The Production Manager's Complete Guide to: Implementing Leading 3D Printing Technologies

Description: The integration of 3DP into established production workflows can be challenging to say the least. There are dozens of elements to factor in, even before beginning to look at the most appropriate 3D printing technology and materials to adopt for a particular circumstance. Bearing all this in mind the author has developed this “Complete Guide,” which is intended to ease the path to 3DP implementation:

- Rather than being just another basic guide to 3DP, this report is an extensive assessment of the key factors that must be considered when implementing 3DP
- It is based on an insider perspective of 3DP use today and our years of analyzing where 3DP is headed in the future. The opinions included in the report are therefore grounded in real world user experience and draw on our extensive interviews of existing 3DP users both large and small. And in order to provide further clarity, this report contains numerous examples and case studies covering how 3DP is being used effectively today
- This report appraises all the major 3DP processes, explains their pros and cons and shows which applications they are best suited to. Included in this report are in depth analyses of the practical considerations related to photopolymer based processes (stereolithography, digital light processing stereolithography and material jetting), thermopolymer based processes (fused deposition modelling and selective laser sintering), a binder based process for both mineral and plastic powders (binder jetting) and the most common metal AM process, known generally as powder bed fusion (PBF) and directed energy deposition (DED)
- Other notable technologies that we will address in this report include paper lamination technology and EBM direct energy deposition. We also discuss new technologies in 2016, such as HP's multijet fusion, Carbon3D's CLIP and Xjet's metal nanoparticle jetting. an new method for 3D printing metal parts which partially derives from material jetting technologies.
- This report also provides guidance on how 3DP usage practices vary from material to material and how materials are best selected and matched with the tasks at hand. The aspect of the report includes broad coverage of 3DP materials including photopolymers, thermopolymers, steels, other major metals and precious metals, as well as peaks at the exotic materials, such as ceramics, that are just beginning to be 3D printed.
- The report concludes with an Appendix that summarized the author's views on the future of 3D printing a wide variety of specific industries. In this roadmap we profile current applications, future applications and the most widely used 3D printing technologies in each industry

The implementation of 3D printing involves integrating new and more efficient practices to reduce time to market, streamline product development and optimize production. The level of understanding that production managers bring to this process can determine the success or failure of a 3D printing deployment strategy.

This Guide is an accessible entry point for production managers into the world of additive manufacturing and is focused specifically on the requirements and practical aspects of implementing 3DP including providing direction on equipment choice, process integration and materials selection.

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