Net Zero, Zero Barriers – Development of Free Platform for Sustainability 360

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ABSTRACT

Sustainability 360 Ltd. is a Christchurch-based startup, intending to simplify sustainability for New Zealand businesses. This paper presents a student-led product for this startup, undertaken during the *Work Integrated Learning* Project, as part of the Bachelor *of ICT* programme at *Ara Institute of Canterbury*. The success of this project has delivered a free platform for businesses in the construction sector to track their carbon footprints in a much-reduced timeframe. The student has gained highly relevant technical and personal learnings, which has increased their employability in the software development sector.

Keywords: Sustainability 360 Ltd., S360, BRANZ, web app, Agile

1. INTRODUCTION

Net Zero, Zero Barriers was a software development project, completed within *BCIS309 – Work Integrated Learning Project*, in Ara Institute of Canterbury's *Bachelor of Information and Communication Technologies (BICT)* programme. This project was completed for a Christchurch-based startup, *Sustainability 360 Ltd.*, with the support of academic supervisors at Ara. The completion of this course demonstrated the student's industry work-readiness.

This project delivered a free version of *Sustainability 360's* existing platform, with the goal of attracting a larger customer base. This project was completed over 12 weeks, following Agile/Scrum project management methodologies.

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2. CLIENT BACKGROUND

Sustainability 360 Ltd is a Christchurch-based startup company, situated in the *Te Ōhaka* incubator at Ara's Institute of Canterbury's Madras Street campus.

They have the vision of simplifying sustainability for New Zealand businesses. Their mission is to remove the confusion that comes with implementing these efforts. In a web application called *S360*, *Sustainability 360* provides businesses with easy-to-use visual reporting tools to track their sustainability initiatives.

S360 helps businesses align with the United Nation's *Sustainable Development Goals (SDGs)* (United Nations Department of Economic and Social Affairs, 2015). These SDGs aim to help the Earth become more habitable, across all socioeconomic and environmental climates. *S360's* most effective tool in this regard is their carbon calculator, allowing businesses to track their emissions over time, in line with targets.

3. OUTCOMES

This project delivered a free version of the *S360* tool – *CCBM (Carbon Calculator for Building Materials)*. This platform is intended for use by businesses in the construction sector, to calculate their carbon footprint for a given construction project. This platform is powered by BRANZ, an independent organisation that provides emission factors for a range of construction materials. Specifically, the *BRANZ* CO_2NSTRUCT manual provides the emission factors (BRANZ, 2021). The version used for *CCBM* is not yet released to the public.

CCBM has tangible business benefits. It has been proven to reduce a business's time expenses in measuring its carbon footprint by at least 90%. *CCBM* has received positive initial endorsements from various Christchurch businesses.

4. FUTURE DIRECTIONS

As an MVP (minimum viable product), *CCBM* will be launched to the public in November 2021. It will be continually patched with improvements and feature additions.

To convert users of *CCBM* to users of the main S360 platform, emails will be sent, using provided information upon registration with *CCBM*. This functionality will be integrated into a new version of *CCBM*.

Future versions of the main *S360* platform are not yet market-ready. The full-featured *S360* platform has been given a launch date in February 2022.

5. PROJECT MANAGEMENT

Net Zero, Zero Barriers was completed using Agile/Scrum project management methodologies. It was completed over six two-week sprints, lasting a total of 12 weeks. This involved weekly meetings among members of the development team, and daily progress stand-ups.

Azure DevOps was the tool used for task management within the *Sustainability 360 Ltd.* team. It supported Kanban boards to visualise the progress on product backlog items (PBIs) – whether they were yet to be started, in progress, or completed.

6. SKILLS AND LEARNINGS

Through the completion of *Net Zero, Zero Barriers*, the student developed technical skills in full-stack web development and general employability competencies. This was the student's first experience working in an Agile-focused software development team. To guide the student's learning, they were supported by two long-standing lecturers at Ara, and two highly tenured industry mentors, well-versed in facilitating professional and personal development.

Technical Skills

The student has gained skills in highly relevant software development technologies. The developed *CCBM* has been hosted on AWS (Amazon Web Services). AWS is a highly available, cloud-based infrastructure platform. Other technologies include the usage of the React JavaScript library and TypeScript as the programming language of choice.

Professional Learnings

The student gained necessary employability skills, such as communication, teamwork, time management, and self-efficacy. These skills were developed through active participation in team meetings and frequent show-and-tells.

The student has proven to be a valuable employee, with a high level of technical knowledge, supported by the demonstration of employability traits.

7. CONCLUSION

This paper presented a student-led project for a local startup, based in Christchurch, New Zealand. This project was completed within the *Work Integrated Learning Project* as part of *Ara's Bachelor of ICT programme*. This project delivered a free version of the *S360* platform for *Sustainability 360 Ltd*. The success of this project means the new platform will be launched in November 2021, attracting a larger pool of customers in the form of Christchurch/New Zealand businesses aiming to track their sustainability.

The student gained relevant technical and professional experience through the completion of this project and has demonstrated industry work readiness.

8. REFERENCES

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