

DRAFT

Engagement Games

a case for designing games to
facilitate real world action



Engagement Games

a Case for Designing Games
to Facilitate Real-World Action



Eric Gordon, PhD
Stephen Walter

RED CROSS/RED CRESCENT
CLIMATE CENTRE

International Federation
of Red Cross and Red Crescent Societies
The Netherlands Red Cross

Pablo Saurez

Designed by Aidan O'Donohue



Part 1: The Problem

From disaster preparedness along a Zambian floodplain to community planning in a struggling American city, many of the initiatives societies around the globe undertake to tackle serious issues suffer the same critical problem: a lack of *stakeholder engagement*. Whether between stakeholders and the environment, stakeholders and decision makers, or stakeholders and each other, many local and global problems could begin to be addressed in more sustainable ways if the people affected by the issues had a greater responsibility in producing the solution.



elusive engagement

Stakeholder engagement can be an elusive thing when considering complex problems. There are many reasons for this.

Often, there are basic practical difficulties preventing engagement:

- Time and location barriers prevent people from being able to attend physical community and informational meetings.
- Social barriers discourage minority groups or the young from participating.
- Action barriers, or the lack of obvious mechanisms in place for one's voice to make a difference, discourage people from even attempting to engage.

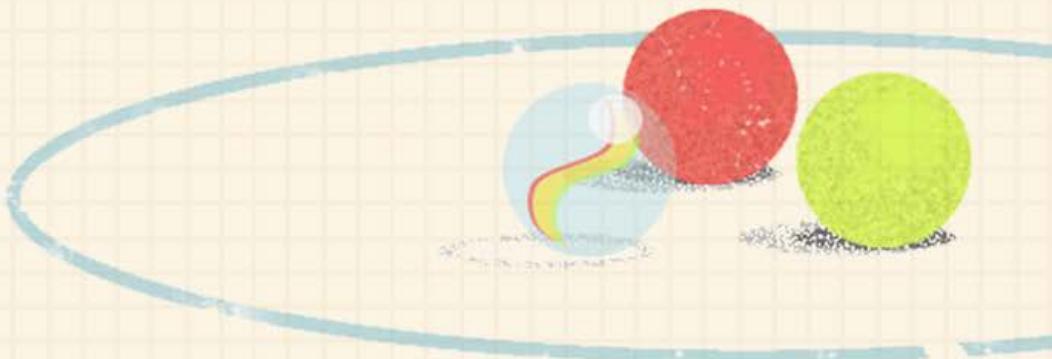
And, too often, stakeholders able to participate are put into passive roles that prohibit them from engaging in a meaningful way:

- Meetings and other traditional methods are not designed with the stakeholder's attention in mind—thus, while people may be officially "participating," they are often not engaging in any way other than showing up and being a warm, bored, body in a room.
- Mechanisms are rarely in place to give stakeholders a real sense of ownership or agency regarding the issues that affect them—too often things seem "out of our hands."
- Most importantly, stakeholders are rarely given opportunities to collect, explore, and learn essential ideas and information relevant to making informed judgments about the issues.

Playful Approaches to Serious Problems

While there are many ways to produce productive public learning environments, the focus of this report is on the particular **strategy of games**. As we will describe, games have particular affordances for fostering engagement in complex social systems. When specifically designed for this purpose, games can be immensely impactful, creating greater opportunities for experiential and applied learning, increased empathy and trust, and more engaging processes for real-world action taking.

The power and productivity of serious games have been prolifically demonstrated in recent years as more and more diverse fields adopt gameful design to help people learn and reflect upon complex issues.¹



¹ Games for Change, an organization devoted to games with real-world impact, celebrated its 10-year anniversary in 2013. See <http://gamesforchange.org>. To learn more about serious games, see ((Apt, 1987; Bogost, 2007; McGonigal, 2011)).

Some types of serious games include:

Learning Games

Games that make use of incentive structures, fun feedback, and narrative to teach academic skills such as math (MathBlasters), language (DuoLingo), science (Reach for the Sun), and many others. These learning games aim to infuse into their players positive emotional experiences and intensified mental activity in hopes of a deeper, more personal internalization of knowledge.²

Inhabitable Games

Playable dynamic models that can meaningfully engage people in experiencing complex systems—to better understand their current or potential role in transforming them—in a way that is both serious and fun. Since games are themselves complex systems for creating meaning, they represent one of most efficient learning tools for teaching real-world complex concepts by allowing players to inhabit systems in a simplified, safe, and fun manner. Some inhabitable games include “Before the Storm,” “Paying for Predictions,” and “The Climate and Gender Game,” all available on the Red Cross Climate Centre website.³

Pervasive Games

Games that expand the realm of play spatially, temporally, or socially, pervading the experience from the domain of the game to the domain of ordinary life.⁴ Often, games create a “magic circle” in which players temporarily drop the rules of reality and adopt the fantastical rules of the “game world.” But games do not always need to be completely cut off from reality—there are many games that blur the lines and allow for a productive mixing of the affordances of games and the real-life situations to which they pertain. Augmented reality games and alternate reality games are becoming increasingly popular with the rise of digital technologies.

2 There is a considerable amount of academic literature on this topic. For a useful overview, see (Clark, Tanner-Smith, Killingsworth, & Bellamy, 2013; Klopfer, 2012)

3 The term was introduced in a report by Red Cross / Red Crescent Climate Centre (See (Suarez, Suarez, Grist, & Pfeifer, 2012)

4 The topic of pervasive games has been addressed in a number of ways. Sometimes referred to as location-based games or location-based mobile games (Gordon & de Souza e Silva, 2011). For an early, but important overview, see (Magerkurth, Cheok, Mandryk, & Nilsen, 2005).



Engagement **Games**

In this book, we'd like to make the case for a new, emerging type of serious game. These games build off the others, but instead of stopping at learning, go one step further: infusing learning with a social system that facilitates real-world action.

We call these games *Engagement Games*.

Engagement Games use game mechanics to scaffold play onto real-world processes, so that real action occurs while playing the game. Evidence suggests that fusing a sense of play onto serious processes—from community deliberations to flood preparedness—can result in increased participation and diversity, increased trust in the system and each other, and, most importantly, increased reflection and learning regarding the process and one's position in it.

An Engagement Game is simply a new type of interface for real-world processes that might traditionally occur in the forms of town hall meetings, presentations, forums, votes, etc.—if at all. From community planning, disaster preparation, advocacy and fundraising, to skill and network building, Engagement Games can facilitate the taking of deliberate action in a way that is designed to maximize stakeholder interest, learning, and ability to create real change.

Part 2: Engagement Games

Engagement Games

1. The Game is in part or in whole the official process
 2. Game actions are actions in the real world
- Engagement Games can result in better action, more trust, and civic learning



What is a Game?

"Games are systems where players engage in artificial conflict, governed by rules, for which there is a knowable outcome."

- Katie Salen and Eric Zimmerman, Rules of Play (2002)

A game is a system with:

- Objectives
- A clear set of rules
- Immediate feedback
- Opportunities to fail safely for purpose of mastery
- ...room to play

Games are emergent systems where the whole is greater than the sum of its parts, and meaning is created through experience.

Games allow for uncertain outcomes and suspense.

Games allow players to fail safely, and to learn from failure.

Games allow for ground-up social cohesion, where the friendly abidance to mutually-agreed upon rules trumps external control or coercion.

Games necessitate the taking of an action, a reflection upon the external response this action generates in your obstacles, and the application of what you have learned in order to move forward.

What Games Do

Games are catalysts for the power and productivity of play

- Gameplay enables exploration, experimentation, and discovery within defined systems.
- Gameplay creates opportunities for people to reflect upon their place in the larger community and empathize with others
- Gameplay creates opportunities for social problem-solving, in which a group of people come together and work as a collective to govern themselves outside the dictates of a single decision-maker
- Gameplay creates opportunities for experiential learning, in which one internalizes and applies what one has learned in order to progress

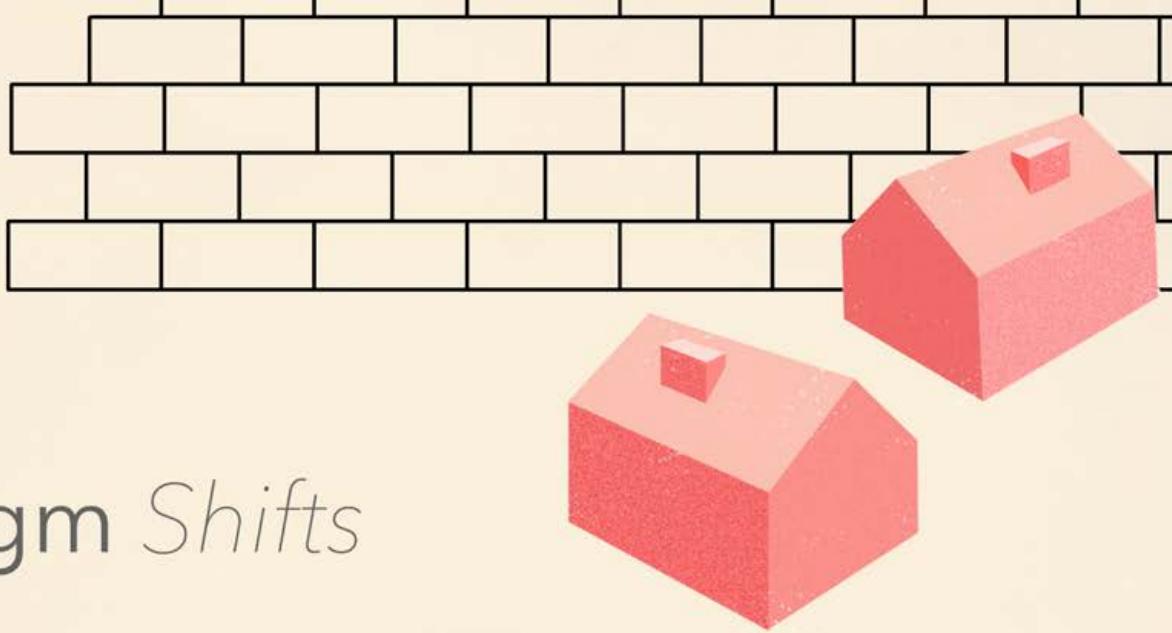
Games focus attention

A game's structure and narrative allow content to unfold in a meaningful, cumulative fashion, while clear feedback and escalating challenges sustain attention over time

Games induce systemic thinking

Games encourage players to navigate a complex system of risks and tradeoffs and can be used to mimic real-world complex systems, allowing players to intuit and internalize successful navigation strategies





Paradigm Shifts

The Growth of Learning Games

Governments, aid organizations, corporations, and NGOs are increasingly understanding and using the engaging power of games and play. Most of the new creations aim to leverage game mechanics to impart knowledge and skills onto players, with the hope that the player will apply what they've learned at some point outside the game. Some have a particular focus on real-time experience and comprehension. For example, the Red Cross / Red Crescent Climate Centre has innovated the idea of inhabitable games, wherein co-present individuals play within dynamic models so as to facilitate the experience of complex systems.

The Growth of Social Technologies

The Internet has been able to connect people throughout the world to services, information, and each other to a degree that has never before existed. With this and the rise of online social networks, a slew of new social behaviors emerge, and the tools for collaborative action have never been more attainable. As mobile penetration leapfrogs over other telecommunications technologies, the ability to digitally connect has touched all corners of the globe.

Engagement Games

Engagement Games represent the convergence of learning games with the social technologies that can be incorporated into real-world political, civic, or organizational systems. In short, Engagement Games blur the line between play and the "work" of civic participation in order to facilitate playful civic actions while opening up opportunities to reflect and learn from those actions.

Designing Engagement Games

When thinking about the design of Engagement Game, the first step is identifying the problem and the broader real-world process.

The next step is to identify the real-world actions the game can facilitate. The following three questions should be considered:

1. How does the game better enable the organization or institution creating the game to take desired action?
2. How does the game enable an individual player to take direct action in the real world?
3. How does the game enable collective real world action or outcomes that could only occur when designer/facilitator and player/citizen come together in a shared process?



Once the real world issues and desired outcomes are identified, the game can be designed to achieve the stated actions. Think of the game as a "box" sitting on top of a conveyor belt. The conveyor belt is the broader real world process and the box is an imaginary place—often called the magic circle—that enables play within a clearly demarcated fictional context. The unique feature of Engagement Games is that the magic circle and the real world are in productive tension. Typically, while there may be stakes to a game (money, status, etc.), the acts of play take place outside of real-world consequences. In an engagement game, the individual acts of play have consequence and purpose beyond the game.

Identify the broader
real world context /
process



Identify the real
world problems and
actions / solutions

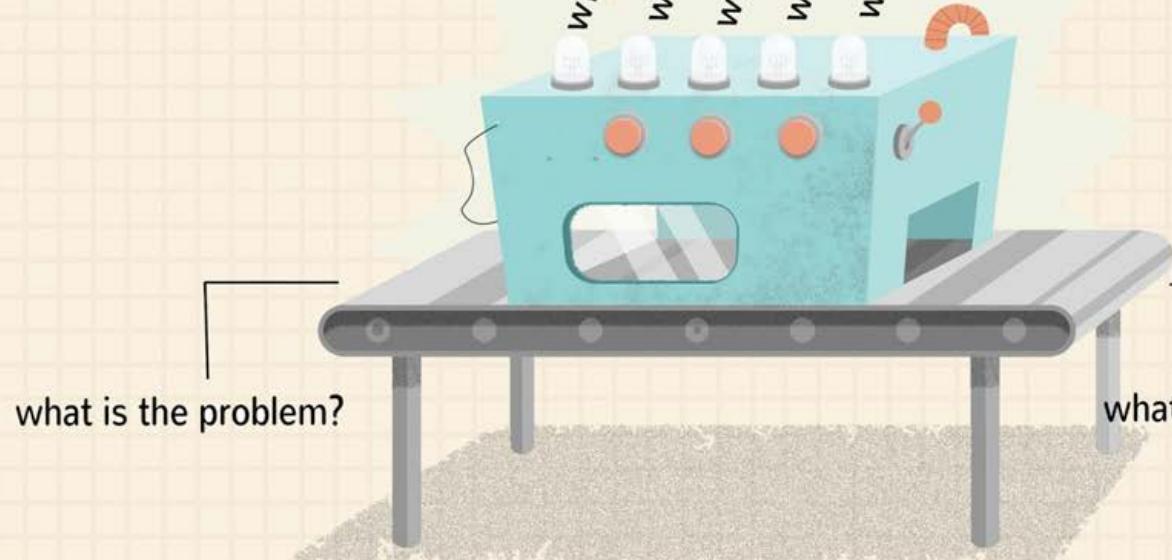


Design a game to fill
the gap between
problems and actions



games design considerations

*who is the player?
what is an action/turn?
what are the obstacles?
what is the feedback?
what is the game goal?*

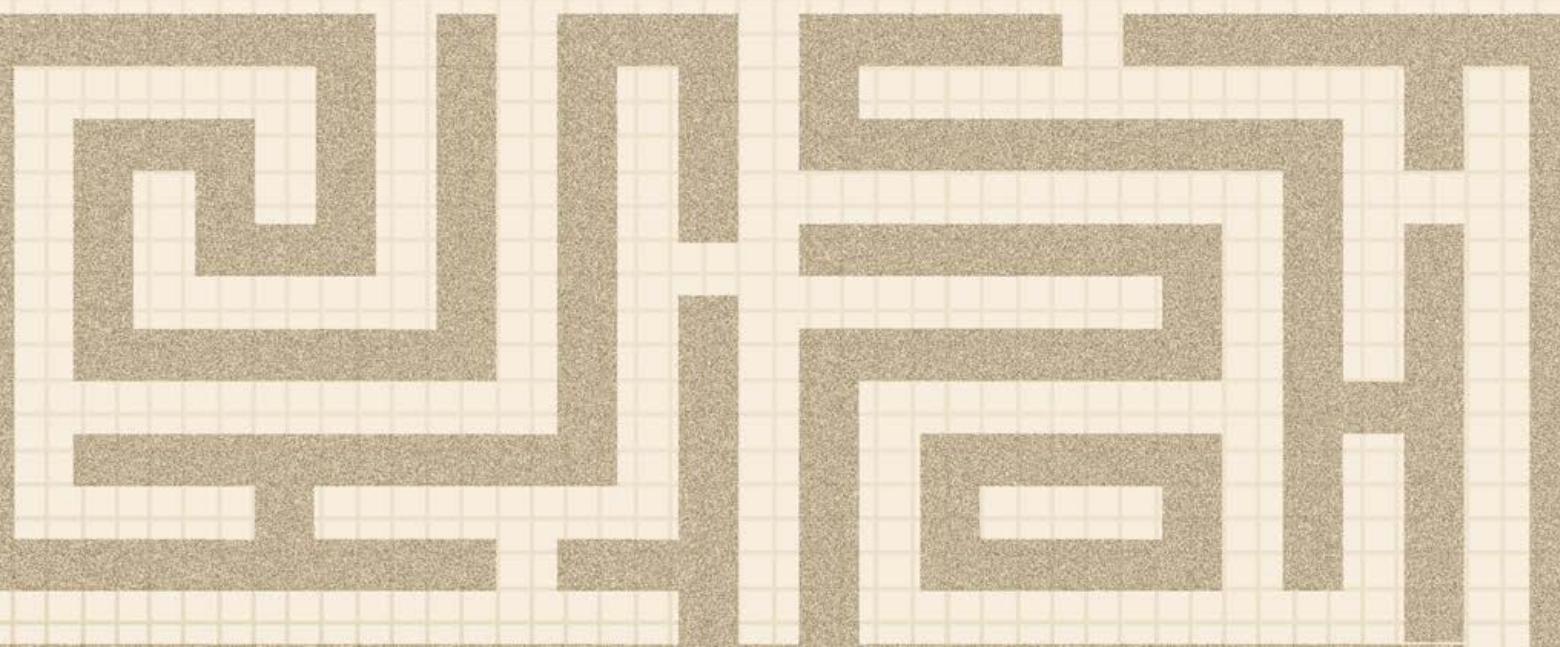


Importance of Evaluation

Evaluation should be seen as central to the Engagement Game process. Measuring player learning and desired social actions is important for assuring quality game design and program delivery.

When identifying desired social outcomes, game designers / facilitators should establish a baseline of knowledge and participation to which to compare the post-game situation. Through the analysis of data generated in the game or external surveys and interviews, it is possible to learn how well the game has increased engagement in the stated game objective. Questions might include:

1. Is there an increased amount of data that can be analyzed, reviewed, or otherwise factored into decision?
2. To what extent do players have greater understanding of the identified problem?
3. Are people talking more about the issues and attempting to reach consensus on problems?
4. Is there more collaboration amongst disparate groups?
5. Are people sharing knowledge with each other to increase their capacity to act collectively?





Part 3:

The Applications of Engagement Games

Engagement Games can be used to facilitate many real world processes and actions. Here, we will discuss four application areas:

- Community Problem Solving and Cohesion
- Urban and Humanitarian Risk
- Civic Action Taking
- Skill and Capacity Building

Community Problem Solving and Cohesion

Communities throughout the world face a myriad of unique challenges and specific needs: but fundamental to the vitality of any democratic community are clear and open means of deliberation. Often, deliberative processes have taken place in the form of a physical meeting in a government building. But these processes are often at risk of excluding a diverse set of participants (due to physical barriers, time barriers, and public speaking challenges), offering passive presentations with little opportunities for meaningful interaction with new information or other participants, and providing ineffectual mechanisms for accountability, follow-through, and documenting/reporting.

Community Planit

Community Planit is a game for local planning. Through the game, citizens learn about the issues, deliberate with each other, and contribute input toward solutions.

Real World Actions:

1. Planners collect nuanced citizen data from larger and more diverse demographics
2. Citizens/Players can create, fund, rally for, and join local community causes
3. Democratic deliberation founded on a context of civic learning, social control, and trust



A screenshot of the Community Planit mobile application. At the top, there's a navigation bar with icons for 'MISSION', 'PUBLIC SQUARE', 'BANK', and user stats (1300 coins, 23rd place, 6 friends). Below that is a 'LEADERBOARD' section with a message: 'See the top 100 players and affiliations based on the coins they've earned. Did you make it on the list?'. It shows a list of top players with their names and coin counts. To the right is a large yellow trophy icon. At the bottom are buttons for 'CURRENT MISSION' and 'GAME WIDE'.

Community Planit is made up of time-based missions containing challenges that range from taking photos of problem areas in one's community, voting on the most pressing problems, offering solutions and personal stories, to stepping in the shoes of someone else and investigating matters from their perspective.

Community Planit

Throughout the game, pesky villains called Crats hault your mission completion progress and quiz you on your knowledge of the community planning process

The goal of the game is to earn coins by completing challenges, and pledging these coins on real-world, community-sourced causes. These range from organizing a neighborhood cleanup to buying art supplies for a teacher. At the end of the game, the top three causes win real project funding. During the game, any player can propose his or her own local cause.

This screenshot shows a challenge titled "Challenge 8: An Engaged City Government". It features a black and white photograph of a street lamp at night. Below the photo is a "RESOURCES" section with a small image of a map. The challenge question asks: "How can the city most effectively support and connect small-scale efforts in order to create city-wide solutions?". There are five options to choose from:

- Convene gatherings for city officials to develop authentic relationships with community members
- Conduct a survey to find out what community efforts are already underway
- Partner with local foundations to give grants to local organizations
- Provide training for community leaders
- Other (explain your response in a comment)

At the bottom, there are buttons for "Add image or Add video URL" and "ANSWER". A yellow progress bar indicates 20% completion.

This screenshot shows a player profile for "Jimmy F." from Detroit. The profile includes a photo of a man, his title "Teacher", and his bio: "Copper reading, University of Detroit Mercy, 5000 Detroit Teacher Union Detroit". He has earned 1300 coins and is ranked 23rd. Recent awards include a gold ribbon for "Media teacher and news lover". The "RECENT ACTIVITY" section shows a recent post about street lights. The "TOP SUPPORTED CAUSES" section lists three causes with progress bars: "More street lights in the park" (0%), "Save McGuinness High" (0%), and "A local newspaper for East Detroit" (0%).

At the end of the online game, players come together at a face-to-face meeting with decision makers to discuss the results and next steps

Urban and Humanitarian Risk

Never have the challenges—and the expectations—of humanitarian and development practitioners been greater than they are today. Threats posed by climate change, population growth, skyrocketing urbanization, and man-made changes to natural environments are chaotic and constantly changing. Flooding, droughts, storms, and other natural disasters affect more and more people's lives in increasingly complex ways. But as we expand our knowledge about how to mitigate and respond to these complicated challenges, the traditional training tools for on-the-ground humanitarian workers and volunteers cannot keep up. New ways of allowing people from a multitude of backgrounds to understand and internalize this new knowledge are urgently needed.

How an Engagement Game Can Help:

UpRiver

UpRiver is a two part early warning / early action game for understanding and predicting river levels along flood-prone areas of rivers. The first part is an analog game designed to help those in flood-prone communities better understand the nuances of river flooding and the importance of upstream-downstream communication. The second part, an SMS-based game played on cell-phones, aims to further these concepts and both put into place an actual communication network for relaying upstream information and to crowd source river level data to improve computer models.

Real World Actions

1. Players learn the nuances of flood prediction and create a network for communicating river level information
2. Scientists receive crowdsourced river level reporting to improve predictions
3. Threats for potential flooding can be more quickly realized and communicated to those in danger



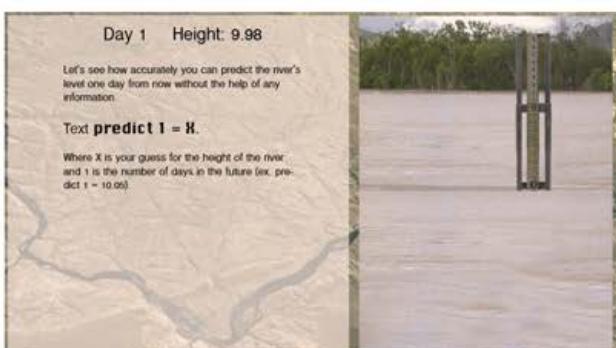
UpRiver

UpRiver challenges players to predict what the water level in their area will be at a future date. The game combines simple crowd-sourcing mechanics with an exciting risk/reward-oriented predictive game engine, played both in-person and over the ubiquitous SMS system available to anyone with cellphone access. At the end of each three-week play period, the top players earn real-world rewards (such as free phone cards).

In the analog game, players simulate water levels along the river by standing in line with cups filled with different amounts of water. Water is added or subtracted from the cups with sponges, and players are asked to predict the final level.



In the digital version, UpRiver is played via text message.

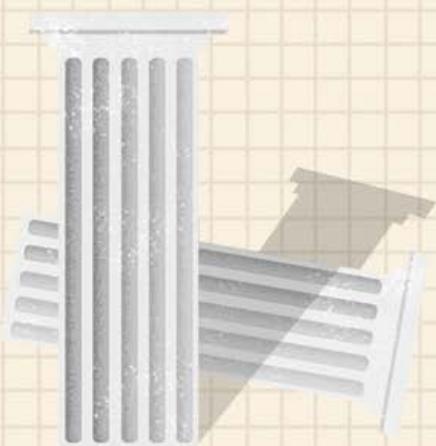


In both versions, players earn game currency by reporting the water level, weather, and other real-time information about their local area. They can earn more by placing bets about future conditions. The farther out their predictions, and more accurate their guesses, the larger the reward.

To help make more accurate guesses, players may also purchase information about what players upstream from them are reporting, or buy access to a computer model. In the end, the player who is best able to leverage this information into accurate predictions will win the day.

Civic Action Taking

Throughout the world, civic life is increasingly shaped by the behaviors, technologies, and connections that the web makes possible—taking place on mobile phones as much as it is in town halls and community centers. This formative shift in the nature of civic engagement has given birth to a spate of new civic tools—from pothole reporting apps to online forums to SMS-based community input campaigns. But enabling these new types of transactions to occur creates a new problem: how to maintain quality citizen engagement with tools that are by default impersonal, speedy, and that privilege data over meaningful human connections.



How an Engagement Game Can Help:

Designed in partnership with the City of Boston, StreetCred is a game-based civic badging API that is meant to expand the types of civic actions people take using existing reporting tools such as Citizens Connect or Foursquare. These tools do a great job of helping people report problems or document location, but research shows they are not very good at allowing citizens to reflect on the actions they take, take action in areas beyond their homes or places of work, or to connect with their local community. StreetCred pulls multiple reporting apps under one umbrella, combining them in a civic badging and reputation API aimed at addressing these problems.

Real World Actions:

1. Players are able to see how problems are connected and how they can work with local government to tackle large issues
2. Recognition and communication of community issues is increased when players are able to visualize one another's actions
3. The local government is able to mobilize communities around concerted campaigns to improve neighborhoods

Street Cred

What would it take to make reporting social? Could a different kind of tool lead to more actions, specific actions, and/or reporting across more spaces in the community? Could a well-designed tool make people feel more connected to their community and to other people?

The City of Boston has been an early adopter of many new civic technologies. One of these, Citizens Connect (CC), is a mobile app that helps residents report quality of life issues, such as graffiti, directly to the right person at City Hall to take action. [images for CC]

The app is designed for Android phones and iPhones. When residents launch the app, they select the type of case they are reporting (e.g. pothole, graffiti), snap a photograph of it, and add a note if they are interested. When the resident submits the case, it is routed into the City's work order management system so that it gets immediately to the best person in City Hall to fix the problem. The resident receives a tracking number and an alert when the problem is resolved. The resident can choose to share their case publicly and see and follow other cases in their neighborhood and across the city.



The City of Boston and the EGL collaborated to build StreetCred, a game-based API that serves as a reputation system for local civic action. Individual actions taken using such tools as CC, Foursquare, Instagram, SMS and email get framed by StreetCred within civic campaigns curated by the City. For instance, a Fall clean up campaign asks people to report using CC and email the location of street trees that need pruning or watering; or the Civic Engagement 101 campaign asks people to check in at community meetings or events, and report problems city-wide. The campaigns have both individual and communal goals, so as to transform previously isolated transactions with government into social, community-wide campaigns.

Skill and Capacity Building

From college students to humanitarian workers to community volunteers, organizations with civic or humanitarian missions face numerous challenges when bringing on new people originating from a diverse set of backgrounds and experiences. Many volunteers enter community service situations without the skills necessary to truly contribute without causing more harm than good. Moreover, training volunteers for the necessary skills takes time and staff capacity that many organizations don't have.

How an Engagement Game Can Help:

Civic Seed

Civic Seed is an online social role-playing game that facilitates the relationship between student volunteers and local community organizations. The game helps students learn fundamental civic engagement principles while necessitating self-reflection, creative thinking, and resource collection. Through gameplay, players are left with a sharable civic resume and community organizations are provided with a certification of a student's successful completion of the training program.

Real World Actions:

1. Players learn the skills necessary to be effective volunteers, and create civic resumes, which they can use to apply to volunteer organizations, jobs, and schools.
2. Community organizations are able to choose from certified volunteers, and learn about them before accepting
3. Community organizations and volunteers can work more effectively with populations in need

Civic Seed is played in closed game sessions with about 20 students at a time; it can be run as part of a class in a single sitting or over the course of a week. Players can see and work with each other in the game. Each game session is monitored and facilitated by a teacher or supervisor. The game is set in a strange world that has mysteriously lost its color. Players strive to help their guide uncover the mysteries of the world by gathering skills for volunteering. Players explore the fantastic land, solve puzzles, and plant seeds to save the world.



Instead of forcing content onto users and quizzing them after, Civic Seed creates a structure that compels players to actively seek out, reflect upon, and apply content and the new knowledge they have gained.

Game actions and responses are recorded and transformed into a civic resume -- a sharable profile, owned by the player, that lets partners understand a student's background, skills, goals, and motivations.

Conclusion

This guide has introduced Engagement Games as a means of engaging citizens in solving complex real-world problems. It introduces a productive tension between the learning and experiential power of play and the serious work of civic engagement. Existing research demonstrates that engagement games are a particular framing of systems and processes that can lead to more participation, better learning, and greater efficacy amongst players. While there is considerable research still needed in order to understand how engagement games can impact long-term civic outcomes, this guide represents a first articulation of a promising new concept. For a look at what Engagement Games are doing right now, visit EngagementGameLab.org.



References

- Apt, C. (1987). Serious Games. University Press of America.
- Bogost, I. (2007). Persuasive Games. MIT Press.
- Clark, D., Tanner-Smith, E. E., Killingsworth, S., & Bellamy, S. (2013). Digital Games for Learning: A Systematic Review and Meta-Analysis Executive Summary.
- Gordon, E., & de Souza e Silva, A. (2011). Net Locality: Why Location Matters in a Networked World (p. 200). Wiley-Blackwell. Retrieved from <http://www.amazon.com/Net-Locality-Location-Matters-Networked/dp/1405180609>
- Klopfer, E. (2012). Augmented Learning: Research and Design of Mobile Educational Games. Cambridge, MA: The MIT Press. Retrieved from <http://www.amazon.com/Augmented-Learning-Research-Design-Educational/dp/0262516527>
- Magerkurth, C., Cheok, A. D., Mandryk, R. L., & Nilsen, T. (2005). Pervasive games. Computers in Entertainment, 3(3), 4. doi:10.1145/1077246.1077257
- McGonigal, J. (2011). Reality Is Broken: Why Games Make Us Better and How They Can Change the World (p. 400). Penguin Press HC, The. Retrieved from <http://www.amazon.com/Reality-Is-Broken-Better-Change/dp/1594202850>
- Salen, K., & Zimmerman, E. (2004). Rules of Play: Game Design Fundamentals. Cambridge, MA: MIT Press.
- Suarez, J. M. de, Suarez, P., Grist, N., & Pfeifer, K. (2012). Games for a New Climate: Games for a New Climate: Experiencing the Complexity of Future Risks. Boston, MA: Pardee Center Task Force Report.

www.engagementgamelab.org

www.climatecentre.org