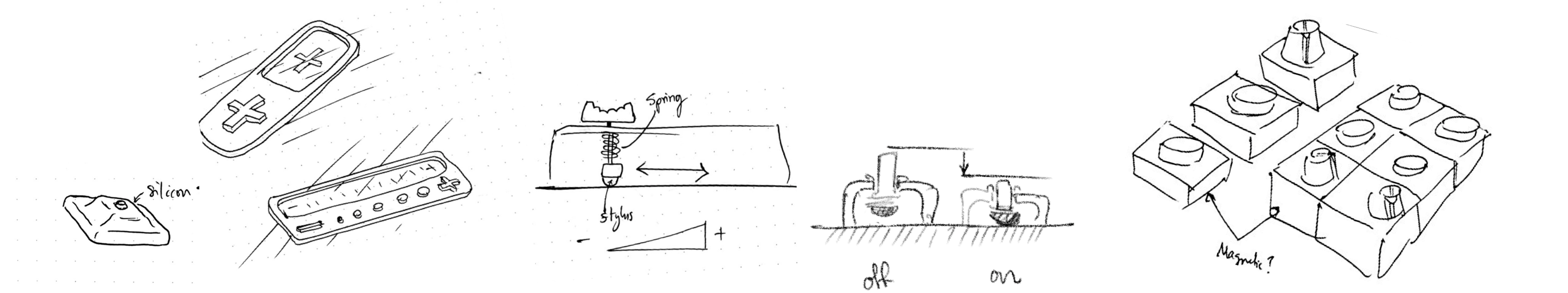**Bachelor's thesis in Business Engineering | Innovation**

Design solutions for touch - control cooktops

for people who are visually impaired
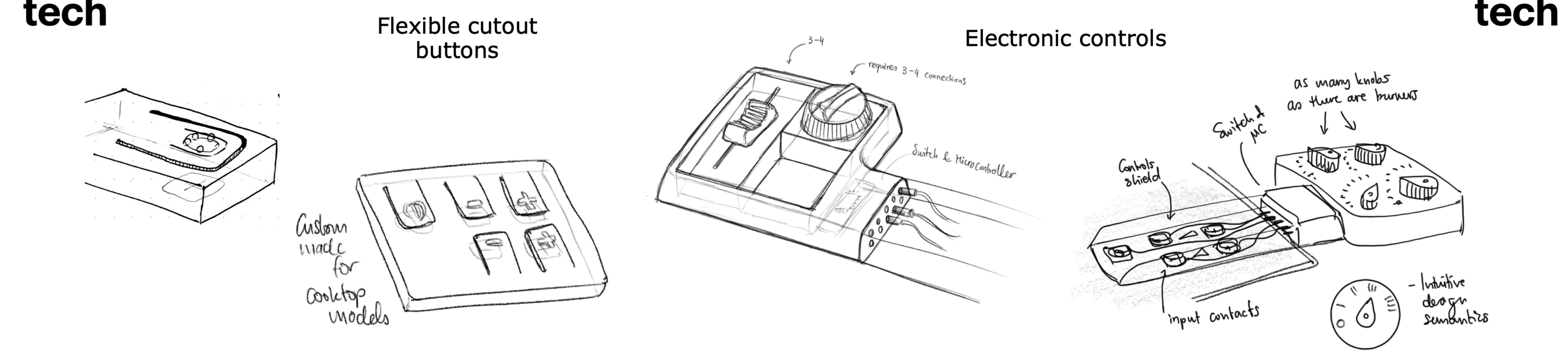

Adhesive
rubber buttons

Spring loaded
tactile buttons/knobs

Electronic
wireless controls

Low tech

High tech

Flexible cutout
buttons

Electronic controls

Abstract

While conventional cooktops were controlled with tactile knobs and buttons, modern cooktops with touch interfaces provide no auditory or tactile feedback, making them difficult for visually impaired (VI) users to use. This report describes how the Design Thinking process was used to design solutions to make such touch-control cooktops more accessible for VI users.

In the first stage of this process an analysis of the target user and the problem they face was carried out. This then allowed the problem to be accurately defined and design requirements to be formulated. Creativity methods such as mood boards and brainstorming were used to generate concept ideas, three of which were then prototyped:

(A) a custom-made panel of cut out buttons that is stuck onto the cooktop's interface with adhesive, giving the user tactile feedback about which touch button is being pressed

(B) mechanical buttons, knobs, or sliders that interface with the touch controls much like a smartphone stylus does

(C) a panel of knobs connected to a microcontroller that then triggers the correct touch-controls on the cooktop using electric leads.

When validated against the requirements, concept C satisfied more requirements than concepts A and B, so only concept C was developed further. The recommendation to the industrial partner is to focus on testing this concept and expanding its features such that it can become an assistive device not just for VI users but for also for elderly users or users with some other disabilities.

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