

Orthopedics: moving towards more sub-contracting and Additive Manufacturing

During last November's presentation of Avicenne's latest Orthopedic market analysis reports, Ali Madani provided a special update on Additive Manufacturing, which has been adopted by many manufacturers and is seen as a strategic option for contract manufacturers.

Well known to manufacturers in the Orthopedic and spine industries, the Implants conference is now organized in 2-hour tutorials presenting the results of Avicenne's latest market trend reports. In 2019, a session was organized in Las Vegas in March, and another in Paris on 12th November. Avicenne's founder, Ali Madani, presented the Orthopedic Industry in its entirety, including manufacturing techniques, markets, players' strategies and innovations.

Participants thus heard that the world Orthopedic market rose to 44Md\$ in 2018 – up by 4% on 2017.

So we are no longer seeing the double-digit growth of the period 2000-2010. The five Majors, DePuy Synthes, Zimmer-Biomet, Stryker, Medtronic and Smith & Nephew, continue to dominate the market, far ahead of their several hundred challengers.

The Challengers are, however, achieving an average growth rate of 8.9%, continually snapping up market share (42% in 2018 compared to 33% in 2013). Generally more nimble, these challengers are often among the market-leaders in their own countries, e.g. Aesculap in Germany, Lima in Italy, Amplitude in France, and so on.

Innovation is still one of the main drivers, even though it is less disruptive than during previous decades. The constraints mainly concern falling prices (see page 28) and lengthening lead-times. The causes? Reimbursement reductions, central purchasing and stricter regulation. Indeed prices continue to drop in every country.

The market should, however, continue to grow, by 4% per year on average, rising to 54Md\$ in 2023.

+7% for sub-contracting

Apart from Medtronic, manufacturers (especially the challengers) make extensive use of sub-contracting to produce their medical devices. And the trend is getting stronger. This is why the market has increased by about 7% per year since 2012 – attaining 5.7Md\$ in 2018 – and is likely to follow the same curve over the coming years.

As orthopaedic companies want to reduce the number of contract manufacturers, they do business with, concentration is a market trend in contract manufacturing. In 2018, this market was dominated by Tecomet, Viant, Orchid, CeramTec, NN, Aalign, Marle, etc.

"In-house" additive manufacturing... for the moment

Most of the main contract manufacturers are investing in Additive Manufacturing, but small-scale, and mainly to gain experience in the field. For them, the big question is to know if the ordering parties will end up outsourcing this type of production as, for the moment, the manufacturers prefer to master Additive Manufacturing in-house.

Zimmer Biomet, Lima, , Adler Ortho, Medtronic and Exactech are especially well advanced in this domain. In 2016, Stryker invested 400M\$ constructing a dedicated 3D printing factory in Ireland, and DePuy Synthes invested 40M\$ in January 2019. More than 500 machines (Arcam, EOS, SLM, ConceptLaser, Renishaw, etc.) were already in use in 2018 producing 6% of Orthopaedic implants. This is especially so for reconstructive implants, interbody cages, cutting guides and complex or personalized implants. In any event, the stakes are high because, from now to 2023, several studies all forecast a growth rate of 20% for metal Additive Manufacturing in the Orthopaedic sector.

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