Entomy – Civic Tech App and Citizen Science Platform

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INTRODUCTION

In the previous platform's proposal, we expressed concerns regarding the living quality of citizens in the San Francisco Bay Area. The main concerns from its citizens were: homelessness, cost of housing, cost of living, traffic congestion, and healthcare. The project proposal was the implementation of 'superblocks' in urban environments where we expected to contribute to solving some of these issues directly.

The platform would provide a collaborative path towards developing walkable public spaces. The project changed, yet the aim remains the same, and we expect to tackle some of the issues that we considered: pollution, traffic congestion, revitalization of public spaces, promotion of social cohesion and urban social fabric, promotion of self-sufficiency in the use of resources, and the integration of autonomous governance processes. The approach is a new and experimental one where incorporating scientific knowledge with public opinion creates a synergic domain where citizens and experts collaborate towards a common goal. This form of knowledge creation is possible through citizen science and civic technologies.

The project's scope became clearer after revising the original idea while reflecting on the given criticism. We expected to develop where the app is not just an opportunity but a necessity: The City of San Francisco, at the neighborhood level. Current recreation and open space improvements could use entomy.sf to benefit citizens.

WHY CITIZEN SCIENCE / CIVIC TECH?

Entomy's purpose is to aid citizens in identifying infrastructural contingencies by their participation. In this way, citizens learn to transform their circumstances collectively and on their own. Moreover, while engaging in the collaborative process of problem-solving within the neighborhood, citizens would also collaborate with experts by enabling academics or professionals to gather data by crowdsourcing research to model outcomes, validate or reject existing hypotheses, and create new knowledge. Nonetheless, it is imperative to note that in contrast to existing data mining methods, entomy emphasizes data transparency and incorporates such aspects as a fundamental part of the platform's flow.

Through this informal learning experience, citizens learn some of the same methodologies that scientists do while gaining a valuable opportunity to solve real-world challenges. Participation can be produced for many reasons: willingness and desire to contribute to science, learn science, or for fun. Moreover, citizen scientists can be motivated to collaborate on projects due to their values, altruism, concern for others, and a simple understanding of a scientific area and its social consequences.

This way, being an experimental monitoring method, could lead to a collective analysis of the 'results' where the detective story becomes an essential cycle of validating and generating new knowledge. Once enough information has been generated, new methods of prediction/forecasting can be developed to facilitate efficiency and accuracy in the problem-solving strategy.

Moreover, once Data flows in the entomy's databases, the information/data should be revised by volunteers who are members of the community from which such data has been collected. This makes possible a democratic environment where the members are not limited to revising data under pre-existing guidelines, but instead, they are expected to come up with new ideas, strategies, and means to achieve a common set goal.

PRAXIS: MOTIVATION

It is also clear that while dealing with civic tech/science, a sense of constant reward has to be considered. This is because the process of participation can quickly become a tedious task, perhaps even indistinguishable from unpaid work. This is why it is essential to find diverse gamification strategies within the platform's praxis not to persuade users to participate for free but rather to portray that it is possible to find genuine communities while striving for a common cause and in a ludic way.

In addition to this, entomy would contain educational resources provided and revised by both professionals and citizen scientists. Therefore, a key factor is understanding how our internal reward system works, how communities come into existence, and how held beliefs are kept as a narrative tool once proven helpful for the community. Being this said, we have split the ludic process into the following categories: 1.- Education, 2.- Detection, and 3.- Communing.

Education: This step is where the existing knowledge is evaluated. The educational detail is necessary beforehand to give users a sense of direction of what they 'need' and 'want' to do with the information they have begun with and the one they have accumulated along the way. Nonetheless, this will allow for such a cooperative mechanism to be passed onto future generations as long as it is a valid method of experimentation.

Detection: The problem-solving step must be addressed as one of our most primitive human instincts: "hunting and gathering." This is the easiest part as it can be done almost naturally and fast; reporting an issue, however, should not be limited to the given 'issue categories' that the platform will begin with as default. It should allow users to 'create' new issue categories and then evaluate the group as relevant or unnecessary.

Communing: Once an issue has been detected, it is shared on the social network of users in real-time: generating visualizations of reports on either the same

issue, the same area, or both. Here the chosen filters then display the 'gathered' information through graphs and maps.

Community: The 'information display' affords an immediate sense of reward as a notion of a virtual community emerges while a sense of purpose is being fulfilled. By displaying the 'just done' contribution to the cause, the users acknowledge their position about other users who also care about the same thing. Note; the virtual community ought to transcend into a physical one through the proposal of communal activities in the spaces considered for transformation.

Socialization: Another critical aspect that can allow communication between users is the 'social' features that entomy will provide. In this case, every user can have a registered profile within entomy, although it is not required unless they want to verify information or participate in the assembly decision-making process (will expand on transparency later). This allows users to interact directly, rate contributions, make comments, and even earn badges according to the amount of 'verified' prior contributions.

Belonging: Finally, once our cycle is completed, we iterate back to the educational step but with a transcendental change: The belonging aspect of entomy is dialectically dependent on the educational step. This since the evaluation of knowledge has to be done by possible users/citizens and academic/experts, where the pedagogical approach lets the citizens reflect from their experience and learn from the experts, while in exchange, the experts listen and reflect on the citizens' experiences.

DEMOCRACY

The way of participating that the platform has been designed around is an experimental form of direct democracy. The possibility of a horizontal democracy is open where everyone's opinions are taken into account through a synoptical* assembly where everyone reflects on everyone has given insights. This means that entomy dynamics are visioned the need for a 'leader' something both obsolete and unnecessary. Nevertheless, how come?

Acknowledging current criticism to forms of direct democracy where the main objections are: scale, competence, and time, the decision making to be made in the entomy platform is considered as somewhat small and straightforward given that the assemblies will be based on a neighborhood level. In this way, we decrease the complexity of the process by distributing it across local modules assigned to each participating neighborhood.

Under a generalized systematic approach, each neighborhood would behave as a separate cell inside the City's organism. This means that every participant should also find their place within the community's organizational structure, fitting to a task, role, or position that the citizen finds as self-fitting and nonetheless that the

others also concede for it. The citizens are in charge of the communal 'self-preservation by auto-adjustment, and entomy is just a vesicle.

DEMOCRACY II: TRANSPARENCY

As mentioned earlier, transparency is a fundamental feature for the platform's social model to work. The decision-making process should work is not different from the data management scenario. While trying to make entomy's processes as straightforward as possible, it is necessary to think about how the data gathered by the citizens will be collected, revised, and owned.

Data Collection: The data collection as information submitted by users is set to work around privacy concerns about using the platform and tracking. While this is an issue that may worry some users, entomy's user registration is NOT necessary. This permits everyone who intends to participate in the project for either altruism or curiosity to snap a photo, write a comment, and that is it. No tracking, no login, help.

Data Revision: However, it will be necessary to create an account for the step of Data Revision. This is because it is assumed that the citizens interested in improving the place they live would also take the time and effort to revise the proposals submitted by other users, including the anonymous ones. This would help to reassure the users that the people they are collaborating with are indeed real and part of their same neighborhood. This also permits them to validate proposals, create events, and interact with neighbors/neighborhoods through community-generated forums.

Data Ownership: Given the issues we face in our current era regarding information property, it is necessary to have a new mechanism to deal with this concern. The platform's approach towards data property lies in implementing a data ownership model called 'Data Cooperatives.' However, what are those?

Data Cooperatives are not so different from any other kind of cooperative, just that as the name implies, this one is specific to Data. The visioning of this model in the platform is dependent on the same concept of direct democracy in the neighborhood. In our situation, the data gathered by any user would be directed into the data pool of the neighborhood, where once stored, the members will then decide how they want to share their data (if so) with companies, researchers, and public-sector entities.

KNOWLEDGE: EXPERT & POPULAR

In entomy's situation, given that it is a social science experiment, the interactions between different knowledge bodies will be primarily through researchers and citizens. This is because as the platform launches, a 'guiding' would be essential to inculcate citizens about entomy's purpose, features, and methodologies to follow to validate ideas once the platform is ready to be run by users themselves. What is meant by this is that users should be able to achieve a 'maximum badge levels' where then they can be considered as proficient in the

understanding of methodologies, and it would also be considered as an expert whom users can refer to if needed.

This is perhaps the most complex matter in entomy's implementation as it is here where personal interests can mislead the intentionality from the beginning. However, as long as the 'instruction' period is given by a trustable academic, the platform would flow as expected. In this case, it would also be necessary to explain beforehand what the implementation of the project implies both for the researchers and the citizens, making clear that the platform's purpose is to invite new forms of auto-regulation and direct democracy while being studied by Social Scientists within the University. As always, communication is vital.

After the 'instruction' period, the 'pilot' period would continue to be studied still but from a distance, where the citizens will be able to run the platform independently. Whereas on the final period, citizens would be running the platform totally by themselves and without any supervision, as it is assumed that enough citizen-scientists have become experts within the platform. Moreover, in this scenario, if any researcher, company, or public body wishes to interact with the already established autonomous mechanism, it should abide by the transparency mentioned in earlier parameters.

SOCIAL MEDIA: CONTRAST AND SIMILARITIES

When contrasting the similarities between entomy and already existing social medial platforms, it is clear that some of the characteristics have been borrowed from the forms that we are already familiar with. However, it is vital to mention that entomy's primary purpose is not to mine data to advertise to targeted audiences at the difference from' generic social media.' Entomy does not even contain this characteristic.

An algorithm does not moderate the content relative to the 'socialization' aspect within the platform but instead is categorized as relevant by community members themselves, as in Reddit. The socialization aspect neither tries to replicate a form of self-exposure portrayed as 'self-expression' as current social media does, but instead, it aims to provide only 'relevant' information to the matter.

Furthermore, entomy aims to transcend imaginary virtual communities into tangible ones while uniting people through a common goal rather than increasing polarization as a means for profit. Entry is a platform of love for the people, not an advertisement machine for corporate interests. We care about improving people's circumstances through the amplification of their subjective experiences, not about their silencing through data as social media does.

CONCLUSION: FURTHER CONSIDERATIONS

According to the Recreation and Open Space Element Plan from the City of San Francisco City Planning, Living Streets, and alleys, plazas or parklets are necessary. Also, their motives under the "Guiding Principles for Open Space and

Recreation" seem to perfectly align with entomy's, as "these are components of the public right-of-way that have been improved to provide a gathering space and enhance the pedestrian experience."

Moreover, their section on Better Streets/Public Realm Planning states the following: "The City's Better Streets Plan, adopted in 2010, states that the City's rights-of-way should be "attractive, safe and useable public open space corridors with generous landscaping, lighting and greenery," providers of habitat for urban wildlife, and that they should invite multiple uses, including recreation. The Better Streets Plan provides a set of standards, guidelines, and implementation strategies to govern how the City designs, builds and maintains its pedestrian environment. Several public realm planning efforts implementing the principles of the Better Streets Plan are underway". (8)

Whereas for the Community and Area Plans: "Several neighborhood-based planning efforts have been completed or are underway throughout the City. Each neighborhood plan seeks to increase the livability of several of San Francisco's urban neighborhoods by tapping the benefits of growth as a way to build more balanced neighborhoods. Most include capital improvement plans that draw from and build upon the policies of this Element to address a range of neighborhood needs including recreation, open space, and an improved public realm". (10)

At this point, it is clear that the further development and implementation of entomy alike platforms are imperative. All it is left is a dialogue with the City Planning Department and the Social Apps Lab at the University.