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UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

REARDEN LLC, et al.,  
Plaintiffs,

v.

THE WALT DISNEY COMPANY, et al.,  
Defendants.

Case No. 17-cv-04006-JST

**FINDINGS OF FACT AND  
CONCLUSIONS OF LAW**

This copyright infringement case was tried to a jury beginning on December 6, 2023 and concluding with a verdict on December 21, 2023. Plaintiffs Rearden LLC and Rearden Mova LLC (collectively “Rearden”) sought an award of actual damages and disgorgement of Defendant Walt Disney Pictures’ (“Disney”) profits from the 2017 film *Beauty and the Beast* (“*BATB*”). On December 14, 2023, the Court ruled that Plaintiffs did not have the right to a jury trial on the issue of disgorgement of profits, and that the jury’s verdict on that issue would be advisory. ECF No. 672.

At the conclusion of trial, the jury returned a verdict finding that (1) Disney vicariously infringed Rearden’s copyright when its vendor Digital Domain 3.0, Inc. (“DD3”) used the MOVA software to animate the face of the film’s computer graphics Beast character; and (2) Disney was liable for actual damages and disgorged profits. ECF No. 691.

The matter is now before the Court on the question of disgorgement of profits. Pursuant to the Court’s order, the parties submitted proposed findings of fact and conclusions of law on that issue, as well as briefs responding to each other’s proposals. Having considered the evidence presented at trial, the parties’ arguments, and the jury’s advisory verdict, and good cause appearing, the Court now finds and concludes on disgorgement of profits as follows:

United States District Court  
Northern District of California

1 **I. FINDINGS OF FACT**

2 **A. The Production of *Beauty and the Beast***

3 1. *BATB* is a live-action movie based on Disney’s 1991 animated film of the same  
4 name. TX1001, 1003; Tr. 1180-81.

5 2. Research and development for *BATB* began in December 2014; principal  
6 photography occurred May 18 to August 20, 2015; post-production work occurred August 31,  
7 2015 to January 31, 2017; and *BATB* was released on March 17, 2017. Tr. 1177, 1182-85.

8 3. Over 1,000 people and more than 200 vendors were involved in the production,  
9 including four main visual effects vendors: Framestore, Method Studios, Lola, and DD3.  
10 TX1052; Tr. 1183, 1186, 1203-05, 1285-86. DD3 created the computer-generated (“CG”) Beast  
11 and other visual effects. DD3 was not initially hired to create the Beast but was later chosen to do  
12 so because of its proprietary Direct Drive technology. Tr. 1285-87.

13 4. *BATB*’s visual effects budget was around \$69 million. TX1022; Tr. 1298. DD3  
14 was paid \$31 million for all its visual effects work. DD3 did not charge separately for use of  
15 MOVA,<sup>1</sup> but charged around \$23,000 for facial motion capture. *Id.*

16 5. DD3 copied MOVA into the random access memory (“RAM”) of computers it  
17 operated when working on *BATB*. Tr. 1176. DD3 used MOVA software to help capture facial  
18 performances of Dan Stevens and to process that data into a tracked mesh. Tr. 987-88, 1232-33,  
19 1482-85. Components other than MOVA software (e.g., hardware, know-how, actor, director)  
20 were needed to capture Stevens’s facial performance and process a tracked mesh. Tr. 991-93.

21 6. MOVA alone could not animate the CG Beast’s face. Tr. 760-61, 992. For  
22 example, MOVA does not capture the eyes or interior of the lips and mouth, which are necessary  
23 for a believable CG character. Tr. 763-64, 993-94, 996-97, 1193, 1485. Some portion of the  
24 nuance in Stevens’s facial movements was lost both after retargeting to the differently shaped  
25 Beast facial rig and also when hair was added to the Beast’s face. *Id.* at 995-98, 1192, 1250-51,  
26 1296, 1493, 1496. Rearden offered no evidence at trial that MOVA software was used to retarget

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<sup>1</sup> All references to MOVA are to the MOVA Contour software, the copyrighted work at issue.

1 captured data to the Beast facial rig. *See, e.g.*, Tr. 988, 995 (Rearden’s expert admitting the  
2 evidence he had seen indicated MOVA software was not used for retargeting).

3 7. Where it was used, MOVA was one step in a multi-step pipeline to animate the  
4 Beast’s face in certain shots. Steps that did not use MOVA included at least: creating the Beast’s  
5 facial rig, the on-set performance, re-targeting, animating, shot modeling, rotomotion, paint,  
6 character effects, lighting, environmental effects, and compositing. TX210, 1057, 1061, 1187,  
7 1189-1191, 1197-1199, 1202, 1204; Tr. 1233-34, 1257-1258, 1486-1502. Both sides’ technical  
8 experts agreed these non-MOVA steps were important to making the CG Beast realistic and  
9 convincing to an audience. Tr. 994-1001.

10 8. The non-MOVA steps required the skills of hundreds of highly trained artists and  
11 animators, dozens of other technologies and tools, and thousands of hours of work. Tr. 1234-35,  
12 1485, 1000-01. DD3 recorded over 169,000 hours to non-MOVA billing codes for Beast shots;  
13 1% of the total hours for Beast shots were recorded to MOVA billing codes. Tr. 1516-17.

14 9. The Beast appeared in 19% of the shots in the movie, and MOVA was not used for  
15 all of those. A tracked mesh, which is the MOVA output used by visual effects artists in the  
16 animation process, was delivered to DD3’s animation team for 9% of shots in the movie.<sup>2</sup> Many  
17 other elements besides the Beast’s face appear in those shots (e.g., his body and voice, other  
18 characters, setting, music, and costumes). TX1061; Tr. 1502-04, 1549-50.

19 10. DD3’s task codes for shots where a tracked mesh was delivered to the pipeline  
20 show 4.6-12% of tasks for those shots may be MOVA-related. The high-end of this range likely  
21 overstates the percentage of such tasks. To calculate the percentage of MOVA-related tasks in the  
22 movie, Disney’s technical expert, Dr. Stephen Lane, multiplied 4.6-12% by the percentage of  
23 Beast shots in the movie (19%), yielding a range of .9-2.4%. TX1057, 1061; Tr. 1517-18.

24 11. The quality of shots made without MOVA is indistinguishable from the quality of  
25 shots made with MOVA. TX210, 1012, 1015, 1176, 1179, 1381-97, 1404-09, 1499; Tr. 1505-09,  
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27  
28 <sup>2</sup> There is no evidence DD3 delivered a tracked mesh to the pipeline after issuance of the preliminary injunction in the *SHST* litigation. TX1381-1397; Tr. 1518-19.

1 1255-58.<sup>3</sup> A comparison of shot versions before and after a tracked mesh was delivered shows  
2 little quality difference and significant expressive detail added by steps that did not involve  
3 MOVA. TX1170-72, 1176-79, 1181-82, 1184-86; Tr. 1255-59, 1509-13.

4 12. MOVA can theoretically save facial animation time, but the data shows it did not  
5 do so for *BATB* for reasons including: the shapes of Stevens's and the Beast's faces are very  
6 different; the Beast's fur caused much of the MOVA-captured expression to be lost; and Stevens's  
7 performance in the MOVA rig did not perfectly re-create his on-set performance. Tr. 1513-16.  
8 On average, it took DD3 the same time to animate one second of footage of the Beast in shots that  
9 used MOVA as those that did not. *Id.* at 1514-15.

10 13. Because MOVA did not produce higher quality Beast shots or save time in creating  
11 those shots, and because MOVA accounted for less than 1% of the work on the movie, Dr. Lane  
12 concluded MOVA contributed little to no net value to the Beast's on-screen appearance. Tr. 1519-  
13 20. No Rearden expert disputed Dr. Lane's opinions about the quality of non-MOVA shots, the  
14 lack of time-savings, or the amount of MOVA versus non-MOVA work to create Beast shots.

15 **B. The Marketing of *Beauty and the Beast***

16 14. Disney's marketing expert, Kristie Kershaw, analyzed Disney's \$129 million  
17 worldwide marketing campaign for *BATB*, which included creative advertising (trailers,  
18 commercials, and print advertising), digital and social campaigns, publicity appearances, brand  
19 partnerships, stunts and events, and media. Tr. 1382, 1387. The Court found Ms. Kershaw's  
20 testimony to be very credible, given her substantial experience in the film industry and the  
21 specificity and relevance of the data on which she based her opinion.

22 15. Disney's overall marketing strategy is set forth in its marketing plan, which does  
23 not refer to MOVA. TX1070; Tr. 1388-89, 1393-94. Disney's campaign focused on three  
24 primary elements: nostalgia and affection for the 1991 animated movie; the cast's star power  
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26 <sup>3</sup> MOVA data was not used for the facial expressions built into the Beast facial rig and used for  
27 hand-animation. Tr. 1246-48, 1252. Mr. Menache opined MOVA was so used, but he did not  
28 confirm that by looking at the facial rig. *Id.* at 989-90. Darren Hendler, who supervised the rig  
team, credibly explained MOVA-captured expressions were not so used, *Id.* 1246-48, 1252, and  
Dr. Lane found no evidence that MOVA data was used for the Beast facial rig. *Id.* 1487-88.

1 (most notably that of Emma Watson); and fidelity to the 1991 movie. Tr. 1383.

2 16. The May 2016 *BATB* “teaser trailer” broke records for most views in 24 hours; the  
3 Beast is not visible in that trailer. TX1487; Tr. 1397. The November 2016 “theatrical trailer”  
4 likewise broke 24-hour viewing records. TX1043; Tr. 1398. This trailer includes some shots of  
5 the Beast but does not refer to *MOVA*. Tr. 1399. There was no evidence of any contemporaneous  
6 press statements about *MOVA* and the trailer. *Id.* Disney also marketed *BATB* through numerous  
7 commercials, social media, and promotional appearances by the movie’s talent. TX1421, 1422,  
8 1426, 1458, 1230; Tr. 1400-04. There is no evidence that any commercial or part of the social  
9 media campaign promoted the use of *MOVA* to animate the Beast. Tr. 1400-04.

10 17. *MOVA* was mentioned at a press conference promoting the movie, in some  
11 interviews with some cast members and the director, and in Disney’s press kit for the movie.  
12 TX141, 148, 247, 363. *MOVA* was one of numerous topics discussed at these events and in these  
13 documents. Tr. 1405-08. Rearden offered no evidence of resulting press mentions of *MOVA* or  
14 that consumers were aware of, or motivated to see *BATB* by, these events/documents. Ms.  
15 Kershaw found that *MOVA* was rarely mentioned in the press. *See id.* at 1409.

16 18. Ms. Kershaw performed a “social listening” study and reviewed audience-survey  
17 data from when *BATB* was released. Tr. 1409-10, 1417-19. Neither of these indicated that  
18 *MOVA* had a direct connection to consumers paying to see *BATB*. *Id.* at 1422, 1428.

19 a. Ms. Kershaw conducted her “social listening” study using Infegy, which is  
20 third-party software used by major companies (e.g., Pepsi) and advertising agencies to analyze  
21 marketing campaigns. Tr. 1410-11. Ms. Kershaw used Infegy to analyze 15.5 million mentions in  
22 posts to popular social media sites (e.g., Twitter and Instagram) from November 13, 2016 (just  
23 after the first theatrical trailer’s release) to April 28, 2017 (around six weeks after the premiere)  
24 that included “Beauty and the Beast” or “#BeautyandtheBeast.” *Id.* at 1409-13. Ms. Kershaw ran  
25 word searches against these posts. *Id.* at 1412-14. “*MOVA*” was mentioned 28 times (.0002%);  
26 “*MOCAP*” was mentioned in 859 posts (006%). *Id.* at 1416-17. Ms. Kershaw could not search all  
27 of the posts for “Beast” because that word is part of the movie’s title and thus was included in the  
28 search that yielded the data set. *Id.* at 1414-15. Ms. Kershaw therefore hand-coded a

1 representative sample of 10,000 of the 15.5 million posts for references to “Beast.” *Id.* Ms.  
2 Kershaw found that the Beast was mentioned in 2.5% of the posts. *Id.* at 1423. Since there was  
3 more to the Beast than MOVA, and since “MOVA” was mentioned in .0002% of posts, Ms.  
4 Kershaw concluded the copying of MOVA software, to the extent it contributed anything, could  
5 not have contributed to anything more than 2.5% of audience interest in *BATB*. *Id.* at 1417, 1422-  
6 23.

7           b. Ms. Kershaw also reviewed the results of surveys of opening weekend in-  
8 theater audiences conducted by National Research Group (“NRG”), a well-known research firm,  
9 and found these results corroborated the results of her social listening study. TX1039; Tr. 1418-  
10 20, 1427. NRG asked survey members to identify, from a list of choices, why they decided to see  
11 *BATB*. Tr. 1420. The primary reasons identified were fandom for the 1991 animated movie, that  
12 Emma Watson played the character of Belle, and interest in the story. *Id.* at 1420-21, 1425. Other  
13 reasons included the Disney brand, the music, the overall cast, and “visual effects” generally. *Id.*  
14 at 1426. The survey did not list “MOVA” or facial motion capture, indicating Disney did not  
15 believe these were marketing priorities. *Id.* at 1421. Based on the NRG data, Ms. Kershaw  
16 concluded that audience interest in visual effects generally, not just animation of the Beast’s face,  
17 contributed 5-10% to audience interest in *BATB*. *Id.* at 1425-27.

18           **C. Disney’s Profits from *Beauty and the Beast***

19           19. Disney’s damages expert, Dr. Robert Wunderlich, found that Disney’s audited  
20 accounting statements for *BATB* accurately represented Disney’s revenue (\$1,013,813,849);  
21 deductible costs (\$799,179,465, including direct and indirect costs, back-end payments, and  
22 taxes); and total profits (\$214,634,384) through September 2023. Tr. 1561-65; *see also* TX388.

23           20. Rearden’s expert, Philip Fier, found virtually the same revenue (\$1,013,813,851)  
24 based on Disney’s accounting statements. Tr. 1169-70. Mr. Fier opined that Disney’s future  
25 profit (September 2023-2047) would be \$10,919,972. *See id.* at 1165-1167. Dr. Wunderlich  
26 adopted this estimate of future profit and added it to his calculation of profits through September  
27 2023, bringing total profits through 2047 to \$225,544,356. *Id.* at 1567, 1588-89. Mr. Fier offered  
28 a different total profits number because he did not include certain deductible expenses (namely,

1 production and distribution overhead costs Disney actually paid), calculated taxes in a different  
2 way, and added interest to Disney's profits. Tr. 1157-1167. The advisory jury adopted Dr.  
3 Wunderlich's total profits opinion, finding Disney's total profit was \$225,544,356. ECF No. 691.  
4 This Court makes the same factual finding.

5 21. Dr. Wunderlich offered two methodologies for determining profits attributable to  
6 DD3's infringement, as opposed to other factors. The first was the "investment-based approach,"  
7 based on the economic concept that the relative cost of a component (here, MOVA) of a larger  
8 product (here, *BATB*) reasonably approximates that component's relative contribution to the  
9 profits generated by the larger product. Tr. 1584-86. Because DD3 did not charge for MOVA  
10 services on *BATB*, Dr. Wunderlich used several approaches to estimate the cost to Disney of just  
11 MOVA services. *Id.* at 1586. Dr. Wunderlich adopted the highest estimate from those different  
12 approaches, \$835,460, which was higher than the costs DD3 actually incurred to provide the  
13 services and more than double the highest amount Rearden has ever received for providing  
14 MOVA services on any film. *Id.* at 1586, 1590-91. Dr. Wunderlich determined that the total cost  
15 to Disney to produce and distribute *BATB* was \$546,776,486 and, thus, that the cost of MOVA  
16 accounted for 0.153% of the overall cost of producing and distributing *BATB*. *See id.* At 1587;  
17 TX388.

18 22. Dr. Wunderlich's alternative apportionment methodology, the "contribution-based  
19 apportionment approach," apportioned profits by using inputs from Dr. Lane's and Ms. Kershaw's  
20 testimony. Tr. 1579. Dr. Lane determined that 4.6-12% of DD3's tasks for shots of the Beast  
21 were related to MOVA. *Id.* at 1580. Dr. Wunderlich adopted the high end of this range, 12%, for  
22 his own apportionment analysis. *Id.* 1580-81. Ms. Kershaw opined that, at most, 2.5% of  
23 filmgoers paid to see *BATB* because of the Beast character as a whole. *Id.* 1423-24. Multiplying  
24 these two numbers, Dr. Wunderlich opined that no more than 0.30% of *BATB* profits were  
25 attributable to DD3's copying of MOVA software. *Id.* at 1581. Dr. Wunderlich testified that  
26 0.30% likely overstated MOVA's contribution, because Ms. Kershaw's underlying 2.5% estimate  
27 was based on the Beast as a whole and because Dr. Wunderlich used the high end of Dr. Lane's  
28 range (12%). *Id.* 1581-82.

1           23. Dr. Wunderlich applied both of his apportionment percentages to the amount of  
2 profit he found Disney would earn through 2047. He opined that the profits attributable to MOVA  
3 ranged from \$345,098 (investment-based apportionment of 0.153%) to \$676,663 (contribution-  
4 based apportionment of 0.30%). Tr. 1588-90. Dr. Wunderlich determined that this range was  
5 reasonable based on several benchmarks: (1) the highest amount Rearden ever charged for the use  
6 of MOVA (about \$386,000); (2) estimates of what DD3 could have charged for MOVA services  
7 on *BATB* (\$245,000-\$835,000); and (3) the amount paid to Mr. Stevens, who played the Beast  
8 (\$400,000 base compensation and about \$500,000 in bonuses). *Id.* at 1590-91.

9 The advisory jury found that \$225,199,258 was the amount of *BATB* profits not attributable to  
10 DD3's infringement, and that \$345,098 (the low end of Dr. Wunderlich's range) was the amount  
11 of profits attributable to DD3's infringement. ECF No. 691.

## 12 **II. CONCLUSIONS OF LAW**

13           1. Section 504 of the Copyright Act provides the copyright owner may recover (1) its  
14 "actual damages" and (2) "any profits of the infringer that are attributable to the infringement and  
15 are not taken into account in computing the actual damages." 17 U.S.C. § 504(a)(1), (b). The first  
16 is a legal remedy that was submitted to the jury; the second (also called "indirect profits") is an  
17 equitable remedy for the Court, although the Court permitted the jury to render an advisory verdict  
18 on that issue here. ECF No. 672.

19           2. In determining indirect profits, the Court "make[s] its own independent assessment  
20 of the issues." *Softketeers, Inc. v. Regal W. Corp.*, No. 8:19-CV-00519-JWH (JDEx), 2022 WL  
21 17968835, at \*3 (C.D. Cal. Dec. 22, 2022) (citation omitted). The Court finds it appropriate, as  
22 part of its independent analysis, to consider the advisory jury's "contemporaneous and considered"  
23 assessment of the "relative credibility" of witnesses and the persuasiveness of evidence. *Clawson*  
24 *v. Mountain Coal Co.*, No. 01-CV-02199-MSK-MEH, 2007 WL 201253, at \*11 (D. Colo. Jan. 24,  
25 2007), *aff'd sub nom. Dillon v. Mountain Coal Co.*, 569 F.3d 1215 (10th Cir. 2009); *Kane v.*  
26 *PaCap Aviation Fin., LLC*, No. CV 19-00574-JAO-RT, 2023 WL 5499994, at \*3 (D. Haw. Aug.  
27 25, 2023) (advisory juries "allow[] the judge to get some appreciation for the common sense or  
28 standard of the community" (citation omitted)).



1           3.       “Section 504(b) sets forth the evidentiary burdens for recovery of profits.” *Polar*  
2 *Bear Prods., Inc. v. Timex Corp.*, 384 F.3d 700, 711 (9th Cir. 2004). “[T]he copyright claimant  
3 must first show a causal nexus between the infringement and the gross revenue.” *Id.* If a causal  
4 nexus is shown, the infringer bears the burden of proving deductible expenses and “apportioning  
5 the profits that were not the result of infringement.” *Id.*

6           4.       **Causal Nexus.** As a threshold matter, Rearden must establish “a legally significant  
7 relationship” between Disney’s gross revenues from *BATB* and the infringement. *Polar Bear*  
8 *Prods.*, 384 F.3d. at 711; *Mackie v. Rieser*, 296 F.3d 909, 914 (9th Cir. 2002) (“[C]opyright holder  
9 must establish the existence of a causal link [to infringement] before indirect profits damages can  
10 be recovered”). Rearden must present “concrete evidence” connecting consumers’ decisions to  
11 pay to see *BATB* with the infringement. *Mackie*, 296 F.3d at 916. The Court concludes Rearden  
12 proved a causal nexus.

13           5.       **Gross Revenues.** Rearden met its burden of proving Disney’s gross revenues from  
14 *BATB* were \$1,013,813,849. TX388.

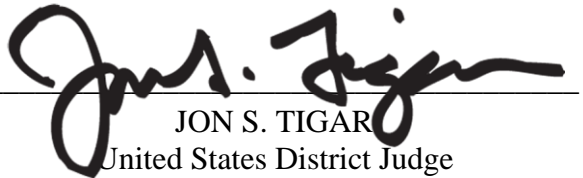
15           6.       **Deductible Expenses & Profits.** Disney met its burden of proving its deductible  
16 expenses for *BATB* (including direct and indirect costs, back-end payments, and taxes) were  
17 \$799,179,465. *See* TX388; Tr. 1561-65. The Court concludes Disney’s net profits from *BATB*  
18 were \$214,634,384 through September 2023 and \$225,544,356 through 2047. The Court’s  
19 independent conclusion is consistent with the advisory jury’s verdict. ECF No. 691.

20           7.       **Profits Attributable to Other Factors.** The Court concludes that Disney met its  
21 burden of proving the profits from *BATB* were substantially attributable to factors other than the  
22 infringement, including but not limited to: fanship for the 1991 animated movie; Emma Watson’s  
23 portrayal of Belle; the story; the Disney brand; the music; the overall cast; and the thousands of  
24 individuals and hundreds of vendors that worked on the movie for more than two years, including  
25 hundreds of thousands of hours of work on the Beast that did not involve MOVA, among others.  
26 Dr. Wunderlich’s apportionment approaches reasonably encapsulated these other factors and  
27 produced results consistent with other market benchmarks. Rearden presented no competing  
28 apportionment opinion. Rearden’s argument to the advisory jury that 8.9% of profits should be

1 apporportioned to the infringement was contrary to the record evidence.<sup>4</sup> The advisory jury appears  
2 to have accepted Dr. Wunderlich's lowest apportionment percentage by attributing \$345,098 of  
3 *BATB* profits to the infringement. Upon independent review, the Court concludes the same. Thus,  
4 the Court finds Rearden is entitled to disgorgement of profits in the amount of \$345,098.

5 **IT IS SO ORDERED.**

6 Dated: April 19, 2024

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8 JON S. TIGAR  
United States District Judge

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United States District Court  
Northern District of California

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27 <sup>4</sup> Rearden's argument to the advisory jury was premised on the delivery of a tracked mesh for  
28 8.9% of shots in *BATB*. But it was undisputed that those shots included many elements other than  
the Beast's face; that MOVA alone cannot create a realistic CG character; and that the tracked  
mesh was a preliminary step in an extensive pipeline to animate the Beast's face. This record does  
not support attributing to MOVA 100% credit for the 8.9% of shots for which tracked mesh was  
delivered, which is what Rearden's argument logically would require.