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SUSTAINABILITY THROUGHOUT THE SPRINGBOARD DESIGN PROCESS

A BLOG SERIES BY
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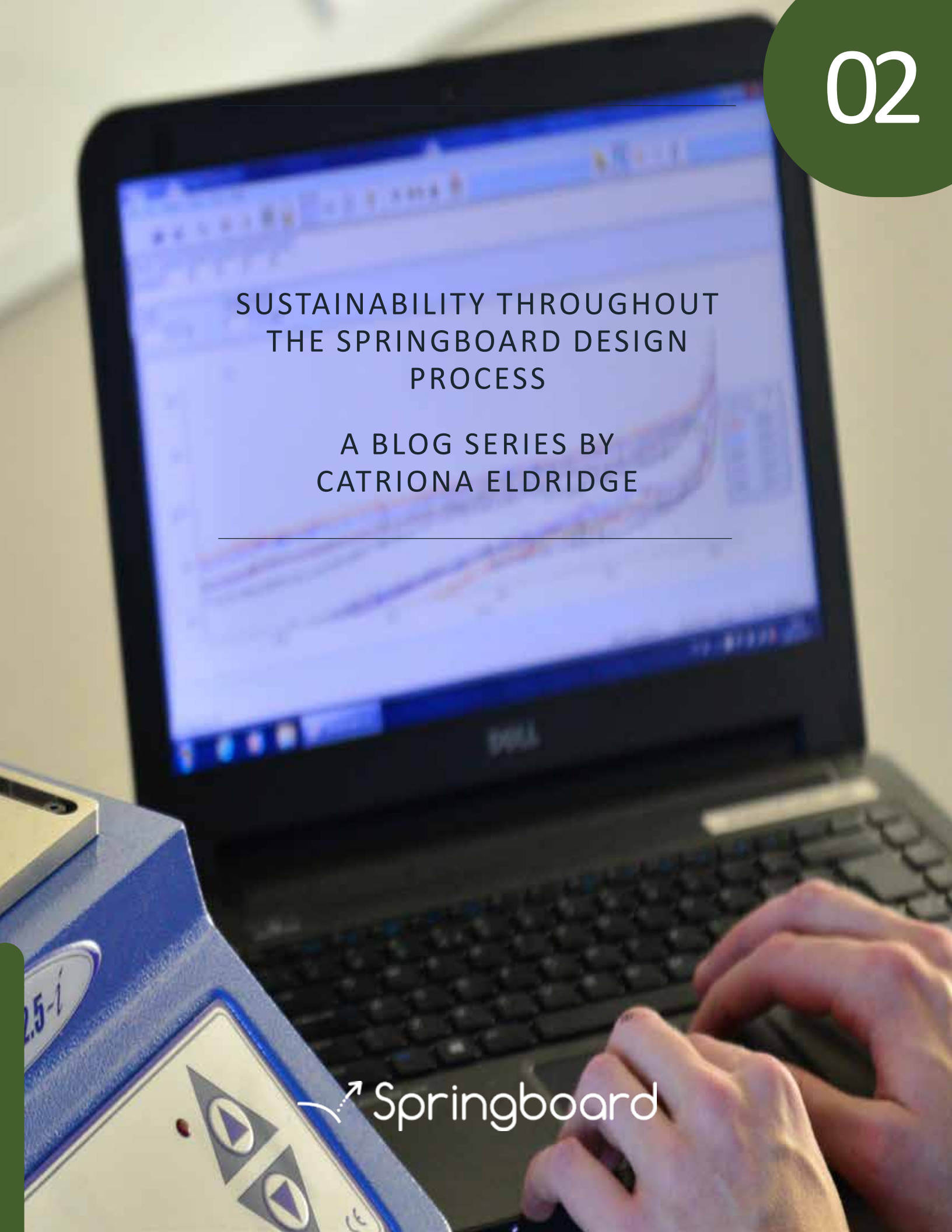

INTRODUCTION

Springboard Pro uses a 5-stage development process:

1. Opportunity and Research
2. Concept and Feasibility
3. Design and Verification
4. Validation and Preparatizaon for Launch
5. Launch and Post-launch

Like many other companies, we are aware of the growing climate crisis, and the increasing pressures from legislation and consumers to develop sustainable, environmentally friendly products. This article explores how to design for sustainability at each of our five product development stages.

This 5-part blog series aims to discuss how sustainability can be built into the product development process.

SUSTAINABILITY AT STAGE 2: CONCEPT AND FEASIBILITY

The Concept and Feasibility stage is where we begin to move from conceptual, blue-sky thinking towards a concrete design.

This stage involves clearly specifying the user, technical and regulatory requirements, and asking which of the concepts (developed in Stage 1) can meet them. At this point, we will develop regulatory and risk management plans, to guide later development, and works-like, looks-like demonstrators. Formative human factors studies, and scientific investigations into concept feasibility will guide our decisions and the direction of further development in Stage 3.

Sustainability in Stage 2 is guided by the same questions which guide the concept selection and design: what requirements must this device meet? How are people likely to use this device? Increasingly, purchases and users are looking for more sustainable options.

We can begin to understand the likely device lifetime, and what this means in detail for the resources needed for the device, as well as the end of life. For example, is this device going to be an inhaler? Patients using inhalers are taught how to use them by specialist nurses, and regularly replace their supply at pharmacies- this means the devices can be collected in a single, dedicated waste stream, as patients can be informed of the collection process, as they already regularly visit potential collection sites. This would make recycling much more feasible.

Is it a single use item for surgery, that will have to be incinerated as part of the hospital's safety policy? Or will it end up in a general municipal waste stream?

These considerations inform what materials or design choices could improve the device's sustainability. If the device could feasibly be collected, designing for disassembly will make recycling possible. Alternatively, a single use surgical instrument that will be incinerated should be made using the least energy intensive methods and materials that still meet the requirements, as the device will literally go up in smoke.

Clearly describing the user, technical and regulatory requirements means we are in a better position to develop an efficient concept design, without compromising performance or wasting energy or materials unnecessarily. A well-designed device that is easy to use correctly will reduce the number of user errors. Fewer user errors can lead to less wasted pharmaceuticals and longer device lifespans with fewer accidental breakages, lowering the overall footprint of the device.

CONCLUSION

Stage 2 focuses on the requirements the device must meet, and considers which concepts could meet them.

This includes sustainability requirements, such as overall CO2e footprint or recyclability, as well as regulatory requirements and patient needs.

Further environmental considerations are addressed in stage 3 when we discuss material and manufacture choices.

Formative human factors studies, and scientific investigations into concept feasibility will guide our decisions

COMING NEXT:
STAGE 3 - DESIGN AND VERIFICATION

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