
Modularity in Apparel Production: An Industry-Integrated Investigation

**Master of Design Exegesis
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I would like to express my deepest gratitude to my supervisors

Deb and Sandy who made even the most challenging tasks

feel achievable.

Also to my parents, you have supported my decisions with

unwavering support for as long as I can remember and made

possibilities feel limitless.

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and feeding me.

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Abstract

The central focus of this project, as outlined in the industry brief, is to develop the workflow and manufacturing capabilities of the apparel company Kapinua, through expansion of the brand’s 3D-integrated, customer driven, e-commerce platform. Based in Levin, New Zealand, Kapinua is a vertically-integrated manufacturing and retailing company. Specialising in made-to-order (MTO) digitally printed garments, Kapinua have developed an online platform that allows its users to select and customise garments from their web browser. With the support of New Zealand government organisation Callaghan Innovation, Kapinua wishes to expand, develop and refine this digital asset. Through iterative design practice, analysis of Kapinua’s systems and processes, reflective documentation, and literary research, this work looks to explore possible applications of customisation and modularity in the production of apparel. Informed by client needs, the primary project outcomes are relevant sizing charts informed by parametric research; grading rule tables; modular pattern templates; a library of products prepared for Kapinua’s 3D-integrated, online platform; and a structured filing system to organise and access digital assets. Further objectives include improved efficiency through workflow streamlining and early iterations of resources designed to assist with future product development within the company. More broadly, this research poses the question: How can digital technologies help create economically-viable, structurally customisable patterns - and how can this increase customer satisfaction, garment fit, and improve the way we engage with clothing?