

6. Summary

The aim of the thesis was to establish the current state of the machine park of Tallinna Hambakliiniks dental laboratory, discovering any concerns or shortcomings and then suggesting changes that could be implemented to address these issues and improve the function of the laboratory.

Initially the relevance and context of the task were explored, establishing the need for analysis and the role that Tallinna Hambakliinik plays for dental care in Tallinn. Followed by background research regarding dental laboratories, the products they produce and manufacturing methods they implement. From the clarified context a methodology for ranking the labs capabilities was derived, identifying the main relevant production criteria of the clinic, and assigning weights to the criteria based on the importance they hold to the labs function. Utilizing these criteria the capabilities of the current machines and lab as a whole was established, from which concerns regarding the capability to produce a wide enough range of products and material handling capabilities was highlighted. From this, accounting for future trends in dentistry, a smaller-scale improvement plan was suggested which would improve the laboratories capabilities by implementing milling and newer precision casting machines that would increase the range of products that can be produced, the achievable accuracy, and throughput, without major changes to infrastructure. Finally, some more significant long term strategic goals were presented which, although ambitious, would create opportunities for growth and allow the clinic to achieve a more significant role in dental manufacturing landscape of Estonia.

The author believes that the thesis is an effective start to inspire more in-depth analysis and development regarding plans to expand Tallinna Hambakliiniks dental laboratory. While no complete, fix-all solutions were found, the analysis of the current facilities, and highlighting of concerns may hopefully spark interest to conduct a more thorough assessment of the lab by experts in the field. Problems that were not tackled but would be appropriate to continue with are effective economic analysis of the viability of the suggested changes, and mapping the layout and production workflow, which would determine if the suggested changes could truly be effectively implemented in the available space. The author would also have hoped to analyze and compare several options for expansions, however constraints in the length of the thesis, and complexity of the task due to the lack of experience regarding such equipment ended up limiting such opportunities.