Mr. {Harper.} How do we encourage other universities to

854 be involved in this field and to move in that direction?

855         Mr. {Farago.} You know, I think there is probably a  
856 couple ways. I mean, I think education of educators is a  
857 good start. I mean, I think a hearing such as this one,  
858 sharing those statistics, the educational field from my  
859 experience is pretty connected as a cohort, as a group. I  
860 think that government could definitely help with maybe  
861 partnering with the private sector, for example, and there  
862 could be matching programs to create more endowments and, you  
863 know, education, you know, basically paying for a student's  
864 education. You could creatively after the fact help--you  
865 know, if you have a company that is investing in an area  
866 local to a university and they have a partnership with that  
867 university, for example, you know, there could be some sort  
868 of increased modest taxation of that developer's salary to  
869 pay back, you know, what was a gift basically for the cost of  
870 education and so on. There are a number of ways I think  
871 those who have skin in the game, private sector and  
872 university, can get together and figure those things out.

873         Mr. {Harper.} I want to thank each of you for being  
874 here. With that, I yield back, Madam Chair.

875         Mrs. {Bono Mack.} Thank you very much, and the Chair  
876 recognizes Dr. Cassidy for 5 minutes.

877         Dr. {Cassidy.} I had a really nice conversation

878 yesterday with a couple of app developers from my own State,  
879 and just a couple things that I would like your perspective  
880 on, not that there will be necessarily be an answer, but  
881 clearly we are coming to you for your perspective, which is  
882 key. One of the things we have had several hearings on is  
883 privacy. They kind of alerted me to the fact that is really  
884 an issue: who owns the data? If I put a picture up, do I  
885 own the picture or does the app developer or does the server?  
886 Who owns the data? So any thoughts on the privacy? Because,  
887 again, when I get a 50-page document and I click ``I agree''  
888 at the very bottom, I have not read those 50 pages, I have  
889 just clicked ``I agree'' and I almost think that might be a  
890 strategy by the attorneys to get me to agree; they just  
891 overwhelm me. Once I actually read it, and it was so  
892 redundant, some of the pages were literally cut and pasted  
893 multiple times and we are thinking this is just a strategy to  
894 overwhelm me, and it frankly works all the time.

895         So that said, what are your thoughts as to who should  
896 own that data? How personalized should we allow it be?  
897 Because that is something that we have pursued in this  
898 committee, that discussion.

899         Mr. {Morgan.} Well, I think it is kind of two questions  
900 in one. You have a question of who owns what, and that is an  
901 important question. We have always in this country had a

902 kind of a pretty straightforward attitude towards information  
903 that I willingly provide. If you think of this way, if you  
904 had a 13-year-old daughter and she walks into Forever 21, or  
905 I guess I should say 16-year-old daughter walking into  
906 Forever 21 and they get her information and her email address  
907 to send her information, it had nothing to do with online, it  
908 didn't have anything to do with a mobile app, but Forever 21  
909 now has information. They have the store that she bought at,  
910 what she purchased, her email address, and Forever 21  
911 considers that part of their information, and again, she  
912 didn't read through a 50-page click memo or anything, she  
913 just signed up right there in the store. So we have had a  
914 pretty good tradition in this country of allowing folks to  
915 enter into those kinds of agreements freely because they  
916 benefit from it.

917         So you have that question of, you know, who owns the  
918 data and how do they collect it, but I think the other side  
919 is, what we are focusing on is, how do we do a good job of  
920 being transparent, which you pointed out wasn't done well in  
921 the example you cited. A 50-page document is not  
922 transparent. So what we are working with developers on, and  
923 in fact this Friday, I will be speaking to an audience of  
924 about 500 developers at Mo Def Tablet here on the East Coast  
925 and I will be talking about ways to increase transparency to

926 build better trust. So on the trust aspect, we need to do a  
927 better job. We are working on it, and in fact, we are  
928 participating with the White House as part of the NTIA multi-  
929 stakeholder process to find best practices and common ground  
930 between the entire stakeholder community to find ways to take  
931 a small device and present a 50-page chunk of information in  
932 a way that is absorbable, understandable and usable by  
933 consumers. And I think once we get there, we will be able to  
934 help your person who commented about 50 pages have a better  
935 sense of what is happening and be more comfortable with it.

936       Mr. {Ramsey.} I would like to comment on that.  
937 Obviously, it is a complex issue and, you know, as my  
938 colleague here, Mr. Reed, said, you know, you have got the  
939 transparency issue and you have got the consent issue, and  
940 they are interwoven. What is important while we are trying  
941 to sort through how to get to a common understanding of  
942 consent and transparency is to keep a few things in mind that  
943 we need to do along the way. One is, we need to make sure  
944 that everybody understands that the business models are and  
945 how these business models rely on certain data. They are not  
946 mutually exclusive but we need to understand that because  
947 there are unintended consequences so all this growth that we  
948 are describing, whether it is small businesses or larger  
949 businesses are all part of this ecosystem of mobility, and

950 that is really what the issue is. I mean, we are having this  
951 conversation about apps but it is really all about the mobile  
952 revolution, and apps are a part of the mobile revolution.

953 The other issue would be, we have got to do more to have  
954 citizens understand, consumers understand not only what their  
955 rights are but what their responsibilities are and that they  
956 are leaving behind a digital footprint all the way from--

957 Dr. {Cassidy.} So you are suggesting that indeed the  
958 developer or the server does own the data. If there is a  
959 digital footprint, you are suggesting that footprint is no  
960 longer mine?

961 Mr. {Ramsey.} It is data that exists, and the question  
962 is where that data will reside, so I am not using the word  
963 ``ownership.'' It is about where the data resides.

964 Dr. {Cassidy.} So that picture that she just showed us,  
965 could that be used by the person where she stores it as a  
966 Gerber baby commercial without her permission? Do you follow  
967 what I am saying? So is that picture of her grandchild--by  
968 the way, she is the best-looking grandmother I have ever  
969 seen. With that said, that picture of her grandchild, could  
970 that in turn--do her daughter and son-in-law or whatever, or  
971 does the person on whom it is stored get to sell it to Gerber  
972 as the next image?

973 Mr. {Ramsey.} I can't comment on whether or not they

974 are going to sell her--the Congresswoman owns her picture.  
975 The question is where that resides, and it resides in  
976 multiple places so it is not a question of who owns it, it is  
977 more about what the data is being used for and understanding  
978 for the Congresswoman in this example what does she know,  
979 which means, you know, in favor of her knowing what the basis  
980 of the bargain is, and that is the transparency that I am  
981 talking about, what her rights and responsibilities are.  
982 That is what I am trying to sort out. It is not about that  
983 another company would own the picture.

984 Dr. {Cassidy.} I am still not sure that we know that  
985 the company could not use that picture, but I am way out of  
986 time, and I had another question but I will yield back.

987 Mrs. {Bono Mack.} We will do a second round after we go  
988 through everybody the first time, and thank you very much for  
989 the questions, and the Chair recognizes Mr. Kinzinger for 5  
990 minutes.

991 Mr. {Kinzinger.} Well, thank you, Madam Chair, and I  
992 thank you all for coming out. I think this is a very  
993 important issue we are discussing.

994 You know, one of the concerns as we have seen apps  
995 develop, we obviously see and many of you have testified that  
996 it is really going to be generating GDP growth. It is kind  
997 of the next generation of where we are seeing a lot of jobs

998 come in. I have a lot of cool apps on my phone that I use  
999 for a lot of various things, and you know, if you ever find  
1000 yourself like with the need for any kind of data or any kind  
1001 of organizational tool, you will find it on your app phone  
1002 somewhere. Somebody has created it. So I think it is an  
1003 outstanding obviously driver of the future.

1004 First question to Ms. Hay. What is the chief barriers  
1005 as you look at the environment out there? What would you say  
1006 is the chief barrier for somebody who wants to develop an app  
1007 to enter or to expand their business and what do you hear  
1008 from some of these entrepreneurs as far as what are their  
1009 frustrations, where are their concerns, what is their wish  
1010 list for the future of this?

1011 Ms. {Hay.} Well, I think it depends on the scope of the  
1012 kind of project they want to work on, so in talking to some  
1013 app developers who are prototyping a small idea to really  
1014 solve a very niche problem, there are relatively few  
1015 barriers. Being able to ask Google the right question to get  
1016 the answers is really the barrier. But I think for the  
1017 larger companies that are trying to solve more widespread  
1018 educational, health care types of problems where there are  
1019 embedded relationships with big guys like Google, Microsoft,  
1020 I think the barrier to entry is having the skill set in the  
1021 case I was talking about with Fast Customer, having the skill

1022 set to be able to have the--build the relationship, be able  
1023 to survive long enough, a long enough financial runway to be  
1024 able to develop those relationships over time and really be  
1025 able to influence change. So I think that that barrier is a  
1026 much more social, even economic one than technical for sure.

1027 Mr. {Kinzinger.} I guess I will ask the rest of you  
1028 maybe the same question to see if you are all in agreement or  
1029 if any of you have an idea in mind of saying hey, here is how  
1030 we make it easier without, you know, I guess the wild West of  
1031 it. Mr. Ramsey, do you have any input on that question about  
1032 any barriers that exist?

1033 Mr. {Ramsey.} Yes, Mr. Congressman, I think, you know,  
1034 as was mentioned earlier, you think of the barriers sort of  
1035 fall into their demographics, geographic demographics,  
1036 demographics based on gender, demographics based on race, and  
1037 so what we have to do from a policy perspective is make  
1038 information more available so that there are women,  
1039 minorities and others who but for not knowing what is  
1040 available to them could be in business. And so one of the  
1041 things is just making information available. If there are  
1042 programs like the Congressman from Mississippi was saying at  
1043 the college, we need from an access perspective make sure  
1044 that women would know about that program. And so what I  
1045 find, and I have done work in inner cities and other places

1046 where people just don't know about what is out there. And  
1047 then I think the second thing is just making sure the basic  
1048 infrastructure is in place so when we look at the broadband  
1049 maps, you can't do this if you don't have the right access.  
1050 You can't do this if spectrum is an issue, you know, in your  
1051 area. So from a broad policy perspective, you have big  
1052 infrastructure issues to make sure in place, and then from an  
1053 access outreach, a big part of that is comfort and  
1054 information, having people feel comfortable.

1055 Mr. {Kinzinger.} So if you had your wish list, it would  
1056 be marrying the ability to get to the Internet with the skill  
1057 set to do what is important to present this app of course  
1058 with the folks who may have the idea. So somebody that may  
1059 not have access to spectrum may have a great idea and they  
1060 have no idea how to get that out of their head into action.

1061 Mr. {Ramsey.} That is exactly right, and this just  
1062 mirrors what happens in the offline world when someone is  
1063 just sort of living their life, they view an opportunity and  
1064 they go, oh, well, there is a need here, I am going to open  
1065 up a laundromat, oh, there is a need here, I am going to--

1066 Mr. {Kinzinger.} And how do I get there.

1067 Mr. {Ramsey.} And so it is how do you get there, and a  
1068 lot of people are still learning that there is not the  
1069 barrier to entry that there might have otherwise been and so

1070 this access to information is really important.

1071 Mr. {Kinzinger.} And I just have 40 seconds left. I  
1072 want to ask Mr. Reed and Mr. Farago if you guys have input on  
1073 that as well.

1074 Mr. {Reed.} Well, I want to follow up with what Rey  
1075 said, and I think there are some characteristics. I want to  
1076 look a little further into the future. Spectrum is a huge  
1077 part of it. If I can't get my app into an enterprise--and I  
1078 want to remind you that I think the big areas--we are moving  
1079 away from 99-cent apps into where we are talking about  
1080 critical applications for business, for health, for financial  
1081 services. So the problem is, if I don't have the  
1082 infrastructure, I can't get in there. The second thing is,  
1083 if I'm new in mobile health, I need to make sure that the FDA  
1084 moves quickly and that they do a fast approval process. And  
1085 finally, as I look down the roadmap, I need to make sure that  
1086 when I get my app into the marketplace, that it doesn't get  
1087 stolen. So we have all those issues, and those are places  
1088 where the government can play a role.

1089 Mr. {Kinzinger.} Mr. Farago, did you have anything to  
1090 add? Just a handful of seconds.

1091 Mr. {Farago.} Yes. I mean, I think the issues we see  
1092 are probably more business-oriented. Smaller companies don't  
1093 have the resources. That is why I think there is a lot of

1094 third-party service providers like ours who can basically put  
1095 a small company on equal footing with a much larger company  
1096 that has resources. So many of the services will basically  
1097 augment the developer's activity. They can focus on creating  
1098 great content.

1099 But there is a significant problem on the larger side of  
1100 the spectrum with big companies where they don't think mobile  
1101 first. They are not as nimble and fast as companies. They  
1102 are kind of suffering from what we call the innovator's  
1103 dilemma, and they don't, you know, sort of appreciate all the  
1104 possibilities. So companies on average that do better in the  
1105 mobile ecosystem are doing a better, smarter job of  
1106 leveraging what is on the phone. Open Table restaurant  
1107 reservation uses location to immediately give you a  
1108 reservation, for example, in the area you are now, and it is  
1109 companies who think like that who are doing better.

1110 Mr. {Kinzinger.} Well, thank you, and I am over my time  
1111 and I appreciate it and yield back.

1112 Mrs. {Bono Mack.} Thank you. The Chair recognizes Mr.  
1113 Guthrie for 5 minutes.

1114 Mr. {Guthrie.} Thank you, Madam Chairwoman. Thank you  
1115 for being here today. I was at another meeting on spectrum,  
1116 so I am sorry I missed some of the testimony but something  
1117 important to what you guys are talking about today as well.

1118 And I know in the written testimony, Mr. Ramsey, and I will  
1119 open this to everybody, you used the term ``freedom to  
1120 innovate'', and so I guess my question would be, what  
1121 restrictions are--we need to maintain the freedom to innovate  
1122 or you are going to have less innovation is what you are  
1123 saying, and what is actually--I mean, what restrictions are  
1124 you concerned about, particularly, and I think you just said  
1125 the FDA process and medical apps. What things could  
1126 government do intentionally or unintentionally--and I can  
1127 start with Mr. Ramsey or any of you--to restrict your ability  
1128 to innovate in the app world.

1129 Mr. {Ramsey.} Again, I think it is more of making sure  
1130 barriers are not in place and so as both--

1131 Mr. {Guthrie.} Such as?

1132 Mr. {Ramsey.} So if there is no broadband available, if  
1133 there is not adoption in your community, if you run into  
1134 spectrum where you can't get on, these types of barriers--and  
1135 then over time if you can't acquire a workforce, and so it is  
1136 more about making sure barriers aren't in place than it is  
1137 about let us push something, you know, toward you, and the  
1138 area of push would be making sure human capital is available,  
1139 making sure there are training programs, making sure people  
1140 know what is available at the community college, at the  
1141 university, and those sorts of things, but a lot of this is

1142 making sure we remove barriers.

1143           Mr. {Guthrie.} That is a good question, and I was going  
1144 to ask Mr. Farago something along that line since we already  
1145 got there. Are most people in the app world, are they  
1146 engineer graduates from Stanford or in Silicon Valley? What  
1147 do you find talent? Because this is something that, you  
1148 know, most States want to have jobs that people can do to  
1149 make living. Where do you find talent?

1150           Mr. {Farago.} Yes, I mean, you know, I think from  
1151 anywhere. The bar is pretty high at our company, you know,  
1152 the core. You know, it is not--in the startup world, it is  
1153 also about risk tolerance. I mean, there is a certain kind  
1154 of person. I carry my school debt. You know, I didn't go to  
1155 certain big companies because I really wanted to be an  
1156 entrepreneur so I am eating my debt still. So, you know,  
1157 there are enough people who are passionate in the startup  
1158 space but probably the population is more on the business  
1159 side. The technical side is where we struggle to fill enough  
1160 of the open positions we need. They traditionally come from  
1161 the best universities in the world. In the United States,  
1162 you have MIT, Cal Tech, Cal, Carnegie Mellon. I am sure I am  
1163 leaving out some fantastic universities--Stanford. We have a  
1164 lot of graduates from a lot of those places. And on average,  
1165 I would say we are getting ours from probably the cream of

1166 the crop, the universities of the world, and a lot of people  
1167 with advanced degrees. That is primarily who we end up  
1168 hiring on average. That is a lot of where they are coming  
1169 from.

1170 Mr. {Guthrie.} So there is not, in your space, the  
1171 technical degree? You are looking for degreed engineers from  
1172 the best schools in the world?

1173 Mr. {Farago.} That is true, but I should also say, you  
1174 know, Flurry is a little bit of a unique business. We are a  
1175 business-to-business company, and we build a lot of very  
1176 highly scalable technical infrastructure which requires  
1177 people who have a lot of what we call backend experience,  
1178 infrastructure experience, and it is very different than  
1179 someone conceiving of a very useful entertaining kind of  
1180 consumer experience who can leverage all that infrastructure.  
1181 So I would say, you know, we are atypical in that we are  
1182 building a lot more scalable systems that we have to imagine  
1183 tens of thousands of other companies leveraging seamlessly  
1184 that we provide to them so we have a little bit of a  
1185 different nut to crack.

1186 Mr. {Guthrie.} Ms. Hay?

1187 Ms. {Hay.} Thank you. I have two comments. Number  
1188 one, around your first question, I think one of the fears in  
1189 a lot of app developers is that they are going to be sued by

1190 the big guys who have a lot more money, big legal counsel,  
1191 ready to when they are innovating just pounce on them  
1192 immediately and squash that.

1193 Mr. {Guthrie.} Are there examples of that? Has that  
1194 happened?

1195 Ms. {Hay.} Oh, yes, absolutely. So on anything,  
1196 somebody might be on their way up and then someone they don't  
1197 know exists comes along with a lot more money and says hey,  
1198 that is infringing on this thing that we did 7 years ago and  
1199 therefore now you are dead. So that is, I think, an issue  
1200 that will continue to get more and should get more attention.

1201 And the second part is, I think, when it comes to  
1202 finding people, the computer science major that may have 10  
1203 years ago been all the rage is a dime a dozen. It is not  
1204 about finding people, it is about--because most of these  
1205 people, who are very talented technically, want to be  
1206 entrepreneurs because of the app economy. So they are not  
1207 trying to go get hired, they are trying to hire people. So  
1208 now you have got a scenario where folks like Living Social  
1209 are really capitalizing on this here locally because they  
1210 were having a hard time finding developers in the specialized  
1211 programming that they have so they created a program, a 3- to  
1212 4-month-long program called Hungry Academy and brought people  
1213 in, many of whom were women who had no technical skills, had

1214 never actually built anything before and paid them to learn  
1215 how to build on their program, and the early results just a  
1216 couple weeks ago that they finished was that these people  
1217 could walk right into their jobs and work on the program in a  
1218 way that people who were hired and had to be onboarded could  
1219 not.

1220 Mr. {Guthrie.} So you are talking about people coming  
1221 in, are they coming in with some degree or are they coming in  
1222 like high school graduate?

1223 Ms. {Hay.} Apprenticeship style.

1224 Mr. {Guthrie.} But they are showing up with just the  
1225 base skill?

1226 Ms. {Hay.} Correct.

1227 Mr. {Guthrie.} That is great.

1228 Ms. {Hay.} They don't have a technical skill otherwise.

1229 Mr. {Guthrie.} That is wonderful. That is absolutely  
1230 wonderful. Thanks.

1231 Mrs. {Bono Mack.} Thank you. The Chair recognizes MR.  
1232 Bass for 5 minutes.

1233 Mr. {Bass.} Thank you, Madam Chairman. Apps are  
1234 intellectual property. They are patented or copyrighted?

1235 Mr. {Reed.} Some. It depends. Trademarks, the full  
1236 panoply of law applies. Some of their ideas are copyrighted.  
1237 Some of it is copyright, some of it is patent, some of it is

1238 trademark.

1239           Mr. {Bass.} So when Ms. Hay talks about getting slammed  
1240 down, that is the basis of the problem, basically you're  
1241 copying somebody?

1242           Mr. {Reed.} Well, I think it is actually worth noting  
1243 that it is a double-edge sword. She is right. Sometimes the  
1244 big companies come in and slam us down. But the other  
1245 problem we have is when a big company bigfoots us, which is  
1246 the reverse problem, which is, we do something truly  
1247 innovative and then a large company essentially copies what  
1248 the small guy has done but he has the marketing power and the  
1249 wherewithal to really just own that space. And so on one  
1250 hand we need to watch out for the guy who comes behind us but  
1251 we also need to make sure that we have got covered our  
1252 ability to go to the big guy and say hey, don't crowd us out,  
1253 we want an opportunity to compete.

1254           Mr. {Bass.} Is there any role for us in dealing with  
1255 that issue?

1256           Mr. {Reed.} Yes, I will start and then I will hand it  
1257 over to Rey, but we definitely have needs when it comes to  
1258 improving the quality within the patent and trademark system.  
1259 Patents can be useful but the quality is from time to time  
1260 questionable, and with pendency at 2 years, you know, that  
1261 was halfway through the beginning of the app economy and they

1262 are still working on patents.

1263 Mr. {Guthrie.} Go ahead.

1264 Mr. {Ramsey.} Mr. Congressman, I would just say, you  
1265 know, I don't want to turn this into a discussion of sort of  
1266 the patent, you know, laws.

1267 Mr. {Bass.} Because it is in the jurisdiction.

1268 Mr. {Ramsey.} Right, and it is also very complex, and I  
1269 just want to again urge that we continue to look at the apps  
1270 economy as part of a broader ecosystem that builds on  
1271 mobility, that includes the entrepreneurs, big, small,  
1272 codependent ecosystem where they exist on each other's  
1273 platforms, each other's marketing ability, you know, etc. We  
1274 have got about a dozen app stores. Those stores reside with  
1275 so-called large companies who then work with big carriers.  
1276 We are all part of this ecosystem and it is important to  
1277 remember that. We at TechNet represent both small companies  
1278 and entrepreneurs. We have many startups and we also have  
1279 large companies, and we focus on policies that will create an  
1280 ecosystem where they will both thrive, and that is important  
1281 to the U.S. economy.

1282 Mr. {Bass.} Is the app economy going to go like the  
1283 economies of all industrial produces--engines, autos,  
1284 computers and so forth--and become consolidated and  
1285 commoditized?

1286           Mr. {Ramsey.} Yes, I think what--again, I don't have  
1287 the crystal ball, Congressman, but what is happening when we  
1288 look at the apps economy right now is we are segregating off  
1289 a number of different specific jobs and small businesses but  
1290 what is happening is, over time there will be this ubiquity  
1291 that all companies will basically be transacting in some  
1292 mobile application way. So as this continues, it will be  
1293 seamless so big companies that you think of will have apps,  
1294 little companies have apps. It is just the way to reach the  
1295 consumer. This is being driven by consumers saying meet me  
1296 where I am and give me a service in a way that I want that  
1297 service. So it creates opportunities for anyone in business.  
1298 That is the way this is moving.

1299           Mr. {Reed.} Congressman Bass, it is worth noting that  
1300 the largest app development shop on the East Coast is  
1301 actually in your district. Zco is incredibly successful.  
1302 Now, you haven't heard of it, but I promise you that apps  
1303 that are used by Members of Congress here and that are  
1304 probably on whatever smart device you have were actually made  
1305 by Zco. So on one level, there is going to be consolidation,  
1306 but on the other level, as Peter talked about earlier, the  
1307 low barrier to entry means that the apps that you might see  
1308 branded with a big name are actually written by a little guy,  
1309 and I think that is important to remember as we do this

1310 consolidation, that low barrier means I can build it even  
1311 while consolidation is happening.

1312 Mr. {Bass.} We are going to have a spectrum hearing  
1313 tomorrow in another subcommittee. To what extent is access  
1314 to spectrum or insufficient spectrum a major factor in this  
1315 industry?

1316 Mr. {Ramsey.} We are together. Mr. Reed and I are both  
1317 going big. It is a big issue, and it would be one of those  
1318 things that would circumvent this growth in this area if we  
1319 don't solve that issue.

1320 Mr. {Bass.} I don't have any further questions, Madam  
1321 Chairman.

1322 Mrs. {Bono Mack.} Thank you, Mr. Bass. The Chair is  
1323 pleased to recognize Mr. Markey for 5 minutes.

1324 Mr. {Markey.} Thank you, Madam Chair, very much.

1325 I will just throw this in because, you know, apps very  
1326 commonly access our sensitive information, our location, our  
1327 phone books, photos, web browsing history, and apps often do  
1328 this without prior notice and even when the app isn't  
1329 actively being used, and this morning I introduced  
1330 legislation, the Mobile Device Privacy Act, that requires app  
1331 sellers to disclose if monitoring software is installed when  
1332 a consumer downloads an app. Mr. Cassidy is concerned about  
1333 this. This is a bipartisan concern. And the bill also

1334 requires consumers to affirmatively consent before the  
1335 monitoring software begins collecting and transmitting  
1336 information so they should know what is happening. Otherwise  
1337 there really are significant societal issues that have to be  
1338 discussed, have to be debated on this committee. We have to  
1339 understand it. That is something where you don't need to  
1340 have a degree in computer science. You are saying gathering  
1341 all this information about a 13-year-old girl, you know, and  
1342 to be used for what purpose, and what notice was given. So  
1343 all of this absolutely has to be discussed. Those are just  
1344 the values that are our grandparents passed down, you know,  
1345 and keep getting passed down. This is not anything that is  
1346 more complicated than that.

1347         Mr. Reed, I worked with Kevin Martin, the Chairman of  
1348 the FCC, to make sure that when we were doing the 700  
1349 megahertz auction that we set aside a certain percent of it  
1350 that could be bid for but only by a company that had an open  
1351 architecture so that any app could get on board, and that  
1352 wound up being the Android. So what role did that play in  
1353 opening up the app market knowing now that there was no  
1354 gateway whatsoever, that you had an aperture through which  
1355 you sitting at home, you know, your own little company, your  
1356 own little idea? Did that really propel this revolution, in  
1357 your mind?

1358           Mr. {Reed.} I think that you have to look at the  
1359 ecosystem in its entirety. While there is some interesting  
1360 things that happened because of the 700 megahertz auction, I  
1361 think what really--if you really look at it, what the change  
1362 that occurred that really propelled us was the ability of our  
1363 product to get in front of a consumer.

1364           Mr. {Markey.} No, I know that. What I am saying is, if  
1365 you were just a smaller person, you didn't know how to  
1366 negotiate with Apple and you just wanted to get your app out  
1367 there, didn't that make it simpler for you to do so and  
1368 increase by maybe 100,000 the numbers of them that could get  
1369 out there almost immediately without having a gateway.

1370           Mr. {Reed.} I guess the reason that I would touch on  
1371 that is, I think that it is worth noting for this committee a  
1372 really important part about how the platforms play a role  
1373 because the problem you are describing is--we didn't have a  
1374 problem getting our app out. There was the Internet. I  
1375 could put anything out anywhere. It was finding a way to  
1376 actually get it in front of people. So I understand your  
1377 point but I--

1378           Mr. {Markey.} Do you understand what I am saying, Ms.  
1379 Hay? Mr. Ramsey, could you comment on that?

1380           Mr. {Ramsey.} Yes, Congressman. I would say  
1381 unequivocally that the principles of openness were important

1382 and continue to be important for this sector and moving  
1383 forward, and that was one of the key elements. As you well  
1384 know, there have been other issues connected to the notion of  
1385 openness that continue to be important.

1386 Mr. {Markey.} And I appreciate that. That is my  
1387 concept. Open architecture is important and the iPhone was a  
1388 closed architecture. So that is just the bottom line. It  
1389 gets more open as they see competition, they see all these  
1390 apps going over to the other devices. Do you agree with  
1391 that, Mr. Farago?

1392 Mr. {Farago.} I mean, as far as I understand the  
1393 question, you know, I agree that it's easier than it has ever  
1394 been for small entrepreneur--

1395 Mr. {Markey.} That was the goal of moving over to 700  
1396 megahertz.

1397 Mr. {Farago.} No, no, it has been great. It has  
1398 reduced barrier to entry and I would say if you compare it to  
1399 the manufacturing world where you have to pay for  
1400 manufacturing and distribution, you have to have a  
1401 professional sales force that negotiates with Best Buy or  
1402 whomever and--

1403 Mr. {Markey.} How many jobs do you think the 700  
1404 megahertz created? How many jobs, do you think?

1405 Mr. {Reed.} I think it is too hard to parse that.

1406 Mr. {Markey.} Is it, like, 25 jobs? Give us a  
1407 magnitude, an order of magnitude. What do you think it did?  
1408 This is a committee hearing on jobs and you are here  
1409 testifying saying, you know, you want to create more jobs.  
1410 So what did the 700 megahertz do in terms of creating more  
1411 jobs so we have some basis for knowing what our goals should  
1412 be or what the objective should be.

1413 Mr. {Reed.} I am happy to take that question back, and  
1414 we will sit down with smart people and come up with some  
1415 numbers.

1416 Mr. {Markey.} I think that is important. I think we  
1417 should answer that question because obviously that was the  
1418 goal that was presented to me by your counterparts five years  
1419 ago in terms of moving over that spectrum and making sure it  
1420 was open for an architecture that would invite hundreds of  
1421 thousands of people who otherwise might never have been able  
1422 to get through the maze of working in corporate America.

1423 Mr. Ramsey?

1424 Mr. {Ramsey.} Yes, I would say, Congressman, again,  
1425 there hasn't been a study of that, which I think it would be  
1426 worthwhile looking at, but I would add, in keeping with that,  
1427 that every time the FCC does an auction, it has a job  
1428 implication connected to it and so it is crucial and so that  
1429 was crucial spectrum to get out as well as some of the next

1430 in line spectrum as well.

1431 Mr. {Markey.} All I am saying is, it might have created  
1432 50 or 100,000 jobs because of the openness of that  
1433 architecture, and it is scattered in 50 States and 435  
1434 Congressional districts because it is obviously--

1435 Ms. {Hay.} I can say that people have moved from iOS  
1436 development to Android development because of the innovation  
1437 that is possible on that open architecture.

1438 Mr. {Markey.} And I appreciate you telling us that, and  
1439 that is really what this is all about. It is about job  
1440 creation, and we have always operated in a bipartisan basis  
1441 here, you know, in order to accomplish that goal, thinking it  
1442 through and trying to be smart as we go forward, and Mr.  
1443 Cassidy and I and I think others also have privacy concerns  
1444 as we get into this world deeper and deeper as well.

1445 I thank you, Madam Chair.

1446 Mrs. {Bono Mack.} I thank the gentleman, and I also  
1447 look forward to seeing the text of your bill and working with  
1448 you, and remind the gentleman that years ago I introduced an  
1449 anti-spyware effort which was very much along the same lines  
1450 of what you are talking about.

1451 Mr. {Markey.} No, I do. I appreciate that.

1452 Mrs. {Bono Mack.} So I look forward to seeing your bill  
1453 and working on it. The Chair recognizes myself for 5 minutes

1454 for a second round of questioning.

1455           But just to follow on Mr. Markey's line of questioning,  
1456 I am an Apple person. It took a long time for me to convert  
1457 from PC to Apple. I mean, once I got to Apple, I couldn't go  
1458 back. But I have chosen to be an Apple person and I have  
1459 chosen to use iTunes, and a lot of my friends are Droid  
1460 people. I mean, we had that choice. But to sort of counter  
1461 what Mr. Markey is saying, I knew that there was sort of a  
1462 walled garden approach in the App Store for Apple yet I  
1463 figured that they knew what they were doing, that they were  
1464 protecting both the growth of their platform, that my apps  
1465 somehow had the stamp of approval from Apple and I felt I  
1466 wasn't shopping in the wild, wild West of the open source.  
1467 So I chose that, and that was my choice, my decision, and  
1468 like everybody else, I guess we all play Words with Friends  
1469 on different platforms but I think it is important to note  
1470 that people make a choice and I had that opportunity.

1471           But I just want to turn a little bit to spectrum.  
1472 Clearly, that is very important to all of us. I was  
1473 wondering if anybody wants to comment on the thinking of  
1474 whether we need more licensed or unlicensed spectrum and  
1475 should it be in big blocks and what should guide our thinking  
1476 tomorrow? Do you have some questions and thoughts you'd like  
1477 to see tomorrow for our hearing?

1478           Mr. {Ramsey.} Madam Chairwoman, just a couple of quick  
1479 things and maybe I will stop in now for this hearing tomorrow  
1480 on spectrum. But I think it is clear that we need both  
1481 licensed and unlicensed. They both play a role in this  
1482 ecosystem and the FCC's proposals around incentive auctions,  
1483 in my opinion, is an innovative way of taking a look at how  
1484 we can better aggregate larger blocks of spectrum and more  
1485 efficiently get it out there into the marketplace. Obviously  
1486 that requires some give and take with other folks.

1487           And I just want to go back to what Mr. Markey had  
1488 brought up because it is too easy to commingle the words  
1489 ``open'' and I don't think--I can't speak for the Congressman  
1490 because he just walked out, you know, or myself when I was  
1491 talking about openness. The principles of openness were not  
1492 to say that Apple wasn't open because they are adhering to  
1493 net neutrality principles and so I think all these platforms  
1494 give consumers choice like the choice that you have  
1495 exercised. So I don't want sort of the old fight of net  
1496 neutrality and openness to be commingled with the  
1497 terminology. The principles of openness have continued to be  
1498 adhered to by all these platforms we are describing whether  
1499 it is Facebook and Google and Apple, so they have all been  
1500 doing I think a very good job in that regard.

1501           Mrs. {Bono Mack.} Mr. Reed, would you care to comment

1502 on spectrum?

1503 Mr. {Reed.} I will be really short and echo what he  
1504 said and say I want more and I want it now, and unlicensed  
1505 and licensed are things that we need to work on. Licensed is  
1506 really important because, bluntly put, I need guys in  
1507 hardhats digging trenches, pulling fiber and putting up  
1508 towers, and so ultimately that means that I need companies  
1509 that are willing to spend the money to build the  
1510 infrastructure that I will be on top of, so get me there and  
1511 get me there now because that is what we are going to need.

1512 Mrs. {Bono Mack.} Would either of you like to comment  
1513 on competitiveness with Europe and what Europe is doing, and  
1514 if we might lose sort of this race in this area? I guess a  
1515 number of European and Asian countries are being substantial  
1516 amounts of spectrum to market for commercial use. If we fail  
1517 to keep pace, will we lose our leadership role in this area?

1518 Mr. {Ramsey.} Madam Chairwoman, I would say there are a  
1519 couple of things we have to look at. One is obviously  
1520 government itself has a lot of spectrum and we have got to  
1521 look at how efficiently that is being organized, how much the  
1522 government needs so we can get that online. Then we have got  
1523 the issue of making sure we can acquire inefficiently used  
1524 spectrum that broadcasters are utilizing or not utilizing,  
1525 and that is where the auctions come into play, so we have got

1526 to get that back on online. And then lastly, we will not--  
1527 even with the most efficient allocation of spectrum from the  
1528 government, let us say the government does everything  
1529 perfect, with this explosive growth in the use of these  
1530 devices, which are all using greater and greater amounts of  
1531 spectrum, innovation and technology itself is going to be one  
1532 of the ways we are going to get through this. Spectrum  
1533 sharing, other sorts of forms of technology like that are  
1534 going to help us get through this problem. So we are going  
1535 to--this is where the private sector will continue to be  
1536 important. The very companies--and this is why I was  
1537 emphasizing early--that do not have this distinction between  
1538 big and small, these so-called small are going to be relying  
1539 on some of these other companies to continue to create  
1540 innovation around spectrum that is going to enable them to  
1541 flourish. So at the end of the day, we are all in this  
1542 together. So better allocation from the federal government,  
1543 the use of technology to get that out, taking spectrum that  
1544 is not being used smartly by the broadcasters, the all-of-  
1545 the-above approach will keep America competitive with that.

1546 Mrs. {Bono Mack.} Thank you.

1547 Dr. Cassidy, you are recognized for 5 minutes.

1548 Dr. {Cassidy.} Again, Madam Chair just spoke of how I  
1549 would choose to use Apple if I choose to use Apple. Another

1550 thought I had though is that clearly Apple can censor what is  
1551 placed upon their App Store. There were some social  
1552 conservatives put something up there, boom, Apple took it  
1553 off. It disagreed with their philosophy. On the flip side,  
1554 I gather they don't allow pornography. And so there is a  
1555 certain censorship that takes place. Now, you could argue  
1556 this is a private company but at some point if their market  
1557 share becomes so great, then does it begin to have a  
1558 responsibility beyond that of a private company? And so I  
1559 toss that again because you guys think about this, and I am  
1560 just--

1561       Ms. {Hay.} Apple has very detailed guidelines for what  
1562 it accepts in the store. It is a 1- to 2-week-long review  
1563 process for most of us developers. So if we find out that  
1564 something we have done inadvertently is violating some terms  
1565 and conditions, which they consistently update as well, then  
1566 it is back to the drawing board, it is changing whatever the  
1567 offending feature is. So, you know, doing business in the  
1568 App Store with Apple is a more detailed process versus  
1569 Android where you are able to sort of explore whatever the  
1570 operating system is put it up there and people can then  
1571 choose to download it in the wild, wild West.

1572       Dr. {Cassidy.} Now, do you see a concern, though,  
1573 because, again, I forget it was but some social conservative

1574 group put something up and it was struck down. It offended  
1575 somebody. Now, they may take everything that is Republican  
1576 theoretically or everything that is Democrat. Now, they say  
1577 of course that wouldn't happen, but again, there is one group  
1578 at least that felt like it happened to them, and do they  
1579 become a quasi-public entity?

1580 Mr. {Reed.} Well, I think it is important to note that  
1581 Android in fact is rising to the level of having the largest  
1582 market share, and they have a true wild, wild West. In fact,  
1583 some of the apps that are on there are problematic for us and  
1584 we have talked to other folks about how do we deal with apps  
1585 that might be doing something illegal or how do we get apps  
1586 that are on the completely wide open atmosphere in a place  
1587 that we can deal with them. I think, though, the reverse  
1588 side is, I am going to be very coldly logical about this from  
1589 my own perspective. My folks make more money on the curated  
1590 store model because of what the chairman said, and that is,  
1591 they find the trust relationship at the curated store whether  
1592 it be Apple or the Xbox platform--

1593 Dr. {Cassidy.} But that is not really my concern.

1594 Mr. {Reed.} Right, but I mean, we--so from our own  
1595 perspective, I like it. I like the curated store because  
1596 small--

1597 Dr. {Cassidy.} But I am not arguing curated versus non-

1598 curated. What is the obligation in terms of allowing free  
1599 speech for something which again has maybe not dominant  
1600 market share but 49 percent or something like that, pretty  
1601 substantial?

1602 Mr. {Reed.} Actually, at this point in time, Apple--the  
1603 Android has actually a larger market share globally.

1604 Dr. {Cassidy.} But I am saying, if it is 40 percent, I  
1605 mean, it is still substantial.

1606 Mr. {Reed.} I think we are so far away from Apple being  
1607 a public entity that I am not quite sure. I think a private  
1608 industry has the right to keep pornography or other material  
1609 off their--

1610 Dr. {Cassidy.} And what about socially conservative  
1611 views?

1612 Mr. {Reed.} So far, I think that is something that if  
1613 there was a major issue around that, that is something that I  
1614 am sure Congress would bring to the attention and I am sure  
1615 the Democrats would do likewise if their apps were kept off  
1616 the platform as well, and I think let us take that on a case  
1617 by case. When it happens, let us address it. But overall, I  
1618 do think I want to preserve the right for private industry to  
1619 make decisions about what they put in front of my kids and in  
1620 front of adults.

1621 Dr. {Cassidy.} Mr. Farago?

1622 Mr. {Farago.} Yes, I mean, I don't have a lot to add to  
1623 what has already been said. I think the way we view it or I  
1624 view it as Apple and Amazon and Google are running stores  
1625 like a retailer. This just happens to have a digitally  
1626 distributed product on a virtual store shelf. So if I go  
1627 into Macy's or Bloomingdale's or Safeway grocery stores on  
1628 the West Coast, I expect that there has been a buyer, there  
1629 has been a review--

1630 Dr. {Cassidy.} It is only a little bit of a difference,  
1631 if I may I interrupt, because it isn't as if you can go to  
1632 one Apple Store versus another Apple Store. There is only  
1633 one Apple Store. And so the paradigm is a little bit  
1634 different than Dillard's versus Macy's versus Sachs.

1635 Mr. {Farago.} I might respectfully point out, if I use  
1636 an Xbox home console, Xbox Live Arcade, which is their  
1637 digital platform is run by them, and if I am a Microsoft Xbox  
1638 user, that is the only store from which I can purchase goods.

1639 Dr. {Cassidy.} A little less pervasive. The  
1640 pervasiveness is the issue.

1641 Mr. {Farago.} Well, I think that, you know, a store if  
1642 it is successful and has a lot of customers coming into its  
1643 large like Walmart sized or even bigger, you know, I still  
1644 think there are fundamentally a private entity running a  
1645 store and they have a right to decide which goods get on the

1646 shelf.

1647 Dr. {Cassidy.} I am out of time. I agree. Yield back.

1648 Thank you.

1649 Mrs. {Bono Mack.} Thank you, Doctor.

1650 Mr. Bass, you are recognized. No further questions?

1651 All right. Well, I am just going to ask one brief  
1652 question of the panel in lieu of a third round, if I might,  
1653 and nobody really touched on cloud technologies and its  
1654 importance, and I would just like to open up briefly if we  
1655 can keep this last round to 2 minutes or so if anybody wants  
1656 to talk about--I think Mr. Farago, you specifically talked  
1657 about, what you said, the nearly endless storage cloud  
1658 technology offers and how it contributes to the handheld  
1659 devices now being super devices. How important is the cloud  
1660 to the app world and how important is security of the cloud  
1661 to ensure consumer confidence. So the last question of the  
1662 day.

1663 Mr. {Farago.} At a high level they are both  
1664 fundamentally, I mean, deeply important. They are critical.  
1665 You know, this device has limited storage. I mean, they are  
1666 really supercomputers in your pocket now, but what makes--one  
1667 of the many things that make this kind of experience special  
1668 for consumers is that not only is there a lot of data that  
1669 one--you know, your picture for example, of your grandchild

1670 could probably be accessed from several different devices.  
1671 It lives somewhere for you, and that is a real convenience  
1672 for customers. That requires storage. If you can't fit  
1673 enough things in your house, then you may go get a public  
1674 storage locker somewhere locally. And so it is just a place  
1675 to hold more things universally for consumers and then they  
1676 like to access those.

1677         The other piece obviously in between the device and the  
1678 cloud is the sort of the highway, the bandwidth and spectrum  
1679 we have been talking about that is also critically important.  
1680 Security of that data is highly important and consumers need  
1681 to have trust that Apple with iCloud and many other cloud  
1682 services. Box is a very popular company for enterprise now,  
1683 Drop Box, places where you can place something and then get  
1684 it later or place something for someone else to get, a file  
1685 or a picture or whatever. You know, you want to believe that  
1686 your property, a picture of your grandchild, is safe and  
1687 secure, so it is critically important.

1688         Mrs. {Bono Mack.} Thank you. Anybody care to chime in?

1689         Ms. {Hay.} Yes. I think the cloud has been monumental  
1690 to the app marketplace. The safety that comes from being  
1691 able to use Amazon web services versus trying to come up with  
1692 some sort of encrypted way of handling credit card numbers as  
1693 an independent app developer or business owner, I mean, there

1694 is just no comparison. So now as an independent or small  
1695 business owner, I am able to leverage cloud services like  
1696 this, particularly in e-commerce, I think, that are safe,  
1697 that conform to all the guidelines that are required of  
1698 protecting that sort of data, and at the same time costing  
1699 very little so I am able to actually launch more products, I  
1700 am actually able to innovate more. So I think the cloud has  
1701 been absolutely monumental in the economy here.

1702 Mrs. {Bono Mack.} All right.

1703 Mr. {Reed.} I think the only part I would add to bring  
1704 it back to policy for a moment is, we need your help, and I  
1705 know this isn't the committee of jurisdiction that deals with  
1706 it but we need all Members of Congress to help us on some of  
1707 the antiquated laws that govern our electronic privacy in the  
1708 cloud because unfortunately they go back to the era where  
1709 things stored in the cloud were less valuable than stuff  
1710 stored on your desktop, and the problem that it creates for  
1711 us from a business perspective is when I go to a risk-averse  
1712 company and I say buy my small-business-created product  
1713 because you can trust the cloud storage that we are using at  
1714 Amazon AWS or anyone else, their answer is, yes, but what is  
1715 our legal responsibilities, is it the 6th Circuit Court, is  
1716 it ECBA, and they don't buy our product, not because our  
1717 product wasn't awesome, it was because our product--they

1718 couldn't have the legal risk that exists right now around  
1719 some of our privacy protection laws. So we ask all Members  
1720 of Congress to help us as an industry with ECBA reform and  
1721 making sure that we have clear, concise ways to speak to  
1722 risk-averse lawyers about why the cloud is a safe, logical  
1723 place to store their data.

1724         Mrs. {Bono Mack.} Thank you very much. That is going  
1725 to conclude our hearing for the day, so I want to thank the  
1726 entire panel for being with us today. You have been very  
1727 gracious. We look forward to working with all of you moving  
1728 forward.

1729         At this point I am going to remind members that they  
1730 have 10 business days to submit questions for the record. I  
1731 ask the witnesses to please respond promptly to any questions  
1732 they may receive.

1733         And with that, thank you again very much and the hearing  
1734 is now adjourned.

1735         [Whereupon, at 11:20 a.m., the Subcommittee was  
1736 adjourned.]