

MASTER'S THESIS SUPERVISOR'S REPORT

Student's name: Ing. Moataz Mohamed Kamel Mahmoud Lashin

Master's Thesis Supervisor (MT): Ing. Denisa Hrušecká, Ph.D.

MT topic: Factors Affecting the Use of Additive Manufacturing in Production

Acad. year: 2021/2022

Notes on completing the report:

1. For the evaluation of each criterion, use the following scale: A - fulfilled very well, significantly exceeds the requirements; B – fulfilled with quality; C – fulfilled without reservations; D – fulfilled with minor deficiencies; E - fulfilled but with significant deficiencies; F - not fulfilled.
2. If any criterion is graded F, the thesis must be evaluated as unsatisfactory overall, not meeting the criteria for the MT defence, and such a thesis cannot be recommended for the defence
3. MT Supervisor must comment verbally on each evaluation criterion!

Assessment criteria:

Assessment

Assessment criteria:	Assessment
1. Thesis Objectives and Methods	B
The main goal is defined clearly, also individual sub-goals described detail together with research questions. Used methodology is appropriate and clearly described, everything understandable, thesis has logical structure.	
2. Theoretical Background	C
Theoretical part is fulfilled without reservations. It includes a systematic literature research based on scientific sources. Student wrote it nicely chronologically. Firstly, he presents and overview of used AM technologies and materials together with describing individual parameters influencing printing process of individual methods. One chapter is focused also on economics aspects of 3D printing, another one dealing with AM implementation. Number of used resources is appropriate.	
3. Practical Application – Analysis	C
Analytical part of thesis has logical structure. Student started with general analysis of industry and later focused on specific examples of AM implementation in selected companies in order to identify key points for proposals. First of all, student presents current state of using AM in industrial companies in general and shows its growth over years. Later, he focuses on Home Appliances sector, where the potential of using AM has been highly increasing during last years. Based on literature review, student presents some key points of AM implementation methodology. These points are later verified and studied more into detail through qualitative research in form of interviews with representatives of three selected industrial companies from the field of home appliances industrial sector.	

4. Practical Application – Project/ Research	D
<p>In project/research part student proposed methodology for applying AM in production based on results of analytical part. This methodology reflects all identified factors affecting the use of AM in production based on previous analysis and deep theoretical research. Methodology provides also specific examples based on data from interviewed companies that are usable in practice. Important part of this section is RIPRAN analysis, which covers all identified risks that can negatively influence implementation of AM in standard production. Student proposed also ways how to cope with these risks.</p> <p>Practical part of the thesis is quite short, financial analysis are not very detailed. Student has a problem do get more detailed data from companies to process more detailed financial analysis. I also miss more details in some parts of proposed methodology, for some sections student provide some specific examples, for some of them not.</p>	
5. Formal Layout	C
<p>Formal layout is quite good. Literature is cited according to required format, the whole work is understandable with logical structure. There are some grammatical mistakes and also some small formal mistakes which are not so serious and do not cause any troubles with understanding the scope of the thesis.</p>	

Overall thesis assessment *	D
<p>Presented master thesis deals with Additive Manufacturing and evaluation of factors affecting its use as a production technology. Topic is very interesting, but also very difficult to solve, especially regarding the fact that student is foreign and communication with interviewed companies had to be processed online. Despite all obstacles, student did good research and analysis to get all important information for his topic. Practical part could be more detailed. I recommend this work for the defence.</p>	

** The final grade is not an arithmetic average of the individual criteria for assessing the thesis.*

Questions for the defence:

1. Do you think that the costs of AM will decrease in the future and this technology will be used more in the practice? If so, in which areas?

The thesis **fulfils** the criteria for the defence of the MT. The thesis **is recommended** for the defence.

The thesis has been checked for the originality of the work in IS STAG. Based on the results of this review, it was concluded that the work **is not** plagiarism.

Date 21.08.2022

Signature of MT Supervisor