IN THE COURT OF CHANCERY OF THE STATE OF DELAWARE

LONGPATH CAPITAL, LLC, a Delaware limited liability company, Petitioner, v. RAMTRON INTERNATIONAL CORPORATION, a Delaware corporation, Respondent.	)))))))))))	C.A. No. 8094-VCP

MEMORANDUM OPINION

Date Submitted: March 3, 2015
Date Decided: June 30, 2015

David A. Jenkins, Esq., Laurence V. Cronin, Esq., SMITH, KATZENSTEIN & JENKINS LLP, Wilmington, Delaware; *Attorneys for Petitioner*.

A. Thompson Bayliss, Esq., Sara E. Hickie, Esq., ABRAMS & BAYLISS LLP, Wilmington, Delaware; *Attorneys for Respondent.*

PARSONS, Vice Chancellor.

In this appraisal action, the petitioner asks the Court to determine the fair value of its shares in the respondent. On November 10, 2012, a third party acquired the respondent in a hostile cash merger for $3.10 per share. The deal had an equity value of approximately $110 million and paid a 71% premium over the respondent's unaffected stock price of $1.81.

The petitioner acquired its shares after the announcement of the merger and demanded appraisal pursuant to 8 *Del. C.* § 262. The respondent contends the merger price less synergies offers the most reliable measure of the fair value of its shares. That methodology, as applied by the respondent's expert, yields a value of $2.76 per share. The petitioner's expert, relying on a combination of a discounted cash flow ("DCF") analysis and a comparable transactions analysis, contends that the fair value is $4.96 per share.

For the reasons that follow, I conclude that a DCF analysis is not an appropriate method of determining fair value in this instance. The utility of a DCF ceases when its inputs are unreliable; and, in this instance, I conclude that the management projections that provide the key inputs to the petitioner's DCF analysis are not reliable. The parties agree that there are no comparable companies. The petitioner relies, in part, upon a comparable transactions approach, but I conclude that his two-observation data set does not provide a reasonable basis to determine fair value. Although the petitioner thoroughly disputes this point, I conclude that the sales process in this instance was thorough and that the transaction price less synergies provides the most reliable method

of determining the fair value of the petitioner's shares. The respondent, however, has not shown that the synergies in fact amounted to $0.34 per share, as it claims. Instead, I adopt the petitioner's estimate of $0.03 per share in synergies, resulting in a fair value of $3.07 per share.

I. BACKGROUND

I begin by providing a brief overview of the parties, the respondent and its business, and the process leading up to the merger.[1] I delve more deeply into several of these and related topics in subsequent Sections.

A. The Parties

Petitioner, LongPath Capital, LLC ("LongPath"), is an investment vehicle that began acquiring shares of the respondent in mid-October 2012, about a month after the announcement of the merger.[2] Overall, LongPath timely demanded and perfected its appraisal rights as to 484,700 shares of common stock in the respondent.[3]

Respondent, Ramtron International Corporation ("Ramtron" or the "Company"), is a fabless semiconductor company that produces F-RAM. A "fabless" semiconductor company is one that does not manufacture the silicon wafers used in its products, but

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[1] The factual record is drawn, in part, from the testimony presented at trial. Citations to such testimony are in the form "Tr. # (X)" with "X" representing the surname of the speaker, if not clear from the text. Exhibits will be cited as "JX #" and facts drawn from the parties' pre-trial Joint Stipulation are cited as "JS ¶ #."

[2] Tr. 10 (Davidian).

[3] JS ¶ 1.

instead, outsources that task to a separate company known as a "fab" or a "foundry."[4] RAM stands for random access memory, a ubiquitous component of computers. F-RAM is ferroelectric RAM.[5] The benefits of F-RAM are that it has fast read and write speeds, can be written to a high number of times, and consumes low power.[6] Importantly, F-RAM will retain memory when power is lost.[7]

Nonparty Cypress Semiconductor Corporation ("Cypress") issued a bear hug letter to Ramtron on June 12, 2012, offering to buy all of its shares for $2.48 per share.[8] After Ramtron's board rejected the offer as inadequate, Cypress initiated a hostile tender offer on June 21, 2012, at $2.68 per share.[9] Ramtron and Cypress eventually reached an agreement on a transaction price of $3.10 per share and signed a merger agreement on September 18, 2012.[10] Following a subsequent tender offer—apparently in an unsuccessful effort to acquire 90% or more of the outstanding stock or at least solidify

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4 *Id.* ¶ 4.

5 Tr. 184 (Davenport).

6 JS ¶ 2.

7 Tr. 281 (Rodgers).

8 JS ¶ 11.

9 *Id.* ¶ 13.

10 *Id.* ¶ 18.

Cypress' stock holdings—and a stockholder vote, the long-form merger closed on November 20, 2012 (the "Merger").[11]

B. Ramtron's Operative Reality

Throughout this litigation, Respondent has portrayed Ramtron as a struggling company unlikely to be able to continue as a business had the transaction with Cypress not concluded successfully. Petitioner, by contrast, describes Ramtron as a company with strong patent and intellectual property protection of its core products, a successful new management team, and excellent business prospects. Indeed, in relying on the management projections, Petitioner characterizes Ramtron as a company on the verge of taking off like a rocket. Perhaps unsurprisingly, I find that Ramtron's operative reality at the time of the Merger was somewhere in between these practically polar opposite characterizations.

1. Ramtron's foundry situation

As a fabless semiconductor company, Ramtron's relationships with its foundries were vitally important. Indeed, Ramtron depended on its foundry to manufacture its products. At the time of the Merger, Ramtron's primary foundry was Texas Instruments ("TI").[12] Ramtron's contract with TI provided that, if TI decided to terminate the contract, it would have to provide three additional years of products to Ramtron. By

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[11] *Id.* ¶ 23.

[12] *Id.* ¶ 5.

contrast, in the event of a change-in-control transaction at Ramtron, TI could stop providing foundry services after only ninety days.[13]

Semiconductor foundries were the subject of a substantial amount of testimony at trial. As will be seen, the subject of foundries relates to both the reliability of the management predictions and the disputed cause of Ramtron's poor performance in 2012. Gery Richards, Ramtron's CFO at the time of the Merger,[14] testified that Fujitsu previously served as the Company's primary foundry. In 2009, Fujitsu gave Ramtron a "last-time buy" notice under the relevant contract, indicating that Fujitsu intended to terminate its foundry relationship with Ramtron in two years.[15]

The testimony at trial made clear that transitioning foundries is not a simple process. Semiconductors are complex products. In fact, even the silicon wafers from which the semiconductors are created are not commodities but instead vary by company.[16] Additionally, each foundry's technology differs and F-RAM, being a relatively unique product, complicates the process further. Thus, transitioning to a new

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[13] JX 322, JX 324.

[14] Before assuming the CFO position, Richards previously had served as the Company's controller. He appears to have started working at Ramtron in 2004. Tr. 49. After the Merger, he worked for Cypress for five months until March 2013. *Id.* at 22-23.

[15] *Id.* at 48-49. Apparently Fujitsu did not definitively terminate the foundry relationship, but instead, was moving its plant to a new location and Ramtron determined that the expense of transitioning to the new location outweighed the benefits.

[16] *Id.* at 291 (Rodgers).

foundry requires understanding the foundry's manufacturing technology and how it interacts with the semiconductors as designed, then modifying the product design to eliminate any resulting errors, then completing several rounds of product testing followed by further design modifications to eliminate any previously undiscovered errors, and then allowing the customers to evaluate the product before finally moving to full-scale production.[17] Unlike, for example, consumer RAM that one could purchase at an electronics store for a PC and then, depending on the model, simply "plug and play," Ramtron's F-RAM often was designed into the product being created by another manufacturer, thus inhibiting Ramtron's ability to unilaterally change its products in any significant way. According to T.J. Rodgers, the CEO of Cypress, even for a noncontroversial shift of "going to a different foundry, to change one of your products, you're looking at two years plus."[18]

In fact, Ramtron's own track record of foundry transitions suggests that two years probably is a significant underestimate. When Fujitsu gave Ramtron a last-time buy notice in 2009, Ramtron already had been attempting to develop a second foundry relationship with TI. The effort of transitioning to TI had begun in 2004 and took seven

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[17] *Id.* at 291-92 (describing the process of transitioning foundries). The Company's products primarily, if not entirely, were for commercial customers. The F-RAM often was "designed into" the customer's end product.

[18] *Id.* at 292. Rodgers also suggested that Ramtron's products had design flaws that increased the difficulty of transitioning.

years to complete.[19] That transition was not smooth, resulting in product shortages that caused Ramtron to place its customers on allocation.[20] Despite the difficulty of transitioning from Fujitsu to TI, Ramtron succeeded, eventually, in obtaining a reliable new foundry.

To increase its flexibility and reduce its dependence on TI, Ramtron sought to develop a second foundry relationship with IBM. That effort, however, never succeeded. Thomas Davenport, Ramtron's Vice President of Technology at the time of the Merger,[21] described the Company's attempt to work with IBM. Davenport headed up a team of six people that worked from 2009 until spring 2012, attempting to get IBM up and running as a second Ramtron foundry. They incurred $17 million in direct costs in addition to $16 million in capital equipment purchased by Ramtron and provided to IBM to enable it to produce F-RAM.[22] But, in what Davenport considered a "huge personal disappointment,"[23] the integration project failed and Ramtron never achieved a single

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[19] Tr. 49 (Richards).

[20] *Id.* at 50-52 (Richards); *id.* at 187-88 (Davenport).

[21] Davenport began working for Ramtron in 1986. He started as an equipment engineer and worked his way up to the Vice President position. He currently is employed by Cypress as the Vice President of Technical Staff. Tr. 183.

[22] *Id*. at 198-99; JX 128.

[23] Tr. 198.

milestone. To put the IBM investment in context, in 2011 Ramtron had approximately $66 million in revenue.[24]

The witnesses at trial uniformly attested to the difficulty of transitioning foundries.[25] Ramtron's own experience with transitioning to TI and its failed attempt to develop IBM as a foundry confirm this fact. Nevertheless, on July 20, 2012, about a month after Cypress launched its hostile bid for Ramtron, Ramtron entered into a manufacturing agreement with ROHM Co., Ltd. ("ROHM"), a Japanese company, to act as Ramtron's second fab.[26] Ramtron's management's five-year forecasts incorporate the purported cost savings that would derive from having ROHM operate as a second, or even the primary, foundry for Ramtron.

2. Ramtron's business and finances

Ramtron's board of directors installed Eric Balzer as the Company's new CEO in January 2011.[27] He hired Pete Zimmer to lead the Company's sales department. At Zimmer's recommendation, Scott Emley was hired to lead Ramtron's marketing department. Both Zimmer and Emley had worked at TI and joined Ramtron sometime in

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[24] JX 215 [hereinafter "Jarrell Rpt."] Ex. 8.

[25] Tr. 49-50 (Richards); *id.* at 198 (Davenport) (noting that the difficulty and risk of transitioning foundries is "substantially higher" in the case of transferring a specialty process like F-RAM if the new foundry has no experience with F-RAM); *id.* at 291 (Rodgers) (stating that "in general, switching foundries is a big deal" and that the process requires a company to "in effect, change the product").

[26] JS ¶ 5.

[27] *Id.* ¶ 6.

2011.[28] Richards officially became CFO in late 2011 or 2012.[29] Thus, as of the time of the Merger, most of Ramtron's executives had been in their positions for less than two years and, in the case of Emley and Zimmer, about a year.

The difficult transition from Fujitsu to TI caused problems for Ramtron's day-to-day business throughout 2011 and into 2012. A brief overview of Ramtron's sales process is required in order to understand that effect. Ramtron sold some of its product directly to customers, but the majority was sold to distributors who in turn sold the products to the end users.[30] Ramtron also recognized revenue on a point-of-purchase basis instead of a point-of-sale basis. Under the point-of-purchase system, revenue is recognized when the product is shipped to a distributor. By contrast, under the point-of-sale method, revenue is only recognized when the product is sold to the end user, whether directly by the Company or indirectly by the distributor.[31]

Theoretically, the two systems *should* arrive at the same results. Unless the distributors are buying exactly the same amount of inventory as they are selling during each financial reporting period, however, the systems will result in revenue being recognized at different times. To take a simplistic example, suppose a company sells 100% of its products through distributors and that the company develops a new product

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[28] Tr. 63-64 (Richards).

[29] *Id.* at 22.

[30] *Id.* at 158 (Richards).

[31] *Id.* at 30-31 (Richards).

in the first quarter. The following chart provides an example of how the company would recognize revenue under the two different regimes assuming the company sold 100 units of the product to the distributors at $1 each over the course of a year:

Revenue Recognition Comparison				
	Revenue Recognized			
Quarter	**Distributors**		***Point-of-Purchase Method***	***Point-of-Sale Method***
	Buy	**Sell**		
Q1	20	0	$20	$0
Q2	30	10	$30	$10
Q3	40	20	$40	$20
Q4	10	30	$10	$30

This comparison deliberately highlights an important dispute between the parties in this case: the point-of-purchase method makes it difficult to forecast actual demand because the distributors provide a buffer. Indeed, in this example, under the point-of-purchase method, demand appears to be falling, while under the point-of-sale method, it appears to be rising.

Several of the witnesses testified that they believed Ramtron's point-of-purchase revenue system made it more difficult accurately to forecast future sales.[32] The revenue recognition system matters for two reasons. First, as already mentioned, distributor

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[32] *Id.* at 30 (Richards); *id.* at 192 (Davenport); *id.* at 299-302 (Rodgers); *id.* at 396-97 (Buss).

activity can mask actual demand. The difficult transition from Fujitsu to TI forced Ramtron to place its customers on allocation in or around 2011. Because Ramtron's F-RAM already was designed into many of their customers' products, those customers needed to ensure that they would have a sufficient supply of F-RAM. After they were placed on allocation, many customers apparently increased their orders accordingly.[33] For example, a customer that was allocated 80% of its ordered amount potentially would order five units for every four that it actually needed. This increase in orders led Ramtron to increase the number of wafers it was ordering from TI. The upshot of this chain of events was a massive inventory bubble, over-recognition of revenue, and a resulting cash crunch for Ramtron because it then had to pay for the extra inventory it ordered.[34] Because of its point-of-purchase revenue recognition, Ramtron recognized these additional distributor orders as revenue, even though the over-ordering was not reflective of "real" underlying demand, but instead, at least in part, was an effort of the customers to game the allocation system.

The second reason that Ramtron's point-of-purchase revenue recognition system is relevant is because it allows management to alter the Company's revenue by forcing more inventory into the distribution channels. This practice is known as "channel stuffing." As discussed in more detail in Section III.A *infra*, I find that Ramtron's

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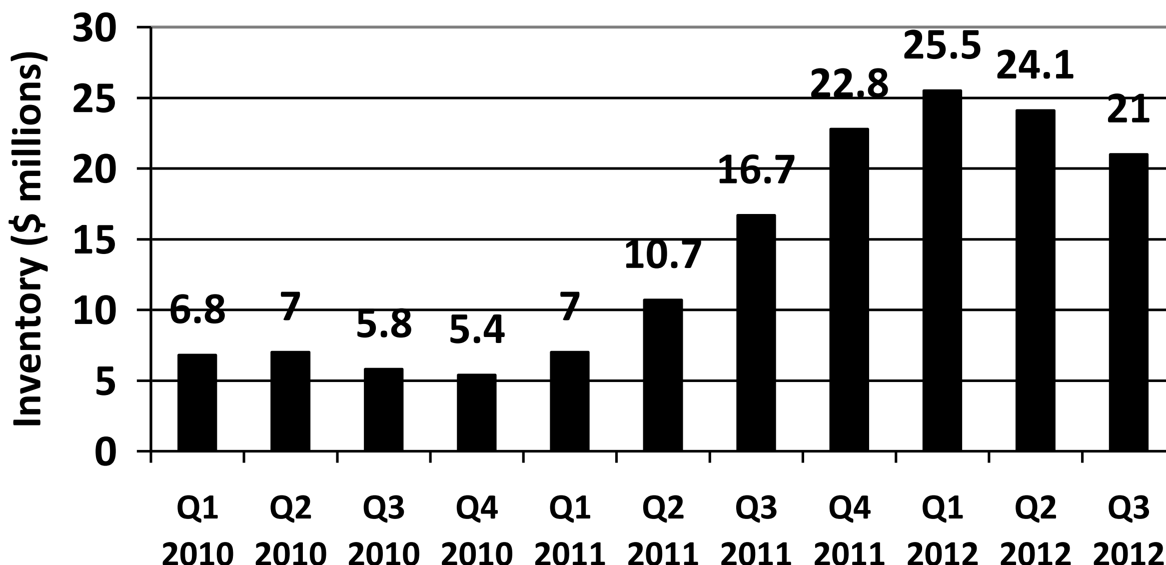
[33] *Id.* at 50-51 (Richards); *id.* at 187-88 (Davenport).

[34] *Id.* at 52 (Richards) (describing the resulting difficulty when TI would not extend credit for the over-order of wafers).

management did stuff the channel in the first quarter of 2012, thereby distorting the company's revenue.

The combination of over-orders from customers that were placed on allocation and Ramtron's stuffing of the channel led to a massive build-up of inventory. The chart below[35] shows the amount of inventory Ramtron had accumulated as of the time of the Merger. Because of its point-of-purchase accounting system, Ramtron already had recognized this inventory as revenue. As this chart shows, in the first quarter of 2012, Ramtron had 3.6 times as much inventory as a year earlier.



This inventory needed to be financed, which took a serious toll on Ramtron's cash position. Ramtron's primary lender was Silicon Valley Bank ("SVB"). Throughout 2011

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[35] The data in this chart is drawn from Exhibit 5 to the Jarrell Report.

and 2012, the years affected by the inventory bubble, Ramtron either missed or needed to renegotiate its loan covenants repeatedly. For example, the Company missed its April 2011 liquidity covenant and received a forbearance for May of that year.[36] A July 7, 2011 Form 8-K filing states that on June 30, 2011, Ramtron entered into a Default Waiver and Fifth Amendment to its loan agreement with SVB, an amendment that cost the Company $20,000.[37]

Around this time, Cypress began expressing an interest in Ramtron. On March 8, 2011, Cypress made a non-public written offer to Ramtron for $3.01 a share.[38] Ramtron rejected the offer as inadequate later that month. The offer represented a 37% premium over the March 8 closing price of Ramtron's stock.[39] Rodgers described the offer as including "a high market premium to say we were serious and not to try to squeeze on them."[40]

After rebuffing Cypress and renegotiating its bank covenants, Ramtron still needed capital. SVB apparently had shifted to lending to Ramtron on an asset-backed basis, meaning that its loans were collateralized by the Company's receivables instead of being unsecured. Ramtron considered borrowing from other lenders, but concluded that

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36 JX 22; Tr. 25 (Richards).

37 JX 24.

38 JS ¶ 8.

39 JX 14.

40 Tr. 285.

the cost was too high.[41] So, in July 2011, Ramtron launched a secondary public offering of 4,750,000 shares, which was roughly 20% of its outstanding shares.[42] The secondary offering occurred at $2 per share, with a net to Ramtron of $1.79 after underwriting commissions and other charges.[43] The Company used the proceeds of this equity raise largely for working capital to pay off its excess inventory.[44]

As the above chart shows, Ramtron's inventory continued to increase throughout 2011. Despite the recent equity raise, Ramtron soon fell short on cash again. At least one internal Company email from January 2012 suggests that the first quarter covenants would be tight.[45] And, by spring 2012, the Company was in a cash crunch of sorts. Richards emailed Davenport on March 3, 2012, that "we are basically running on fumes in regards to cash management and related bank covenants, which we just announced new ones yesterday."[46] These cash management problems continued after Cypress announced its hostile bid for Ramtron on June 12, 2012. Shortly after the merger agreement was signed, Richards provided Brad Buss, Cypress' then-CFO, with cash

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[41] *Id.* at 54-55 (Richards).

[42] *Id.* at 54 (Richards).

[43] JS ¶ 9.

[44] Tr. 55 (Richards).

[45] JX 35.

[46] JX 43; Tr. 28 (Richards: explaining that this reference to the new bank covenants related to the fact that Ramtron recently had renegotiated its covenants yet again).

forecasts that showed the Company would go cash negative on October 26, 2012.[47] In response, Cypress promptly began funding Ramtron.[48]

Overall, the evidence shows that Ramtron continually had difficulty meeting its bank covenants, but that SVB seemed willing to renegotiate those covenants. There is no evidence that SVB ever sought to call its loans or that the Company actually faced a serious risk of foreclosure. Richards concisely summed up Ramtron's relationship with SVB as "rocky in regards to the covenants" but that he "had a good relationship with the bankers."[49] From the evidence of record, therefore, I conclude that the Company was cash-strapped and struggling from a liquidity standpoint at the time of the Merger, but that Ramtron was not, as Cypress suggests, a bankruptcy waiting to happen.

C. The Merger

On June 12, 2012, Ramtron issued a public letter declaring its intent to acquire Ramtron for $2.48 a share.[50] Interestingly, the $2.48 offer reflected the same 37% premium to market as Cypress' March 2011 offer; the decrease in price corresponded to

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[47] JX 151.

[48] Tr. 410 (Buss).

[49] *Id.* at 30.

[50] JS ¶ 11.

the fall in Ramtron's stock price.[51] Ramtron rejected that offer as inadequate in a June 18 press release and announced that it had begun exploring strategic alternatives.[52]

Only two days after Cypress announced its public bid, Balzer, Ramtron's CEO, ordered the creation of new long-term management projections (the "Management Projections"). While, as discussed *infra*, the parties vigorously dispute the accuracy of Ramtron's prior forecasts, there seems to be no dispute that the Company's management had not previously created multi-year forecasts and instead generally only created five-quarter forecasts.[53] Balzer oversaw the team in charge of creating the new management projections, which consisted of Richards, Brian Yates, who worked for Richards, Zimmer, and Emley.[54]

A June 14, 2010 email chain among those five individuals shows a team undertaking a new and unfamiliar project. As if emphasizing that the projections were not being prepared in the ordinary course of Ramtron's business, Balzer wrote that he wanted a "product by product build up, with assumptions, for it to hold water in the event

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[51] Tr. 294 (Rodgers).

[52] JS ¶ 12.

[53] The sole exception appears to be a set of projections created by Richards in February 2012 and sent to the Company's auditors in an effort to corroborate the extent of Ramtron's net operating loss tax assets. JX 40. Interestingly, the 2013 forecasts included a confidence factor of 80% and the 2014 forecasts had a confidence factor of only 50%. Richards did not even bother providing a confidence factor for the 2015 forecasts. *Id.* (native file).

[54] Tr. 59 (Richards).

of a subsequent dispute."[55] Indeed, Richards testified that he understood the purpose of the projections to be twofold: marketing the company to a white knight and creating inputs for a DCF analysis.[56] The Ramtron management team had never done long-term projections before.[57] Zimmer, the head of sales, wrote that not even the automotive industry, which he apparently considered more predictable than the semiconductor industry, "can do a line item 4 year forecast."[58] He also suggested that for "[o]ut years I would simply plug in 30% CAGR,"[59] a comment that reinforces the inference that these projections were not produced in the ordinary course of business based on reliable data. Additionally, Balzer wanted the projections done using a point-of-sale approach, as opposed to Ramtron's standard point-of-purchase methodology. Ramtron's management team had never done point-of-sale projections.[60] I describe the resulting projections in significantly more detail in Section III.A *infra*.

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[55] JX 60.

[56] Tr. 59 ("Needham was going to market our company. . . . [O]ne of their tactics was to put us out to bid so hopefully maybe a white knight would come in. And, two, I think they used [the projections] for a discounted cash flow to come up with a basis to value the company, if you will.").

[57] *Id.* at 63.

[58] JX 60.

[59] *Id.* By recommending use of a 30% CAGR, which generally stands for compound annual growth rate, Richards understood Zimmer to be advocating multiplying a base value by 1.3 for each year of the projection period.

[60] Tr. 63 (Richards).

Meanwhile, Cypress' hostile offer continued. On June 21, 2012, Cypress commenced a hostile tender offer for Ramtron at $2.68 per share.[61] Ramtron's Board rejected the $2.68 price as inadequate and not in the best interests of the Company's stockholders. Accordingly, the Board recommended that the stockholders not tender their shares.[62] Shortly thereafter, Ramtron issued its second quarter 2012 earnings, which were significantly below expectations. In the first quarter of 2012, Ramtron had reported $15 million in revenue and reaffirmed its public guidance for entire-year 2012 revenue of "approximately $70 million."[63] On July 24, 2012, Ramtron reported $14.2 million in revenue for the second quarter and projected revenue of $14 to $14.5 million for the third quarter.[64] These results and projections placed the Company on track to undershoot its full-year 2012 estimate by at least $10 million. On July 26, 2012, shortly after Ramtron's announcement, Merriman Capital, the only analyst covering Ramtron, downgraded the Company from "buy" to "neutral."[65] Merriman also suspended its target price and observed that "were Cypress to pull its offer for Ramtron, these shares might very well return to the $2.00 range or perhaps lower."[66]

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[61] JS ¶ 13.

[62] *Id.* ¶ 14.

[63] JX 47.

[64] JX 96.

[65] JX 97.

[66] *Id.*

The witnesses at trial agreed that Ramtron's second quarter performance was disappointing.[67] The parties, however, vigorously dispute the reasons for that. Petitioner assigns basically all of the blame for the poor second quarter to Cypress and denies that it resulted from any inherent weakness in Ramtron. According to Petitioner, the distributors pulled back their orders dramatically in light of Cypress' hostile bid, because they feared being terminated after the merger. For this proposition, LongPath relies mostly on Balzer's deposition testimony.[68] Respondent argues that Ramtron's second quarter results reflected Ramtron's own operational failures.

It is conceivable that Cypress' offer may have had some negative effect on second quarter sales, but the weight of the evidence shows that operational shortcomings of Ramtron were the primary cause of the decline in sales. Ramtron appears to run on a calendar fiscal year. As such, less than three weeks remained in June (and the second quarter) when Cypress issued its bear hug letter on June 12 and at most ten days remained after Cypress initiated its hostile tender offer. The most probable explanation for the poor second quarter is that Ramtron's management had stuffed the Company's

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[67] Tr. 73 (Richards); *id.* at 302 (Rodgers); *id.* at 397 (Buss).

[68] JX 245 [hereinafter "Balzer Dep."] at 106 ("Part of the reason that sales fell off as soon as Cypress announced the acquisition is distributors that we had. . . . If these distributors were not distributors of Cypress product, it was their belief—and I heard this from Pete [Zimmer]—their belief then that Cypress would probably not protect them if they consummated the deal and they could be stuck with a whole bunch of product and, hence, they just stopped buying."). There is a potential hearsay problem with this testimony, but Respondent did not press any such objection in its briefing.

distribution channel with inventory in the first quarter of 2012, and that caused the Company's distributors to order less product in quarter two. I discuss channel stuffing in Section III.A *infra*. Here, it suffices to note that, as of the first quarter of 2012, Ramtron had $25.5 million in inventory, a 264% increase over the previous year. Even assuming Ramtron's optimistic 2012 projection of $70 million in revenue, Ramtron had roughly nineteen weeks worth of inventory, for which it already had recognized revenue, at the beginning of the second quarter of 2012.[69] A fiscal quarter contains only thirteen weeks.

Other factors support the conclusion that Cypress' hostile bid did not drive Ramtron's poor second quarter performance. First, Davenport disagreed with the allegation that the distributors were pulling back because of Cypress. Davenport viewed Zimmer's comments to that effect as excuses for not hitting his sales targets.[70] Considering that Balzer admittedly based his assertion that the distributors were withholding orders on out-of-court statements made by Zimmer, who did not testify at trial, I accord it little weight. Second, it appears from the record that a significant number of Ramtron's products are "designed into" the final products, meaning that the end users would need the semiconductors to complete their own products and thus would have relatively stable, long-term demand. This makes it unlikely that demand dipped sharply at the end of Q2 because of Cypress' bid.[71] For all of these reasons, I find that, although

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[69] A $70 million year would equate to weekly sales of, on average, $1.347 million.

[70] Tr. 209.

[71] *Id.* at 402-04 (Buss).

Cypress' bid may have contributed slightly to Ramtron's poor performance in the second quarter of 2012, the main cause of that performance was Ramtron's own business reality.

Notwithstanding the poor second quarter, Cypress increased its offer price to $2.88 per share on August 27, 2012, and extended the term of the tender offer.[72] On September 10, 2012, Ramtron's Board again concluded that the offer was inadequate and recommended that the stockholders not tender their shares.[73] During the time Cypress was pursuing its hostile tender offer, Ramtron actively canvassed the market looking for other buyers. In fact, Ramtron contacted over twenty potential suitors, a process I discuss in more detail in Section III.C *infra.* None of those other companies, however, ever made a firm offer, even though the most serious of them had access to Ramtron's internal management projections.

Beginning on September 12, 2012, representatives of Cypress and Ramtron engaged in active negotiations. Cypress increased its offer to $3.01 per share on September 16 and then again to $3.08 on September 17. Later that same day, Ramtron and Cypress agreed on the final transaction price of $3.10 per share.[74] The parties signed

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72 JS ¶ 15.

73 *Id.* ¶ 16.

74 *Id.* ¶ 17.

the merger agreement on September 18,[75] and the Merger was approved by a stockholder vote on November 20, 2012.[76]

D. Procedural History

LongPath filed this appraisal action on December 11, 2012. After the parties engaged in discovery, the Court presided over a three-day trial from October 7 to 9, 2014. Eight witnesses testified, including the parties' experts. After extensive post-trial briefing, I heard final argument on March 3, 2015.

I also note, for completeness, that a stockholder class action challenging the Merger was filed on October 15, 2012. Those plaintiffs moved to preliminarily enjoin the Merger, but that motion was denied. Thereafter, the defendants in the class action moved to dismiss. On June 30, 2014, I issued a memorandum opinion granting those motions and dismissing the stockholder class action with prejudice.[77]

E. Parties' Contentions

Both parties base their positions on expert testimony. Petitioner called David Clarke as its expert; Respondent relied upon Gregg Jarrell. Not surprisingly, the experts arrived at widely disparate conclusions. Clarke contends that the fair value of Ramtron's stock as of the Merger was $4.96 a share. Jarrell opines that the stock was worth only

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[75] *Id.* ¶ 18.

[76] *Id.* ¶ 23.

[77] *Dent v. Ramtron Int'l Corp.*, 2014 WL 2931180 (Del. Ch. June 30, 2014).

$2.76. Petitioner's fair value of $4.96 a share is more than 274% of Ramtron's unaffected stock price of $1.81.

Clarke bases his conclusion of $4.96 per share on a combination of a DCF analysis and a comparable transactions analysis, which he weighted at 80% and 20%, respectively. Clarke relied on Ramtron's management projections and a three-stage DCF analysis to arrive at a value of $5.20 per share. He based his comparable transactions analysis on a dataset consisting of only two transactions and obtained a fair value of $3.99 per share. Because Clarke found no comparable companies, he did not rely on that valuation method.

Jarrell rather unusually began his analysis with two premises: (1) that the Merger price was the result of a fair and competitive auction; and (2) that the management projections were overly optimistic. Based on these predicates, Jarrell opted to examine the transaction price and back out any synergies in order to determine fair value. This approach resulted in a fair value of $2.76 per share. In addition, Jarrell conducted a DCF analysis, in which he relied upon the management projections he earlier concluded were overly optimistic. Based on that analysis, Jarrell opined, apparently in the alternative, that the fair value of the Company's shares was $3.08 each, a number coincidentally only two pennies from the Merger price. As a result of his analysis, Jarrell also concluded that there were no comparable companies or comparable transactions.

Much has been said of litigation-driven valuations, none of it favorable.[78] Here, the parties have proffered widely disparate valuation numbers which differ, at the extremes, by $2.44 as compared to an unaffected stock price of $1.81 and a deal price of $3.10. LongPath asks this Court to adopt its $4.96 figure and conclude that the market left an amount on the table exceeding Ramtron's unaffected market capitalization. This would be a significant market failure, especially in the context of a well-publicized hostile bid and a target actively seeking a white knight. But, LongPath itself is a market participant. It bought its shares *after* the announcement of the Merger, thereby effectively purchasing an appraisal lawsuit. Although such arbitrage can be profitable on the merits when flawed deals undervalue companies, LongPath invested an amount so small that, even if I accepted its position and concluded that Ramtron's true value at the time of the Merger was somewhere in the range of $4.96 per share, this lawsuit is likely a less-than-break-even proposition for LongPath after considering its litigation expenses. Respondent, on the other hand, has submitted an eyebrow-raising DCF that, based on projections its expert *presumed* were overly optimistic, still returns a "fair" value two cents *below* the Merger price.

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78 *E.g.*, *In re Dole Food Co.*, 2014 WL 6906134, at *11 (Del. Ch. Dec. 9, 2014) ("In appraisal proceedings, the battling experts tend to generate widely divergent valuations as they strive to bracket the outer limits of plausibility."); *Finkelstein v. Liberty Digital, Inc.*, 2005 WL 1074364, at *13 (Del. Ch. Apr. 25, 2005) ("Men and women who purport to be applying sound, academically-validated valuation techniques come to this court and, through the neutral application of their expertise to the facts, come to widely disparate results, even when applying the same methodology.").

II. STANDARD OF REVIEW

In a statutory appraisal action brought pursuant to 8 *Del. C.* § 262, the Court is tasked with "determin[ing] the fair value of the shares exclusive of any element of value arising from the accomplishment or expectation of the merger or consolidation, together with interest, if any, to be paid upon the amount determined to be the fair value."[79] The Delaware Supreme Court has held that "fair value" is "the value to a stockholder of the firm as a going concern, as opposed to the firm's value in the context of an acquisition or other transaction."[80] "Accordingly, the corporation must be valued as a going concern based upon the 'operative reality' of the company as of the time of the merger."[81] Section 262 directs that, in making this determination, "the Court shall take into account all relevant factors."[82] Our case law has made clear that "[a]ny 'techniques or methods which are generally considered acceptable in the financial community and otherwise admissible in court' may be used."[83]

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[79] 8 *Del. C.* § 262(h).

[80] *Golden Telecom, Inc. v. Global GT LP*, 11 A.3d 214, 218 (Del. 2010).

[81] *M.G. Bancorporation, Inc. v. Le Beau*, 737 A.2d 513, 525 (Del. 1999) (quoting *Cede & Co. v. Technicolor, Inc.*, 684 A.2d 289, 298 (Del. 1996)).

[82] 8 *Del. C.* § 262(h).

[83] *Gholl v. eMachines, Inc.*, 2004 WL 2847865, at *5 (Del. Ch. Nov. 24, 2004) (quoting *Weinberger v. UOP, Inc.*, 457 A.2d 701, 713 (Del. 1983)).

As is well-known, the Delaware appraisal statute places the burden of proof on both parties.[84] "If neither party satisfies its burden, however, the court must then use its own independent business judgment to determine fair value."[85]

III. ANALYSIS

A survey of the case law reveals that there are four main, or at least recurring, valuation techniques generally presented in an appraisal action: a discounted cash flow or DCF analysis, a comparable companies approach, a comparable transactions approach, and an examination of the merger price itself, less synergies. Like all tools, each has its own strengths and weaknesses. The parties agree that there are no comparable companies. Jarrell and Clarke disagree about whether there are comparable transactions, but the universe of potential comparables, even according to Clarke, is limited to two. Both sides conducted a DCF analysis, but disagree about certain issues in addition to the reliability of the Management Projections, such as the proper size premium, the appropriate method of modeling future capital expenditures, and whether a two-step or three-step DCF is more appropriate, as well as several more minor issues. The parties strongly disagree about the appropriate weight, if any, to give the Merger price, which Respondent weighs at 100%. Petitioner places the most weight on its DCF analysis.

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[84] *M.G. Bancorporation, Inc.*, 737 A.2d at 520 ("In a statutory appraisal proceeding, both sides have the burden of proving their respective valuation positions by a preponderance of the evidence.").

[85] *Gholl*, 2004 WL 2847865, at *5.

Accordingly, I begin there and then address the utility of a comparable transactions approach before turning to the transaction price.

A. A Discounted Cash Flow Analysis Is Inappropriate Because the Management Projections Are Unreliable

A discounted cash flow analysis "involves projecting operating cash flows for a determined period, setting a terminal value at the end of the projected period, and then discounting those values at a set rate to determine the net present value of a company's shares."[86] "Typically, Delaware courts tend to favor a DCF model over other available methodologies in an appraisal proceeding. However, that metric has much less utility in cases where the transaction giving rise to appraisal was an arm's-length merger, [or] where the data inputs used in the model are not reliable . . . ."[87] The foundational inputs of a DCF are the company's cash flows.[88] In determining those inputs, this Court has placed substantial weight on the projections of the incumbent management. Indeed, "this Court prefers valuations based on management projections available as of the date of the

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86 *Doft & Co. v. Travelocity.com Inc.*, 2004 WL 1152338, at *5 (Del. Ch. May 21, 2004).

87 *Highfields Capital, Ltd. v. AXA Fin., Inc.*, 939 A.2d 34, 52-53 (Del. Ch. 2007).

88 *Cf. Laidler v. Hesco Bastion Envt'l, Inc.*, 2014 WL 1877536, at * 8 (Del. Ch. May 12, 2014) ("Though DCF is more prominently employed in Delaware appraisal litigation, both parties' experts opine that employing a DCF is not feasible here because [the company's] management never made cash flow projections in the ordinary course of its business.").

merger and holds a healthy skepticism for post-merger adjustments to management projections or the creation of new projections entirely."[89]

The reason that "Delaware law clearly prefers valuations based on contemporaneously prepared management projections" is "because management ordinarily has the best first-hand knowledge of a company's operations."[90] These projections are useful in appraisals, because they "by definition, are not tainted by post-merger hindsight and are usually created by an impartial body. . . . When management projections are made in the ordinary course of business, they are generally deemed reliable."[91] By corollary, projections prepared outside of the ordinary course do not enjoy the same deference. In fact, management projections can be, and have been, rejected entirely when they lack sufficient indicia of reliability, such as when they were prepared: (1) outside of the ordinary course of business; (2) by a management team that never before had created long-term projections; (3) by a management team with a motive to alter the projections, such as to protect their jobs; and (4) when the possibility of litigation, including an appraisal action, was likely and probably affected the neutrality of

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[89] *Cede & Co. v. JRC Acq. Corp.,* 2004 WL 286963, at *2 (Del. Ch. Feb. 10, 2004).

[90] *Doft & Co.*, 2004 WL 1152338, at *5.

[91] *Cede & Co. v. Technicolor, Inc.*, 2003 WL 23700218, at *7 (Del. Ch. Dec. 31, 2003), *revised* (July 9, 2004), *aff'd in part, rev'd in part*, 884 A.2d 26 (Del. 2005).

the projections.[92] These factors go to the reliability of the projections. In this case, the Ramtron management projections suffer from all of these problems.

1. A new Ramtron management team prepared projections not in the ordinary course using a methodology they never had employed before

The team in charge of creating the new Management Projections consisted of Richards and one of his employees, Zimmer, and Emley, with oversight by Balzer.[93] According to Richards, the projections started with the numbers provided by the sales department, because most of the Company's costs either were fixed or a percentage of

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[92] *Gearreald v. Just Care, Inc.*, 2012 WL 1569818, at *4 (Del. Ch. Apr. 30, 2012) (listing these four factors as reasons not to afford deference to the projections); *see also Huff Fund Inv. P'ship v. CKx, Inc.*, 2013 WL 5878807, at *9-11 (Del. Ch. Nov. 1, 2013) (rejecting management projections prepared out of the ordinary course that included substantial speculative elements), *holding left unmodified*, 2014 WL 2042797 (Del. Ch. May 19, 2014), *both aff'd*, 2015 WL 631586 (Del. Feb. 12, 2015) (TABLE); *Doft & Co.*, 2004 WL 1152338, at *5-6 (finding management projections unreliable because: (1) management themselves did not regard them as reliable; and (2) the company, and seemingly the industry, was deemed nearly impossible to forecast in the short term, much less the long-term).

Recent cases continue to evaluate the reliability of management projections on similar grounds. *See, e.g.*, *Merlin P'rs LP v. AutoInfo, Inc.*, 2015 WL 2069417, at *8 (Del. Ch. Apr. 30, 2015) (refusing to rely on management projections where: (1) management never before had prepared similar projections; (2) the projections were so "indisputably optimistic" that the petitioner's own expert testified that a discount would have been appropriate; and (3) management "itself had no confidence in its ability to forecast"); *Owen v. Cannon*, 2015 WL 3189204, at *19-21 (Del. Ch. June 17, 2015) (rejecting an attack on the management projections when those projections did not include speculative business items, were not inconsistent with historical performance, were not "created by novices," and instead generally resulted from a "deliberate, iterative process over a period of three years to create, update and revise multi-year projections for the Company").

[93] Tr. 59 (Richards).

revenue, so the revenue numbers were the most important inputs.[94] Zimmer and Emley were the lead individuals responsible for developing the sales (and, hence, revenue) numbers. Both had been with the Company at most a year when they began creating the new projections.[95]

Aside from having relatively new employees tasked with creating the inputs, the team that developed the Management Projections utilized: (1) a new product-by-product build-up method; (2) a point-of-sale instead of the usual point-of-purchase methodology; and (3) a multi-year projection period.[96] The Ramtron management team previously had not created projections using any of these methods, much less all three.

Additionally, the projections were not prepared in the ordinary course of business. There is no evidence Ramtron ever had prepared forecasts for more than five quarters, with the exception of Richards's deferred tax asset projections.[97] Balzer ordered the projections created immediately *after* Cypress issued its bear hug letter. Thus, these projections were prepared in anticipation of potential litigation, or, at least, a hostile takeover bid. Balzer explicitly wrote that he wanted a "product by product build up, with assumptions, for it to hold water in the event of a subsequent dispute."[98] Furthermore, at

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[94] *Id.* at 60.

[95] *Id.* at 64.

[96] *Id.* at 63 (Richards); *see also* JX 60.

[97] *See supra* note 53.

[98] JX 60.

least Richards understood one of the purposes of the projections was to serve as a marketing tool in Needham's hunt for a white knight.[99] This knowledge gave the management team an incentive to err on the optimistic side.

In sum, Ramtron's new management team employed a new methodology to create long-term projections, which they were not accustomed to doing, out of the ordinary course of business, with knowledge that the projections could or would be used: (1) in a subsequent dispute; (2) in marketing the Company; (3) as the inputs for Needham's DCF analysis;[100] or (4) any combination of those three possibilities. These projections, therefore, facially lack the indicia of reliability that generally have led Delaware courts to defer to management projections. I now turn to more specific problems with the Management Projections that reinforce the conclusion that the Projections are unreliable.

2. Management's forecasting capabilities

The parties vigorously dispute Ramtron management's forecasting accuracy. One dispute, for example, involves Respondent's contention that Ramtron often missed its publicly issued guidance for annual revenue going back to 2007, four years before Zimmer and Emley even joined the Company. This line of attack is something of a red herring. The proper focus should be on the forecasting accuracy of the management team *that actually made the projections*. Whether other, prior executives had or lacked the gift of seeing into the Company's future and predicting the success of its business is less

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99 Tr. 59.

100 *Id.*

relevant and barely probative of the forecasting capabilities of the pre-Merger management team. Accordingly, I would assign little weight to Ramtron's alleged historic forecasting prowess, even assuming it was proven.

The record is surprisingly unclear on exactly what projections were made by the then-current Ramtron management team, aside from the occasional public guidance.[101] The parties' main disagreement over management's forecasting abilities concerns a waterfall chart. The chart shows forecasts by quarter. Respondent contends that the chart represents management's ongoing internal forecasts. Petitioner argues that it depicts nothing but "stretch goals." The answer is somewhat important. If the waterfall chart in fact represents actual forecasts, then Ramtron's ability to forecast its own business more than two quarters out was quite poor. On the other hand, if the chart merely reflects stretch goals, then it loses much of its impact. The weight of the evidence convinces me that the waterfall chart represented actual forecasts, but I still accord that chart only moderate weight in my evaluation of the Management Projections. Before explaining why, I have included below a portion of the waterfall chart.[102]

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[101] *E.g.*, JX 47 (forecasting, on April 19, 2012, $70 million in total 2012 revenue). On February 22, 2011, Ramtron forecasted between $65 and $70 million in total 2011 revenue. JX 294. Actual revenues for 2011 were $66.4 million. JX 215 Ex. 3. The 2011 forecast likely was not made by exactly the same management team and neither the 2011 nor the 2012 forecasts utilized a point-of-sale or a bottoms-up line-item methodology. Thus, the relevance of the 2011 and 2012 forecasts, as predictors of the accuracy of the Management Projections, is marginal, at best.

[102] JX 39. This chart was included in a presentation to the Ramtron Board and is dated February 9, 2012. The first two columns indicate the month and the quarter

Date	Qtr	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012
Apr. 2010	Q2 2010	$21,000							
July 2010	Q3 2010	$21,000	$23,000						
Oct. 2010	Q4 2010	$21,000	$23,000	$24,000					
Dec. 2010	Q1 2011	$21,000	$22,000	$24,000	$25,000				
Jan. 2011	Q1 2011	$10,000 **$10,440**	$15,000	$20,000	$22,000				
Apr. 2011	Q2 2011		$15,000 **$16,537**	$20,000	$22,000	$20,000			
July 2011	Q3 2011			$21,500 **$21,736**	$22,532	$18,000	$21,500		
Oct. 2011	Q4 2011				$22,300 **$16,905**	$20,000	$22,000	$21,500	
Feb. 2012	Q1 2012					$14,000 **$15,000**	$15,000 **$14,200**	$18,000	$20,000

Respondent's argument is straightforward: the waterfall chart appears in a presentation to the Board,[103] and there is no indication that the numbers are anything other than ordinary-course forecasts. LongPath relies on a pair of "Sales Update" presentations that refer to the numbers in the waterfall chart as "stretch goals."[104]

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when each particular forecast was made. The remaining columns are the quarters being forecasted. For unknown reasons, there are two sets of forecasts in the first quarter of 2011. The bolded number represents the actual results in thousands of dollars for each quarter. For example, the cell Q2 2010 by Q1 2011 represents management's forecast, as of the second quarter of 2010, for revenue in the first quarter of 2011. I have added the actual results for Q1 and Q2 2012, which were not yet known as of February 9, 2012.

[103] Indeed, an earlier version of the same chart appeared in an October 18, 2011 board presentation entitled "Financial Outlook." JX 31. That chart similarly was entitled "Sales Forecast Waterfall Chart," as in JX 39, and it contained no indication that the figures presented were "stretch" goals.

[104] JX 313 (Oct. 18, 2011); JX 314 (Feb. 13-14, 2012).

Respondent advances the theory (and urges the Court to infer) that Zimmer, as the Vice President of Sales, referred to the forecasts as stretch goals because, as the head of sales, he primarily was responsible for failing to meet revenue targets. At trial, Ramtron's Vice President of Technology, Davenport, similarly suggested that Zimmer blamed Ramtron's poor second quarter on Cypress as an excuse to cover up his own poor performance.[105]

More practical reasons lead me to the conclusion that the waterfall chart likely represented management's actual forecasts. First, contemporaneous emails suggest that the management team saw these numbers as goals they *should* hit. In a late January 2012 email chain, Balzer writes to Zimmer, Richards, and Yates that the Company "really need[s] to find a way to hit $14.5. That is what we said we would do."[106] The first quarter 2012 forecast for that quarter was $14 million, as the chart above shows. Second, the very idea of "stretch" or "reach" goals requires targets that are, as the names imply, actually within reach.[107] Many of these forecasts were wildly incorrect. In December 2010, for example, the Company forecasted $21 million for the first quarter of 2011 (the very next quarter), a quarter in which actual revenue was $10.4 million, less than half of the forecast. Relatedly, as the actual quarter drew closer, management generally reduced

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[105] Tr. 209, 232.

[106] JX 36.

[107] *See Gholl*, 2004 WL 2847865, at *9 (rejecting contention that management projections were unrealistic reach goals and noting: "If the 2002 budget represented management's wildest dreams come true, it would be illogical and callous to key the Bonus Plan to even higher targets that were not achievable").

its forecasts to better approximate the actual revenue. As the quote from Balzer suggests, the management team treated these numbers as real targets, not lofty stretch goals.[108] Third, if these are not actual forecasts, then the record lacks evidence of regularly created and updated management forecasts, *i.e.*, if the waterfall chart only contains stretch goals, then management's publicly issued guidance would be the only basis for assessing its forecasting.

I find it most likely that management began with high aspirations for future quarters and reduced those expectations toward the actual expected results as the quarter drew nearer. This suggests that management's near-term forecasting abilities were mediocre at best. Even so, the waterfall forecasts and the public guidance forecasts were done with a different methodology than the Management Projections. Accordingly, I conclude that management, even under its traditional forecasting system, was of middling quality when it came to forecasting Ramtron's future business. Several witnesses at trial testified that, in general, the semiconductor business is difficult to forecast.[109] Indeed, after Ramtron issued its weak second quarter 2012 earnings, Merriman Capital issued a report that suspended its target price for the Company and stated: "We simply can't

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[108] The February 2012 projections cumulatively estimate $67 million in revenue for 2012. This is the same number used by Richards in a set of projections prepared to justify the Company's deferred tax assets to its auditors. JX 40. Richards's use of the waterfall chart forecast numbers for projections provided to the Company's auditors further supports my finding that these were not "stretch" goals.

[109] Tr. 31-32 (Richards); *id.* at 320-21 (Rodgers: explaining that rigorous competition, technological change, and macroeconomic factors make the industry difficult to forecast); *id.* at 378-80 (Buss).

figure out how to model this company consistently at the current time."[110] Ramtron's management also recognized its own limited success in forecasting.[111] In sum, management's lack of success in accurately projecting future revenue in the past provides another reason to doubt the reliability of the Management Projections.

3. The projections incorporate unrealistic assumptions regarding ROHM

I also note that the Management Projections assume cost reductions, over time, associated with the transition to ROHM's foundry. The projections reflect an assumption that production of F-RAM at ROHM would to begin in January 2013 at 150,000 units a

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[110] JX 97.

[111] Balzer candidly conceded the Company was mediocre at forecasting:

> Q: What was the quality of those forward-looking projections when you took over as CEO?
> A: Probably mediocre.
> Q: Did you attempt to make improvements in the quality of the projections?
> A: Yes.
> Q: Did you succeed?
> A: I'd say no.
> Q: Why not?
> A: . . . [Y]ou need to understand the market . . . . And while we were working very hard on that, we weren't there.

Balzer Dep. 50. These comments temper the reliability of Balzer's position that the Management Projections "were the most likely of what would happen if Cypress walked away." *Id.* at 83.

month and increase by 50,000 units per month thereafter.[112] These assumptions are too speculative to merit any deference.[113]

Ramtron entered into a manufacturing agreement with ROHM in late July 2012 pursuant to which ROHM would serve as a second foundry for Ramtron.[114] According to a July 23, 2012 press release, "Initial low-density F-RAM products have already been qualified for commercial production and Ramtron expects to receive and begin selling the first devices produced on ROHM's manufacturing line within approximately 60 days."[115] As already described, it took Ramtron *seven years* to transition entirely from Fujitsu to TI. That process went so poorly that it forced Ramtron to place its customers on allocation in 2011. Ramtron's earlier efforts to develop IBM as a second foundry took place over *three years* and caused it to incur more than $30 million in direct costs and equipment expenses. That endeavor failed entirely. Additionally, the evidence shows that, in July 2012, Ramtron was not flush with cash. The IBM venture suggests that establishing a new foundry requires a substantial monetary investment, and Ramtron's liquidity situation in the summer of 2012 makes it doubtful that Ramtron would have

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[112] JX 170 native file.

[113] *See Gearreald*, 2012 WL 1569818, at *5-6 (concluding that the requirement that a company be valued as a going concern based on its operative reality at the time of the merger required the exclusion of "speculative costs or revenues"); *see also Huff Fund Inv. P'ship*, 2013 WL 5878807, at *11 (finding the inclusion or exclusion of significant contract revenues so speculative as to render the management projections unreliable).

[114] JX 95.

[115] *Id.*

been able to finance the continued development of ROHM as a foundry.[116] In light of this evidence, as well as the uniform testimony on the difficulty of transitioning foundries, I do not find credible the proposition that Ramtron reasonably could expect to begin commercial production at ROHM in sixty days and start enjoying cost savings within six months.[117]

Additionally, evidence presented at trial buttresses this conclusion. Consistent with the other testimony on the lead time for getting a product from concept to full-fledged commercial sale,[118] Davenport testified the term "initial low-density F-RAM products" referred to sample quantities that Ramtron was "going to take over ROHM's design and try to commercialize them as samples. They weren't cost-effective but they would seed the market."[119] In fact, Ramtron never got further than this initial sample stage. Davenport further testified that Ramtron "never got so far as transfer[ing] our designs to the ROHM foundry" before the Merger closed.[120] It also appears that ROHM

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[116] *E.g.*, Tr. 410 (Buss: commenting that, upon acquiring Ramtron, Cypress discovered that the Company still had unpaid legal bills from the beginning of 2012). Indeed, Ramtron was on pace to go cash negative before the end of October 2012. JX 151.

[117] JX 170 native file (assumption of per part cost reductions).

[118] *See supra* notes 16-18 and accompanying text.

[119] Tr. 225.

[120] *Id.* at 205.

technologically lagged behind both TI and IBM as a foundry.[121] I do not question the strategic judgment of Ramtron's management in seeking to implement the Company's manufacturing agreement with ROHM, but the record as a whole leads me to find that the ROHM assumptions built into the Management Projections were speculative and further undermine the reliability of those projections.

4. The Management Projections rely on 2011 and 2012 revenue figures that were distorted because of customer allocation issues and channel stuffing

As discussed in the next Subsection, the Management Projections for revenue assume a constant growth rate of 24% for 2014, 2015, and 2016.[122] This is an arbitrary method of predicting revenue growth if not supported by reasonable assumptions. Such simple modeling makes the reliability of the base year numbers crucially important—*i.e.*, if a set of projections assumes constant growth from a starting number, the inaccuracy of that foundational input affects the reliability of the entire enterprise. Substantial evidence

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[121] *Id.* at 207-08 (Davenport: discussing ROHM's wafer yield of 20% to 60%, as against a "good" yield of 97%, which TI could achieve, all of which bears on supply costs); *id.* at 348-51 (Rodgers: testifying that ROHM lagged behind TI technologically, was not competitive in the marketplace against TI's products, and had a very different technology than TI that would make the foundry transition difficult, all of which raised questions about the economic viability of manufacturing microchips there); *id.* at 395 (Buss: stating that TI and IBM "are probably two of the best, well-run, capable fabs in the world," and that successfully introducing ROHM as a second foundry "was definitely a long shot"). The testimony of Cypress' officers and employees is obviously self-serving, but their remarks on the technological status of ROHM versus TI or IBM is not contradicted by any other evidence and comports with Ramtron's own difficult history in transferring foundries.

[122] JX 170 native file (year-over-year growth rates of -12%, 19%, 24%, 24%, and 24%, for 2012 through 2016, respectively).

in the record supports the conclusion that Ramtron's revenue in 2011, the last full year before Cypress' offer, is an unreliable figure.

In Section I.B.2 *supra*, I discussed the massive inventory build-up that Ramtron experienced beginning in 2011. During no quarter in 2010 did Ramtron have more than $7 million in inventory. Over the course of 2011, however, Ramtron shipped a huge amount of inventory into its distribution channels until, in the first quarter of 2012, Ramtron had $25.5 million in inventory. Even under favorable assumptions for Ramtron, that amounts to about nineteen weeks of inventory in the channel and it consists of product for which Ramtron already had recognized revenue.[123] In describing Ramtron's background, I found that this inventory build-up resulted at least in part from the supply shortages the Company faced as a result of its foundry transition. Those shortages forced the Company to place customers on allocation; the customers responded by over ordering. Because Ramtron recognized revenue when it shipped to distributors, it is reasonable to infer that an unknown, but not insignificant amount of Ramtron's revenue in 2011 actually reflected this over-ordering by customers, as opposed to a genuine surge in demand. In addition, because of the backlog of inventory that existed in the first quarter of 2012, it is logical that less revenue would be recognized later in 2012 as the inventory bubble was burned off, unless there was a significant uptick in demand.

Ramtron's management, however, expected to hit their reduced forecasts for the first quarter of 2012. Although I already have discussed the difficulties with the point-of-

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[123] *E.g.* Tr. 415 (Buss: describing Ramtron's inventory problem).

purchase revenue recognition system, there is another pitfall not yet discussed: channel stuffing. Channel stuffing is the practice of stuffing inventory into the channel in order to recognize the attendant revenue sooner, notwithstanding the fact that the revenue does not correspond to underlying increases in demand. Hence, it is a form of revenue manipulation.

I find that Ramtron's management pushed excess inventory into the Company's distribution channels in the first quarter of 2012. In an already referenced email chain from late January 2012, Balzer remarked that the Company "really need[ed] to find a way to hit $14.5" million.[124] Zimmer responded: "I'll die trying. We'll for sure stuff channel. Next Qtr will suffer."[125] There is no persuasive evidence that Balzer disagreed. Although Petitioner fights the channel-stuffing conclusion,[126] the combination of Zimmer's contemporaneous comments and the massive inventory buildup strongly support the conclusion that Ramtron stuffed the channel in order to make its first quarter revenue forecast.

All of this matters for two reasons. First, forcing excess inventory into the channel in early 2012 meant that there would be a corresponding fall off in revenue at some point

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[124] JX 36.

[125] *Id.*

[126] LongPath cites to statements by Balzer regarding other time periods that the Company should avoid stuffing the channel. JX 10; JX 242.

in the future absent a demand spike.[127] As Zimmer predicted, the next quarter, Q2 2012, did suffer. Petitioner's efforts to attribute those disappointing results to Cypress' hostile offer, rather than weaknesses in Ramtron's own business practices, are unavailing.[128] Second, Ramtron's revenue figures for 2011 and the first half of 2012 do not accurately map to actual demand for the Company's products. LongPath argues that the quantification of the point-of-purchase versus point-of-sale issue reveals that, at most, Ramtron over-recognized 3.7% of its total revenue from 2010 through 2012.[129] Assuming Petitioner's math is correct, that is an over-recognition, in three years, of $6.6 million for a company that only once in its history had had more than $70 million in revenue in a single year.

The problem, however, goes beyond just the amount of improperly recognized revenue. The timing of the revenue also is affected significantly. If 2011 and 2012 are used as base years in forecasting, but those years include inflated revenue because of

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[127] The evidence suggests that many or most of Ramtron's products were "designed into" its customers' products. This long-term supply nature of Ramtron's business reduces the likelihood of dramatic short-term demand fluctuations.

[128] *See supra* notes 70-72 and accompanying text.

[129] Pet'r's Post-Trial Br. 34. My rather simplistic comparison of point-of-purchase versus point-of-sale revenue recognition *supra* suggested that the use of one system over the other affects only the timing of the revenue, not the amount. There are various reasons why using the point-of-purchase approach also may lead to over-recognition of revenue. The distributors may return inventory because, for example, they ordered too much or the products are obsolete. Distributors also may sell to the end-user for less than the list price, leading to a reduction in the actual revenue received. *See* Tr. 299-302 (Rodgers: comparing the two revenue recognition systems).

either over-ordering by customers placed on allocation or channel stuffing, then the reliability of the projections is affected. Thus, customer allocation issues in 2011 and channel stuffing in the first quarter of 2012 throw significant doubt on the accuracy of the underlying revenue figures for those periods. In that regard, I do not consider it productive (even assuming it is feasible) to attempt to quantify how much in extra revenue Ramtron recognized in 2011 or 2012 based on these factors.[130]

5. The projections defy historical trends

Historical performance does not control a company's future performance. It is, however, a red flag when projections suggest a dramatic turnaround in a company despite no underlying changes that would justify such an improvement of business. This is the classic "hockey stick" problem. The Management Projections, prepared days after Cypress made its bid and with knowledge that Needham would use the Projections to market the Company, fall into this category. Both revenue growth and gross margins are shown as undergoing dramatic improvements. The following chart shows Ramtron's historical revenue (for the ten years before the projection period) versus its projected

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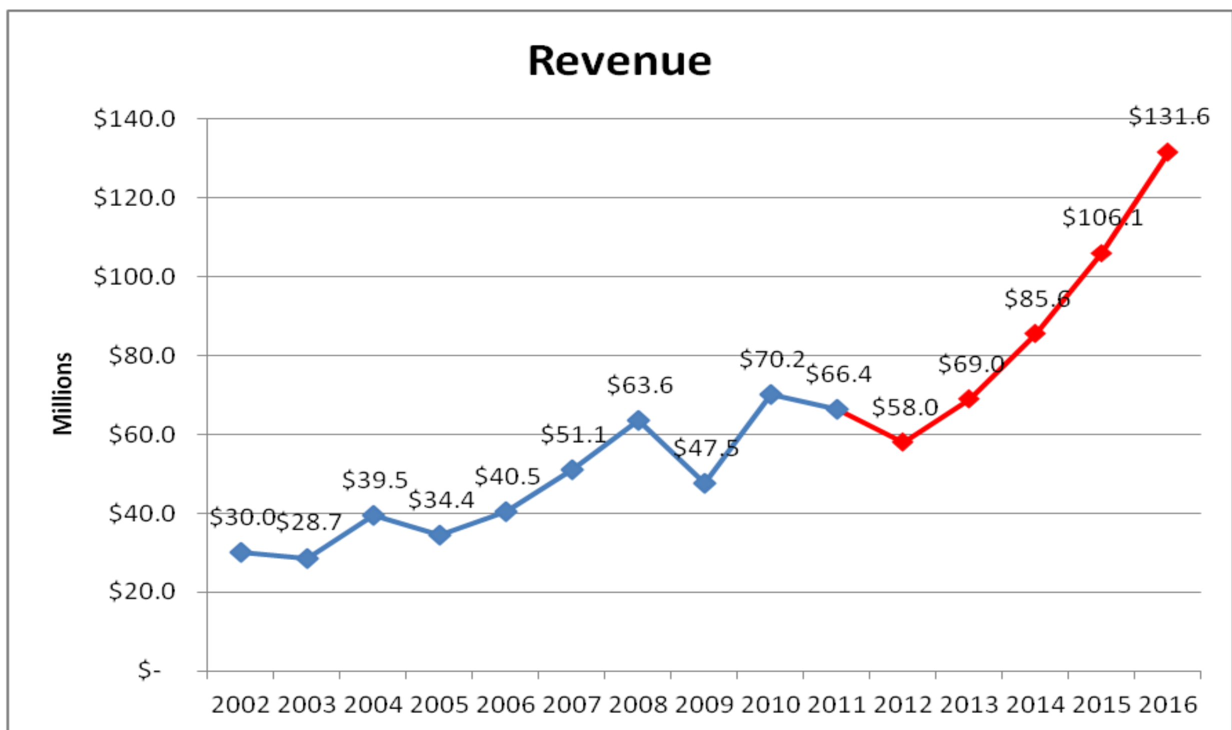
[130] Moreover, because Ramtron's management moved to a new revenue-recognition approach for the Management Projections, it is not clear what steps the Company took to avoid double counting revenue. As of the end of January 2012, Ramtron had about $21 million in inventory in its distribution channels. JX 34 (Zimmer email). That is more than a quarter's worth of revenue. But, the Company apparently did track to some extent the differences between point-of-sale and point-of-purchase revenues. JX 174.

revenue.[131] As the graphs make clear, the projection period suggests a period of previously unknown prosperity for Ramtron. Not only is the Company's historically volatile growth rate transformed into a consistently high growth rate, but the downward trend in revenue is replaced by a sharp, unprecedented increase in absolute revenue.[132] This sharp uptick in revenue is in contrast to the fact that, at least dating back to 1994, the Company never has experienced four consecutive years of growth.



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131 The historical figures are drawn from Exhibit 8 of Jarrell's Report. These figures are for the years 2002 through 2011 and are in blue. The projected revenues are drawn from the native excel spreadsheet of JX 170, which is the final iteration of the Management Projections. The projection period is 2012 through 2016 and those numbers are displayed in red.

132 By 2012, the Company had experienced two consecutive years of revenue decreases. In fact, 2012 revenue was forecasted as less than 2008 revenue. 2016 forecasted revenue, by contrast, nearly would exceed Ramtron's 2010 and 2011 actual revenues *combined*.

Presented in another perspective, the following chart shows the Company's compound annual growth rate ("CAGR") over various periods.[133] Only under the arbitrary 2005-2008 timeframe, which appears to be the Company's best-ever growth period, does historic growth approach projected growth. When comparing the five or ten years preceding the projections period, it is clear that the Management Projections forecast incredible growth. Indeed, the five-year projection period implies a CAGR of 22.73%, which is roughly 3.36 times higher than the CAGR for the five years immediately preceding the projection period (2007-2011) and approximately 2.46 times greater than the ten-year period (2002-2011) before the management forecasts.

Time Period	**Years**	**CAGR**
2002-2006	5	7.79%
2005-2008	4	22.73%
2007-2011	5	6.77%
2009-2011	3	18.23%
2002-2011	10	9.23%
2012-2016	5	22.73%

[133] The inputs are the same as the previous graph. CAGR provides the rate at which an initial value would need to grow each year in order to achieve a final amount. It is a measurement that smoothes out swings in growth over time. For CAGR, I use the formula: CAGR = ((End Value / Start Value)^(1 / Number of Years)) – 1. Note that, while, for example, 2002-2011 is a period of ten years, the input for the CAGR formula would be nine, because there are only nine periods of growth between year-end 2002 and year-end 2011. CAGR can be a misleading measurement tool, as the selection of years can dramatically affect the implied annual return. This is why multiple historical CAGR measurements are provided.

Petitioner attempts to justify the Management Projections as reasonable by comparing the projections to a set of internal Cypress projections. In what was called the President's Strategic Plan (the "PSP"), Cypress forecasted the potential F-RAM market in terms of total available market, service available market (which was Cypress' term for a product's core market) and predicted share of the market.[134] Petitioner argues that, if Ramtron simply maintained the market share of the core F-RAM market that it had at the time of the Merger, then the Management Projections would be accurate. There are numerous problems with this argument: (1) Ramtron's management did not have the PSP when they were creating the Management Projections, so this thesis is an entirely post hoc justification for the Projections; (2) for the Management Projections to be accurate, Ramtron would have had to increase its market share significantly, not just maintain it; (3) to the extent that Cypress' predictions are relevant, the Management Projections would require Ramtron to capture a substantially larger portion of the market than Cypress predicted it would; and (4) perhaps most damaging to Petitioner's theory, Cypress predicted that Ramtron, operating as an improved division of Cypress, would lose market share.

The chart below compares Cypress' predictions for Ramtron, as a division of Cypress, against the Ramtron Management Projections. Dollar values are in millions.

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[134] JX 199; Tr. 426-32 (Buss: explaining the various portions of JX 199, which is the PSP).

	2013	*2014*	*2015*	*2016*
Core Market	$187	$218	$254	$288
Ramtron Share of Market, as Cypress Division	$41	$55	$61	$67
Cypress F-RAM Market Share (forecast by Cypress)	22%	25%	24%	23%
Ramtron Management Projections	$69	$85.6	$106.1	$131.6
Ramtron F-RAM Market Share (Petitioner's argument)	37%	39%	42%	46%
Market Share Gap (Management Projections – Cypress Predictions)	**15%**	**14%**	**18%**	**23%**

Petitioner's argument is unpersuasive. The PSP forecasts Ramtron as a division of Cypress—*i.e.*, after a possible merger. That alone makes the comparison of market share unavailing. More importantly, Cypress predicted a moderate, but falling market share for Ramtron or, at best, that Ramtron would maintain its market share.[135] The Management Projections predict an entirely different trend under which Ramtron's market share would increase by nearly 25%, *i.e.*, Ramtron would capture another nine percent of the core F-RAM market. By the year 2016, for the Management Projections to be accurate, Ramtron would need to hold *twice* as much of the core market as Cypress predicted it would. Considering all the evidence of record regarding projections, I find it unlikely that Cypress substantially would underestimate the potential of the very company it was about to purchase. Thus, Petitioner's attempts to show the "reasonableness" of the Management Projections by comparing them to the Cypress PSP are unconvincing. Rather, the Projections defy historical trends.

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[135] In 2017, for example, Cypress predicted a 22% market share.

6. Management utilized other projections for ordinary business purposes

The fact which I find to be the final nail in the coffin for the Management Projections is that Ramtron did not rely on them in the ordinary course of its business. Although Balzer suggested that the Management Projections were used for other purposes, such as cash management,[136] the significance of those alleged uses is dubious. Richards, the CFO, credibly testified that he used other sets of projections for managing the Company's finances, such as providing estimated revenue and cash flow numbers to SVB, the Company's bank.

The final version of the Management Projections utilized by Needham in preparing its fairness opinion is from September 18, 2012.[137] The Needham presentation listed $58.2 million for estimated 2012 revenue, a slight discrepancy from the native excel spreadsheet of the Projections, dated August 28, 2012, which listed $58 million for 2012.[138] On July 17, 2012, however, Richards sent an email to SVB projecting $56.5 million for 2012 (the "July SVB Projections").[139] On September 10, 2012, Richards sent another update to SVB that reduced that projection to slightly less than $54 million (the "September SVB Projections").[140] Both the July and September SVB Projections pre-

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136 Balzer Dep. 80-81.

137 JX 170.

138 *Id.* & native file.

139 JX 93 & native file.

140 JX 136 & native file.

date the Needham presentation. The September SVB Projections are nearly 6.9% lower than the Management Projections. If the revenue growth assumptions from the Management Projections were applied to the September SVB Projections, the Management Projections would overstate five-year revenue by $31 million, even ignoring all of the other problems with the Management Projections I have discussed. Richards testified that he believed that the September SVB Projections "were more accurate" and that he provided those projections to SVB because it was the Company's "sole source of borrowing" and he wanted to keep the bank "apprised of the situation."[141]

7. There are insufficient reliable inputs to produce a reliable DCF analysis

In summary, the Management Projections suffer from numerous flaws. Specifically, they: (1) were prepared by a new management team, (2) in anticipation of future disputes and of shopping the Company to potential white knights, (3) using a new methodology, and (4) were for a significantly longer period of time than previous forecasts. In addition, I note the following problems: (5) management's track record at forecasting was questionable even under their standard method of forecasting; (6) the final projections incorporate speculative elements relating to ROHM, (7) rely on distorted base year figures that resulted from customer allocation issues and channel stuffing, and (8) predict growth out of line with historical trends; and, finally, (9) management itself was providing other, "more accurate" projections to the Company's bank. None of the indicia that often justify deferring to management projections are present in this case.

[141] Tr. 81.

Thus, Petitioner has not proven that the Management Projections are reliable, and I conclude that they are too questionable to form the basis of a reliable DCF valuation.[142]

"[W]ithout reliable five-year projections, any values generated by a DCF analysis are meaningless."[143] Having found that the Management Projections are unreliable and there are no other viable projections in the record,[144] I therefore conclude that it would be inappropriate to determine fair value based on a DCF analysis in this instance.

B. The Comparable Transactions Method Does Not Produce a Reliable Value

The parties' experts agree that there are no comparable companies to Ramtron.[145] Using another approach, Clarke, petitioner's expert, opined that there were two

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142 My conclusion that the Management Projections are unreliable prevents me from using those inputs. It is equally dubious to use either set of the SVB Projections, because they extend only for the 2012 calendar year and one of the main problems with the Management Projections is that they forecast an unrealistic *rate* of growth. Thus, even if the SVB Projections provided a reliable 2012 input, it still would not be clear what rate of growth to apply for future years. The parties, perhaps, could have advised on this issue. Instead of arguing that the Management Projections should be discounted a certain percentage, however, the parties took the opposite tactic of wholesale adoption or rejection of the Management Projections. This has forced the Court to choose one of those routes. Adopting instead some sort of middle ground would require me to engage in impermissible and unreliable speculation.

143 *Huff Fund Inv. P'ship*, 2013 WL 5878807, at *9.

144 Cypress prepared its own projections for Ramtron. JX 174. Those projections, however, predict Ramtron's performance as a division of Cypress. Tr. 321-23 (Rodgers). Accordingly, they are not useful as a predictor of Ramtron's stand-alone operating potential. Furthermore, Cypress predicted substantially more conservative figures than Ramtron's management, even after accounting for improvements that Cypress anticipated making to Ramtron.

145 JX 214 [hereinafter "Clarke Rpt."] at 47; Jarrell Rpt. 84.

comparable transactions from which Ramtron's value could be derived.[146] This analysis resulted in an implied value for Ramtron of $3.99 per share, and Clarke accorded it a 20% weight in his ultimate fair value determination.[147] Jarrell concluded that there were no comparable transactions.[148] For the following reasons, I conclude that Petitioner has not proven that the comparable transactions method is an appropriate valuation technique in this case.

A comparable transactions approach requires "identifying similar transactions, quantifying those transactions through financial metrics, and then applying the metrics to the company at issue to ascertain a value. The utility of a comparable transactions methodology is directly linked to the 'similarity between the company the court is valuing and the companies used for comparison.'"[149] "Reliance on a comparable companies or comparable transactions approach is improper where the purported 'comparables' involve significantly different products or services than the company whose appraisal is at issue, or vastly different multiples."[150]

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[146] Clarke Rpt. 51.

[147] *Id.* at 58.

[148] Jarrell Rpt. 87, 91.

[149] *Highfields Capital, Ltd. v. AXA Fin., Inc.*, 939 A.2d 34, 54 (Del. Ch. 2007) (quoting *In re U.S. Cellular Operating Co.*, 2005 WL 43994, at *17 (Del. Ch. Jan. 6, 2005)).

[150] *In re Orchard Enters., Inc.*, 2012 WL 2923305, at *9 (Del. Ch. July 18, 2012).

The purportedly comparable transactions are the acquisitions of Actel Corporation ("Actel") and Virage Logic Corporation ("Virage"), both of which Clarke concluded were companies that produced memory products but, like Ramtron, operated without their own foundry.[151] Clarke computed multiples for the two firms based on the transactions involving them for the following financial metrics: (1) equity value ("EV")/last twelve months' revenue ("LTM"); (2) EV/next twelve months' forecasted revenue ("NTM"); and (3) EV/NTM + 1.[152] Clarke then averaged the Virage and Actel multiples and derived an implied value for Ramtron from them.

Jarrell contests Clarke's choice of comparable transactions. He notes that the proxy statement in the Virage transaction included a list of comparable companies from two industries similar to Virage's and that Ramtron was not listed in either group.[153] It is unclear whether Jarrell believes that Actel is not comparable in and of itself, but he did observe that the multiples for that company support the Merger price as evidence of fair value. More importantly, Jarrell opines that the dispersion of the multiples for Actel and Virage is too great to be reliable and violates the "law of one price."[154] I agree with this criticism.

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[151] Clarke Rpt. 50-51.

[152] This is "forecasted revenue for the one-year period after the next 12 months." *Id.* at 53.

[153] JX 216 [hereinafter "Jarrell Rebuttal Rpt."] at 38.

[154] *Id.*

In the past, "[t]his Court has found comparable transactions analyses that used as few as five transactions and two transactions to be unreliable."[155] This "dearth of data points . . . undermines the reliability" of the methodology.[156] Here, there are only two data points and the multiples (shown below) differ significantly.[157]

Target Company		*EV/LTM Revenue*	*EV/NTM Revenue*	*EV/NTM + 1 Revenue*
Virage		4.43x	2.80x	2.25x
Actel		2.05x	1.72x	1.65x
	Average	**3.24x**	**2.26x**	**1.95x**
Ramtron	Financials	$58.2M	$69.0M	$85.6M
	Implied[158] Equity Value (Unadjusted for Synergies)	**$181.1M**	**$148.4M**	**$159.7M**

Clarke then went on to: (1) subtract a 13% synergy discount from each of the implied equity values; and (2) average the three figures to arrive at a comparable-transactions-based equity value for Ramtron of $141.9 million.

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155 *Merion Capital, L.P. v. 3M Cogent, Inc.*, 2013 WL 3793896, at *8 (Del. Ch. July 8, 2013) (citing *In re John Q. Hammons Hotels Inc. S'holder Litig.*, 2011 WL 227634, at *5 (Del. Ch. Jan. 14, 2011) and *In re U.S. Cellular Operating Co.*, 2005 WL 43994, at *18).

156 *Id.*

157 Clarke Rpt. 54.

158 The implied equity value is not an exact multiple, because Ramtron's debt of $8.8 million is subtracted out and the Company's cash of $1.3 million is added into the calculation. This results in netting out $7.5 million to obtain the implied equity value that is shown.

Even assuming these two transactions qualitatively are comparable transactions, in that the acquired companies operated similar businesses to Ramtron, the meager number of data points and the range of multiples indicate that this valuation approach is of questionable reliability in this instance. The EV/LTM multiple, for example, yields synergy-adjusted per share values of $2.74 to $6.13, a range of $3.39, which exceeds the Merger price of $3.10.[159] The EV/NTM multiple suggests equity values of $2.72 to $4.55, a spread of $1.83.[160] By contrast, the EV/NTM+1 multiple produces a tighter range of $3.27 to $4.53.

I see little justification for Clarke's simple averaging method, particularly with only two data points. His comparable transactions approach implies per share values ranging anywhere from $2.72 to $6.13. Two of the multiples have high-low ranges exceeding Ramtron's unaffected stock price. I am not convinced it is productive to utilize a method that implies Ramtron's fair value is somewhere between 88% and 198% of the deal price.[161] Also, the EV/NTM and EV/NTM+1 multiples rely on the

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[159] This calculation is derived by applying the comparable transaction multiples to Ramtron's financials, subtracting $7.5 million, discounting by 13%, and then dividing by the number of shares, which I assume to be Clarke's figure of 35,528,425. Jarrell contends that the latter figure understates the number of shares by about four million units because of restricted stock and stock options.

[160] These numbers are inconsequentially different from Jarrell's calculations. The deviation seemingly results from his rounding of Clarke's determination of shares outstanding to 35,500,000.

[161] Jarrell presents a colorable argument that Virage is not, in fact, a comparable transaction. If correct, that provides yet another reason that the comparable transaction methodology is not reliable here, but I need not decide that issue. If

Management Projections, which I already have concluded are unreliable. Finally, Clarke himself attributed minimal weight to this approach—only one-fifth of his conclusion. For all of these reasons, I conclude that Petitioner has not satisfied its burden of proving that the comparable transactions approach provides a reliable indication of Ramtron's fair value.

C. The Transaction Price Provides the Best Evidence of Fair Value

A DCF analysis attempts to value a company by looking within the company, extrapolating its financials into the future, and then discounting these cash flows to present value. A comparables approach instead looks outside the company and attempts to value it by market analogy. The former method is only useful to the extent its inputs are reliable; the latter is helpful only to the extent actual comparables exist. Neither approach yields a reliable measure of fair value in this case. Instead, I conclude that the Merger price offers the best indication of fair value.

A merger price does not necessarily represent the fair value of a company, as the term "fair value" is interpreted under 8 *Del. C.* § 262. For example, in a short-form merger under Section 253, the merger price is set unilaterally by the controlling stockholder; the minority stockholders are forced out of the company and left with appraisal as their sole remedy. To presume that the merger price represented fair value in such a situation would leave the minority stockholders effectively without the remedy

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Virage is not comparable, the Court would be left attempting to value Ramtron on the highly questionable basis of a single allegedly comparable transaction.

offered by Section 262 of an independent analysis of a company's fair value. In 2010, the Delaware Supreme Court in *Golden Telecom, Inc. v. Global GT LP*[162] explicitly rejected the argument that this Court should "defer" to the merger price. Indeed, the Supreme Court concluded that such deference would be contrary to the statutory language of Section 262, which requires consideration of "all relevant factors" in determining a company's fair value.[163]

Nevertheless, in the situation of a proper transactional process likely to have resulted in an accurate valuation of an acquired corporation, this Court has looked to the merger price as evidence of fair value and, on occasion, given that metric one-hundred percent weight.[164] In an oft-quoted passage, then-Vice Chancellor Jacobs wrote: "The fact that a transaction price was forged in the crucible of objective market reality (as distinguished from the unavoidably subjective thought process of a valuation expert) is viewed as strong evidence that the price is fair."[165] Similarly, Chief Justice Strine, then writing as a Vice Chancellor, noted: "[O]ur case law recognizes that when there is an

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[162] 11 A.3d 214 (Del. 2010).

[163] *Id.* at 217-18.

[164] *In re Appraisal of Ancestry.com, Inc.*, 2015 WL 399726 (holding that the merger price was the most reliable indication of fair value and performing confirmatory DCF analysis); *Huff Fund Inv. P'ship*, 2013 WL 5878807 (finding the merger price to be the best indication of fair value in light of the lack of other reliable methods); *The Union Illinois 1995 Inv. Ltd. P'ship v. Union Fin. Gp., Ltd.*, 847 A.2d 340 (Del. Ch. Jan. 5, 2004) (concluding that the merger price offered the best indication of fair value and also performing a confirmatory DCF analysis).

[165] *Van de Walle v. Unimation, Inc.*, 1991 WL 29303, at *17 (Del. Ch. Mar. 7, 1991).

open opportunity to buy a company, the resulting market price is reliable evidence of fair value."[166] The inquiry here is whether the Merger process resulted in a price indicative of Ramtron's fair value or, as the parties have framed it, whether there was a "competitive and fair auction"[167] for Ramtron.

At the outset, I note that I am not aware of any case holding that a multi-bidder auction of a company is a prerequisite to finding that the merger price is a reliable indicator of fair value. Here, unlike in *Union Illinois* or *Huff Fund*, only one company, Cypress, made a bid. This case also differs in that the Merger was a hostile deal. As detailed below, however, I conclude that "the process by which [the Company] was marketed to potential buyers was thorough, effective, and free from any spectre of self-interest or disloyalty,"[168] and that the resulting price accordingly provides a reliable indication of Ramtron's fair value.

Ramtron could, and repeatedly did, reject Cypress' overtures. Simultaneously, Ramtron actively solicited every buyer it believed could be interested in a transaction. The Company provided several of those potential buyers with the much-vaunted Management Projections. No one bid. LongPath contends that the lack of other bidders indicates a flawed process. I disagree. Any impediments to a higher bid resulted from Ramtron's operative reality, not shortcomings of the Merger process.

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[166] *Union Illinois*, 847 A.2d at 357.

[167] *Id.* at 358.

[168] *Huff Fund Inv. P'ship*, 2013 WL 5878807, at *13.

1. TI and Ramtron's operative reality

Much already has been said about Ramtron's operative reality as of the Merger. Petitioner focuses on one particular factor that it contends irredeemably corrupted the sales process: Ramtron's foundry relationship with TI. Under Ramtron's manufacturing agreement with TI, Ramtron was guaranteed three additional years of production if TI terminated the agreement.[169] But, in the event Ramtron experienced a change in control, TI had the right to terminate the agreement upon ninety days notice.[170] LongPath argues that this change-in-control provision deterred prospective bidders. I reject this contention as contrary to the evidence.

The parties do not dispute that Cypress began preparing for its hostile bid well in advance. Part of that diligence involved predicting potential interlopers. Another aspect of Cypress' preparation involved essentially seeking TI's blessing for its potential bid. Because of the change-in-control provisions, Cypress sought to get some form of assurance from TI in advance of issuing its bear hug letter that TI would not exercise that right in relation to an acquisition by Cypress. Rodgers testified that he called TI's president to discuss a potential acquisition of Ramtron. In that regard, Cypress offered to avoid competing with one of TI's F-RAM products if TI agreed not to terminate the foundry relationship with Ramtron. Cypress never received a contract or other written

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[169] JX 322 (TI Mfg. Agreement); JX 324 (TI Mfg. Agreement Amendment No. 2) § 13.1.

[170] JX 322 § 14.8(b).

agreement from TI—in fact, it appears that TI never explicitly agreed to support Cypress' bid. Cypress did receive, however, enough of an informal assurance that it deemed the risk of proceeding with the acquisition acceptable.[171]

As Petitioner emphasizes, Rodgers began discussing this issue with TI in March 2011, over a year before Cypress' bid for Ramtron.[172] Even so, the record is clear that Cypress never obtained a contractual commitment from TI. In an undated internal Cypress presentation analyzing the potential bid for Ramtron, the possibility of TI dishonoring its commitment is listed as a low risk, but Cypress (twice) listed the lack of TI support as a major risk to any potential deal.[173]

LongPath argues that Cypress had an unfair tactical advantage and that other bidders were unlikely to get TI's support. This appears to be nothing but speculation. Ramtron's relationship with TI was part of its operative reality. A Cypress planning document, titled "Potential Interlopers," listed five such plausible interlopers. For three of them, Cypress predicted that TI would not extend foundry support because those

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[171] Tr. 287-90; *id.* at 289 (Rodgers: "They explicitly refused to say 'we will support you' to the point that I didn't even try to get them to sign a document, but my inference was that they wouldn't harm us if we didn't attack them.").

[172] JX 320.

[173] JX 236 at 7. Because the presentation includes actual numbers for 2011, I infer that it must be from sometime in 2012.

companies directly competed with TI.[174] A different document predicted the same as to a sixth possible interloper.[175]

I find these predictions and Petitioner's reliance upon them somewhat puzzling. Even though Cypress offered not to encroach on one specific TI product line, "low power microcontrollers,"[176] in order to get an informal assurance that the manufacturing agreement would continue, the uncontradicted evidence shows that TI and Cypress directly competed in several markets and that the two companies had significant bad blood between them as a result of two previous intellectual property lawsuits.[177] Thus, applying the reasoning underlying Cypress' advisor's predictions, TI likely would not have extended foundry services to Cypress either. But, TI did make at least a nonbinding commitment to continue foundry services for Cypress.

Petitioner has not shown that any other company that wanted to acquire Ramtron was in a worse position than Cypress in terms of getting TI's assent. Indeed, some may

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[174] JX 67.

[175] JX 65.

[176] Tr. 287 (Rodgers).

[177] *Id.* at 286 (Rodgers: "They're a company with many divisions, like us, and they compete broadly in the market."); *id.* at 287 ("TI and Cypress have a history of conflict, and they sued us twice about 15 years ago. We won both trials, but there's not good blood."); *id.* at 237 (Kaszubinski: testifying that TI and Cypress competed); *id.* at 389-90 (Buss: "So the challenge for us is that TI does not like Cypress. TI and T.J. [Rodgers] do not get along. . . . I believe he had been in two prior lawsuits with them prior to my tenure, and I think he beat them both times. So there is a lot of animosity between the two companies, and it was the number one issue we wrestled with.").

have been better positioned than Cypress. Construed most favorably to LongPath, all bidders were in the same boat as Cypress vis-à-vis TI. Ramtron's manufacturing agreement with TI simply was part of the Company's operative reality at the time of the Merger.

Furthermore, there is no evidence that the change-in-control provisions in the TI manufacturing agreement actually deterred any of the potential bidders.[178] Ramtron apparently proceeded the furthest in discussing alternative transactions with three companies: Atmel Corp., SMART Modular, and ROHM. Nothing suggests that the TI agreement caused any of those companies to back out. Davenport testified that SMART Modular was "very hesitant due to our supply-side cost structure and the tenuousness of our supply" and also did not like the Company's "sole sourcing."[179] Atmel similarly declined because of Ramtron's "cost structure [and] in particular our wafer supply, [which] they were very, very concerned about."[180] ROHM seems to have been contemplating a minority investment, discussed in the next Subsection, which would not have implicated the TI concerns. In short, Petitioner has not demonstrated that the change-in-control provisions in the manufacturing agreement with TI materially impaired Ramtron's sales process. Instead, Ramtron's sole or primary reliance on TI as its foundry was part of the Company's operative reality.

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178 *Id.* at 65 (Richards); *id.* at 202 (Davenport).

179 *Id.* at 201.

180 *Id.*

2. Ramtron tries to sell itself to anyone but Cypress

Ramtron authorized Needham, its financial advisor, to market the Company to other potential acquirers and explore strategic alternatives. According to an August 30, 2012 Needham presentation, Needham had: (1) contacted twenty-four third parties, including Cypress; (2) sent non-disclosure agreements ("NDAs") to twelve of those entities, again including Cypress; (3) received executed NDAs from six interested parties, which did not include Cypress; and (4) remained in discussions with two companies other than Cypress.[181] This market canvass reveals that six companies were intrigued enough to enter into NDAs. It appears that those companies received or at least had access to Ramtron's Management Projections.[182] In addition, by August, Ramtron had announced its new manufacturing agreement with ROHM. Yet, despite this sales effort, not one company besides Cypress ever made a firm bid for Ramtron.

SMART Modular and Atmel were two of the companies with which talks proceeded the furthest. As noted, both companies declined to pursue a transaction because of what they viewed as problems with Ramtron's cost structure. The evidence does not reveal why each and every other company declined to bid for Ramtron. At least

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[181] JX 125 at 8.

[182] The Management Projections were in the Company's data room. *E.g.*, JX 84. Needham's call log shows that five companies who had signed NDAs accessed the data room, though one company that executed an NDA is missing from that log. JX 88.

one that executed an NDA saw no synergies in the transaction.[183] A second did not see the acquisition fitting with the potential bidder's strategic priorities.[184] Another that apparently did have familiarity with Ramtron's technology was advised by its engineers not to move forward.[185] That company was sent, but did not sign, an NDA.

Not one of the specific explanations in the record relates to TI. Instead, what evidence there is suggests that these other companies did not see value in Ramtron exceeding Cypress' bid. The importance of this point is amplified by the fact that Needham's call log indicates that the NDAs all were executed in late June,[186] when Cypress' bid was only $2.68 a share. According to Petitioner's position in this litigation, at that point in time, the Company was being undervalued by $2.28. Ramtron's hostile bid caused a significant spike in trading volume, as revealed by Needham's stock price analyses.[187] Aside from the prospective purchasers that Needham contacted, therefore, the fact that Ramtron was in play was known in the market. Purely financial purchasers theoretically could have stepped in and made unsolicited bids and, according to LongPath's position in this litigation, snatched up Ramtron at a fire sale price. None did.

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[183] JX 114.

[184] JX 70.

[185] JX 76.

[186] JX 88.

[187] JX 125.

Indeed, *no one even bid*, including those with inside information, even when Cypress' offer was $0.42 below the final Merger price.

Petitioner focuses at length on Ramtron's discussions with ROHM. On July 17, 2012, Ramtron's management proposed two alternative transactions to ROHM: (1) a purchase of seven million shares of Ramtron common stock at $3.50 per share together with a board seat; or (2) seven million shares of Ramtron convertible preferred stock at $4.00 per share and a board seat.[188] Three days later, on July 20, Ramtron and ROHM announced their new manufacturing agreement.[189] ROHM apparently also was interested in the potential purchase of Ramtron's common stock and, on August 11, 2012, communicated to the Company that any such purchase would be at $3.00 per share.[190]

According to Petitioner, ROHM's interest in a minority investment at a price slightly below the deal price indicates that the Merger price undervalued Ramtron. If ROHM in fact had made such an investment, I might be inclined to agree.[191] But, even in its email countering at $3.00, ROHM explicitly stated the following:

> Actually, one of our concerns at this time is the legal and financial risk for purchasing stocks of a public company with

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188 JX 90.

189 JS ¶ 5.

190 JX 109.

191 Clarke's report, for example, suggested that the average acquisition premium in the semiconductor industry is about 30%, with roughly half of that amount attributable to a control premium and the remainder attributable to synergies. Clarke Rpt. 56. An additional 15% on top of $3.00 would imply a minimum acquisition price of $3.45, exclusive of synergies.

> a price above the market price. Since we have to justify the purchasing price to achieve the accountability to our shareholders, we have to seek profit that can make up for the paid premium. And we have to be careful to decide the purchase price in order to avoid impairment loss of assets.[192]

ROHM itself, it seems, was concerned with justifying the above-market premium. Perhaps, because of the manufacturing agreement between it and Ramtron, ROHM might have been able to exploit synergies between the two companies or otherwise unlock value in Ramtron not available to other bidders. Ultimately, however, ROHM backed away from pursuing a deal for Ramtron at the end of August. Citing "growing apprehension in ROHM's own business environment," ROHM determined that it was "not in a position to make an investment under present business outlook."[193]

3. Ramtron extracts a substantial premium from Cypress

Finally, LongPath criticizes Cypress' hostile approach, arguing that Cypress pounded Ramtron into submission at a below-market rate. I already have found that, to the extent Cypress' hostile bid negatively altered Ramtron's performance, such effects were dwarfed by Ramtron's own business problems, which included channel stuffing earlier in the year. Those flaws are part of Ramtron's operative reality. On the other hand, there is support in the case law for disregarding *temporary* distortions in determining a company's fair value.[194] In theory, then, it could be acceptable to back out any negative effects caused by Cypress' hostile offer. The parties, however, have offered

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[192] JX 109.

[193] JX 126.

no practical way to quantify those effects, particularly as against the larger effects from Ramtron's own business problems.

In that regard, there is no evidence that Cypress' hostile approach hampered the ability of other companies to bid for Ramtron or otherwise affected the Merger process. Only one company contacted by Needham stated that it did not wish to bid against Cypress.[195] By contrast, six other companies went so far as to execute NDAs. Even if Cypress was attempting to wear Ramtron down,[196] Cypress had every right to do so and there is no evidence that it acted improperly in this regard. Furthermore, the history of the Merger runs contrary to LongPath's argument. Ramtron's Board had the ability to say no to Cypress and repeatedly did so. The Board advised Ramtron's stockholders on several occasions not to tender into Cypress' bid and, over the same time period, *Cypress raised its bid five separate times*. The price Cypress ultimately paid—which was negotiated by the Ramtron Board and Cypress—was 25% higher than Cypress' starting offer.

4. Conclusion

The Merger resulted from Cypress' hostile bid. Cypress spent three months attempting to acquire Ramtron, during which time the Company actively shopped itself to other conceivable buyers, several of which indicated serious interest. None of those

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194 *See Glassman v. Unocal Exploration Corp.*, 777 A.2d 242, 248 (Del. 2001).

195 JX 88.

196 *See* JX 89 ("Wear them down and wait is working.").

potential alternative buyers made a firm offer. Cypress, however, repeatedly raised its price until it and Ramtron's Board agreed on final Merger price of $3.10 per share. This lengthy, publicized process was thorough and gives me confidence that, if Ramtron could have commanded a higher value, it would have. "For me (as a law-trained judge) to second-guess the price that resulted from that process involves an exercise in hubris and, at best, reasoned guess work."[197] As such, I conclude that the Merger price is a reliable indication of Ramtron's fair value.

D. Transaction Price Less Synergies

Thus far, I have concluded that the Management Projections are unreliable, making the use of a DCF inappropriate. Additionally, the parties agree that there are no comparable companies and I concur with Respondent that the comparable transactions approach does not provide a reliable indication of fair value here. By contrast, the Merger process was thorough and supports my reliance on the Merger price as an indication of Ramtron's fair value. In the absence of alternative methodologies, I weigh the Merger price at 100% in determining the fair value of Petitioner's shares.

In an appraisal action, however, it is inappropriate to include merger-specific value. Accordingly, I must exclude from the $3.10 Merger price any portion of that amount attributable to Cypress-specific synergies, as opposed to Ramtron's value as a

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[197] *Union Illinois*, 847 A.2d at 359.

going concern.[198] Respondent argues that the synergies amount to $0.34 per share. Petitioner contends that the net synergies are only $0.03.

Preliminarily, I reject LongPath's contention that synergies should be subtracted not from the Merger price, but instead from the value that Cypress attributed to Ramtron, which, according to Petitioner, is between $3.90 and $5.44. Those valuations estimated Ramtron's worth as a division of Cypress. Petitioner's requested approach is contrary to the language of Section 262, which commands that I "determine the fair value of the shares *exclusive of* any element of value arising from the accomplishment or expectation of the merger or consolidation."[199] There is no basis to deduct synergies from the idiosyncratic value attributed to a company by its purchaser, because it is not clear that value would provide insight into the fair value of the target company as a going concern. Instead, the proper way of applying a merger-price-less-synergies approach is to determine the value paid for a company and then subtract that portion of the purchase price representing synergies.[200]

As to the synergies in this transaction, I find Respondent's argument that over 10% of the transaction price represented synergies to be without merit. Jarrell first

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[198] *Huff Fund*, 2014 WL 2042797, at *2.

[199] 8 *Del. C.* § 262(h) (emphasis added).

[200] *Cf. Huff Fund*, 2014 WL 2042797, at *5 (providing the example of the urban cornfield auction and the eccentric farmer, and noting that, "In an auction setting, it makes little sense to determine whether a bid incorporates information about the value of certain opportunities by considering only the idiosyncratic weight attached to that information by any particular bidder, even the winning bidder").

provided a market-wide analysis of the premia paid by financial versus strategic buyers and from this approach concluded that average synergies could be removed from the purchase price by applying the ratio of the average financial buyers' premium to the average strategic buyers' premium, *i.e.*, effectively multiplying the Merger price by 0.73, which results in a fair value of $2.75.[201]

This general data, however, does not tell me anything about *this specific* transaction, which must be the focus in a Section 262 action. With respect to Cypress-specific synergies, Jarrell compared the Management Projections to a set of Cypress projections[202] and quantified the cost savings, which Jarrell determined to be $0.69 per share. He then assumed that Ramtron's stockholders captured between 25% and 75% of these synergies and took the midpoint of those calculations, resulting in a fair value of $2.76.[203] In addition to its back-of-the-envelope feel, this approach focuses solely on cost savings, which are positive synergies, and neglects the possibility of negative synergies, which Clarke asserts would exist here.[204]

Although Clarke rejected the transaction-price-less-synergies approach, he opined that negative revenue synergies and transaction costs would have to be added back to any value based on Jarrell's estimate of synergies. I find this approach to be reasonable and

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201 Jarrell Rpt. 43-44.

202 JX 174.

203 Jarrell Rpt. 46.

204 JX 217 (Clarke Rebuttal Rpt.) at 26-27.

supported by the record. The testimony at trial indicates that Cypress expected significant negative synergies from the Ramtron acquisition.[205] While Petitioner's approach may understate the net synergies, I find that it better conforms to the evidence adduced at trial than Ramtron's position. Accordingly, I adopt LongPath's approach to synergies and exclude $0.03 from the Merger price. This results in a fair value determination of $3.07 per share.

E. Reality Checks

As a final step, I consider it appropriate to touch briefly on some of the "real world" evidence that Petitioner contends undermines the Merger price as a reliable indicator of fair value. Some of these items are entitled to zero weight. Balzer, for example, testified at his deposition that he told Cypress at the time of its nonpublic offer in 2011 that he believed Ramtron's stock would be worth $6 to $8 "several years out."[206] This speculation, of course, is not informative as to what Ramtron was worth at the time of the Merger. Similarly, Ramtron's Chairman of the Board testified that he "personally would have paid more than $3.10."[207] The usefulness of a transaction price, however, is that "buyers with a profit motive [are] able to assess [company-specific] factors for themselves and to use those assessments to make bids with actual money behind

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205 Tr. 358-61 (Rodgers: testifying about negative synergies in the range of ten to fifteen percent of revenue); *id.* at 268-70 (Kaszubinski: same).

206 Balzer Dep. 19.

207 JX 246 at 76.

them."[208] By contrast, hypothetical statements about how much money someone allegedly would have paid, if they actually had the money to do so, which they apparently did not, are significantly less probative.

Similarly, I give no weight to the $4 target trading price Merriman Capital announced in January 2012,[209] and reiterated in April 2012.[210] By late July, Merriman Capital had pulled its target price and admitted it could not model Ramtron accurately.[211] And, as already discussed, I do not find informative the fact that Cypress' internal documents suggest a value for Ramtron above the deal price; those documents model Ramtron as a division of Cypress and are not indicative of the fair value of Ramtron as a stand-alone company.

The one factor that does cause me some pause, however, is the ROHM potential investment. The fact that ROHM apparently was seriously considering a minority equity investment at $3.00 per share casts some doubt on the Merger price of $3.10. Ultimately, however, ROHM did not make this investment and, in fact, expressed serious concern about paying an above-market price for Ramtron stock. Because ROHM had extensive information about Ramtron and ultimately decided not to pursue the minority investment, I discount its importance. ROHM made exactly as many actual bids as the rest of the

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208 *Union Illinois*, 847 A.2d at 359.

209 JX 38.

210 JX 48.

211 JX 97.

market: zero. In that regard, the ROHM equity “investment” is simply another non-event.

Indeed, I suspect that, rather than the Merger price being low, it was more likely that the ROHM proposal was inexplicably high. Recall, for example, that, in 2011, long before Cypress made its public offer, Ramtron executed a secondary public offering in which it diluted its equity holders and sold about 20% of its shares for $2.00 each, with a net to itself of $1.79. By July 2012, based on the findings in this Memorandum Opinion, Ramtron’s financial condition was no better than it was when it made the secondary public offering. For these reasons, I conclude that the ROHM investment, which never actually occurred, does not cast doubt on the Merger price as a reliable indicator of fair value.

IV. CONCLUSION

For the foregoing reasons, I determine the fair value of Ramtron as of the Merger date to be $3.07 per share. Counsel for Petitioner shall submit, on notice, an appropriate final order to that effect, including provisions for pre- and post-judgment interest.