

## Digital Platform-Enabled Community Development: A Case Study of a Private-Public Partnership Sustainability Initiative

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### Abstract

*The significant human impact on the environment has prompted many governments to invest in sustainability initiatives across cities and communities. Moreover, although it has been suggested that information technology can aid in the development of these sustainability initiatives, there is a dearth of empirical field studies in this area. In this research-in-progress paper, we present preliminary findings from a case study of a private-public partnership (PPP) community-based sustainability initiative that is enabled by a digital platform. Preliminary analysis sheds light on the mechanisms underlying the formation of the PPP, the development of the PPP's business model, the development of the digital platform, and ultimately the emergence of a community for sustainability. A framework for digital platform-enabled community development is posited based on the case analysis. Implications to both research and practice, as well as future research work are then discussed in concluding this paper.*

### 1. Introduction

With the number of people living within urban areas estimated to rise to five billion by 2030, the significant human impact on the environment has prompted many cities and their governments to promote sustainable production, management and consumption of resources amongst their communities [1]. In fact, one of the United Nations' Development Goals is the development of sustainable cities and communities, such as through using information technologies (IT) to promote and enable access to

sustainable housing services [2]. However, there is currently a dearth of empirical field studies on the role of IT in advancing the United Nations' Development Goals in general, and in enabling the development of sustainable cities and communities in particular [3]. Without further research to advance this body of knowledge, the existential risk of the environment becoming overstressed and unsustainable remains real [3, 4].

Extant literature suggests that IT can play an important role in sustainability initiatives [4, 5]. For example, scholars established that IT can enable community development [6], whereby community members come together to take collective action and generate solutions to common problems [7], such as the sustainability of their cities and communities [8, 9]. IT can also support initiatives that target the building and construction sector [10], such as mass customization of housing [11]. However, existing research has mainly focused on the reduction of individual energy consumption in households by utilizing smart meter-based feedback systems [10].

At the same time, the costs of using IT in sustainability initiatives has been rapidly rising [12]. In response, governments are increasingly using private sector involvement (i.e. public-private partnerships) to develop and finance the delivery of public services and infrastructure projects, including sustainability initiatives, aimed at improving the quality of citizens' lives [13-16].

Considering the above, this study attempts to address the research gap by examining the use of IT and public-private partnerships (PPP) in developing sustainable cities and communities. Specifically, it aims to answer the research question: "How does IT enable public-private partnerships to develop sustainable cities and communities?". Our empirical

investigation centered on one such PPP project - My Renovation Planner - involving a multi-university research organization, two government agencies, not-for-profit organizations, several private businesses and user testing groups. The project aimed at promoting affordable and sustainable renovation and housing services across cities and suburbs in Australia.

This paper is structured as follows. In the next section we discuss the background and related prior research on sustainability initiatives, community development and IT. As the case study is on a PPP, a sub-section on private-public partnerships is also included. The research method, data collection and data analysis are then presented. Next, we present the case description and discuss the preliminary analysis. Finally, we discuss the implications and future work.

## 2. Background and Prior Research

### 2.1. Sustainability Initiatives, Community Development and IT

The role of communities in enacting technology-driven sustainability initiatives and change is particularly important, as like-minded groups, organizations and governing institutions must seek to work in partnership to use IT to transform their circumstances in significant ways [9, 17]. Also, technology-driven cities provide open and user-driven ecosystems [16, 18]. Community development refers to the process by which community members come together to take collective action and generate solutions to common problems, including environmental sustainability [7, 8].

IT exists within a social and cultural context, and as such the institutionalization of community-based IT within community practices is critical [19]. When implemented, Community-based IT can empower communities in urban planning [20]. Creating community-based IT using principles of participatory design can result in the bridging of social networks within the community, the reinforcement of existing networks within the community, the improvement of information flows between community members and local institutions, and bring positive impact to community actors who hold leadership and unifying potential [21]. Successfully operational community-based IT requires high levels of commitment from the various stakeholders [22]. More recently, there has been an emergence of digital platforms that enable the increase of communication channels and dissemination of knowledge among people in communities [6, 9].

Of particular interest to this study are digital platforms that act as intermediaries for citizen participation [23] in stimulating sustainable practices across cities. As intermediaries, digital platforms operate to aggregate demand or supply, reduce operating costs, match transacting parties, and provide a trusted infrastructure among collaborating sides [24]. Most digital platforms usually subsidize one side of participants to enhance the attractiveness of the platform to the other sides, supporting a wide range of interactions between them [25-27]. Digital platforms democratize access to services and skills [28] and reduce the need for traditional bases of trust, such as brand, expertise, and qualification certificates, by providing an alternative digitally-enabled trusted infrastructure. In addition, platforms enable access to large amounts of personal and business data that platform owners can use to enhance the intensity and scope of interactions on their platform [16].

A widely utilized theoretical concept in the study of sustainability initiatives using community-based IT is the concept of Belief-Action-Outcome (BAO). Originally presented in Melville [5], the BAO concept is based on the Model of Social and Individual Relations presented in Coleman [29]. The concept has been used to examine senior managers' perceptions to the adoption of IT in sustainability initiatives [30]. It has also been employed to study the pro-environmental beliefs and attitudes of IT professionals [31] and the application of IT in sustainability initiatives among the emerging economies [32].

According to the BAO concept, *beliefs* about the environment held by micro-level actors (i.e. individuals) are formed by the structures of macro-level entities (i.e. the individual's organization, community and society at large). It further asserts that these *beliefs* form the basis for *actions* of micro-level actors in undertaking sustainability initiatives, which in turn impact the behavior of the macro-level entities. For example, micro-level actors who hold the *belief* that excessive usage of paper for printing and photocopying is bad for the environment may *act* to limit the amount of printing and photocopying that each of these micro-level actors does individually with the help of printing workflow and smart workplace solutions. Such micro-level *actions* will not only produce micro-level *outcomes* in the form of reduced paper usage by each individual, but will also lead to certain *outcomes* for the macro-level entities, such as reduced usage of paper across an organization, a community or even an entire society.

In sum, micro-level *beliefs* about the environment, which are formed by the structures of macro-level entities, are translated into micro-level sustainability *actions* and lead to micro-level *outcomes* upon the

environment. Each of these individual micro-level *outcomes* may be amalgamated into macro-level *outcomes* upon the environment.

## 2.2. Public-Private Partnerships

Public-private partnerships (PPP) foster efficiency, support creativity and induce innovation in sustainable city initiatives [33]. Traditional PPPs have been founded on the concept that the transfer of risk to the private sector improves the value for money of infrastructure spending in cities, yet the risks have to be ‘manageable’ [34]. Private companies bring innovative design, project management skills and risk management knowledge to these initiatives [35]. A flexible and shared partnership is likely to attract the private sector towards infrastructure investments [34]. When governments and companies are the only bodies in the partnership, it is referred to as a ‘double-helix’ collaborative model, and when end users work alongside governments, companies and universities, it is known as a ‘quadruple-helix’ collaborative model [36].

Cities should ensure the visibility of procurement and PPP opportunities [37]. In terms of the environment, collaboration between universities, companies and governments can generate sustainable development in cities [38]. Private sector participation in sustainable city initiatives typically faces three challenges: finding the right balance between private investors’ willingness to invest and public values in long-term sustainability objectives that are guarded by the government, finding an incentive structure that substantiates economic and sustainability objectives, and establishing an institutional framework that combines economic, environmental, social, and financial regulatory regimes [39]. Overcoming these challenges using good governance practices is crucial to PPP success in sustainable city initiatives [39]. Such good governance practices include building regulatory capacity, enhancing transparency and accountability mechanisms, designing codes of conduct, creating incentive structures that reward sustainable performance and agreeing on sustainability targets and procedures to assess them [39].

## 3. Method

A case study methodology is particularly appropriate for the exploratory nature of our research [40], allowing us to investigate processes that are emerging and not well understood [41], and to address the ‘how’ questions [42, 43]. In addition, we adopt a qualitative approach and an interpretive stance [44] in

order to seek a better understanding of the relationship between platform models and public-private partnerships towards the digital transformation of public services.

The case study selected must allow us to explore the use of IT in developing sustainable cities and communities. For the above reasons, we study a PPP to develop a digital platform, namely My Renovation Planner, aimed at promoting affordable and sustainable renovation and housing services in the state of New South Wales, Australia. The PPP partners include a multi-university research organization, two government agencies, not-for-profit organizations, several private businesses and user testing groups.

The case study was selected on the basis that it constituted an ‘extraordinary case’; the variety and prestige of the organizations involved, as well as the depth of their involvement, made this sustainability-focused PPP project truly unique within the Australian residential sector.

### 3.1. Data Collection and Analysis

Data collection was conducted from Dec 2018 till September 2019 and primarily from three main sources: 1) interviews with key stakeholders chosen on the basis of their importance in the My Renovation Planner project or within the wider ecosystem; 2) field work at events that pertained to My Renovation Planner or the wider ecosystem; and 3) internal documents pertaining to the My Renovation Planner project and business. The objective is to gain an in-depth understanding of the internal workings of the PPP during the development of My Renovation Planner, its place in the ecosystem and the utilization of IT.

Table 1 summarizes the data collection to date. Information about the stakeholders, their job titles and acronyms, description of data collection and interviews can be found in the table. In total, fifteen interviews were conducted, and four large events were attended.

### 3.2. Data Analysis

We performed open, axial and selective coding [45] of the primary and secondary data, and coded the data in three broad phases with distinct objectives. In the first phase we coded data according to the organization or PPP member that the code was most concerned with. The outcome of this phase was a map of the ecosystem, with a complex diagram of relationships between PPP members, organizations and projects. In the second phase we coded the data according to project dimensions. This resulted in a

No	Title of Interviewee	Organization	Topics discussed during interviews
1	Senior Executive	Cooperative Research Centre (CRC) for Low Carbon Living	Mission statement of organization, Collaborative Sustainable Housing Initiative, sustainability goals and projects perspective and challenges of public private collaborations, digital platforms features, prior projects data collected and analysis, citizen services and participation, decision making, service delivery, governance policies etc.
2	Program Manager		
3	Project Lead	The Commonwealth Scientific and Industrial Research Organisation (CSIRO)	
4	Program Manager		
5	Senior Project Officer		
6	Team Leader	NSW Government Office of Environment and Heritage (OEH)	
7	IT Manager		
8	Senior Executive	Housing Industry Association (HIA)	Background of the organisation, mission statement, subscription model, members, motivations for service platform usage and participation, events, benefits of membership
9	Senior Executive	Blue Tribe	Strategic direction, important platform features, perspective on platform model, working relationship with other stakeholders, community participation in renovator project, growth strategy, platform architecture considerations, customer journey logic, UX design considerations, business model etc.
10	Senior Executive	Wattblock Platform	
11	Information Day participants	Cooperative Research Centre (CRC) for Low Carbon Living	Observations made on operational day-to-day activities, stakeholder engagements, customer service operations and management, platform usage and participation, filming, benefits of program etc.
12	Filming Day participants	Renovate or Rebuild's pilot TV show	
13	Presentation Day participants	Wattblock and UNSW Founders Incubator	
14	TV show launch event participants	Renovate or Rebuild	
15	Secondary Data	The Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Various internal documents relating to My Renovation Planner's business case and the platform's design
16	Secondary Data	Public Websites	News articles relating to the project

**Table 1. Summary of Interviews and Fieldwork**

similar picture that articulated the different components ecosystem's projects (specifically concepts such as project governance, use of IT, etc.). In the final phase of coding, we coded the data according the BAO concept, which resulted in the

Digital Platform-Enabled Community Development framework shown in Figure 2.

#### 4. Case Description

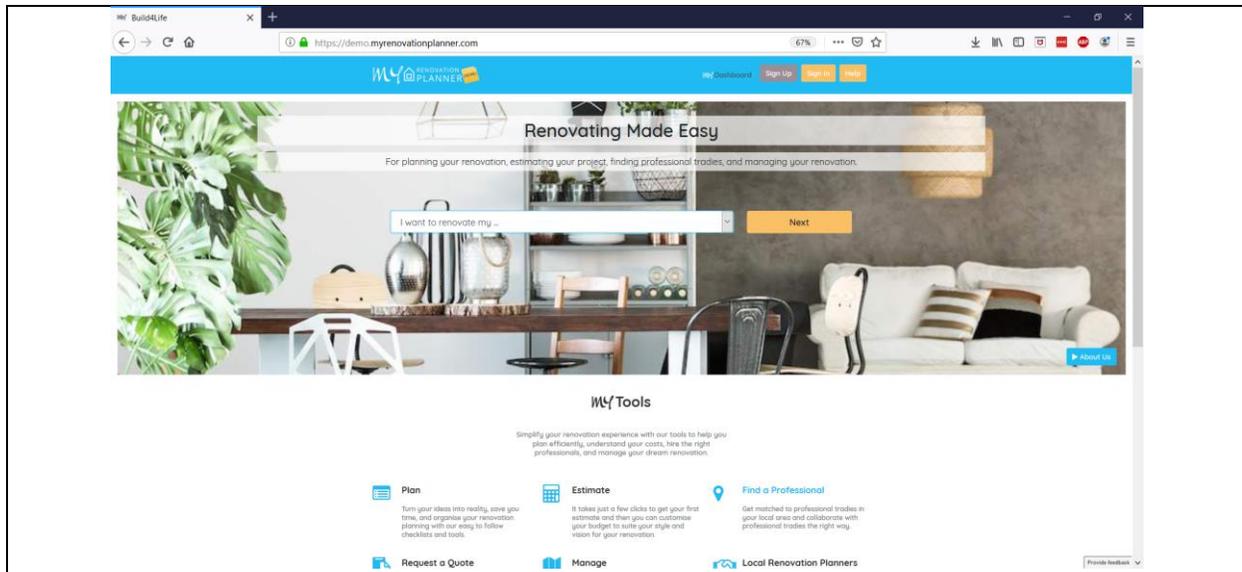
My Renovation Planner is an online platform that is built by a PPP including government agencies, universities and the private sector in the state of New South Wales, Australia. When operational, it is the marketplace for its users to plan for renovations, estimate project, find professional tradespeople, and manage the renovation. The PPP aims for the platform to support a network of renovation planners, who, much like interior decorators, will be local businesspeople who help guide customers (i.e. individuals who are conducting renovations) through the renovation process. These renovation planners will also have to be passionate about environmental sustainability, and overt sustainability messaging are used in recruiting these renovation planners. My Renovation Planner will split their fees on a 60/40 basis in favour of the individual renovation planners.

*"Its genesis arose from the fact that there was a wealth of information out there in terms of the uptake of sustainability initiatives... yet we aren't seeing the growth and transition in the marketplace that we would hope."* – Program Manager, CRC.

The platform, which will be the most visible part of the PPP, will be a platform to simplify the renovation process for individual users of renovation services. It is, at the time of writing, mostly built, and is live in the form of a demo website (see Figure 1). It comprises of three core functionalities. First, there is a planning tool, which provides users an organized and customized checklist based on the type of renovation that the user wishes to undertake. Next, there is a budgeting tool that estimates the cost of the renovation using Rawlinson's Construction Costs Guide, which has been described as "the industry bible for all medium to large construction projects" [46]. Finally, there is a requests tool, where the user can automatically generate a request for process. The user will then give this request for process to the renovation planner, who will in turn reach out to tradespeople.

*"So basically what we did, we took the Rawlinson Construction Cost data, we simplified things down to square meterages or 'per unit', and then we have sort of predefined recipes for room types"* – Senior Executive, Blue Tribe.

Crucially, these functionalities of the platform will give users small 'nudges' to make sustainable building decisions. For example, in the requests tool, additional specifications that are cheap to implement and yet make the house more environmentally sustainable are



**Figure 1. My Renovation Planner Platform and Landing Page**

automatically added. This is useful as tradespeople do not typically build these specifications unless told to. The PPP and platform target two key groups: users and tradespeople. The platform aims to solve three key pain points that users normally face, namely, they often do not understand the process of a renovation, they usually do not understand the costs of a renovation, and they have trouble finding tradespeople.

The platform also aims to reduce the number of ‘arm waving’ quotes that tradespeople receive from users, which occurs when users do not have adequate information about their renovation and waste the time of the tradespeople who respond.

Unlike the messaging for the renovation planners, the PPP and platform will not direct any overt sustainability messaging towards the users or tradespeople. The value proposition to them will solely be to address their pain points, and any sustainability motives are kept covert.

*“Either I or somebody in my team would have somebody from outside the organisation say, hey this is really cool and we think HIA (Housing Industry Association) should be involved... we would probably get one of those a month...and it is up to us to decide what is the value to our members in saying yes to that process” – Senior Executive, HIA.*

The platform is being supported by a ‘quadruple-helix’ PPP. The idea was initially conceived in 2014 by the Cooperative Research Centre (CRC) for Low Carbon Living, which is a multi-university research organisation committed to sustainability outcomes in Australia. Shortly afterwards, the NSW Government’s Office of Environment and Heritage (OEH), which is

a state government body, and the Australian Government’s Commonwealth Scientific and Industrial Research Organisation (CSIRO), which is a federal agency, came onboard and began to work on the project jointly with the CRC. These three bodies co-own the project, and their representatives form the ‘primary’ members of the PPP.

The project also has a steering committee which, in addition to having representatives from the three aforementioned organisations, has representatives from private companies and organisations. An example is the Housing Industry Association, which is a membership organisation of around 60,000 building professionals. The composition of the steering committee has changed over time, and its members, aside from those from the CRC, OEH and CSIRO, can be considered as the PPP’s ‘secondary’ members.

*“...it’s like an internal team that you’d have in an organization, but it’s split across multiple organizations.” – Team Leader, NSW Government Office of Environment and Heritage.*

The business model and platform are being iteratively built by a sustainable venture builder called Blue Tribe. They entered the project in 2017 and transformed the business model into its current shape, which aims to solve user problems that do not overtly relate to sustainability. The firm adopts a lean start-up approach [47] – a hypothesis-driven approach to evaluating entrepreneurial opportunity – for this initiative. Additionally, Blue Tribe has subcontracted developers and UX designers to build the digital platform. They also conduct testing with user groups, who have a large input into the development of the digital platform. In recruiting renovation planners to

join the digital platform, Blue Tribe also reached out using social media such as Facebook, which has been used to explain parts of the business model and sustain contact with the planners until the business is live.

My Renovation Planner has a sister project called ‘Renovate Or Rebuild’, which is a TV show that aims to entertain whilst educating audiences about how to sustainably build and renovate homes. The CRC for Low Carbon Living, CSIRO, OEH and Blue Tribe are also involved in ‘Renovate Or Rebuild’.

*“So even though we had lots of partners, really the organizations that were most aligned to us were the CSIRO and the CRC, because they have similar goals for Net Zero, and they don't have other goals like creating a profit or meeting the needs of their members, which some of our partners had” – Senior Project Officer, NSW Government Office of Environment and Heritage.*

## 5. Preliminary Analysis

The case findings is examined and represented using the notions of BAO as discussed in Section 2, yielding the framework of platform-enabled community development as shown in Figure 2. Our model has three stages: Individual & Organizational Sustainability Beliefs, Sustainability Actions & Outcomes, and Organizational & Societal Sustainability Outcomes. The Individual & Organizational Sustainability Beliefs stage covers how micro-level (i.e. individuals) *beliefs* about the environment are formed by the structural influences of macro-level entities (i.e. organizations and society-at-large). The Sustainability Actions & Outcomes stage covers how micro-level sustainability *actions* lead to micro-level *outcomes*. The Organizational & Societal Outcomes stage covers how individual micro-level *outcomes* are then amalgamated into macro-level *outcomes*.

The analysis presented in this paper only focused on the Sustainability Actions & Outcomes stage, as it is the mechanism by which the sustainability initiative is established. Within this stage, four phases of micro-level actions and outcomes were identified. These are described in the following sub-sections.

### 5.1. Initial Stage – Individual & Organizational Sustainability Beliefs

From our analysis, this initial stage of the framework can occur for every member of the PPP. Virtually all PPP members, and certainly all primary PPP members, represented organizations which place great emphasis and value on environmental

sustainability. The strength of these organizational beliefs, as well as the strength of the personal beliefs about the environment, served to determine whether individuals are motivated to become members of the PPP. This was observed in the PPP which developed the My Renovation Planner digital platform, where initial organizational involvement was largely driven by a handful of individuals from within those organizations.

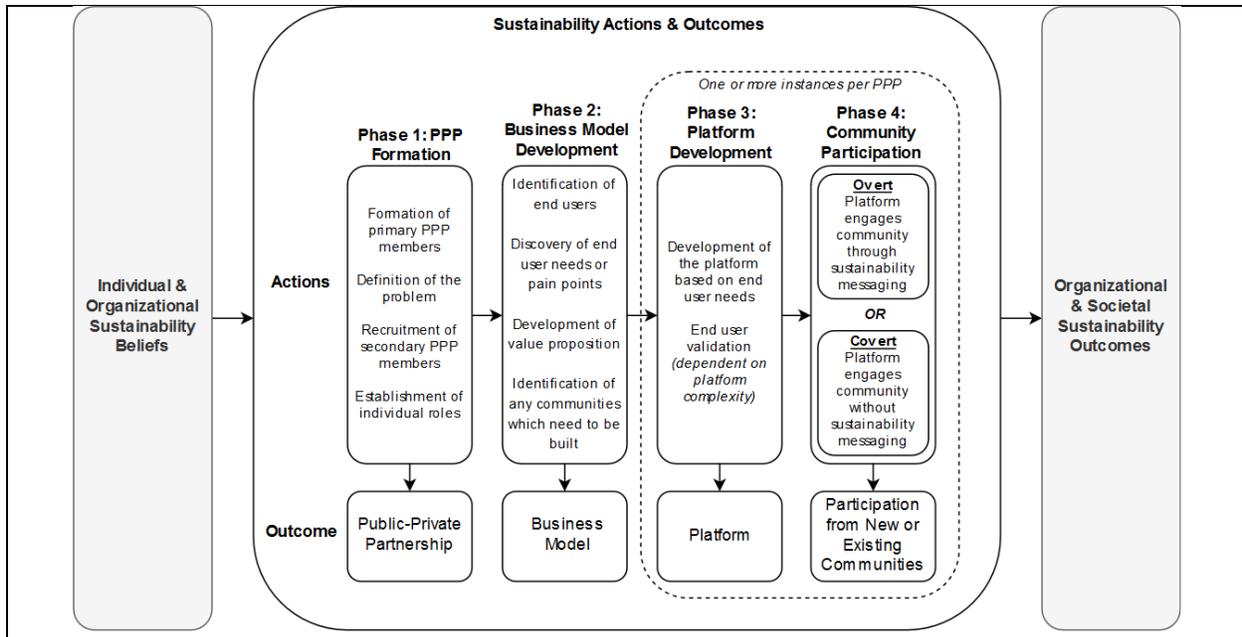
The resulting PPP is then comprised of individuals from a variety of organizations who all feel passionately about the environment. This alignment of beliefs in turn creates an alignment of purpose within the PPP, and across individuals in the PPP. Our preliminary analysis suggests this alignment of purpose to be a most significant factor to the success of My Renovation Planner.

## 5.2. Intermediate Stage - Sustainability Actions & Outcomes

**5.2.1 Phase One: PPP Formation.** In the first phase of the Sustainability Actions & Outcomes stage, individuals from various organizations of primary PPP members come together with the goal of generating a solution for the common problem, such as a lack of sustainable housing services. Secondary PPP members (such as the HIA) are then recruited, and individual roles within the PPP are assigned through the creation of a governance structure, such as the My Renovation Planner’s Steering Committee. The final outcome is a structured PPP.

**5.2.2. Phase Two: Business Model Development.** In the next phase, the PPP begins to define the business model of its solution. The PPP identifies the end users they wish to target. In the case of My Renovation Planner, end users were identified to be individual users of renovation services and tradespeople involved in small, residential renovations. With the end users sorted, the PPP then proceeds to discover the pain points and needs of these end users, with the aim of addressing them. This results in the creation of a value proposition. The success of the PPP’s solution depends on its ability to meet problems which legitimately matter to users. Whether or not these problems relate directly to sustainability determine the approach taken in Phase Four. Finally, the PPP identifies any communities which must be built as part of the solution. The result is a business model, which will be enabled by the digital platform.

**5.2.3. Phase Three: Platform Development.** From our analysis, Phase Three and Phase Four occur at least once during the PPP; a PPP can develop multiple



**Figure 2. Digital Platform-Enabled Community Development**

platforms, and thus target multiple communities. For example, the PPP involved in My Renovation Planner also established a Facebook group to build a community of renovation planners, which is complementary to the My Renovation Planner digital platform. The actual development of the platform largely depends on its complexity and the community being targeted; it can be as simple as a Facebook page or as complex as the My Renovation Planner digital platform, which is considering adding on artificial intelligence and chatbots in future versions.

**5.2.4. Phase Four: Community Participation.** From our analysis, the fourth phase occurs for each community being targeted or developed. It can occur in one of two ways in order to encourage community participation. The choice between the two ways may be decided by taking reference to the value proposition determined during Business Model Development (Phase Two).

Essentially, if the needs of the users are sustainability-related, or if users are believed to care deeply about sustainability, then an overt approach to sustainability messaging can be taken. For example, the renovation planner community in the My Renovation Planner digital platform were built on the basis that the potential members of this community would take to the sustainability messaging positively. Thus, overt sustainability messaging was carried out, targeting individuals and organizations to join the growing community.

On the other hand, if the needs of the end users are not related to sustainability, then it may be more advisable to use covert messaging approach, as an overt approach may cause potential users to disidentify with the initiatives. Thus, such digital platforms should take a covert approach to community development, whereby users are subtly ‘nudged’ to make sustainable decisions, as is the case with the My Renovation Planner website.

**5.2.5. Critical Success Factors in the Intermediate Stage.** Several Critical Success Factors were identified throughout the four phases of the intermediate stage of Sustainability Actions and Outcomes. Many of the factors are not exclusive to one specific phase but permeate throughout the entire stage. These Critical Success Factors are summarized in Table 2.

**5.3. Final Stage – Organizational and Societal Outcomes**

If the intermediate stage of Sustainability Actions and Outcomes is successful in stimulating community participation, it will result in positive behavioral changes in the broader society, causing community members to come together and take collective action.

Such an outcome may also have an impact at the organizational level of each PPP member. For example, the CSIRO plans to use data from the My Renovation Planner digital platform to continuously

No	Critical Success Factor	Evidence
1	Alignment of purpose amongst participating organisations	<i>“This alignment of purpose has been - and I actually wrote about this in one of the reports I did - I think the reason the project was so successful was that everyone on the team were all going in the same direction” – Senior Executive, BlueTribe</i>
2	Use of an Agile / Lean Startup Methodology	<i>“And so our whole approach has been around using lean startup, lean innovation methodologies...and applying that to solve a policy problem” – Senior Executive, BlueTribe</i>
3	Government Involvement	<i>“When OEH, which is the government department, came on board, then it gained better traction as it does with government on board” – Senior Executive, CRC for Low Carbon Living</i>
4	Individual Cross-Organisational Relationships	<i>“I’d say that first phase really built up our relationship with the CSIRO and partnership... like we’re big organizations, but essentially it comes down to us individuals acting... And trust” – Senior Project Officer, OEH</i>
5	Finding a Real End-User Problem to Solve	<i>“They just didn’t do the problem definition properly. The problem they were solving was their problem, not the user’s problem. I think that’s the mistake they made.” – Senior Executive, Blue Tribe</i>

**Table 2. Critical Success Factors in the Intermediate Stage**

improve their community development efforts to effect sustainability behavior in the society at large.

## 6. Implications to Research & Practice

The role of IT in facilitating sustainability initiatives is heavily underexplored [10], and the literature on how IT is used in promoting and enabling access to sustainable housing services has focused mainly on the application of smart meters [10]. This research thus extends the corpus of literature by exploring the role of IT in facilitating sustainability initiatives that does not focus on smart meters.

Specifically, our study presents a preliminary framework on Digital Platform-Enabled Community Development basing on a case study of a PPP sustainability initiative. The framework draws on BAO, which consists of three stages, with the intermediate stage being further detailed into four phases. This not only extends the application of BAO to a new context, but also reconceptualizes the process of how a community-based sustainability initiative can be orchestrated through a digital platform, over different phases of its development.

This research builds on extant research on the development of sustainable cities and communities through the use of IT, as well as the literature on PPP for pursuing sustainability initiatives, especially IT-enabled sustainability initiatives.

The preliminary findings have implications for practice. The preliminary framework presented in this paper serves as a roadmap for the adoption of IT to pursue community-based sustainability initiatives. Specifically, the framework articulates the process of how the digital platform serves to orchestrate community-based sustainability initiatives.

In addition, the framework also serves to inform practitioners who are keen to leverage PPPs for pursuing sustainability initiatives. It demonstrates how IT can be used in such initiatives to develop community-based solutions, especially for the development of community based digital platforms for PPP based sustainability initiatives.

## 7. Future Work

This paper analyzed preliminary findings from a PPP sustainability initiative case study to present a framework for digital platform-enabled community development. This research is not without limitations. First, our findings have been derived from a singular context and we would urge caution, especially when applying our prescriptions in different contexts, where multiple variables along several dimensions may exist.

In addressing this limitation, the researchers seek to continue analyzing the sustainability initiative and the development of the digital platform presented in this paper. Future research will provide more empirical discussions on the interactions between individual beliefs (micro-level) and organizational beliefs (macro-level), and also the interactions between micro-level outcomes and macro-level outcomes of the PPP.

Another common criticism of case study research approach is the problem of transferability. While we acknowledge that our findings are drawn from case studies, we contend that future findings are nevertheless generalizable beyond the current context, and they will be corroborated by, and built on, the findings of other studies in the literature. We intend to study similar community-based, IT-enabled sustainability initiatives in countries other than Australia. Future case studies can canvass a larger sample size or in a different setting to reinforce further the existing findings and to reveal any perspectives that may have been missed, in an intent of contributing to the efforts of both academics and practitioners to tackle the sustainability challenges posed to the world’s cities.

## 7. Acknowledgements

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