

1994-1996: One of the first and most notable research projects in the area of "code design" for embedded systems.

ANALOGICAL

1. A design approach that involved the use of formal methods to ensure all the "right" and "left" things were done.
2. A series of building blocks provided to ensure the system was built in a way that was consistent with the design.

CODE DESIGN

The code design approach was used to ensure that the code was built in a way that was consistent with the design.

CODE DESIGN

Outlines the problem of code design for embedded systems and the need for a design approach that is consistent with the design.

CODE DESIGN

CODESIGN @ MIT

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CCTV’S
NEIGHBOR
MEDIA

DESIGN STUDIO
FOR SOCIAL
INTERVENTION

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NO ONE KNOWS EVERYTHING AND NO ONE KNOWS NOTHING; NO
ONE EDUCATES ANYONE, NO ONE EDUCATES HIMSELF ALONE, PEOPLE
EDUCATE EACH OTHER, MEDIATED BY THE WORLD AND HISTORY.

Paolo Freire

ABOUT CODESIGN STUDIO

The Civic Media Codesign Studio provides a service-learning opportunity for students and is organized into multidisciplinary, diverse teams that work together with a community partner to create civic media projects based on real-world needs. The studio is also a space for shared inquiry into the theory, history, best practices, and critiques of various approaches to community inclusion in iterative stages of project ideation, design, implementation, testing and evaluation.

Civic Media Codesign Studio approaches communities not as (solely) consumers, test subjects, “test beds” or objects of study and, instead, imagines them as codesigners and coauthors of shared knowledge, technologies and social practices. Our goal is twofold: on the one hand, to develop an understanding of the ways that technology design processes often replicate existing power inequalities, while at the same time, moving beyond critique to travel as far down the path of community coauthorship as possible, within the constraints of any given project.

CODESIGN PARTICIPANTS

COURSE FACILITATORS

- Instructor: Dr. Federico Casalegno, *Mobile Experience Lab @ MIT*
- Teaching assistant to NeighborMedia group: Denise Cheng, *MIT Center for Civic Media and Comparative Media Studies @ MIT*
- Teaching assistant to DS4SI group: Becky Hurwitz, *MIT Center for Civic Media*

PARTNER - NeighborMedia

Cambridge Community Television (CCTV) is a community media center that provides television production, and various media tools and training to foster free speech and creative expression in Cambridge. It empowers producers and viewers to engage in local issues through media as diverse as the community it serves.

CCTV is the steward of NeighborMedia, a citizen journalism program in Cambridge (neighbormedia.org). CCTV worked with Codesign Studio participants to get fresh perspectives

on how to raise NeighborMedia's visibility as a community news source in light of CCTV's limited staff capacity. The spring codesign studio overlapped with NeighborMedia's fifth anniversary, for which NeighborMedia hosted an event in collaboration with Harvard's Digital Media Law Project + Berkman Center for Internet and Society, MIT Center for Civic Media (represented by the codesign studio), Cambridge Public Library and others.

REPRESENTATIVES

- CCTV: Clodagh Drummey, Susan Fleischmann
- NeighborMedia correspondents: Olufolakemi Alalade, Sarah Hill, Susan Hunziker, Beverly Mire, Joan Squeri, Saul Tannenbaum, Andrew Vitvitsky

NEIGHBORMEDIA STUDENT TEAM

- MC McGrath, *Civic Technology at Boston University*



- Karina Qian, *Harvard Kennedy School of Government*
- Victor Youk, *Electrical Engineering and Computer Science at MIT*

PARTNER - Design Studio for Social Intervention

Design Studio for Social Intervention (ds4si) is an artistic research and development outfit for the improvement of civil society and everyday life. They design and test social interventions with and on behalf of marginalized populations, controversies and ways of life. They focus on social interventions to affect both formal hierarchical systems like school systems and complex nonlinear systems like cultures.

We worked together on the “Making Planning Processes Public in Upham’s Corner” project. This project focused on researching past, present and outside planning processes relevant to the Upham’s Corner area. It culminated in a weeklong, interactive pop-up shop exhibit that highlighted the different planning processes and planners pertinent to the area. Our project was specifically to visualize neighborhood change in a way that is informative, invites reflection and

would empower participants to feel that they can affect change in their neighborhood.

REPRESENTATIVES

- Corina McCarthy Fadel and Diego Perez Lacera, *coordinators for the Making Planning Processes Public in Upham’s Corner intervention*

DS4SI STUDENT TEAM

- Laurel Donaldson, *Urban Studies and Planning at MIT*
- Stephanie Lee, *Computer Science at Wellesley College*
- Dmitri Megretski, *Electrical Engineering and Computer Science at MIT*
- Fernando Nunez, *Mechanical Engineering at MIT*
- Alicia Rouault, *Urban Studies and Planning at MIT*



ENGAGING WITH PARTNERS

This semester, we designed media strategies and tools with our partners to contribute to public events. We engaged with partners and identified projects together before the course began so we could kick off our semester in the classroom together, build a common understanding of codesign practice and the contexts of our projects.



To create one shared space for the learning processes and codesign practice, we invited partners to join the class during class time. Our partners joined the regular weekly class times, which created formal weekly space to work and develop knowledge together. Of the potential partners

we spoke with who did not partner for the class, the time commitment and project identification were limitations. One, a student-run organizing group, had classes of their own to attend. Other groups are volunteer committees, and limitations included making the time to join the class and agreeing on a high priority problem.

Each group included two representatives from the partner organizations, and as the term continued, the representatives alternated attending class so that there was always one member present for each class meeting.

CONTEXTUALIZING AND DEFINING CODESIGN

As a first dip into codesign, we assigned a few readings and project case studies by practitioners in civic technology to help students navigate the terms and develop their own definitions.

KEY TEXTS

- Design philosophies to empower marginalized communities, *Preston Rhea, Open Technology Institute*
- Patterns in Civic Technology, *Ben Sheldon for Code for America on GitHub*
- Co-design in a historical context *Nathan Matias, MIT Center for Civic Media*



CODESIGN LITERATURE REVIEW

As part of their exploration, students each identified three projects that struck them as examples of codesign or one of its relative approaches. In order to contextualize their definitions of codesign, we asked students to share what they felt were its major components before jumping into the case studies. Students presented projects that took a codesign approach in some or all of the design process, ranging from projects they recently discovered to projects they followed to projects they worked on.

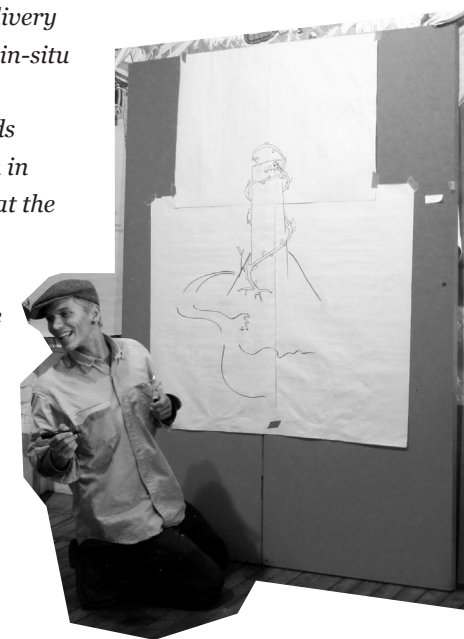
- Making Policy Public - *Making Policy Public is the Center for Urban Pedagogy's series of foldout posters that use graphic design to explore and explain public policy. Each poster is the product of a collaboration between a designer, an advocate and CUP.*
- LocalData - *LocalData empowers communities to collect data with new tools. Smartphone and paper-based surveys, simple online management and instant visualization will let*

you use data without an expert.

- NeighborLand - *A collection of tools to help neighbors share ideas and gather in urban environments.*
- Deaf Telephony - *A ten-year project set out to assist South African Deaf people to communicate with each other, with hearing people and with public services after South Africa became democratic. This was pre-Skype, and researchers learned sign language and started from paper prototypes.*
- eSPACE - *In the early 2000s, eSPACE collaborated with users to work up to a platform that investigated how new technologies can help to improve transactions between sales agents and customers in complex situations. One of its exercises was convening customers and sales agents to put together a trip around the world.*
- International Children's Digital Library - *The ICDL was created as an international library of children's book that reflects every language. It also connects children in different classrooms around the world to learn from and share with each other.*
- Ways and Means Toolkit - *Facing a series of new challenges, opportunities and technologies, The Community Builders began to reexamine its approach for helping low-income residents and communities realize their full potential, culminating in this toolkit.*
- Supporting Reblocking and Community Development in Mtshini Wam, South Africa - *The*

South African government faces immense pressure to provide all citizens with access to housing and basic services. In response to the historically slow and unsustainable system of delivery for informal communities across South Africa, a process called reblocking— in-situ upgrades like weather proofing and drainage—was enacted.

- Exquisite Corpse, Surrealism - *A method by which a collection of words or images is collectively assembled. Each collaborator adds to a composition in sequence, either by following a rule or by being allowed to see the end of what the previous person contributed.*
- Beehive Collective - *A volunteer-driven collective that uses graphical media as educational tools to communicate stories of resistance to corporate globalization. The extremely intricate illustrations are informed and developed through extensive firsthand research. A broad spectrum of people are interviewed, from students to union organizers, factory employees, agricultural workers, entomologists and more.*
- Data Therapy - *An interactive workshop, Data Therapy engages with*



community coalitions to build their capacity to visualize and present data. New computer-based tools are lowering the barriers of entry for making engaging and creative presentations of data. Rather than encouraging partnerships with epidemiologists, statisticians, or programmers, Data Therapy seeks to build capacity within small community organizations by using these new tools.

- iSET - The “Interactive Social-Emotional Toolkit” is a system for recording and live annotation of video to teach emotion recognition to persons with Autism Spectrum Disorders.
- GlobaLeaks - The GlobaLeaks software suite empowers people to stand up anonymously no matter what their definition of “whistleblowing” is. The administrator running the software can customize the platform to best suit needs.
- Citizens Connect - Citizens Connect is the City of Boston’s award-winning effort to empower residents to be the City’s “eyes and ears.” Residents make use of an app or social media to alert the City of Boston to neighborhood issues such as potholes, damaged signs and graffiti.
- Adopt a Hydrant - In the midst of winter snowstorms, buried hydrants cause dangerous delays in the ability of fire fighters to respond to fire emergencies. To check and clear thousands of hydrants across the city of Boston, would be a timely, costly, and burdensome process. Adopt-a-Hydrant lets governments turn to the community.

This map-based web app allows individuals, small businesses, and community organizations to volunteer to be responsible for shoveling out specific hydrants.

- Project Mwana - Project Mwana leverages high mobile phone penetration to improve early infant diagnosis of HIV and post-natal follow-up and care.
- Building Healthy Communities - A 10-year, \$1 billion program of The California Endowment. Fourteen communities across the state are improving employment opportunities, education, housing, neighborhood safety, unhealthy environmental conditions, access to healthy foods and more. The goal: to create places where children are healthy, safe and ready to learn.
- Community PlanIt - A local engagement game designed to make community planning fun while providing a context for learning and action. It is part of an ongoing design research project at Emerson College on games and civic engagement.

GETTING TO KNOW YOU

To better understand the context of our projects—the organizations we worked with, the field they are working in, the work they do—we used two methods: a literature review to identify similar projects to NeighborMedia and DS4SI, and a hands-on mini-ethnography.

NEIGHBORMEDIA LITERATURE REVIEW

- The Local - *Run by faculty and students of the CUNY J-School and New York University, the project helps neighborhoods report on themselves using online tools to gather and share information.*
- The Forum - *The Forum is a source for news and current information, and an outlet for sharing events, opinions and creative expression through a web-based newspaper supplemented by periodic print issues.*
- Open Media Boston - *An online, metro news publication dedicated to regularly publishing fair and accurate news, views, arts, entertainment and technology coverage for the Boston area. OMB has a progressive editorial stance and solicits submissions and commentary from the general public.*
- Mount Elliott Maker Space - *A community space outfitted with fabrication tools. Programs are designed*



to test new ideas and methods for community learning and entrepreneurial economic development.

- Detroit Digital Justice Coalition - *DDJC and Detroit Future programs work together to lead trainings, weave networks, build transformative education practices and community organizing to bring about digital justice in Detroit. They started with the shared principles of access, participation, common ownership and healthy communities and designed the Detroit Future programs to put those principles directly into practice.*
- The Lens - *The New Orleans area's first nonprofit, nonpartisan public-interest newsroom dedicated to in-depth reporting projects. Its mission is to educate, engage and empower readers with information and analysis necessary to advocate for transparent, accountable and just governance.*
 - MyMissourian - *In operation from 2004-2011, MyMissourian was one of the first citizen journalism outlets, shepherded by the University of Missouri Journalism School for the town of Columbia, MO.*
 - iBrattleboro - *More than a decade old, iBrattleboro is a citizen journalism for residents of Brattleboro, VT. It is also a community hub to exchange information.*

DS4SI LITERATURE REVIEW

- Social Agency Lab's Museo del Futuro - *A mobile museum of street performances and other collaborative artworks developed by community cultural groups to imagine what Mexico City will be like in 2068, the centennial anniversary of the Tlatelolco Massacre.*
- 72 hours - *Artist John Husley worked with homeowners in Dorchester, MA whose homes were foreclosed to create a walking tour. Husley projected silhouettes of family-members emulating the last 72-hours of living in a foreclosed home. The silhouettes feature women packing boxes, men folding clothes, and children playing together.*
- 72-hour Urban Action - *A real-time architecture competition where teams have three days and three nights to design and build projects in public space.*
- Krzysztof Wodiczko's Interrogative Design *combines art and technology into design that reflect emerging cultural issues which play critical roles in society but are given the least design attention.*
- Pier 40 LGBT Center - *A proposal to build a memorial to gay culture with a 24-hour access center in a historically significant location. It wasn't built, but policy recommendations, a white paper and awareness of the issue came out of the process. A commissioner was appointed for runaways and homeless youth following the*

campaign.

- Blocks and Lots - *A game about land use, politics and the urban environment. A team of researchers and community members created this online, interactive game so that local, popular knowledge would be embedded in the game rather than being lost due to the transience of neighborhood residents.*
- Off the Bus - *An initiative of The Huffington Post for readers and contributors to cover 2012 election issues together by writing news stories about local political events and sending in examples of campaign activity.*
- Open Plans - *Open Plans builds tools to get cities on the path to better technology, help citizens get the responsive government they should expect, and scale up small discussions to city-wide change. A guide to civic technology, incorporating technology, transportation and city planning, an open-source approach, and the standards knowledge necessary to deliver valuable tools to clients.*



NEIGHBORMEDIA MINI-ETHNOGRAPHIES

Using Locast, a mobile phone-based reporting tool developed by MIT's Mobile Experience Lab, students donned their citizen reporting hats and explored different subjects in the Boston metro area:

- Telling the story behind workers at Wellesley Dining
- A small protest to demand the District
- The vibrant nanocultures in MIT dorms
- The journey of an avocado, from Haymarket suppliers to the dinner table
- Homelessness in Cambridge
- How effective is community artwork, hanging on the barriers around construction sites, at distracting from construction sites?
- The limited dining options at and around MIT



DS4SI MINI-ETHNOGRAPHIES

To understand how codesign partner DS4SI works with the public, student pairs researched topics such as “what does affordable housing mean in Boston” and “what is Boston’s 5-10 year plan?” DS4SI’s goal is to make the complex planning process publicly accessible and transparent. Students presented their findings as creative, visual storyboards.



NEIGHBORMEDIA

**DESIGN STUDIO FOR
SOCIAL INTERVENTION**

COLLABORATIVE IDEATION AND ITERATION

The NeighborMedia group began by working closely with Susan Fleischmann and Clodagh Drummey, staffers at Cambridge Community Television. After several ideation sessions, the team invited NeighborMedia correspondents to join the process.

29a

With limited staff resources, CCTV's biggest challenge was how to position the citizen journalism site as the go-to city news source. As an opening gambit, CCTV asked, "How do we make NeighborMedia more visible in the community?"

STORYBOARDING

Throughout the semester, the DS4SI group worked closely together. Corina and Diego were coordinating all of the artists and pieces of the Making Planning Processes Public in Upham's Corner intervention in addition to working with the codesign studio to develop one installation for the event. They were able to share details of the other elements of the installation. The end result was a project that blended well with the aesthetic of the event and filled a narrative need unfilled by other components.

29b

Within the team, members had community organizing experience and training in urban studies and planning, computer science and mechanical engineering. This was evident in the way the group worked; each member

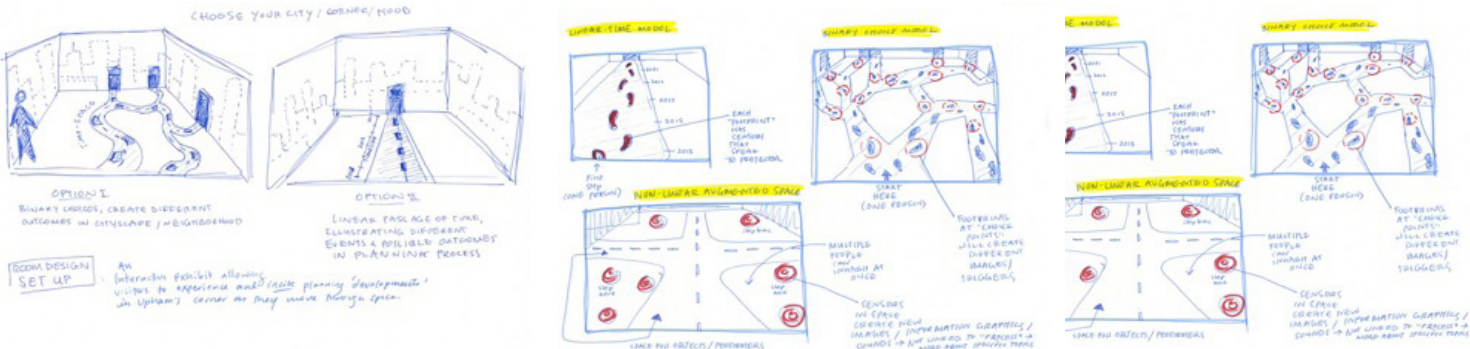
Initial ideas revolved around spectacle and nifty technology. Up till midterms, the team considered the feasibility of a helicopter drone mimicking a news copter (on a smaller scale, in parallel to Cambridge's relationship to Boston). The helicopter would follow a NeighborMedia correspondent during on-the-street interviews about aspects of Cambridge life. Strapped to the drone were a camera, mic and mini projector that would shine other responses on surfaces below.

While this was sure to be a head turner, the NeighborMedia team eventually ruled this option out. The technical know-how was there, but given unpredictable weather conditions—abundant sunlight, rain?—it was not a watertight solution.

After meeting with NeighborMedia correspondents, the newly expanded team decided to work on a social media and poster campaign spotlighting provocative issues that were only being covered on NeighborMedia.

IMPLEMENTATION

#CambridgeResponds - In the thick of planning, two bombs exploded during the 2013 Boston Marathon, killing three and injuring more than 200 people. The NeighborMedia team felt it was not the right timing to implement a social media-issues campaign. Meanwhile, browsers, channels, airwaves and print were awash with minute-by-minute updates. The greater Boston area was also affected, as the suspects lived in Cambridge, an MIT officer was killed and a chase ensued through Cambridge and Watertown.



was able to employ their skills and talents.

The DS4SI team developed several low-fidelity prototypes consisting of sketches and mock-ups of how the narrative in their work would progress and how individuals would interact with their proposed physical interface. During class time, the full team would review and modify these together.

During the midterm review, the group presented a sketch of a system integrated into the installation space. As participants moved through the installation along a pathway, they would see images of the neighborhood change based on different levels of input into the planning process.

To make sure the Cambridge reaction and impact did not go undocumented, the team of students and reporters started #CambridgeResponds, a hashtag to mark fresh stories from the Cambridge perspective on the NeighborMedia site.

Event - On May 5, NeighborMedia celebrated its fifth birthday and CCTV its 25th anniversary. In recognition, CCTV organized a local conference on citizen journalism, “Filling the News Gap in Cambridge and Beyond.” Participants included Harvard’s Open Media Law Project, Cambridge Day, Cambridge Civic Journal, Free Press and the MIT Center for Civic Media as represented by the Codesign Studio.



After the presentation, the team met to discuss the limitations of the pop-up space. They worked together to scale the installation and to design it so that participants could be stationary while interacting with it. They visited the installation space and met with Kenny Bailey and Lori Lobenstine, the directors of DS4SI, to discuss their plans and work together to further develop the narrative frame.

IMPLEMENTATION

The Upham’s Corner Input Collector (UCIC) aimed to disseminate accessible information and to address a lack of understanding and ownership in “planning” as an everyday concept. By interacting with the UCIC, a user saw what community involvement could result in and is encouraged to engage. UCIC was a digital and physical installation consisting of a wooden podium with an input selector, a keyboard and a select button. When standing at the podium, participants watched a screen onto which a series of slides are projected.

At the beginning of each session, participants were asked to choose their level of community input: high, medium or low. They were then guided through three different scenarios that could affect community life

TAs Denise Cheng and Becky Hurwitz coordinated with citizen journalists David Shalliol of Gapers Block (Chicago, IL), CB Smith-Dahl of Oakland Local (Oakland, CA) and Laura Amico of Homicide Watch to put on “The Most Experimental Storytellers: Citizen Journalists.” Panelists shared how they became citizen journalists and tools for creative presentation as part of a national network of citizen journalists.

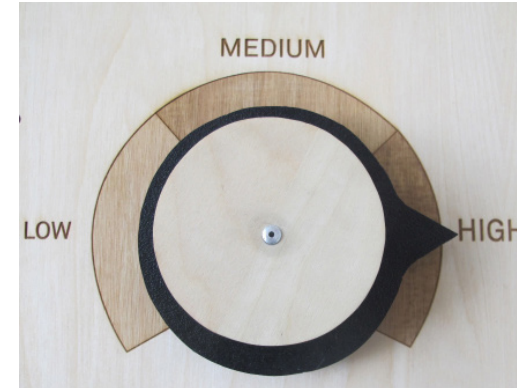
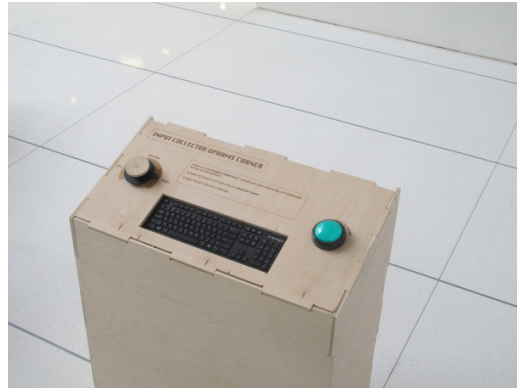
Branding - As a logo placeholder, NeighborMedia had used an image of a photographer, with the reflection of the Cambridge cityline in the camera lens, for five years. The team designed a simple graphic of a house and selected a new font to give the logo a fresh new look.



the NeighborMedia team came on board. Their developer was so far in the process that although students on the NeighborMedia gave invaluable feedback to increase reader engagement on NeighborMedia, CCTV was not in a position to incorporate all of the recommendations. To make sure the suggestions would not be lost, CCTV asked for a report on all of the recommendations that would be added to the docket for upcoming iterations and improvements to the NeighborMedia site.

The team also made recommendations for dynamic storytelling tools that NeighborMedia correspondents could easily add to pieces to increase interactivity. Tools included:

Final recommendations and reference manual - CCTV was in the midst of rolling out a redesigned site when



Visual Presentation

- TimelineJS (timeline.verite.co): *A tool that to create interactive timelines. These can be embedded in articles or webpages.*
- infogr.am (infogr.am): *A tool for easy creation of interactive infographics and charts.*
- Wordle (wordle.com): *A word cloud generator. Wordle lets users customize the fonts, colors, and layouts of the word clouds.*
- Zeega (zeega.com): *A tool for combining multiple types of media into an interactive and engaging story.*
- Google Chart Tools (developers.google.com/chart): *Tools for creating interactive charts and graphs of data. These are not as easy to use as infogr.am. Google Maps*
- Timeline.JS - *Interactive timeline created with Google spreadsheets and social content hosts like Flickr.*

Mapping

- Locast (locast.mit.edu): *A platform for telling stories, mapping communities, and sharing information. Users can add pictures, video, and text to locations on a map.*
- Leaflet (leafletjs.com): *A JavaScript library for creating interactive maps. This may be harder to use than other mapping applications, but it is more flexible. The website includes tutorials and examples you can modify.*
- Ushahidi (ushahidi.com): *A platform for collaborative mapping. Ushahidi is often used for crisis mapping, but it can be used to map almost anything.*
- Google Maps (maps.google.com): *Google Maps can be used to create custom maps. A guide on how to create custom maps is at bit.ly/WHvYBK.*



in Upham's Corner. The scenarios include changes to the Fairmont Line train schedule and pricing, new businesses coming to Dudley Street and redevelopments in place of the Leon Building. Participants were given the opportunity to offer thoughts and suggestions within these visual narratives, depending on their chosen level of involvement.



Content Curation

- Storify (storify.com): *An application for collecting and including tweets and other media in stories. Stories created can be viewed on Storify or embedded elsewhere.*
- Chirpstory (chirpstory.com): *A tool for collecting and creating stories from tweets.*
- Paper.li (paper.li): *A tool for creating an online newspaper by combining different types of media.*

Remixing

- Meme Generator (memegenerator.net): *An internet meme generator that makes it easy to add text to images uploaded or found via search.*
- NewsJack (newsjack.in): *A tool for remixing websites by making spoofs with different text and images.*

REFLECTIONS FROM CORINA McCARTHY-FADEL OF DS4SI

The codesign process was a process of learning how to get on the same ground. Language was a major barrier between ourselves and the students, as we came from different backgrounds and understandings of what was most important in our project. We realized the importance of the students coming to Uphams Corner too late, as they came to the place late in the process. Due to the scheduling of students, often we had to work around their schedules which were pretty inflexible. This was mainly due to our levels of commitment and prioritizing this project; it was a high priority and major commitment for myself and Diego; and for the students it was a project in a class on a schedule of many classes. Also, there was not a formal process for how we should integrate all of our skill sets; the technologists, the planners, us as organizers and

Creating and Sharing Stories

- Vojo (vojo.co): *A group blogging platform for posting audio, text, or picture stories from any phone.*
- Vine (vine.co): *An app for creating and posting six second video clips.*
- Ustream (ustream.tv): *A livestreaming platform. Users can livestream from and to smartphones and computers.*
- CoverItLive (coveritlive.com): *An application for liveblogging events. Users can insert text, videos, images, and polls. They can also solicit feedback and hold Q&A sessions.*

designers. It was hard to know who would be best-fit for our specific project goals and timeline without a structure to learn each person’s backgrounds, skills and capacities. Once we were as a team, the access to the skills and resources of the students, professors and institutions were useful.

Directly following the project ending, we were all in good spirits. The ICUC had been made and made beautifully, matching the design and feel of the exhibit and had been there to collect necessary data. Even though it broke down and only worked for about half of the week-long exhibit, we felt positive feelings. A month later however, with none of the data synthesized or even sent back to us in a raw format for us to work through, this project seems much less beneficial. The data we depended on the ICUC to collect for us to give back to the has still yet to be received.

REFLECTIONS FROM CLODAGH DRUMMEY OF CCTV

During the spring of 2013, CCTV had the opportunity to partner with CMS.862, a collaborative design class in the Comparative Media Studies department at MIT. At the start of the class, each community partner was asked define an organizational issue that the class would work to address. CCTV's Executive Director Susan Fleischmann and I articulated a desire to raise the visibility of NeighborMedia, CCTV's citizen journalism project. The ability for each community partner to define the issue that would direct the collaboration helped set the stage for co-design projects that would be grounded in real community need.

The MIT student team assigned to work with CCTV hit the ground running—coming up with a list of

creative and innovative ways to promote NeighborMedia. After this initial brainstorming, the team invested a considerable amount of time in researching the field of citizen journalism and getting to know the NeighborMedia project. The team read NeighborMedia stories, talked to journalists, and eventually invited them to join the co-design team. This phase of their work turned out to be incredibly important, resulting in a more collaborative design process.

By the end of the semester, the CCTV team—comprising MIT students, CCTV staff and NeighborMedia journalists—created a story series and promotions strategy, a list of website and social media recommendations, a new NeighborMedia logo, and resources and promotional materials to distribute at “Filling the News Gap in Cambridge and Beyond,” a citizen journalism forum that took place on May 4, 2013.

In general; students priorities are their grades, and the completion of their classes in good standing. At the end of the semester; it felt as though, besides the lack of flexibility to fix and maintain the running of the ICUC, that this project had been well done. Now, however it is hard for us as a team to rationalize the three hours of class plus extra work emailing, calling, meeting and working with students outside of class as something worthwhile when we have nothing to show or give back. In general, throughout the whole process it was hard to work with time; it felt as though the lack of flexibility of the students due to their work and classes created an unbalance in our group; this codesign work was a small percentage of our work and time for the project; and we both were working other jobs. This made it feel unequal, with how we had negotiate timing to schedule work and meet-ups.

A student's commitment mostly extends as far as the class grade does; and because the data synthesizing was outside of the grade timeline and framework, it has yet to be done. In the future we would recommend that any of the necessary steps or work in a project fall within the grade for the project; to ensure that it is done fully, done well, and that nothing is left aside afte the semester ends. Also, I think looking at a way to communicate and incorporate learning for both the class and the community partners is important. It felt as most of what we were in the class to do was to produce, and in truth, we could have found a much less time consuming way to get the data we needed from the ICUC. I think the intentions were good on both sides, but the struggle was really in level of commitment; and finding a way to work that works for both side, students and partners.

REFLECTIONS FROM NEIGHBORMEDIA STUDENT TEAM

MC McGrath, Karina Qian, Victor Youk

Sometimes the process is more important than the product. Even though our final products were ultimately not as cool or high-tech as our original idea, they ended up being more useful and sustainable for CCTV. And even though we spent most of our time this semester in meetings—at first, internally, and then increasingly with stakeholders from CCTV and NeighborMedia journalists—rather than actually creating products, the process was, in the end, beneficial to us as students interested in collaborative design. It was also constructive for the CCTV stakeholders and NM reporters, who said that they could not have organized the #CambridgeResponds campaign otherwise and also would not know how to use these new technologies.

In codesign, ideally there should be no distinction between the stakeholders and the team working on the project. We are all one team, not distinct groups working together. Functioning as one team keeps everyone on the same page when it comes to the problem, development of ideas, and the best solution. Once we started working as more of a team with the NeighborMedia journalists and CCTV staff, the process was much smoother and more productive for everyone involved. And it is a really good that we discarded the drone idea. Otherwise we would be trying to fly drones over Cambridge after the [Boston Marathon] bombing.

REFLECTIONS FROM DS4SI TEAM

Laurel Donaldson, Alicia Rouault

Several important lessons came out of our experience in the design and implementation process. The first was the importance of a cross-disciplinary team with a diverse yet complimentary set of skills and perspectives. Second was the importance of having an iterative design process and ultimately embracing an adaptive prototyping mentality—both within the creative process and during the final exhibit itself. By tweaking the content based on user feedback, responding to the way users circulated through the exhibit and rearranging the elements accordingly, and experimenting with different levels of facilitation, we were able to successfully ‘adapt’ the product, even after it had been installed. Finally, we saw the importance of

integrating high- and low-tech elements to appropriately engage the audience.

We also realized certain pitfalls that would be importance to address in the future, including a pre-determined maintenance schedule for similar DIY installations and a mechanism for collecting feedback about the user experience itself. We also felt that a deeper interface with the neighborhood earlier in the process would have been meaningful and helpful in producing content that was even more tailored and thought-provoking for the specific participants. Ultimately, both ds4si and the students felt that the exhibit and the UCIC were a tremendous success. We learned from each other and from the neighborhood residents, and witnessed the power of ephemeral experience as a sustainable method for community engagement.

EVALUATION - REFLECTIONS ON CODESIGN STUDIO

INSTRUCTORS

Together with our partners, we set problem-defintions at the beginning of the term. Even so, the groups continued to evolve in how they worked as a team and to further clarify goals as the term continued. We invited our codesign partner organizations into the classroom with students, but in the future, we will take it another step further by having students map out a constellation of partner organizations that our codesign partners collaborate with regularly.

Each class session took place at MIT Media Lab, but the teams would have benefitted by having at least half of their group meetings at codesign partners' spaces (i.e.: NeighborMedia at the CCTV headquarters and ds4si at the exhibition space).

Iteration is a key part of thorough design processes. While iteration was part and parcel of the course, students first formally presented their prototypes and sketches for feedback as their

midterm. We invited both outside evaluators and our codesign partners to give their thoughts. The feedback process was highly beneficial, and we learned that it would be better for students to have periodic assessments sprinkled throughout the semester, even ahead of the midterm.

MEDIA CREDITS

- Cover Codesign definition - Denise Cheng
- 9 NeighborMedia - Mary Holbrow on Flickr
- 11 Making Planning Processes Public - ds4si
- 12 Water color map of Boston and Cambridge - Stamen Design
- 15 Bushwick neighborhood assessment map - Center for Urban Pedagogy on Flickr
- 17 Beehive Collective workshop - Denise Cheng
- 20-21 Raven working on some speakers - Mt. Elliott Maker Space on Flickr
- 23 Open Plans + Hacks/Hakers - Dan Nguyen @ New York City on Flickr
- 24 Karina’s locast photo - Karina Qian
- 25 Laurel’s locast photo - Laurel Donaldson
- 30b ds4si team sketches
- 33a NeighborMedia conference - Maurice on Vojo
- 34a-35a NeighborMedia logo - NM team
- 34b-35b Final ds4si photos - ds4si team
- 36b Fairmount line
- 37b Mural in Upham’s Corner

