

John Hartner: Good afternoon, everybody. Welcome to the ExOne presentation here today. My name is John Hartner. I'm the chief operating officer, and today, Brian Smith and I will go over some slides to tell you more about the Company. Thanks for being here.

The first slide is our safe harbor statement and we'll be talking about current results as well as some future outlook.

On slide 3, we have a snapshot of the business overall. We are distinctively positioned for 3D printing of industrial applications using binder jetting technology. You can see that we went public in 2013 and we have a market cap just under \$150 million. The insider ownership is quite high at 29% and our three-year revenue CAGR is 17%.

Slide 4 covers the key investment highlights. These are the five key points that I'll mention here, but we'll go into more detail in the slides ahead.

First, the additive manufacturing market, sometimes called 3D printing, is large and is growing rapidly. As a matter of fact, it's accelerating, so that's a positive wind at our back.

Second, where ExOne participates, we're very well-positioned for the ongoing growth of the market. I would say, in some ways, we're at the sweet spot of the market. That's both because of the participation we have in the industrial space, which is the fastest growing part, and because of our core technology, which is called binder jetting, which has a very broad range of materials and applications throughout the industry.

Third is ExOne's focus on profitable growth. We've been growing for a while and you can see that over the last three years, we had a 17% revenue CAGR. But as we've gotten to scale, we are now at the point where we're going to have profitability. We showed that in the second half of 2018, where we had positive net income. And we have guided to positive Adjusted EBITDA this year. We think this is an opportunity to continue to leverage our business model going forward.

Four, as I mentioned a moment ago, we also have significant inside ownership, so we have good alignment of our management with our outside shareholders.

Lastly, there are some new strategic initiatives we have and we'll share those with you, which we think accelerate the success we've already had.

Moving to slide 5, I talked about the additive market being big. In 2018, it's about a \$10 billion market and it's been growing nicely. In this slide, I talk about some projections from six different consultants over the next few years, what they think. You can see that that line tilts up further, so the slope is higher and, therefore, people believe that the market is accelerating.

Why is it accelerating? Going to the next slide, slide 6, this is really one of the key points. Traditionally, additive manufacturing, particularly in the beginning of the early days, was oriented towards prototyping. Prototyping is when you'd be doing one or two visual models, potentially moving into functional models.

The industry is moving from prototyping into tooling and other molds, and we participate in both of these spaces, but the real buzz lately and where the acceleration in the market is coming from is the industry is moving into end-part production or short-run production. We're not talking about millions of parts. We're talking about 1,000 or 100,000 parts for products that are out there in the marketplace. We see that that is quite a large market and the penetration is very low at this point. So, that's what's going to drive the acceleration in adoption of additive manufacturing into industry.

That \$10 billion industry, if we move to slide 7, we talk about binder jetting advantages. I map that market two ways. The columns are the materials that are used in various 3D printing areas for parts; and then, the rows are actually the different technologies. You can see on the far right-hand side that plastics has quite a few technologies, and that's really where the industry started. That's

why most of the prototype sample parts you may have seen in the past have been plastic parts. It's a big part of the market and, traditionally, the part of the market that was known by customers.

That was primarily done with one of two technologies. One was by photo-polymerization, normally exposing a laser of UV light to a resin bath; and then, the part would build up layer by layer to create a three-dimensional part. In the third row, you see parts built through melting. This is, traditionally, what's called FDM, fused deposition modeling. A lot of people think of a filament being extruded through a heat nozzle. Both the photo-polymerization and the melting process are singular processes with a single activation head, if you will.

The middle row is where we participate, parts built with a binding agent. What happens in this process is, layers are built of individual powder bases; and then, we bind a pattern that creates the geometry of the part. We've been in the industry for quite a while and one of the things you'll notice about that green bar across the middle is it goes across all of the different material types: plastics, sand, ceramics and metal, so, it has quite a broad range. Also, it's more oriented towards mid- and large-volume parts. Although we've been doing prototypes and we've done tools and molds, really, binder jetting is more oriented towards production part runs and that's where it's getting more interest lately.

We've been there for a while. We had HP join the binder jetting industry. They started three years ago, focusing on plastics and, about six months ago, they started to announce an entry into the metal space. That entry will take them a few years, but it's good recognition that the industry is a scalable industry and where the industry is moving in the future. We've also had some other investments by venture capital companies. The key point is, not just the breadth of the materials, but also the scalability that makes binder jetting technology attractive.

In the next slide, I talk in a little bit more detail about the binder jetting process. There's a video, if you go to the PDF of this presentation online, where you can see actual parts being made in the machines. In the bottom left corner, you can see a photo of an inkjet head. Imagine that there's a whole range of nozzles in that inkjet head, so again, compared to those individual polymerization-type applications, we are doing a full bed of powder at one time and creating that very rapidly. That gives us the scale to go into real manufacturing.

Slide 9. We are binder jet printing, but there are really two types of binder jet printing that we do—indirect and direct. Let me explain, first of all, indirect. Indirect means that you're not 3D printing the part itself; you're forming a negative of the part, the mold or the core, that will be used later to pour molten metal or some other product in to create a casting, for example. This is a large part of our business and, as you can see on the left-hand side, we have machines that print the molds and cores. In the middle, we talk about materials that are used, and on the right-hand side are some examples of customer applications.

The machines in this space are quite large, by the way, and range anywhere from \$600,000 to \$1.5 million in sales value, so these are large, significant pieces of equipment. We use various materials, like sands and other ceramics, to create indirect parts here. The examples on the right are an aerospace application, an oil and gas pump, and an automotive application—quite broad—and these parts can be quite large as well.

Slide 10. With binder jetting, the second way would be direct printing. This is one area that is gathering quite a bit of interest in the marketplace where, again, we are printing a part directly in this case. This part may not be 100% dense, but it could be in the 80% density range; and then, there's a post process where you sinter the part and it becomes 100% dense or a much higher density. In this case, on the left-hand side, we show examples of many of our machines. These machines are smaller from a part-size potential and also from a price point. These range between \$150,000 and \$600,000 in sales value.

One of the things that you also see is the range of materials. This is one of the things in 3D printing that continues to add to the adoptions and use cases. Because we've been in the industry for quite a while, we have a broad range of materials and a broad range of experience. We actually get a lot of benefit as we work with our customers in that particular regard.

The parts on the right are those parts that have been directly printed. They could be printed and then subsequently sintered. We have a business model where, a lot of times, we're working with customers early in their development process and we're providing them with parts as a service; and then, they get to a certain volume or they add a number of skews into their 3D printing stable, so they buy a machine. The nice thing about this business is, once they buy a machine, there is a recurring revenue market afterwards, so monthly, they're buying consumables and services from us. Those are the two parts of our business and it actually is a pretty broad application base.

Slide 11. This gives you an example of the industries we sell into. We do not have a concentration in any one industry. We can be anything from aerospace to automotive to oil and gas to industrial equipment, decorative aspects, as well as academics. Because the industry is still relatively young, there's still a lot of work going on in a range of universities and research institutes around the world. In each of these areas, there are new use cases coming up every day and later in the backup deck you can see some of the examples of real customers that we work with on a regular basis.

Slide 12. The next slide highlights our geographic footprint. We're present in all three regions with physical presences in the US, Europe and Asia. Our primary sites are in Pennsylvania, just outside of Pittsburgh, in the US; in Germany, just outside of Munich; and then, in Japan, outside of Tokyo. We also service a number of other countries through distributors and other agent relationships.

You can see that our installed base is split around the world as well with almost 300 machines installed. Again, this is an installed-based business and it relates to some of my background in digital print. The great thing about the business is, as you install machines, work with customers to make them successful, and utilize those machines in a higher volume aspect in new use cases, new SKUs, they consume more materials and consume more services. This is a really positive aspect of our organization and we're going to continue to emphasize that.

I've talked about the favorable market we have and our installed base, so now, I want to mention what we want to do to accelerate our adoption and our success. We have three strategic pillars that I want to highlight on Slide 13 that will continue to drive profitable growth for us.

The first is an increased focus on customers and new applications. Because of the breadth of what you can do with binder jetting, the breadth of materials and the scalability of the size of the products, we see many new applications that are very unique and potentially carry very high margins. We're going to focus more on those and bring those to market faster. That should help our growth and margins.

Second, we've been developing machines and solutions in this market for quite a while, but we have to continue to drive improvement in those machines relative to the total cost of ownership for our customers. That will help adoption as well as applications that will be more modular. We have a range of different machines, six different types. We want to have more modular components such that we can innovate faster as well as have more scale and improve our margins.

The third row talks about recurring revenue and I talked a moment ago about the installed-based model. This is an area that we've focused on to a degree; however, we've been more of a machine company in the past. I'm interested in growing our recurring revenue at a faster pace in the future. What does that do? Although it doesn't grow as fast as machine revenue from the standpoint of overall top line dollars, that steady revenue helps us quarter to quarter and year to year to minimize volatility and you'll see that grow over time.

Let me give you a couple of examples of these three points. First thing on Slide 14, Expand Customer and Application Focus, I have one example from our indirect business in binder jetting and one from our direct. First, in washout tooling, although many times we're doing molds for very complex sand castings, this new application of washout tooling is an area that we hadn't participated in the past. For many aerospace applications, high-end racing applications, automotive applications, etc., people are using composite material, carbon-fiber type materials to create complex ducting within the aircraft or within the automotive engines, etc.

Inside, that ducting is formed over tooling and that tooling, many times, has to be washed out with very harsh chemicals. It is a complicated customized application, and we've been able to expand the uses for our sand printing to be able to do the mandrel using a special process, to expand this into a washout tooling. So, they would use this as a tool for the composite ducting and then that tool, subsequently, would be washed out for every set of composite ducting they do. It's a brand new application; we've been working on it for a few years. Last year, we just started to sell it and we see the market for this growing this year.

Second, on the direct side, I mentioned and showed a number of metals where we have experience and again, the breadth of the technology from a material standpoint and our experience together really give us opportunities to go further. Silicon carbide is an advanced ceramic that's used due to its thermal capabilities, both in hot and cold applications—think aerospace. Over the last few years, we have been working with the Missile Defense Agency, and received some government funding from them to develop silicon carbide on our process. We've been very successful with that particular grant and are moving this into our production.

The small part on the bottom there is an example. It's an example of the actual part of a ceramic housing that would be used for an optical mirror in a satellite. This is one application that's very high value and we see many additional applications in aerospace and defense.

Slide 15. Moving on to enhance and expand our technology, again, we have machine platforms both on the direct and the indirect side. These are leading platforms in the industry, but we can't rest with what we have. We have to keep developing new machines that have higher throughput, higher capability for different ranges of powders and different ranges of materials. The photograph shown is our machine that we call the X1 25PRO that was announced at the end of last year. We've doing beta testing at this point and, in the second half of the year, we'll start shipping to customers. This builds on some of the machines we already have and some of the successes we've had in the MIM powder applications. We see this being a true success in expanding our capabilities to larger parts and higher production applications.

On the indirect side, I don't have a lot of information to share yet, but we have a trade show coming up in June called GIFA [14th International Foundry Trade Fair with Technical Forum in Dusseldorf, Germany]. This is the largest casting show in the world, held only every four years, so we'll be introducing some really exciting new applications and new equipment there that will continue to drive down the total cost of ownership, broadening the applications for our equipment as well as expanding the market potential.

Finally, on slide 16, I want to touch on the recurring revenue point. At the end of the day, recurring revenue is fantastic, because it aligns the customers' interest with our interest. If their equipment is producing at a high volume and a high yield, they're happy and they use more consumables. There are a number of initiatives here that we're working on that will improve our capabilities, to serve our customers around the world.

So, from here, I'd like to pass it over to Brian to cover some financials.

Brian Smith: Okay. Thanks, John. Hello, everybody. Here we go. Slide 18 gives you a quick peek at where we've been over the last five years relative to revenue and gross margin. You see a

good curve of growth over the 2015 to 2018 year periods. That's where we had our 17% CAGR growth that John mentioned. You also see improving margins. I want to note that, in the fourth quarter of 2018, we had over \$25 million in revenue and a 40% gross margin. It shows the leveragability of our business model at these higher volume levels.

Why did we generate that in the fourth quarter? Slide 19. Back at the end of the second quarter, we had a leadership change. We decided to go to a different model. We did a cost realignment project, took some costs out and created some efficiencies by changing some processes and procedures. That, as well as revenue growth in the second half that we announced at that time that we would have, led to positive net income and positive adjusted EBITDA in the second half of 2018, led by that strong quarter in Q4. This has resulted in some tremendous changes in our culture and improved communication among our core group.

If you'll go to the next slide, Slide 20, you'll see where we are with R&D and SG&A, and where we've been over the last several years. For R&D, you see investments in our new machine, the X1 25PRO™. That has kicked up our R&D slightly; and then, the SG&A is kind of a tale of two halves. We had increasing SG&A in 2018 in the front half and significantly lower in the second half. Our SG&A was \$5.4 million in Q4 of 2018. Again, this is led by almost \$7 million of costs that we've taken out. We also reduced our fixed cost burden by exiting one location that wasn't profitable. We did a good profitability review of each location; and so, we like our new model and where it's going.

Slide 21 gives you a picture of cash flows; again, a tale of two times, the first half and the second half. You can see how we've significantly changed the profile of our cash flows from the burn in the first half from increasing expenses, and then the cost reductions and the progress we made in the second half slowing that cost rate. Offsetting that was an increase in working capital to drive that growth in the fourth quarter.

The next slide, 22, shows where we are with liquidity. We're in a better position at 12/31/18 than we were in 2017. Our total liquidity is \$22.6 million. That \$15 million is a revolver that is available for borrowing. It's a very inexpensive revolver. We have not borrowed on it. We think that, as well as our projections for 2019, mean that we would not need to access any capital markets in the near term.

Slide 23. Let's talk about 2019 for a minute here. Okay, so what are our growth goals for 2019? In 2019, we're looking at a 35/65 revenue split, first half/second half. We grew at 12% in 2018. We're saying that 2019 will grow faster than the 12% in 2018, which would be mid-teens for 2019. We do expect a little softer first quarter, but a very strong second quarter for the first half. Why is that? It's driven mainly by machine revenue growth and timing. We have good, robust activity with our customers and we expect good machine revenue growth in the 2019 year.

Continuing fiscal prudence, we expect to have positive adjusted EBITDA for the year. We will remain at about the same level of our investment in R&D, mainly our machine technologies that John had mentioned earlier. Then, we think that the model will change. The things we've done will drive us to increasing rates of growth over the next several years with the introductions of the new machines that we've talked about.

Slide 24. To finish with our investment highlights, John touched on the growth in the industry, where our participation is in the industry, where binder jetting fits. We are the leader in binder jetting globally as of today. We will continue to advance our technology. We've talked about enhancements to both our direct metal machines as well as our indirect metal machines. We are focused on profitable growth, not growth for growth's sake, so we expect to continue our second half net income showing that we can generate net income. That model will continue.

We talked about what would be positive adjusted EBITDA in 2019. John mentioned we have significant insider ownership, which aligns our management team with the shareholders, and we think our current plan will accelerate growth.

We have five minutes for questions and we would enjoy questions for John or myself.

Q: *[Off mic]*

Brian Smith: The question is a little color around our consumables and what we capture. John, do you want to handle it?

John Hartner: I'll start and, Brian, you can add in. In the revenue slide that was showing, there were two colors on the bars—green and black. Black was the non-machine or recurring. That's about 45% of our revenue; 55% is machines. In that 45%, there are a few different elements. One is the parts we sell to customers in the beginning to get them used to 3D printing; and then, they buy their machines. The other half of that is for consumables and services.

We do pretty well on capturing those. I think we have a variety and we're looking around and, frankly, just getting a better handle on who is using our consumables and who isn't. We think we continue to evolve our technologies and come out with better binders that actually speed the process and broaden the material set and, with our expansion of service and expansion of geography on that service, we think we'll even capture more. So, we think that growth will go up in the future.

In 2018, recurring revenue grew around 2% with some other changes in the footprint that Brian described. We think that will be higher this year and in future years.

Q: *Great, thank you.*

John Hartner: Sure.

Q: *[Off mic] I have a question from left field here, but there's a little red flag here. I know your Chairman/CEO has a lot inside ownership, but it's usually a bad sign when somebody like yourself is not on the Board. What do you think of that? And also, I see the stock traded as high as 45 in 2014, so somebody wasn't ashamed about hyping this. So, you see where I'm going with this. These are bad flags.*

John Hartner: I'll try to repeat the question here. There was a little bit out of left field. The question was related to the Chairman/CEO having high insider ownership on the board, me a COO not on the board is one question, and what does that mean? The second thing related to the fluctuation of the stock over the years, particularly with the spike at 2014.

I'll take a shot at it, Brian. You have a little bit more history with the Company. I just joined four months ago, so I'm here to continue the leadership and some of the changes that started in the second half of last year and then take it further. I think that partially answers your first question.

Q: *[Off mic]*

John Hartner: Yes, so my background, as you just mentioned, is in a range of different industrial technology companies and I ran businesses all over the world in semi-conductor capital equipment, automation and digital print. So, I understand the installed-based business model. I understand how to make these improve, and I see that opportunity here.

Secondly, regarding the stock price fluctuation over a number of years, I think it's no secret that the 3D printing market, the additive manufacturing space, has had some hype in it. That period you just described in 2014 was a period where people were talking about a printer in every room in your home, a lot more on the consumer side. By the way, Gartner has these cycles and I think generally it was at the peak of hysteria or the peak of that cycle; and since then, it has come back down and actually started to move up because of the industrial markets particularly. I think that

transition to those industrial markets and end-use parts are what's going to allow us to have a steady stream and steady growth forward.

Thank you for the question.

Okay, I think we're actually at the end of our period. Thank you all for joining us, and we appreciate your continued interest in ExOne.