UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

VIDEO DEPOSITION OF ROBERT DREW MAJOR
September 17, 2024

AYLO FREESITES, LTD and fuboTV MEDIA, INC.,

Petitioner,

vs.

DISH TECHNOLOGIES, L.L.C.,

Patent Owner.

IPR2024-000431 (Patent 11,677,798 B2)
IPR2024-00044 (Patent 11,470,138 B2)
IPR2024-00045 (Patent 10,469,544 B2)
IP42024-00046 (Patent 10,951,680 B2)
IPR2024-00146 (Patent 10,469,555 B2)2

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Aylo Exhibit 1021
Aylo Freesites v. DISH Technologies, IPR2024-00045

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1 Pursuant to Notice, the video
2 deposition of ROBERT DREW MAJOR, called by
3 Petitioner, was taken on Tuesday, September 17, 2024,
4 commencing at 9:00 a.m., at 1144 15th Street, Suite
5 3600, Denver, Colorado 80202, before Teresa L.
6 Cardenas, Registered Professional Reporter and
7 Certified Realtime Reporter within the State of
8 Colorado.
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1 I N D E X
2

EXAMINATION	PAGE
By Mr. Paquette	7
By Mr. Guy	177

MAJOR EXHIBIT	DESCRIPTION	INITIAL REFERENCE
1	US Patent 8,868,772 B2, 10/21/14	154
2	Patent 2005/10262257 A1, 11/24/05	155

PREVIOUSLY MARKED EXHIBITS

EXHIBIT	DESCRIPTION	INITIAL REFERENCE
2010	Declaration Of Robert Drew Major In Support Of DISH Technologies L.L.C.'s Patent Owner Response To Petitioner's Petitions For Inter Partes Review	16
2012	Technical Overview Of Move Networks Implementation	62
2013	Sling TV Press Release	101
2015	Article Entitled "American Fork company Move Networks Rebounding with new business"	173
2022	Webware Article	168
2031	Email to Edwards and Taylor from Smith, 5/15/07, Subject: RE: Follow up, with attached email	134

PREVIOUSLY MARKED EXHIBITS

EXHIBIT	DESCRIPTION	INITIAL REFERENCE
2032	Email to Honeybone, et al., from Smith, 6/16/07, Subject: RE: Move Networks Presentation on Thursday?, with attached emails	134
2033	Email to Carper from Smith, 11/26/07, Subject: Re: VC1/Silverlight, with attached emails	134
2042	Move Networks Releases Live Streaming Data for 2010 FIFA World Cup Internet Broadcasts by Televisa	126
2043	The Wayback Machine Blend Television News Release, ABC Offering Full Screen Streaming HD Content, 04/03/07	126
2051	Y Magazine Article, "To the Ends of the Earth"	117
2055	Apple Computer, Inc., Confidentiality Agreement	147
2068	Press Release, "Drew Major Induction Into UVEF Hall of Fame for Lifetime Achievement	33
2069		

1 P R O C E E D I N G S

2 THE VIDEOGRAPHER: We're on the record at
3 9:00. Today is September 17th, 2024. This begins
4 the video-recorded deposition of Drew Major taken in
5 the matter of Aylo Freesites LTD, et al. versus DISH
6 Technologies.

7 This deposition is being taken at 1144 15th
8 Street, Suite 3600, Denver, Colorado 80202. The
9 court reporter today is Teresa Cardenas. The
10 videographer is Dwayne Beuthel. Counsel will
11 introduce themselves and the parties they represent,
12 beginning with the plaintiffs' counsel first.

13 MR. PAQUETTE: I suppose that's
14 petitioner. So Ian Paquette with Venable, LLP. Also
15 with me is Philip Sheng representing petitioner, Aylo
16 Freesites.

17 MR. GUY: Hopkins Guy and Ali Dhanani with
18 Baker Botts. And also with us is James Hanft from
19 DISH.

20 ROBERT DREW MAJOR,
21 having been first duly sworn to state the whole
22 truth, testified as follows:

23 THE VIDEOGRAPHER: You may begin
24 examination.
25

1 EXAMINATION

2 BY MR. PAQUETTE:

3 Q Good morning, Mr. Major.

4 A Good morning.

5 Q Would you please state your full name and

6 address for the record.

7 A Robert Drew Major, 863 West 600 South,

8 Warren, Utah 84058.

9 Q You've been deposed before, right?

10 A A couple of times.

11 Q Okay. So you're at least moderately

12 familiar with the process?

13 A Moderately.

14 Q So I'll just briefly go through a couple

15 of the ground rules.

16 I'll be asking questions and you'll be

17 providing answers, right?

18 A Yes.

19 Q And your attorney may object from time to

20 time, but unless you're instructed not to answer, you

21 continue to answer the question. Agreed?

22 A Yes.

23 Q And we'll be taking breaks throughout the

24 day. I just ask if I have a question pending, answer

25 the question, and we can take a break. Sound good?

1 A Fine with me.
2 Q And also for the benefit of the court
3 reporter and the transcript, let's just keep, you
4 know, verbal answers, yes, no, not so much head nods.
5 Agreed?
6 A Okay.
7 Q And as a reminder, now that the deposition
8 has begun, you're not to discuss the substance of
9 your testimony today with anyone, including your
10 counsel, even during breaks. Agree?
11 A I agree.
12 Q Do you have any questions about the
13 procedure before we continue?
14 A No.
15 Q Okay. Is there any reason you can't
16 provide full and accurate and truthful testimony
17 today?
18 A No.
19 Q Okay. Now, I understand you live in Utah.
20 Is there a reason Denver was more convenient for you
21 today for this deposition?
22 A Well, yeah. I travel to Denver quite
23 often; so I figured I needed to get out here anyway
24 and visit with DISH, so. . .
25 Q Okay. So do you have an understanding of

1 what inter partes review or IPR proceedings are?
2 A Just at a very high level.
3 Q And what is your understanding of what the
4 IPRs are?
5 A The patent -- patents that have been
6 issued is being challenged.
7 Q Right. And you understand it's an
8 administrative proceeding to challenge the validity
9 of patents, essentially, correct?
10 A Yes.
11 Q Yeah. And so you submitted a declaration
12 in the IPRs at issue in this case, correct?
13 A Yes.
14 Q What was the purpose of you submitting
15 that declaration?
16 A Well --
17 MR. GUY: Objection as to form. It may
18 call for attorney-client communication. Answer of
19 the witness's own background.
20 MR. PAQUETTE: Is that a privilege
21 objection?
22 MR. GUY: Yes.
23 MR. PAQUETTE: Okay.
24 Q (BY MR. PAQUETTE) Without revealing any
25 attorney-client communication, what do you believe is

1 the reason you submitted a declaration today?
2 A Because I was asked to by my company, and
3 because I'm -- I'm motivated to defend the patent.
4 Q And what's the reason you're motivated to
5 defend the patent?
6 A Because it's a great patent.
7 Q Is there any other reason?
8 A No.
9 Q Aren't you an inventor of --
10 A Well, because I'm an inventor --
11 Q Okay.
12 A -- of the patent and I'm defending my
13 work.
14 Q Okay. Before we continue on talking about
15 the patent and patents, let's establish some
16 terminology.
17 In your declaration, you refer to these
18 patents as the ABR patents, also termed the -- sorry,
19 what do you call them? Adaptive Bitrate Streaming
20 patents; is that true?
21 MR. GUY: Objection, compound.
22 A I -- yeah, that's -- that's one way of
23 naming them. I quite often call them the HTTP
24 Adaptive Rate --
25 Q (BY MR. PAQUETTE) Okay.

1 A -- Streaming, HTTP-based Adaptive Rate
2 Streaming.
3 Q Okay. So if I refer to these patents as
4 the HTTP Adaptive Rate Streaming patents or the ABR
5 patents, you would know what I'm talking about?
6 A Yes.
7 Q Okay. Is it your understanding that these
8 ABR patents are related to one another?
9 A Yes.
10 Q Do you have any understanding of what that
11 means from a patent law perspective?
12 MR. GUY: Objection, calls for a legal
13 conclusion.
14 Answer, if you know.
15 A They're -- they're related, different
16 aspects of the -- the core invention, the core ideas
17 that -- that, you know, as we developed streaming,
18 ATV adapted rate streaming, we -- we continue to come
19 up with new ideas. And because no one else had built
20 this before. So we were just coming up with new
21 ideas and so new things would come up and be patented
22 based on the -- some of the original ideas.
23 But that's the reason I believe there's
24 multiple patents.
25 Q Okay. So it's fair to say that they share

1 a common specification --
2 A Yeah.
3 Q Okay. So referring to one -- your answers
4 that apply to one of the IPR patents could quite
5 often apply to the others; is that true?
6 A Quite often.
7 Q Okay. Now, did you review any of the IPR
8 petitions in preparation for your deposition today?
9 MR. GUY: Again, caution the witness to
10 answer the question and not to reveal any
11 attorney-client communication.
12 Q (BY MR. PAQUETTE) I was asking, did you
13 review -- as a factual matter, did you review any of
14 the IPR petitions before your deposition today?
15 MR. GUY: Same objection.
16 A No.
17 Q (BY MR. PAQUETTE) Do you have an
18 understanding of what an IPR petition is?
19 A Other than high level, it's a challenge to
20 the patent.
21 Q Okay. Did you review any prior art before
22 your deposition today?
23 MR. GUY: Objection, vague; calls for a
24 legal conclusion.
25 MR. PAQUETTE: Please limit your

1 objections to form.
2 MR. GUY: Huh?
3 MR. PAQUETTE: Please limit your
4 objections to form.
5 A I don't think -- no.
6 Q (BY MR. PAQUETTE) You hesitated a little.
7 Are you sure you didn't review any prior art?
8 A Well --
9 MR. GUY: Same objection, form.
10 A I'm trying to think, because I -- I
11 reviewed some of our, you know, stuff on my side.
12 Q (BY MR. PAQUETTE) You didn't review
13 anything cited in the petition is what you're saying?
14 A Yeah, not -- well, yeah, I didn't -- I
15 didn't review the petition you guys did, yeah. I
16 didn't. I'm just trying to sort out my English.
17 Q I understand "prior" is a term of art, for
18 lack of a better word, but --
19 A Yeah.
20 Q -- it's -- have you ever spoken to DISH's
21 expert, Dr. Jeffay?
22 A No.
23 Q Okay. I want to go into a little bit of
24 the process of this declaration you submitted. Is
25 this something -- strike that.

1 Did you draft the declaration that you
2 submitted?
3 A Yeah. I drafted it. It was based -- with
4 lawyers -- based on what we previously done that I
5 was also involved in drafting. And then I edited it
6 a bit.
7 Q And when you say what you'd previously
8 done, what are you referring to?
9 A The previous declarations, depositions in
10 the past for previous lawsuits.
11 Q And you're -- you're referring to the
12 prior ITC --
13 A Yes.
14 Q -- proceedings? Okay.
15 A And perhaps even -- there was something
16 even earlier than that. A few years earlier. I
17 don't know. I can't remember it, but -- I know it
18 happened, I just don't remember --
19 Q Understood.
20 A -- where it all came from.
21 Q So do you have a familiar -- any
22 familiarity with the petitioner in these IPRs, Aylo
23 Freesites?
24 A No.
25 Q Do you understand what they do and what

1 their line of business is?
2 A I've heard they're -- they're involved in
3 streaming and pornography.
4 Q That's true, yeah. And do you have any
5 familiarity with their specific websites or --
6 A No.
7 Q Okay. Are you aware generally of the
8 various other litigations going on between DISH and
9 Aylo Freesites?
10 A I'm really only aware of this litigation.
11 Q Okay. So, Mr. Major, what did you do to
12 prepare for this deposition?
13 A Well, we prepared the response, the --
14 my -- my -- my -- my statement. I reviewed the
15 supporting documents around that. We had one phone
16 call a few days ago for an hour and then we met
17 yesterday with the lawyers.
18 Q Okay. So you reviewed your declaration,
19 you said?
20 A Yes.
21 Q You read it through several times?
22 A Several times.
23 Q And you reviewed the exhibits cited
24 therein?
25 A Yes.

1 Q And then you said you had two meetings to
2 prepare, one phone?
3 A One phone call that was more the logistics
4 of what was going to happen. And then the other one
5 was preparation yesterday.
6 Q Who was involved in these meetings?
7 A Alley, Hopp, and Jim, and maybe someone
8 else. I don't know. Not yesterday. These three
9 were involved yesterday.
10 Q Okay. Okay. I'm going to start by
11 handing you your declaration.
12 MR. PAQUETTE: If you could hand that to
13 him. Thanks. I think I have enough for all of you.
14 Q (BY MR. PAQUETTE) All right. So,
15 Mr. Major, if you just look at the cover of the
16 Exhibit 2010 I just handed you, is this the
17 declaration you submitted in these IPR proceedings?
18 A It appears to be.
19 Q And is that your signature on the final
20 page?
21 A Yes, that's my signature.
22 Q All right. Now, sticking with the front
23 cover here, there's five different IPR numbers
24 listed. Is it the case that you submitted the same
25 declaration for all five of these IPRs?

1 A Yes.
2 Q Okay. If you could, please, Mr. Major,
3 turn to paragraph 3 of your declaration.
4 Now, I know we briefly talked about the
5 ABR patents. It appears that you're listing out some
6 of the ABR patents in this paragraph; is that true?
7 A Yes.
8 Q I just want to draw your attention to
9 one -- I believe it's a typo. You refer to the
10 patent number 11,430,138?
11 A 114 --
12 Q Do you see that in paragraph 3?
13 A 114 what? 30 --
14 Q 430,138?
15 A Okay.
16 Q I believe it's actually 11,470,138. Does
17 that sound right?
18 A I don't know.
19 Q I'll represent to you that it's
20 11,470,138. But as we discussed, if I just refer to
21 these ABR patents by their last digits, such as the
22 138 or the 555, you would know I'm speaking about
23 specific ABR patents, correct?
24 A Yes.
25 Q So if we look at just the first sentence

1 of your paragraph 3 statement, if you could just read
2 that to yourself and let me know when you're done.
3 A Okay.
4 Q So your declaration submitted here,
5 Exhibit 2010, is at least in part about the ABR
6 patents that you're an inventor on that relate to
7 streaming video over the internet, true?
8 A Yes.
9 Q And if we look at the next paragraph,
10 paragraph 4 of your declaration, this is where you
11 say that you are one of the inventors of the ABR
12 patents, correct?
13 A Yes.
14 Q Are you a named inventor on all of the ABR
15 patents?
16 A I think so.
17 Q Do you have any reason to think you
18 wouldn't be?
19 A Most of the patents that were done, at
20 least at Move were -- I was involved reading them,
21 but I wasn't involved in the preparation, per se. I
22 had some -- my co-inventors were more involved. So
23 all specifics I'm not totally up -- up with, but,
24 yeah.
25 Q Okay. Fair enough. But you believe you

1 are an inventor of --
2 A Oh, yes.
3 Q -- at least the listed ABR patents you
4 have in paragraph 3?
5 A Yes, I am.
6 Q So as a named inventor, what do you
7 believe you contributed to the ABR patents?
8 MR. GUY: Objection, calls for a legal
9 conclusion.
10 Answer, if you can.
11 A The -- the core thing on -- on the
12 HTTP-based ABR patents was the idea to take video and
13 instead of video being a stream of bits flowing, like
14 cable, satellite, antenna, or video being a giant
15 file, like DVR or even -- not DVR -- DVD, Blue-ray or
16 whatever, instead, the idea was that video should be
17 represented in discrete segments. And by doing that,
18 there was a plethora of cool things that happened
19 that worked that made it -- made video delivery over
20 the internet work way better, given the issues sort
21 of surrounding internet delivery.
22 So the core idea was that video needs to
23 be represented in smaller pieces, moved together.
24 The other core idea was that the intelligence
25 surrounding decisions about what video quality to

1 render would be done by the client and not by the
2 server. So the client device that's playing the
3 video, it would decide.
4 And that combination made video delivery
5 extremely friendly to internet, very -- it just --
6 just generic proxy caches that -- in content delivery
7 networks. And it was in many ways radically
8 different than what the state of the art was or what
9 the industry felt like the way to deliver internet --
10 video over the internet should go, or how it should
11 go.
12 It was based on other protocols and
13 intelligent servers and dumb clients, and the data
14 was just getting pushed to the clients. Similar to
15 how television works, and how everyone had kind of --
16 they -- they had almost taken the television --
17 traditional television distribution model and applied
18 it to the internet.
19 And besides over the internet, they also
20 had their IP TV streaming, which wasn't a big deal,
21 but it was the same thing, it was push, just use the
22 internet as a -- as a -- as a delivery mechanism
23 similar to how everything else had been done.
24 And my idea was, no, the client is going
25 to pull the data, and it's going to have the

1 intelligence because it knows what it's seeing --
2 what it's seeing, how fast the internet is right now,
3 and if you arrange and take the -- the video and put
4 it in different bitrates and -- and where each of the
5 bitrates are different HTTP objects stored in caching
6 using the traditional web protocols, those -- those
7 video chunks -- it would make it so that the
8 intelligent client could easily switch between
9 bitrates and its intelligence. It knows what it's
10 seeing. It -- it asks for a two-second video chunk
11 and it takes it four seconds to get there. Well,
12 then it knows -- obviously it's asking for video
13 that's too high quality because it's too big.
14 The beauty of video is you can vary the
15 quality, which varies the size -- the amount of data
16 you have to deliver. And so I took advantage of that
17 fact and pushed that to the client, and the client
18 then says, okay, well, I -- I asked for a
19 high-quality video thing, it took four seconds, so
20 now I'm going to ask for something significantly
21 lower quality and hopefully that takes less than four
22 seconds, so it will likely take maybe a second or
23 two. And by doing that, I can catch up. I can stay
24 connected to live. I can -- and particularly, I
25 don't -- I won't be hiccupping in the playback.

1 I think everyone remembers that during the
2 2000s, you know, either the video was very small or
3 you had to download it. And in the old days was the
4 way you watched video was you selected low, medium,
5 high. And the low was -- would come faster and the
6 high would take better, but, you know, you went -- if
7 you wanted to look at any video, you had -- the user
8 had to decide and had to download it and then play
9 it, because the internet was so variable.
10 And my invention automated all of that,
11 made it dynamic, made it work for live, made it work
12 so that it -- that it's very rare that you would have
13 a hiccup. But it also always gave you the highest
14 quality that was possible at the time.
15 And we tried very hard when we figured out
16 the different bitrates to match them. Sometimes we
17 were matching up to 9 to 12 bitrates so that if it
18 was moving up and down, the user would like -- likely
19 don't even per -- perceive that there was any change,
20 if it went to a lower bitrate or a higher bitrate.
21 So we took advantage of flexibility by
22 this new way of doing it, new architecture, to --
23 to -- to give the user a beautiful premium streaming
24 experience without hiccups. And you compare that
25 with what -- how video was like over the internet,

1 you know, 20 years ago, and it was night and day.
2 And so -- but the core of it was, yeah, move the
3 intelligence to the client, use the traditional HTTP
4 delivery mechanisms that were way cheaper, more
5 scalable, and -- and then take the video and chunk
6 it.
7 And when we did all those things together,
8 we created something that was very revolutionary.
9 Everyone that saw it, first of all, couldn't believe
10 it, and then endorsed it.
11 Q (BY MR. PAQUETTE) We'll come back to some
12 of these things --
13 A Okay.
14 Q -- a little later, but let's just stick
15 with paragraph 4 now --
16 A All right.
17 Q -- of your declaration where you say,
18 "This declaration is also about Move Networks,
19 Incorporated."
20 A Yes.
21 Q What is Move Networks, Incorporated?
22 A Move Networks was a company that I founded
23 and funded for a number of years. I had
24 originally -- it started out actually as a different
25 company I called Ex-Long for extra large object

1 something -- I don't even know the name right now,
2 something. It was a -- it was a -- going to be a
3 form of a content delivery network that was going to
4 focus just on large objects, that would be downloads
5 of software or the -- of course the biggest one is
6 video.
7 So -- and so -- and I formed that company
8 while I was employed by Novell, Incorporated. Part
9 of it -- motivation was at Novell I built an HTTP
10 proxy cache that was extremely scalable. And to the
11 side when I -- I found out that people didn't need
12 scaling because video -- video -- well, the founder
13 of Akamai told me, Hey, your proxy cache is ten times
14 faster than ours. And Akamai was the leading content
15 delivery company at the time.
16 Said your -- I still remember the
17 discussion. He said -- his name is Danny Lewin. He
18 talked to me and he said, Your content delivery,
19 your -- your -- your proxy cache is ten times faster
20 than what we've got. But it doesn't matter to us
21 because they were putting caches in 10,000 places,
22 and they were just delivering up web pages. You
23 know, which, again, this is prior to very much video
24 on the internet.
25 And so it wasn't that important. That

1 kind of -- because I was trying to talk -- talk him
2 into doing it. And he didn't want to buy it. So
3 then I said, Well, okay, I'll start my own company
4 instead and do it. Direct -- direct understanding.
5 So -- so I invented XLon. The problem was
6 then the video streaming didn't work with those
7 caches and video wasn't working. And then later I
8 realized I had to invent how to do that to do it, to
9 -- to -- to take advantage of this capability. And
10 then -- and then I realized the real value wasn't in
11 the CDN side but it was in the streaming side. And
12 we renamed the company from XLon to Move and focused
13 on licensing the streaming.
14 That's a long explanation, but it's kind
15 of how I --
16 Q Yeah, that makes sense.
17 A -- evolved into even figuring out -- to do
18 this. Actually, I want my -- my XLon company was
19 sort of failing and I wanted to save it, and I kept
20 expecting that someone was going to fix streaming on
21 the internet. And no one did, and then I realized I
22 had to if it was going to get fixed.
23 Q Okay. So just to pick up on a few things.
24 You were at Novell, and this was the '90s?
25 A Late '90s when I founded XLON, yes.

1 Q Okay. And was XLON founded to do video
2 streaming or was it founded --
3 A It was founded to do large object
4 distribution, which video would be part of it. And
5 so, for example, one of our businesses was going --
6 was -- we delivered video ads -- the first video ads
7 that AOL Instant Messenger did. We did a billion
8 video ads, and those were large objects. It wasn't
9 really streaming, though, it was download.
10 Q And what do you mean by download? You
11 download the whole video and then play it?
12 A Well, there's -- there's -- there's two
13 kinds of downloads. There's download where you wait
14 for it to come down and then you play it. And,
15 again, that was how a lot of people did it. In the
16 2000s if you wanted to watch a trailer for a movie,
17 you would click it, download it, then push play.
18 YouTube and other people realized that you could
19 start playing it earlier. If you had enough network
20 bandwidth, you could download it at the same time you
21 were playing it.
22 Now, that was dangerous because you could
23 download it and think the internet was fast, and so
24 you start playing it and then the data isn't there on
25 time because the internet hiccupped. And so you --

1 that's -- that was the source of a lot of the hiccups
2 on the internet. And so, of course, guys like
3 YouTube got around it by just doing small video.
4 And -- and, of course, AOL wanted to
5 deliver video ads. That was going to be a huge --
6 remember, AOL was huge at the time; but -- well, part
7 of what motivated me to -- to invent this was that --
8 first of all, people don't like to watch ads. So if
9 you got to wait for a little while to watch it, so
10 you're in the middle of AOL Instant Messenger and it
11 puts up -- it's going to put up an ad but -- but you
12 see black for a little while, that's -- that's bad.
13 Or -- but then if you play it and it hiccups, that's
14 bad, too. And you can avoid that, but then you have
15 to do low quality, and advertisers don't want
16 low-quality video. Anyway, so that was -- that was
17 the -- the -- the problem I was thinking about in
18 dealing with it.
19 And so back to fully answering your
20 question, XLon, again, was getting deals like this
21 thing with AOL, to deliver video over the internet,
22 but the progressive download way of doing it had some
23 major problems. And that's exactly what motivated me
24 to fix it.
25 Q So the progressive download is what you

1 were referring to where you start to download and you
2 start to play while it's still coming?
3 A While it's still coming, but you wait --
4 you sometimes have to wait a little while because you
5 don't know, again, the quality. So quite often you
6 would wait. I've had one time where I requested in
7 the -- when Netflix was doing downloads, I was at a
8 WiFi in an airport and Netflix literally said, you
9 can watch this video in three hours. Literally.
10 That was my experience. Because Netflix at that time
11 originally was doing progressive download. But
12 that's what they had to do. They had to say, well,
13 the data is coming. We want to do this movie, so you
14 can watch it in three hours.
15 So, anyway, all of that was a big problem,
16 which, again, and then I was kind of in a position to
17 see a solution.
18 Q So at XLon you were doing some progressive
19 downloading of video, is that what --
20 A Well, we were just the back end --
21 Q Okay.
22 A -- that was serving the video, this
23 content delivery network.
24 Q Was it ordinary web server caches?
25 A Yeah, ordinary web server caching, just

1 large ones, and, of course, video is the large one,
2 largest -- it's the largest.
3 Q So would this be considered streaming in
4 the early 2000s?
5 A It was a -- you know, downloading and
6 watching it over the internet you could call it
7 streaming, perhaps, but it really wasn't practically.
8 Q In the sense that you haven't downloaded
9 the full video but you're watching it before --
10 A That's right. And it's just, it's a very
11 inferior version of streaming. Most people here have
12 experienced that, if they remember how video was like
13 20 years ago.
14 Q Okay. So we have video downloading,
15 right?
16 A Yeah.
17 Q We have progressive downloading, which is
18 a form of streaming, right?
19 A Yes.
20 Q And then you spoke about -- well,
21 actually, let's look at it in your declaration.
22 A Yeah, let's -- okay.
23 Q Actually, before we move on to that, I
24 just wanted to close the loop on Move.
25 A That's fine.

1 Q So when did Move come into existence?
2 A I'm not exactly sure of the date when we
3 renamed it.
4 Q Um-hum.
5 A But it was around the time when I invented
6 this new way of streaming.
7 Q Okay. Do you remember when -- strike
8 that.
9 Move had a player that it eventually came
10 out with, right?
11 A Yeah, we needed the intelligent client,
12 yeah.
13 Q And that would be on the client?
14 A It would be on the client that was
15 downloading and playing the video, yes.
16 Q And I think that was -- was that the 2006
17 time frame?
18 A We had ones working early in 2005.
19 Q Okay.
20 A Late. And we demonstrated it first
21 publicly in October of 2005.
22 Q And then eventually Move was acquired by
23 EchoStar in 2010 --
24 A That's right.
25 Q -- which is part of DISH now, correct?

1 A That's correct, yeah.
2 Q Okay. So Move no longer exists as an
3 entity, it's been absorbed?
4 A All the -- everything has been absorbed.
5 Q Okay.
6 A Yeah.
7 Q Now, did you -- you personally work at
8 EchoStar after the acquisition?
9 A Yes.
10 Q And what was your role there?
11 A I was senior vice president and CTO of
12 DISH Digital originally is what they called it. And
13 I -- I guess I'm considered the CTO of Sling TV right
14 now.
15 Q Okay. So right now you're the chief
16 technical officer of Sling TV?
17 A Kind of.
18 Q Kind of? Okay. Fair enough.
19 If we can just briefly go to paragraph 2
20 of your declaration.
21 A Okay.
22 Q You say -- you say there, "My compensation
23 is not based on the content of my opinions or the
24 resolution of this matter."
25 Could you just explain to me what you mean

1 by that?
2 A I'm not going to get a bonus. I'm not
3 going to -- you know, I'm -- I'm on -- I'm on certain
4 incentive -- internal incentive plans totally
5 independent of this.
6 Q Okay. So you have no financial interest
7 in the outcome of -- of these litigations?
8 A I have no financial interest.
9 Q No -- you don't get any royalties from
10 licenses for the ABR patents?
11 A I don't get any royalties. I wish I did,
12 but I don't. I didn't negotiate well enough when I
13 sold the company.
14 Q So who -- who is paying your salary today?
15 Is it Sling TV?
16 A Yeah, DISH.
17 Q DISH?
18 A DISH. They pay my salary, DISH, yes.
19 Q But we already established you have,
20 obviously, a personal interest in upholding the
21 validity of these patents, correct?
22 A Yes, yes. I'm very proud of these
23 patents.
24 Q All right. Let's go ahead and look at
25 paragraph 6 of your declaration.

1 A Okay.
2 Q Now, here you say, "Because of my
3 inventions, which included those disclosed in the ABR
4 patents, I've been" -- "I have been inducted into the
5 Utah Valley Entrepreneurial Forum Hall of Fame." And
6 then you cite to Exhibit 2068. Do you see that?
7 A Yes.
8 Q And then you go on to say, and you've been
9 inducted, I suppose, into the Utah Technical Council
10 Hall of Fame, and you cite to Exhibit 2069.
11 A Yeah.
12 Q And here you say that this was -- for
13 previous work you did at Novell, you were also
14 inducted into the National Computer Industry Hall of
15 Fame in 1999, right?
16 A Yes.
17 Q So starting with the Utah Valley
18 Entrepreneurial Forum, how does one get elected to
19 that?
20 A I don't know.
21 MR. GUY: Objection to form.
22 Answer.
23 A I don't know. I was just called. They
24 said they wanted to do it.
25 Q (BY MR. PAQUETTE) So you have no idea who

1 submitted you or anything like that?
2 A I suspect it's a lawyer who likes me at
3 Novell.
4 Q Okay.
5 A But honestly --
6 Q So you think it was tied to your work at
7 Novell?
8 A Yeah, it was -- it was -- it was tied to
9 work at Novell, but also at that time the streaming
10 was going, too, so -- and I, you know, started at
11 Novell, and I started Move Networks. You know, what
12 date was that? That was -- I can't remember the
13 dates. I think Move was still independent at the
14 time.
15 Q Okay.
16 A I think.
17 Q And we can come back to that later.
18 Let's -- let's move on to paragraph 7 of your
19 declaration, please.
20 A Okay.
21 Q Do you see that first sentence -- just
22 please read the first sentence of paragraph 7 to
23 yourself, and just let me know when you're done.
24 A Yes.
25 Q So here you're referring to something

1 called RTP/RTSP. Could you tell me what those mean?
2 A That was a standard for streaming video
3 over the internet that was a published standard. I'm
4 not sure exactly which organization supported it, but
5 it was considered the correct way to stream video
6 over the internet.
7 Q How so?
8 A Well, that's what Microsoft and Apple and
9 Adobe and RealNetworks used to stream. They --
10 they -- they took it and then implemented a
11 proprietary version. And that was QuickTime and -- I
12 can't remember all the names, RealNetworks streaming
13 all was based on that protocol. And it was a client
14 server protocol, again, where the intelligence was in
15 the server.
16 Q Okay. So these were -- Real-Time was
17 doing video streaming using their Real-Time Streaming
18 Protocol, right?
19 MR. GUY: Objection, form.
20 A Yeah. I -- I believe -- yeah, again,
21 my -- my understanding was that all of these
22 companies were using different proprietary versions
23 of RTP/RTSP.
24 Q (BY MR. PAQUETTE) Okay. But this was for
25 video streaming?

1 A For video streaming.
2 Q Okay. And this is before the ABR patents,
3 this was the state --
4 A That was the state of the ABR patent. I
5 think it was also used for audio streaming.
6 Q Okay.
7 A Especially by RealNetworks. I believe,
8 but I'm -- yeah.
9 Q Do you know did Real-Time do live video as
10 well?
11 A RealNetworks did live video as well, yes.
12 Q And isn't it true that Real-Time would
13 also adjust the Bitrate based on the bandwidth?
14 MR. GUY: Objection, form, foundation.
15 A RTP/RTSP did adjust bit -- bitrate
16 according to -- according to bandwidth, but very
17 poorly.
18 Q (BY MR. PAQUETTE) Okay. How so?
19 A It -- I -- I -- I don't really understand
20 why it was implemented the way it was. I just know
21 when I tested it and people tested it and used it, it
22 didn't work definitely as well as what I did.
23 Q Okay. Understood.
24 A So I -- I -- I -- again, I think some of
25 it is just because the server -- the client knows

1 more what's happening than the server does. So it
2 was kind of a delayed reaction. And it was again a
3 push model, server knows best, server knows, oh,
4 well, you got to have lower bitrate, oh, you gotta
5 have higher bitrate.
6 Q Okay.
7 A But the server didn't know best, the
8 client does.
9 Q So along those lines, continuing on in
10 paragraph 7, the next sentence you say, "These
11 protocols were implemented using expensive
12 specialized servers."
13 A Yes.
14 Q Could you expand on that? What made them
15 specialized?
16 A Well, they had to have -- in the case of
17 each of these four companies, they had to have their
18 own back-end server that would deliver the data to
19 their proprietary -- to their -- to their client.
20 And so, for example, Akamai was, again, the largest
21 CDN in the world. They had to have four different
22 servers for streaming in their thousands of -- of
23 head-ins or nodes, whatever they -- they called them,
24 because each of them were different. And so if
25 someone bought QuickTime, they had to use a QuickTime

1 server. If you wanted to use Adobe Flash streaming,
2 you had to use that Flash server. If you wanted to
3 do RealNetworks streaming, you had to -- and so Adobe
4 -- or no, Akamai responding to that business
5 requirement had to deploy four servers in thousands
6 of places to do the streaming. And then the
7 servers -- because the servers were -- you know, they
8 can only do so much. They had to do all the work,
9 and as a single piece of hardware, and push it to all
10 these people. So -- so it wouldn't scale to very
11 many, you know, users. So it was, in my mind, an
12 inferior way of -- of doing streaming.
13 Q Yeah. And then you go on in that
14 paragraph 7 to talk about what we already discussed,
15 video downloading and progressive downloading, right?
16 A That's right, yeah. I think some of that
17 came because of the problems with RTP/RTSP. So
18 people said, Well, screw this, it doesn't work very
19 well. We'll just download the files.
20 Q Okay.
21 A And it will probably work as good as this
22 complicated system, and it will be cheaper and we'll
23 just download the files.
24 Q Okay. So people knew at the time that
25 this expensive specialized streaming was not ideal;

1 is that fair?
2 A Yeah. And so everyone was moving to
3 progressive download. That's what YouTube did,
4 that's what Netflix did originally.
5 Q And did progressive download use ordinary
6 protocols?
7 A Yes, they used a GP normal protocols, and
8 a little more of the intelligence was in the client
9 because the client would have to ask for the data,
10 see how long it took, and then judge and say, well, I
11 can start right now or I can wait for five seconds
12 and then I can start, or -- and in the extreme case I
13 cited you got to wait for several hours --
14 Q Right.
15 A -- you know. So there was more
16 intelligence in the client but just a little bit.
17 Q Okay. So at this time, we have -- if
18 somebody is using progressive downloading in 2003,
19 their client would be connecting to, like, an
20 ordinary web server?
21 A Correct.
22 Q And it would be requesting, say, a video
23 file?
24 A Correct.
25 Q And it would start to download the file,

1 right?

2 A It would be asking for a giant -- it would

3 be asking for the entire video file.

4 Q Right.

5 A The entire video file.

6 Q Understood. And that would be over like a

7 TCP connection, right?

8 A Yeah, TC -- HTP, which is -- it runs on

9 TCP, yeah.

10 Q The transmission control --

11 A Control protocol, the underlying protocol

12 for the internet today, yeah.

13 Q So -- and all of this was going on before

14 2004, right?

15 A Yes.

16 Q Okay.

17 A There was -- there was -- I -- I -- I

18 sensed a -- it seemed like there was frustration.

19 Because I remember the NFL announced a little earlier

20 sometime -- and I'm just guessing -- they -- they

21 announced that they were going to put their games on

22 the internet. And it just didn't work. Major League

23 Baseball tried to do it and it just sort of didn't

24 work. Everyone thought that the internet should be

25 able to deliver video, but it didn't work.

1 Q And what time frame was this?
2 A This was right -- 2000s, early 2000s.
3 Q And was part of that problem that a lot of
4 people didn't have very much bandwidth at the time,
5 true?
6 A Exactly.
7 Q Right.
8 A But the protocols also did not -- were --
9 were very -- didn't -- didn't work very well either,
10 even if you had more bandwidth, so. . .
11 Q Okay. Let's go on to paragraph 9, please,
12 of your declaration.
13 A Okay.
14 Q In that first sentence you talk about how
15 "In the 2003 time frame, options for accessing video
16 content online were limited."
17 I guess my question is, have you done an
18 investigation into what systems were available in
19 2003?
20 A You know, I, again, had just general
21 understanding of stuff; but I -- you know, I -- I had
22 a company called XLon at the time that was trying to
23 participate in this, and other than doing progressive
24 download, was not doing anything. You know, it just
25 was still not happening.

1 Q Let's see. I wanted to ask about one
2 thing in here. We've already talked about how these
3 realtime servers were expensive.
4 Could you please just read the second
5 sentence in paragraph 9 to yourself, and let me know
6 when you're done.
7 A Second sentence? Yeah.
8 Q So I think we've talked about this a
9 little bit already, but is it fair to say that
10 freezing and buffering was a known problem in 2003?
11 A Yes.
12 Q And I guess my -- my next question is,
13 does your -- does the ABR patents, if you implement
14 them, do they completely prevent any buffering or
15 freezing?
16 A There are occasions it can happen; but
17 it's, like, many times less likely, you know.
18 Q Okay.
19 A Dozens, hundreds -- I mean, you know, just
20 rarely happen. Def -- sometimes -- you know,
21 sometimes the internet actually goes away, you know,
22 and then you can't get it; but it's very rare.
23 Q And then the last sentence of paragraph 9,
24 do you see where you say, "These specialized servers
25 supported only a small number of concurrent viewers"?

1 A Yes.
2 Q Why was that the case?
3 A Just because of capacity. The server had
4 to do all the work, and there's only so many CPU
5 cycles in a server; so you do it. Whereas with the
6 client doing it, each client brings its own compute.
7 So the -- the -- the dynamics of -- of -- of
8 decision -- you know, of -- of -- of how it scales is
9 dif -- fundamentally different. Because each client
10 can do all of that work. All you have to have now is
11 a dumb -- a -- not dumb, a -- a -- a server that just
12 delivers the data. That's all it does is deliver the
13 data.
14 Q It just responds to requests from --
15 A Responds to simple requests for -- from
16 pull requests, yeah.
17 Q We'll come back to pull in a minute.
18 But paragraph 10, this is where you start
19 talking about the problems in the industry. You
20 mention co-inventors Mark Hurst and David Brueck.
21 A Yes.
22 Q Who was Mark Hurst?
23 A Mark Hurst is a partner and a friend of
24 mine for 40 years.
25 Q And he was a co-inventor on the ABR

1 patents as well?
2 A ABR patents.
3 Q What did you think his contribution to the
4 invention was?
5 MR. GUY: Object to the extent it calls
6 for a legal conclusion.
7 Answer.
8 A Mark actually implemented it, and figured
9 out the core algorithms for deciding shifting up and
10 down, did a bunch of math and a bunch of testing to
11 evaluate it, and actually built the code as well.
12 I came up with the original concepts.
13 Mark at the time was not working at XLon. And I had
14 just left Novell. I left Novell in March of 2003.
15 And in April of 2003 is when I -- when I actually got
16 into -- you know, I -- I had funded XLon but now I
17 was free to innovate, you know, because I wasn't
18 employed by Novell anymore, and that's why it all
19 came in that next month.
20 But right as soon as -- as I figured it
21 out, I -- I actually had another company going, too,
22 that I was going to work full-time to, so I thought,
23 you know, who is the guy who can implement it? And
24 Mark Hurst was the man. He's done protocol -- we
25 built protocols and stuff.

1 So I immediately called him. He quit his
2 other job, and -- and came and implemented it.
3 Q Okay. So it's fair to say you came up
4 with the core idea, right?
5 A The core -- the core -- start of the idea.
6 But, of course, it's a whole bunch of stuff built
7 around --
8 Q Fair enough.
9 A -- the idea of chunking and using
10 intelligent clients, yeah.
11 Q Yeah. So you came up with the -- creating
12 the segments?
13 A Yeah.
14 Q And coding the segments and different
15 quality levels?
16 A Yes.
17 Q And you came up with using the ordinary
18 web servers?
19 A Yes.
20 Q And you came up with using the client
21 intelligence to pull --
22 A Pull -- pull it, yeah, and then --
23 Q And then Mark --
24 A -- Mark came up with a lot of the
25 algorithms for deciding when to go up and down

1 intelligently and, you know, there's a long process
2 between idea and actually making it real and actually
3 making it, you know, it working in the market and
4 turning the whole industry's head around. And Mark
5 did that.
6 Q Have you ever spoken to Mark Hurst about
7 these IPRs?
8 A I told Mark that the patent was being
9 challenged, and that's -- that's it.
10 Q Okay. And what about David Brueck, who is
11 he?
12 A Dave was another employee, I believe, at
13 XLon at the time. And he -- we asked him to build
14 the back-end segmenting and the coding. Because,
15 remember no -- no coders existed at this time that
16 did this. You know, the -- and -- and he had to
17 figure out how to -- to actually implement that. And
18 he came up with some great ideas in the process of
19 doing that as well. And so that's why they are --
20 he's a co-inventor.
21 Q Okay. So he came up with more the aspect
22 of -- you -- you had already come up with the
23 segmentation aspect, right?
24 A Yes.
25 Q And so he came up with taking those

1 segments and encoding them into specific --
2 A How to -- how to -- how to actually
3 implement that and make that work and make that
4 scale. And they both came up with the idea of the
5 virtual timeline. That's kind of implied by my
6 ideas, but they actually -- when they actually had to
7 implement the thing they recognized that we need this
8 capability here to make it actually work, especially
9 for live streaming. They invented that. I didn't.
10 But it was based on -- you know, it was kind of a
11 natural evolution of -- of my core ideas.
12 Q Okay. So David Brueck. You mentioned the
13 virtual timeline. Is that -- please explain what you
14 mean by that.
15 A That's just a way of describing what a vid
16 -- an adaptive-rate video streaming is. It says the
17 video consists of this piece and then this piece and
18 then this piece and then this piece. And -- and
19 it -- it's -- it's stitched together. Because, you
20 see, in the past it would be, the video consists of
21 this giant file.
22 Now, it's the video consists of this and
23 this and this and this. And, of course, for live,
24 that's very dynamic.
25 Q So it would say Segment 1?

1 A Segment 1 is at this time, Segment 2 is at
2 this time, Segment 3.
3 Q And it would have the time parameters
4 specified for each segment?
5 A I -- I think so.
6 Q Okay. Have you spoken to Mr. Brueck about
7 these IPRs?
8 A No.
9 Q Okay. When is the last time you spoke to
10 Mr. Brueck? Do you remember?
11 A It's probably been about five years.
12 Q All right.
13 MR. PAQUETTE: I think I'm at a good place
14 for a break, if you guys are good.
15 THE DEPONENT: Okay.
16 MR. PAQUETTE: Or we can keep going. I
17 will defer to you, Mr. Major.
18 THE DEPONENT: I need some water here.
19 MR. GUY: There's waters right here.
20 THE VIDEOGRAPHER: The time is 9:50.
21 We're off the record.
22 (Recess taken, 9:50 a.m. to 10:03 a.m.)
23 THE VIDEOGRAPHER: The time is 10:03.
24 We're back on the record. And before we go back, I
25 was asked to have people online to identify

1 themselves for the court reporter, please.
2 MR. EDELL: This is Jim Edell for the
3 patent owner, in-house counsel.
4 MR. LYNN: This is Jamie Lynn from Baker
5 Botts. Go ahead, Andrew.
6 MR. WILSON: Andrew Wilson, Baker Botts
7 for DISH.
8 MR. GUY: That was Andrew Wilson.
9 MR. LYNN: And Jamie Lynn with Baker Botts
10 for DISH.
11 Q (BY MR. PAQUETTE) All right. Welcome
12 back, Mr. Major.
13 Did you speak to anyone during the break?
14 A I visited a bit with my lawyers, but just
15 said nothing.
16 Q You visited but said nothing?
17 A Yeah. Just went back and, well, we can't
18 talk.
19 Q What did you talk about?
20 A Oh, I just said that I talk too much.
21 That's all.
22 Q You said that?
23 A I said that. I said that.
24 MR. GUY: Caution the witness not to
25 disclose attorney-client communication.

1 THE DEPONENT: Okay.
2 Q (BY MR. PAQUETTE) Let's stick with your
3 declaration, Exhibit 2010.
4 A Okay.
5 Q Moving on to paragraph 11, please.
6 A Okay.
7 Q Would you please read the first sentence
8 of that paragraph to yourself and let me know when
9 you're done.
10 A Okay.
11 Q Now, there you're talking about creating
12 video streamlets that were short in length. Earlier
13 you used the word segment. Is that a reference to
14 streamlets?
15 A Yes, same type of -- I -- I will call them
16 sometimes video chunks or video streamlets or video
17 segments.
18 Q Is streamlets a word that you came up
19 with?
20 A I believe Mark Hurst came up with the
21 word.
22 Q And in that sentence, you say that your
23 invention involved creating video streamlets that
24 were short in length and separately compressed and
25 encoded.

1 So, first, what do you mean by short in
2 length? Are you talking duration?
3 A Yeah, duration in length. They were
4 short like, typically two seconds, but it can be any
5 size, short size.
6 Q So just said slightly differently, you
7 have a series of segments or streamlets that are
8 short, two seconds?
9 A Short in length, but --
10 Q But consecutive?
11 A Consecutive, yeah.
12 Q And together they make up a larger video
13 presentation?
14 A That's right.
15 Q Okay. So if you were to take -- like,
16 let's use your ad example. If you took two segments
17 of video, you added a third segment, that was an ad,
18 and then you added two more segments of video, you
19 would create streamlets, true, of different videos?
20 A Well, usually there would be multiple ones
21 of each because they would be smaller than the full
22 ad.
23 Q Oh, I see what you're saying. So an ad
24 would have multiple streamlets, too?
25 A Yeah. A 30-second ad would probably have

1 15 segments.
2 Q But if you took all those segments and
3 arranged them in order, you would create a larger
4 video, true?
5 A That's correct.
6 Q Okay. How short does a streamlet have to
7 be to be considered a streamlet in the ABR patents?
8 MR. GUY: Objection, calls for a legal
9 conclusion.
10 Answer.
11 A They can be -- they can -- they can be
12 longer certainly, four seconds, eight seconds, maybe
13 even 16 seconds. You do lose, particularly with
14 live, the ability to start quickly as they get
15 bigger.
16 Q Okay. So --
17 A So smaller.
18 Q For live, the benefit is if you have a
19 shorter streamlet, you can start -- you can create
20 the streamlet and start encoding it --
21 A Faster.
22 Q -- faster. Okay.
23 A And you can -- and it's faster for the
24 client to get it, too. So --
25 Q Okay.

1 A -- that's -- that's the advantage of
2 having short versus long, but the patent allows
3 flexibility.
4 Q Okay. So it's sort of a tradeoff is what
5 you would say?
6 A There's tradeoffs there, yeah.
7 Q So -- so your invention, just to break it
8 down, is you're taking -- you're creating video
9 streamlets or segments, which are the same thing,
10 right?
11 A Yeah.
12 Q And you're encoding each segment
13 individually into, say, Bitrate A, Bitrate B, Bitrate
14 C?
15 A Yes.
16 Q Okay. You also -- you say they are
17 compressed and encoded. Could you describe what you
18 mean by that?
19 A Well, that they're kind of one thing.
20 When -- when video -- you know, raw video is massive
21 data. So it's always compressed, different --
22 different ways of compressing it. And as part of
23 that, it's encoded, too, so it's kind of one and the
24 same thing; but it's mostly compression.
25 Q Okay. So the encoding aspect is -- is it

1 fair to say that's a function of it being a digital
2 video that --
3 A Yeah -- well, and there's -- there was
4 different -- there's different formats of -- of --
5 of -- of ways that the video can be a container --
6 con -- you know, different ways of containing the
7 video, too, so. . .
8 Q So you're -- when you compress a video,
9 you're talking about encoding it to a specific
10 bitrate; is that what you're referring to?
11 A Yeah.
12 Q Okay.
13 A Probably, yeah.
14 Q So let's just say as an example, I have a
15 video from, like, a Disney movie, and I take it and I
16 chop it up into, say, two-second segments. And are
17 you with me so far?
18 A Yes.
19 Q You take each segment, so you have Segment
20 1, Segment 2, Segment 3, I take each segment and I
21 encode it to say Bitrate A and Bitrate B. Is that --
22 is that fair?
23 A Yeah, that's part of the process, yes.
24 Q That's part of your invention. So what
25 you end up with in your invention is -- let's just

1 use two bitrates as an example. You end up with
2 Segment 1 at Bitrate A, Segment 1 at Bitrate B.
3 Segment 2 at Bitrate A, Segment 2 at Bitrate B. Is
4 that fair?
5 A Yes.
6 Q Okay. And those are -- I guess said
7 slightly differently, Segment 1 at Bitrate A would be
8 the same bitrate of Segment 2 at Bitrate A, but it
9 would be different than -- let's stop there. Segment
10 1 at Bitrate A would be the same bitrate as Segment 2
11 at Bitrate A, correct?
12 A Likely, yeah.
13 Q Is there any instances where it wouldn't
14 be?
15 A Probably not.
16 Q Okay.
17 A It -- it -- technically it could switch,
18 if you wanted to, but you don't have to. You --
19 like, it usually doesn't happen.
20 Q So the -- but the Segment 1 across the
21 bitrates would be --
22 A Yes.
23 Q -- different -- different encoding rates,
24 correct, different bitrates?
25 A Yeah, each -- each -- each of the

1 segments, each of the versions of -- yeah, of Segment
2 1, there will be different bitrates that will have
3 different sizes.
4 Q But they would have -- they would have the
5 same corresponding content, it would just be --
6 A Same corresponding content. Same
7 corresponding timeline.
8 Q Okay.
9 A Preciseness -- one advantage is the
10 timeline. They start at the same time exactly. So,
11 again, switching.
12 Q And is that part of the -- creating the
13 segment and then encoding to create the perfect
14 timeline?
15 MR. GUY: Excuse me. Can I have that
16 question read back?
17 (The last question was read back as
18 follows: "And is that part of the -- creating the
19 segment and then encoding to create the perfect
20 timeline?")
21 MR. GUY: Incomplete hypothetical.
22 Answer, if you can.
23 A Basically, one way of implementing it was
24 just to give the same exact set of video -- two
25 seconds of video to multiple encoders at all the

1 different bitrates so they would obviously have the
2 exact same timeline.
3 Q (BY MR. PAQUETTE) Okay. And that was
4 beneficial why?
5 A Because then the client can switch between
6 different bitrates and there's no gaps. So the
7 client can ask for the first at Bitrate 1, and then
8 the second one because he has more bandwidth, it can
9 be a different bitrate and a different thing. But
10 for the user's playback experience, it's transparent.
11 Q Okay. So --
12 A It looks the same.
13 Q -- if it wasn't the case, then the user
14 would miss things --
15 A Yeah.
16 Q -- or when you switched you would lose
17 scenes, right?
18 A You could lose pieces, probably.
19 Q Pieces, okay. And that would be
20 undesirable? Everybody -- you didn't want that,
21 right?
22 A Yeah.
23 Q Okay. So you also in this paragraph talk
24 about how -- this is paragraph 11 --
25 A Yeah.

1 Q -- the different quality levels have
2 different sizes --
3 A Yes.
4 Q -- and required different amounts of
5 internet bandwidth to be successfully delivered on
6 time.
7 Could you just go into a little detail
8 about why a different quality level would have a
9 different size?
10 A Well, the different quality levels
11 typically is reflected in either -- on a
12 compression -- on a video compression it's reflected
13 either in the number of bits, you know, the
14 resolution, if it's HD, if it's 10 ATP, if it's 4K.
15 That's the number of dots. And so there's a lot
16 more -- the higher quality requires a lot more data.
17 Q Right. So if you have a -- if I had a --
18 a segment that was 600 kilobytes per second and 30
19 frames a second, the same segment encoded at 400
20 kilobytes per second and 15 frames per second, that
21 would be --
22 A That would be one instance --
23 Q Okay.
24 A -- of that, yeah. But it's -- it's --
25 yeah. Yeah. So there's -- there's several ways to

1 change how things are compressed. And they --
2 Q Right.
3 A -- all typically end up with different
4 sizes.
5 Q Okay. Could you give me some examples?
6 A Oh, yeah. 4K versus 10 -- 10 -- 24K, or
7 10 -- what is it?
8 Q 1080p?
9 A Oh, yeah, 1080p. Sorry. I froze up on
10 that. Those take different -- that's -- that's a
11 different size.
12 Q Okay. Understood. So that -- that larger
13 file size, that would take longer to download,
14 correct?
15 A Yes.
16 Q Over the same internet bandwidth?
17 A Same internet bandwidth, yeah.
18 Q Okay. So all other things being equal,
19 you know, if you have a two-second segment and it
20 will take you five seconds to download, you'd say
21 that's probably not the right one for this client,
22 correct?
23 A Yeah. Well, what will happen is it will
24 shift down and the next one will be a lot smaller to
25 catch up, because obviously it took five seconds and

1 we only played it for two seconds. We're getting
2 behind. We get behind unless we catch up. The user
3 will see a -- a hiccup.
4 Q So when you say "get behind," what are you
5 talking about?
6 A Get behind on the playback.
7 Q Okay. So --
8 A On the -- on the download that's feeding
9 the playback. The downloading of the data is feeding
10 the playback.
11 Q So are you talking about a buffer?
12 A Yeah. The -- the client will -- all --
13 all video playback has a buffer --
14 Q Okay.
15 A -- of some size. And, again, if the data
16 is coming in slower than it is getting -- taken out,
17 that's how -- that's how a hiccup happens, is if you
18 don't correct that problem.
19 Q Okay. So even before the ABR patents, all
20 video players had a buffer, right?
21 A Yes.
22 Q And they would download and they would put
23 things -- put data in the buffer to build up a
24 cushion, I suppose, for lack of a better word, right?
25 A That's right, yeah, a little spinning

1 wheel which you'll see often.
2 Q Right. And so that's what -- that's what
3 would happen with progressive downloading?
4 A Yes.
5 Q Okay.
6 A But it happened -- it happens with any
7 streaming, honestly.
8 Q Okay.
9 A And it just doesn't happen very often
10 with -- with my invention.
11 Q And the -- so the Move -- the Move player,
12 I think you mentioned sometimes the Move player had
13 nine or so different quality levels at one time?
14 A Sometimes we used -- we could use nine
15 different quality levels, yes.
16 Q And would the Move player vary frame rate
17 as well as bitrate?
18 A Well, the -- the frame rate will change
19 the bitrate, yes.
20 Q Okay. Understood. So I think I saw that
21 sometimes there was, say, 30 frames per second at the
22 highest quality, and sometimes you would have -- I
23 think the lowest quality was 12 frames per second.
24 Does that sound right?
25 A I don't know what the numbers were.

1 Q Okay. Let's actually look at Exhibit --
2 I'm handing you Exhibit 2012 that's been previously
3 marked.
4 So the front page here, this says, "Move
5 Networks, Technical Overview of Move Networks
6 implementation." Do you recognize this?
7 A I'm sure I saw it in the past. I haven't
8 seen it in a long time.
9 Q I just want to look at one thing. If you
10 go to page -- page 19.
11 A Okay.
12 Q Now, it appears at the bottom here this
13 chart is giving some examples of --
14 MR. GUY: I'm sorry. What page are you
15 on?
16 MR. PAQUETTE: 19.
17 THE DEPONENT: Page 19.
18 Q (BY MR. PAQUETTE) At the bottom it
19 appears this chart is giving some examples of Move's
20 quality versions. Does that look right?
21 A It says high definition, yeah.
22 Q And it's got a -- if you see the left
23 column there, it has Total Rate, then Audio Rate,
24 then Video Rate. Do you see that?
25 A Yes.

1 Q It appears that the total rate is a sum of
2 the audio rate and the video rate. Does that look
3 correct?
4 A Yeah, that's what it appears to be.
5 Q So it looks like the Move player had -- I
6 don't know how many are here, but it had many
7 different quality levels.
8 In sort of the middle of this chart, do
9 you see FPS as a column?
10 A Yeah. FTS -- PS, yeah.
11 Q Would that be frames per second?
12 A Yes.
13 Q See, this is what I was referring to. So
14 some -- say the lowest quality I think would be rate
15 -- Total Rate 32 at the top there, right?
16 A Total Rate 32. Okay. Yeah.
17 Q Do you see that? And that would have a
18 small frame size of 96 by 54, and it would have a
19 frame per second of 12. Is that true?
20 A That's what the chart looks like, yes.
21 Q Okay. And then if we go all the way down
22 to the bottom, we see it goes as high as Total Rate
23 of 2400, and that would be a frames per second of 30,
24 right?
25 A Yes.

1 Q Now, in the Move player, these -- these
2 different versions, they would be the same video,
3 right?
4 A Yes. It would be the same video, just --
5 yeah.
6 Q So even though you would have, say,
7 reduced motion in the -- the lower 32-rate 12 frames
8 per second, you'd still consider that the same video,
9 true?
10 MR. GUY: Objection. Could I have that
11 read back? Just hold on.
12 THE REPORTER: "So even though you would
13 have, say, reduced motion in the -- the lower 32-rate
14 12 frames per second, you still consider that the
15 same video, true?"
16 MR. GUY: Objection to form.
17 Q (BY MR. PAQUETTE) I'll ask it again.
18 In this example from Move, would the
19 12-frames-per-second video be the same as the
20 30-frames-per-second video?
21 A It would look tremendously fuzzy and --
22 and jerky, but it would be the same underlying video,
23 just not very -- extremely poor quality.
24 Q Okay. So it would be -- you said it would
25 be jerky. Why would that be?

1 A Well, watching a 12-frames-per-second
2 video versus a 30-frames-per-second video, 30 seconds
3 is -- it doesn't appear to be jerky, but 12 usually
4 does.
5 Q And that would just be because, I mean,
6 you have fewer frames per second. So one frame is on
7 the screen for longer, correct?
8 A I -- yeah.
9 Q Okay.
10 A I suppose that's -- that's -- that's --
11 that's what that means, yes.
12 Q Okay. Let's go back to your declaration,
13 please.
14 A Okay.
15 Q Let's talk a little bit more about
16 paragraph 11 where you -- do you see where you say,
17 "The client playback device is in control of
18 switching between the different quality streamlets"?
19 A Yes.
20 Q And we already touched on this a little
21 bit, but could you -- could you explain a little bit
22 more about what makes the client playback device in
23 control?
24 A The client playback device decides -- it's
25 -- it's presented several, if not maybe even nine or

1 whatever, different versions of the same video, and
2 it knows what the sizes of those video is and it
3 knows what the bandwidth it's just recently seen.
4 And so it makes a decision for every two-second video
5 streamlet, which size to get. And -- and all of that
6 intelligence and that monitoring is done by the
7 client itself.
8 Q And so that would -- this is something
9 that happens automatically, right?
10 A Well, there's code that does that.
11 Q Right?
12 A But that's part of the playback is -- that
13 was -- one of the uniquenesses of the adaptive -- of
14 the Move Adaptive Bitrate Player was that no other
15 player did it at this time like this. So, yeah.
16 Q So it was -- it was -- it was an
17 improvement upon a user clicking a quality level?
18 A It was an improvement, and it was just --
19 yeah, it worked better, but it was also cheaper to
20 deploy, too. Because, again, you didn't have to
21 have -- buy expensive servers to -- to do that.
22 Every client brought his own computer. And so all of
23 that processing was done by the client, and so it
24 could scale. Instead of one server doing it all,
25 each -- more -- the more players you -- the more

1 clients you had, the more compute power you had to do
2 it. Each had its own compute power.
3 Q Okay. So, for example, the Move player
4 would be downloaded and installed on, say, someone's
5 laptop, right?
6 A Yes.
7 Q And the code for the Move player would --
8 let me back up.
9 So then how would a user select a video?
10 A Oh, typically, off of a web page or
11 something, like, push play.
12 Q And they would just select the video.
13 They wouldn't select the quality?
14 A No, they wouldn't select the quality.
15 Q And then all of the intelligence on the
16 player would execute the code to determine which next
17 segment --
18 A That's right.
19 Q -- quality level to --
20 A Yeah, the -- the Move players that play
21 this video over here, goes to get the data about it
22 and starts playing it. And then in realtime figures
23 out what the bandwidth was and adjusts the quality
24 and the bitrate function of exactly what it was
25 measuring at that time of internet bandwidth that was

1 available to it.
2 Q Now, you also mentioned -- I think you
3 said measuring every two seconds. Is that a function
4 of your invention?
5 A Yeah. To make it work you obviously had
6 to measure the internet bandwidth, and the decision
7 had to be made every two seconds.
8 Q Okay.
9 A What am I going to get next?
10 Q And would that -- is that a function of
11 the streamlet size, I guess is my question, or is it
12 always two seconds?
13 A Yeah, the two seconds is a function of the
14 streamlet size; because, again, that's the decision
15 that needs to be made every two seconds, or whatever,
16 the next video, how big should it be? How -- how
17 quality -- how much quality should -- can I support
18 on this next segment.
19 Q Okay. So does your invention have to
20 measure the bandwidth every two seconds or does it
21 just have to make the decision every two seconds?
22 MR. GUY: Objection, may call for a legal
23 conclusion.
24 Answer.
25 A It could do either way. It could be

1 measuring it. It just has to have it some way. The
2 measure -- the actual how it measures it is an
3 implementation detail.
4 Q (BY MR. PAQUETTE) Okay.
5 A But definitely a decision has to be made
6 every two seconds, a function of that data as to what
7 the next video quality should be.
8 Q And if there's no change, would the player
9 just continue on at the same quality level?
10 A Quite often it does that.
11 Q Okay.
12 A Most of the time, it does that. It does
13 try to get to the highest quality that it can support
14 always.
15 Q And how does it know it can support a
16 higher quality?
17 A Because it tries and it works.
18 Q I guess, is that purely a bandwidth
19 calculation?
20 A It's prime -- it's primarily a bandwidth
21 calculation. However, at that time some computers
22 did not have the horsepower to do the highest quality
23 video. If the device itself doesn't have the power
24 to render a 4K video or a 2K video, or whatever,
25 the -- the -- the -- the player also knew that. It

1 could figure that out and decide not to go to the
2 highest bitrates because it's going to overcome the
3 capacity of the -- the -- the actual computer.
4 Q Okay. So you're talking about taking CPU
5 capacity into account as well, potentially?
6 A Yeah, CPU and video frame rendering, you
7 know, the whole -- the whole thing that's required
8 to -- to deliver video.
9 Q So I guess relatedly, you talk about in
10 the paragraph 11 the -- this enabling smooth
11 non-interrupted viewing?
12 A Yes.
13 Q And I think -- I think we already touched
14 on this, but you're not saying that freezing or
15 buffering is impossible. It's just unlikely?
16 A It's significantly less likely.
17 Q And your -- when you switch, because you
18 have those common time borders, the user won't
19 perceive the change, is that correct?
20 A The user doesn't perceive -- now,
21 obviously, if it switched from 1080p down to postage
22 size, the user would see that. But most of the time
23 we designed it to where it would just kind of go up
24 and down a little bit and it would be imperceptible.
25 Q Okay. So often you would -- let's say --

1 let's say you think you can switch to the highest
2 quality but you're not sure, you might go up to the
3 next one, I believe and --
4 A Yeah, we would ratchet our way up.
5 Q Okay. So you might go to the second
6 highest, and then if things are still okay, you'd go
7 up to the --
8 A Yeah. Yes.
9 Q So sticking with paragraph 11, do you see
10 kind of toward the middle bottom-ish of the paragraph
11 you say, "All of these capabilities use the standard
12 web servers, standard Content Delivery Networks,
13 (CDN)s, and standard internet protocols, like HTTP"?
14 A Yes.
15 Q And we already discussed the ordinary
16 standard web servers. You -- you -- you came up with
17 the ordinary web server aspect, right?
18 A Well, the -- the fact that it would use
19 HTTP, and HTTP is the core part of the web, yeah.
20 Q Right. And so that's like -- the HTTP was
21 the critical part for enabling the adaptive nature of
22 your invention?
23 A Well, we could use other transports; but
24 HTTP is the one that's -- that's available and CDNs,
25 that's what's there. And it gets -- goes through --

1 goes through firewalls. It's -- you know, any time
2 you do a web page. So it was just obvious to try to
3 use it. And that, again, that was one of the
4 disadvantages of RTP/RTSP. It was not a standard.
5 It was a standard, but it did not -- yeah, it was --
6 it was specialized and --
7 Q Right. It was proprietary as well? Is
8 that --
9 A Well, the implementation would be
10 proprietary.
11 Q Oh, I see, I see.
12 A Again, so that you couldn't mix the
13 systems. Whereas the web is -- is open, you know, I
14 can use a Chrome browser or an Edge browser or
15 whatever and everything works.
16 Q Okay. So we've got using HTTP over
17 ordinary web servers --
18 A Yes.
19 Q -- to request segmented video, right?
20 A Yes.
21 Q At different quality levels?
22 A That's right.
23 Q And that's the core of your invention,
24 right?
25 MR. GUY: Objection, characterization.

1 Answer.
2 A That's a big part of it, but not -- not
3 everything. It's really the combination of all of
4 these things together into a system that -- that --
5 that -- that worked. And it was cheaper.
6 Q (BY MR. PAQUETTE) So in the next sentence
7 in paragraph 11, you say, "The use of standard HTTP
8 GET requests also allowed for concurrent delivery of
9 different parts of the video."
10 A Yes.
11 Q So HTTP GET requests, if I understand it
12 correctly, that's the standard way for clients to ask
13 for things from a server, correct?
14 A That's right, that's -- yeah.
15 Q And that was all -- I mean, HTTP is
16 well-known?
17 A That's standard.
18 Q Goes way back before 2003, right?
19 A Probably the vast majority of everything
20 uses HTTP today, yeah.
21 Q And what do you mean by "allowed for
22 concurrent delivery of different parts of the video"?
23 A Well, this was another clever thing we did
24 is, there's a capability on HTTP called range
25 requests. And range requests lets you get part of

1 the video -- part of the object. You don't have to
2 get the entire part. And so we would actually open
3 sometimes three TCP connections. And the first one
4 would get the first third, the next one would get the
5 next third, and then the third one would get the --
6 the bottom third concurrently.
7 Q Okay.
8 A And effectively it was like adding lanes
9 to the freeway, more lanes to the freeway because you
10 have parallelisms. And the reason HTT -- the reason
11 TCP, which is what HTTP is built on, works is that it
12 occasionally -- if there's congestion points in the
13 network, there's effectively some of the TCP streams
14 slow down dramatically for a little bit. You'd --
15 you'd observe it when you watch a download, watch --
16 watch the spinning thing on a download, it will be
17 fast and it will be slow. What you're seeing there
18 is TCP responding on -- on different things. And so
19 that -- of course, that wreaks havoc with video
20 streaming, potentially. So -- but it's -- it's
21 statistically random.
22 So if you have three TCP connections going
23 at the same time bringing the data down, it's very
24 unlikely that all three of them are stopping. Maybe
25 one or two would stop. But actually in the third

1 one, it would probably be going faster because it
2 would have more unthrottled bandwidth.
3 So, again, it's sort of similar to adding
4 more lanes on the freeway. And so, again, that would
5 allow us to get -- again, remember, people's internet
6 bandwidth and what was provided -- you know, in 2003,
7 you know, 2004, you know, people thought they had
8 great bandwidth when they had 2 megabytes, you know.
9 And this allows -- and -- and this
10 allows -- it -- it largely overcome -- came the
11 inherent problem with TCP by doing multiple TCP
12 connections.
13 Q And the -- the inherent problem with TCP
14 was that congestion?
15 A The congestion avoidance shuts -- slows
16 things down. And the way you -- and -- and you're
17 familiar with it even though you don't know it, when
18 you watch downloads.
19 Q So when you talk about requesting parts,
20 are we talking about parts of a segment or are we
21 talking about whole segments?
22 A Parts of the video segment, also sometimes
23 multiple segments at the same time.
24 Q Okay. So another important aspect of your
25 invention was to take either parts of a segment or

1 request whole segments concurrently and parallel?
2 A Yeah, that -- that was not -- it's not
3 required, but it was something that improves it
4 significantly.
5 Q Because it alleviated some congestion?
6 A Yeah, it --
7 Q Sometimes?
8 A -- alleviates the behavior -- it minimizes
9 the damaging behavior of TCP in dealing with network
10 congestion.
11 Q Okay. All right. Let's go to
12 paragraph 12, please.
13 A Okay.
14 Q Now, here you start talking about
15 streaming of live TV. Do you see that?
16 A Yes.
17 Q Do you see where you say -- the second
18 sentence in paragraph 12, you see, "changed the live
19 video feed into a sequence of segments so each
20 segment could be encoded and compressed on the fly in
21 various bit rates" -- or "into various bit rates,"
22 excuse me.
23 A Yes.
24 Q I just want to ask what "on the fly" means
25 in this instance?

1 A Well, just -- just a term that says it's
2 -- there -- it's -- it's all happening on the fly.
3 It's just that's part of what's happening with video
4 -- with live, you're getting a stream of video,
5 whereas if you're compressing video on demand, you're
6 getting a file, giant file. This was on the fly we
7 were chunking it. We're basically, okay, as soon as
8 two seconds came, okay, take that, go give it to
9 typically multiple serve -- multiple servers, but
10 different entities to compress it at the different
11 bitrates. And then the next two seconds shows up.
12 Okay, give it, maybe, to a different set of servers
13 to compress it at the different bitrates.
14 And the fact that you could do multiple
15 servers and the -- the video was so easy to handle in
16 terms of two-second chunks meant we could use 10 or,
17 you know -- you know, more than one server to do the
18 compression for all of the different bitrates. And
19 if we wanted to add more bitrates, we just added more
20 servers.
21 And that was, by the way, very different
22 than how traditional video compression was happening
23 on live streams by, you know, cable companies and
24 satellite companies.
25 Q Because they were -- they were encoding

1 entire files?
2 A They were just doing the stream, whereas
3 we're chunking it, giving it to multiple servers
4 to -- to do it.
5 Q Okay. So just to break it down, you
6 have -- you have, say, a raw video coming in, right?
7 A Yeah, which is typically a stream of bits.
8 Q Right. And you can measure the duration
9 as it's coming, right?
10 A That's right, there's time -- time stamps.
11 Q And then say every two seconds you create
12 a new segment?
13 A We take that -- the two seconds and make
14 that, that's a file.
15 Q It's a file. Okay.
16 A Piece of data, as many bits from here to
17 here, and then we give it to multiple servers to
18 compress, or one server, you know, if it has enough
19 capacity. But in those days, you know, computers
20 were probably 100 times less powerful, or dozens of
21 times less powerful than they are today in terms of
22 compression. So -- and then we could, of course, do
23 a better job compressing it that way.
24 Q You talk about live video. There's
25 obviously an inherent delay with live --

1 A Yes.
2 Q -- to some extent. At what point does
3 live become no longer live, in your opinion?
4 MR. GUY: Objection, may call for a legal
5 conclusion.
6 A It's --
7 MR. GUY: Answer if you know. Please wait
8 for -- please wait until I finish the objection.
9 Answer.
10 A Okay. I think it's a matter of taste. I
11 would think if you're more than a couple of minutes
12 behind live, it's not live.
13 Q (BY MR. PAQUETTE) Okay. Fair enough.
14 A And I think it's more taste.
15 Q All right. If we could just briefly go to
16 paragraph 19 of your declaration. That will be on --
17 A Okay.
18 Q -- page 9.
19 A Yes.
20 Q In the second sentence of paragraph 19,
21 you say that your "technology works almost exactly
22 the same way regardless of whether it is used for
23 live TV or video on demand."
24 Is that because you're still creating the
25 segments and then encoding them into different

1 bitrates?
2 A Yeah. It's whether -- the difference is
3 baud. Video on demand you get the entire thing
4 upfront, and with live, you're getting it coming.
5 But in the end of the day, both of them end up with
6 the same data. In fact, you can then use the live
7 encoded as video on demand.
8 Q Right. So you could take -- once the live
9 event is over, you could store it on a server?
10 A Yeah, well, it's already stored on a
11 server.
12 Q Already stored on a server?
13 A And it's video on demand. The other big
14 advantage is we got time shifting. So you could go
15 back in time on a live and play it back, too. So
16 you've actually got video on demand, live video on
17 demand and time shifting of live video on demand all
18 with a single architecture and all basically the
19 same.
20 Q Okay.
21 A And the only difference with live is you
22 don't have all the data upfront.
23 Q So you don't know how long the video is
24 going to be, but --
25 A Yeah, but you just -- usually you're just

1 constantly doing it forever because -- yeah.
2 Q All right.
3 A Like a TV channel, you're just -- you're
4 just always doing it.
5 Q Let's go to paragraph 17 on page 8,
6 please, of your declaration.
7 A Okay.
8 Q If you could please just read the first
9 sentence to yourself, and just let me know when
10 you're done.
11 A Which -- which sentence?
12 Q Sorry, paragraph 17, the first sentence.
13 A The first sentence, yeah. Okay.
14 Q When you refer to small here, for small
15 individually included streamlets, we're still talking
16 about duration?
17 A I'm talking about duration, yes.
18 Q Okay. And we've already covered
19 individually encoding, that's compressing each
20 segment to the various bitrates, correct?
21 MR. GUY: Objection, characterization.
22 You can answer.
23 A Yes, they're encoded in different
24 bitrates, yes.
25 Q (BY MR. PAQUETTE) Now, you say here that

1 these segments "are aligned by starting time and
2 substantially the same duration (typically two
3 seconds)."
4 What do you mean by they're substantially
5 the same duration?
6 A Well, what I mean here is, if you are --
7 like, for example, splicing an ad into a live video
8 stream, the ad would begin not typically on the
9 two-second boundary. So what you would do is you
10 would tell the player to play maybe the first second
11 of the -- the live video stream, but only do the
12 first second and then switch to start running the ad,
13 okay? And then -- that's almost like you're
14 switching video underneath. You're obviously going
15 to a different place to get the ad, so you go get the
16 ad, then you're going to come back to the live video
17 stream, in which case then you have to sometimes go
18 into -- partly into the two seconds to the -- into
19 the two-second video, partly into it to splice --
20 come back into the live. Because, again, the two
21 seconds aren't going to exactly align where the ad
22 came and left and -- and came back.
23 So that's what I mean by substantially, is
24 that you don't always play a two-second video.
25 Sometimes you play part of it, sometimes you play the

1 first part of it, sometimes you play the last part of
2 it as you're splicing, particularly advertising,
3 into -- into a live stream.
4 Q Okay. So you could -- you could pull, I
5 guess, a different segment and insert it into the --
6 A Yeah. Yeah, you're -- yeah, you're --
7 you're -- you're going to a different place
8 temporarily to go get the ad.
9 Q Okay. And then you're resuming the video?
10 A Then I'm going to go back to the original.
11 Q Okay.
12 A And that's -- so that's -- I'm just
13 mentioning that's how you do ad. That's why I just
14 say it's not always playing two seconds.
15 Sometimes --
16 Q So --
17 A -- it only plays part of the two-second
18 segment, yeah.
19 Q So sometimes -- sometimes it's two
20 seconds, sometimes it's about two seconds?
21 A Yeah.
22 Q Fair?
23 A And it's -- you know, it's pretty rare,
24 but still happens. We all like ads, right?
25 Q Yeah, when I -- when I originally read

1 that I thought you were saying that the streamlets
2 are typically two seconds. But sometimes they're not
3 two seconds?
4 A Well, they're -- they're -- I should have
5 been clearer there. They -- they're -- typically
6 they're two seconds long or four seconds. Other
7 people -- some people do four seconds. But the
8 playback, sometimes you do a partial playback.
9 Q Okay.
10 A When you're splicing ad -- particularly
11 when you're splicing ads in.
12 Q Okay. So just to make sure --
13 A Let's clarify that, yeah.
14 Q -- I understand. You could have, say --
15 say you have -- the video is five streamlets, and
16 they're each -- the first one is two seconds, the
17 second one is 2.1 seconds.
18 A No. All of the -- all of the video -- all
19 of the streamlets would be two seconds.
20 Q They would all be the same?
21 A But the playback --
22 Q The playback is what changed?
23 A -- could be told to only play the first
24 second of the two-second videos segment. So the
25 player only plays part of the segment, then it goes

1 somewhere else and starts a different set of streams,
2 which happens to be the ad -- the ad that's being
3 spliced into the video stream.
4 Q Okay. So --
5 A It's play -- it's -- yeah. Yeah. So --
6 so maybe it's unclear here. But it's -- it's --
7 yeah, it's playback.
8 Q Okay. So this is referring to playback.
9 But -- but it's important that each streamlet is the
10 exact same duration, in your invention?
11 A Pretty much, yeah.
12 Q Each sequential streamlet.
13 A There's no reason to change it.
14 Q There's no reason, okay.
15 A There's no reason to change it.
16 Q So you wouldn't have, like, a two-second
17 and then a 2.1 second?
18 A That could have been done, but -- and I'll
19 -- I was thinking about maybe it may make sense,
20 but -- and I think the patent allows for that. I'm
21 not totally sure on that. But in practice it's
22 always just been two seconds or four seconds.
23 Q What about when a video doesn't have a
24 clean end point, you know, like, it's not perfectly
25 divisible by two seconds or four seconds?

1 A Well, again, the very last video frame
2 you'll tell it -- again, it will say, here's this
3 video and play one second of it. Because that's --
4 that's its size, yeah. So yeah, definitely at the
5 end of a video on demand thing, the very last segment
6 is going to be smaller.
7 Q It would actually be smaller, it wouldn't
8 just be filled with, like, dummy data or something?
9 A Yeah, it would be smaller.
10 Q Okay.
11 A It doesn't need to be. Because, again,
12 the player can be told to only play partial. It
13 says, here's my two seconds, you know, here's the
14 video, play two seconds of it. Here's this video's
15 chunk, play one second of it, and maybe the video
16 underneath is two seconds.
17 Q Okay.
18 A So, yeah. That's what that's talking
19 about.
20 Q So it could play precisely the two
21 seconds --
22 A Yeah.
23 Q Or it could play 1.9 seconds and that
24 would be substantially --
25 A Yeah, it's fine --

1 MR. GUY: Please let him finish his whole
2 question, so I can then object.
3 THE DEPONENT: Okay.
4 MR. GUY: My objection is incomplete
5 hypothetical because I never heard the whole thing.
6 So why don't we try again.
7 THE DEPONENT: Okay.
8 Q (BY MR. PAQUETTE) So my question was, you
9 could take a two-second streamlet and play back
10 precisely two seconds, or you could take a two-second
11 streamlet and play back 1.9 seconds to insert an ad,
12 and they would both be substantially the same
13 duration, correct?
14 MR. GUY: Again, incomplete hypothetical.
15 A The underlying object would be the same
16 object. It's just now this is -- this is how the
17 player is interpreting that object. The player is
18 told not to play the entire two seconds, the player
19 is to -- it's to play 1.9 seconds, in your example.
20 Q Yeah, I guess I'm just confused about the
21 playback aspect, because this first sentence in
22 paragraph 17 talks about creating the individually
23 encoded streamlets or segments which are
24 substantially the same duration, typically two
25 seconds.

1 A Yeah. And that's -- that's -- that's
2 totally true. But again --
3 Q But you're saying they would always be two
4 seconds?
5 A Yeah, yeah, the segments would be two
6 seconds, but the player can be told to play
7 different --
8 Q Okay.
9 A -- on the playback. But the -- the -- the
10 segments would likely be two seconds, yeah.
11 Q Is this at odds at all with the next
12 sentence in this where you say, "The contiguous
13 playback yields seamless playback of the full
14 content"?
15 It sounds -- it seems to me if you're
16 inserting an ad, you're -- you're not doing seamless
17 playback.
18 MR. GUY: Objection, speculation.
19 Answer.
20 A The way it works, it looks seamless. The
21 user has no idea. Really doesn't have any idea that
22 it's -- that it's -- that it's switching. But this
23 is just how you do it. Regular television, when they
24 insert ads, they do something similar.
25 Q (BY MR. PAQUETTE) So on this contiguous

1 playback point you make here, you say, "The time
2 indexed order of the streamlets independently yields
3 seamless playback of the full content."
4 I'm a little confused by the word
5 "independently" here. Could you explain what you
6 mean by that?
7 A Okay. "Continuous playback of the time
8 index order independently yields seamless playback."
9 I think what I meant there is that, just
10 the fact that they're all contiguous in time with --
11 you know, I just brought up an exception with ads,
12 but, you know, that's very -- but -- and so they're
13 all -- it's -- you just have to keep playing them
14 one -- one after another and it works.
15 I may be referencing there just -- just
16 the -- you know -- well, I don't know. I don't know.
17 MR. GUY: Caution the witness not to
18 speculate.
19 A Yeah, I won't speculate.
20 Q (BY MR. PAQUETTE) So if we read this
21 without the word "independently," it says,
22 "Contiguous playback in the time indexed order of
23 streamlets yields seamless playback of the full
24 content."
25 A Yeah.

1 Q Is that probably what you meant?
2 MR. GUY: Objection, speculation, form.
3 A Yeah, I'm not totally sure what
4 "independently" meant.
5 Q (BY MR. PAQUETTE) Okay. That's fine. I
6 was just a little confused. I was trying to figure
7 out --
8 A Yeah.
9 Q -- if it meant something specific.
10 But on contiguous playback, you're talking
11 about the fact that the segments are each in a time
12 order, correct?
13 A Yes.
14 Q So Segment 1 would be time zero to two
15 seconds. Segment 2 would be time two seconds to four
16 seconds, and so on, right?
17 A Yes.
18 Q And you're saying that you -- by -- by
19 requesting from an ordinary web server, right, and
20 downloading each individual segment to your computer
21 and playing them back in order, you're yielding the
22 entire video; is that fair?
23 A That's how -- that's how streaming
24 playback works, yes.
25 Q Okay. Do they have to be requested and

1 delivered in order?
2 A No.
3 Q So you could request Streamlet 3 before
4 you need it?
5 A Yeah, there -- there can be buffering
6 issues if you got enough buffer. And as I mentioned
7 before, I can have multiple TCP connections going.
8 So one could arrive before the other. But as long as
9 the other arrives in time, it doesn't really matter.
10 So they're -- in that sense, they're kind of
11 independent of each other. What matters is are they
12 there at the time needed to play.
13 Q Okay. So the player would say, I need to
14 play Segment 2, is it here?
15 A Yes.
16 Q If it's not here, I need to ask for it?
17 A Yeah. Well, it would have asked for it a
18 long -- a fair -- earlier.
19 Q Okay.
20 A You know, two seconds earlier, and then
21 it's hoping.
22 Q Hoping it arrived in time?
23 A It -- you know, catastrophic -- a
24 catastrophic -- or a congestion problem happens and
25 it just hasn't shown up yet. That's the case where

1 sometimes it will hiccup, not play. But, again, with
2 all the things done that happens extremely rarely
3 with our implementation -- with this patent, yeah.
4 Q All right. So based on paragraph 17 and
5 what we've been discussing, would you agree that the
6 core of your invention is creating these segments
7 that make up a larger video, each segment is a
8 different size at different quality levels, and the
9 intelligence is on the client?
10 MR. GUY: Objection, mischaracterizes
11 prior testimony.
12 Answer.
13 A Yeah, that's -- that's the core of it, but
14 not all of it certainly.
15 Q (BY MR. PAQUETTE) Okay.
16 MR. PAQUETTE: Would you like to take a
17 break?
18 THE DEPONENT: No, I'm fine.
19 MR. GUY: Sure. Yeah, if we -- is there
20 another conference room?
21 MR. PAQUETTE: I don't believe so. We can
22 put you in a visitor office if you want.
23 MR. GUY: Okay.
24 MR. SHENG: Yeah, just grab a --
25 MR. GUY: I think that's what we did last

1 time. As long as you don't mind that.
2 THE VIDEOGRAPHER: Are we taking a break?
3 The time is 10:54. We're off the record.
4 (Recess taken, 10:54 a.m. to 11:09 a.m.)
5 THE VIDEOGRAPHER: The time is 11:09.
6 We're back on the record.
7 Q (BY MR. PAQUETTE) Hi, Mr. Major. Did you
8 speak to anyone during the break?
9 A Not my legal counsel.
10 Q I'm sorry, what was that?
11 A I didn't speak to legal counsel.
12 Q You didn't speak with legal counsel?
13 A Yeah.
14 Q Did you speak to anyone else?
15 A I spoke about Lake Powell and the
16 Colorado River, but. . .
17 Q So we've discussed a lot about these
18 streamlets that you came up with. I just wanted to
19 make sure I understood. If we look at paragraph 16
20 of your declaration, please, do you see in that first
21 sentence on the third line there, you say, "short
22 (e.g., 2-second) encoded streamlets."
23 So I'm just struggling, I guess, to see if
24 the e.g. -- let me ask it this way: So you're
25 saying, for example, all of the streamlets could be

1 two seconds?
2 A Yes, they could be.
3 Q But you're also saying -- are you saying
4 also all of the streamlets could be four seconds?
5 A Yeah. I -- I'm just saying two seconds is
6 an example.
7 Q Okay.
8 A It could be different sizes, and
9 potentially even mixed; but --
10 Q So they could --
11 A -- practically that could -- that could
12 happen, but it doesn't -- it doesn't practically
13 happen.
14 Q What do you mean by it doesn't
15 practically?
16 A Well, when people deploy it, they -- I
17 think usually it's two seconds or four-second chunks
18 size.
19 Q So --
20 A I'll just stick with that, yeah.
21 Q There would be no reason to have a two and
22 then a four and then a two?
23 A No, there's no reason.
24 Q Okay. And sorry, I'm just hung up on this
25 word "substantially" in paragraph 17 --

1 A 17.
2 Q -- because you say in that first sentence,
3 about three lines down, where it starts with "which,"
4 you say, "which," referring to the segments or
5 streamlets, correct?
6 A Yeah.
7 Q You say, "Which are aligned by starting
8 time and substantially the same duration (typically
9 two seconds)."
10 So I just wanted to make sure, when you
11 say substantially the same duration, do you mean
12 approximately the same duration?
13 A No, they're --
14 THE DEPONENT: Oh, sorry.
15 MR. GUY: Objection, form.
16 A They are -- they are -- they are typically
17 always two seconds long, with the exception of the
18 very last segment would be shorter typically. So,
19 yeah, I was just trying to say that there can be
20 exceptions, but, you know, 99.99 percent of the time,
21 they're two seconds long, or whatever the --
22 Q (BY MR. PAQUETTE) How does the "Align by
23 starting time" fit in with this "Substantially the
24 same duration"?
25 A Well, that's just two statements there,

1 that they are typically -- well, they're always
2 aligned by starting times, you know, because you
3 have -- that's -- that's a hard requirement. And
4 almost always they're two seconds, or four seconds or
5 whatever you pick.
6 Q Okay. So when you say, "Substantially the
7 same duration," you mean precisely the same duration
8 or almost the same duration?
9 A Yeah. But --
10 MR. GUY: Hold on. Wait. Asked and
11 answered. Objection to form.
12 A Yeah. Always the starting time is the
13 same between all the sets.
14 Q (BY MR. PAQUETTE) Right. But I'm asking,
15 when you say, "Substantially the same duration,"
16 you're saying that the streamlets could be exactly
17 two seconds or they could be close to two seconds,
18 true?
19 A It's --
20 MR. GUY: Asked and answered, object to
21 the form.
22 THE DEPONENT: Yeah.
23 MR. PAQUETTE: Well, you're not letting
24 him answer. Please answer the question.
25 MR. GUY: No, he's already answered.

1 A Yeah. It's possible it doesn't ever
2 happen. So --
3 Q (BY MR. PAQUETTE) It doesn't ever happen?
4 A Well, when people configure it. It's
5 always -- they always configure it for two seconds.
6 Q Okay.
7 A But they -- the invention does not require
8 everything to be two seconds. It just requires -- it
9 requires them to be aligned at the same time.
10 Q Okay. Let's move on to -- let's go to
11 paragraph 18.
12 A Okay.
13 Q And here you're talking about EchoStar not
14 merged with DISH, purchased Move for 45 million.
15 A Yes.
16 Q I assume that purchase included the ABR
17 patent portfolio, correct?
18 A Yes.
19 Q Could you please read paragraphs 19 and 20
20 to yourself, and just let me know when you're done.
21 A Okay.
22 Q You don't cite any exhibits to support the
23 statements in paragraph 19, correct?
24 A Yeah, I -- there's no exhibit cited there.
25 Q And you also don't cite anything to

1 support your statements for paragraph 20, true?
2 A Not in that paragraph, but it's other
3 places.
4 Q So for the statement that "DISH TV grew to
5 over 2 million subscribers based on its adoption of
6 the inventive technology," what are you citing as
7 evidence for that?
8 A Well, my own knowledge that's -- that
9 helped build Sling TV, we use the adaptive rate
10 streaming patents. The capabilities of --
11 Q So your testimony is that Sling TV grew
12 because of the adaptive bitrate patents?
13 A That was an element of it, but obviously
14 there was a whole bunch of other things that have to
15 happen, too, like content rights, had to build
16 everything else around it, yeah.
17 Q So what are some other examples of that?
18 A Well, the -- the systems that manage users
19 and give people rights and, you know, and all the
20 players and the websites and the -- you know,
21 there's -- there's -- if you have a television
22 service, there's a whole bunch of stuff in it.
23 Q And was -- was the content that's being
24 provided by Sling important as well?
25 A Well, it was -- it was the first Pay-TV

1 pack -- general package available over the internet.
2 Q Now, what -- what is your basis for your
3 statement in paragraph 19 where you say that "Sling
4 TV uses the technology of the ABR patents?"
5 A It would be my knowledge having helped
6 build it.
7 Q Did Sling TV incorporate the Move player
8 or just rename the Move player?
9 A Renamed it, and evolved it, and put it in
10 devices like Rokus and Apple TVs and --
11 Q Does Sling --
12 A -- iPads.
13 Q Does Sling TV use the Move QMX files?
14 A I believe it still does. I'm not sure.
15 Q Wasn't there a time where Sling TV used
16 HLS for HTTP live streaming?
17 A I'm not sure.
18 Q So in paragraph -- if -- if Sling did use
19 HLS, would that surprise you?
20 A If they used it, it probably would just be
21 to get commercials and stuff. It wouldn't surprise
22 me. There's -- you can run different players, and
23 Sling has decided to use different players, native
24 players on the devices.
25 Q So Sling TV has different players on

1 different devices?
2 A Yeah, now.
3 Q Okay. Was that always the case?
4 A Originally, it was only Move players,
5 because that was the only player available on most of
6 those devices.
7 Q Okay. So would the Move -- was the Move
8 player compatible with HLS, then, is that what you're
9 saying?
10 A Not -- no. It -- it can't play an HLS.
11 Q Okay.
12 A The play -- the Move player. But, again,
13 the -- the -- over time, devices have got their own
14 players, native players. And it's made sense for us
15 to start using their native player instead of our own
16 proprietary player.
17 Q I understand.
18 A But we did have a proprietary originally
19 because these others didn't exist.
20 Q And what time frame was this?
21 A The time frame around when Sling was
22 announced, you know, probably 2015.
23 Q Okay. So let's look at paragraph 21.
24 A Okay.
25 Q Here again, you talk about Sling TV. You

1 say, "Sling TV was awarded a Technology & Engineering
2 Emmy Award by the National Academy of Television Arts
3 and Sciences for its groundbreaking work recognizing
4 'excellence in engineering' for Sling TV."
5 Do you see that?
6 A Yes.
7 Q And then you cite to Exhibit 2013.
8 A Yes.
9 Q So I'm handing up Exhibit 2013 now.
10 UNIDENTIFIED SPEAKER: Please unmute the
11 witness's microphone.
12 THE DEPONENT: Do I need my microphone
13 higher?
14 MR. PAQUETTE: No, I think it was a Zoom
15 issue. Don't worry about it.
16 Q (BY MR. PAQUETTE) Okay. So I've just
17 handed you Exhibit 2013.
18 A Yes.
19 Q This is a press release by Sling TV
20 announcing it received an Emmy, correct?
21 A That's what it looks like.
22 Q And this was -- it appears to be from
23 Sling TV's website?
24 A I don't know where it came from.
25 Q Okay. So you -- you didn't download this

1 exhibit from the Sling TV website?
2 A No, I didn't.
3 Q Have you seen this before?
4 A Yes.
5 Q When?
6 A When we prepared my statement here. It
7 was one of the collateral things. So --
8 Q Okay. So this was provided to you to
9 draft your statement, your declaration?
10 A Yeah.
11 Q So the date here is -- on the left side --
12 January 15th, 2020. Were you -- let me ask it --
13 were you invited to the Emmy award ceremony?
14 A I think I was going to go.
15 Q What happened?
16 A COVID.
17 Q Oh. Okay. So the award actually came out
18 in January 2020. Is that your understanding, if the
19 award was given in 2020?
20 A Reading this, yes.
21 Q Okay. So 15 years after you filed for
22 your ABR -- your first ABR patent, true?
23 MR. GUY: Objection, mischaracterizes his
24 testimony.
25 A Well, yeah, but the patent was filed in

1 2005.
2 Q (BY MR. PAQUETTE) Right. And 15 years
3 later, Sling gets an Emmy for technology and
4 engineering?
5 A Yes.
6 Q So you believe that your ABR patents
7 revolutionized the industry in 2006, correct?
8 A It was new then, but obviously it had to
9 be sold and deployed and used.
10 Q So I guess I'm just -- my question is,
11 Move never received an Emmy, correct?
12 A What?
13 Q Move never received an Emmy, correct?
14 A Move did not receive an Emmy.
15 Q Okay. Do you see on the first paragraph
16 of this Exhibit 213 -- 2013, excuse me, it says,
17 "This Emmy is being given 'for its groundbreaking
18 work developing and launching the nation's first live
19 over-the-top television service'."
20 Do you see that?
21 A Yes.
22 Q Does anywhere in this sentence mention
23 adaptive bitrate?
24 A No.
25 Q Can you tell me what's over-the-top

1 television service?
2 A I think what they meant is that it was
3 going over the common internet and not through a
4 proprietary channel, like, cable or -- or satellite
5 or IP TV. It was going -- it's going over -- over
6 the internet. That was -- that was a term we used
7 prior to using "streaming" as the term describing it.
8 Q Over-the-top is a -- is that a cable
9 industry term?
10 A Over -- over -- over the internet. But it
11 was where the -- we did not have to own the
12 distribution. Sling used other people to distribute
13 the video service, whereas, you know, cable and
14 whatever they -- they owned the pipe, they owned the
15 entire distribution path. And so I think that's what
16 that references.
17 Q Okay. But you're not -- you're not sure
18 what over-the-top means in this context?
19 A Well, it's going over --
20 MR. GUY: Objection, mischaracterizes the
21 testimony.
22 Answer.
23 A Yeah, it means going over the internet,
24 the common internet. That's what it means.
25 Q (BY MR. PAQUETTE) What's the common

1 internet?
2 A The internet, it's everywhere. And,
3 again, it's -- it's the internet that's not owned by
4 DISH, or by anyone. You know, a whole bunch of
5 people own components of the internet.
6 Q Okay. So just to sum up, the Emmy was
7 awarded for DISH launching this live television over
8 the internet, fair?
9 MR. GUY: Objection, mischaracterizes his
10 testimony. Asked and answered.
11 Answer, if you can.
12 A That was part of it.
13 Q (BY MR. PAQUETTE) What else was part of
14 it?
15 A Well, the fact that it was -- that it was
16 new and it worked, you know.
17 Q What was -- what was new about it?
18 A Well, no one had ever done Pay-TV to that
19 degree over the internet.
20 Q Okay. So it was -- it was new to offer
21 paid TV over the internet?
22 A Yes.
23 Q And the Emmy award is praising the
24 groundbreaking work of launching this Pay-TV over the
25 internet; is that fair?

1 A Yes.
2 Q Okay. Let's briefly go back to your
3 declaration, Exhibit 2010. And in paragraph 21, if
4 you turn the page to page 10, there's -- there's a
5 picture of what purports to be this Emmy award. Do
6 you see that?
7 A Yes.
8 Q Now, this says 2018 to 2019 technology
9 Emmy award. Do you see that?
10 A Yes.
11 Q Do you have any idea why the press release
12 is from 2020, but this says it was awarded in 2018?
13 MR. GUY: Objection, mischaracterizes his
14 testimony.
15 A I don't know why.
16 Q (BY MR. PAQUETTE) Okay. I was just
17 curious.
18 Did you take this picture of the Emmy?
19 A No.
20 Q Do you know where it came from?
21 A DISH must have taken the picture, someone
22 at DISH.
23 Q Have you seen the Emmy?
24 A Maybe. I don't really remember.
25 Q Didn't leave a big impression?

1 A No. Well, I was excited we got it,
2 but. . .
3 Q All right. So you have -- in your
4 declaration there, you have a statement right next to
5 the picture. It has a quote. The statement next to
6 the picture says, the Emmy award recognized the
7 "development that 'considerably improves existing
8 technology' - related to its adaptive bitrate
9 streaming technology."
10 Do you see that?
11 A Yes.
12 Q All right. So let's go back to the
13 Exhibit 2013, please, and turn to page 2.
14 A Page 2.
15 Q Press release, Exhibit 2013, page 2. So
16 that quote that I just read from your declaration,
17 "considerably improves existing technology," that
18 shows up about the middle of this page.
19 Do you see under the heading "About the
20 71st Engineering Emmy Awards"? If you go to the last
21 sentence --
22 A Yeah.
23 Q -- it says, "An Emmy Award for technology
24 or engineering represents acknowledgment of
25 engineering development that considerably improves

1 existing technology, or innovations that materially
2 affect the transmission, recording or reception of
3 television."
4 Do you understand this to just be
5 generally talking about what the award is?
6 A I don't know who wrote that paragraph, but
7 that's what it appears.
8 Q Well, it says, "Source Sling TV, LLC."
9 A But where they got that, I don't know.
10 Q Okay. But it would appear that this
11 statement is not speaking directly about your ABR
12 patent technology, true?
13 MR. GUY: Objection, foundation. Calls
14 for speculation.
15 Answer.
16 A Well, this is basically defining that a --
17 you know, a technology that -- a development of --
18 engineering development that considerably improves
19 technology or innovations and materially affects
20 transmission, recording, or reception of television.
21 Definitely what we did with adaptive rate streaming
22 fits that cat -- fits that.
23 Q (BY MR. PAQUETTE) So you're -- you're --
24 you're saying -- well, let me ask it this way:
25 There's no mention of adaptive rate streaming in this

1 paragraph, right?
2 A Not in this paragraph, no. This is just
3 talking about what the Emmy is.
4 Q Right. That was my question. Right. So
5 if we go up to the top paragraph on page 2 of this
6 Exhibit 2013, do you see where it says, "The service
7 continues to define the rapidly growing streaming TV
8 industry with its unique and flexible model that
9 empowers customers to customize their programming."
10 I assume the service is --
11 MR. GUY: Where are you reading?
12 MR. PAQUETTE: I'm sorry, the top of
13 page 2 in Exhibit 2013.
14 Q (BY MR. PAQUETTE) The sentence, "The
15 service continues." By "the service," do you
16 understand this to be referring to Sling TV's
17 over-the-top television service?
18 A That's what the press release is about,
19 so, yes.
20 Q And would you agree that this statement is
21 praising "Sling's unique and flexible model that
22 allows customers to customize their programming"?
23 A That's what it says.
24 Q And, again, there's no mention of adaptive
25 bitrate in this statement, correct?

1 A No mention.
2 Q If we move on, same page, same sentence,
3 just continuing, it says, "Starting with a base
4 service that includes free cloud DVR, and adding only
5 the genre-based 'Extras' they choose."
6 Do you also understand this to be praising
7 the ability to add genre-based extras?
8 A That's what the word says, yeah.
9 Q And it mentions a free cloud DVR. Could
10 you tell me a bit about that, if you know?
11 A Well, we built an adaptive rate compatible
12 cloud DVR as part of the Sling TV service, and
13 that's -- that's a different kind of DVR than the
14 traditional cloud DVRs.
15 Q How so?
16 A Videos in chunks, videos served in chunks,
17 not in a stream.
18 Q But the -- I suppose the -- my question
19 would be, is the storage ability of a cloud DVR, is
20 that -- is the storage different because you're
21 storing chunks, or would it be the same?
22 A It's -- it's very similar, but there's
23 some changes, some differences needed, yeah.
24 Q Like what?
25 A Again, it's asked for by a client in

1 chunks, not, give me the entire file, or stream the
2 entire -- give me a stream of bits. You know, the --
3 the playback mechanism was adaptive rate friendly.
4 Q Right. But I'm just asking about the DVR,
5 the cloud aspect.
6 A The cloud, yeah.
7 Q So the storage is just storage, right?
8 A The storage is still files, big files,
9 yeah.
10 Q Okay. But it's praising the free aspect,
11 I suppose. Is that fair?
12 A Yeah.
13 Q So -- and what -- again, there's --
14 there's no mention explicitly of adaptive rate
15 streaming, correct?
16 A Not there.
17 MR. GUY: Objection, mischaracterizes
18 testimony.
19 A Yeah. This is just talking about Sling TV
20 that was enabled by the patents, so. . .
21 Q (BY MR. PAQUETTE) And then the last
22 sentence on that first -- that same paragraph we've
23 been in, at the very end it talks about offering "a
24 suite of free content, a la carte channels and
25 services, transactional live events and movies

1 on-demand, without requiring a base subscription."
2 Do you see that?
3 A Yes.
4 Q Do you understand this also to be praising
5 the ability to stream without needing a base
6 subscription?
7 A That's how it reads.
8 Q Do you have any reason to disagree with
9 that?
10 A No.
11 Q Could you show me where, if you can, in
12 this article, this article describes adaptive bitrate
13 streaming?
14 MR. GUY: Ask the witness to read the
15 entire article.
16 MR. PAQUETTE: You can take time to look
17 at it.
18 A Okay.
19 Q (BY MR. PAQUETTE) It was nowhere?
20 A What?
21 Q Do you see anywhere that it mentions
22 adaptive?
23 MR. GUY: Do you have the question in
24 mind? He had a question pending.
25 THE DEPONENT: Well, ask -- ask me the

1 question again.
2 Q (BY MR. PAQUETTE) Could you show me
3 where, if you can, in this article this article
4 describes adaptive bitrate streaming?
5 A This doesn't directly describe it, but it
6 implies it very heavily, starting with, "First live
7 over-the-top television service," which would not
8 work without adaptive rate streaming. It's an award
9 for technical excellence in engineering and
10 creativity, and it's disrupting the industry,
11 leadership -- and showing leadership in live
12 streaming TV.
13 And, you know, today all live -- pretty
14 much all live streaming TV uses the ideas in our
15 patent. So it doesn't call it directly out, but
16 you -- you ask anyone how -- how streaming works, and
17 they will describe how live streaming works. They
18 will describe at the technical level how it is
19 implementation of this patent. So, yeah, it's not
20 directly, but it's definitely indirect.
21 Q Okay. So just -- my question is just, you
22 can't point to anywhere in that press release,
23 Exhibit 2013, that says adaptive rate streaming,
24 true?
25 MR. GUY: Objection, mischaracterizes the

1 document. Asked and answered.
2 MR. PAQUETTE: Please limit it to form.
3 MR. GUY: It's not a form question.
4 You're mischaracterizing the document. I have a
5 right to object -- I get to object to that. If you
6 have an objection, we can call the -- we can call the
7 court.
8 MR. PAQUETTE: Okay.
9 MR. SHENG: You want to call the court to
10 ask the judge whether you're limited to form
11 objections; is that what you're saying?
12 MR. GUY: No, I get to ask -- I get to
13 make an objection if you mischaracterize the
14 document.
15 MR. SHENG: That's not a form objection?
16 MR. GUY: Not in this case.
17 MR. SHENG: Not in this case?
18 MR. GUY: It's asked and answered.
19 MR. SHENG: That's not a form objection?
20 Isn't asked and answered a form objection?
21 MR. GUY: You know, at some point it does
22 get old, and it's harassment. I've been polite about
23 it. I have very few objections. So why don't we
24 just keep going.
25 Q (BY MR. PAQUETTE) We'll keep going. I

1 think I had a question pending. Let me read it back.
2 MR. GUY: Why don't we have the court
3 reporter read it back?
4 Q (BY MR. PAQUETTE) So my question is, you
5 can't point to anywhere in that press release,
6 Exhibit 2013, that says adaptive rate streaming,
7 correct?
8 A Those words are not in this press release.
9 Q Let's look at paragraph 22. So this --
10 here you say, "Within a couple of years after our
11 product release in fall of 2006."
12 Was this talking about the Move player?
13 A This is talking about the Move player and
14 publishing system, the -- the entire thing.
15 Q So the product release for the Move player
16 was publicly released in the fall of 2006; is that
17 true?
18 A It had been released testing-wise earlier,
19 like, in October of 2005; but with commercial -- I
20 think the 2006 is talking about, you know, where --
21 where someone was paying for it.
22 Q Okay.
23 A Like Disney. Disney was now paying for
24 it.
25 Q Okay. So continuing on there, you say,

1 "Move Networks had about 35 million people download
2 the Move Network's client."
3 Where did that number come from?
4 A Just internal counts that -- that Move
5 made.
6 Q How do you know how many people downloaded
7 it as opposed to how many downloads there were of the
8 player?
9 A I'm not sure how they counted it.
10 Q So you don't know where this number came
11 from precisely?
12 A Well, it came from Move, and we were
13 tracking every time people opened it and downloaded
14 it and we were counting that.
15 Q So it could be the same person watching
16 multiple videos, getting multiple accounts?
17 A Well, multiple devices, maybe. If you had
18 two PCs, you could have two downloads. So, yeah, if
19 you had two PCs, you could download it twice, yeah.
20 And we wouldn't know that. We would think it's two
21 downloads because we had no user knowledge. We were
22 just downloading. But that's -- that's what all
23 downloading is.
24 Q And you don't provide any exhibit
25 citations for this paragraph 22, correct?

1 A No, I did not. This was just my own
2 knowledge. There's been previous testimony about
3 that by John Edwards and stuff that --
4 Q Who is John Edwards?
5 A The CEO of Move.
6 Q Is he involved in DISH or Sling?
7 A No. No.
8 Q In paragraph 23, you talk about the early
9 testing. Is this what you were mentioning --
10 A Yes.
11 Q -- the Church of Jesus Christ of
12 Latter-Day Saints testing in October 2005?
13 A Yes.
14 Q And here, you say in the last sentence,
15 "As a result, we proved our technology worked, and no
16 one was doing anything of this kind at the time."
17 Do you see that?
18 A Yes.
19 Q And you cite to the Exhibit 2051, right?
20 A Yes.
21 Q All right. So I'm handing you now
22 Exhibit 2051. This is an article in Brigham Young
23 University Y Magazine titled "To the Ends of the
24 Earth," right?
25 A Yes.

1 Q And this was what you were citing to in
2 that -- for that --
3 A That's right.
4 Q Yeah. Now, it looks like -- if you can
5 just briefly look at the first five pages. This
6 appears to be talking about BYU Television. Is that
7 correct?
8 A Yeah. This -- this is an all-encompassing
9 article about all the stuff BYU Television has done,
10 including cable and streaming, yeah.
11 Q Okay. And it looks like if you go to
12 page 6 of the exhibit, there's a subheading called
13 "Now Streaming."
14 A Yes.
15 Q Is this what you were intending to cite to
16 in your declaration?
17 A Yes.
18 Q Now, if we go down to the second paragraph
19 here, it mentions the individual you just mentioned,
20 John Edwards, and it says, "Through bleeding-edge
21 technology pioneered by alumni John W. Edwards (BS
22 '87) and R. Drew Major (BS '80) (a founder of
23 Novell), both channels are available to anyone with
24 an Internet connection anywhere in the world."
25 Do you see that?

1 A Yes.
2 Q So John Edwards, you said he was -- was he
3 the CEO of Move?
4 A The CEO of Move.
5 Q Was he -- do you consider him to have
6 pioneered the technology along with you?
7 A He did the business side. He didn't do
8 the technology side.
9 Q Okay. And this Drew Major is you,
10 correct?
11 A That is me, yes. That's my first initial,
12 Robert.
13 Q Understood. And so did Mr. Edwards -- did
14 he ever tell you he considered himself an inventor?
15 A I don't think he considered himself an
16 inventor.
17 Q Okay. Staying in that same section
18 here -- actually, let's go -- if you go to the next
19 paragraph on the same page, page 6 of Exhibit 2051,
20 and just read that to yourself, please, and let me
21 know when you're done.
22 MR. GUY: Which paragraph?
23 MR. PAQUETTE: Starting at the -- the last
24 paragraph on page 6, it spills over to the top of
25 page 7.

1 A Okay.
2 Q (BY MR. PAQUETTE) So it talks about Move
3 being at the forefront of the web television
4 movement, and it mentions other publishers like ABC,
5 FOX, ESPN, and Disney, right?
6 A Yes.
7 Q And then it goes on to say, not one --
8 "Though not one of those networks maintains a station
9 that airs 24 hours a day seven days a week," right?
10 A Yeah, that -- that's what he said, yes.
11 Q Do you understand BYU's television
12 streaming distinguishing factor to be their 24/7
13 streaming, according to this article?
14 A That's the claim Edwards is making here,
15 yes.
16 Q And was he speaking for Move?
17 A Likely.
18 Q All right. If you could just review this
19 subsection, "Now Streaming" briefly for me and let me
20 know if it mentions adaptive bitrate streaming. That
21 would be starting on page 6 and going to --
22 A Yeah.
23 Q -- the middle of page 8.
24 A Okay.
25 Q Is there anywhere that mentions adaptive

1 bitrate streaming?
2 A Not directly.
3 Q Let's look at page 7, please, of
4 Exhibit 2051. In the first full paragraph on page 7,
5 do you see -- it's the second sentence, it starts
6 with, "Priced out." Do you see that?
7 A Yes.
8 Q And it says, "Priced out, streaming both
9 channels would cause BYU an estimated $1 million
10 annually. BYU Broadcasting, however, receives a
11 service from Move Networks free of charge."
12 A Yes.
13 Q Do you know why Move offered a million
14 dollars' worth of streaming services to BYU?
15 MR. GUY: Objection, mischaracterizes the
16 document.
17 Answer.
18 A Because it was being tested there, and it
19 was a great beta test to test it worldwide. You
20 know, the CDM quality, you know, no one was streaming
21 like BYU. We were looking for content at that time,
22 people to put their content on the internet. And BYU
23 was willing to -- BYU.tv was willing to do it, and
24 so -- yeah. And I don't know where he came up with
25 the $1 million number.

1 Q (BY MR. PAQUETTE) Okay. So leaving aside
2 the -- the number of 1 million, Move was basically
3 making a donation to BYU of streaming services,
4 correct?
5 A In ex -- yes, in exchange for allowing --
6 being able to test it all and -- and put, you know --
7 we wanted to test it somewhere that was big before we
8 gave it to Disney and Fox. That made a lot of sense.
9 Q And so do you see -- let's go to page 8,
10 please.
11 A Okay.
12 Q And the last statement on that section of
13 page 8, it's the middle of the page, it starts with,
14 "Just like BYU Television." So it says, "'Just like
15 BYU Television, we're interested in getting good,
16 family-centered content on the Web in an
17 increasing' -- 'increasing, ample supply,' said
18 Edwards. 'There's already plenty of content on the
19 Internet that we wish was never there,'" which is
20 also a quote from Edwards, true?
21 A That's what he just wrote, yes, or said.
22 Q Was Edwards also speaking for Move at this
23 time?
24 A I think he was playing to the audience
25 that this article was written for.

1 Q And that would be the Church of Jesus
2 Christ of Latter-Day Saints?
3 A Well, the alumni of BYU, which are
4 predominantly Church of Jesus Christ Latter-Day
5 Saints.
6 Q And I mean no disrespect, but the church
7 has a very strong anti-online pornography stance,
8 correct?
9 A Yes.
10 Q And do you personally share that
11 anti-pornography stance?
12 MR. GUY: One moment. I'll -- I think
13 it's irrelevant and it's harassing. And I'll mark
14 it, and I'll -- I'll consider letting him answer.
15 MR. PAQUETTE: We'll just move on.
16 MR. GUY: Okay.
17 Q (BY MR. PAQUETTE) Okay. If we go back to
18 your declaration, please. If we can look at now
19 paragraph 24, which is on page 11.
20 Now, here the first sentence says, "The
21 industry reaction was overwhelmingly positive."
22 What do you mean by "the industry" in this
23 instance?
24 A The television content, you know, the TV
25 industry.

1 Q Okay. So would that include people doing
2 streaming, or include -- let me ask it this way:
3 Does the industry -- industry include, say, Cisco,
4 who does videoconferencing?
5 A I don't know. Probably not, because they
6 are at such a lower level.
7 Q Does the industry include, say, Comcast,
8 who does cable television at the time, no streaming?
9 A I'm not sure. They would have -- they --
10 but, you know, they -- they delivered internet
11 connectivity and make more money at it, I believe.
12 And they benefited from this, eventually.
13 Q Okay. So I'm just -- I'm just --
14 A Yeah.
15 Q I'm just trying to drill down on what's an
16 industry and what's an industry person. If you can
17 let me know what you mean by that.
18 A Well, I think, again, the -- the -- the
19 people that had content that wanted to stream it on
20 the internet, it didn't work, and it was really
21 expensive.
22 So, you know, as soon as Disney saw it and
23 tested and did an AV test with us against what they
24 were doing originally, which was Flash, they
25 immediately jumped on our stuff and invested and let

1 us put ESPN on the internet and got very excited
2 about what delivering over the internet could mean to
3 them. So that's -- that's what I'm referring to.
4 Q So the industry people would be people who
5 have content that they wanted to stream?
6 A That would be a big portion of it, yes.
7 Q Would it include anything else?
8 A Well, the -- the CDN people liked it, too,
9 because it was cheaper for them to deliver that, and
10 they could make more money. And they didn't have to
11 buy these expensive servers traditionally being sold
12 by Microsoft, Real, Apple and Adobe.
13 So, you know, anyone -- if you were in the
14 internet industry and suddenly the streaming works,
15 that was viewed very positive by everyone. It was,
16 like, wow. And --
17 Q So the -- sorry, I cut you off.
18 A And, again, lots of articles that
19 expressed that exact thing.
20 Q I'm -- I'm more interested, I guess, in
21 what you're thinking is an industry -- what's not an
22 industry. Is a -- is a regular person at home on his
23 laptop watching a video, is that part of the
24 industry?
25 A Well, he's getting a service from the

1 industry. He's getting available content on the
2 industry he couldn't get before.
3 Q So if he said -- if -- if some -- some guy
4 is watching an ABC episode of Lost and says, Wow,
5 this looks great, you would consider that to be
6 industry praise?
7 A Yes.
8 Q And what about -- what about people who
9 blogged about television shows? Would they be part
10 of the industry?
11 A I don't know. They certainly talk about
12 it. Are critics part of the theater industry?
13 Maybe. I don't know.
14 Q Okay. So for the statement in this
15 paragraph 24, you cite to two exhibits, which were EX
16 2042 and EX 2043, correct?
17 A Yes.
18 Q All right. I'm going to hand you -- let's
19 do EX 2043.
20 A Okay.
21 Q Okay. This appears to be a blog post of
22 some sort; is that fair?
23 MR. GUY: Objection, characterization,
24 form.
25 Q (BY MR. PAQUETTE) What does this appear

1 to be to you, Mr. Major?
2 A Someone review -- who reviews television,
3 looks like Blend Television.
4 Q Are you familiar with Blend Television?
5 A No.
6 Q What about the author, Mr. Steve West, it
7 appears?
8 A I'm not familiar with him.
9 Q Did you retrieve this article from the
10 Wayback Machine?
11 A DISH did, yes.
12 Q But you didn't?
13 A Personally, no.
14 Q Is Steve West an industry person, as
15 you've defined it?
16 A I don't know.
17 Q So the title of this post is "ABC Offering
18 Full Screen Streaming HD Content."
19 Do you see that?
20 A Yes.
21 Q And in the second paragraph, it talks
22 about CBS using Real Player, right?
23 A Yes.
24 Q And NBC uses Flash, right?
25 A Yes.

1 Q It goes on to say, "Neither provides great
2 visual quality. ABC player uses a player by Move
3 Networks, which offers a much clearer picture
4 quality," right?
5 A Yes.
6 Q So would you agree that this person, Steve
7 West, is praising Move's picture quality as compared
8 to ABC and NBC?
9 A Yes. And Real and Flash.
10 Q Right. So Mr. West, I guess, more
11 specifically, he's praising the clear picture quality
12 of Move as compared to the picture quality of Real
13 Player and the picture quality of Flash?
14 A Yes.
15 Q Okay. Is there anything here about
16 surprise? Because in your declaration, you say,
17 "There was surprise after Move's demonstrations
18 defeated skepticism." And you cite to -- this is one
19 of the exhibits you cite, correct?
20 MR. GUY: Objection, form.
21 A Well, I -- he -- he certainly didn't
22 expect it, comparing the other two. But how that
23 registers, I -- you know, it was just like my own
24 personal experience. You showed -- showed it to them
25 and they -- people were always amazed. Wow, that

1 works. I remember walking on an airplane and
2 streaming and the guy looked over, "Are you watching
3 video here?" It was, like, yeah. No one was doing
4 it. It was surprising to the people who had been
5 following it.
6 Q (BY MR. PAQUETTE) Okay. But my question
7 is, it's not -- in this Exhibit 2043, it's not
8 expressed, right?
9 A It's not expressed, but it's certainly in
10 my opinion implied.
11 Q Where is it implied?
12 A Well, he's comparing it with these other
13 ones, and he's -- it's like he's discovering this.
14 He -- he -- wow, this is HD, it actually -- it
15 actually works. These other ones don't work as well.
16 Q Isn't he saying that ABC's full screen --
17 strike that.
18 Okay. Let's look at -- let's look at the
19 other exhibit, 2042.
20 A Okay.
21 Q Let me hand that to you. Sorry. We've
22 got a pile of papers in front of you now. Just pile
23 it up here.
24 Okay. So this Exhibit 2042 appears to be
25 a press release from Move Networks, correct?

1 A That's what it appears, yes.
2 Q Sorry. One second. And this is -- this
3 second paragraph has a quote from someone named Tony
4 Rallo, VP of Technology Strategies for Televisa. Do
5 you see that?
6 A Yes.
7 Q Do you know who that individual is?
8 A Yes. I met him several times.
9 Q And what was his relationship to Move?
10 A Well, he got Televisa to invest in Move,
11 and they -- they had found something that worked, and
12 they -- they were very excited. He was running,
13 trying to -- to modernize Televisa, and Move allowed
14 him to now stream all these channels. And, of
15 course, the internet is not as good down in Latin
16 America and in Mexico as it is here. And he was very
17 amazed and loved us.
18 Q So Televisa, is that -- that's a Mexican
19 telecom --
20 A Yeah.
21 Q -- company?
22 A No, no. It's a Mexican TV and production
23 company.
24 Q Okay.
25 A So it's kind of like -- yeah, NBC. It's

1 -- I think it's the largest one in the world.
2 They're the biggest producer of telenovas, for
3 example. And their content, I think, here is in --
4 what is it -- Televisa, not Televisa, yeah, it's --
5 what's -- it's one of the channels. They're the main
6 supplier of the content.
7 Q Do you see where it says in that same
8 second paragraph, "Move's technology is superior to
9 others we have used." Do you see that?
10 A Yes.
11 Q Do you know what others Televisa -- do you
12 know what other streaming services Televisa tried?
13 A I don't know which ones they did.
14 Q Okay.
15 A I would suspect they tried most of them.
16 Q Such as --
17 A Well, Real, Adobe Flash, Apple QuickTime,
18 and Microsoft, whatever the Mediaroom that they
19 called before they -- yeah. So -- yeah, Tony was a
20 pretty aggressive guy for Televisa, and he was very
21 excited when he found Move.
22 Q How long did Move stream with Televisa?
23 A Several years.
24 Q I suppose this was -- so this -- this is
25 dated September 2010, correct?

1 A Yes.
2 Q Is that nearing the time that EchoStar
3 acquired Move?
4 A EchoStar acquired Move at the end of 2010,
5 so, yes.
6 Q Go to page -- like, go to the second page
7 of Exhibit 2042, please, the last line. It says,
8 "Move is headquartered in American Fork, Utah, and
9 Move has offices and data centers in the US and the
10 UK."
11 A Yes.
12 Q Did -- did Move have offices in the UK?
13 A We purchased a company in the UK.
14 Q Did you ever do work with any UK
15 companies?
16 A We sold some in UK, I believe.
17 Q Did you work with any of the
18 telecommunication companies, like British Telecom?
19 A I believe we did, but I was not involved
20 directly at that point.
21 Q What company did you purchase in the UK?
22 A A company called Inuk.
23 Q Can you spell that?
24 A I-n-u-k.
25 Q I-n-u-k. And they were video streaming?

1 A They were building a -- a -- a -- kind of
2 a Pay-TV type of thing. And they weren't -- they
3 were very complementary to our content -- our
4 capabilities. They built the -- the rest of the
5 video TV system stuff is why -- why we purchased
6 them, yeah.
7 Q Do you remember roughly when that was?
8 A 2009 maybe.
9 Q Okay. And do you remember roughly when
10 you were working with British Telecom?
11 MR. GUY: Objection, mischaracterizes his
12 testimony. Objection to form.
13 A I'm not sure when we connected with
14 British Telecom.
15 Q (BY MR. PAQUETTE) Okay.
16 A We -- our sales guys had a lot of fun.
17 We'd go in and everyone loved us. So, yeah. We
18 were -- we sold in Germany a little bit, plus even --
19 that's here, and then England.
20 Q Would this also be probably around 2009?
21 A Between 2008 and '09, yeah.
22 Q Okay. All right. And in this
23 Exhibit 2043 -- strike that. I think we'll move on.
24 Let's go back to your declaration, please.
25 Go to paragraph 25.

1 A Okay.
2 Q Now, here you talk about a collaboration
3 with Microsoft to support streaming of the Democratic
4 National Convention in 2008, right?
5 A Yes.
6 Q Now, when you say "collaboration," isn't
7 it true that the Microsoft Silverlight player is the
8 one that actually did the streaming for that
9 convention?
10 A Silverlight was the front end. We did the
11 streaming underneath. We -- they -- they -- they
12 wanted to use our player, so we integrated our player
13 in with Silverlight.
14 Q So the Move Player was fully integrated
15 into Silverlight?
16 A Into Silverlight, yes.
17 Q Did -- did that stream use the Move QMX
18 and QVT?
19 A Yes.
20 Q You also -- you cite to a few exhibits in
21 paragraph 25 that are numbered Exhibit 2031 to 2033,
22 which includes Exhibit 2032. Do you see that?
23 A Yes.
24 Q I'm just going to hand you all three of
25 those briefly. So here is Exhibit 2031. If you look

1 at the top email on this chain, it's from someone
2 named Greg Smith at Move Networks. Do you see that?
3 A Yes.
4 Q And it's also -- it's to John Edwards at
5 Move, right?
6 A Yes.
7 Q And then there's Mark Taylor at Level 3,
8 correct?
9 A Yes.
10 Q Who is Greg Smith, first of all?
11 A Greg Smith was CTO of Move Networks at the
12 time.
13 Q Okay. And we already established John
14 Edwards was the CEO?
15 A Yes.
16 Q Who -- who is Mark Taylor?
17 A Mark Taylor must have been a
18 representative at Level 3 that we were negotiating
19 with or working with.
20 Q And what was Level 3?
21 A Level 3 is a CDN, content distribution
22 company.
23 Q Okay. So just confirm for me, you're not
24 on this email chain --
25 A I'm not.

1 Q -- in Exhibit 2031. You're not? Okay.
2 Do you know Mark Taylor or did you know Mark Taylor
3 at the time?
4 A I don't remember the name. I did visit
5 Level 3 once.
6 Q Okay. All right. I'm handing you 2032
7 now. This one, again, if you see at the top, this
8 one is an email from Greg Smith. Do you see that?
9 A Yes.
10 Q The "to" line is to several individuals
11 that have a Microsoft.com email address, correct?
12 A Yes.
13 Q It also includes a Robert Bryson at Move
14 Networks?
15 A Yes.
16 Q Who is Robert Bryson?
17 A Robert Bryson was the chief of sales.
18 Q Do you know these individuals, Tom
19 Honeybone or the other ones at Microsoft?
20 A No.
21 Q And you're also not on this email chain,
22 correct?
23 A I am not on this email chain.
24 Q All right. Finally here's Exhibit 2033.
25 This is, again, an email from Greg Smith, correct?

1 A Yes.
2 Q And this is to someone, Christopher Carper
3 at Windows, correct? Microsoft, excuse me.
4 A Yes.
5 Q And you're also not on this email, right?
6 A I'm not on this chain, no.
7 Q Were you involved in the negotiations with
8 Microsoft?
9 A No.
10 Q Let's turn back to your declaration,
11 please. Let's go to paragraph 27. Here, you say
12 that Microsoft at a certain point took an equity
13 establishing in Move. Is that true?
14 A Yes.
15 Q Do you remember when that was?
16 A 2008.
17 Q So this was -- would this be after the
18 streaming of the DNC convention or before?
19 A I think it was after.
20 Q And you weren't involved with those
21 negotiations with Microsoft for the equity stake,
22 correct?
23 A Yeah, no -- no involvement in the
24 negotiations.
25 Q Did Microsoft ever take a license to the

1 ABR patents?
2 A I don't think so.
3 Q Did you ever negotiate, or did Move ever
4 negotiate with Microsoft to discuss licensing of the
5 ABR patents?
6 A They may have.
7 Q But you're not sure?
8 A I'm not sure. I wasn't involved at that
9 level of the company.
10 Q Has Move or DISH ever sued Microsoft for
11 infringing the ABR patents?
12 A I don't believe we did, no.
13 Q Do you agree with that decision?
14 MR. GUY: Objection to the extent it calls
15 for any sort of privileged communication. If he has
16 a personal opinion separate and apart from that, he
17 can answer. I caution the witness not to disclose
18 any attorney-client communication.
19 A Well, Move got the patent. They were
20 actually award in May, I think, 2010, and we were
21 sold by the end of the year. When we got the patent,
22 we were actually in the process of being sold. So,
23 you know, we weren't in a position to sue anyone.
24 Q (BY MR. PAQUETTE) So did Microsoft ever
25 sell its -- at a certain point, did Microsoft sell

1 its stake in Move?
2 A Well, when the -- the company got sold,
3 they got their return on it, yeah.
4 Q I see.
5 A On their investment, yes.
6 Q Do you know if Microsoft was involved in
7 the negotiations at all?
8 A I don't know. I was not involved directly
9 in the negotiations myself.
10 MR. PAQUETTE: I think we have a choice.
11 I can continue going for another probably 45 minutes
12 or we can take a break. I'd defer to you, Mr. Major.
13 THE DEPONENT: And would you be done after
14 45 minutes?
15 MR. PAQUETTE: Probably 45 minutes to an
16 hour. It's up to you.
17 MR. GUY: Yeah, let's finish.
18 THE DEPONENT: Yeah, let's finish it.
19 Q (BY MR. PAQUETTE) All right. So please
20 look at paragraph 30 of your declaration. So here,
21 do you see the first sentence where it says,
22 "Ultimately, this adaptive bit-rate streaming
23 solution has been standardized within MPEG-DASH and
24 by Apple within HTTP Live Streaming, or HLS"?
25 A Yes.

1 Q And when you refer to "this adaptive
2 bit-rate streaming solution," you're referring to
3 your adaptive bit-rate --
4 A Yes.
5 Q -- streaming patent solution?
6 A The patents and the technology that was --
7 was substantiated in the Move products, yeah.
8 Q And so could you just be a little more
9 specific about what in your solution -- or what do
10 you mean by "solution"?
11 A Well, I was probably talking sales-ish
12 there, but the thing that Move was selling. We were
13 selling a solution to streaming. You had content, we
14 can stream it on the internet for you.
15 Q Right. But a lot of people could do that,
16 right? So what --
17 A We did it far superior than anyone else,
18 so. . .
19 Q What was -- what was your sales point,
20 then, I suppose, if you want to go that way? What --
21 what set your HTTP streaming apart?
22 A Well, the -- the fact that it worked
23 better and it was cheaper.
24 Q Right. But those are -- if -- if true,
25 those were effects, right? So what was the cause of

1 the improvement, in your eyes?
2 A Well, just all of the ideas as
3 incorporated into the patent, the set of patents.
4 Q So everything -- everything in the
5 patents?
6 A It kind of all combines together into a
7 system or a solution that worked. It worked on live
8 television, it worked on video on demand, and anyone
9 who did a realistic evaluation of it picked us.
10 People that didn't, it's because they had other
11 reasons. But no one -- no one pointed -- ever gave
12 us -- in sales, no one ever gave us a better
13 solution.
14 Q So I guess --
15 A There was never any difference. We were
16 always superior to every -- everything else.
17 Q I guess what I'm asking is, you're -- this
18 statement is specifically saying that your solution
19 was standardized within MPEG-DASH and HLS, right?
20 A The underlying ideas, a significant
21 percentage of them, most of them were incorporated
22 with HLS and with MPEG-DASH and with Microsoft Smooth
23 Streaming. That's part of MPEG-DASH.
24 Q So let's start with MPEG-DASH then. What
25 is MPEG-DASH?

1 A MPEG-DASH is a standard for streaming that
2 was put out by a standards group.
3 Q Do you know what the group was?
4 A The MPEG group. I'm not that up on exact
5 specifics of MPEG-DASH other than at a high level I
6 understand what they did.
7 Q Okay. So what's your understanding about
8 what MPEG-DASH implements that is the solution that
9 Move offered?
10 A They -- just the underlying core adaptive
11 rate stuff. Video is chunks, intelligent client, you
12 know, the -- the chunks are -- were aligned on time,
13 all of that. It -- using HTTP. All of that. So the
14 essence of why Move did well, which was, of course,
15 expressed in the patents, shows up here in MPEG-DASH,
16 and -- and in HLS even broad -- more broadly.
17 Q Okay. So -- so you're saying MPEG-DASH
18 implements videos in chunks or segments, right?
19 A At one of their instances, yeah. Their
20 support, they -- they do chunking.
21 Q And those segments are aligned in time in
22 MPEG-DASH, right?
23 A Yes, I believe so. I'm not an expert on
24 MPEG-DASH, though; but that's what I've heard.
25 Q Have you read -- have you read the

1 standard?
2 A No, I have not. I've been told by other
3 people. So there's experts that will answer those
4 questions for you.
5 Q Well, I guess just more -- and let's just
6 keep it at a high level.
7 A Yeah.
8 Q At a high level, your understanding is
9 that MPEG-DASH has video segments aligned in time?
10 A Yeah.
11 Q An intelligent client?
12 A Yeah.
13 Q And segments encoded at different
14 bitrates?
15 A Yeah. It was -- yeah. And it was
16 significantly derived from ideas in the patent.
17 Q And those are the -- the core ideas that
18 MPEG-DASH incorporated from --
19 A That they incorporated those, yes.
20 Q Is there anything else that you can think
21 of?
22 A Not that I can think of.
23 Q So let's move on to what you mention here
24 as well, which is Apple's HTTP live streaming or HLS?
25 A Yeah.

1 Q Could you explain what HLS is?
2 A HLS is -- is Apple's streaming solution
3 that they've made available as a -- an unratified
4 working document, the description of how to do
5 streaming. But it -- and it's through the IEEE or
6 whoever the standards body is, but they have not --
7 they have not formalized it or had it approved. It's
8 a working draft. But everyone copies it because it's
9 Apple, or uses it because it's Apple.
10 Q So --
11 A And it's for streaming, yeah.
12 Q So you're saying in this paragraph 30 that
13 "HLS also incorporates Move's adaptive bit-rate
14 streaming solution"?
15 A It certainly does.
16 Q Could you explain how?
17 A All the -- again, almost all of the
18 salient characteristics of -- of the Move and the
19 Move patents and the -- on streaming they -- HLS was
20 very highly influenced by Move streaming in terms of
21 what they built, and they abandoned their previous
22 RTP/RTSP approach, and threw all that away,
23 effectively, a lot of it, and chose to do something
24 very similar to what we had done.
25 Q So HLS -- what's the difference between

1 HLS and MPEG-DASH, then, if they both have the same
2 core features?
3 A It's just who's doing them. And HLS has
4 kind of won because -- because of Apple.
5 Q Okay.
6 A And Apple is -- it's a little more
7 prevalent, and the Apple standard is -- even though
8 it's -- it's not a standard because they haven't --
9 but it's a -- I don't know what the term is. It's a
10 proposal still. But it --
11 Q Okay. So --
12 A Because it's Apple.
13 Q So just to -- just to make sure we get an
14 understanding here, so you're saying that both
15 MPEG-DASH, HLS, and Move's adaptive streaming patent
16 technology did several core things, right?
17 A Yeah.
18 Q It would be use of ordinary web servers
19 over HTTP, right?
20 A Yes.
21 Q It would be segmented video?
22 A Different bit -- bitrates of small
23 streamlets.
24 Q Each segment is encoded --
25 A Different bitrate.

1 Q -- into a different bitrate?
2 A At the same time.
3 Q Each segment corresponds and aligns in
4 time?
5 A Yes.
6 Q And an intelligent client requests each
7 segment, right?
8 A Yes. That's part -- that's -- that's a
9 big part of it, yeah.
10 Q Is it your understanding that HLS also
11 segments the video and then encodes the video?
12 A I'm not sure how the HLS servers operate.
13 Q If HLS didn't operate that way would you
14 be surprised?
15 A I'd be sur --
16 MR. GUY: Objection, form.
17 A Yeah. I -- likely they did the simplest
18 way to do it, which is what we did, too.
19 Q (BY MR. PAQUETTE) And that would be your
20 invention, which is segmenting the video --
21 A Yeah, take the videos, each -- take the
22 video chunks, or the source video, chunk it into two
23 seconds or four seconds, or whatever, give it to the
24 encoders, yeah.
25 Q Okay.

1 A But it could be done other ways.
2 Q But if they --
3 A But that's the simplest way of doing it.
4 Q But if they encoded it and then segmented
5 it, you're saying that wouldn't be what you did in
6 your invention, right?
7 MR. GUY: Objection, form, speculation.
8 A That's really more an implementation
9 level, though, too. It's an implementation thing
10 that -- the core idea is what we described. This
11 video from this time to this time, all the videos are
12 the same thing. Exactly how you get that is an
13 implementation detail, and that -- that wasn't -- I
14 think we're -- we're flexible on the patent in terms
15 of exactly how they're derived, though there were
16 some patents that talked about different approaches.
17 Q (BY MR. PAQUETTE) So let's move on to
18 paragraph 31, your declaration.
19 MR. GUY: Sorry. Which one?
20 A 31.
21 Q (BY MR. PAQUETTE) 31. Here you say,
22 "Move entered into a non-disclosure agreement with
23 Apple in late 2006," correct?
24 A Yes.
25 Q So in there -- for that sentence, you cite

1 this Exhibit 2055. Do you see that?
2 A Yes.
3 Q All right. I'm going to hand you
4 Exhibit 2055. Is this the NDA you were referencing?
5 A Yes.
6 Q If you look at the last page of the
7 exhibit, it looks -- it appears that someone from
8 Apple signed on December 1st, 2006. Do you see that?
9 A Yes.
10 Q And then someone named James Ericson, VP
11 of Marketing from Move, signed on November 15th,
12 2006, right?
13 A Yes.
14 Q Who is James Ericson?
15 A I think he was a VP of marketing, yeah, at
16 the time.
17 Q Did you work with Jim Ericson?
18 A Not very much, no.
19 Q Okay. You're not a signatory to this NDA,
20 correct?
21 A I am not.
22 Q So judging by the dates here, this NDA was
23 signed November, December 2006, right?
24 A Yes.
25 Q Were you aware of this NDA in 2006?

1 A I was aware we were meeting with Apple.
2 Q But you weren't involved in the
3 negotiations?
4 A I was not involved in the negotiations
5 with Apple or the discussions with Apple. It was
6 less of a negotiation. It was more of a discussion.
7 Q Okay. What makes it a discussion as
8 opposed to a negotiation?
9 A Well, we weren't buying anything from
10 Apple. We were there because Disney wanted -- Disney
11 had said that they will only do Move streaming at the
12 time because it was the only thing that was high
13 quality. And Apple wanted the Disney content. And
14 so then Disney said -- then Apple -- then Disney
15 said, look, go convince Apple that they should
16 support your player. They had their own system,
17 again, pretty broadly used, called QuickTime. And
18 they initially were very skeptical of the Move
19 player, apparently.
20 But Disney requested that we talk to
21 Apple. And Apple, of course, wanted to know why our
22 player was better than their player. And we chose to
23 disclose to them why our player was better than their
24 player. And this -- in subsequent -- and maybe some
25 subsequent meetings.

1 So that's the context of this meeting. I
2 was aware that we were meeting with Apple and we were
3 going to disclose the secret sauce to the patent, why
4 we were better. And we were doing that because our
5 biggest customer, Disney, was close to Apple, of
6 course, Steve Jobs I think was on the board at the
7 time, and they just sold Pixar. And Disney wanted
8 Apple to embed one of our players.
9 So we had numerous discussions over the
10 years with them. They never embedded our player, but
11 three years later, they came out with HLS instead.
12 Q So let's take -- take these a few steps.
13 A Yeah, sorry, that's a narrative, but
14 that's --
15 Q Just sticking --
16 A -- that's my understanding of what
17 happened.
18 Q -- just sticking with the meetings, where
19 does your understanding about what happened at these
20 meetings come from?
21 A From Greg Smith, who was there at the
22 meeting.
23 Q Okay. So Greg Smith represented Move at
24 the meeting?
25 A And I don't know who else was there.

1 Q Okay.
2 A Yeah.
3 Q Do you know who from Apple?
4 A I believe at the first meeting it was the
5 guy who later it was said to be the HLS architect.
6 He was at the -- there was a technical guy there.
7 And he was the -- I believe he was the HLS architect.
8 Q So these meetings, they would have taken
9 place after the NDA was signed, probably?
10 A Or, I don't know --
11 Q Okay.
12 A -- the dates.
13 Q Okay. So you're not sure about the dates
14 or who was involved, correct?
15 A I know the meeting was there, but I know
16 this is what we have on paper here. So. . .
17 Q So what we have on paper here is an NDA
18 was signed in late 2006 to have discussions between
19 Apple and Move --
20 A That's right.
21 Q -- about video streaming, correct?
22 A And then I explained the additional
23 knowledge I have about those meetings.
24 Q And I think you said Move revealed the
25 secret sauce; is that right?

1 A Yeah.
2 Q Do you -- do you know what specifically
3 Move told Apple?
4 A Other than eye level how it worked.
5 Q So -- so your testimony is that Move and
6 Apple entered into this NDA, and as part of the NDA
7 Move disclosed at a high level how its player worked?
8 A How its player -- and the -- the whole
9 system worked.
10 Q And that would be?
11 A The server side, the adaptive, you know,
12 the encoding and the --
13 Q Would that be --
14 A -- bigger chunks.
15 Q -- specifics or would that be just --
16 A That was the approach that we were taking
17 and why it was superior. And obviously, when Apple
18 heard about it, they realized it was superior. And
19 so they did HLS and they abandoned their existing
20 streaming solution.
21 Q So in paragraph 31, you say that "Move
22 revealed novel elements of its adaptive bitrate
23 streaming technology to Apple."
24 A Yeah, the secret sauce.
25 Q Would that include segmenting the video?

1 A Yes.
2 Q Would that include using ordinary web
3 servers for storage?
4 A Yes.
5 Q Would that include an intelligent client
6 --
7 A Yes.
8 Q -- to request? Would that include
9 encoding segments of different quality levels?
10 A Yes.
11 Q Would that include using HTTP?
12 A Yes.
13 Q Would there be anything else?
14 A Well, probably, but I'm -- I'm not sure
15 exactly the full extent. I do know that Apple was
16 very interested and three years later, HLS showed up.
17 Q So your first patent that was filed in the
18 ABR patent family, it wasn't the first one that was
19 issued, but the first one that was filed was the 772
20 patent, right? Does that sound right?
21 A The one that was in 2005, yeah.
22 Q Yeah. And so that one -- I'll represent
23 to you that the 772 patents application was published
24 in November of 2005. Does that sound right?
25 A I -- I'm not sure of the exact date,

1 but. . .
2 Q I can -- I'll have this marked as Major
3 Exhibit 1.
4 Does this appear to be the 772 patent in
5 the ABR patent family?
6 (Deposition Exhibit Major 1 was marked.)
7 A Yes.
8 Q And you're listed as an inventor, right?
9 A Yes.
10 Q If you look on the left side, there's a
11 heading that says "Prior Publication Data." Do you
12 see that?
13 A Yes.
14 Q And it says it was published
15 November 24th, 2005. Right?
16 A Yes.
17 Q So in other words, your initial
18 application was already public a year before these
19 Apple meetings were occurring, correct?
20 A I don't know how the patent office works.
21 We did kind of a preliminary version originally, and
22 then had to follow up with the real version a year --
23 the new version, I'm not sure on that.
24 Q Well, I can --
25 A On how -- you know, if Apple can find,

1 look it up or not, especially before it's granted,
2 because it wasn't granted until 2010, so. . .
3 Q Well, let's do this. I'll hand you what
4 I'm going to mark as Major Exhibit 2. And this
5 is the -- what's called a pre-grant publication. So
6 this is the actual document that was published --
7 excuse me -- published November 24th, 2005. Do you
8 see that in the top right corner?
9 (Deposition Exhibit Major 2 was marked.)
10 A Yeah, but it's -- yeah, it says it was
11 filed in -- yeah, I see that in the top right.
12 Q Yeah, filed April 28th, 2005.
13 A Yeah.
14 Q Published November 24th, 2005, right?
15 A Yes.
16 Q And if you look, this is essentially --
17 this is the patent, it's a pre-grant publication.
18 So do you have any reason to think this
19 wasn't public a year before these Apple meetings?
20 A I don't know. I don't know how -- I don't
21 know whether -- whether or not it -- I don't know how
22 the patent office works, sorry.
23 Q Okay. So if -- if I represent to you that
24 this publication -- pre-grant publication was
25 available before Apple had these meetings, does that

1 change your opinion about what was disclosed to Apple
2 during these discussions?
3 MR. GUY: Objection, caution on
4 speculation. Objection to form.
5 A Again, I was told by Greg Smith that Apple
6 had not heard of this, it hadn't thought of this,
7 didn't know anything about it. We were introducing
8 it to Apple at the time, and would question -- I
9 don't know whether Apple scours what's being patented
10 all the time trying to find new ideas that they can
11 do or not, I have no idea there. But all I know is
12 that -- that Greg Smith represented to me that this
13 was a new idea, they were initially very skeptical on
14 it, didn't -- because it wasn't their thing, it was
15 totally different. But then they realized when they
16 looked at it further that, wow, this is important,
17 and they quit doing what they did before and came up
18 with HLS instead.
19 Q So your understanding, it's fair to say,
20 comes from Greg Smith and not --
21 A I was not in these meetings.
22 Q -- being involved in the meetings?
23 A I wasn't involved in these meetings. I
24 was not involved operationally with Move. I was --
25 Q Okay.

1 A -- I was funding Move, I was monitoring
2 it, I was excited about what was happening. I did
3 meet occasionally with people, but I did not -- you
4 know, I was not, you know, other than, you know,
5 obviously watching out for my money that I was
6 putting into the company.
7 Q So you -- you don't actually know what
8 Move disclosed to Apple under this NDA. Fair?
9 A Other than what Greg Smith told me, no.
10 Q Okay. Let's stay in paragraph 31 of your
11 declaration, please.
12 A Okay.
13 Q The next sentence would be the second
14 sentence in the paragraph. You say, "After
15 explaining to Apple how it could support our
16 invention in 2007." What do you mean by "support"?
17 A We wanted Apple to embed a Move player
18 within Apple's ecosystem, so on their Apple TV, on
19 their iPads, on their Macs. That's what Disney was
20 asking us to ask Apple to do.
21 Q So would this include -- were you trying
22 to get investments from Apple into Move?
23 A I don't know.
24 Q Were you trying to get Apple to take a
25 license for ABR patents?

1 A No.
2 Q Are you sure?
3 A We didn't have a patent then.
4 Q Well, you had pending patents, though?
5 A Yeah. I'm -- I'm pretty sure that we
6 never tried to license the patents to anyone. We
7 were trying to exploit them ourselves at that time.
8 Q What about after the patents were issued?
9 A Again, that happened -- I wouldn't know
10 the sales time. So I believe different discussions
11 happened. I'm not sure. I thought I heard somewhere
12 where Microsoft wanted to buy something maybe. But
13 our strategy was not to license the patents. Our
14 strategy was to build a service employing the
15 technology from the -- that was protected by the
16 patents and sell the service. But that required us
17 to have client software in different -- on different
18 devices.
19 So we put them on devices, and we were
20 trying to get the same thing out of Micro -- Apple
21 and we never did. They would -- they -- they chose
22 not to embed our -- our -- our player.
23 Q So you said that you thought you heard
24 that Microsoft wanted to maybe license your patents
25 at a certain point?

1 A I -- I'm not sure. I thought I heard
2 that. But it's been years.
3 Q So you don't have any information or
4 knowledge about Microsoft offering to license any
5 patents?
6 A I have a vague recollection that maybe
7 something like that happened. But, again, it was
8 during the time of the windup of Move.
9 Q So it would be around 2010?
10 A Yeah, about 2010. If that happened.
11 Q In that same sentence in paragraph 31, you
12 say, "To our surprise, in 2009, Apple proposed a
13 standard they called HLS."
14 Is "our surprise" your surprise?
15 A Everyone involved's surprise. We in
16 hindsight probably should have seen it coming, but
17 Apple was going down that HL -- that QuickTime path,
18 and then suddenly they totally shifted gears.
19 Q So you think it's not a coincidence that
20 Apple met with Move and then --
21 A No, of course not.
22 Q -- put out HLS?
23 A Of course not.
24 Q Do you think Apple stole Move's idea?
25 A Definitely we heavily influenced HLS.

1 Q And that's for the reasons we discussed,
2 the segmentation?
3 A Yeah, all of that.
4 Q Ordinary web server, HTTP?
5 A Yeah.
6 Q Client --
7 A And --
8 Q Intelligent client?
9 A The Federal Trade Commission ruling said
10 that HLS infringes on our patents.
11 Q It's your understanding that the Federal
12 Trade Commission said that HLS infringes your
13 patents?
14 A Infringes on our patents, yes.
15 Q All implementation of HLS infringe your
16 patents?
17 A I don't know, other than a high level that
18 they -- they -- they are infringing the patents. I'm
19 not super up on all nuances of patent law.
20 Q Do you know if there can be different
21 implementations of HLS?
22 MR. GUY: Objection, calls for
23 speculation.
24 A All I know is HLS is put out as a -- a
25 draft standard by Apple. They occasionally change

1 it. Different people use it and have implemented it,
2 the clients and the server side, based on that
3 standard.
4 Q (BY MR. PAQUETTE) So after --
5 A And so there's going to be different
6 versions and different companies.
7 Q So after HLS came out and after your
8 patents were issued, did Move ever sue Apple?
9 A No.
10 Q Did DISH ever sue Apple?
11 A No.
12 Q Sling ever sue Apple?
13 A No.
14 Q So let's say -- let's say someone
15 implements HLS that doesn't switch. You wouldn't
16 consider that to be copying your invention, right?
17 MR. GUY: Objection, calls for
18 speculation. Incomplete hypothetical. Outside the
19 scope of the declaration.
20 Q (BY MR. PAQUETTE) You can answer.
21 A Often you can just pick and go on one
22 bitrate if you want to with it. And there's still
23 value in terms of chunking and in internet
24 friendliness of having video in separate things
25 instead of one gigantic file. So there's value in

1 it. And I would consider it still infringing, yes.
2 Q So even if you just have, say, 720p and
3 it's segmented and a client requests it?
4 A Yeah, I think that -- well, in my opinion,
5 that still infringes bitrate.
6 Q It seems we're shrinking the core of your
7 invention to the segmentation.
8 A For that particular instance, it would be
9 still infringing on that aspect, yes.
10 Q On that aspect?
11 A On that aspect. And it may be my opinion,
12 but I'm not a --
13 Q Of course.
14 A You have to talk to the patent people on
15 that.
16 Q I'm just trying to understand why you --
17 why you think HLS copies your invention but
18 doesn't -- but Move never chose to go after Apple for
19 that?
20 MR. GUY: Objection. Caution the witness
21 not to disclose any attorney-client communication.
22 Asked and answered.
23 Q (BY MR. PAQUETTE) Let me ask it a
24 different way.
25 Do you -- do you think that all streaming

1 on the internet is based on your idea in the ABR
2 patents?
3 A All HTTP-based streaming, adaptive rate
4 streaming is based on my -- my ideas.
5 Q All streaming -- all the billions of hours
6 of streaming that happen on the internet is all based
7 on your idea?
8 A Yes. To -- to a -- to a broad degree,
9 yes.
10 Q Okay. Can you be more specific about to
11 what degree?
12 A Well, almost all -- you know, they're
13 doing chunking, they have intelligent clients, the
14 whole list that you -- you named.
15 Q Could you just list them real quick?
16 A Yeah. Well, again, video is in -- in
17 chunks that start -- or streamlets, that start at a
18 certain type, typically two to four seconds long, you
19 have an intelligent client, these are HTTP objects.
20 The player is intelligent and figures out what
21 bitrate is appropriate for the next chunks. It
22 affects the next chunks. The encoding is done to
23 support that in the back end.
24 Those -- those elements are typically in
25 almost all streaming today. Now, it doesn't -- the

1 Zoom type of stuff isn't streaming. FaceTime isn't
2 streaming.
3 Q FaceTime isn't streaming?
4 A It's an HTTP-based adaptive rate
5 streaming. You know, you Zoom or you do FaceTime,
6 you know, that's -- that's live point to point or
7 through a service. But for -- for scalable streaming
8 of video on demand and live -- live TV streaming that
9 goes beyond just maybe a few people, almost
10 everything uses my patents --
11 Q Okay.
12 A -- to some degree.
13 Q Let's look at paragraph 32, please.
14 A Yes.
15 Q Now, here you say -- you can just read
16 that whole paragraph to yourself, the first four
17 sentences to yourself, please.
18 A Okay.
19 Q And let me know when you're done.
20 A Okay. Yes.
21 Q So, again, you're saying that HLS embodies
22 the claims here, right?
23 A Yeah.
24 Q What do you mean by that word "embodies"?
25 A I know it's kind of a lawyer-ish term. It

1 takes advantage of them, exploits them, uses them.
2 Q Would you say it has -- it has all the
3 core features that you mentioned?
4 A It has pretty much the core features,
5 yeah.
6 Q And you say, these core features are --
7 well, I don't want to mischaracterize. Let's say,
8 you say, "HLS protocol supports live and on-demand
9 streaming," right?
10 A Yes.
11 Q That was a core feature of your invention?
12 A That's right.
13 Q You say, "It has short streamlets." That
14 was a core feature of your invention?
15 A That's one core feature, yes.
16 Q And "The streamlets were compressed at
17 various sizes." A core feature of your invention?
18 A Yes.
19 Q And "allows the end user device to decide
20 which size streamlet to download." Another core
21 feature of your invention?
22 A Yes.
23 Q "And the end user device does this by
24 making an HTTP GET request," which is another core
25 feature of your invention?

1 A Yes.
2 Q And finally, "The servers are standard
3 data servers that do not monitor the internet
4 connection. The end user's device does that."
5 Another core feature?
6 A That's -- that's one feature.
7 Q Are there any core features of your
8 invention that HLS does not implement?
9 A I'm not -- I'm not an HLS expert. I've
10 looked at it, and understood the -- the core stuff.
11 And I -- I did not really see -- I haven't looked at
12 it actually in detail since 2000 and -- since it came
13 out in 2010.
14 Q Okay. So --
15 A But -- so I really defer to other people
16 for that. But -- but I'm talking, you know, experts
17 have done that. My impression in 2010 was -- was
18 this, yeah. It continues to be this.
19 Q Okay. So if you have -- in this example
20 you say, "Streamlets compressed to various sizes."
21 Would one example be, like we discussed
22 before, a 500-kilobyte segment, and that one's at 30
23 frames per second? Is that fair?
24 A I'm not sure where it maps to. It
25 probably -- 500 is kind of small nowadays.

1 Q Well, let's use a -- whatever number you
2 like. Give me a -- give me a number that's common
3 these days.
4 A Most of the time streaming happens now
5 at -- more at bits per second, like, 5, 6. For HD
6 it's 5, 6 megabits per second.
7 Q Okay. So --
8 A Which maps to, I don't know, maybe a
9 megabyte or a -- a -- a streamlet that's maybe a
10 megabyte and a half size.
11 Q Okay. So if we have a 1 megabyte?
12 A Size.
13 Q -- streamlet --
14 A Yeah, yeah.
15 Q -- one meg per second, right?
16 A Well, no, it's the -- multiply by eight.
17 Q Okay.
18 A And it's two seconds. So, yeah.
19 Q Let's just say we have one that's --
20 A It would be 400. It would be 400. A
21 two-second one would -- at -- it would be 400,
22 4 megabytes a second would be --
23 Q Okay. Let's just use that example. Let's
24 say we have Streamlet 1 at 4 megabits per second at
25 30 frames per second. And then let's say we have a

1 really low-quality version at 100 kilobits per
2 second.
3 A Okay.
4 Q And it's at three frames per second.
5 A Yeah.
6 Q Would that still be the same video?
7 A It would be -- they would -- they would be
8 derived from the same video.
9 Q Okay.
10 A But if the user was watching it, the audio
11 would stay the same, the quality would go to crap,
12 you know, but you would still be seeing the video.
13 Q So you see the same video, but it would be
14 reduced motion, correct?
15 MR. GUY: Objection, mischaracterizes.
16 Objection to form.
17 Q (BY MR. PAQUETTE) You'd see the same
18 video but it would be reduced motion, correct?
19 A Reduced motion and reduced resolution,
20 both in color, depth, and in number of bits. So
21 it's --
22 Q All right. So let's just -- let's go to
23 paragraph 33, please.
24 A Okay.
25 Q Here you say, "Many wrote articles

1 praising the quality is shockingly good."
2 And you cite this Exhibit 2022, right?
3 A Yes.
4 Q Let's just give you that. Okay. I'm
5 handing you Exhibit 2022. Sorry. Thank you. So
6 here we have an article, apparently from a
7 publication on the web called Webware. Are you aware
8 of that publication?
9 A No, other than this article.
10 Q Are you aware of this author David Carnoy?
11 A No.
12 Q Do you know if he would be an industry
13 person as you described it in your declaration?
14 A I'm guessing if -- yeah, but I'm just,
15 yeah, speculating there, I guess.
16 Q What makes you think he would be an
17 industry person?
18 A Well, he's publishing something on the web
19 on -- on a site that people probably read. I don't
20 know.
21 Q Is that all it takes?
22 A Well, I -- I don't know.
23 Q It's a very short article.
24 A Yeah.
25 Q It really is just the front -- the first

1 page. The next page is just hyperlinks. If you can
2 just let me know, is there anywhere in this
3 Exhibit 2022 that mentions adaptive rate streaming?
4 MR. GUY: Instruct the witness to read the
5 whole thing.
6 THE DEPONENT: Okay.
7 A Yes.
8 Q (BY MR. PAQUETTE) Is there anywhere that
9 mentions adaptive rate streaming in Exhibit 2022?
10 A No.
11 Q Let's please go back to your declaration.
12 A But it talks about Move, which is adaptive
13 rate streaming. And it looks like this guy does work
14 at CNET. So that's a -- an industry published,
15 magazine publisher, so --
16 Q Let's go to --
17 A -- I caught that.
18 Q -- paragraph 36 of your declaration,
19 please.
20 A Okay.
21 MR. GUY: You said 36?
22 MR. PAQUETTE: 36, yes.
23 Q (BY MR. PAQUETTE) And here you say, "In
24 view of our groundbreaking inventions and Move's
25 years of success, my contributions to the industry, I

1 was inducted into the Utah Valley Entrepreneurial
2 Hall of Fame in 2013."
3 Do you see that?
4 A Yes.
5 Q And you also go on to say you were
6 inducted into the Utah Technology Hall of Fame in
7 2005, right?
8 A Yes.
9 Q Now, let's start with the Utah Technology
10 Hall of Fame. Earlier in your declaration you say
11 the Move player wasn't publicly released until 2006,
12 right?
13 A Yeah.
14 Q How would your induction into the Utah
15 Technology Hall of Fame relate to Move's player, if
16 that's the case?
17 A Well, I think that was referring to my
18 contributions to the industry.
19 Q So more broadly your work at Novell?
20 A The work at Novell, yeah.
21 Q Okay. So it would be -- the Utah
22 Technology Hall of Fame, at least, is not related to
23 Move or your adaptive rate patents, correct?
24 A Well, I had a company going at the time,
25 though, in 2005. And we were, you know -- but it was

1 not public, you know, so --
2 Q So you agree it's -- the Utah Technology
3 Hall of Fame --
4 A Was not recognized --
5 Q -- induction was not related to --
6 A Right, it wasn't recognized --
7 Q -- to ABR patents?
8 A -- for the ABR patents.
9 Q Okay. Then so in 2013 you were inducted
10 into the Utah Valley Entrepreneurial Hall of Fame.
11 A Yeah.
12 Q And you cite to this Exhibit 2068, right?
13 A Yes.
14 Q All right. I'm handing you Exhibit 2068
15 now.
16 A Yeah.
17 Q And this article is entitled, "Drew Major
18 Induction Into UVEF," which I presume is the Utah
19 Valley Entrepreneurial Hall of Fame, right?
20 A Yes.
21 Q Now, the first page here announces your
22 induction saying -- if you'd just read the first
23 sentence, "UVEF announces the induction of Novell
24 founder, tech guru, and prolific entrepreneur Drew
25 Major into the UVEF Hall of Fame."

1 A Yes.
2 Q This doesn't mention -- it mentions your
3 work at Novell, right?
4 A Yeah.
5 Q But it doesn't mention Move in this
6 sentence, right?
7 A Not in that sentence, yeah.
8 Q Okay. Let's go back to your declaration
9 real quick.
10 A I would -- I would just mention, later on
11 the article talks about Move and streaming, so, yeah.
12 Q Let's go to paragraph 36 again of your
13 declaration, please.
14 A Okay.
15 Q At the very bottom of the page 14, you
16 have a sentence that says, "The article from the Utah
17 Daily Herald at Exhibit 2015 references some of my
18 accomplishments over the years and the success of
19 Move Networks, including the invention of HTTP
20 adaptive bit-rate streaming."
21 A Yeah.
22 Q So let me go ahead and hand you
23 Exhibit 2015. I think I misplaced it in my pile of
24 papers.
25 MR. PAQUETTE: Actually, just -- why don't

1 we just go off the record real quick. I'll find it
2 and I'll make sure we can finish up in, like, 10
3 minutes. Sound good?
4 THE VIDEOGRAPHER: The time is 12:56.
5 We're off the record.
6 (Recess taken, 12:57 p.m. to 1:04 p.m.)
7 THE VIDEOGRAPHER: The time is 1:04.
8 We're back on the record.
9 Q (BY MR. PAQUETTE) Okay. Mr. Major, I'm
10 handing you Exhibit 2015.
11 A Okay.
12 Q Now, do you see the second full paragraph
13 in this article where it says -- let's see. Sorry.
14 If you go to page 2 of the exhibit, my apologies. Go
15 to page 2 of Exhibit 2015.
16 A Yeah.
17 Q If you look at the second full paragraph
18 where it says, "But the American Fork firm." Do you
19 see that?
20 A Yeah.
21 Q The American Fork firm, that's referring
22 to Move, correct?
23 A Yes.
24 Q And it says, "So Move nearly went out of
25 business last year laying off 150 employees out of

1 180 and exposing how tough it is to stir the market
2 in the highly competitive computer sector."
3 A Yes.
4 Q So is it true that Move nearly went out of
5 business in 2010?
6 A We needed more money, and our backers
7 would not provide it. So they put us up for sale.
8 Q So, yes, Move nearly went out of business
9 in 2010, correct?
10 A Yeah. We needed more money.
11 Q And you had to lay off 80 percent of your
12 employees in 2010, right?
13 A Whatever that number was, yeah.
14 Q 150 out of 180?
15 A Yeah.
16 Q And about halfway down the page 2 here, do
17 you see where it says, "But perhaps"?
18 A Yes.
19 Q Could you just read "But perhaps" and the
20 next sentence "Move's missed opportunity" to
21 yourself, and let me know when you're done?
22 A I read that. Yeah, I've read it.
23 Q Oh, okay. So am I to understand that Move
24 was in the running to partner with Netflix in 2010?
25 A Yes, we tried to get Netflix to license

1 our service.
2 Q But it seems Netflix chose Microsoft
3 instead --
4 A Yes.
5 Q -- to stream their video streaming
6 service? Yes?
7 A Yes.
8 Q And this decision nearly put Move out of
9 business in 2010?
10 A There was a number of things that nearly
11 put Move out of business. It would have definitely
12 helped if we would have gotten Netflix's business,
13 but there were other things, too. Primarily really
14 it was we needed more money to support the direction
15 we wanted to go and our -- our -- our backers decided
16 not to fund us anymore.
17 Q Okay. And so I understand you said you
18 were doing a lot of self-funding, correct?
19 A Well, I had -- I had funded it up through
20 the rounds, and then -- then when they put it on the
21 market and stuff and were not doing stuff, then I did
22 some bridge loans prior to the sale.
23 Q Did you ultimately lose money on the Move
24 system?
25 A Yes, I did.

1 Q So just briefly, you had mentioned there
2 was an ITC proceeding for these patents, right?
3 A Yes.
4 Q And you said you're generally aware of the
5 other litigations?
6 A Other than this one right now, this is the
7 only one I'm aware of.
8 Q Okay. So you're not aware of any
9 litigations in Utah?
10 A No.
11 Q You're not aware of any litigations in
12 Delaware?
13 A Not -- no, not right now.
14 Q Would you travel to testify for any of
15 these litigations to support your patents?
16 A If I was asked by DISH to do that, yes, I
17 would.
18 MR. PAQUETTE: Pass the witness.
19 EXAMINATION
20 BY MR. GUY:
21 Q You were shown Exhibit 2013.
22 A Is that the Sling --
23 Q It's the Sling Emmy --
24 A Okay.
25 Q -- announcement.

1 A Yeah.
2 Q Okay. Do you recall this witness -- this
3 exhibit and the questions you were asked about it?
4 A Yes.
5 Q Okay. And do you recall that counsel
6 referred you to the top one or two paragraphs of the
7 first page?
8 A Yes.
9 Q And counsel also refers you to
10 paragraphs -- one of the three paragraphs on the
11 second page, correct?
12 A Yes.
13 Q And he asked you certain questions about
14 whether or not this press release mentioned adaptive
15 rate streaming. Do you see that? I mean, do you
16 remember that?
17 A Yes, I remember that question.
18 Q All right. Look at the last paragraph.
19 A Okay.
20 Q Do you see where it says, "A pioneer in
21 adaptive bitrate streaming"? Do you see that?
22 A Where is that? I missed that.
23 Q The very last paragraph.
24 A The very last paragraph.
25 Q On the first page.

1 A On the first page. Yeah, I see that.
2 Q And so this press release does mention
3 adaptive bitrate streaming; is that correct?
4 MR. PAQUETTE: Objection, leading.
5 A That is correct. And I must have missed
6 it when looking over it.
7 Q (BY MR. GUY) Okay. You -- you missed it
8 in your prior questioning; is that correct?
9 A Yeah, in my prior questioning.
10 MR. PAQUETTE: Objection, leading.
11 Q (BY MR. GUY) Counsel never referred you
12 to that last paragraph during his questioning, did
13 you -- did he?
14 MR. PAQUETTE: Objection, leading.
15 A I don't remember.
16 Q (BY MR. GUY) Okay. With regard to the
17 Apple meetings that Greg Smith had with the architect
18 of HLS --
19 A Yes.
20 Q -- do you know whether or not Greg Smith
21 provided a full demonstration of the Move player and
22 back end to Apple?
23 A I don't know.
24 Q Okay.
25 A I would say likely he did. That was

1 usually how they sold it, they would show it.
2 Because people were always skeptical. But then we
3 showed it to them, and then they'd go, wow. That was
4 part of the traditional sales process. But, yeah.
5 Q With respect to Move as a company, it
6 existed from approximately 2005 to, I think, 2010,
7 when it was sold; is that correct?
8 MR. PAQUETTE: Leading.
9 A Well, XLon existed prior, yeah, to 2010.
10 Q (BY MR. GUY) What years did Move exist
11 under that name?
12 A Under that name, it was approximately 2005
13 on, yeah.
14 Q Until when?
15 A Until 2010. The last day of 2010 --
16 Q Okay.
17 A -- when we sold.
18 Q And other than ABR technology over an HTTP
19 network, was there any other technology that -- that
20 Move was generally known for?
21 A That was basically the -- the -- the core
22 thing of it, just selling that as a service. Yeah.
23 We -- we bought that company in Wales to try to move
24 into potentially doing some stuff in IPT -- on the
25 IPTV side, but that never went anywhere.

1 Q All right. And going back to the Emmy,
2 with respect to the Emmy award you received, other
3 than Adaptive Bitrate Streaming Over HTTP Networks,
4 is there any other technology that you are aware of
5 that you would have gotten an Emmy for?
6 MR. PAQUETTE: Objection, form,
7 foundation.
8 A I'm not aware of any technology that we
9 got an Emmy for.
10 MR. GUY: Okay. Pass the witness.
11 MR. PAQUETTE: Nothing further. Thank
12 you, Mr. Major.
13 THE COURT REPORTER: Could I get your
14 orders, please, on the record, in terms of E-tran,
15 with exhibits?
16 MR. PAQUETTE: We'll take the expedited
17 exhibit.
18 MR. SHENG: I'm sorry. What was the
19 question? I'm sorry.
20 THE COURT REPORTER: What your order is in
21 terms of E-tran with exhibits or whatever you want.
22 Do you want an E-tran with exhibits?
23 MR. SHENG: I'm sorry. Do we want E-tran,
24 and then is that a separate question, E-tran with the
25 exhibits? We don't need the exhibits.

1 MR. PAQUETTE: We have the exhibits.
2 MR. SHENG: We have the exhibits. So
3 that's where I was confused.
4 THE COURT REPORTER: Okay. Okay. You
5 want an E-tran, not the exhibits.
6 MR. SHENG: Yes.
7 MR. GUY: Are you ordering the video or
8 anything else?
9 MR. PAQUETTE: We're not going to order it
10 right now. But is there a time frame by which we
11 need to order it before you delete it?
12 MR. GUY: I'll put it this way, if you
13 don't order anything, I'm not.
14 MR. SHENG: We're going to order the
15 transcript of this.
16 MR. GUY: Expedited?
17 MR. SHENG: What's your normal turnaround?
18 THE COURT REPORTER: I was told Monday.
19 MR. PAQUETTE: Yeah, she said four days,
20 which would be Saturday, right? So Monday.
21 MR. SHENG: We don't need it by Saturday.
22 MR. PAQUETTE: Monday is fine.
23 MR. SHENG: Monday is fine, yeah.
24 MR. DHANANI: Monday is fine with us.
25 MR. GUY: Monday is fine with us.

1 MR. SHENG: Could we get a rough, original
2 of the rough, though, through the internet?
3 THE COURT REPORTER: Sure. You can get a
4 rush tonight.
5 MR. SHENG: A rough -- rough of the draft,
6 not a rush, but the rough draft.
7 THE COURT REPORTER: No, a rough tonight.
8 MR. SHENG: Great.
9 THE COURT REPORTER: Do you want a rough?
10 MR. SHENG: Sure, please. Do you have my
11 email?
12 THE COURT REPORTER: Yes. I'll just --
13 yes, we can go off.
14 THE VIDEOGRAPHER: All right. The time is
15 1:13. This concludes today's proceedings. We are
16 off the record.
17 (WHEREUPON, the within proceedings were
18 concluded at the approximate hour of 1:13 p.m. on the
19 17th day of September, 2024.)
20
21
22
23
24
25

1 I, ROBERT DREW MAJOR, do hereby certify that I
2 have read the foregoing transcript and that the same
3 and accompanying amendment sheets, if any, constitute
4 a true and complete record of my testimony.
5
6
7
_____
8 Signature of Deponent
( ) No Amendments
9 ( ) Amendments Attached
10 Acknowledged before me this
11 _____ day of _____, 2024.
12
13 Notary Public: _____
14 My commission expires _____
15 Seal:
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1 STATE OF COLORADO)
2) ss. REPORTER'S CERTIFICATE
3 COUNTY OF DENVER)
4 I, Teresa L. Cardenas, do hereby certify
5 that I am a Registered Professional Reporter and
6 Certified Realtime Reporter within the State of
7 Colorado; that previous to the commencement of the
8 examination, the deponent was duly sworn to testify
9 to the truth.
10 I further certify that this deposition was
11 taken in shorthand by me at the time and place herein
12 set forth, that it was thereafter reduced to
13 typewritten form, and that the foregoing constitutes
14 a true and correct transcript.
15 I further certify that I am not related to,
16 employed by, nor of counsel for any of the parties or
17 attorneys herein, nor otherwise interested in the
18 result of the within action.
19 In witness whereof, I have affixed my
20 signature this 23rd day of September, 2024.
21
22
Teresa L. Cardenas, CRR, RPR
23 216 - 16th Street, Suite 600
Denver, Colorado 80202
24
25

1 ERRATA SHEET

2 I wish to make the following changes, for the

3 following reasons:

4 Page Line

5 ____ ____ CHANGE _____

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9 ____ ____ CHANGE _____

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17 ____ ____ CHANGE _____

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19 ____ ____ CHANGE _____

20 REASON _____

21

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22 SIGNATURE OF DEPONENT

23 Sworn to before me

this ____ day of _____, 2024.

24

_____

25 Notary Public

A

a.m 3:4 48:22,22 93:4,4
A1 4:9
abandoned 144:21 152:19
ABC 5:12 120:4 126:4 127:17 128:2,8
ABC's 129:16
ability 52:14 110:7,19 112:5
able 40:25 122:6
ABR 10:18 11:4,8 17:5,6,21 17:23 18:5 18:11,14 19:3,7,12 32:10 33:3 36:2,4 42:13 43:25 44:2 52:7 60:19 97:16 99:4 102:22,22 103:6 108:11 138:1,5,11 153:18 154:5 157:25 163:1 172:7,8 180:18
absorbed 31:3,4
Academy 101:2
accessing 41:15
accompan... 184:3
accompli... 173:18
account 70:5
accounts 116:16
accurate 8:16
Achievement 5:18
Acknowle... 184:10
acknowle... 107:24
acquired 30:22 132:3,4
acquisition 31:8
action 185:18
actual 69:2 70:3 155:6
ad 27:11 51:16,17 51:22,23 51:25 82:7 82:8,12,15 82:16,21 83:8,13 84:10 85:2 85:2 87:11 88:16
adapted 11:18
adaptive 10:19,24 11:1,4 66:13,14 71:21 98:9 98:12 103:23 107:8 108:21,25 109:24 110:11 111:3,14 112:12,22 113:4,8,23 115:6 120:20,25 139:22 140:1,3 142:10 144:13 145:15 152:11,22 163:3 164:4 170:3,9,12 171:23 173:20 178:14,21 179:3 181:3
adaptive... 47:16
add 77:19 110:7
added 51:17 51:18 77:19
adding 74:8 75:3 110:4
additional 151:22
address 7:6 136:11
adjust 36:13 36:15
adjusts 67:23
administ... 9:8
Adobe 35:9 38:1,3 125:12 131:17
adoption 98:5
ads 26:6,6,8 27:5,8 83:24 84:11 88:24 89:11
advantage 21:16 22:21 25:9 53:1 56:9 80:14 165:1
advertisers 27:15
advertising 83:2
affect 108:2
affixed 185:19
aggressive 131:20
ago 15:16 23:1 29:13
agree 8:10 8:11 92:5 109:20 128:6 138:13 172:2
Agreed 7:21 8:5
agreement 5:16 147:22
ahead 32:24 49:5 173:22
airplane 129:1
airport 28:8
airs 120:9
Akamai 24:13 24:14 37:20 38:4
al 5:3 6:5
algorithms 44:9 45:25
Ali 2:6 6:17
ali.dhan... 2:8
align 82:21 95:22
aligned 82:1 95:7 96:2 97:9 142:12,21 143:9
aligns 146:3
all-enco... 118:8
alleviated 76:5
alleviates 76:8
Alley 16:7
allow 75:5
allowed 73:8 73:21 130:13
allowing 122:5
allows 53:2 75:9,10 85:20 109:22 165:19
Alto 2:4
alumni 118:21 123:3
amazed 128:25 130:17
amendment 184:3
Amendments 184:8,9
America 130:16
American 4:18 132:8 174:18,21
amount 21:15
amounts 58:4
ample 122:17
Andrew 2:11 49:5,6,8
announced 40:19,21 100:22
announce... 177:25
announces 172:21,23
announcing 101:20
annually 121:10
answer 7:20 7:21,24

9:18 11:14 12:10 19:10 33:22 44:7 52:10 56:22 68:24 73:1 79:7,9 81:22 88:19 92:12 96:24,24 104:22 105:11 108:15 121:17 123:14 138:17 143:3 161:20
answered 96:11,20 96:25 105:10 114:1,18 114:20 162:22
answering 27:19
answers 7:17 8:4 12:3
antenna 19:14
anti-online 123:7
anti-por... 123:11
anymore 44:18 176:16
anyway 8:23 27:16 28:15
AOL 26:7 27:4,6,10 27:21
apart 138:16 140:21
apologies 174:14
apparently 149:19 169:6
APPEAL 1:2
appear 65:3 108:10 126:25 154:4
APPEARANCES 1:14 2:1
Appearing 1:18,22 2:5,9,11 2:12,12,13
appears 16:18 17:5 62:12,19 63:1,4 101:22 108:7 118:6 126:21 127:7 129:24 130:1 148:7
Apple 5:15 35:8 99:10 125:12 131:17 139:24 144:9,9 145:4,6,7 145:12 147:23 148:8 149:1,5,5 149:10,13 149:14,15 149:21,21 150:2,5,8 151:3,19 152:3,6,17 152:23 153:15 154:19,25 155:19,25 156:1,5,8 156:9 157:8,15 157:17,18 157:20,22 157:24 158:20 159:12,17 159:20,24 160:25 161:8,10 161:12 162:18 179:17,22
Apple's 143:24 144:2 157:18
application 153:23 154:18
applied 20:17
apply 12:4,5
approach 144:22 152:16
approaches 147:16
appropriate 163:21
approved 144:7
approximate 183:18
approxim... 95:12 180:6,12
April 44:15 155:12
architect 151:5,7 179:17
architec... 22:22 80:18
arrange 21:3
arranged 52:3
arrive 91:8
arrived 91:22
arrives 91:9
art 12:21 13:7,17 20:8
article 4:18 4:20 5:14 112:12,12 112:15 113:3,3 117:22 118:9 120:13 122:25 127:9 169:6,9,23 172:17 173:11,16 174:13
articles 125:18 168:25
Arts 101:2
aside 122:1
asked 10:2 21:18 46:13 48:25 91:17 96:10,20 105:10 110:25 114:1,18 114:20 162:22 177:16 178:3,13
asking 7:16 12:12 21:12 40:2 40:3 96:14 111:4 141:17 157:20
asks 21:10
aspect 46:21 46:23 53:25 71:17 75:24 87:21 111:5,10 162:9,10 162:11
aspects 11:16
assume 97:16 109:10
ATP 58:14
attached 4:23 5:5,7 184:9
attention 17:8
attorney 7:19
attorney... 9:18,25 12:11 49:25 138:18 162:21
attorneys 185:17
ATV 11:18
audience 122:24
audio 36:5 62:23 63:2 168:10
author 127:6 169:10
automated 22:10
automati... 66:9
AV 124:23
available 41:18 68:1 71:24 99:1 100:5 118:23 126:1 144:3 155:25
avoid 27:14
avoidance 75:15
award 101:2 102:13,17 102:19 105:23

106:5,9
107:6,23
108:5
113:8
138:20
181:2
awarded
101:1
105:7
106:12
Awards
107:20
aware 15:7
15:10
148:25
149:1
150:2
169:7,10
177:4,7,8
177:11
181:4,8
Aylo 1:5 6:5
6:15 14:22
15:9

B

B 53:13
54:21 55:2
55:3
B2 1:11,11
1:12,12
4:7
B2)2 1:13
back 23:11
27:19
28:20
34:17
43:17
48:24,24
49:12,17
56:16,17
64:11
65:12 67:8
73:18
80:15,15
82:16,20
82:22
83:10 87:9
87:11
90:21 93:6
106:2
107:12
115:1,3
123:17
133:24
137:10
163:23
170:11
173:8
174:8
179:22
181:1
back-end
37:18
46:14
backers
175:6
176:15
background
9:19
bad 27:12,14
Baker 2:2
6:18 49:4
49:6,9
bandwidth
26:20
36:13,16
41:4,10
57:8 58:5
59:16,17
66:3 67:23
67:25 68:6
68:20
69:18,20
75:2,6,8
base 110:3
112:1,5
Baseball
40:23
based 11:22
14:3,4
20:12
31:23
35:13
36:13
47:10 92:4
98:5 161:2
163:1,4,6
basically
56:23 77:7
80:18
108:16
122:2
180:21
basis 99:2
baud 80:3
beautiful
22:23
beauty 21:14
beginning
6:12
begins 6:3
begun 8:8
behalf 1:18
1:22 2:5,9
behavior
76:8,9
believe 9:25
11:23 17:9
17:16
18:25 19:7
23:9 35:20
36:7 46:12
50:20 71:3
92:21
99:14
103:6
124:11
132:16,19
138:12
142:23
151:4,7
158:10
beneficial
57:4
benefit 8:2
52:18
benefited
124:12
best 37:3,7
beta 121:19
better 13:18
19:20 22:6
60:24
66:19
78:23
140:23
141:12
149:22,23
150:4
Beuthel 2:11
6:10
beyond 164:9
big 20:20
21:13
28:15
68:16 73:2
80:13
106:25
111:8
122:7
125:6
146:9
bigger 52:15
152:14
biggest 24:5
131:2
150:5
billion 26:7
billions
163:5
bit 13:23
14:6 36:15
39:16 42:9
49:14
65:15,21
65:21
70:24
74:14
76:21,21
110:10
133:18
145:22
bit-rate
139:22
140:2,3
144:13
173:20
bitrate
10:19
22:20,20
36:13,15
37:4,5
53:13,13
53:13
54:10,21
54:21 55:2
55:2,3,3,7
55:8,8,10
55:10,11
57:7,9
61:17,19
66:14
67:24
98:12
103:23
107:8
109:25
112:12
113:4
120:20
121:1
145:25
146:1
152:22
161:22
162:5
163:21
178:21
179:3
181:3
bitrates
21:4,5,9
22:16,17
55:1,21,24
56:2 57:1
57:6 70:2
77:11,13
77:18,19
80:1 81:20
81:24
143:14
145:22
bits 19:13
58:13 78:7
78:16
111:2
167:5
168:20
black 27:12
bleeding...
118:20
Blend 5:11
127:3,4
blog 126:21
blogged
126:9
Blue-ray
19:15
board 1:2

150:6
body 144:6
bonus 32:2
borders 70:18
bottom 62:12 62:18 63:22 74:6 173:15
bottom-ish 71:10
Botts 2:2 6:18 49:5 49:6,9
bought 37:25 180:23
boundary 82:9
break 7:25 48:14 49:13 53:7 78:5 92:17 93:2,8 139:12
breaks 7:23 8:10
bridge 176:22
briefly 7:14 17:4 31:19 79:15 106:2 118:5 120:19 134:25 177:1
Brigham 117:22
bringing 74:23
brings 43:6
British 132:18 133:10,14
broad 142:16 163:8
Broadcas... 121:10
Broadcasts 5:10
broadly 142:16 149:17 171:19
brought 66:22 89:11
browser 72:14,14
Brueck 43:20 46:10 47:12 48:6 48:10
Bryson 136:13,16 136:17
BS 118:21,22
buffer 60:11 60:13,20 60:23 91:6
buffering 42:10,14 70:15 91:5
build 46:13 60:23 98:9 98:15 99:6 158:14
building 2:3 133:1
built 11:19 24:9 44:11 44:25 45:6 74:11 110:11 133:4 144:21
bunch 44:10 44:10 45:6 98:14,22 105:4
business 4:19 15:1 38:4 119:7 174:25 175:5,8 176:9,11 176:12
businesses 26:5
buy 25:2 66:21 125:11 158:12
buying 149:9
BYU 118:6,9 121:9,10 121:14,21 121:22 122:3,14 122:15 123:3
BYU's 120:11
BYU.tv 121:23

C

C 6:1 53:14
cable 19:14 77:23 104:4,8,13 118:10 124:8
cache 24:10 24:13,19
caches 20:6 24:21 25:7 28:24
caching 21:5 28:25
calculation 69:19,21
California 1:20,20 2:4
call 9:18 10:19,23 15:16 16:3 29:6 50:15 68:22 79:4 113:15 114:6,6,9
called 3:2 23:25 31:12 33:23 35:1 37:23 41:22 45:1 73:24 118:12 131:19 132:22 149:17 155:5 159:13 169:7
calls 11:12 12:23 19:8 44:5 52:8 108:13 138:14 160:22 161:17
capabili... 71:11 98:10 133:4
capability 25:9 47:8 73:24
capacity 43:3 70:3 70:5 78:19
Cardenas 3:6 6:9 185:4 185:22
Carnoy 169:10
Carper 5:6 137:2
carte 111:24
case 9:12 16:24 37:16 39:12 43:2 57:13 82:17 91:25 100:3 114:16,17 171:16
cat 108:22
catastro... 91:23,24
catch 21:23 59:25 60:2
caught 170:17
cause 121:9 140:25
caution 12:9 49:24 89:17 138:17 156:3 162:20
CBS 127:22
CDM 121:20
CDN 25:11 37:21 125:8 135:21
CDN)s 71:13
CDNs 71:24
centers 132:9
CEO 117:5 119:3,4 135:14
ceremony 102:13
certain 32:3 137:12 138:25 158:25 163:18 178:13
certainly 52:12 92:14 126:11 128:21 129:9 144:15
CERTIFICATE 185:2
Certified 3:7 185:6
certify 184:1 185:4,10 185:15
chain 135:1 135:24 136:21,23 137:6
challenge 9:8 12:19
challenged 9:6 46:9
change 22:19

59:1 61:18 69:8 70:19 85:13,15 156:1 160:25 186:5,7,9 186:11,13 186:15,17 186:19
changed 76:18 84:22
changes 110:23 186:2
channel 81:3 104:4
channels 111:24 118:23 121:9 130:14 131:5
characte... 144:18
characte... 72:25 81:21 126:23
charge 121:11
chart 62:13 62:19 63:8 63:20
cheaper 23:4 38:22 66:19 73:5 125:9 140:23
chief 31:15 136:17
choice 139:10
choose 110:5
chop 54:16
chose 144:23 149:22 158:21 162:18 176:2
Christ 117:11 123:2,4
Christopher 137:2
Chrome 72:14
chunk 21:10 23:5 86:15 146:22
chunking 45:9 77:7 78:3 142:20 161:23 163:13
chunks 21:7 50:16 77:16 94:17 110:16,16 110:21 111:1 142:11,12 142:18 146:22 152:14 163:17,21 163:22
church 117:11 123:1,4,6
Cisco 124:3
citations 116:25
cite 33:6,10 97:22,25 101:7 117:19 118:15 126:15 128:18,19 134:20 147:25 169:2 172:12
cited 13:13 15:23 39:13 97:24
citing 98:6 118:1
claim 120:14
claims 164:22
clarify 84:13
clean 85:24
clear 128:11
clearer 84:5 128:3
clever 73:23
click 26:17
clicking 66:17
client 20:1 20:2,24 21:8,17,17 23:3 30:11 30:13,14 35:13 36:25 37:8 37:19 39:8 39:9,16,19 43:6,6,9 45:20 52:24 57:5 57:7 59:21 60:12 65:17,22 65:24 66:7 66:22,23 92:9 110:25 116:2 142:11 143:11 146:6 153:5 158:17 160:6,8 162:3 163:19
clients 20:13,14 45:10 67:1 73:12 161:2 163:13
close 29:24 96:17 150:5
cloud 110:4 110:9,12 110:14,19 111:5,6
CNET 170:14
co-inventor 43:25 46:20
co-inven... 18:22 43:20
code 44:11 66:10 67:7 67:16
coders 46:15
coding 45:14 46:14
coincidence 159:19
collabor... 134:2,6
collateral 102:7
color 168:20
Colorado 3:5 3:8 6:8 93:16 185:1,7,23
column 62:23 63:9
combination 20:4 73:3
combines 141:6
Comcast 124:7
come 11:18 11:21 22:5 23:11 26:14 30:1 34:17 43:17 46:22 82:16,20 116:3 150:20
comes 156:20
coming 11:20 28:2,3,13 60:16 78:6 78:9 80:4 159:16
commence... 185:7
commencing 3:4
commercial 115:19
commercials 99:21
commission 160:9,12 184:14
common 12:1 70:18 104:3,24 104:25 167:2
communic... 9:18,25 12:11 49:25 138:15,18 162:21
companies 35:22 37:17 77:23,24 132:15,18 161:6
company 4:19 10:2 23:22 23:25 24:7 24:15 25:3 25:12,18 32:13 41:22 44:21 130:21,23 132:13,21 132:22 135:22 138:9 139:2 157:6 171:24 180:5,23
compare 22:24

compared 128:7,12
comparing 128:22 129:12
compatible 100:8 110:11
compensa... 31:22
competitive 175:2
compleme... 133:3
complete 184:4
completely 42:14
complicated 38:22
components 105:5
compound 10:21
compress 54:8 77:10 77:13 78:18
compressed 50:24 53:17,21 59:1 76:20 165:16 166:20
compressing 53:22 77:5 78:23 81:19
compression 53:24 58:12,12 77:18,22 78:22
compute 43:6 67:1,2
computer 5:15 33:14 66:22 70:3 90:20 175:2
computers 69:21 78:19
con 54:6
concepts 44:12
concluded 183:18
concludes 183:15
conclusion 11:13 12:24 19:9 44:6 52:9 68:23 79:5
concurrent 42:25 73:8 73:22
concurre... 74:6 76:1
conference 92:20
Confiden... 5:16
configure 97:4,5
confirm 135:23
confused 87:20 89:4 90:6 182:3
congestion 74:12 75:14,15 76:5,10 91:24
connected 21:24 133:13
connecting 39:19
connection 40:7 118:24 166:4
connections 74:3,22 75:12 91:7
connecti... 124:11
consecutive 51:10,11
consider 64:8,14 119:5 123:14 126:5 161:16 162:1
consider... 107:7,17 107:25 108:18
considered 29:3 31:13 35:5 52:7 119:14,15
consists 47:17,20 47:22
constantly 81:1
constitute 184:3
constitutes 185:13
container 54:5
containing 54:6
content 5:13 20:6 24:3 24:14,18 28:23 31:23 41:16 56:5 56:6 71:12 88:14 89:3 89:24 98:15,23 111:24 121:21,22 122:16,18 123:24 124:19 125:5 126:1 127:18 131:3,6 133:3 135:21 140:13 149:13
context 104:18 150:1
contiguous 88:12,25 89:10,22 90:10
continue 7:21 8:13 10:14 11:18 69:9 139:11
Continued 2:1
continues 109:7,15 166:18
continuing 37:9 110:3 115:25
Continuous 89:7
contributed 19:7
contribu... 44:3
contribu... 170:25 171:18
control 40:10,11 65:17,23
convenient 8:20
convention 134:4,9 137:18
convince 149:15
cool 19:18
copies 144:8 162:17
copying 161:16
core 11:16 11:16 19:11,22 19:24 23:2 44:9 45:4 45:5,5 47:11 71:19 72:23 92:6 92:13 142:10 143:17 145:2,16 147:10 162:6 165:3,4,6 165:11,14 165:15,17 165:20,24 166:5,7,10 180:21
corner 155:8
correct 9:9 9:12 17:23 18:12 30:25 31:1 32:21 35:5 39:21,24 52:5 55:11 55:24 59:14,22 60:18 63:3 65:7 70:19 73:13 81:20 87:13 90:12 95:5 97:17,23 101:20 103:7,11 103:13 109:25 111:15 115:7 116:25 118:7 119:10 122:4 123:8 126:16 128:19 129:25 131:25

135:8
136:11,22
136:25
137:3,22
147:23
148:20
151:14,21
154:19
168:14,18
171:23
174:22
175:9
176:18
178:11
179:3,5,8
180:7
185:14
correctly 73:12
correspo... 56:5,6,7
corresponds 146:3
Council 33:9
counsel 6:10 6:12 8:10 49:3 93:9 93:11,12 178:5,9 179:11 185:16
counted 116:9
counting 116:14
counts 116:4
COUNTY 185:3
couple 7:10 7:14 79:11 115:10
course 24:5 27:2,4 29:1 45:6 47:23 74:19 78:22 130:15 142:14 149:21 150:6
159:21,23
162:13
court 1:24 6:9 8:2 49:1 114:7 114:9 115:2 181:13,20 182:4,18 183:3,7,9 183:12
cover 16:15 16:23
covered 81:18
COVID 102:16
CPU 43:4 70:4,6
crap 168:11
create 51:19 52:3,19 56:13,19 78:11
created 23:8
creating 45:11 50:11,23 53:8 56:12 56:18 79:24 87:22 92:6
creativity 113:10
critical 71:21
critics 126:12
CRR 185:22
CTO 31:11,13 135:11
Cup 5:9
curious 106:17
cushion 60:24
customer 150:5
customers 109:9,22
customize 109:9,22
cut 125:17
cycles 43:5

D

D 4:1 6:1
Daily 173:17
damaging 76:9
dangerous 26:22
Danny 24:17
data 5:9 20:13,25 21:15 26:24 28:13 37:18 39:9 43:12,13 53:21 58:16 60:9 60:15,23 67:21 69:6 74:23 78:16 80:6 80:22 86:8 132:9 154:11 166:3
date 30:2 34:12 102:11 153:25
dated 131:25
dates 34:13 148:22 151:12,13
Dave 46:12
David 43:20 46:10 47:12 169:10
day 7:24 23:1 80:5 120:9 180:15 183:19 184:11 185:20 186:23
days 15:16 22:3 78:19 120:9 167:3 182:19
deal 20:20
dealing 27:18 76:9
deals 27:20
December 148:8,23
decide 20:3 22:8 70:1 165:19
decided 99:23 176:15
decides 65:24
deciding 44:9 45:25
decision 43:8 66:4 68:6,14,21 69:5 138:13 176:8
decisions 19:25
declaration 4:12 9:11 9:15 10:1 10:17 13:24 14:1 15:18 16:11,17 16:25 17:3 18:4,10 23:17,18 29:21 31:20 32:25 34:19 41:12 50:3 65:12 79:16 81:6 93:20 102:9 106:3 107:4,16 118:16 123:18 128:16 133:24 137:10 139:20 147:18 157:11 161:19 169:13 170:11,18 171:10 173:8,13
declarat... 14:9
Def 42:20
defeated 128:18
defend 10:3 10:5
defending 10:12
defer 48:17 139:12 166:15
define 109:7
defined 127:15
defining 108:16
definitely 36:22 69:5 86:4 108:21 113:20 159:25 176:11
definition 62:21
degree 105:19 163:8,11 164:12
Delaware 177:12
delay 78:25
delayed 37:2
delete 182:11
deliver 20:9

21:16 27:5
27:21
37:18
40:25
43:12 70:8
125:9
delivered
26:6 58:5
91:1
124:10
delivering
24:22
125:2
delivers
43:12
delivery
19:19,21
20:4,6,22
23:4 24:3
24:15,18
28:23
71:12 73:8
73:22
demand 77:5
79:23 80:3
80:7,13,16
80:17,17
86:5 141:8
164:8
Democratic
134:3
demonstr...
30:20
demonstr...
179:21
demonstr...
128:17
Denver 3:5
6:8 8:20
8:22 185:3
185:23
deploy 38:5
66:20
94:16
deployed
103:9
deponent
48:15,18
50:1 62:17
87:3,7
92:18
95:14
96:22
101:12
112:25
139:13,18
170:6
184:8
185:8
186:22
deposed 7:9
deposition
1:3 3:2
6:4,7 8:7
8:21 12:8
12:14,22
15:12
154:6
155:9
185:10
depositions
14:9
depth 168:20
derived
143:16
147:15
168:8
describe
53:17
113:5,17
113:18
described
147:10
169:13
describes
112:12
113:4
describing
47:15
104:7
description
4:6,11 5:2
144:4
designed
70:23
detail 58:7
69:3
147:13
166:12
determine
67:16
developed
11:17
developing
103:18
development
107:7,25
108:17,18
device 20:2
65:17,22
65:24
69:23
165:19,23
166:4
devices
99:10,24
100:1,6,13
116:17
158:18,19
Dhanani 2:6
6:17
182:24
dif 43:9
difference
80:2,21
141:15
144:25
differences
110:23
different
11:15
16:23 20:8
21:4,5
22:16
23:24
35:22
37:21,24
43:9 45:14
51:19
53:21,22
54:4,4,6
55:9,23,23
55:24 56:2
56:3 57:1
57:6,9,9
58:1,2,4,8
58:9,10
59:3,10,11
61:13,15
63:7 64:2
65:18 66:1
72:21 73:9
73:22
74:18
77:10,10
77:12,13
77:18,21
79:25
81:23
82:15 83:5
83:7 85:1
88:7 92:8
92:8 94:8
99:22,23
99:25
100:1
110:13,20
143:13
145:22,25
146:1
147:16
153:9
156:15
158:10,17
158:17
160:20
161:1,5,6
162:24
differently
51:6 55:7
digital
31:12 54:1
digits 17:21
direct 25:4
25:4
direction
176:14
directly
108:11
113:5,15
113:20
121:2
132:20
139:8
disadvan...
72:4
disagree
112:8
disclose
49:25
138:17
149:23
150:3
162:21
disclosed
33:3 152:7
156:1
157:8
discovering
129:13
discrete
19:17
discuss 8:8
138:4
discussed
17:20
38:14
71:15
93:17
160:1
166:21
discussing
92:5
discussion
24:17
149:6,7
discussions
149:5
150:9
151:18
156:2
158:10
DISH 1:8
4:13 6:5
6:19 8:24
15:8 30:25
31:12
32:16,17
32:18,18
49:7,10
97:14 98:4
105:4,7
106:21,22
117:6
127:11
138:10
161:10
177:16
DISH's 13:20
Disney 54:15

115:23,23
120:5
122:8
124:22
149:10,10
149:13,14
149:14,20
150:5,7
157:19
disrespect
123:6
disrupting
113:10
distingu...
120:12
distribute
104:12
distribu...
20:17 26:4
104:12,15
135:21
divisible
85:25
DNC 137:18
document
114:1,4,14
121:16
144:4
155:6
documents
15:15
doing 19:17
21:23
22:22 25:2
27:3,22
28:7,11,18
35:17
38:12
41:23,24
43:6 46:19
66:24
75:11 78:2
81:1,4
88:16
117:16
124:1,24
129:3
145:3
147:3
150:4
156:17
163:13
176:18,21
180:24
dollars'
121:14
donation
122:3
dots 58:15
download
22:3,8
26:9,10,11
26:13,17
26:20,23
27:22,25
28:1,11
38:19,23
39:3,5,25
41:24
59:13,20
60:8,22
74:15,16
101:25
116:1,19
165:20
downloaded
29:8 67:4
116:6,13
downloading
28:19 29:5
29:14,17
30:15
38:15,15
39:18 60:9
61:3 90:20
116:22,23
downloads
24:4 26:13
28:7 75:18
116:7,18
116:21
dozens 42:19
78:20
Dr 13:21
draft 14:1
102:9
144:8
160:25
183:5,6
drafted 14:3
drafting
14:5
dramatic...
74:14
draw 17:8
Drew 1:3 3:2
4:12 5:17
6:4,20 7:7
118:22
119:9
172:17,24
184:1
drill 124:15
duly 6:21
185:8
dumb 20:13
43:11,11
dummy 86:8
duration
51:2,3
78:8 81:16
81:17 82:2
82:5 85:10
87:13,24
95:8,11,12
95:24 96:7
96:7,8,15
DVD 19:15
DVR 19:15,15
110:4,9,12
110:13,19
111:4
DVRs 110:14
Dwayne 2:11
6:10
dynamic
22:11
47:24
dynamics
43:7

E

E 4:1 6:1,1
E-tran
181:14,21
181:22,23
181:24
182:5
e.g 93:22,24
earlier
14:16,16
26:19
40:19
50:12
91:18,20
115:18
171:10
early 29:4
30:18 41:2
117:8
Earth 5:14
117:24
easily 21:8
easy 77:15
EchoStar
30:23 31:8
97:13
132:2,4
ecosystem
157:18
Edell 2:12
49:2,2
Edge 72:14
edited 14:5
Edwards 4:21
117:3,4
118:20,21
119:2,13
120:14
122:18,20
122:22
135:4,14
effectively
74:8,13
144:23
effects
140:25
eight 52:12
167:16
either 22:2
41:9 58:11
58:13
68:25
75:25
elected
33:18
element
98:13
elements
152:22
163:24
email 4:21
4:23 5:3,6
135:1,24
136:8,11
136:21,23
136:25
137:5
183:11
emails 5:5,7
embed 150:8
157:17
158:22
embedded
150:10
embodies
164:21,24
Emmy 101:2
101:20
102:13
103:3,11
103:13,14
103:17
105:6,23
106:5,9,18
106:23
107:6,20
107:23
109:3
177:23
181:1,2,5
181:9
employed
24:8 44:18
185:16
employee
46:12
employees
174:25
175:12
employing
158:14
empowers
109:9
enabled
111:20
enabling
70:10
71:21
encode 54:21

encoded 50:25 53:17,23 58:19 76:20 80:7 81:23 87:23 93:22 143:13 145:24 147:4
encoders 56:25 146:24
encodes 146:11
encoding 47:1 52:20 53:12,25 54:9 55:23 56:13,19 77:25 79:25 81:19 152:12 153:9 163:22
endorsed 23:10
Ends 5:14 117:23
engineering 101:1 103:4 107:20,24 107:25 108:18 113:9
engineer... 101:4
England 133:19
English 13:16
entered 147:22 152:6
entire 40:3 40:5 74:2 78:1 80:3 87:18 90:22 104:15 111:1,2 112:15 115:14
entities 77:10
entitled 4:18 172:17
entity 31:3
entrepre... 172:24
Entrepre... 33:5,18 171:1 172:10,19
episode 126:4
equal 59:18
equity 137:12,21
Ericson 148:10,14 148:17
ERRATA 186:1
especially 36:7 47:8 155:1
ESPN 120:5 125:1
Esq 1:16,19 2:2,6
essence 142:14
essentially 9:9 155:16
establish 10:15
established 32:19 135:13
establis... 137:13
estimated 121:9
et 5:3 6:5
evaluate 44:11
evaluation 141:9
event 80:9
events 111:25
eventually 30:9,22 124:12
Everybody 57:20
evidence 98:7
evolution 47:11
evolved 25:17 99:9
ex 122:5 126:15,16 126:19
Ex-Long 23:25
exact 56:24 57:2 85:10 125:19 142:4 153:25
exactly 27:23 30:2 35:4 41:6 56:10 67:24 79:21 82:21 96:16 147:12,15 153:15
examination 4:2 6:24 7:1 177:19 185:8
example 26:5 37:20 51:16 54:14 55:1 64:18 67:3 82:7 87:19 93:25 94:6 131:3 166:19,21 167:23
examples 59:5 62:13 62:19 98:17
excellence 101:4 113:9
exception 89:11 95:17
exceptions 95:20
exchange 122:5
excited 107:1 125:1 130:12 131:21 157:2
excuse 56:15 76:22 103:16 137:3 155:7
execute 67:16
exhibit 4:6 4:11 5:2 16:16 18:5 33:6,10 50:3 62:1 62:2 97:24 101:7,9,17 102:1 103:16 106:3 107:13,15 109:6,13 113:23 115:6 116:24 117:19,22 118:12 119:19 121:4 129:7,19 129:24 132:7 133:23 134:21,22 134:25 136:1,24 148:1,4,7 154:3,6 155:4,9 169:2,5 170:3,9 172:12,14 173:17,23 174:10,14 174:15 177:21 178:3 181:17
exhibits 4:10 5:1 15:23 97:22 126:15 128:19 134:20 181:15,21 181:22,25 181:25 182:1,2,5
exist 100:19 180:10
existed 46:15 180:6,9
existence 30:1
existing 107:7,17 108:1 152:19
exists 31:2
expand 37:14
expect 128:22
expecting 25:20
expedited 181:16 182:16
expensive 37:11 38:25 42:3 66:21

124:21
125:11
experience
22:24
28:10
57:10
128:24
experienced
29:12
expert 13:21
142:23
166:9
experts
143:3
166:16
expires
184:14
explain
31:25
47:13
65:21 89:5
144:1,16
explained
151:22
explaining
157:15
explanation
25:14
explicitly
111:14
exploit
158:7
exploits
165:1
exposing
175:1
expressed
125:19
129:8,9
142:15
extent 44:5
79:2
138:14
153:15
extra 23:25
extras 110:7
Extras'
110:5
extreme
39:12
extremely
20:5 24:10
64:23 92:2
eye 152:4
eyes 141:1

F

FaceTime
164:1,3,5
fact 21:17
71:18
77:14 80:6
89:10
90:11
105:15
140:22
factor
120:12
factual
12:13
failing
25:19
fair 11:25
18:25
31:18 39:1
42:9 45:3
45:8 54:1
54:22 55:4
79:13
83:22
90:22
91:18
105:8,25
111:11
126:22
156:19
157:8
166:23
fall 115:11
115:16
Fame 5:18
33:5,10,15
171:2,6,10
171:15,22
172:3,10
172:19,25
familiar
7:12 14:21
75:17
127:4,8
familiarity
14:22 15:5
family
153:18
154:5
family-c...
122:16
far 54:17
140:17
fast 21:2
26:23
74:17
faster 22:5
24:14,19
52:21,22
52:23 75:1
feature
165:11,14
165:15,17
165:21,25
166:5,6
features
145:2
165:3,4,6
166:7
Federal
160:9,11
feed 76:19
feeding 60:8
60:9
felt 20:9
fewer 65:6
FIFA 5:9
figure 46:17
70:1 90:6
figured 8:23
22:15 44:8
44:20
figures
67:22
163:20
figuring
25:17
file 19:15
39:23,25
40:3,5
47:21
59:13 77:6
77:6 78:14
78:15
111:1
161:25
filed 102:21
102:25
153:17,19
155:11,12
files 38:19
38:23 78:1
99:13
111:8,8
filled 86:8
final 16:19
finally
136:24
166:2
financial
32:6,8
find 154:25
156:10
174:1
fine 8:1
29:25
86:25 90:5
92:18
182:22,23
182:24,25
finish 79:8
87:1
139:17,18
174:2
firewalls
72:1
firm 174:18
174:21
first 6:12
6:21 17:25
23:9 26:6
27:8 30:20
34:21,22
41:14 50:7
51:1 57:7
74:3,4
81:8,12,13
82:10,12
83:1 84:16
84:23
87:21
93:20 95:2
98:25
102:22
103:15,18
111:22
113:6
118:5
119:11
121:4
123:20
135:10
139:21
151:4
153:17,18
153:19
164:16
169:25
172:21,22
178:7,25
179:1
fit 95:23
fits 108:22
108:22
five 16:23
16:25
39:11
48:11
59:20,25
84:15
118:5
fix 25:20
27:24
fixed 25:22
Flash 38:1,2
124:24
127:24
128:9,13
131:17
flexibility
22:21 53:3
flexible
109:8,21
147:14
flowing
19:13
fly 76:20,24
77:2,6
focus 24:4
focused
25:12
follow 4:22
154:22
following

129:5
186:2,3
follows 6:22
56:18
forefront
120:3
foregoing
184:2
185:13
forever 81:1
Fork 4:19
132:8
174:18,21
form 9:17
13:1,4,9
24:3 29:18
33:21
35:19
36:14
64:16 90:2
95:15
96:11,21
114:2,3,10
114:15,19
114:20
126:24
128:20
133:12
146:16
147:7
156:4
168:16
181:6
185:13
formalized
144:7
formats 54:4
formed 24:7
forth 185:12
Forum 33:5
33:18
found 24:11
130:11
131:21
foundation
36:14
108:13
181:7
founded
23:22
25:25 26:1
26:2,3
founder
24:12
118:22
172:24
four 21:11
21:19,21
37:17,21
38:5 52:12
84:6,7
85:22,25
90:15 94:4
94:22 96:4
146:23
163:18
164:16
182:19
four-second
94:17
Fox 120:5
122:8
FPS 63:9
frame 30:17
41:1,15
61:16,18
63:18,19
65:6 70:6
86:1
100:20,21
182:10
frames 58:19
58:20
61:21,23
63:11,23
64:7,14
65:6
166:23
167:25
168:4
Francisco
1:20
free 44:17
110:4,9
111:10,24
121:11
Freesites
1:5 6:5,16
14:23 15:9
freeway 74:9
74:9 75:4
freezing
42:10,15
70:14
friend 43:23
friendli...
161:24
friendly
20:5 111:3
front 16:22
62:4
129:22
134:10
169:25
froze 59:9
frustration
40:18
FTS 63:10
fuboTV 1:5
full 5:12
7:5 8:16
29:9 51:21
88:13 89:3
89:23
121:4
127:18
129:16
153:15
174:12,17
179:21
full-time
44:22
fully 27:19
134:14
fun 133:16
function
54:1 67:24
68:3,10,13
69:6
fund 176:16
fundamen...
43:9
funded 23:23
44:16
176:19
funding
157:1
further
156:16
181:11
185:10,15
fuzzy 64:21

G

G 2:2 6:1
games 40:21
gaps 57:6
gears 159:18
general
41:20 99:1
generally
15:7 108:5
177:4
180:20
generic 20:6
genre-based
110:5,7
Germany
133:18
getting
20:14
27:20 60:1
60:16 77:4
77:6 80:4
116:16
122:15
125:25
126:1
giant 19:14
40:2 47:21
77:6
gigantic
161:25
give 22:23
56:24 59:5
77:8,12
78:17
98:19
111:1,2
146:23
167:2,2
169:4
given 19:20
102:19
103:17
giving 62:13
62:19 78:3
go 7:14
13:23
20:10,11
31:19
32:24 33:8
38:13
41:11
45:25
48:24 49:5
58:7 62:10
63:21
65:12 70:1
70:23 71:2
71:5,6
76:11 77:8
79:15
80:14 81:5
82:15,17
83:8,10
97:10
102:14
106:2
107:12,20
109:5
118:11,18
119:18,18
122:9
123:17
132:6,6
133:17,24
133:25
137:11
140:20
149:15
161:21
162:18
168:11,22
170:11,16
171:5
173:8,12
173:22
174:1,14
174:14
176:15
180:3
183:13
goes 42:21
63:22
67:21
71:25 72:1
73:18
84:25
120:7

164:9
going 15:8 16:4,10 20:24,25 21:20 24:2 24:3 25:20 25:22 26:5 27:5,11 32:2,3 34:10 40:13,21 44:21,22 48:16 68:9 70:2 74:22 75:1 80:24 82:14,16 82:21 83:7 83:10 86:6 91:7 102:14 104:3,5,5 104:19,23 114:24,25 120:21 126:18 134:24 139:11 148:3 150:3 155:4 159:17 161:5 171:24 181:1 182:9,14
good 7:3,4 7:25 38:21 48:13,14 122:15 130:15 169:1 174:3
gotta 37:4
gotten 176:12 181:5
GP 39:7
grab 92:24
granted 155:1,2
great 10:6 46:18 75:8 121:19 126:5 128:1 183:8
Greg 135:2 135:10,11 136:8,25 150:21,23 156:5,12 156:20 157:9 179:17,20
grew 98:4,11
ground 7:15
groundbr... 101:3 103:17 105:24 170:24
group 142:2 142:3,4
growing 109:7
guess 31:13 41:17 42:12 55:6 68:11 69:18 70:9 83:5 87:20 93:23 103:10 125:20 128:10 141:14,17 143:5 169:15
guessing 40:20 169:14
guru 172:24
guy 2:2 4:4 6:17,17 9:17,22 10:21 11:12 12:9 12:15,23 13:2,9 19:8 33:21 35:19 36:14 44:5 44:23 48:19 49:8 49:24 52:8 56:15,21 62:14 64:10,16 68:22 72:25 79:4 79:7 81:21 87:1,4,14 88:18 89:17 90:2 92:10,19 92:23,25 95:15 96:10,20 96:25 102:23 104:20 105:9 106:13 108:13 109:11 111:17 112:14,23 113:25 114:3,12 114:16,18 114:21 115:2 119:22 121:15 123:12,16 126:3,23 128:20 129:2 131:20 133:11 138:14 139:17 146:16 147:7,19 151:5,6 156:3 160:22 161:17 162:20 168:15 170:4,13 170:21 177:20 179:7,11 179:16 180:10 181:10 182:7,12 182:16,25
guys 13:15 27:2 48:14 133:16

H

half 167:10
halfway 175:16
Hall 5:17 33:5,10,14 171:2,6,10 171:15,22 172:3,10 172:19,25
hand 16:12 126:18 129:21 134:24 148:3 155:3 173:22
handed 16:16 101:17
handing 16:11 62:2 101:9 117:21 136:6 169:5 172:14 174:10
handle 77:15
Hanft 2:13 6:18
happen 16:4 42:16,20 55:19 59:23 61:3 61:9 94:12 94:13 97:2 97:3 98:15 163:6
happened 14:18 19:18 61:6 102:15 150:17,19 158:9,11 159:7,10
happening 37:1 41:25 77:2,3,22 157:2
happens 60:17 61:6 66:9 83:24 85:2 91:24 92:2 167:4
harassing 123:13
harassment 114:22
hard 22:15 96:3
hardware 38:9
havoc 74:19
HD 5:13 58:14 127:18 129:14 167:5
head 8:4 46:4
head-ins 37:23
heading 107:19 154:11
headquar... 132:8
heard 15:2 87:5 142:24 152:18 156:6 158:11,23 159:1
heavily 113:6 159:25

helped 98:9 99:5 176:12
Herald 173:17
hesitated 13:6
Hey 24:13
Hi 93:7
hiccup 22:13 60:3,17 92:1
hiccupped 26:25
hiccupping 21:25
hiccups 22:24 27:1 27:13
high 9:2 12:19 21:13 22:5 22:6 62:21 63:22 142:5 143:6,8 149:12 152:7 160:17
high-qua... 21:19
higher 22:20 37:5 58:16 69:16 101:13
highest 22:13 61:22 69:13,22 70:2 71:1 71:6
highly 144:20 175:2
hindsight 159:16
HL 159:17
HLS 99:16,19 100:8,10 139:24 141:19,22 142:16 143:24 144:1,2,13 144:19,25 145:1,3,15 146:10,12 146:13 150:11 151:5,7 152:19 153:16 156:18 159:13,22 159:25 160:10,12 160:15,21 160:24 161:7,15 162:17 164:21 165:8 166:8,9 179:18
hold 64:11 96:10
home 125:22
honestly 34:5 61:7
Honeybone 5:3 136:19
hop.guy@... 2:5
hopefully 21:21
hoping 91:21 91:22
Hopkins 2:2 6:17
Hopp 16:7
horsepower 69:22
hour 15:16 139:16 183:18
hours 28:9 28:14 39:13 120:9 163:5
Houston 2:7
HTP 40:8
HTT 74:10
HTTP 10:23 11:4 21:5 23:3 24:9 71:13,19 71:19,20 71:24 72:16 73:7 73:11,15 73:20,24 74:11 99:16 139:24 140:21 142:13 143:24 145:19 153:11 160:4 163:19 165:24 173:19 180:18 181:3
HTTP-based 11:1 19:12 163:3 164:4
HUDSON 1:24
huge 27:5,6
Huh 13:2
hundreds 42:19
hung 94:24
Hurst 43:20 43:22,23 44:24 46:6 50:20
hyperlinks 170:1
hypothet... 56:21 87:5 87:14 161:18

I

I-n-u-k 132:24,25
Ian 1:16 6:14
idea 19:12 19:16,22 19:24 20:24 33:25 45:4 45:5,9 46:2 47:4 88:21,21 106:11 147:10 156:11,13 159:24 163:1,7
ideal 38:25
ideas 11:16 11:19,21 11:22 46:18 47:6 47:11 113:14 141:2,20 143:16,17 156:10 163:4
identify 48:25
IEEE 144:5
igpaquet... 1:18
III 2:2
immediately 45:1 124:25
impercep... 70:24
implement 42:13 44:23 46:17 47:3 47:7 166:8
implemen... 4:16 62:6 69:3 72:9 92:3 113:19 147:8,9,13 160:15
implemen... 160:21
implemented 35:10 36:20 37:11 44:8 45:2 161:1
implemen... 56:23
implements 142:8,18 161:15
implied 47:5 129:10,11
implies 113:6
important 24:25 75:24 85:9 98:24 156:16
impossible 70:15
impression 106:25 166:17
improvement 66:17,18 141:1
improves 76:3 107:7 107:17,25 108:18
in-house 49:3
incentive 32:4,4
include 124:1,2,3 124:7 125:7 152:25 153:2,5,8 153:11 157:21
included 33:3 81:15 97:16
includes 110:4 134:22

136:13
including 8:9 118:10 173:19
incomplete 56:21 87:4 87:14 161:18
incorporate 99:7
incorpor... 23:19,21 24:8 141:3 141:21 143:18,19
incorpor... 144:13
increasing 122:17
increasing' 122:17
independent 32:5 34:13 91:11
independ... 89:2,5,8 89:21 90:4
index 89:8
indexed 89:2 89:22
indirect 113:20
individual 90:20 118:19 130:7
individu... 53:13 81:15,19 87:22
individuals 136:10,18
inducted 33:4,9,14 171:1,6 172:9
induction 5:17 171:14 172:5,18
172:22,23
industry 20:9 33:14 43:19 103:7 104:9 109:8 113:10 123:21,22 123:25 124:3,3,7 124:16,16 125:4,14 125:21,22 125:24 126:1,2,6 126:10,12 127:14 169:12,17 170:14,25 171:18
industry's 46:4
inferior 29:11 38:12
influenced 144:20 159:25
information 159:3
infringe 160:15
infringes 160:10,12 160:14 162:5
infringing 138:11 160:18 162:1,9
inherent 75:11,13 78:25
initial 4:5 4:11 5:1 119:11 154:17
initially 149:18
156:13
innovate 44:17
innovations 108:1,19
insert 83:5 87:11 88:24
inserting 88:16
installed 67:4
instance 58:22 76:25 123:23 162:8
instances 55:13 142:19
Instant 26:7 27:10
Instruct 170:4
instructed 7:20
integrated 134:12,14
intellig... 19:24 21:1 21:9 23:3 35:14 39:8 39:16 45:21 66:6 67:15 92:9
intelligent 20:13 21:8 30:11 45:10 142:11 143:11 146:6 153:5 160:8 163:13,19 163:20
intellig... 46:1
intending 118:15
inter 4:14 9:1
interest 32:6,8,20
interested 122:15 125:20 153:16 185:17
internal 32:4 116:4
internet 5:9 18:7 19:20 19:21 20:5 20:9,10,18 20:19,22 21:2 22:9 22:25 24:24 25:21 26:23,25 27:2,21 29:6 35:3 35:6 40:12 40:22,24 42:21 58:5 59:16,17 67:25 68:6 71:13 75:5 99:1 104:3 104:6,10 104:23,24 105:1,2,3 105:5,8,19 105:21,25 118:24 121:22 122:19 124:10,20 125:1,2,14 130:15 140:14 161:23 163:1,6 166:3 183:2
interpre... 87:17
introduce 6:11
introducing 156:7
Inuk 132:22
invent 25:8 27:7
invented 25:5 30:5 47:9
invention 11:16 22:10 44:4 50:23 53:7 54:24,25 61:10 68:4 68:19 71:22 72:23 75:25 85:10 92:6 97:7 146:20 147:6 157:16 161:16 162:7,17 165:11,14 165:17,21 165:25 166:8 173:19
inventions 33:3 170:24
inventive 98:6
inventor 10:9,10 18:6,14 19:1,6 119:14,16 154:8
inventors 18:11
invest 130:10
invested 124:25
investig... 41:18
investment

139:5
investments 157:22
invited 102:13
involved 14:5 15:2 16:6,9 18:20,21 18:22 50:23 117:6 132:19 137:7,20 138:8 139:6,8 149:2,4 151:14 156:22,23 156:24
involved's 159:15
involvement 137:23
IP 20:20 104:5
IP42024-... 1:12
iPads 99:12 157:19
IPR 9:1 12:4 12:7,14,18 16:17,23
IPR2024-... 1:11
IPR2024-... 1:11
IPR2024-... 1:12
IPR2024-... 1:13
IPRs 9:4,12 14:22 16:25 46:7 48:7
IPT 180:24
IPTV 180:25
irrelevant 123:13
issue 9:12 101:15
issued 9:6 153:19 158:8 161:8
issues 19:20 91:6
ITC 14:12 177:2

J

James 2:12 2:13 6:18 148:10,14
Jamie 2:12 49:4,9
January 102:12,18
Jeffay 13:21
jerky 64:22 64:25 65:3
Jesus 117:11 123:1,4
Jim 16:7 49:2 148:17
job 45:2 78:23
Jobs 150:6
John 117:3,4 118:20,21 119:2 135:4,13
judge 39:10 114:10
judging 148:22
jumped 124:25

K

keep 8:3 48:16 89:13 114:24,25 143:6
kept 25:19
kilobits 168:1
kilobytes 58:18,20
kind 20:15 25:1,14 28:16 31:17,18 37:2 47:5 47:10 53:19,23 70:23 71:10 91:10 110:13 117:16 130:25 133:1 141:6 145:4 154:21 164:25 166:25
kinds 26:13
knew 38:24 69:25
know 8:4 11:5,14,17 13:11 14:17,17 16:8 17:4 17:18,22 18:2 22:2 22:6 23:1 24:1,23 28:5 29:5 32:3 33:20 33:23 34:10,11 34:23 36:9 36:20 37:7 38:7,11 39:15 41:20,21 41:24 42:5 42:17,19 42:20,21 43:8 44:16 44:17,23 46:1,3,16 47:10 50:8 53:20 54:6 58:13 59:19 61:25 63:6 69:15 70:7 72:1,13 75:6,7,7,8 75:17 77:17,17 77:23 78:18,19 79:7 80:23 81:9 83:23 85:24 86:13 89:11,12 89:16,16 89:16 91:20,23 95:20 96:2 97:20 98:19,20 100:22 101:24 104:13 105:4,16 106:15,20 108:6,9,17 110:10 111:2 113:13 114:21 115:20 116:6,10 116:20 119:21 120:20 121:13,20 121:20,24 122:6 123:24 124:5,10 124:17,22 125:13 126:11,13 127:16 128:23 130:7 131:11,12 131:13 136:2,2,18 138:23 139:6,8 142:3,12 145:9 149:21 150:25 151:3,10 151:15,15 152:2,11 153:15 154:20,25 155:20,20 155:21,21 156:7,9,11 157:4,4,4 157:7,23 158:9 160:17,20 160:24 163:12 164:5,6,19 164:25 166:16 167:8 168:12 169:12,20 169:22 170:2 171:25 172:1 175:21 179:20,23
knowledge 98:8 99:5 116:21 117:2 151:23 159:4
known 42:10 180:20
knows 21:1,9 21:12 36:25 37:3 37:3 66:2 66:3

L

L 3:5 185:4 185:22
L.L.C 1:8
L.L.C.'s

la 111:24
lack 13:18 60:24
Lake 93:15
lanes 74:8,9 75:4
laptop 67:5 125:23
large 23:25 24:4 26:3 26:8 29:1 29:1
largely 75:10
larger 51:12 52:3 59:12 92:7
largest 29:2 29:2 37:20 131:1
late 25:25 30:20 147:23 151:18
Latin 130:15
Latter-Day 117:12 123:2,4
launching 103:18 105:7,24
law 11:11 160:19
lawsuits 14:10
lawyer 34:2
lawyer-ish 164:25
lawyers 14:4 15:17 49:14
lay 175:11
laying 174:25
leadership 113:11,11
leading 24:14 179:4,10 179:14 180:8
League 40:22
leave 106:25
leaving 122:1
left 44:14 44:14 62:22 82:22 102:11 154:10
legal 11:12 12:24 19:8 44:6 52:8 68:22 79:4 93:9,11,12
length 50:12 50:24 51:2 51:3,9
let's 8:3 10:15 23:14 29:21,22 32:24 34:18,18 41:11 42:1 50:2 51:16 54:14,25 55:9 62:1 65:12,15 70:25 71:1 76:11 81:5 84:13 97:10,10 100:23 106:2 107:12 115:9 119:18 121:3 122:9 126:18 129:18,18 133:24 137:10,11 139:17,18 141:24 143:5,23 147:17 150:12 155:3 157:10 161:14,14 164:13 165:7 167:1,19 167:23,23 167:25 168:22,22 169:4 170:11,16 171:9 173:8,12 174:13
letting 96:23 123:14
level 9:2 12:19 58:8 66:17 67:19 69:9 113:18 124:6 135:7,18 135:20,21 136:5 138:9 142:5 143:6,8 147:9 152:4,7 160:17
levels 45:15 58:1,10 61:13,15 63:7 72:21 92:8 153:9
Lewin 24:17
license 137:25 157:25 158:6,13 158:24 159:4 175:25
licenses 32:10
licensing 25:13 138:4
Lifetime 5:18
liked 125:8
likes 34:2
limit 12:25 13:3 114:2
limited 41:16 114:10
line 15:1 93:21 132:7 136:10 186:4
lines 37:9 95:3
list 163:14 163:15
listed 16:24 19:3 154:8
listing 17:5
literally 28:8,9
litigation 15:10
litigations 15:8 32:7 177:5,9,11 177:15
little 13:6 13:23 23:14 27:9 27:12 28:4 39:8,16 40:19 42:9 58:7 60:25 65:15,20 65:21 70:24 74:14 89:4 90:6 133:18 140:8 145:6
live 5:8 8:19 21:24 22:11 36:9 36:11 47:9 47:23 52:14,18 76:15,18 77:4,23 78:24,25 79:3,3,12 79:12,23 80:4,6,8 80:15,16 80:17,21 82:7,11,16 82:20 83:3 99:16 103:18 105:7 111:25 113:6,11 113:13,14 113:17 139:24 141:7 143:24 164:6,8,8 165:8
LLC 108:8
LLP 1:15 6:14
loans 176:22
logistics 16:3
long 25:14 39:10 46:1 53:2 62:8 80:23 84:6 91:8,18 93:1 95:17 95:21 131:22 163:18
longer 31:2 52:12 59:13 65:7 79:3
look 16:15 17:25 18:9 22:7 29:21 32:24 62:1 62:9,20 63:2 64:21 93:19 100:23 112:16

115:9
118:5
121:3
123:18
129:18,18
134:25
139:20
148:6
149:15
154:10
155:1,16
164:13
174:17
178:18
looked 129:2
156:16
166:10,11
looking
121:21
179:6
looks 57:12
63:5,20
88:20
101:21
118:4,11
126:5
127:3
148:7
170:13
loop 29:24
lose 52:13
57:16,18
176:23
Lost 126:4
lot 26:15
27:1 41:3
45:24
58:15,16
59:24
93:17
122:8
133:16
140:15
144:23
176:18
lots 125:18
Louisiana
2:7
loved 130:17
133:17
low 22:4,5
27:15
low-quality
27:16
168:1
lower 21:21
22:20 37:4
64:7,13
124:6
lowest 61:23
63:14
Lynn 2:12
49:4,4,9,9

M

Machine 5:11
127:10
Macs 157:19
magazine
5:14
117:23
170:15
main 131:5
maintains
120:8
major 1:3
3:2 4:5,13
5:17 6:4
6:20 7:3,7
15:11
16:15 17:2
27:23
40:22
48:17
49:12 93:7
118:22
119:9
127:1
139:12
154:2,6
155:4,9
172:17,25
174:9
181:12
184:1
majority
73:19
making 46:2
46:3
120:14
122:3
165:24
man 44:24
manage 98:18
maps 166:24
167:8
March 44:14
mark 43:20
43:22,23
44:8,13,24
45:23,24
46:4,6,8
50:20
123:13
135:7,16
135:17
136:2,2
155:4
marked 4:10
5:1 62:3
154:2,6
155:9
market 46:3
175:1
176:21
marketing
148:11,15
massive
53:20
match 22:16
matching
22:17
materially
108:1,19
math 44:10
matter 6:5
12:13
24:20
31:24
79:10 91:9
matters
91:11
mean 26:10
31:25 35:1
42:19
47:14 51:1
53:18 65:5
73:15,21
82:4,6,23
89:6 94:14
95:11 96:7
123:6,22
124:17
125:2
140:10
157:16
164:24
178:15
means 11:11
65:11
76:24
104:18,23
104:24
meant 77:16
89:9 90:1
90:4,9
104:2
measure 68:6
68:20 69:2
78:8
measures
69:2
measuring
67:25 68:3
69:1
mechanism
20:22
111:3
mechanisms
23:4
MEDIA 1:5
Mediaroom
131:18
medium 22:4
meet 157:3
meeting
149:1
150:1,2,22
150:24
151:4,15
meetings
16:1,6
149:25
150:18,20
151:8,23
154:19
155:19,25
156:21,22
156:23
179:17
meg 167:15
megabits
167:6,24
megabyte
167:9,10
167:11
megabytes
75:8
167:22
mention
43:20
103:22
108:25
109:24
110:1
111:14
143:23
173:2,5,10
179:2
mentioned
47:12
61:12 68:2
91:6
118:19
165:3
177:1
178:14
mentioning
83:13
117:9
mentions
110:9
112:21
118:19
120:4,20
120:25
170:3,9
173:2
merged 97:14
Messenger
26:7 27:10
met 15:16
130:8
159:20
Mexican
130:18,22
Mexico
130:16
Micro 158:20
microphone

101:11,12
Microsoft 35:8 125:12 131:18 134:3,7 136:19 137:3,8,12 137:21,25 138:4,10 138:24,25 139:6 141:22 158:12,24 159:4 176:2
Microsof... 136:11
middle 27:10 63:8 71:10 107:18 120:23 122:13
Mill 2:3
million 97:14 98:5 116:1 121:9,13 121:25 122:2
mind 38:11 93:1 112:24
mine 43:24
minimizes 76:8
minute 43:17
minutes 79:11 139:11,14 139:15 174:3
mischara... 114:13 165:7
mischara... 92:10 102:23 104:20 105:9 106:13 111:17 113:25 121:15 133:11 168:15
mischara... 114:4
misplaced 173:23
missed 175:20 178:22 179:5,7
mix 72:12
mixed 94:9
model 20:17 37:3 109:8 109:21
moderately 7:11,13
modernize 130:13
moment 123:12
Monday 182:18,20 182:22,23 182:24,25
money 124:11 125:10 157:5 175:6,10 176:14,23
monitor 166:3
monitoring 66:6 157:1
month 44:19
morning 7:3 7:4
motion 64:7 64:13 168:14,18 168:19
motivated 10:3,4 27:7,23
motivation 24:9
move 4:16,19 5:4,8 18:20 23:2 23:18,21 23:22 25:12 29:23,24 30:1,9,22 31:2 34:11 34:13,18 61:11,11 61:12,16 62:4,5 63:5 64:1 64:18 66:14 67:3 67:7,20 97:10,14 99:7,8,13 100:4,7,7 100:12 103:11,13 103:14 110:2 115:12,13 115:15 116:1,2,4 116:12 117:5 119:3,4 120:2,16 121:11,13 122:2,22 123:15 128:2,12 129:25 130:9,10 130:13 131:21,22 132:3,4,8 132:9,12 133:23 134:14,17 135:2,5,11 136:13 137:13 138:3,10 138:19 139:1 140:7,12 142:9,14 143:23 144:18,19 144:20 147:17,22 148:11 149:11,18 150:23 151:19,24 152:3,5,7 152:21 156:24 157:1,8,17 157:22 159:8,20 161:8 162:18 170:12 171:11,23 173:5,11 173:19 174:22,24 175:4,8,23 176:8,11 176:23 179:21 180:5,10 180:20,23
Move's 62:19 128:7,17 131:8 144:13 145:15 159:24 170:24 171:15 175:20
moved 19:23
movement 120:4
movie 26:16 28:13 54:15
movies 111:25
moving 22:18 39:2 50:5
MPEG 142:4
MPEG-DASH 139:23 141:19,22 141:23,24 141:25 142:1,5,8 142:15,17 142:22,24 143:9,18 145:1,15
multiple 11:24 51:20,24 56:25 75:11,23 77:9,9,14 78:3,17 91:7 116:16,16 116:17
multiply 167:16

N

N 4:1 6:1
name 7:5 24:1,17 136:4 180:11,12
named 18:14 19:6 130:3 135:2 148:10 163:14
names 35:12
naming 10:23
narrative 150:13
nation's 103:18
National 33:14 101:2 134:4
native 99:23 100:14,15
natural 47:11
nature 71:21
NBC 127:24 128:8 130:25

148:22,25
151:9,17
152:6,6
157:8
nearing
132:2
nearly
174:24
175:4,8
176:8,10
need 24:11
47:7 48:18
86:11 91:4
91:13,16
101:12
181:25
182:11,21
needed 8:23
30:11
91:12
110:23
175:6,10
176:14
needing
112:5
needs 19:22
68:15
negotiate
32:12
138:3,4
negotiating
135:18
negotiation
149:6,8
negotiat...
137:7,21
137:24
139:7,9
149:3,4
Neither
128:1
Netflix 28:7
28:8,10
39:4
175:24,25
176:2
Netflix's
176:12
network 24:3
26:19
28:23
74:13 76:9
180:19
Network's
116:2
networks
4:16,19
5:4,8 20:7
23:18,21
23:22
34:11 62:5
62:5 71:12
116:1
120:8
121:11
128:3
129:25
135:2,11
136:14
173:19
181:3
never 87:5
103:11,13
122:19
141:15
150:10
158:6,21
162:18
179:11
180:25
new 1:17,17
4:19 11:19
11:20,21
22:22,22
30:6 78:12
103:8
105:16,17
105:20
154:23
156:10,13
News 5:11
NFL 40:19
night 23:1
nine 61:13
61:14
65:25
nodes 37:23
nods 8:4
non-disc...
147:22
non-inte...
70:11
normal 39:7
182:17
Notary
184:13
186:25
Notice 3:1
novel 152:22
Novell 24:8
24:9 25:24
33:13 34:3
34:7,9,11
44:14,14
44:18
118:23
171:19,20
172:23
173:3
November
148:11,23
153:24
154:15
155:7,14
nowadays
166:25
nuances
160:19
number 17:10
23:23
42:25
58:13,15
116:3,10
121:25
122:2
167:1,2
168:20
175:13
176:10
numbered
134:21
numbers
16:23
61:25
numerous
150:9

O

O 6:1
object 7:19
23:25 26:3
44:5 74:1
87:2,15,16
87:17
96:20
114:5,5
objection
9:17,21
10:21
11:12
12:15,23
13:9 19:8
33:21
35:19
36:14 52:8
64:10,16
68:22
72:25 79:4
79:8 81:21
87:4 88:18
90:2 92:10
95:15
96:11
102:23
104:20
105:9
106:13
108:13
111:17
113:25
114:6,13
114:15,19
114:20
121:15
126:23
128:20
133:11,12
138:14
146:16
147:7
156:3,4
160:22
161:17
162:20
168:15,16
179:4,10
179:14
181:6
objections
13:1,4
114:11,23
objects 21:5
24:4 26:8
163:19
observe
74:15
obvious 72:2
obviously
21:12
32:20 57:1
59:25 68:5
70:21
78:25
82:14
98:13
103:8
152:17
157:5
occasion...
74:12
157:3
160:25
occasions
42:16
occurring
154:19
October
30:21
115:19
117:12
odds 88:11
offer 105:20
offered
121:13
142:9
offering
5:12
111:23
127:17
159:4
offers 128:3
office 1:1
92:22
154:20
155:22
officer
31:16
offices
132:9,12
oh 19:2 37:3

37:4 49:20
51:23 59:6
59:9 67:10
72:11
95:14
102:17
175:23
okay 7:11
8:6,15,19
8:25 9:23
10:11,14
10:25 11:3
11:7,25
12:3,7,21
13:23
14:14 15:7
15:11,18
16:10,10
17:2,15
18:3,25
21:18
23:13 25:3
25:23 26:1
28:21
29:14,22
30:7,19
31:2,5,15
31:18,21
32:6 33:1
34:4,15,20
35:16,24
36:2,6,18
36:23 37:6
38:20,24
39:17
40:16
41:11,13
42:18 45:3
46:10,21
47:12 48:6
48:9,15
50:1,4,6
50:10
51:15 52:6
52:16,22
52:25 53:4
53:16,25
54:12 55:6
55:16 56:8
57:3,11,19
57:23
58:23 59:5
59:12,18
60:7,14,19
61:5,8,20
62:1,11
63:16,21
64:24 65:9
65:12,14
67:3 68:8
68:19 69:4
69:11 70:4
70:25 71:5
71:6 72:16
74:7 75:24
76:11,13
77:7,8,12
78:5,15
79:10,13
79:17
80:20 81:7
81:13,18
82:13 83:4
83:9,11
84:9,12
85:4,8,14
86:10,17
87:3,7
88:8 89:7
90:5,25
91:13,19
92:15,23
94:7,24
96:6 97:6
97:10,12
97:21
100:3,7,11
100:23,24
101:16,25
102:8,17
102:21
103:15
104:17
105:6,20
106:2,16
108:10
111:10
112:18
113:21
114:8
115:22,25
118:11
119:9,17
120:1,24
122:1,11
123:16,17
124:1,13
126:14,20
126:21
128:15
129:6,18
129:20,24
130:24
131:14
133:9,15
133:22
134:1
135:13,23
136:1,6
142:7,17
145:5,11
146:25
148:19
149:7
150:23
151:1,11
151:13
155:23
156:25
157:10,12
163:10
164:11,18
164:20
166:14,19
167:7,11
167:17,23
168:3,9,24
169:4
170:6,20
171:21
172:9
173:8,14
174:9,11
175:23
176:17
177:8,24
178:2,5,19
179:7,16
179:24
180:16
181:10
182:4,4
old 22:3
114:22
on-demand
112:1
165:8
once 80:8
136:5
one's 166:22
ones 29:1
30:18
51:20
129:13,15
131:13
136:19
online 41:16
48:25
open 72:13
74:2
opened
116:13
operate
146:12,13
operatio...
156:24
opinion 79:3
129:10
138:16
156:1
162:4,11
opinions
31:23
opportunity
175:20
opposed
116:7
149:8
options
41:15
order 52:3
89:2,8,22
90:12,21
91:1
181:20
182:9,11
182:13,14
ordering
182:7
orders
181:14
ordinary
28:24,25
39:5,20
45:17
71:15,17
72:17
90:19
145:18
153:2
160:4
organiza...
35:4
original
11:22
44:12
83:10
183:1
originally
23:24
28:11
31:12 39:4
83:25
100:4,18
124:24
154:21
outcome 32:7
Outside
161:18
over-the...
103:19,25
104:8,18
109:17
113:7
overcome
70:2 75:10
Overview
4:16 62:5
overwhel...
123:21
owned 104:14
104:14
105:3
owner 1:9
2:5,9 4:14
49:3

P

P 6:1
p.m 174:6,6

183:18
pack 99:1
package 99:1
page 2:3 4:2 16:20 62:4 62:10,10 62:14,17 67:10 72:2 79:18 81:5 106:4,4 107:13,14 107:15,18 109:5,13 110:2 118:12 119:19,19 119:24,25 120:21,23 121:3,4 122:9,13 122:13 123:19 132:6,6 148:6 170:1,1 172:21 173:15 174:14,15 175:16 178:7,11 178:25 179:1 186:4
pages 24:22 118:5
paid 105:21
Palo 2:4
paper 151:16 151:17
papers 129:22 173:24
Paquette 1:16 4:3 6:13,14 7:2 9:20 9:23,24 10:25 12:12,17 12:25 13:3 13:6,12 16:12,14 23:11 33:25 35:24 36:18 48:13,16 49:11 50:2 57:3 62:16 62:18 64:17 69:4 73:6 79:13 81:25 87:8 88:25 89:20 90:5 92:15,16 92:21 93:7 95:22 96:14,23 97:3 101:14,16 103:2 104:25 105:13 106:16 108:23 109:12,14 111:21 112:16,19 113:2 114:2,8,25 115:4 119:23 120:2 122:1 123:15,17 126:25 129:6 133:15 138:24 139:10,15 139:19 146:19 147:17,21 161:4,20 162:23 168:17 170:8,22 170:23 173:25 174:9 177:18 179:4,10 179:14 180:8 181:6,11 181:16 182:1,9,19 182:22
paragraph 17:3,6,12 18:1,9,10 19:4 23:15 31:19 32:25 34:18,22 37:10 38:14 41:11 42:5 42:23 43:18 50:5 50:8 57:23 57:24 65:16 70:10 71:9 71:10 73:7 76:12,18 79:16,20 81:5,12 87:22 92:4 93:19 94:25 97:11,23 98:1,2 99:3,18 100:23 103:15 106:3 108:6 109:1,2,5 111:22 115:9 116:25 117:8 118:18 119:19,22 119:24 121:4 123:19 126:15 127:21 130:3 131:8 133:25 134:21 137:11 139:20 144:12 147:18 152:21 157:10,14 159:11 164:13,16 168:23 170:18 173:12 174:12,17 178:18,23 178:24 179:12
paragraphs 97:19 178:6,10 178:10
parallel 76:1
parallel... 74:10
parameters 48:3
part 18:5 24:8 26:4 27:6 30:25 41:3 53:22 54:23,24 56:12,18 66:12 71:19,21 73:2,25 74:1,2 77:3 82:25 83:1,1,17 84:25 105:12,13 110:12 125:23 126:9,12 141:23 146:8,9 152:6 180:4
partes 4:14 9:1
partial 84:8 86:12
participate 41:23
particular 162:8
particul... 21:24 52:13 83:2 84:10
parties 6:11 185:16
partly 82:18 82:19
partner 43:23 175:24
parts 73:9 73:22 75:19,20 75:22,25
Pass 177:18 181:10
patent 1:1,2 1:9,11,11 1:12,12,13 2:5,9 4:7 4:9,13 9:5 10:3,5,6 10:12,15 11:11 12:20 17:10 36:4 46:8 49:3 53:2 85:20 92:3 97:17 102:22,25 108:12 113:15,19 138:19,21 140:5 141:3 143:16 145:15 147:14 150:3 153:17,18

153:20
154:4,5,20
155:17,22
158:3
160:19
162:14
patented
11:21
156:9
patents 9:5
9:9 10:15
10:18,18
10:20 11:3
11:4,5,8
11:24 12:4
17:5,6,21
17:23 18:6
18:12,15
18:19 19:3
19:7,12
32:10,21
32:23 33:4
36:2 42:13
44:1,2
52:7 60:19
98:10,12
99:4 103:6
111:20
138:1,5,11
140:6
141:3,5
142:15
144:19
147:16
153:23
157:25
158:4,6,8
158:13,16
158:24
159:5
160:10,13
160:14,16
160:18
161:8
163:2
164:10
171:23
172:7,8
177:2,15
path 104:15
159:17
pay 32:18
Pay-TV 98:25
105:18,24
133:2
paying 32:14
115:21,23
PCs 116:18
116:19
pending 7:24
112:24
115:1
158:4
people 24:11
26:15,18
27:8 29:11
36:21
38:10,18
38:24 41:4
48:25 75:7
84:7,7
94:16 97:4
98:19
104:12
105:5
116:1,6,13
121:22
124:1,19
125:4,4,8
126:8
128:25
129:4
140:15
141:10
143:3
157:3
161:1
162:14
164:9
166:15
169:19
180:2
people's
75:5
perceive
22:19
70:19,20
percent
95:20
175:11
percentage
141:21
perfect
56:13,19
perfectly
85:24
person
116:15
124:16
125:22
127:14
128:6
169:13,17
personal
32:20
128:24
138:16
personally
31:7
123:10
127:13
perspective
11:11
petition
12:18
13:13,15
petitioner
1:6,18,22
3:3 6:14
6:15 14:22
Petition...
4:14
petitions
4:14 12:8
12:14
Philip 1:19
6:15
phone 15:15
16:2,3
pick 25:23
96:5
161:21
picked 141:9
picture
106:5,18
106:21
107:5,6
128:3,7,11
128:12,13
piece 38:9
47:17,17
47:18,18
78:16
pieces 19:23
57:18,19
pile 129:22
129:22
173:23
pioneer
178:20
pioneered
118:21
119:6
pipe 104:14
Pixar 150:7
place 48:13
82:15 83:7
151:9
185:11
places 24:21
38:6 98:3
plaintiffs'
6:12
plans 32:4
play 22:8
26:11,14
26:17
27:13 28:2
67:11,20
80:15
82:10,24
82:25,25
83:1 84:23
85:5 86:3
86:12,14
86:15,20
86:23 87:9
87:11,18
87:19 88:6
91:12,14
92:1
100:10,12
playback
21:25
57:10 60:6
60:9,10,13
65:17,22
65:24
66:12 84:8
84:8,21,22
85:7,8
87:21 88:9
88:13,13
88:17 89:1
89:3,7,8
89:22,23
90:10,24
111:3
played 60:1
player 30:9
61:11,12
61:16 63:5
64:1 66:14
66:15 67:3
67:7,16
69:8,25
82:10
84:25
86:12
87:17,17
87:18 88:6
91:13 99:7
99:8 100:5
100:8,12
100:15,16
115:12,13
115:15
116:8
127:22
128:2,2,13
134:7,12
134:12,14
149:16,19
149:22,22
149:23,24
150:10
152:7,8
157:17
158:22
163:20
171:11,15
179:21
players
60:20
66:25
67:20
98:20
99:22,23
99:24,25
100:4,14

100:14
150:8
playing 20:2
26:19,21
26:24
30:15
67:22
83:14
89:13
90:21
122:24
plays 83:17
84:25
please 7:5
12:25 13:3
17:2 34:19
34:22
41:11 42:4
47:13 49:1
50:5,7
65:13
76:12 79:7
79:8 81:6
81:8 87:1
93:20
96:24
97:19
101:10
107:13
114:2
119:20
121:3
122:10
123:18
132:7
133:24
137:11
139:19
157:11
164:13,17
168:23
170:11,19
173:13
181:14
183:10
plenty
122:18
plethora
19:18
plus 133:18
point 79:2
85:24 89:1
113:22
114:21
115:5
132:20
137:12
138:25
140:19
158:25
164:6,6
pointed
141:11
points 74:12
polite
114:22
poor 64:23
poorly 36:17
pornography
15:3 123:7
portfolio
97:17
portion
125:6
position
28:16
138:23
positive
123:21
125:15
possible
22:14 97:1
post 126:21
127:17
postage
70:21
potentially
70:5 74:20
94:9
180:24
Powell 93:15
power 67:1,2
69:23
powerful
78:20,21
practically
29:7 94:11
94:12,15
practice
85:21
praise 126:6
praising
105:23
109:21
110:6
111:10
112:4
128:7,11
169:1
pre-grant
155:5,17
155:24
precisely
86:20
87:10 96:7
116:11
Preciseness
56:9
predomin...
123:4
preliminary
154:21
premium
22:23
preparation
12:8 16:5
18:21
prepare
15:12 16:2
prepared
15:13
102:6
PRESENT 2:10
presenta...
5:4 51:13
presented
65:25
president
31:11
press 4:17
5:17
101:19
106:11
107:15
109:18
113:22
115:5,8
129:25
178:14
179:2
presume
172:18
pretty 83:23
85:11
113:13
131:20
149:17
158:5
165:4
prevalent
145:7
prevent
42:14
previous
14:9,10
33:13
117:2
144:21
185:7
previously
4:10 5:1
14:4,7
62:2
Priced 121:6
121:8
primarily
69:20
176:13
prime 69:20
prior 12:21
13:7,17
14:12
24:23
92:11
104:7
154:11
176:22
179:8,9
180:9
privilege
9:20
privileged
138:15
probably
38:21
48:11
51:25
54:13
55:15
57:18
59:21
73:19 75:1
78:20 90:1
99:20
100:22
124:5
133:20
139:11,15
140:11
151:9
153:14
159:16
166:25
169:19
problem 25:5
27:17
28:15 41:3
42:10
60:18
75:11,13
91:24
problems
27:23
38:17
43:19
procedure
8:13
proceeding
9:8 177:2
proceedings
9:1 14:14
16:17
183:15,17
process 7:12
13:24 46:1
46:18
54:23
138:22
180:4
processing
66:23
producer
131:2
product
115:11,15
production
130:22
products
140:7
Professi...

3:6 185:5
programming 109:9,22
progressive 27:22,25 28:11,18 29:17 38:15 39:3 39:5,18 41:23 61:3
prolific 172:24
proposal 145:10
proposed 159:12
proprietary 35:11,22 37:19 72:7 72:10 100:16,18 104:4
protected 158:15
protocol 35:13,14 35:18 40:11,11 44:24 165:8
protocols 20:12 21:6 37:11 39:6 39:7 41:8 44:25 71:13
proud 32:22
proved 117:15
provide 8:16 116:24 175:7
provided 75:6 98:24 102:8 179:21
provides 128:1
providing 7:17
proxy 20:6 24:10,13 24:19
PS 63:10
ptsheng@... 1:21
public 154:18 155:19 172:1 184:13 186:25
publication 154:11 155:5,17 155:24,24 169:7,8
publicly 30:21 115:16 171:11
published 35:3 153:23 154:14 155:6,7,14 170:14
publisher 170:15
publishers 120:4
publishing 115:14 169:18
pull 20:25 43:16,17 45:21,22 45:22 83:4
purchase 97:16 132:21
purchased 97:14 132:13 133:5
purely 69:18
purports 106:5
purpose 9:14
Pursuant 3:1
push 20:21 26:17 37:3 38:9 67:11
pushed 20:14 21:17
put 21:3 27:11 40:21 60:22,23 92:22 99:9 121:22 122:6 125:1 142:2 158:19 159:22 160:24 175:7 176:8,11 176:20 182:12
puts 27:11
putting 24:21 157:6

Q

QMX 99:13 134:17
quality 19:25 21:13,15 21:21 22:14 27:15 28:5 45:15 58:1 58:8,10,16 61:13,15 61:22,23 62:20 63:7 63:14 64:23 65:18 66:17 67:13,14 67:19,23 68:17,17 69:7,9,13 69:16,22 71:2 72:21 92:8 121:20 128:2,4,7 128:11,12 128:13 149:13 153:9 168:11 169:1
question 7:21,24,25 12:10 27:20 41:17 42:12 56:16,17 68:11 87:2 87:8 96:24 103:10 109:4 110:18 112:23,24 113:1,21 114:3 115:1,4 129:6 156:8 178:17 181:19,24
questioning 179:8,9,12
questions 7:16 8:12 143:4 178:3,13
quick 163:15 173:9 174:1
quickly 52:14
QuickTime 35:11 37:25,25 131:17 149:17 159:17
quit 45:1 156:17
quite 8:22 10:23 12:4 12:6 28:5 69:10
quote 107:5 107:16 122:20 130:3
QVT 134:18

R

R 2:12 6:1 118:22
radically 20:7
Rallo 130:4
random 74:21
range 73:24 73:25
rapidly 109:7
rare 22:12 42:22 83:23
rarely 42:20 92:2
ratchet 71:4
rate 10:24 11:1,4,18 61:16,18 62:23,23 62:24 63:1 63:2,2,14 63:15,16 63:22 98:9 108:21,25 110:11 111:3,14 113:8,23 115:6 142:11 163:3 164:4 170:3,9,13 171:23 178:15
rates 55:23 76:21,21
raw 53:20 78:6
reaction 37:2

read 15:21 18:1 34:22 42:4 50:7 56:16,17 64:11 81:8 83:25 89:20 97:19 107:16 112:14 115:1,3 119:20 142:25,25 164:15 169:19 170:4 172:22 175:19,22 175:22 184:2
reading 18:20 102:20 109:11
reads 112:7
real 25:10 46:2 125:12 127:22 128:9,12 131:17 154:22 163:15 173:9 174:1
Real-Time 35:16,17 36:9,12
realistic 141:9
realized 25:8,10,21 26:18 152:18 156:15
really 15:10 26:9 29:7 36:19 73:3 88:21 91:9 106:24 124:20 147:8 166:11,15 168:1 169:25 176:13
RealNetw... 35:9,12 36:7,11 38:3
realtime 3:7 42:3 67:22 185:6
reason 8:15 8:20 10:1 10:4,7 11:23 18:17 74:10,10 85:13,14 85:15 94:21,23 112:8 155:18 186:6,8,10 186:12,14 186:16,18 186:20
reasons 141:11 160:1 186:3
Rebounding 4:19
recall 178:2 178:5
receive 103:14
received 101:20 103:11,13 181:2
receives 121:10
reception 108:2,20
Recess 48:22 93:4 174:6
recognize 62:6
recognized 47:7 107:6 172:4,6
recognizing 101:3
recollec... 159:6
record 6:2 7:6 48:21 48:24 93:3 93:6 174:1 174:5,8 181:14 183:16 184:4
recording 108:2,20
reduced 64:7 64:13 168:14,18 168:19,19 185:12
refer 10:17 11:3 17:9 17:20 81:14 140:1
reference 4:6,11 5:2 50:13
references 104:16 173:17
referencing 89:15 148:4
referred 178:6 179:11
referring 12:3 14:8 14:11 28:1 34:25 54:10 63:13 85:8 95:4 109:16 125:3 140:2 171:17 174:21
refers 178:9
reflected 58:11,12
regard 179:16
regardless 79:22
Registered 3:6 185:5
registers 128:23
regular 88:23 125:22
relate 18:6 171:15
related 11:8 11:15 107:8 171:22 172:5 185:15
relatedly 70:9
relation... 130:9
release 4:17 5:12,17 101:19 106:11 107:15 109:18 113:22 115:5,8,11 115:15 129:25 178:14 179:2
released 115:16,18 171:11
Releases 5:8
remember 14:17,18 24:16 27:6 29:12 30:7 34:12 35:12 40:19 46:15 48:10 75:5 106:24 129:1 133:7,9 136:4 137:15 178:16,17 179:15
remembers 22:1
reminder 8:7
rename 99:8
renamed 25:12 30:3 99:9
render 20:1 69:24
rendering 70:6
reporter 3:6 3:7 6:9 8:3 49:1 64:12 115:3 181:13,20 182:4,18 183:3,7,9 183:12 185:5,6
REPORTER'S 185:2
REPORTING 1:24
represent 6:11 17:19 153:22 155:23
represen... 135:18
represented 19:17,23 150:23 156:12
represen... 6:15
represents 107:24
request 72:19 76:1

91:3 153:8 165:24
requested 28:6 90:25 149:20
requesting 39:22 75:19 90:19
requests 43:14,15 43:16 73:8 73:11,25 73:25 146:6 162:3
require 97:7
required 58:4 70:7 76:3 158:16
requirement 38:5 96:3
requires 58:16 97:8 97:9
requiring 112:1
resolution 31:24 58:14 168:19
respect 180:5 181:2
responding 38:4 74:18
responds 43:14,15
response 4:14 15:13
rest 133:4
result 117:15 185:18
resuming 83:9
retrieve 127:9
return 139:3
reveal 12:10
revealed 151:24 152:22
revealing 9:24
review 4:15 9:1 12:7 12:13,13 12:21 13:7 13:12,15 120:18 127:2
reviewed 13:11 15:14,18 15:23
reviews 127:2
revoluti... 23:8
revoluti... 103:7
right 7:9,17 9:7 16:14 16:22 17:17 21:2 23:16 24:1 29:10,15 29:18 30:10,24 31:13,15 32:24 33:15 35:18 38:15,16 39:11,14 40:1,4,7 40:14 41:2 41:7 44:20 45:4 46:23 48:12,19 49:11 51:14 53:10 57:17,21 58:17 59:2 59:21 60:20,24 60:25 61:2 61:24 62:20 63:15,24 64:3 66:9 66:11 67:5 67:18 71:17,20 72:7,19,22 72:24 73:14,18 76:11 78:6 78:8,9,10 79:15 80:8 81:2 83:24 90:16,19 92:4 96:14 103:2 107:3,4,12 109:1,4,4 111:4,7 114:5 117:19,21 117:24 118:3 120:5,9,18 126:18 127:22,24 128:4,10 129:8 133:22 134:4 135:5 136:6,24 137:5 139:19 140:15,16 140:24,25 141:19 142:18,22 145:16,19 146:7 147:6 148:3,12 148:23 151:20,25 153:20,20 153:24 154:8,15 155:8,11 155:14 161:16 164:22 165:9,12 167:15 168:22 169:2 171:7,12 172:6,12 172:14,19 173:3,6 175:12 177:2,6,13 178:18 181:1 182:10,20 183:14
rights 98:15 98:19
River 93:16
Road 2:3
Robert 1:3 3:2 4:12 6:20 7:7 119:12 136:13,16 136:17 184:1
Rokus 99:10
role 31:10
room 92:20
rough 183:1 183:2,5,5 183:6,7,9
roughly 133:7,9
rounds 176:20
royalties 32:9,11
RPR 185:22
RTP/RTSP 35:1,23 36:15 38:17 72:4 144:22
rules 7:15
ruling 160:9
run 99:22
running 82:12 130:12 175:24
runs 40:8
rush 183:4,6

S

S 6:1
Saints 117:12 123:2,5
salary 32:14 32:18
sale 175:7 176:22
sales 133:16 136:17 140:19 141:12 158:10 180:4
sales-ish 140:11
salient 144:18
San 1:20
satellite 19:14 77:24 104:4
Saturday 182:20,21
sauce 150:3 151:25 152:24
save 25:19
saw 23:9 61:20 62:7 124:22
saying 13:13 51:23 70:14 84:1 88:3 90:18 93:25 94:3 94:3,5 96:16 100:9 108:24 114:11 129:16 141:18

142:17
144:12
145:14
147:5
164:21
172:22
says 21:18
47:16 62:4
62:21 77:1
86:13
89:21
103:16
106:8,12
107:6,23
108:8
109:6,23
110:3,8
113:23
115:6
118:20
121:8
122:14
123:20
126:4
131:7
132:7
139:21
154:11,14
155:10
173:16
174:13,18
174:24
175:17
178:20
scalable
23:5 24:10
164:7
scale 38:10
47:4 66:24
scales 43:8
scaling
24:12
scenes 57:17
Sciences
101:3
scope 161:19
scours 156:9
screen 5:12
65:7
127:18
129:16
screw 38:18
se 18:21
Seal 184:15
seamless
88:13,16
88:20 89:3
89:8,23
second 21:22
42:4,7
57:8 58:18
58:19,20
58:20
61:21,23
63:11,19
63:23 64:8
64:14 65:6
71:5 76:17
79:20
82:10,12
84:17,24
85:17 86:3
86:15
118:18
121:5
127:21
130:2,3
131:8
132:6
157:13
166:23
167:5,6,15
167:22,24
167:25
168:2,4
174:12,17
178:11
seconds
21:11,19
21:22
39:11 51:4
51:8 52:12
52:12,13
56:25
59:20,25
60:1 65:2
68:3,7,12
68:13,15
68:20,21
69:6 77:8
77:11
78:11,13
82:3,18,21
83:14,20
83:20 84:2
84:3,6,6,7
84:16,17
84:19
85:22,22
85:25,25
86:13,14
86:16,21
86:23
87:10,11
87:18,19
87:25 88:4
88:6,10
90:15,15
90:16
91:20 94:1
94:4,5,17
95:9,17,21
96:4,4,17
96:17 97:5
97:8
146:23,23
163:18
167:18
secret 150:3
151:25
152:24
section
119:17
122:12
sector 175:2
see 17:12
27:12
28:17 33:6
34:21
39:10 42:1
42:24
47:20
51:23 60:3
61:1 62:22
62:24 63:9
63:13,17
63:22
65:16
70:22 71:9
72:11,11
76:15,17
76:18
93:20,23
101:5
103:15,20
106:6,9
107:10,19
109:6
112:2,21
117:17
118:25
121:5,6
122:9
127:19
130:5
131:7,9
134:22
135:2
136:7,8
139:4,21
148:1,8
154:12
155:8,11
166:11
168:13,17
171:3
174:12,13
174:19
175:17
178:15,20
178:21
179:1
seeing 21:1
21:2,10
74:17
168:12
seen 62:8
66:3 102:3
106:23
159:16
segment
47:25 48:1
48:1,2,4
50:13
51:17
53:12
54:19,19
54:20,20
54:20 55:2
55:2,3,3,7
55:8,9,10
55:20 56:1
56:13,19
58:18,19
59:19
67:17
68:18
75:20,22
75:25
76:20
78:12
81:20 83:5
83:18
84:24,25
86:5 90:14
90:15,20
91:14 92:7
95:18
145:24
146:3,7
166:22
segmenta...
46:23
160:2
162:7
segmented
72:19
145:21
147:4
162:3
segmenting
46:14
146:20
152:25
segments
19:17
45:12,14
47:1 50:17
51:7,16,18
52:1,2
53:9 54:16
56:1 75:21
75:23 76:1
76:19
79:25 82:1
87:23 88:5
88:10
90:11 92:6
95:4
142:18,21

143:9,13
146:11
153:9
select 67:9
67:12,13
67:14
selected
22:4
self-fun...
176:18
sell 138:25
138:25
158:16
selling
140:12,13
180:22
senior 31:11
sense 25:16
29:8 85:19
91:10
100:14
122:8
sensed 40:18
sentence
17:25
34:21,22
37:10
41:14 42:5
42:7,23
50:7,22
73:6 76:18
79:20 81:9
81:11,12
81:13
87:21
88:12
93:21 95:2
103:22
107:21
109:14
110:2
111:22
117:14
121:5
123:20
139:21
147:25
157:13,14
159:11
172:23
173:6,7,16
175:20
sentences
164:17
separate
138:16
161:24
181:24
separately
50:24
September
1:4 3:3
6:3 131:25
183:19
185:20
sequence
76:19
sequential
85:12
series 51:7
serve 77:9
served
110:16
server 20:2
28:24,25
35:14,15
36:25 37:1
37:3,3,7
37:18 38:1
38:2 39:20
43:3,5,11
66:24
71:17
73:13
77:17
78:18 80:9
80:11,12
90:19
152:11
160:4
161:2
servers
20:13
37:12,22
38:5,7,7
42:3,24
45:18
66:21
71:12,16
72:17 77:9
77:12,15
77:20 78:3
78:17
125:11
145:18
146:12
153:3
166:2,3
service
98:22
104:1,13
109:6,10
109:15,15
109:17
110:4,12
113:7
121:11
125:25
158:14,16
164:7
176:1,6
180:22
service'
103:19
services
111:25
121:14
122:3
131:12
serving
28:22
set 56:24
77:12 85:1
140:21
141:3
185:12
sets 96:13
seven 120:9
share 11:25
123:10
SHEET 186:1
sheets 184:3
Sheng 1:19
6:15 92:24
114:9,15
114:17,19
181:18,23
182:2,6,14
182:17,21
182:23
183:1,5,8
183:10
shift 59:24
shifted
159:18
shifting
44:9 80:14
80:17
shockingly
169:1
short 50:12
50:24 51:1
51:4,5,8,9
52:6 53:2
93:21
165:13
169:23
shorter
52:19
95:18
shorthand
185:11
show 112:11
113:2
180:1
showed
128:24,24
153:16
180:3
showing
113:11
shown 91:25
177:21
shows 77:11
107:18
126:9
142:15
shrinking
162:6
shuts 75:15
side 13:11
24:11
25:11,11
102:11
119:7,8
152:11
154:10
161:2
180:25
signatory
148:19
signature
16:19,21
184:8
185:20
186:22
signed 148:8
148:11,23
151:9,18
significant
141:20
signific...
21:20
70:16 76:4
143:16
Silverlight
134:7,10
134:13,15
134:16
similar
20:14,23
75:3 88:24
110:22
144:24
simple 43:15
simplest
146:17
147:3
single 38:9
80:18
site 169:19
size 21:15
51:5,5
58:9 59:11
59:13
60:15
63:18 66:5
68:11,14
70:22 86:4
92:8 94:18
165:20
167:10,12
sizes 56:3
58:2 59:4
66:2 94:8
165:17
166:20
skeptical
149:18
156:13

180:2
skepticism 128:18
slightly 51:6 55:7
Sling 4:17 31:13,16 32:15 98:9 98:11,24 99:3,7,11 99:13,15 99:18,23 99:25 100:21,25 101:1,4,19 101:23 102:1 103:3 104:12 108:8 109:16 110:12 111:19 117:6 161:12 177:22,23
Sling's 109:21
slow 74:14 74:17
slower 60:16
slows 75:15
small 22:2 27:3 42:25 63:18 81:14,14 145:22 166:25
smaller 19:23 51:21 52:17 59:24 86:6 86:7,9
Smith 4:22 5:3,6 135:2,10 135:11 136:8,25 150:21,23 156:5,12 156:20 157:9 179:17,20
smooth 70:10 141:22
software 24:5 158:17
sold 32:13 103:9 125:11 132:16 133:18 138:21,22 139:2 150:7 180:1,7,17
solution 28:17 139:23 140:2,5,9 140:10,13 141:7,13 141:18 142:8 144:2,14 152:20
somebody 39:18
someone's 67:4
soon 44:20 77:7 124:22
sorry 10:18 59:9 62:14 81:12 93:10 94:24 95:14 109:12 125:17 129:21 130:2 147:19 150:13 155:22 169:5 174:13 181:18,19 181:23
sort 13:16 19:20 25:19 40:23 53:4 63:8 75:3 126:22 138:15
sound 7:25 17:17 61:24 153:20,24 174:3
sounds 88:15
source 27:1 108:8 146:22
South 7:7
speak 49:13 93:8,11,12 93:14
SPEAKER 101:10
speaking 17:22 108:11 120:16 122:22
specialized 37:12,15 38:25 42:24 72:6
specific 15:5 17:23 47:1 54:9 90:9 140:9 163:10
specific... 128:11 141:18 152:2
specific... 12:1
specifics 18:23 142:5 152:15
specified 48:4
speculate 89:18,19
speculating 169:15
speculation 88:18 90:2 108:14 147:7 156:4 160:23 161:18
spell 132:23
spills 119:24
spinning 60:25 74:16
splice 82:19
spliced 85:3
splicing 82:7 83:2 84:10,11
spoke 29:20 48:9 93:15
spoken 13:20 46:6 48:6
ss 185:2
stake 137:21 139:1
stamps 78:10
stance 123:7 123:11
standard 35:2,3 71:11,12 71:13,16 72:4,5 73:7,12,17 142:1 143:1 145:7,8 159:13 160:25 161:3 166:2
standard... 139:23 141:19
standards 142:2 144:6
start 16:10 25:3 26:19 26:24 28:1 28:2 39:11 39:12,25 43:18 45:5 52:14,19 52:20 56:10 76:14 82:12 100:15 141:24 163:17,17 171:9
started 23:24 34:10,11
starting 33:17 82:1 95:7,23 96:2,12 110:3 113:6 119:23 120:21
starts 67:22 85:1 95:3 121:5 122:13
state 3:7 6:21 7:5 20:8 36:3 36:4 185:1 185:6
statement 15:14 18:1 98:4 99:3 102:6,9 107:4,5 108:11 109:20,25 122:12 126:14 141:18
statements 95:25 97:23 98:1
STATES 1:1

station 120:8
statisti... 74:21
stay 21:23 157:10 168:11
Staying 119:17
steps 150:12
Steve 127:6 127:14 128:6 150:6
stick 23:14 50:2 94:20
sticking 16:22 71:9 150:15,18
stir 175:1
stitched 47:19
stole 159:24
stop 55:9 74:25
stopping 74:24
storage 110:19,20 111:7,7,8 153:3
store 80:9
stored 21:5 80:10,12
storing 110:21
Strategies 130:4
strategy 158:13,14
stream 19:13 35:5,9 77:4 78:2 78:7 82:8 82:11,17 83:3 85:3 110:17 111:1,2 112:5 124:19 125:5 130:14 131:22 134:17 140:14 176:5
streaming 5:9,12 10:19 11:1 11:2,4,17 11:18 15:3 18:7 20:20 22:23 25:6 25:11,13 25:20 26:2 26:9 29:3 29:7,11,18 30:6 34:9 35:2,12,17 35:17,25 36:1,5 37:22 38:1 38:3,6,12 38:25 47:9 47:16 61:7 74:20 76:15 90:23 98:10 99:16 104:7 107:9 108:21,25 109:7 111:15 112:13 113:4,8,12 113:14,16 113:17,23 115:6 118:10,13 120:12,13 120:19,20 121:1,8,14 121:20 122:3 124:2,8 125:14 127:18 129:2 131:12 132:25 134:3,8,11 137:18 139:22,24 140:2,5,13 140:21 141:23 142:1 143:24 144:2,5,11 144:14,19 144:20 145:15 149:11 151:21 152:20,23 162:25 163:3,4,5 163:6,25 164:1,2,3 164:5,7,8 165:9 167:4 170:3,9,13 173:11,20 176:5 178:15,21 179:3 181:3
streamlet 52:6,7,19 52:20 66:5 68:11,14 85:9,12 87:9,11 91:3 165:20 167:9,13 167:24
streamlets 50:12,14 50:16,18 50:23 51:7 51:19,24 53:9 65:18 81:15 84:1 84:15,19 87:23 89:2 89:23 93:18,22 93:25 94:4 95:5 96:16 145:23 163:17 165:13,16 166:20
streams 74:13 77:23 85:1
Street 1:16 1:20 2:7 3:4 6:8 185:23
strike 13:25 30:7 129:17 133:23
strong 123:7
struggling 93:23
stuff 13:11 41:21 44:25 45:6 98:22 99:21 117:3 118:9 124:25 133:5 142:11 164:1 166:10 176:21,21 180:24
subheading 118:12
Subject 4:22 5:4,6
submitted 9:11 10:1 13:24 14:2 16:17,24 18:4 34:1
submitting 9:14
subscribers 98:5
subscrip... 112:1,6
subsection 120:19
subsequent 149:24,25
substance 8:8
substant... 82:2,4,23 86:24 87:12,24 94:25 95:8 95:11,23 96:6,15
substant... 140:7
success 170:25 173:18
successf... 58:5
suddenly 125:14 159:18
sue 138:23 161:8,10 161:12
sued 138:10
suite 1:20 2:3 3:4 6:8 111:24 185:23
sum 63:1 105:6
super 160:19
superior 131:8 140:17 141:16 152:17,18
supplier 131:6
supply,' 122:17
support 4:13 68:17 69:13,15 97:22 98:1 134:3 142:20 149:16

157:15,16
163:23
176:14
177:15
supported
35:4 42:25
supporting
15:15
supports
165:8
suppose 6:13
33:9 60:24
65:10
110:18
111:11
131:24
140:20
sur 146:15
sure 13:7
30:2 35:4
62:7 71:2
84:12
85:21 90:3
92:19
93:19
95:10
99:14,17
104:17
116:9
124:9
133:13
138:7,8
145:13
146:12
151:13
153:14,25
154:23
158:2,5,11
159:1
166:24
174:2
183:3,10
surprise
99:19,21
128:16,17
159:12,14
159:14,15
surprised
146:14
surprising
129:4
surrounding
19:21,25
suspect 34:2
131:15
switch 21:8
55:17 57:5
70:17 71:1
82:12
161:15
switched
57:16
70:21
switching
56:11
65:18
82:14
88:22
sworn 6:21
185:8
186:23
system 38:22
73:4
115:14
133:5
141:7
149:16
152:9
176:24
systems
41:18
72:13
98:18

T

take 7:25
19:12 21:3
21:22 22:6
23:5 25:9
51:15
54:15,19
54:20
59:10,13
59:20
75:25 77:8
78:13 80:8
87:9,10
92:16
106:18
112:16
137:25
139:12
146:21,21
150:12,12
157:24
181:16
taken 3:3
6:4,7
20:16
48:22
60:16 93:4
106:21
151:8
174:6
185:11
takes 21:11
21:21
165:1
169:21
talk 25:1,1
38:14
41:14
49:18,19
49:20
57:23
65:15 70:9
75:19
78:24
100:25
117:8
126:11
134:2
149:20
162:14
talked 17:4
24:18 42:2
42:8
147:16
talking
10:14 11:5
43:19
50:11 51:2
54:9 60:5
60:11 70:4
75:20,21
76:14
81:15,17
86:18
90:10
97:13
108:5
109:3
111:19
115:12,13
115:20
118:6
140:11
166:16
talks 87:22
111:23
120:2
127:21
170:12
173:11
taste 79:10
79:14
Taylor 4:21
135:7,16
135:17
136:2,2
TC 40:8
TCP 40:7,9
74:3,11,13
74:18,22
75:11,11
75:13 76:9
91:7
tech 172:24
technical
4:16 31:16
33:9 62:5
113:9,18
151:6
technically
55:17
Technolo...
1:8 4:13
6:6
technology
79:21 98:6
99:4 101:1
103:3
106:8
107:9,17
107:23
108:1,12
108:17,19
117:15
118:21
119:6,8
130:4
131:8
140:6
145:16
152:23
158:15
171:6,9,15
171:22
172:2
180:18,19
181:4,8
technology'
107:8
telecom
130:19
132:18
133:10,14
telecomm...
132:18
telenovas
131:2
Televisa
5:10 130:4
130:10,13
130:18
131:4,4,11
131:12,20
131:22
television
5:11 20:15
20:16,17
88:23
98:21
101:2
103:19
104:1
105:7
108:3,20
109:17
113:7
118:6,9
120:3,11
122:14,15
123:24
124:8
126:9
127:2,3,4
141:8
tell 35:1
82:10 86:2

103:25
110:10
119:14
temporarily
83:8
ten 24:13,19
Teresa 3:5
6:9 185:4
185:22
term 13:17
77:1 104:6
104:7,9
145:9
164:25
termed 10:18
terminology
10:16
terms 77:16
78:21
144:20
147:14
161:23
181:14,21
test 121:19
121:19
122:6,7
124:23
tested 36:21
36:21
121:18
124:23
testified
6:22
testify
177:14
185:8
testimony
8:9,16
92:11
98:11
102:24
104:21
105:10
106:14
111:18
117:2
133:12
152:5
184:4
testing
44:10
117:9,12
testing-...
115:18
Texas 2:7
Thank 169:5
181:11
Thanks 16:13
theater
126:12
there,'
122:19
they'd 180:3
thing 19:11
20:21
21:19
27:21 42:2
47:7 53:9
53:19,24
57:9 62:9
70:7 73:23
74:16 80:3
86:5 87:5
115:14
125:19
133:2
140:12
147:9,12
149:12
156:14
158:20
170:5
180:22
things 11:21
19:18 23:7
23:12
25:23
57:14 59:1
59:18
60:23 71:6
73:4,13
74:18
75:16 92:2
98:14
102:7
145:16
161:24
176:10,13
think 13:5
13:10
16:13
18:16,17
22:1 26:23
30:16 34:6
34:13,16
36:5,24
38:16 42:8
44:3 48:5
48:13
61:12,20
61:23
63:14 68:2
70:13,13
71:1 79:10
79:11,14
85:20 89:9
92:25
94:17
101:14
102:14
104:2,15
115:1,20
116:20
119:15
122:24
123:12
124:18
131:1,3
133:23
137:19
138:2,20
139:10
143:20,22
147:14
148:15
150:6
151:24
155:18
159:19,24
162:4,17
162:25
169:16
171:17
173:23
180:6
thinking
27:17
85:19
125:21
third 51:17
74:4,5,5,6
74:25
93:21
thought
40:24
44:22 75:7
84:1 156:6
158:11,23
159:1
thousands
37:22 38:5
three 16:8
28:9,14
74:3,22,24
95:3
134:24
150:11
153:16
168:4
178:10
threw 144:22
Thursday 5:4
tied 34:6,8
time 7:19,20
22:14
24:15
26:20,25
27:6 28:6
28:10 30:5
30:17 34:9
34:14
38:24
39:17 41:1
41:4,15,22
44:13
46:13,15
48:1,2,3,9
48:20,23
56:10 58:6
61:13 62:8
66:15
67:25
69:12,21
70:18,22
72:1 74:23
75:23
78:10,10
80:14,15
80:17 82:1
89:1,7,10
89:22
90:11,14
90:15 91:9
91:12,22
93:1,3,5
95:8,20,23
96:12 97:9
99:15
100:13,20
100:21
112:16
116:13
117:16
121:21
122:23
124:8
132:2
135:12
136:3
142:12,21
143:9
146:2,4
147:11,11
148:16
149:12
150:7
156:8,10
158:7,10
159:8
167:4
171:24
174:4,7
182:10
183:14
185:11
timeline
47:5,13
56:7,10,14
56:20 57:2
times 7:10
15:21,22
24:13,19
42:17
78:20,21
96:2 130:8
title 127:17
titled
117:23
today 6:3,9
8:9,17,21

10:1 12:8 12:14,22 32:14 40:12 73:20 78:21 113:13 163:25
today's 183:15
told 24:13 46:8 84:23 86:12 87:18 88:6 143:2 152:3 156:5 157:9 182:18
Tom 136:18
tonight 183:4,7
Tony 130:3 131:19
top 63:15 109:5,12 119:24 135:1 136:7 155:8,11 178:6
total 62:23 63:1,15,16 63:22
totally 18:23 32:4 85:21 88:2 90:3 156:15 159:18
touched 65:20 70:13
tough 175:1
tracking 116:13
Trade 160:9 160:12
TRADEMARK 1:1
tradeoff 53:4
tradeoffs 53:6
traditional 20:17 21:6 23:3 77:22 110:14 180:4
traditio... 125:11
trailer 26:16
transact... 111:25
transcript 8:3 182:15 184:2 185:14
transmis... 40:10 108:2,20
transparent 57:10
transports 71:23
travel 8:22 177:14
tremendo... 64:21
TRIAL 1:2
tried 22:15 40:23 131:12,15 158:6 175:25
tries 69:17
true 10:20 12:5 15:4 17:6 18:7 36:12 41:5 51:19 52:4 63:19 64:9 64:15 88:2 96:18 98:1 102:22 108:12 113:24 115:17 122:20 134:7 137:13 140:24 175:4 184:4 185:14
truth 6:22 185:9
truthful 8:16
try 69:13 72:2 87:6 180:23
trying 13:10 13:16 25:1 41:22 90:6 95:19 124:15 130:13 156:10 157:21,24 158:7,20 162:16
Tuesday 3:3
turn 17:3 106:4 107:13 137:10
turnaround 182:17
turning 46:4
TV 4:17 20:20 31:13,16 32:15 76:15 79:23 81:3 98:4,9,11 99:4,7,13 99:15,25 100:25 101:1,4,19 102:1 104:5 105:21 108:8 109:7 110:12 111:19 113:12,14 123:24 130:22 133:5 157:18 164:8
TV's 101:23 109:16
TVs 99:10
twice 116:19
two 16:1 21:23 26:12 51:4 51:8,16,18 55:1 56:24 60:1 68:3 68:7,12,13 68:15,20 68:21 69:6 74:25 77:8 77:11 78:11,13 82:2,18,20 83:14,19 83:20 84:2 84:3,6,16 84:19 85:22,25 86:13,14 86:16,20 87:10,18 87:24 88:3 88:5,10 90:14,15 91:20 94:1 94:5,17,21 94:22 95:9 95:17,21 95:25 96:4 96:17,17 97:5,8 116:18,18 116:19,20 126:15 128:22 146:22 163:18 167:18 178:6
two-second 21:10 54:16 59:19 66:4 77:16 82:9 82:19,24 83:17 84:24 85:16 87:9 87:10 167:21
type 50:15 133:2 163:18 164:1
typewritten 185:13
typically 51:4 58:11 59:3 67:10 77:9 78:7 82:2,8 84:2,5 87:24 95:8 95:16,18 96:1 163:18,24
typo 17:9

U

UK 132:10,12 132:13,14 132:16,21
ultimately 139:22 176:23
Um-hum 30:4
unclear 85:6
underlying 40:11 64:22 87:15 141:20 142:10
underneath 82:14 86:16 134:11
understand 8:19 9:7 13:17 14:25

36:19
73:11
84:14
100:17
108:4
109:16
110:6
112:4
120:11
142:6
162:16
175:23
176:17
understа...
8:25 9:3
11:7,10
12:18 25:4
35:21
41:21
102:18
142:7
143:8
145:14
146:10
150:16,19
156:19
160:11
understood
14:19
36:23 40:6
59:12
61:20
93:19
119:13
166:10
undesirable
57:20
UNIDENTI...
101:10
unique 109:8
109:21
uniquene...
66:13
UNITED 1:1
University
117:23
unmute
101:10
unratified
144:3
unthrottled
75:2
upfront 80:4
80:22
upholding
32:20
use 20:21
23:3 37:25
38:1,2
39:5 51:16
55:1 61:14
71:11,18
71:23 72:3
72:14 73:7
77:16 80:6
98:9 99:13
99:18,23
134:12,17
145:18
161:1
167:1,23
user 22:7,18
22:23
57:13 60:2
66:17 67:9
70:18,20
70:22
88:21
116:21
165:19,23
168:10
user's 57:10
166:4
users 38:11
98:18
uses 73:20
99:4
113:14
127:24
128:2
144:9
164:10
165:1
usually
51:20
55:19 65:3
80:25
94:17
180:1
Utah 7:8
8:19 33:5
33:9,17
132:8
171:1,6,9
171:14,21
172:2,10
172:18
173:16
177:9
UVEF 5:17
172:18,23
172:25

V

vague 12:23
159:6
validity 9:8
32:21
Valley 33:5
33:17
171:1
172:10,19
value 25:10
161:23,25
variable
22:9
varies 21:15
various 15:8
76:21,21
81:20
165:17
166:20
vary 21:14
61:16
vast 73:19
VC1/Silv...
5:7
Venable 1:15
6:14
verbal 8:4
version
29:11
35:11
154:21,22
154:23
168:1
versions
35:22 56:1
62:20 64:2
66:1 161:6
versus 6:5
53:2 59:6
65:2
vice 31:11
vid 47:15
video 1:3,24
3:1 18:7
19:12,13
19:14,16
19:19,22
19:25 20:3
20:4,10
21:3,7,10
21:12,14
21:19 22:2
22:4,7,25
23:5 24:6
24:12,12
24:23 25:6
25:7 26:1
26:4,6,6,8
26:11 27:3
27:5,16,21
28:9,19,22
29:1,9,12
29:14
30:15 35:2
35:5,17,25
36:1,9,11
38:15
39:22 40:3
40:5,25
41:15
47:16,17
47:20,22
50:12,16
50:16,16
50:23
51:12,17
51:18 52:4
53:8,20,20
54:2,5,7,8
54:15
56:24,25
58:12
60:13,20
62:24 63:2
64:2,4,8
64:15,19
64:20,22
65:2,2
66:1,2,4
67:9,12,21
68:16 69:7
69:23,24
69:24 70:6
70:8 72:19
73:9,22
74:1,19
75:22
76:19 77:3
77:4,5,15
77:22 78:6
78:24
79:23 80:3
80:7,13,16
80:16,17
80:23 82:7
82:11,14
82:16,19
82:24 83:9
84:15,18
85:3,23
86:1,3,5
86:14,15
90:22 92:7
104:13
125:23
129:3
132:25
133:5
141:8
142:11
143:9
145:21
146:11,11
146:20,22
146:22
147:11
151:21
152:25
161:24
163:16
164:8
168:6,8,12
168:13,18
176:5
182:7
video's
86:14

video-re... 6:4
videocon... 124:4
videogra... 2:11 6:2 6:10,23 48:20,23 93:2,5 174:4,7 183:14
videos 51:19 84:24 110:16,16 116:16 142:18 146:21 147:11
view 170:24
viewed 125:15
viewers 42:25
viewing 70:11
virtual 47:5 47:13
visit 8:24 136:4
visited 49:14,16
visitor 92:22
visual 128:2
VP 130:4 148:10,15
vs 1:7

W

W 118:21
wait 26:13 27:9 28:3 28:4,6 39:11,13 79:7,8 96:10
Wales 180:23
walking 129:1
want 13:23 17:8 25:2 25:18 27:15 28:13 57:20 62:9 76:24 92:22 114:9 140:20 161:22 165:7 181:21,22 181:23 182:5 183:9
wanted 22:7 25:19 26:16 27:4 29:24 33:24 38:1 38:2 42:1 55:18 77:19 93:18 95:10 122:7 124:19 125:5 134:12 149:10,13 149:21 150:7 157:17 158:12,24 176:15
Warren 7:8
wasn't 18:21 20:20 24:25 25:7 25:10 26:8 29:7 44:17 57:13 99:15 138:8 147:13 153:18 155:2,19 156:14,23 171:11 172:6
watch 26:16 27:8,9 28:9,14 74:15,15 74:16 75:18
watched 22:4
watching 29:6,9 65:1 116:15 125:23 126:4 129:2 157:5 168:10
water 48:18
waters 48:19
way 10:22 19:20 20:9 22:4,22 23:4 27:22 30:6 35:5 36:20 38:12 47:15 56:23 63:21 68:25 69:1 71:4 73:12 73:18 75:16 77:21 78:23 79:22 88:20 93:24 108:24 124:2 140:20 146:13,18 147:3 162:24 182:12
Wayback 5:11 127:10
ways 20:7 53:22 54:5 54:6 58:25 147:1
we'll 7:23 23:11 38:19,22 43:17 114:25 123:15 133:23 181:16
we're 6:2 48:21,24 60:1 77:7 78:3 81:15 93:3,6 122:15 147:14,14 162:6 174:5,8 182:9,14
we've 24:20 42:2,8 72:16 81:18 92:5 93:17 111:22 129:21
web 21:6 24:22 28:24,25 39:20 45:18 67:10 71:12,16 71:17,19 72:2,13,17 90:19 120:3 122:16 145:18 153:2 160:4 169:7,18
website 101:23 102:1
websites 15:5 98:20
Webware 4:20 169:7
week 120:9
Welcome 49:11
well-known 73:16
went 22:6,20 49:17 174:24 175:4,8 180:25
weren't 133:2 137:20 138:23 149:2,9
West 1:16 7:7 127:6 127:14 128:7,10
wheel 61:1
whereof 185:19
WiFi 28:8
willing 121:23,23
Wilson 2:11 49:6,6,8
Windows 137:3
windup 159:8
wish 32:11 122:19 186:2
witness 12:9 49:24 89:17 112:14 138:17 162:20 170:4 177:18 178:2 181:10 185:19
witness's 9:19 101:11
won 145:4
word 13:18 50:13,18 50:21 60:24 89:4

89:21
94:25
110:8
164:24
words 115:8
154:17
work 10:13
19:20
22:11,11
25:6 31:7
33:13 34:6
34:9 36:22
38:8,18,21
40:22,24
40:25 41:9
43:4,10
44:22 47:3
47:8 68:5
101:3
103:18
105:24
113:8
124:20
129:15
132:14,17
148:17
170:13
171:19,20
173:3
worked 19:19
66:19 73:5
105:16
117:15
130:11
140:22
141:7,7,8
152:4,7,9
working 25:7
30:18
44:13 46:3
133:10
135:19
144:4,8
works 20:15
69:17
72:15
74:11
79:21
88:20
89:14
90:24
113:16,17
125:14
129:1,15
154:20
155:22
world 5:9
37:21
118:24
131:1
worldwide
121:19
worry 101:15
worth 121:14
wouldn't
18:18
38:10
55:13
67:13,14
85:16 86:7
99:21
116:20
147:5
158:9
161:15
wow 125:16
126:4
128:25
129:14
156:16
180:3
wreaks 74:19
written
122:25
wrote 108:6
122:21
168:25

X

X 4:1
XLon 25:5,12
25:18,25
26:1 27:20
28:18
41:22
44:13,16
46:13
180:9

Y

Y 5:14
117:23
yeah 8:22
9:11 10:22
12:2 13:14
13:14,15
13:19 14:3
15:4 18:24
23:2 25:16
28:25
29:16,22
30:11,12
31:1,6
32:16
33:11 34:8
35:20,20
36:8 38:13
38:16 39:2
40:8,9,12
42:7 43:16
45:10,11
45:13,22
49:17 51:3
51:11,25
53:6,11
54:3,11,13
54:23
55:12,25
56:1 57:15
57:22,25
58:24,25
58:25 59:6
59:9,17,23
60:12,25
62:21 63:4
63:10,10
63:16 64:5
65:8 66:15
66:19
67:20 68:5
68:13 70:6
71:4,8,19
72:5 73:14
73:20 76:2
76:6 78:7
80:2,10,25
81:1,13
83:6,6,6
83:18,21
83:25
84:13 85:5
85:5,7,11
86:4,4,9
86:18,22
86:25
87:20 88:1
88:5,5,10
89:19,25
90:3,8
91:5,17
92:3,13,19
92:24
93:13 94:5
94:20 95:6
95:19 96:9
96:12,22
97:1,24
98:16
100:2
102:10,25
104:23
107:22
110:8,23
111:6,9,12
111:19
113:19
116:18,19
118:4,8,10
120:10,22
121:24
124:14
129:3
130:20,25
131:4,19
131:19
133:6,17
133:21
137:23
139:3,17
139:18
140:7
142:19
143:7,10
143:12,15
143:15,25
144:11
145:17
146:9,17
146:21,24
148:15
150:13
151:2
152:1,24
153:21,22
155:10,10
155:11,12
155:13
158:5
159:10
160:3,5
162:4
163:16
164:23
165:5
166:18
167:14,14
167:18
168:5
169:14,15
169:24
171:13,20
172:11,16
173:4,7,11
173:21
174:16,20
175:10,13
175:15,22
178:1
179:1,9
180:4,9,13
180:22
182:19,23
year 138:21
154:18,22
155:19
174:25
years 14:16
23:1,23
29:13
43:24
48:11
102:21
103:2
115:10
131:23
150:10,11
153:16
159:2
170:25
173:18

180:10
yesterday 15:17 16:5 16:8,9
yielding 90:21
yields 88:13 89:2,8,23
York 1:17,17
Young 117:22
YouTube 26:18 27:3 39:3

Z

zero 90:14
Zoom 2:11,12 2:12,13 101:14 164:1,5

0

04/03/07 5:13
09 133:21

1

1 4:7 47:25 48:1 54:20 55:2,2,7 55:10,20 56:2 57:7 90:14 121:9,25 122:2 154:3,6 167:11,24
1.9 86:23 87:11,19
1:04 174:6,7
1:13 183:15 183:18
10 43:18 58:14 59:6 59:6,7 77:16 106:4 174:2
10,000 24:21
10,469,544 1:12
10,469,555 1:13
10,951,680 1:12
10/21/14 4:8
10:03 48:22 48:23
10:54 93:3,4
100 78:20 168:1
1001 2:3
10036 1:17
101 1:20 4:17
1080p 59:8,9 70:21
11 50:5 57:24 65:16 70:10 71:9 73:7 123:19
11,430,138 17:10
11,470,138 1:11 17:16 17:20
11,677,798 1:11
11/24/05 4:9
11/26/07 5:6
11:09 93:4,5
114 17:11,13
1144 3:4 6:7
117 5:14
12 22:17 61:23 63:19 64:7 64:14 65:3 76:12,18
12-frame... 64:19 65:1
12:56 174:4
12:57 174:6
126 5:8,11
134 4:21 5:3 5:6
138 17:22
14 173:15
147 5:15
15 52:1 58:20 102:21 103:2
150 174:25 175:14
151 1:16
154 4:7
155 4:9
15th 3:4 6:7 102:12 148:11
16 4:12 52:13 93:19
168 4:20
16th 185:23
17 1:4 3:3 81:5,12 87:22 92:4 94:25 95:1
173 4:18
177 4:4
17th 6:3 183:19
18 97:11
180 175:1,14
19 62:10,16 62:17 79:16,20 97:19,23 99:3
1999 33:15
1st 148:8

2

2 4:9 31:19 48:1 54:20 55:3,3,8 55:10 75:8 90:15 91:14 98:5 107:13,14 107:15 109:5,13 155:4,9 174:14,15 175:16
2-second 93:22
2.1 84:17 85:17
20 23:1 29:13 97:19 98:1
200 2:3
2000 166:12
2000s 22:2 26:16 29:4 41:2,2
2003 39:18 41:15,19 42:10 44:14,15 73:18 75:6
2004 40:14 75:7
2005 30:18 30:21 103:1 115:19 117:12 153:21,24 154:15 155:7,12 155:14 171:7,25 180:6,12
2005/102... 4:9
2006 30:16 103:7 115:11,16 115:20 147:23 148:8,12 148:23,25 151:18 171:11
2007 157:16
2008 133:21 134:4 137:16
2009 133:8 133:20 159:12
2010 4:12 5:9 16:16 18:5 30:23 50:3 106:3 131:25 132:4 138:20 155:2 159:9,10 166:13,17 175:5,9,12 175:24 176:9 180:6,9,15 180:15
2012 4:16 62:2
2013 4:17 101:7,9,17 103:16 107:13,15 109:6,13 113:23 115:6 171:2 172:9 177:21
2015 4:18 100:22 173:17,23 174:10,15
2018 106:8 106:12
2019 106:8
2020 102:12 102:18,19 106:12
2022 4:20 169:2,5 170:3,9
2024 1:4 3:3 6:3 183:19 184:11 185:20 186:23
2031 4:21 134:21,25 136:1
2032 5:3 134:22 136:6
2033 5:6 134:21

136:24
2042 5:8 126:16 129:19,24 132:7
2043 5:11 126:16,19 129:7 133:23
2051 5:14 117:19,22 119:19 121:4
2055 5:15 148:1,4
2068 5:17 33:6 172:12,14
2069 5:19 33:10
21 100:23 106:3
213 103:16
216 185:23
22 115:9 116:25
23 117:8
23rd 185:20
24 120:9 123:19 126:15
24/7 120:12
2400 63:23
24K 59:6
24th 154:15 155:7,14
25 133:25 134:21
27 137:11
28th 155:12
2K 69:24

3

3 17:3,12 18:1 19:4 48:2 54:20 91:3 135:7 135:18,20 135:21 136:5
30 17:13 58:18 61:21 63:23 65:2 139:20 144:12 166:22 167:25
30-frame... 64:20 65:2
30-second 51:25
31 147:18,20 147:21 152:21 157:10 159:11
310-1769 1:24
32 63:15,16 164:13
32-rate 64:7 64:13
3212.218... 1:17
33 5:17 168:23
35 116:1
36 170:18,21 170:22 173:12
3600 3:5 6:8
3800 1:20

4

4 18:10 23:15 167:22,24
40 43:24
400 58:19 167:20,20 167:21
415.343.... 1:21
42nd 1:16
430,138 17:14
45 97:14 139:11,14 139:15
4K 58:14 59:6 69:24

5

5 167:5,6
5/15/07 4:22
500 166:25
500-kilo... 166:22
54 63:18
555 17:22

6

6 32:25 118:12 119:19,24 120:21 167:5,6
6/16/07 5:3
600 7:7 58:18 185:23
62 4:16
650.739.... 2:4

7

7 4:3 34:18 34:22 37:10 38:14 119:25 121:3,4
713.229.... 2:8
71st 107:20
720p 162:2
77002 2:7
772 153:19 153:23 154:4

8

8 81:5 120:23 122:9,13
8,868,772 4:7
80 118:22 175:11
800 1:24
80202 3:5 6:8 185:23
84058 7:8
863 7:7
87 118:22

9

9 22:17 41:11 42:5 42:23 79:18
9:00 3:4 6:3
9:50 48:20 48:22
90s 25:24,25
910 2:7
94111 1:20
94304-1007 2:4
96 63:18
99.99 95:20