Trickle Research

Every raging river, every great lake, every deep blue sea starts … with a trickle

Research Update and Target Decrease

SIGMA Additive Solutions

Sigma Additive Solutions

(NasdaqGS: **SASI)**

(www.sigmaadditive.com)

Report Date: 12/13/22

12- 24 month Price Target (Adjusted): *$3.50

Allocation: 7

(Adjusted) Closing Stock Price at Initiation (Closing Px: 10/29/19): $5.10

Closing Stock Price at Allocation Increase (Closing Px: 10/07/20): $2.58

Stock Price at Allocation Increase and Price Target Decrease (Closing Px: 07/29/21): $3.76

Stock Price at Allocation Increase (Closing Px: 04/06/22): $1.99

Stock Price at This Price Target Decrease (Closing Px: 12/13/22): $.53

Prepared By:
David L. Lavigne
Senior Analyst, Managing
Partner Trickle Research

Disclosure: Portions of this report are excerpted from Sigma Additive's filings, website(s), presentations or other public collateral. We have attempted to identify those excerpts by *italicizing* them in the text.

Sigma reported 3QF22 results about 30 days ago. Those results were largely in line with our estimates. Specifically, we overstated revenues by about $200,000, and net income by a similar number and there were no surprises in terms of expenses. As most of our subscribers and other readers are likely aware, perhaps unconventionally, we do not always provide updates around earnings releases. That is especially the case with companies in the early stages of their revenue development (like Sigma) because frankly, outside of addressing their burn and associated cash position, we do not generally find those releases to be particularly eventful or insightful. On the other hand, *we do* often provide updates around other releases that we think may support our investment thesis, which leads us to an announcement Sigma made a few days ago.

Sigma made an announcement early in the month that attracted our attention and as such, we thought was worth providing an update around. An excerpt from the announcement is below:

> *Thursday, December 1, 2022*
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> *Sigma to Expand Agnostic Software-only Offerings to Provide Key Analytics to EOS Machine, Process, and Part In-process Data*
>
> *SANTA FE, N.M., December 01, 2022--(BUSINESS WIRE)--Sigma Additive Solutions, Inc. (NASDAQ:SASI) ("Sigma", "we," or "our"), a leading developer of quality assurance software to the commercial 3D printing industry, announced today that it has joined the EOS Developer Network (EDN) by EOS, a leading supplier for responsible manufacturing solutions via industrial 3D printing technology. This enables Sigma to provide software and analytics applications from EOS application programming interfaces (APIs).*
>
> *The EDN partner program streamlines services and tools to allow Sigma to expand its software offering via the EOS digital thread from data preparation, machine management, process data acquisition, and reporting. EDN also provides access to API documentation, code samples, dedicated support by solution experts and access to virtual EOS systems for testing and integration validation.*
>
> *According to Sigma's General Manager of European Operations Stephan Kuehr, "This is a great step in allowing us to support customer quality at every point of their additive journey, as well as better integrate with other software solutions. EOS is a premier supplier to the entire additive manufacturing industry, including both metals and polymer technologies. We share their mission of providing high levels of manufacturing quality and economic sustainability. We believe that the combination of EOS' machine platforms with Sigma's pedigree in agnostic monitoring and analytics software will be a marketplace differentiator and catalyst for growth of the entire additive industry."*
>
> *Stated Mirco Schöpf, Product Line Manager Software, EOS, "We are very pleased to welcome Sigma Additive Solutions to the EDN partner program.* ***EOS believes open software interfaces have a strong impact on the adoption of additive manufacturing (AM) in general and provide opportunities to speed up industrialization****. We created the EOS Developer Network (EDN) to support the AM software community to build seamlessly integrated software products that add to the powerful foundation EOS has built."*

There are a few reasons this announcement jumped out at us.

First, back in April (2022) we provided an extensive update on Sigma. That update provided our views around several sequential announcements the Company made prior to the publication. One of those announcements dealt with the Company's collaboration with Auburn University (AU) and the National Aeronautics and Space Administration (NASA). The second announcement was related to Sigma's signing of a collaboration with Phillips Federal as exclusive reseller. The announcement noted that the agreement was aimed at " *facilitating the ability of Phillips Federal to provide testing and onsite demonstrations, Sigma Labs will install a PrintRite3D® system at the Phillips Additive Innovation Center inside the Army Center of Excellence for Advanced Manufacturing at Rock Island Arsenal Joint Manufacturing and Technology Center. Phillips' Additive Innovation Center is a dedicated space utilized in conjunction with their collaborative work with the Department of Defense (DoD) to educate, inspire, and redefine the capabilities of additive manufacturing. The PrintRite3D system will be installed on an* ***EOS M290 DMLS*** *machine to be used for demonstration, training and education of DoD personnel on the benefits of in-process monitoring".*

In our March update, we also "connected" these two announcements via the following narrative:

> *(Just to segue for a moment to something we found interesting, we believe the* ***EOS M290*** *machine is the same machine that Auburn University is installing Print Rite 3D on)...*

Revisiting the announcement we noted above from Thursday, December 1, 2022, notice, that announcement centers on a collaboration with EOS, which in turn corresponds to the two announcements we referenced in March in that both of those collaborations (Auburn University/NASA and Phillips/ Rock Island Arsenal), involved EOS machines. At points in the past, we have discussed EOS with Company management and especially around these two collaborations involving EOS machines. Our curiosity stemmed in part from what we viewed as EOS' leadership posture in the Additive Metal Manufacturing industry. From EOS:

> *"EOS is leading supplier for responsible manufacturing solutions via industrial 3D printing technology. With our innovative EOS 3D printers, we are leaders in technology and quality* ***for high-end solutions*** *in additive manufacturing (AM). Founded in 1989, we are pioneers in the field of metal 3D printing (DMLS) and providers of highly productive systems for additive manufacturing with plastics. Our portfolio also includes worldwide service and comprehensive consulting offers for additive manufacturing".*

While perhaps anecdotal, we think the two referenced announcements support our view that EOS is perhaps a lynchpin in the industry, in that each of these organizations we referenced are using EOS machines. As a result, we think the new collaboration with EOS is highly positive. However, it is our understanding of Sigma's *prior* relationship with EOS that we find particularly telling. To edify, our past discussions with management led us to believe that EOS was not historically receptive to Sigma and/or its technology. That is not overly intuitive since in the past, many of the printer manufactures have/had taken that position, but specifically, **that view is one of the reasons that we included the paragraph above in our March (2022) update regarding their two new collaborations involving EOS machines**. In short, we found it interesting that these two organizations were collaborating with Sigma on a machine from a manufacturer that was perhaps not supportive of Sigma. Without getting too far into the weeds, if our prior assessment that *once-upon-a-time* EOS was not a fan of Sigma's is accurate, then our new assumption is that given Sigma's new partnership with EOS, something obviously changed along the way. In our opinion, we think it is more likely that EOS customers like Auburn et al and Phillips et al, had more to do with EOS being more palatable to a collaboration with Sigma than EOS suddenly *"seeing the light"* and embracing Sigma's technology. Clearly, we could be mistaken, but that is our sense, and frankly that fits a narrative we have been arguing for some time now (as has the Company) that Sigma's success might hinge in part on getting printer customers to demand ubiquitous QA solutions like Sigma's, which as some will recall, has been part of their strategy given the reluctance of printer manufacturers to embrace 3rd party solutions. Whatever the case, as the comments from EOS (which we highlighted above in bold letters) indicate, the industry is beginning to embrace "*open software interfaces"* that may accelerate *"the adoption of additive manufacturing (AM) in general and provide opportunities to speed up industrialization."* Again, that narrative should sound familiar because it is a drum that Sigma has been beating (and we have been marching to) since the initiation of our research and we believe that scenario is playing out across the industry. That brings us to our next point.

To reiterate, we believe much of what Sigma has been suggesting about the eventual adoption and acceleration of additive metal manufacturing depending on more industry collaboration, more industry standards and more ubiquitous (and likely 3rd party) quality assurance protocols is proving to be accurate. Moreover, that mantra is beginning to be echoed by significant industry players that we think it is fair to say have historically rejected or at least resisted that path. At the same time, we cannot argue with the reality that meaningful revenue momentum continues to evade Sigma, which begs the question, how long will it take for that prescience to turn into sales?

As we have noted in prior research, Sigma's decision to switch to a subscription type model as opposed to outright sales, has negatively impacted revenues as unit revenue is now recognized in smaller pieces over longer periods of time. That said, we submit, despite some of the universal excuses regarding covid, supply chains et al, the fact is, Sigma has not been able to generate the type of momentum we thought they would by now when we first initiated the coverage, or even along the way for that matter. We tend to believe some of that has to do with the nature (pace) of the industry, but we also admit that over the past 2+ years, the Company has improved the platform considerably which includes the transitioning to an all-software solution as well as functionality beyond the melt pool, and in retrospect, much of that evolution was probably necessary for Sigma to achieve scalable commercialization. Put another way, they may have *never* succeeded commercially with the version of the platform they had when we initiated coverage, although again, some of that critique lies at the feet of an industry that has been slow to adopt standards that likely would have hastened its growth. On the positive side, we think some of Sigma's evolution *has* coincided with changes in the industry (re: growing collaboration) that will benefit Sigma and ultimately get them to where we have believed they could get to. We would add, perhaps counterintuitively, that evolution may have also impeded some of their revenue opportunities along the way, specifically their retrofit business.

To edify, when we first initiated the coverage of Sigma, we envisioned their revenue ramp to start with retrofitting existing printers, especially among manufactures that perhaps owned multiple types of printers wherein they could use PrintRite 3D to standardize their QA across their existing fleet. Recall, the Company gained some credibility in that regard in Q1 2021 when it announced a sale to Lockheed Martin. In short, the retrofit business has not accelerated as we (or ostensibly they) had originally envisioned. From another perspective, as we noted above, the "bigger picture" has always been to get printer manufacturers to embed or otherwise include PrintRite 3D with their printers (ultimately usurping the retrofit business). With that backdrop, we believe Sigma has become acutely focused on expanding its collaboration with printer manufacturers (something they continue to gain traction around, including the above announcement regarding EOS) and more specifically developing a software only solution that should significantly enhance their opportunities. That may be a convenient excuse for why our initial projections have proven to be woefully overstated (or maybe just early as it may turn out), but we do believe that both their focus and perhaps some of the acquiescence of the industry around collaboration, may have muted some of their retrofit efforts. To be clear, we are not suggesting Sigma is out of the retrofit business, but we do think it may be more focused on bigger opportunities. In fact, we think the transition to a software only solution will likely provide a better opportunity in the retrofit market because customers may ultimatley simply download Sigma QA from a set of modules (melt pool, machine health, camera data collection and analysis etc.)

There was another issue they discussed on the call that has us reading between the lines again. Succinctly, they talked about their efforts to attract and/or choose a "strategic investor". This is an issue we have alluded to in prior research, but to revisit this, we have believed for some time that the eventual endgame here might be a combination with another "agnostic" player in the AM software space. We still believe that is the likely outcome, but it sounds like they are already well down the road in terms of at least trying to identify and attract an investment along those lines. This was in our view a great piece of visibility in the sense that we think most investors have been looking at the combination of Sigma's burn rate and balance sheet and concluding that they will need to revisit the equity markets sooner rather than later, which probably explains a portion of the compression in stock. We feel like we have been saying this frequently these days, but illiquid and volatile equity markets are generally an unforgiving place for small companies that need to continue to address cash burn via equity sales. As a result, relatively speaking, we would view some sort of strategic investment as a positive development and something that seems to be forthcoming given that they chose to address it on the call.

We submit, Sigma has been largely frustrating throughout much of our coverage. However, we think most who follow it would say much the same about the industry in general. That does not blunt the frustration, but we do think it speaks to our continued view that given the environment, management continues to position the Company in a way that will prove fruitful if the industry does in fact become what we and others believe it ultimately will. Further, we think the Company's ability to continue adding collaborations with major printer manufacturers is proof that their vision that their technology could ultimately be adopted and embedded directly into printers by those OEMs, as well as validation of the strength of their technology in general. We continue to believe that those tenets of our thesis remain intact.

As we have also noted through much of our research, modeling early stage and early revenue companies is difficult, rife with error and subject to considerable change. Specifically, as we have noted, Sigma's revenue model has changed since our initial coverage, from a typical product sale model to a "subscription" model, (that looks more like a lease to us), but we'll set aside the vernacular. As a result of that change, we updated our model to reflect revenue recognition from the placement of units over several subsequent quarters as opposed to one, but also better margins because the extension of the payment structure also includes a larger collective piece of revenue per unit. Aside from spreading revenues over several quarters, that approach also complicates cash flow as payments are also received over several quarters. To that end, reiterating some of the discussion we noted above, they are going to need additional cash, so more dilution is coming. We have reflected that in our new modeling. We are inclined to think, (and are hopeful that) added capital will come through the "strategic" channels they alluded to. We will report on that as they provide updates.

Lastly, as an extension to some of the above, we have currently cast two models but we are only providing the first iteration, which is based on some of our revised assumptions around the new revenue model. However, our sense is that as we move forward, the model is likely to take another turn as they transition to the software only iteration that we think is clearly the plan. In that case, we would expect unit sales to generate lower recurring revenue revenues than the current iteration, as the software only solution will provide them with markedly better pricing flexibility, which should in turn allow them to providecometitive pricing. However, we also think that combination, an easy to integrate software solution combined with lower pricing, will expand the Company's TAM significantly, which means we think they will ultimately end up in substantially more printers than our current model reflects. We believe they have alluded to that as well. Further, we would expect an iteration of that nature (despite lower price points) should yield better margins than our current model reflects. To translate, we have provided a new model, but it will likely be well off actuals if we are correct about the intermediate and longer-term path of the business.

In summary, in some of our past research on Sigma, we have reflected on the notion of whether or not we have just been early on Sigma, or if we have been wrong. Obviously, we have at best been early, however, we also think that given Sigma's focus on software their subsequent success is soon going to hinge on another of our major tenets, which is that their technology represents the best, or at least a markedly competitive solution to AM. To that end, we remain convinced that Sigma will ultimately play a role in what we think will be marked growth in the additive manufacturing industry. Further, we are also cognizant of the delays/setbacks along the way (which may remain topical going forward), and the added dilution they have/will cause. As a result, we are establishing a new (lower) 12/24-month price target *$3.50 on revisions to our original model. Concurrently, despite continued poor visibility, we are reiterating our allocation of 7, as we believe their posturing and improving profile in the industry will eventually result in a basis for considerably better valuations.

Projected Operating Model

Projected Operating Model						
Sigma Labs, Inc.						
Prepared By: Dave Lavigne, Trickle Research						
	(Actual)	(Actual)	(Actual)	(Estimate)	(Estimate)	(Estimate)
	3/31/2022	**6/30/2022**	**9/30/2022**	**12/31/2022**	**Fiscal 2022**	**Fiscal 2023**
REVENUES	$ 51,844	$ 236,660	$ 188,245	$ 305,073	$ 781,822	$ 3,111,559
COST OF REVENUE	$ 40,091	$ 193,075	$ 79,713	$ 146,537	$ 459,416	$ 1,125,424
GROSS PROFIT	$ 11,753	$ 43,585	$ 108,532	$ 158,537	$ 322,407	$ 1,986,136
EXPENSES:					$ -	$ -
Salaries & Benefits	$ 1,292,010	$ 1,184,818	$ 1,227,805	$ 1,256,712	$ 4,961,345	$ 5,068,454
Stock-Based Compensation	$ 170,976	$ 167,439	$ 275,418	$ 175,000	$ 788,833	$ 700,000
Operating R&D Costs	$ 143,418	$ 146,885	$ 152,245	$ 139,118	$ 581,666	$ 673,111
Investor & Public Relations	$ 94,326	$ 152,300	$ 46,832	$ 75,000	$ 368,458	$ 300,000
Organizational Costs	$ 58,749	$ 60,817	$ 140,522	$ 141,225	$ 401,313	$ 571,995
Legal & Professional Service Fees	$ 211,416	$ 144,528	$ 252,886	$ 209,457	$ 818,287	$ 996,458
Office Expenses	$ 205,432	$ 303,600	$ 183,608	$ 207,627	$ 900,267	$ 877,789
Depreciation & Amortization	$ 31,584	$ 29,861	$ 26,857	$ 26,991	$ 115,293	$ 109,321
Other Operating Expenses	$ 87,787	$ 89,177	$ 86,783	$ 87,217	$ 350,964	$ 353,250
Total Operating Expenses	$ 2,295,698	$ 2,279,425	$ 2,392,956	$ 2,318,347	$ 9,286,426	$ 9,650,379
LOSS FROM OPERATIONS	$ (2,283,945)	$ (2,235,840)	$ (2,284,424)	$ (2,159,810)	$ (8,964,019)	$ (7,664,244)
OTHER INCOME (EXPENSE)					$ -	$ -
Interest Income	$ 1,571	$ 1,176	$ 278	$ 662	$ 3,687	$ 2,962
State Incentives	$ 76,628	$ -	$ -	$ -	$ 76,628	$ -
Change in fair value of derivative liabilities	$ -	$ -	$ -	$ -	$ -	$ -
Exchange Rate Gain (Loss)	$ (330)	$ (10,436)	$ (6,184)	$ -	$ (16,950)	$ -
Interest Expense	$ (1,319)	$ (2,070)	$ (1,978)	$ (1,988)	$ (7,355)	$ (8,051)
Loss on Disposal of Assets	$ -	$ -	$ -	$ -	$ -	$ -
Debt discount amortization	$ -	$ -	$ -	$ -	$ -	$ -
Total Other Income (Expense)	$ 76,550	$ (11,330)	$ (7,884)	$ (1,326)	$ 56,010	$ (5,089)
LOSS BEFORE PROVISION FOR INCOME TAXES	$ (2,207,395)	$ (2,247,170)	$ (2,292,308)	$ (2,161,136)	$ (8,908,009)	$ (7,669,333)
Provision for Income Taxes	$ -	$ -	$ -	$ -	$ -	$ -
Net Loss	$ (2,207,395)	$ (2,247,170)	$ (2,292,308)	$ (2,161,136)	$ (8,908,009)	$ (7,669,333)
Preferred Dividends	$ 14,220	$ 14,220	$ 14,220	$ 14,220	$ 56,880	$ 56,880
Net Loss applicable to Common Stockholders	$ (2,221,615)	$ (2,261,390)	$ (2,306,528)	$ (2,175,356)	$ (8,964,889)	$ (7,726,213)
Net Loss per Common Share - Basic and Diluted	$ (0.21)	$ (0.22)	$ (0.22)	$ (0.20)	$ (0.85)	$ (0.29)
Net Loss per Common Share - Diluted	$ (0.21)	$ (0.22)	$ (0.22)	$ (0.20)	$ (0.85)	$ (0.28)
Weighted Average Number of Shares Outstanding -	10,498,802	10,498,802	10,498,802	10,788,058	10,571,116	26,705,567
Weighted Average Number of Shares Outstanding -	10,498,802	10,498,802	10,498,802	10,852,673	10,587,270	27,584,401

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Trickle Research co-sponsors two microcap conferences each year. Trickle Research encourages its coverage companies to present at those conferences and Trickle charges them a fee to do so. Companies are under no obligation to present at these conferences.

Sigma has paid fees to present at investor conferences co-sponsored by Trickle Research.

Portions of this publication excerpted from company filings or other sources are noted in italics and referenced throughout the report.

Rating System Overview:

There are no letters in the rating system (Buy, Sell Hold), only numbers. The numbers range from 1 to 10, with 1 representing 1 "investment unit" (for my performance purposes, 1 "investment unit" equals $250) and 10 representing 10 investment units or $2,500. Obviously, a rating of 10 would suggest that I favor the stock (at respective/current levels) more than a stock with a rating of 1. As a guideline, here is a suggestion on how to use the allocation system.

Our belief at Trickle is that the best way to participate in the micro-cap/small cap space is by employing a diversified strategy. In simple terms, that means you are generally best off owning a number of issues rather than just two or three. To that point, our goal is to have at least 20 companies under coverage at any point in time, so let's use that as a guideline. Hypothetically, if you think you would like to commit $25,000 to buying micro-cap stocks, that would assume an investment of $1000 per stock (using the diversification approach we just mentioned, and the 20-stock coverage list we suggested and leaving some room to add to positions around allocation upgrades. We generally start initial coverage stocks with an allocation of 4. Thus, at $1000 invested per stock and a typical starting allocation of 4, your "investment unit" would be the same $250 we used in the example above. Thus, if we initiate a stock at a 4, you might consider putting $1000 into the position ($250 * 4). If we later raise the allocation to 6, you might consider adding two additional units or $500 to the position. If we then reduce the allocation from 6 to 4 you might consider selling whatever number of shares you purchased with 2 of the original 4 investment units. Again, this is just a suggestion as to how you might be able to use the allocation system to manage your portfolio.

For those attached to more traditional rating systems (Buy, Sell, Hold) we would submit the following guidelines.

- A Trickle rating of 1 thru 3 would best correspond to a "Speculative Buy" although we would caution that a rating in that range should not assume that the stock is necessarily riskier than a stock with a higher rating. It may carry a lower rating because the stock is trading closer to a price target we are unwilling to raise at that point. This by the way applies to all of our ratings.
- A Trickle rating of 4 thru 6 might best (although not perfectly) correspond to a standard "Buy" rating.
- A Trickle rating of 7 thru 10 would best correspond to a "Strong Buy" however, ratings at the higher end of that range would indicate something that we deem as quite extraordinary..... an "Extreme Buy" if you will. You will not see a lot of these.