APRIL 2022.

CityTalks
Business Proposal

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Problem

Cities have not greatly advanced their methods of sharing information with residents and receiving resident feedback through online methods. The City of Vancouver currently uses two online tools to get resident input, The Shape Your City website and the VanConnect Mobile App. The website is not easily accessible to all residents, as those in lower income quintiles are more likely to own a mobile device than a home computer (CRTC, 2019). The mobile app currently lacks the input capacity of the website. Residents are only able to make service requests to the city as the app acts as a mere information source for residents on features such as transit and cycling routes or council meeting details. Using Arnstein's Ladder of Citizen Participation (1969) as a reference, the current state of resident input from both these online tools would place resident engagement somewhere between informing and consultation. Vancouverites have the capacity to provide input more effectively and act in partnership with local government, delegating power to its local staff and council members. Deployment of a smart city app could create a "tourist citizen" who is inspired to explore their city, take advantage of a full range of city services, and provide feedback to municipal governments on proposed urban changes (Prandi et al, 2019). Our goal is to create a comprehensive and interactive interface for citizen-government information sharing which will improve and expedite city projects and lead to better resident satisfaction for placemaking projects.

Problem

Sector Scan

Our sector scan has identified a clear gap between existing platforms for community engagement and platforms for development visualization. Both of these are emerging sectors, with competitors most active in Europe. By combining community engagement features with development visualization, we hold a competitive advantage over these existing platforms.

Commonplace and Decidem both provide examples of digital platforms used to bring collective knowledge into planning. Commonplace is especially of interest, as it has partnered with several UK municipalities and a multitude of UK-based property developers to boost engagement in residential development projects (Commonplace, 2022).

AR is also an emerging tool in the construction industry, there are six notable companies which are using AR for project presentations and to give clients an idea of a building's appearance ahead of construction. While these platforms use similar AR concepts as our app, they do not currently include public engagement and feedback functions. However, many of these platforms have already completed software that transforms BIM and 3D models into AR. Notable platforms include: Akular AR, GAMMA AR, Arvizio, ICT Tracker, The Wild, and VisualLive (Ellis, 2022).

Solution

We propose the creation of an app named CityTalks that incorporates more services than existing public engagement platforms including Vancouver's VanConnect app. Our marketplace scan has already identified the best features from competitors in the engagement app space. This includes the use of comments, asset mapping, and surveys to gauge resident sentiment in the early phases of city projects. To stand out from the pack, and for financial viability, we want to use augmented reality (AR) technology to display development projects to residents on site, at home, or anywhere with the app. We would collect CAD data from development companies and convert it to AR data so that residents can use the app or shareable qr codes to see how future projects would fit into their community. We would then provide the AR data back to developers at a cost, so they can use it for their own sales marketing. The use of AR and improved resident input will provide a better sense of the collective knowledge or opinion of residents. Local Governments and Planners are already aware of the benefits and social value of public engagement. The Real Estate Institute of British Columbia (2021) also recognizes the social value of engaging with the community by stating;

- It ought to be considered a civic duty due to the interface between the public realm and private property
- It will undoubtedly inspire refinements to the design of the project
- Without question, it will aid the goal of "defusing" applications that are potentially contentious
- It will broaden social acceptance of the end product

The app platform provides accessibility to a wider audience of residents. It also allows us as a company to continuously update the platform and UI with the latest facilitation and engagement methods. We believe our platform will be particularly valuable during the early stages of the development approval process, especially during the technical review stage and ahead of formal public meetings.

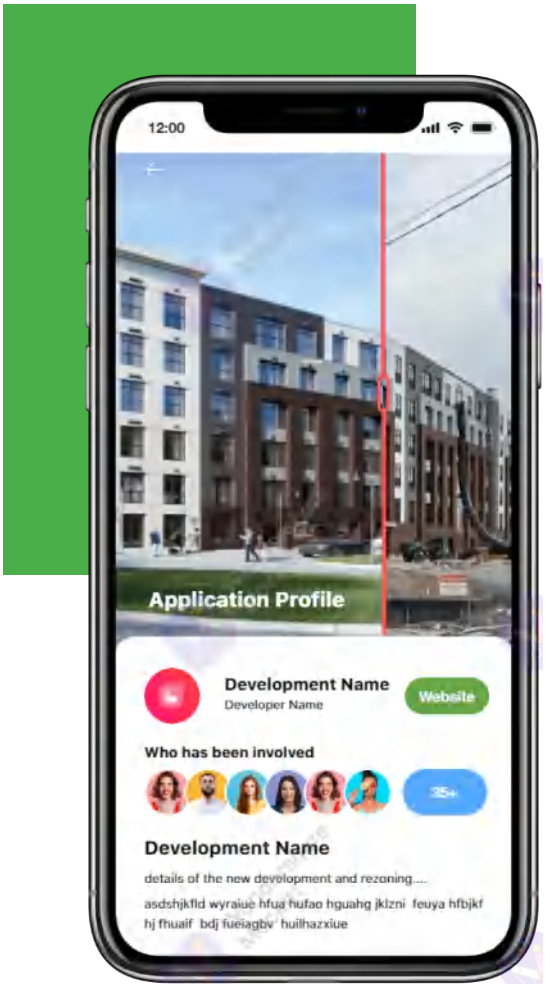
Developers will be able to gain early public feedback, and meaningfully incorporate this into their proposals - strengthening their application (City of Vancouver, 2019) (See Appendix). Future iterations of the app could include collaborative, resident-led design - allowing users to edit the CAD designs in the AR space. We consider replacing the VanConnect app without our app an obvious decision for Vancouver. After a stage one pilot project where we will refine the app at UBC, we will look to replace VanConnect and rollout in the City of Vancouver in stage two. Stage three will see our app offer services in cities around the globe. Our stage one implementation is detailed below.

Implementation

Minimum Viable Product: Front End

CityTalks will be a free app available on phone and tablet. When users see development postings in their neighbourhood, they would be able to scan a QR code and view that development as a 3D, real world, experience through augmented reality.

Initially, our team will focus on the basics. Our minimum viable product will be used to provide a proof of concept while allowing our team to gather feedback and data from clients (property developers and local governments) as well as end-users (residents). For initial rollout, our minimum viable product will consist of the augmented reality app and a single property developer – this will allow our team to work hand-in-hand with the client, ensuring our app can transform 3D models into augmented reality experiences. This will also allow us to refine our revenue model.



The minimum viable product's user experience will focus solely on the augmented reality model and feedback functions. Augmented reality for a development site will be activated by scanning a QR code at the site. The user can then visualize how that future development would appear. After exploring the AR model, the user will then be prompted for any questions or comments they may have about that development. From the user, the app would collect their residence status (resident or visitor to the area), then prompt them to answer surveys, comment threads, or asset mapping where they could identify points of interest in the community. Data privacy features will be built into the back end development, ensuring all answers are confidential. Developer clients will be able to access an aggregate of relevant feedback to their project.

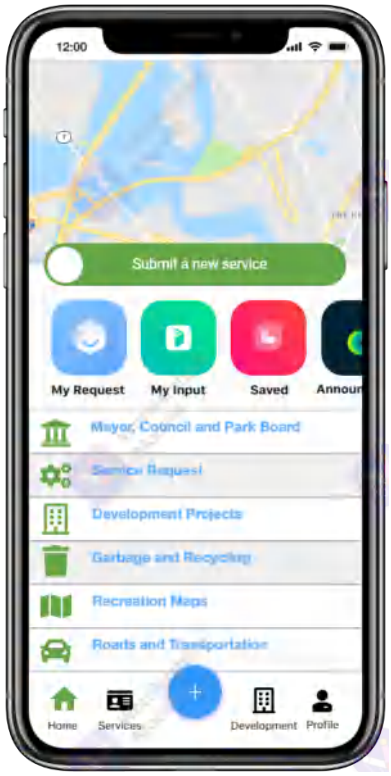
Implementation

Minimum Viable Product: Back End

As part of the onboarding process with developers and municipal governments, our MVP will target a single integrated government developer to simplify feedback loops and better refine our app. We aim to partner with the University of British Columbia in its role as a local government and a property developer to pilot the app on an individual site or their portfolio of sites on campus. The University currently has nine development projects in application stages and a further 17 projects under construction. This stable, but relatively small number of projects at any given time is ideal for our app development, allowing our team to best troubleshoot issues that may arise with the augmented reality technology.

Funding

Our funding will focus on four grants, plus investments and loans as needed. We also aim to negotiate some funding from UBC Campus and Community Planning as a component of any sort of partnership with the University. UBC Campus as a Living Lab funding would also have to be sought as part of a partnership with UBC Campus and Community Planning, and potentially in partnership with one or more UBC faculty members. Potential grants are detailed in Appendix II.



Business Model & Resource Needs

Key Partners

Our key partners come from the development industry and local government. We aim to partner with the University of British Columbia for initial rollout with the University acting in its capacity as both a developer and the local government. After the initial pilot, further rollouts will have our company working with multiple partners -- local developers as well as local governments.

Our app requires inputs only from the development partner. They will provide us with their 3D models for their proposed development project, as well as the metadata and geographic references required to transform that model into an AR format. In Vancouver, developers already provide much of this data to the city as part of the development process. These are stored in 3DS, DWG, Revit, and BIM files and comply with City of Vancouver technical security standards (City of Vancouver, 2020). Based on our sector scan of existing AR platforms, we believe this existing data will be sufficient for our minimum viable product.

Key Activities

Our minimum viable product will consist of one key activity, the production of AR models of development projects. These models will then be viewable through the app, allowing the general public to provide informed feedback on a development project. Our final product will integrate two further functions into the minimum viable product. First, we will sell the AR model back to the developer, they can then use this for their own marketing and sales. Second, for our government partner, we will integrate feedback on municipal services into the app. The end goal is for the app to function as an engagement hub for residents to provide feedback on all developments and services.

Value Propositions

We deliver two products to our client (the property developer): enhanced community feedback and an AR model that they can use for their own marketing purposes. By providing enhanced community feedback, our clients can better refine their development proposals and help their project clear municipal development permit backlogs with fewer delays (City of Vancouver, 2021; LOCO BC, 2020). We also deliver value to our government partner, by enhancing public feedback in order to create a more socially sustainable and inclusive development project.

Business Model & Resource Needs

Key Resources

Initially we aim to hire 3x software engineers in addition to our own roles acting as CEO/CFO, COO/Partnership Director, and UI Designer/Lead Data Scientist. We will also require web hosting services for the app, start-up computing equipment and technology, and potentially the rental of office space. Our budget is detailed in the appendix.

Cost Structure

The bulk of our costs will be employee salaries in addition to upfront costs for necessary computing equipment and technology. We anticipate paying for necessary technologies through initial grants such as the Campus as a Living Lab funding program (UBC Sustainability, 2021) or the IRAP Technology Innovation Projects grant. We will aim to minimize salary costs through the IRAP Youth Employment Strategy grant - this could, at maximum, cover $60,000 per year towards two software engineers under the age of 30 (National Research Council Canada, 2022).

Revenue Streams

The initial rollout and minimum viable product will not be able to tap into our predicted main revenue streams. We Kaim to fund these initial steps through grants (as detailed above) and through a mutually beneficial partnership with UBC's Campus and Community Planning.

Further rollout of the app will target two potential revenue streams. First, municipal governments - as a services and engagement app, we aim for our app to replace existing municipal services apps such as VanConnect and ShapeYourCity in Vancouver. We believe that we can then charge municipal governments an equivalent cost to the cost of operating these apps. Given the expense of developing our app and the AR aspects, we intend to cover the remainder of our costs, and gain profit, by selling the AR model back to the developer. Currently Vancouver developers average about $28,000 in cost overruns due to development delays (LOCO BC, 2020) - we estimate that we can charge roughly 5% of this to the developer, amounting to ~$1,400 per development project.

A further breakdown of our costs and revenues, including five-year budget, is detailed in Appendix III.

Ethical Risk Assessment

As an engagement tool for the public, and due to CityTalks' functionality in the development process during a housing crisis, detailed ethics considerations are necessary. Looking first at social sustainability concerns, there is a risk that developers may start creating AR models in house for their own marketing. This leaves the fees charged to cities as the only income source for the company, impacting its survivability. While the issue is a financial concern, most importantly, it would undermine the social goal of the project to improve engagement from residents and enabling them to create a built environment that reflects their needs. An additional risk is that expediting the development process without policy or plans in place to promote affordable housing could simply increase the supply of luxury housing. However, we believe that early use of the app in the development approval process would allow communities to request designs and features that would provide the middle- to low- income housing that the city desperately needs (Berntzen & Johannessen, 2015).

Next, looking at data privacy concerns,, users of the app need to be identified as either residents of the city or tourists.

This means that the app will potentially hold valuable personal information. Proper attention must be given to security and anonymization of data on the back end of the app to prevent malicious attacks seeking to steal personal data. In addition, ethics reviews will consider what data is appropriate for release to developers, recognizing that some communities will be uncomfortable with the release of their data (Zoonen, 2016). The engagement content generated within the app which takes the form of comments, surveys, and asset identification will also need to be verified by city staff. Illegitimate responses could occur through any online medium, meaning that city staff will need to parse through the data to determine the veracity of the information. Updated iterations of the app will need to find a balance between keeping the app accessible to anyone with a mobile device while filtering out unusable input.

Finally, engagement must be available to people of all demographics. The company also recognizes that the UI needs to be available in multiple languages to engage different ethnic communities. Additionally, as a mobile app, seniors, children, and the unhoused will still be difficult to reach through this form of engagement. Indirect methods of engagement and input from parents, caregivers, and family members may be required until the mobile user base becomes accessible across all age groups.

Conclusion

CityTalks has the potential to change the engagement process at UBC, in Vancouver, and eventually globally. It also can impact urban design in a truly collaborative resident-led manner. Like any start-up, financing and ethical considerations will require the bulk of the company's resources. We feel that the innovation and community benefits contribute positively to the common good of all residents while also providing incentives for private developers and municipal governments to partner with us.

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Appendix I

Appendix

How Public Input, CACs and Affordable Housing Combine in the Rezoning and Development Approval Process

Rezoning Steps	Public Consultation and Engagement	CAC & Affordable Housing Considerations
1 – WRITTEN REZONING ENQUIRY SUBMITTED		
Rezoning enquiry fee is paid.		May include an in-kind public benefit including an affordable housing proposal.
2 – PRE-APPLICATION REVIEW		
Assess proposal for consistency with applicable city-wide and or area policy. A formal response is provided indicating support (or not) and any additional considerations.	If supportable based on policy review, the developer may be required to hold a public meeting/ open house to gauge community support and identify possible issues before making a formal application.	Applicable CAC and/or affordable housing policy is identified.
3 – REZONING APPLICATION SUBMITTED		
Rezoning application fee is paid.	Rezoning application signage erected on site. Notification letters sent to surrounding properties. Application posted on City website.	
4 – TECHNICAL REVIEW OF APPLICATION		
Planning review for land use policy and urban design. Technical review for traffic, parking, sustainability, servicing, etc.	City-wide and area policies reflect earlier public processes as well as Council direction.	If applicable, CAC evaluation begins, i.e., negotiated rezoning projects.
5 – FORMAL PUBLIC INPUT		
	Public open house(s) organized/ hosted by city staff. Input from Council's advisory committees, Urban Design Panel, and stakeholder groups is sought. Written comments sought (website, mail).	Public comment is sought on the type of community benefits needed in neighbourhoods.

Appendix II

Funding Grants

UBC Campus as a Living Lab Funding Competition - $50,000

- UBC Campus as a Living Lab Projects are centred on the on-campus demonstration of innovation. This includes platforms, technologies, products, and research in the social or infrastructural realms.
- We believe that our app, by increasing the amount of informed community feedback going to development projects, meets the objectives of the Campus as a Living Lab program. This increased amount of informed community feedback has the potential to create buildings and spaces which are more socially sustainable and inclusive of the whole community.

National Research Council of Canada Industrial Research Assistance Program (IRAP), Technology Innovation Projects - $50,000

- The IRAP Technology Innovation Projects sub-program is a federal grant for the commercialization and development of technology projects.
- We believe we meet the values and strategic objectives of this funding program by creating an app that will contribute to the partnership between government and industry and foster collaboration with local planning organizations.

National Research Council of Canada Industrial Research Assistance Program, Youth Employment Strategy Program - $30,000 per hiree for up to two 15-30 year old graduates

- This grant is a further sub-program of IRAP funding. As young graduate students who aim to support other young graduates as a start-up firm, we believe we meet the values and strategic objectives of the funding program.

Innovate BC, Innovator Skills Initiative - $10,000 to hire a new employee from an underrepresented group in the tech sector

- Our team would seek to have diverse employment, we believe this is important when designing a public engagement platform.

Appendix III

Employee Wages (Base Salary Year 1 + 3.1% Cost of Living Increase Annually)

	Year 1	Year 2	Year 3	Year 4	Year 5
Software Engineer (x3)	$55,000 (each)	$56,705 (each)	$58,465 (each)	$60,275 (each)	$62,145 (each)
CEO / CFO	$60,000	$61,860	$63,775	$63,775	$67,795
COO / Partnership Director	$55,000	$56,705	$58,465	$60,275	$62,145
UI Designer / Lead Data Scientist	$55,000	$56,705	$58,465	$60,275	$62,145
Total	$335,000	$345,385	$356,100	$367,130	$378,520

Resource Needs

	Year 1	Year 2	Year 3	Year 4	Year 5
Employee Wages	$335,000	$345,385	$356,100	$367,130	$378,520
Technology & Computing	$50,000 (initial capital investment)	$2,000 (maintenance)	$2,000 (maintenance)	$2,000 (maintenance)	$2,000 (maintenance)
Server Hosting	-	$3,840	$3,840	$3,840	$3,840
Office Space	$9,000 (for rental of shared desk space)	$9,000 (for rental of shared desk space)	$9,000 (for rental of shared desk space)	$9,000 (for rental of shared desk space)	$9,000 (for rental of shared desk space)
Miscellaneous (Marketing, Events, Etc.)	$2,000	$2,000	$2,000	$2,000	$2,000
Total	$396,000	$362,225	$372,940	$383,940	$395,360

Revenue Projections

	Year 1	Year 2	Year 3	Year 4	Year 5
Number of Developments on App	-	40	120	200	280
5% of Average Cost of Development Delays	$1,400	$1,400	$1,400	$1,400	$1,400
Revenue from Developer (# Developments on App * 5% of Delay Costs)	-	$56,000	$168,000	$280,000	$392,000
Revenue from Local Government Partner	-	$150,000	$150,000	$150,000	$150,000
Total	-	$206,000	$318,000	$430,000	$542,000

Income Projections

	Year 1	Year 2	Year 3	Year 4	Year 5
Grants	$170,000	-	-	-	-
Investments	$100,000 (target)	-	-	-	-
Loans	$126,000 (total minus grants and investments)	$162,225	$72,940	(-$16,060)	(-$104,640)
Revenue	-	$200,000 (Goal)	$300,000 (Goal)	$400,000 (Goal)	$500,000 (Goal)
Total	$396,000	$362,225	$372,940	$383,940	$395,360

Sources: Amazon Web Services, 2022; InnovateBC, 2021; LOCO BC, 2020; National Research Council Canada, 2022; UBC Sustainability 2021; WeWork, n.d.; GlassDoor, n.d..