

EXHIBIT 5

1 UNITED STATES DISTRICT COURT
2 SOUTHERN DISTRICT OF FLORIDA
3 CASE NO. 11-20427-WILLIAMS/TURNOFF
4

5 DISNEY ENTERPRISES, INC.,
6 TWENTIETH CENTURY FOX FILM
7 CORPORATION; UNIVERSAL CITY
8 STUDIOS PRODUCTIONS LLP;
9 COLUMBIA PICTURES INDUSTRIES,
10 INC., and WARNER BROS.
11 ENTERTAINMENT, INC.,
12 Plaintiff,

13 vs.

14 HOTFILE CORP., ANTON TITOV,
15 and DOES 1 - 10

16 Defendants.

17 _____/
18 AND RELATED CROSS-ACTIONS.
19 _____/

20 VIDEOTAPED DEPOSITION OF ANDREW S. CROMARTY, Ph.D.
21 SAN FRANCISCO, CALIFORNIA
22 FRIDAY, DECEMBER 16, 2011

23 BY: ANDREA M. IGNACIO HOWARD, CSR, RPR, CCRR, CLR
24 CSR LICENSE NO. 9830
25 JOB NO. 44314

1 FRIDAY, DECEMBER 16, 2011

2 10:09 a.m.

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5
6 VIDEOTAPED DEPOSITION OF ANDREW S. CROMARTY,
7 Ph.D., taken at Farella Braun + Martel LLP
8 235 Montgomery Street, San Francisco,
9 Pursuant to Notice, before me,
10 ANDREA M. IGNACIO HOWARD, CLR, CCRR, RPR,
11 CSR License No. 9830.
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1 A P P E A R A N C E S :

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3 FOR THE PLAINTIFFS:

4 JENNER & BLOCK

5 By: LUKE C. PLATZER, Esq.

6 1099 New York Avenue, NW

7 Washington, D.C. 20001

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12 FOR THE DEFENDANTS:

13 FARELLA BRAUN + MARTEL

14 By: TONY SCHOENBERG, Esq.

15 235 Montgomery Street

16 San Francisco, California 94104

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20 ALSO PRESENT: Sean McGrath, Videographer

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1 (Recess taken.)

2 THE VIDEOGRAPHER: The time is 4:31 p.m., and
3 we are on the record.

4 MR. PLATZER: Q. I'd like to shift gears a
5 little and talk about fingerprinting technology.

6 A Sure.

7 Q And having read through your report a couple
8 of times, I want to make sure I understand exactly
9 what your expert opinion here is.

10 You're not actually offering an expert
11 opinion that fingerprinting technology results in
12 frequent false positives; are you?

13 MR. SCHOENBERG: Objection; vague and
14 ambiguous.

15 MR. PLATZER: Q. Do you understand the --
16 the term "false positive" the way I used it?

17 A I have a very deep understanding of the term
18 false positive, and I assume we're using it the same
19 way.

20 Q Okay.

21 A Well, respectfully, the question is not well
22 posed.

23 But if we appeal to the common understanding
24 of false positives and these sorts of matching
25 techniques, there is often a tradeoff between false

1 negatives and false positives.

2 So the question is not in a vacuum, does a
3 technique have a false positive rate, although that
4 may be a characteristic of an individual technique, as
5 is noted in the MovieLabs analyses, but what is the
6 rate of false positives and false negatives jointly
7 for some setting?

8 And then, I believe, as they themselves note,
9 that is, MovieLabs, there can be differences in the
10 combined false negative and positive rate across
11 techniques, and that there are business reasons why
12 one might choose a false positive rate.

13 So now, your question is about whether I'm
14 opining that they inherently have a high false
15 positive rate.

16 So the first part of my answer is that a
17 reason the question inherently is not well posed is
18 that it is one of many interacting characteristics of
19 the technique in application, and second, that there
20 are business decisions that go into a selected false
21 positive rate.

22 So the -- in that regard, the answer is no, I
23 am not offering the opinion that you stated -- as you
24 stated it. I'm offering more complex opinions that
25 reflect the actual nature of false positives and the

1 other business factors and other technical factors.

2 Q Well, since it's a vendor that you opine
3 about in your report, let's talk about Vobile
4 specifically.

5 A Okay.

6 Q Are you offering an opinion about the
7 frequency with which Vobile identifies a false
8 positive?

9 A Not precisely. Would you like me to explain?

10 Q Well, let me -- let me pose it this way. I
11 know you've -- you've opined that false positives are
12 a theoretical possibility with video fingerprinting
13 systems because information is lost when complex
14 assets are reduced down to small numbers.

15 Is that a fair paraphrasing or summary of
16 one -- one of the opinions that you offer in your
17 report?

18 A That's somewhat similar to one of the
19 opinions that I offer in my report.

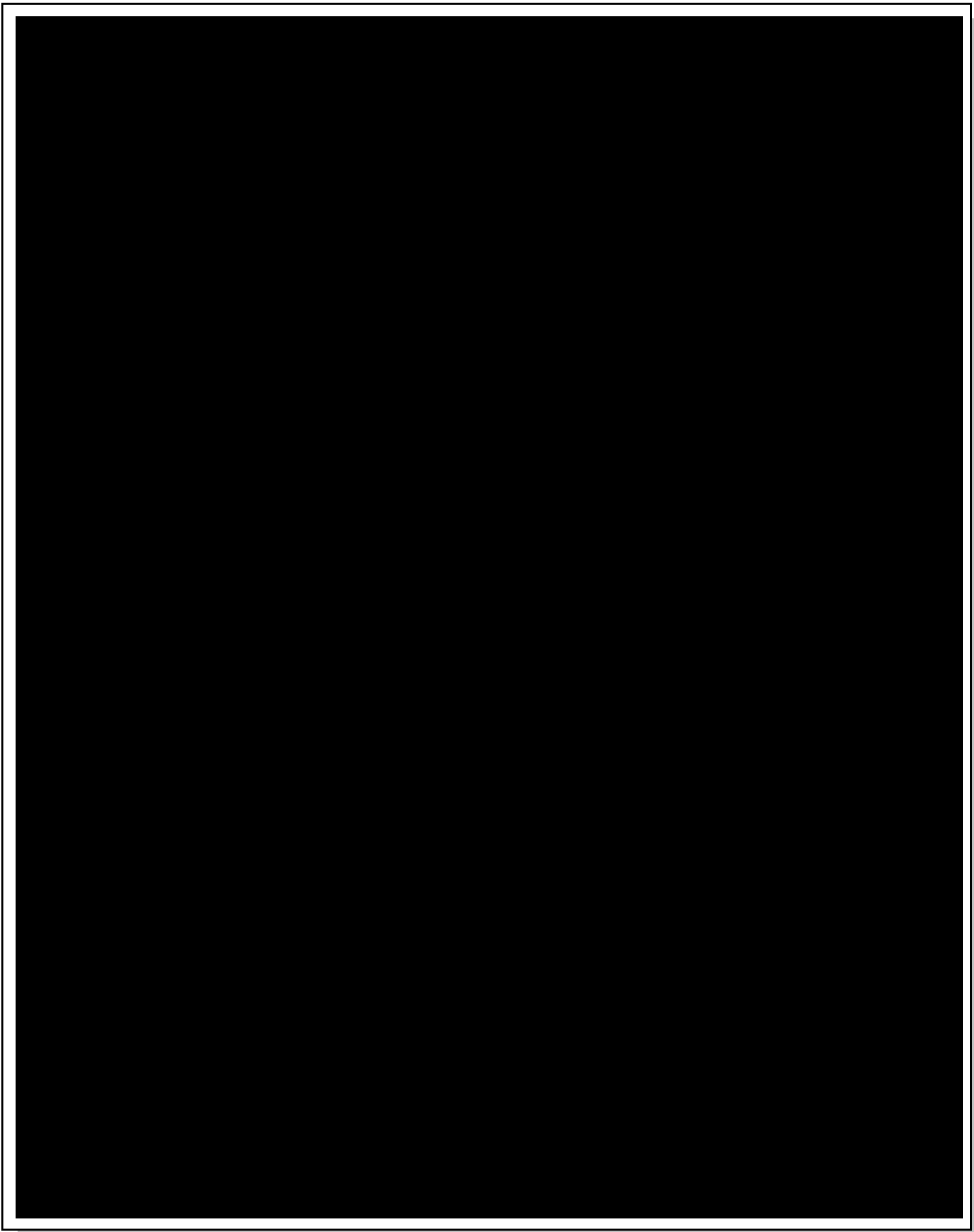
20 Q How would you characterize it, briefly?

21 A Well, I have a -- a collection of opinions
22 on -- on the topic.

23 Q And I'm referring --

24 A So --

25 Q -- to that specific opinion about the



1 MD5 hashing, have you?

2 A That's correct. In this instance, I'm
3 answering your question.

4 Q Okay. So the answer that you just gave is
5 just hypothetical; it's not an answer about what
6 Hotfile actually did?

7 A No. That was an A, B, and neither of those
8 is correct. It's not A or B. It's not hypothetical,
9 and it's not what I know what they did. It's
10 practical, and it's a deep understanding, and it has
11 significant business consequences. But it is not
12 based on my conversation with Mr. Titov in which he --
13 he could have identified these -- these specific
14 details to me.

15 Q Is using hashing to implement takedown
16 notices a standard business practice among Internet
17 service providers, in your opinion?

18 A Well, first, I haven't been asked to opine on
19 the frequency of the use of this technique by other
20 providers as a part of my report, per se.

21 I think the question that you asked there is
22 slightly different from -- from -- from -- as I
23 understand your question, and maybe I don't understand
24 it.

25 Q Well, you do opine here that this is an

1 industry standard practice, don't you, in the heading
2 to section -- Roman numeral VIII, heading A of your
3 report?

4 A Oh, yes. You asked what -- maybe -- maybe we
5 should have you re-ask your question so I'm sure that
6 I hear it correctly.

7 Q Well, is implementing takedown notices based
8 on hashing an industry standard practice?

9 MR. SCHOENBERG: Objection; vague and
10 ambiguous.

11 THE WITNESS: There are several parts to that
12 question. I think that might be what I was responding
13 to.

14 So the use of hash matching is not the same
15 as takedowns. So a takedown is not an algorithm.
16 It's a -- it's a business or even social process. And
17 my opinion here in the first instance is about hash
18 matching. I say:

19 "SHA/MD5 hash matching is a best effort and
20 reasonable business practice that addresses an
21 importance class of potential infringements by unknown
22 third-party actors on the Internet."

23 And so, in fact, when I review this
24 paragraph -- and I'm reading 145, to which you
25 effectively directed me a moment ago -- in my first

1 reading, I don't see the phrase "takedown" anywhere in
2 that paragraph, and yet I was able to say a good 30 or
3 40 words about the use of SHA and MD5 hash matching in
4 the industry.

5 So I'm just trying to -- to make clear
6 that -- that you've combined several things in your
7 question and implied a different result than perhaps I
8 had opined on.

9 MR. PLATZER: Well, sir, I'm not asking you
10 what your report says.

11 Q I'm asking you a question here today: Is
12 implementing a takedown notice based on hashing to
13 identify identical files to the one that's the subject
14 of the takedown notice, is that an industry standard
15 practice?

16 MR. SCHOENBERG: Objection; vague and
17 ambiguous; asked and answered.

18 THE WITNESS: Based on my industry
19 experience, I will say I do have the impression that
20 to the extent that takedowns are implemented with
21 respect to DMCA takedown specifically or not, but
22 requests that -- that it may be the case that hash
23 matching is a technique that is widely employed, yes.
24 And I'm relying there on my industry experience.

25 MR. PLATZER: So I want you to assume that a

1 file sharing service that employs hash matching for
2 de-duplication purposes, upon receipt of a takedown
3 notice, does not delete or disable the file that
4 resides at the URL in the takedown notice, but simply
5 disables the particular URL that is mentioned in the
6 notice that -- that leads to that file, while allowing
7 other URLs that direct to that file to remain active.

8 Q Do you understand the hypothetical as I've
9 posed it?

10 A I think so. I think what you're saying is
11 there's file de-duplication in place, that there's a
12 single underlying physical -- well, in the sense that
13 we think of files as physical, an asset -- file
14 asset -- that there are multiple pointers to this
15 file, and through one that has web links or what have
16 you, names for it, and that there is a takedown notice
17 pursuant to one, for example, published web link, and
18 then in your hypothetical, that that link is made
19 dysfunctional or inactive, but that other links may
20 still point to the file; is that the question?

21 Q You have comprehended my hypothetical
22 precisely.

23 A Okay. I understand the -- the backdrop,
24 then, yes. Okay.

25 Q In that hypothetical, is the file sharing

1 service's response of disabling one particular URL,
2 but not the underlying file itself, would you consider
3 that a standard business practice?

4 MR. SCHOENBERG: Objective; incomplete --
5 objection; incomplete hypothetical; lack of
6 foundation; vague and ambiguous.

7 THE WITNESS: Well, actually, that's an
8 excellent example of the flaws in the core model that
9 I understand plaintiffs to have advanced through their
10 complaint that I illustrate in my four-part
11 methodology that I identify in my report and opine on
12 extensively.

13 As one example -- and we see this from --
14 from the fact that we have plaintiffs who themselves
15 uploaded files into Hotfile -- there can be multiple
16 paths to a single file. Some of them may be
17 warranted.

18 And so we can easily imagine a case in
19 which -- I'll give -- I'll give you an example. When
20 I was the CTO and CIO of the principal industry file
21 sharing site that was used by many of the plaintiffs,
22 that a given asset was used and shared and made
23 available by multiple companies at once.

24 Now, if someone had somehow created an extra
25 link to that -- we never had any security violations

1 in the years that I was in that role, but that would
2 have been regarded as a security violation if it had
3 been made available to them through that additional
4 company's interface.

5 And if that link were taken down, you
6 certainly would not want to destroy the underlying
7 asset. You would want it to remain available to the
8 legitimate rights holders who had a right to share it.

9 So this shows exactly the kind of difficulty
10 that I've identified where you can have an asset
11 that -- that does correctly belong on a file sharing
12 service, but the link to it that is a separate entity
13 does not belong in the possession of some -- some
14 unauthorized user.

15 MR. PLATZER: Q. Are you aware of any file
16 sharing or user-generated content website that follows
17 the practice that I just described in my hypothetical?

18 MR. SCHOENBERG: Same objections.

19 THE WITNESS: Well, I -- as I understand the
20 question you're immediately asking exactly, the Dax
21 site used exactly that model. That is, one underlying
22 asset, multiple individual pointers to it, the
23 pointers are represented as web links, they're
24 available to different users, and it's theoretically
25 possible that some user could obtain a web link that

1 was an inappropriate use for them because they did not
2 have rights to the file.

3 And in that instance the right response would
4 be to remove the link, but not to remove the other
5 links or the underlying digital asset that was owned
6 by companies such as your own clients, the plaintiffs.
7 So that's exactly an example of that, yes.

8 MR. PLATZER: You also opine in paragraph 147
9 that defendants -- and I'm quoting here:

10 "Timely adopted and currently employ
11 techniques for digital fingerprinting, including those
12 generally advanced or approved by the plaintiff's
13 industry association, including the products and
14 services of Vobile."

15 Q Sitting here today, do you know when Hotfile
16 implemented Vobile's technology?


17 A It's my recollection that I discussed the
18 implementation of and adoption -- implementation is
19 probably misuse of the term, but let's call it
20 adoption -- of Vobile's technology with Mr. Titov.
21 And to the best of my ability to recall, I discussed
22 some of the details of the dates. I no longer have
23 those in mind as I sit here today.

24 But I would point out that I must say that
25 in -- in the world of the Internet in which we live,

J U R A T

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3
4 I, ANDREW S. CROMARTY, Ph.D., do hereby
5 certify under penalty of perjury that I have
6 read the foregoing transcript of my
7 deposition taken on December 16, 2011; that I
8 have made such corrections as appear noted
9 herein in ink, ~~initialed by me~~, that my / on attached
10 testimony as contained herein, as corrected, **ERRATA SHEET**
11 is true and correct. **Exhibit**

12
13
14 DATED this 20 day of JANUARY, ²⁰¹² ~~2011~~,
15 at Palo Alto, California.

16
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20 SIGNATURE OF WITNESS

CERTIFICATE OF REPORTER

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I, ANDREA M. IGNACIO HOWARD, hereby certify that the witness in the foregoing deposition was by me duly sworn to tell the truth, the whole truth, and nothing but the truth in the within-entitled cause;

That said deposition was taken in shorthand by me, a Certified Shorthand Reporter of the State of California, and was thereafter transcribed into typewriting, and that the foregoing transcript constitutes a full, true and correct report of said deposition and of the proceedings which took place;

That I am a disinterested person to the said action.

IN WITNESS WHEREOF, I have hereunto set my hand this 21st day of December 2011.

ANDREA M. IGNACIO HOWARD, RPR, CCRR, CLR, CSR No. 9830

Transcript Errata - Cromarty Hotfile Deposition Dec 16, 2011

ERRATA SHEET

I, ANDREW S. CROMARTY, Ph.D., make the following changes to my deposition taken in the matter of Disney Enterprises, Inc., et al., vs. Hotfile, Corp., et al., taken on December 16, 2011:

DATE: 20-Jan-2012


Signature of Witness

Page Line: Change ("a -> b" signifies "replace a with b")

- p.7 L.19: "JCPenny et al." -> "J. C. Penney, et al."
- p.8 L.8: "the Patent-in-Suit, and that" -> "the Patent-in-Suit that"
- p.11 L.24: "this" -> "is"
- p.12 L.7: "to my" -> "of my"
- p.15 L.23: "legally phrased" -> "legally freighted"
- p.21 L.6: "which" -> "in which"
- p.26 L.8: Strike "but"
- p.26 L.19: "For -- for example," -> "For, for example,"
- p.27 L.5: In Mr. Platzer's text, "your" should be "their" (changes meaning of my answer)
- p.27 L.19: "helpful" -> "helpfully"
- p.28 L.7: "experience" -> "experience is,"
- p.28 L.8: "sort of the" -> "the sort of"
- p.30 L.10: strike comma
- p.30 L.11: "e-mails called Kapow" -> "emails, called Kapow,"
- p.31 L.23-24: "principals, and" -> "principals. And"
- p.33 L.4: "publication. It's" -> "publication--it's"
- p.33 L.5: "referee publication, for example, by one" -> "refereed publication, for example--by one"
- p.35 L.5: Delete paragraph indentation (changes meaning).
- p.34 L.7: "Google" -> "Google is"
- p.36 L.18: "report," -> "report"
- p.36 L.22-23: "domain name. [par] Some" -> "domain name, some"
- p.37 L.5 "mathematical" -> "mathematically"
- p.37 L.11: "my upload" -> "upload"
- p.38 L.17,22.: Mr Platzer's text refers to "Nutella", should be "Gnutella". [I am answering his questions about Gnutella, hence affects meaning of my answers.]
- p.38 L.25: "true. Generally for the 2P" -> "true generally for the P2P"
- p.39 L.15 & throughout: "Use Net" -> "Usenet"
- p. 39 L.17-19: "has not been use of it. It was a use of" - "has not been. Usenet was a use of"
- p.40 L.2: "much" -> "machine"
- p.40 L.3-4: "files. Almost inversely" -> "files, almost universally"
- p.40 L.9: "server hosted sites." -> "server hosting sites, or what have you."

p.41 L.16: "implicit of" -> "implicit about"
p.42 L.7: "testing. If" -> "testing, if"
p.42 L.8: "unaware and" -> "unaware, and"
p.46 L.6: "risky" -> "risk a"
p.46 L.23: "going to be" -> "in a"
p.49 L.8: "which" -> "which a"
p.49 L.11: "resilient" -> "Brazilian"
p.49 L.13: "describe that or refer to the tool." -> "describe or refer to that tool."
p.49 L.16: "tool" -> "tool,"
p.49 L.21: "for" -> "from the"
p.50 L.1-2: "of that site, including Hotfile." -> "at sites including Hotfile."
p.50 L.3: "is, with" -> "is with"
p.50 L.4: "I" -> "I've"
p.50 L.22: "draw on" -> "draw"
p.52 L.15: "Kapow" -> "that Kapow"
p.52 L.17: "used" -> "used,"
p.52 L.22: "want to have" -> "want"
p.54 L.5: "of documents plus" -> "plus"
p.55 L.3: "information theoretically" -> "for information theoretic reasons"
p.55 L.11: "I've" -> "I have"
p.55 L.19: "cited." -> "cited it."
p.56 L.1: "now." -> "now, yes."
p.56 L.16: "general" -> "general,"
p.56 L.22-23: "copyright itself may need another party. Permission for" -> "copyright is held by another party and permission for"
p.56 L.24-25: "granted. [par] The ownership information is" -> "granted. This ownership and permission is"
p.57 L.1: "matter and is noted in Appendix H. In any case," -> "matter, and as noted in Appendix I in any case"
p.57 L.2: "support the" -> "support a"
p.57 L.4: "transfers and file sharing services." -> "transfers to file sharing services in particular."
p.57 L.5: "In particular, that's" -> "That's"
p.58 L.2: "material" -> "materials"
p.58 L.2: "written about Kapow" -> "right in sentences about Kapow"
p.58 L.10: "list" -> "a list"
p.63 L.19: "reliable" -> "a reliable"
p.63 L.23: "there're" -> "there are"
p.64 L.2: "and impossible, probably impossible," -> "or impossible, and probably impossible,"
p.65 L.15: "burn convention" -> "Berne Convention"
p.66 L.23: "have" -> "have to have"
p.67 L.17: "would" -> "will"
p.68 L.4: "service" -> "Internet service"
p.68 L.15: "consumer-generated" -> "consumer user-generated"
p.68 L.24-25: "two documents, that the two contractual documents that the user" -> "two documents that the--two contractual documents, that the user"
p.69 L.1: "the Hotfile" -> "Hotfile's"
p.70 L.14: "service" -> "of service"

p.71 L.7: "question where I'm not sure you're asking" -> "question--I'm not sure where you're also asking"
p.71 L.8: "about" -> "as to"
p.72 L.9: "information, theoretic" -> "information-theoretic"
p.72 L.19: "their" -> "their -- or an"
p.74 L.22: "explicitly" -> "illicitly"
p.75 L.1: "that a" -> "the"
p.75 L.7: "if" -> "though"
p.75 L.9: "that they're" -> "they're"
p.75 L.10: "for," -> "for it,"
p.75 L.17: "that" -> "of that"
p.77 L.13: "allowing" -> "allowing you to ask"
p.78 L.3: "'reliability,' with" -> "'reliability' is with"
p.78 L.10: "I'm assuming" -> "I assume"
p.78 L.15: "of a" -> "for"
p.78 L.15-16: "correct. [par] What we" -> "correct, what we"
p.79 L.21: "is yes, but; that is," -> "is 'yes but'. That is,"
p.79 L.24: "than I would weigh" -> "that outweigh"
p.80 L.1: "if those other factors may" -> "those other factors might"
p.80 L.7 "as to, and so on." -> "as to."
p.82 L.12: "misnomer" -> "misnomer,"
p.85 L.2: "as -- and" -> "as, and"
p.85 L.3: "as" -> "as,"
p.90 L.9: "as the one" -> "as one"
p.90 L.10: "answered" -> "answer"
p.90 L.22: "that" -> "as"
p.90 L.22: "report" -> "report,"
p.90 L.23: "there" -> "they're"
p.91 L.7.: "dispassionately." -> "and dispassionately."
p.91 L.11 "report" -> "report,"
p.94 L.2: "is for" -> "is: 'For"
p.94 L.3: "of those" -> "of"
p.94 L.4: "file sharing services server, this is 69, may" -> "file sharing service's server' -- this is 69 -- 'may"
p.94 L.7: "compliant computers connecting to it." -> "client computers connecting to it.' "
p.94 L.24: "server, at" -> "server at"
p.94 L.25: "instance" -> "instant"
p.95 L.15: "things. There" -> "things -- there"
p.96 L.18: "IPV for" -> "IPv4"
p.97 L.14: "Certain, MapQuest" -> "certain -- MapQuest"
p.97 L.15: "company, is" -> "company -- is"
p.97 L.16: "from" -> "in"
p.97 L.19: "technical" -> "technically"
p.98 L.1: "can trivially" -> "trivially can"
p.98 L.4: "outline" -> "outlined"
p.99 L.12: "intent. An induced intent" -> "intent, an induced intent, "
p.99 L.15: "elicit" -> "illicit"

p.125 L.8-9: "available. [par] One hopes," -> "available -- one hopes,"

p.125 L.22: "information theoretic" -> "information-theoretic"

p.130 L.22: "understanding. Similarly," -> "understanding, similarly,"

p.131 L.22: "is yes, when that's possible." -> "is, 'Yes when that's possible.' "

p.132 L.3: "information theoretic" -> "information-theoretic"

p. 133 L.18-19: "information, theoretic" -> "information-theoretic"

p.139 L.21: "information theoretic" -> "information-theoretic"

p.143 L.17: "small and feeling that it's a" -> "small 'n', treating it as a"

p.159 L.8: "protection" -> "protections"

p.161 L.2: "instance" -> "instant"

p.166 L.11: "the reason" -> "reasoned"

p.186 L.1: "justified?" -> "justified."

p.191 L.4: "the fingerprint" -> "the -- 'fingerprint' "

p.192 L.16: "plaintiffs" -> "plaintiffs"

p.194 L.14: "efficacy, these" -> "efficacy of these"

p.194 L.20-21: "information theoretic" -> "information-theoretic"

p.200 L.25: "files, that" -> "files. That"

p.201 L.5: "that we're true" -> "it were true"

p.201 L.9-10: "servers, that" -> "servers. That"

p.209 L.22-23: "effect. [par] First," -> "effect -- first,"

p.210 L.22: "effect of" -> "effective"

p.212. L.2: "at, then" -> "at -- then"

p.215 L.15: "argument, if" "argument -- if"

p.215 L.16: "assets, and we know that just" -> "assets and we know that, just"

p.219 L.22: "one's" -> "ones"

p.220 L.13: "fact" -> "facts"

p.220 L.14 "that is produced during discovery that" -> " -- that is, produced during discovery -- that"

p.232 L.18: "network detached storage" -> "network-attached storage"

p.232 L.19: "de-duplications." -> "de-duplication."

p.233 L.7: "necessary" -> "necessarily"

p.233 L.10: strike "and"

p.235 L.25: "techniques first." -> "techniques, first."

p.236 L.18: "optimization -- for business optimization" -> "optimization, for business optimization, "

p.236 L.21: "satisfy -- let's call it the" -> "satisfy, let's call it, the"

p.238 L.4: "Oh, yes." -> "Yes."

p.239 L.20: "implemented with" -> "implemented -- with"

p.239 L.22: "requests that" -> "requests -- that"

p.240 L.11: "place, that" -> "place; that"

p.240 L.13: "physical, an asset -- file" -> "physical -- an asset, a file"

p.240 L.14: "asset -- that" -> "asset; that"

p.240 L.15: "file, and through one that has web" -> "file; and through one -- that is, web"

p.240 L.16: "you, names for it, and" -> "you -> names for it; and"

p.240 L.17: "link, and" -> "link; and"

p.240 L.20: "file; is" -> "file. Is"

p.242 L.20: "asking exactly, the Dax" -> "asking, exactly, the DAX"

p.252 L.8: "is -- and" -> "is, and"
p.252 L.9: "is an" -> "is, an"
p.253 L.17: "about, so I" -> "about -- so, I"
p.254 L.13: "say and" -> "say, and"
p.255 L.7: "enforced. It's" -> "enforced; it's"
p.255 L.8: "providers that -- it" -> "providers; that it"
p.256 L.8: "of technical or" -> "of 'technical' or"
p.256 L.9 "performance or technical operations involves" -> "'performance' or 'technical operations' involves"
p.256 L.18: "burden we've" -> "burden. We've"
p.278 L.25: "as we're all in this together, and" -> "as, 'We're all in this together', and"
p.282 L.2: "is the number" -> "is it's a number"
p.282 L.20: "inde" -> "indie"
p.283 L.1: "damages that" -> "damages, that"
p.285 L.20: "industries and have been for at least a decade" -> "industries, and have been for at least a decade, "
- END OF ERRATA -