Operator: Greetings, and welcome to the ExOne Company First Quarter 2020 Results Conference Call. [Operator Instructions] As a reminder, this conference is being recorded.

I would now like to turn the conference over to your host, Ms. Karen Howard, Investor Relations for ExOne. Please go ahead, Karen.

Karen L. Howard: Thank you, Jerry, and good morning, everyone. We appreciate your time today for the ExOne First Quarter 2020 Financial Results Conference Call.

Referring to Slide 2 in our slide deck, on the line with me today are our presenters, John Hartner, our Chief Executive Officer; and Doug Zemba, our Chief Financial Officer and Treasurer. John and Doug will be reviewing the results that were published in the press release distributed yesterday afternoon. If you don't have that release, it's available on our website at www.exone.com. The slides that accompany our discussion today are also posted on our website.

On Slide 3 is our safe harbor statement. As you may be aware, we will make some forward-looking statements during this presentation and may also during the Q&A. These statements apply to future events that are subject to risks and uncertainties as well as other factors that could cause actual results to differ from where we are today. These risks and uncertainties and other factors are provided in the earnings release, as well as other documents filed by the Company with the Securities and Exchange Commission. These documents can be found on our website or at www.sec.gov.

I also want to point out that during today's call, we may discuss some non-GAAP financial measures, which we believe are useful in evaluating our performance. You should not consider the presentation of this additional information in isolation or as a substitute for results prepared in accordance with GAAP. We have provided reconciliations of comparable GAAP to non-GAAP measures in the tables accompanying today's release.

John will get us started providing a business update. Doug will go through a detailed review of the financial results, and then John will provide perspective on our outlook for the rest of the year before we open up the line for questions and answers.

And with that, it's my pleasure to turn the call over to John to begin. John?

John F. Hartner: Thank you, Karen, and good morning, everybody. Thanks for joining us for ExOne's first quarter report. The past few months have certainly been historic, presenting the world with many new challenges and, over time, new opportunities. I'm happy to report that we at ExOne have proactively responded to the challenges and are well positioned to respond to the opportunities.

Let's move to Slide 5 for a summary of the quarter. We realized $13.4 million of revenue, a solid level for a first quarter. We benefited from a strong year-end backlog and momentum from the new machine lineup that we started delivering to customers in the fourth quarter of 2019. From an operating performance standpoint, we also reported solid gross margins, and we closed the quarter with backlog at a new record level, thanks to orders early in the quarter.

Obviously, the environment changed quite dramatically in the second half of March due to the COVID-19 pandemic. But I'm pleased to report that all of our facilities around the globe continue to operate in support of our customers that serve critical industries. We have instituted procedures advised by the health authorities for social distancing and other protocols to keep people safe. We have reached out to our customers to ensure adequate levels of consumables to operate their installed base of machines and support their manufacturing processes. We also proactively initiated cost reductions to protect the health of our business.

Please turn to Slide 6, and I'll review in more detail the proactive actions taken to respond to COVID-19. First, let me say that our hearts go out to all the folks impacted by this pandemic, and our gratitude goes especially to the frontline health care workers. I have a bit of insight about how challenging it can be, as my daughter is an ICU nurse in New York City.

Now I'd like to explain the impact that the pandemic has had on ExOne's revenues thus far. In some cases, we've been restricted from shipping, or more importantly, traveling to complete customer installations as planned. This resulted in the deferral of a few machine installations in Asia that we planned for the first quarter of 2020. Travel restrictions continue into the second quarter and broadly remain in effect today. Therefore, despite our strong backlog, it's difficult to know the timing when we'll be able to execute on it. I will touch on that later in our outlook.
From a cost perspective, we've been proactive in implementing cost reductions, some of which are temporary and others are permanent. In March and April, we made the difficult but necessary decisions on some permanent staff reductions and organizational changes. Temporary reductions include the following. Our global leadership team is taking a 20% salary reduction and similarly, our Board has taken a 20% reduction in their cash fees. We have implemented a 10% salary reduction for most of our North American employees, and we've initiated furloughs, or short work, in our German workforce. Finally, we took a hard look at all discretionary spending and made further cost reductions, some temporary and some permanent. We expect to deliver approximately $5 million of savings in the second through fourth quarters of 2020, of which about half are permanent reductions that will carry over into 2021.

As we progress through 2020, we will continue to assess the market situation and stay proactive. We believe that these early actions are important for our corporate health, and we will preserve capital as we manage through these uncertain times. At the same time, though, we have stayed true to our strategic goals, investing in long-term priorities, just at a reduced rate.

Please turn to Slide 7, and I will share our recent announcement on our collaboration with the University of Pittsburgh to produce a reusable respirator filter. Currently undergoing initial testing, the filter cartridge contains a 3D-printed porous metal filter intended for sustainable, long-term protection against contaminants, such as COVID-19. I say sustainable because these serializable filters avoid the bio-waste issues associated with disposable masks. Our team has been working urgently to expedite this solution for medical personnel on the frontlines. Once approved, we can print these filters in a variety of shapes for respirators, ventilators and other new customized PPE mask designs that are being developed today. While this filter presents a solution to help address the current PPE shortage, we believe it is a long-term solution for a variety of other applications.

Please turn to Slide 8. Over the next few slides, I want to provide some color on the diversified revenue streams that we believe help differentiate ExOne and provide stability in turbulent times. We have long talked about the diversity of our customers and end markets. Binder jetting technology lends itself to a broad range of applications that enable that diversity. We categorized our 2019 revenues by industry as shown in the chart here. Not surprising, automotive was our largest sector, being one of the more innovative industries at the forefront of 3D printing. It’s important to note that almost half of our revenue was categorized into the “Other” category, emphasizing the diverse nature of our end-market exposure. We believe that this is beneficial to ExOne as different industries advance through the economic cycle at varying rates.

Now let’s turn to Slide 9, and I’ll touch on that concept further. We’ve been advancing binder jetting technology since 1995, interacting with customers, developing solutions, in the end, driving diversity from the perspective of our revenue stream. We have a wide breadth of machine platforms. These range from our smaller Innvent+, which is ideal for research and prototyping, to our S-Max Pro and our X1 160Pro, which were the market’s largest and fastest production machines for sand and metal printing. And in between are our S-Print, M-Flex and X1 25Pro, commonly used for small batch production of sand molds, cores and metal components. This diversity of machine sizes positions us well to respond to a wide variety of customer applications.

Our service offerings generate recurring revenue, ranging from collaborative R&D contracts to customized part production, to printing high volumes of custom parts for customers at one of our adoption centers. Focusing on recurring revenue is one of our strategic pillars. During a period of economic turmoil, this becomes even more important and provides a steady revenue base.

Now let’s turn to Slide 10. The chart on the right demonstrates the breadth of our materials and how they align with our various machine platforms. We have more than 20 qualified powders consisting of sands, ceramics, composites and metal. Additionally, we print more than 20 R&D materials, a number which is constantly growing as we work with our customers. The combination of these powders, along with the breadth of our machines, drives a wide range of high-value manufacturing solutions for our customers. These factors help demonstrate ExOne’s resiliency to weather the economic storm and emerge even stronger.

I’m now going to let Doug walk through the details of our financial slides. Doug?

Douglas D. Zemba Thanks, John. Good morning, everyone. If you could please turn to Slide 12, we’ll start with revenue. Revenue increased by 40% to $13.4 million in Q1 2020 compared with $9.6 million in the first quarter of 2019. Total first quarter 2020 revenue growth was driven by increases in both machine sales and recurring revenues. On a trailing 12-month basis, revenue was $57.1 million through the first quarter of 2020 compared to $62.3 million through
Q1 of 2019.

Now let's go to Slide 13. Our machine sales were $6.3 million in the current quarter, up from $3.3 million in last year's first quarter. This 90% increase is due to higher volumes and a favorable mix of machines sold. Trailing 12-month machine sales were $30.2 million through the first quarter of 2020 compared to $35.2 million through the first quarter of 2019.

Now if we can turn to Slide 14, we'll review machine unit sales. As a reminder, our direct machines print components, such as metal and ceramic parts, for industrial and other applications and include our X1 25Pro, Innovent+ and M-Flex platforms as well as our recently introduced X1 160Pro platform, for which development is expected to be completed in the second half of 2020. Our indirect machines print tools, such as sand cores and molds, and include our S-Max Pro, S-Max and S-Print platforms. Our indirect machines are our larger footprint systems, generally achieving a higher average sales value.

We sold 14 machines in the 2020 first quarter compared with eight in the prior year quarter. As I already mentioned, this quarter, we benefited from an increase in volume as well as a favorable mix of machines sold. The 14 machines sold in the first quarter of 2020 consisted of five indirect and nine direct printing machines, including our first customer acceptance of an X1 25Pro. This customer was an early adopter of binder jetting technology through our M-Flex platform. Following the successful completion of their first X1 25Pro installation, this customer is firmly committed to delivery of four additional X1 25Pro systems as well as an Innovent+ system during 2020 to support their global operations.

Once again, our machine sales during Q1 2020 represented a diverse set of global geographies and customer applications and included a mix of industrial and research and development users. On a TTM basis, we sold a total of 50 machines, split 24 direct and 26 indirect, for 2020 versus 58 machines, split 33 direct and 25 indirect, for the first quarter 2019 TTM period.

Now let's turn to Slide 15. Recurring revenue, which includes our 3D printed and other products, materials and services, was $7.1 million in the first quarter of 2020, reflecting a 13% increase over last year's first quarter. The growth as compared to the 2019 first quarter was driven primarily by an increase in sales of consumables to our growing global installed base of machines as well as an increase in revenue associated with commercial research and development contracts. For the trailing 12 months, recurring revenue of $26.9 million was relatively in line with $27.1 million in the prior year period.

Turning to Slide 16, we'll talk about gross profit and margin. Gross profit was $3.6 million for the first quarter of 2020, up from $2.6 million in the 2019 first quarter. For the first quarter of 2020, gross margin was 27.1%, down from a 27.6% margin for the first quarter of 2019. Improved execution drove our higher revenue base during first quarter 2020, which was partially offset by lower realized pricing and an approximate 160 basis point impact of the completed sale-leaseback of our European headquarters and operating facility in Gersthofen, Germany. On the right, for the trailing 12 months, the decline is attributed to lower revenue volumes and lower realized pricing, partially offset by reductions in overhead costs and lower net inventory charges following our 2018 global cost realignment program initiated in June 2018.

Please turn to Slide 17, and we'll discuss SG&A. Comparing the first quarter of 2020 to 2019, our SG&A expenses were up $800,000 million to $6.2 million. This increase was driven by our investment in our global sales and marketing infrastructure. For the trailing 12 months, our SG&A increased by $900,000 to $23.3 million. The increase was due to costs incurred for executive management changes, our investment in selling and marketing efforts, including costs associated with the GIFA trade fair, which we discussed during our prior calls, and higher net provisions for bad debt. This was partially offset by employee and consulting cost reductions associated with our 2018 global cost realignment program.

Please turn to Slide 18, and we'll discuss our investment spending in R&D. First quarter R&D expense increased by $100,000 to $2.5 million, driven by an increase in employee-related costs, partially offset by a decrease in consulting and professional fees associated with lower overall machine development costs. The Q1 2020 trailing 12-month period reflects lower consulting and professional fees associated with our 2018 global cost realignment program.

Before moving on to backlog, I'd like to point out that, as a result of the completion of the sale-leaseback transaction I mentioned earlier, we recognized a nonrecurring gain of $1.5 million during the first quarter of 2020 reported as a separate line item in our statement of operations.
Now if you'll turn to **Slide 19**, I'll review backlog. To remind you, our backlog includes firmly committed orders received from our machine and recurring revenue customers. It includes our machine maintenance contracts as well as the non-cancelable portion of our operating lease agreements. Backlog also includes orders for our global direct and indirect printing operations and other contractual services, including funded research and development.

We ended Q1 2020 with another record backlog balance of $33.8 million, compared to $18.8 million at the end of the 2019 first quarter and $31.8 million at year-end 2019. Despite this increase in backlog, both year-on-year and sequentially, we anticipate that the impacts of the COVID-19 global pandemic, including disruptions to international shipping and travel, and overall adverse impacts in the macroeconomic environment, will result in lower revenue for our 2020 second quarter as compared to Q1 2020.

Significant uncertainties associated with the duration and severity of the outbreak make it difficult for us to predict the full year and longer-term effect on our business at this time, including the impact on future capital equipment spending decisions of our customers. Nonetheless, we remain confident in the underlying thesis of our binder jetting technology, including its ability to shorten global supply chains, which has been a notable topic of discussion in the industrial space during the COVID-19 outbreak. Our goal is to appropriately manage our business and ultimately come out of this situation in a position of strength, further enhancing our market-leading position in binder jetting.

Turning to **Slide 20**, this chart represents a waterfall of our first three months 2020 cash flows. Overall, we added net positive cash flows of $11.1 million during the quarter. This net increase was driven by proceeds received from the completion of our sale-leaseback transaction, which generated $16.2 million in cash during the quarter. Our cash capital expenditures for the first quarter were limited to $300,000. We anticipate an additional $1 million to $2 million of planned cash CapEx spending in 2020.

If you'll turn to **Slide 21**, you will see our total liquidity at year-end 2019 and at March 31, 2020. At the end of the first quarter, we had $26.8 million of liquidity as compared to $20.2 million at year-end 2019. This increase reflects the proceeds from the completion of the sale-leaseback I just spoke about, offset by the reduced amount available under our related party revolving credit facility following its amendment and extension through March 2024, also completed during Q1 2020.

We continue to believe that we have sufficient liquidity to manage through these uncertain times and to provide stability for our business. In response to the COVID-19 global pandemic, in March and April 2020, we initiated various cost-saving actions, including a mix of employee terminations, furloughs, pay rate reductions and decreases in consulting and other spending, all in an effort to conserve cash and maintain adequate liquidity. We've targeted a net cost reduction for the remainder of 2020 of approximately $5 million as a result of these actions. Given the high level of uncertainty associated with the timing and extent of the COVID-19 global pandemic, we expect to continue to assess whether additional cost actions are necessary to further adjust our operating model.

That concludes my prepared comments. And now I'll turn it back to John.

**John F. Hartner**: Thanks, Doug. Please turn to **Slide 23**, and I'll discuss our current outlook for 2020. With record backlog and a fresh lineup of machines as we entered the year, we were cautiously optimistic for growth and improved financial performance in 2020. Our backlog drove solid revenue in the first quarter. But, as I mentioned earlier, due to COVID-19, shipping and travel have been restricted, delaying machine installations in the first quarter as well as into the second quarter at least.

Our operations teams continue to build machines from our backlog, but we can't predict when we'll be able to install them and realize those revenues. At the same time, our customer-facing team is working hard with customers that see the value of additive manufacturing, despite the economic backdrop. That is part of the reason we set another backlog record this quarter. So we remain excited about the future growth once we get past the COVID-19-induced economic downturn. In addition to the new machines we started to ship last year, we are on track for the development of our newest machine, the extra-large metal production printer, X1 160Pro. We plan to have development completed by year-end and revenues in the first half of 2021. Despite our fresh lineup of machines, we recognize that some capital investment decisions are likely to be postponed. This certainly increases our focus on recurring revenue, which provides a more stable revenue stream.

Finally, we continue to be proactive to respond to the market situation, ensuring we come out of this crisis stronger than when we entered.
Please turn to Slide 24 for my closing slide. We have engaged in discussions with some of our customers and some potential new customers, as others have stated publicly that the current COVID-19 pandemic reveals shortcomings in the global supply chain. Some companies are looking for ways to revamp their supply chains with a more decentralized production method that makes it more resilient. This could lead to the accelerated adoption of 3D printing. Our customers are attracted to the faster response to changing market demands, de-risking global supply chains and, in many cases, lower total cost, which is now being delivered by binder jet printing.

We know that many things will change as a result of this historic pandemic. We can't predict exactly what, or how, things will change. But we can say that ExOne has the capabilities to support manufacturers as they move forward to succeed in the new world.

That concludes my prepared comments, and now let's open up the lines for questions.

**Operator:** [Operator Instructions] The first question is from Brian Kinstlinger, Alliance Global Partners.

**Brian Kinstlinger:** I hope your daughter is doing okay in the ICU and God bless what she’s done. You talked about the international restrictions on travel, but I guess I'm curious about North America. Have you been able to deliver to install machines quarter-to-date in the U.S.?

**Douglas Zemba:** Yes. Brian, this is Doug. We have. Domestic travel, for the most part, has still been pretty clean. Certain companies, depending on what their geographies are, may have restrictions for access by outsiders. But for the most part, we have been able to continue work on a number of machines and have closed out a few transactions here in the second quarter already.

**Brian Kinstlinger:** Great. That's helpful. And then you mentioned, it's difficult to assess the impact, long-term and even short-term, on capital decisions, I appreciate that. In light of the difficult economic conditions, what are prospective customers saying? Are they communicating delays? And is there a reasonable scenario, do you believe, at least in the U.S., that you won't be able to deliver all of your backlog and install it this year, even if social distance eases?

**John Hartner:** Yes. Thanks, Brian. I think there are two questions there. One is the perspective for new orders, and I'll talk about that. Broadly, as a result of the pandemic, one of the things customers do many times is just put a halt to things until they can see through the fog a little bit. The good news is, I think, a lot of these customers understand the importance of additive to their future product road maps. So, many of the projects we're working on are not for products that are going out today, but for products that are going to be launched in 2022 or 2021. So we continue to see customers making, at a reduced level, positive decisions to move forward there. It certainly affects us. It varies by industry. That's why I pointed out the real diversity of our industry coverage. Obviously, things like aerospace and oil and gas are more affected than, let's say, medical or other general industrials, like food-processing equipment. So we're seeing a variety of responses. But overall, there are still positive opportunities out there that our customer-facing team is pushing through.

Doug, do you want to take the second part?

**Douglas Zemba:** Sure. Yes. So look at the business currently and, you hit on this with your first question, we continue to have the ability to move around domestic to domestic. And that applies both for the U.S. operation as well as Germany and Japan, where we've seen similar impacts - the ability to move around domestically, but just not internationally, there's no doubt that, when you look at the backlog that we have, we have various scenarios that suggest when those transactions may be able to be completed either within 2020 or beyond. In a best-case scenario, we believe that those transactions are gettable in 2020, but that's contingent on international travel restrictions being lifted and having our teams be able to get out and execute the work, understanding that there's a pretty heavy concentration of work to be completed given the slowdown and the large number of machine contracts that we currently have.

**Brian Kinstlinger:** Great. The reusable metal cartridges, how and when do you see this impact in the consumables side of your business which, I assume is the main benefit for ExOne? Is that right?

**John Hartner:** Yes. I mean, frankly, it just started as a project to say, how we could help. There broadly has been recognition that 3D printing has been very responsive in conjunction with response to COVID-19. Much of that press has been on the polymer side for face shields, et cetera. We saw an opportunity with the unique technology, that binder jet can deliver a variety of porosities that are used in industrial filters. And so we thought about it, and we came in to try it...
with the masks and we're seeing very good initial testing results.

We haven't quantified it. Frankly, we meet daily on it with our collaborators, including end customers and medical centers, and now have, as a result of the press release, upwards of 20 different companies that are very interested in incorporating this in their masks or in their future mask designs. We haven't been able to quantify it. I think it would be just normal course. Broadly, I think, as other people have said, despite some positive things like this for us, COVID-19 is a drag. But this is a really interesting, sustainable solution that we think has legs for the long term.

**Brian Kinstlinger:** Great. Last question I have is on the cost side. Do we expect to see about $1.6 million less in operating expenses per quarter beginning in 2Q, or is it more back-end loaded, Doug? And then are there any severance or other cash charges we should think about per the restructuring?

**Douglas Zemba:** The way we have it mapped out is pretty ratable for the remainder of the year. The actions that we did take were near the end of March and very early in April, based on the time line of how we were getting out in front of the market conditions that ensued. There's not a substantial charge that we expect to incur associated even with the permanent employee terminations. But nonetheless, I think we're looking at the savings as being fairly well spread out for the remainder of the year.

**Operator:** The next question is from Chris Van Horn, FBR.

**Christopher Van Horn:** Thank you for everything you're doing on the health care side with your printers. Just want to follow-up on the previous caller. How are conversations going real-time? And you're hearing as the economy is somewhat opening back up, there's still some demand happening? Just want to know, is this a weekly dynamic process where you're going to have your conversations ramp up? Just to take a temperature of what you're seeing out there right now.

**John F. Hartner:** Yes. I'd say, it's, again, one of the advantages of our diversity including, as Doug also mentioned, our geographic diversity. We saw this starting in Asia and then Europe and then the U.S. And so in some ways, different geographies are coming out of this at different speeds, obviously. The other thing that happened, I alluded to it last time, is there was an initial response to shut down capital spending. But in the U.S., particularly what I would say, which maybe I have a little bit closer touch with on a day-to-day basis, that happened for two or three weeks. And then, as customers got through that and understood their plans and, again, recognize the road maps that they have that our equipment is tied to their future road maps, those discussions ensued again. Our customer-facing team has been effective even being remote. And in some ways, particularly on the marketing side, we've had significant interactions with customers and leads coming. So there is that phenomenon.

And then as I mentioned in my last slide, there is the start of, and I don't want to overplay this, but the start of these discussions about supply chains should be reconfigured. And there's opportunity to look at the current cost of ownership with production-based binder jet printing, with more decentralized production closer to the customer, and we're having those discussions all the time. So that's not a short-term impact, but I think that's also weighing into the discussions and probably board-level conversations around the various countries. Again, that's not solely a U.S. thing, that's a German thing or an Italian thing or a Japanese thing, et cetera.

**Christopher Van Horn:** Got it. Okay. And then how about your supply chain? Have you seen any disruptions or interruptions that are affecting things?

**John Hartner:** So we did look very early on, at this, and we continue to monitor. Initially, our concern was primarily for electronics that may have been embedded inside of either control systems or subassemblies that we buy. We've not had any disruptions on that. We've been assured by our supply base, that we had that. Since we provide consumables, we have looked at our supply chain of incoming chemistries and feel that there's adequate supply out there. So yes, the supply chain has responded well. Frankly, most of our supply chain is domestic, either in Western Europe or in the U.S.

**Christopher Van Horn:** Okay. Got it. And I just want to make sure I heard you correctly. On the gross margin side, the margin downtick from last year, I believe you said it was mainly due to price. Was that just due to price concessions, competitive forces? Any detail around that pricing environment.

**John Hartner:** So a couple of areas. Number one, I think in prior calls, we've talked a little bit about that there's been some pricing pressure on the consumable materials side, there's been a little bit of pricing pressure. Our margins are down a bit there. The discrete machines, that varies from period to period. And in this particular quarter, we just
introduced a new machine. The early models of the X1 25Pro are probably going to be a little bit less of a return than maybe what we've historically experienced on some of our other machine types. So those 2 on the pricing side are probably the most significant elements, notwithstanding the other items that we mentioned on the call, including the impact of the sale-leaseback.

**Operator:** The next question is from Jed Dorsheimer, Canaccord Genuity.

**Jed Dorsheimer:** Let me echo the sentiments about your daughter, John. So with respect to the business, what was the geographic breakdown on the tools side?

**John Hartner:** We saw a little bit of an increase relative to normal performance in the U.S., which represented about 40%. The other 2 regions were split sort of evenly, about 30-30. So we had been experiencing a little bit of an uptick in Asia recently and that sort of leveled off just a bit. Europe was down a little bit compared to where they had been running at, and that then ended up being to the benefit of the U.S.

**Jed Dorsheimer:** Got it. And I'm assuming, but I'd rather just ask the question, are the travel restrictions that are hampering the timing and setup as you look forward as a result of the pandemic, is that mostly coming from Asia or is it equally spread between Asia and Europe?

**John Hartner:** So it's pretty much equally spread. We can do Japan-to-Japan transactions, and we've continued to do that. We're currently shut out from China, but we hadn't been selling a lot of systems into China. We do have a few into Asia more broadly. The Europe-to-Europe transactions, the limited movement that exists there, although we're starting to see signs that, that may be opening up, has been a bit of a detriment. And so that's probably the biggest effect.

**Jed Dorsheimer:** Got it. Okay. Doug, just on cost structure, if we assume 2020 is flat with '19, and again, this is just for this exercise, not guidance or anything like that. When I look at the cost reductions that you've put in place, should I just take the $5 million for 3 quarters in getting to OpEx of like $28 million, $29 million at those levels or are there other nuances that would affect the cost structure?

**Douglas Zemba:** It will be spread, from our perspective, we believe it will be spread pretty evenly from Q2 to Q4 so dividing by three makes a lot of sense. And then in terms of the allocation as to where it's targeted, we're a little heavier on the COGS and on the G&A side, a little bit less intensive on the R&D side. And it depends a little bit on how the short-work program in Germany plays out and how allocation really ends up, because we do have some flexibility as to how we've set that up and how we bring people in and out based on scheduling. So obviously, we're trying to align the production with a revised forecast internally that's down a bit. So you can anticipate that the fixed cost of goods sold is likely to come down based on these actions maybe to the tune of, let's say, about a third of the savings and then the remainder going to the G&A and to the R&D efforts.

**Jed Dorsheimer:** Got it. And then last question. John, could you just remind me of the new tool lineup, does that shift the end-market segmentation at all? And if so, how might that shift the focus as we look forward?

**John Hartner:** I would say on the sand side of the business, I don't think there'll be a dramatic shift. I think we continue to improve productivity of the new tools we have there. So I would assume that the output of the split by category is about the same. On the direct metals side, as we introduce, particularly the X1 160Pro, again, even though that is moving more towards production where, let's say, the Innovent+ is more for R&D and education, it's across the board. We have a number of customers, and they spread into categories from defense to automotive to food processing to precious metal production. So it's really pretty broad. So I think our split of end market stays somewhat consistent, which is really nice.

**Jed Dorsheimer:** Got it. Yes. So one follow-up there. As you're feeding these markets, you've seen one and two type orders. Is there a specific end market that you're seeing the signs of an earnest ramp that maybe COVID-19 pushes things out by a year, but that you think will be running for where the value proposition might be clearer than others?

**John Hartner:** There's that broad point I brought up at the end of my prepared remarks, which is supply chain de-risking and with lower-cost production of metal parts, can manufacturers bring things back, re-shore, decentralize. That's a broad thing. As far as particular segments, we see interest from relevant automobiles on the EV (electric vehicle) side. So people that are coming up with either hybrid or EV vehicles, I think there are folks that are absolutely looking at high-volume applications there. I think with some of the unique materials we're bringing to market, including tool steels, we're seeing, it's really broad, Jed. So it's hard to say there's one that's going to break out. There are two or three that I would
say are really interested in big expansions as we get through this crisis.

**Operator:** [Operator Instructions] We have a question from Ralph Weil, Weil Investment Management.

**Ralph Weil:** John and Doug, nice quarter. It's tough asking questions after a few others have had similar questions. But let me ask you this. You say you're a global leader in industrial sand and metal 3D printing binder jetting technology. Can you explain in a simplistic way why binder jet printing, in your mind, may be the way to go for production manufacturing? And also, if you can say how your product line, what the advantages and ways to differentiate between yours and the others that are either in the field or coming in the field or trying to make a name for themselves, like Desktop, Hewlett-Packard, GE, et cetera?

**John Hartner:** Sure. Thanks, Ralph. Binder jetting is one of multiple different tools in the additive world. It's become recognized recently that it has the highest productivity, lowest cost of ownership for metal parts. That is something that has attracted some of those names you just described. So we've been in this business for 25 years. They've been coming in, in the last 2 or 3 years. So, I think that recognition says it's lower cost. It's lower cost for a couple of reasons. The scalability and speed, a majority of additive processes have a singular, almost a raster to build a part where we're going in a serial fashion to build layers. And that speed is one key element of the productivity. The second key is lower-cost materials. Our materials tend to be dramatically lower cost compared to laser powder-bed fusion, potentially even 1/10th the cost because they're closer to standard commodity products that are used in powder metallurgy. So those are the two primary reasons why binder jetting is the future of production metal printing.

As far as ExOne's advantages, yes, as I've already described, we've been in this a long time, which actually does a couple of things. One, it shows you we have a large installed base. That installed base produces recurring revenue plus gives us experience with these customers. Someone coming in new, they're trying to place their first machine or their fifth machine, where we have hundreds of machines out there. Our machines also are the most productive in the industry. So if you're coming into this space to get high productivity, why wouldn't you go to the highest-productivity machine, and that's us.

Finally, I would say, the breadth, because of that experience and because of the features of our equipment and our platforms, we have the widest range of materials. So some customers are very interested in standard stainless steels, some are interested in aluminums or titanos, some are interested in exotic ceramics. We are able to produce across a wide range of those. So in a downturn such as this, that also is an advantage because different folks have different needs, and those may be customers who are buying now. So I'd say those are not just the reasons why binder jetting is the future of metal 3D printing, but also why ExOne has significant advantages over new entrants.

**Operator:** Ladies and gentlemen, we have reached the end of the question-and-answer session. And I'd like to turn the call back over to management for closing remarks. Please go ahead.

**John Hartner:** Thank you all for your time today, and thank you to our team members around the world who are working hard to drive collaboration, innovation and acceleration for the digital transformation of manufacturing. Take care, all. Talk to you next quarter.

**Operator:** This concludes today's conference. You may disconnect your lines at this time. Thank you for your participation.