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www.redeye.se/aktiebloggen/arcam/arca...

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De technologie:

Additive manufacturing is a manufacturing method in which the manufactured built up layer by layer by a CAD drawing. There are several benefits over traditional manufacturing techniques such as casting, turning, punching, etc;

- The products will be easier because "the air is being built in". Particularly interesting for the aerospace industry because every kilo on fuel costs.
- Complex parts can be manufactured in one step, rather than in separate parts. In some cases enables AM a complexity that is impossible with other methods.
- Less waste, since virtually all the raw material can be utilized. Especially important for products produced by more expensive materials such as titanium.
- New product features. Within medtech one is mainly interested in the products where human bones and tissue can grow into the printed part.
- Parts can be manufactured "on-site" that is, in the customer's plant instead of the customer to sit on a large team of components. Reduces capital accumulation and needs for supplies. Clients are also plenty of tools that also binds capital and need to be replaced and updated.
- Parts can be customized. Particularly interesting for medtech as standardized parts may not fit the specific patient.

One drawback is that today's printers are significantly slower than traditional methods. Technology evolves, however, and in 2015 is expected Arcam launch a new generation printers by 2-3 times higher power and at least twice as high print speed. At this stage, AM only compete in smaller production runs or where the characteristics outweigh the time spent. It is therefore logical that Arcam has chosen to focus on the aviation industry and the implant industry so far. The CEO, however, mentioned that you look at more segments, including the automotive industry.

Arcam is deel van een consortium dat een turbocharger voor automotoren tracht te ontwikkelen op basis van 3D printing. Dit is een door de EU gefinancierd project. Zie: <http://www.tialcharger.de/partner/>

Over dit project is nauwelijks voortgangsinformatie te vinden, dus het zou zomaar kunnen dat het niet succesvol is. Arcam noemt het zelf nooit en neemt het niet mee in de prognoses.

Business Model

Arcam printers cost between 4 and 7 million each (hereinafter referred to as ASP, average sales price). The system Q10 is designed for implant industry and located in the lower end of the price range. Q20 is designed for the aerospace industry and is located in the upper part. In addition to this non-recurring income selling Arcam metal

powder, service and spare parts with a **value of approximately SEK 800,000 per machine per year**. The business model is thus an element of razor-blade where the Arcam like Gillette assuming a stable recurring revenue stream from the installed base of machines. To take a stronger control over the powder supply bought Arcam AP & C, a leading powder manufacturers in 2014.

In addition, Arcam also acquired a contract manufacturer (DiSanto) who own their own printers and selling finished printed parts. To Arcam can offer this gives potential customers the chance to try without buying a separate system directly. DiSanto sales of approximately SEK 85 million this year.

Arcam is actief op 3 markten:

1. *Implant industry (Q10 printer, non-recurring, 4-6 mio per machine)
Installed base: 20 machines?*
2. *Aerospace industry (Q20 printer, non recurring, 6-6 mio per machine)*
3. *Powder supply, service, spare parts (recurring, 800k per machine p.j.)*

Totale installed base: ca. 150 machines? Nog te verifiëren.

Levert Arcam ook poeders aan gebruikers van andere metaal printers?

De markt

Any attempt to quantify the potential is educated guesses at best, but several reports I've read estimates the potential to 30-50 billion dollars . Jeffries example, made ??the following calculation in March 2013 based on figures from the company; Arcam has 20 machines installed in orthopedics customers accounting for 2% of the world's manufactured hip joints. That means a potential in the hip joints of 1,000 machines. According Arcam standing hip joints for about 10% of the potential of medical technology. Other potential markets, knee, spine, and small joints such as the shoulder, elbow, ankles, etc. This means that the total potential in medical technology are 10,000 machines. According to the company's potential in the aerospace industry 10 times greater than in medical technology, providing a potential of 100,000 machines for the aerospace industry. Jeffries then take into account that the next generation of printers is twice as fast, which halves the potential for a total of 55,000 machines. Multiplies you then with an ASP of 5-6 million so obtained a total addresserbar market of about 300 billion, or about 40 billion dollars. Then it's up to each one to fantasize about how much of this market as the AM will ultimately be able to take and how much Arcam's market share is (currently about 12%). But the potential is staggering alone in the medical and aerospace industries, which explains why Arcam can grow at least 30% per year for the foreseeable future and why the shares can defend their sky-high valuation multiples.

Groeiverwachtingen:

30% per jaar

Concurrentie

Arcam has sold a total of about 150 machines since the company was founded, of which 25 were delivered in 2013 and about 30 will be delivered this year. Arcam's share of the total installed base metal printer is approximately 12%, which gives the company a shared third place with German SLM Solutions. The largest German private EOS with 34% market share, followed by Concept Laser with 18%.

The American companies 3D Systems, Stratasys and ExOne often portrayed

incorrectly as competitors to the Arcam but actually has very little overlap with the Arcam. It's really just 3D Systems has a small segment that competes with Arcam (3D Systems acquired French Phenix Systems in 2013). Otherwise, the American companies focused primarily on printers for prototyping and printers for the consumer. These markets are far less interesting, I think.

A concern for the AM industry is the **potential competition from Hewlett Packard and even China**. My conclusion is that this is more of a threat just for 3D Systems and Stratasys with its major focus on prototyping and consumer. HP in the near future would be a threat to Arcam in industrial metal printers I see as highly unlikely. The customers who Arcam working with the aerospace industry and medical technology makes incredibly thorough testing of the printers they evaluate. After all parts to sit in the civil aviation or in the human body and as a result lead times and Certification times are very long. Arcam has also repeatedly hinted that product development is done in close collaboration with major customers in each segment. Thus it seems to be very high barriers to entry for new players in metal printing.

Furthermore, the Arcam himself developed his technique, which is based on melting the powder with an electron beam (EBM - Electron beam melting). Competitors in metal printing instead uses various forms of laser beam. There are advantages and disadvantages to both EBM and laser and it is likely that both technologies will have a place of the future manufacturing industry.

Mogelijke concurrentie:

- *vermoedelijk geen concurrentie uit de laser technologie*
- *mogelijk dat HP een concurrent wordt met een nieuwe technologie*

News Feed

Fourth quarter order intake of 2014 was record high for Arcam, who announced orders for 21 machines, compared with the previous record of 10 machines. The quarter was also one of its largest orders, on 5 machines from the implant manufacturer Lima in Italy. Arcam delivered thus on the promise to take at least one volume orders before year-end. I expect that Arcam delivers 10 machines to customers in Q4, which means that the order book stands at 24 units per turn of the year, compared with 12 machines a year ago.

As late as October on the conference call in connection with the Q3 report received Managing the question whether the company would have time to take any volume orders in 2014. President replied that it was very unlikely that this would happen. In consequence the question of the industry that would be the first to add a volume orders (implants or aerospace) so the answer was "either-or". The outcome was thus that the implant manufacturer Lima ordered 5 machines in Q4. But my conclusion of it all is that **as president expressed himself Arcam is extremely close to a volume orders even from the aerospace industry**. When that happens, I think the stock will take a big jump when the market starts discounting that both Arcam endmarkets enters a new phase with larger orders than the orders on one machine that has characterized the Arcam orders received so far.

The thesis that the industry is entering a new phase is also confirmed by the SLM Solutions press release from the mid Decemeber. SLM reported 112% increase in the number of orders for the 2014 25-53 pieces. SLM CEO underlines the fact that more and more existing customers place orders follow-up on multiple machines;

www.stage.slm-solutions.com/index.php...

Another data point confirming that the Arcam is entering a new phase is that the company in 2015 is planning a move to larger premises that takes production capacity from 50 systems per year to around 150 systems per year.

Er is een kans dat er een grote volume order aankomt uit de aerospace industry. Ook het feit dat Arcam gaat verhuizen naar een grotere locatie kan daarop duiden.

Forecasts

Substantially all of Arcam's customers are billed in dollars or euros, so revenues and profits should benefit clearly a weaker crown. Because the uncertainties of modeling Arcam is already large, I have chosen to model at constant exchange rates below.

Fourth quarter of 2014 is expected to be a new record on all counts. Sales should be around SEK 110 million, of which about half comes from hardware sales (10 machines supplied). Aftermarket revenues (powder, service, parts) should come in higher than Q3, ie a piece of over 30 million. The acquisition of DiSanto the full impact in Q4, which adds just over 20 million. I expect a gross margin of 38% and significantly higher operating expenses of SEK 28 million (vs. 21-22 million in recent quarters) due to costs related to DiSanto. It provides an operating profit of SEK 15 million for Q4, which represents more than 100% increase y / y and an operating margin reached a high of 14%.

This also gives **a total turnover in 2014 of approximately SEK 310 million**, based on 30 pieces of machines supplied with an ASP of 5.6 million. **EBIT (ex eo) for the year end of 30 million.**

For 2015, I expect 42-45 machines installed with an ASP of 5.2 million. Arcam has thus already 24 machines in the order book for 2015. During the first half of 2014 took orders for 16 machines. To Arcam would deliver fewer than 40 machines in 2015, I see why the question. If you manage to take a number of volume orders during the year my forecast to be conservative but at the moment I'm counting on 44 machines, which gives machine revenues of approximately SEK 230 million. Aftermarket sales should be able to get a real boost to many of the machines supplied goes into production and thus consume greater amount of metal powders. I expect SEK 165 million in aftermarket revenues, compared with SEK 112 million in 2014. For reasons of caution, I expect slightly increasing revenue for DiSanto to 90 million. **This gives SEK 485 million in revenue for 2015.** The cost is very difficult to predict because Arcam both plan to change premises, and continuously invests in the organization to allow for strong growth for a long time. **I expect that operating expenses increased to SEK 130 million (SEK 32.5 million per quarter vs. 28 million in Q4). Overall, this gives an EBIT of 54 million for the 2015th**

For 2016, I expect 60 machines installed with an ASP at 5 million. Aftermarket sales rise to 208 million and DiSantos revenues grow to 100 million. With operating expenses of SEK 150 million will be debited SEK 93 million.

For the sake of modeling, I was also a year when Arcam sell 100 machines with an ASP at 5 million. Adopted an aftermarket sales of 300 million, net sales for DiSanto about SEK 120 million and 42% gross margin will be debited SEK 237 million. My main scenario is that this only occurs until 2018.

Voorspellingen:

Omzet in 2015: 485 mio

Waarderingen

Arcam has gone from being grotesquely overvalued in early 2014 to now finally start to look appetizing. For 2014, 2015, 2016 and 2017/2018 sees the key figures as follows on my estimate;

2014:

Installed machines: 30 pieces

EV / sales: 7,6x

EV / EBIT: 79x

PE ratio: 75x (adjusted for eo)

2015

Installed machines: 44 pieces

EV / sales: 4.8X

EV / EBIT: 43x

PE ratio: 52x

2016

Installed machines: 60

EV / sales: 3,9x

EV / EBIT: 25x

PE ratio: 32x

2017 or 2018

Installed machines: 100

EV / sales: 2.6x

EV / EBIT: 10x

PE ratio: 14x

Conclusion:

Then I put myself into the Arcam in the Spring of 2013, I have had a strong belief that this will be big. One of the many data points I lean on in this belief, the statements from General Electric CEO Jeff Immelt said that 3D printing is the Holy Grail of the world's largest manufacturing companies, see interview below.

However, there are limits to what I pay to be a part of this future technology and in August 2013 when the share price has risen to 520 SEK (130 after the split), I sold my Arcam because valuations were getting too high for my taste, at that time 2.2 billion, or 11x the 2013 sales forecast. Guess if I gritted teeth when the stock went 150% up next six months.

Now they've got a second chance at Arcam. The Company has taken big steps forward while shares are back in the district where I was selling. Sure there is the risk that the stock will fall further, but **with the strong news flow as company and sector peers in metal printing now performs so chances are at least equal to the share rushes to 200 on a volume orders from, for example, GE's subsidiary Avio.** I want to emphasize that my predictions are highly uncertain and more to be seen as examples. In particular, the cost is very difficult to forecast and deviations have a large effect on profit forecasts. As a counterbalance to this is the positive effect of a weaker krona, which I then opted not to model.

Als de volume order van GE naar arcam gaat, en die kans is groot, dan zal dat een groot effect op de koers hebben.