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# Discursive Architecture: integrating buildings, displays and text messages

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**Abstract**

The built environment has increasingly become a canvas for digital augmentation where the public nature of urban space creates an ideal setting for outward reflection and the exchange of ideas. We present the design and installation of *Your \_\_\_\_\_ here*, a large projection display for site-specific participatory interventions, and indicate its potential as a simple, yet provocative public engagement system.

**Keywords**

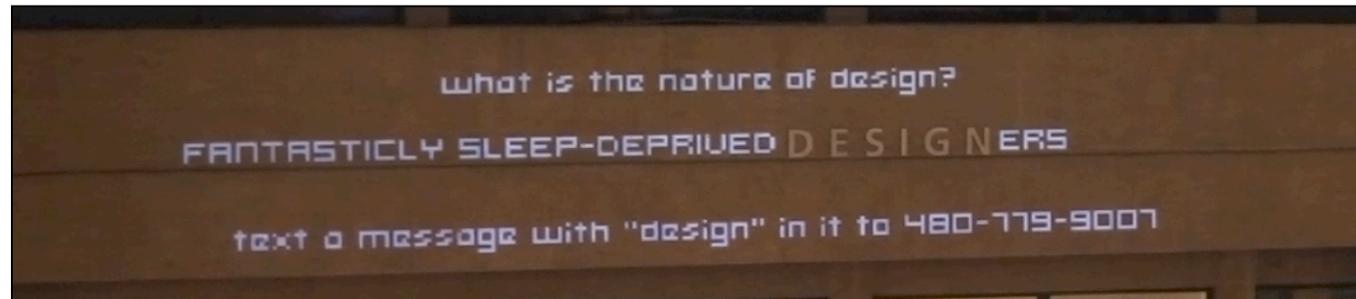
Urban display, SMS, projection, infrastructure

**ACM Classification Keywords**

H.4.3 Communications Applications; H.5.1 Multimedia Information Systems — Artificial, Augmented and Virtual Realities; H.5.3 Group and Organization Interfaces — Asynchronous interaction

**Introduction**

A growing body of work addresses the augmentation of urban space through the projected image for purposes as diverse as information-sharing, marketing, and guerilla political statement. Another, parallel development involves the integration of mobile devices as I/O for large, fixed displays in a variety of settings.



**Figure 1:** *Your \_\_\_\_\_ here*, augmenting the word "DESIGN". The top line cycles through various provocative statements, the middle line is user-submitted, and the final line remains static. A video of the system is located at <http://rl.ame.asu.edu/projects/23>

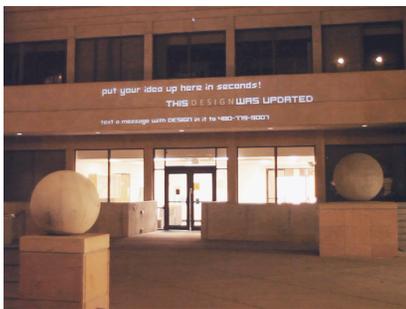
In this paper we describe *Your \_\_\_\_\_ here*, an SMS-driven large projection display for site-specific participatory interventions. Text-based projections are displayed on the exterior of buildings, prompting passers-by to contribute responses via mobile phone. We describe our experience developing a site-specific intervention to stimulate reflection on the reorganization of an academic institution. By integrating the SMS (mobile text-messaging)-driven projection with a physical manifestation of the ongoing changes in the institution and its surrounding community, we activate a public space in transition. *Your \_\_\_\_\_ Here* promotes engagement in the community, both within the context of the display and in real-space around it.

### Motivation

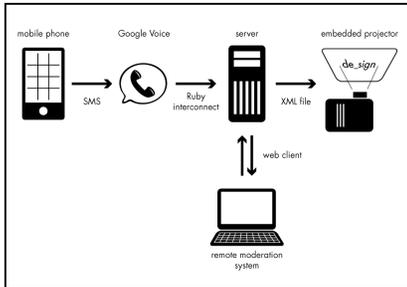
Corporations and institutions commonly deal with issues of rebranding during times of transition and change. Within academia, this can happen with the renaming of schools, new endowments, or the creation of cross-university initiatives. We initially developed the *Your \_\_\_\_\_ here* project in response to a transitional period in the rebranding efforts of a former college in our institution. The temporary simplification of a sign

reading "COLLEGE OF DESIGN" to merely "DESIGN", pending a renaming decision, left open an opportunity for generating discussion about the evolving academic unit. With formal community discussion already underway, we felt that we could promote further informal reflection by digitally augmenting the sign, projecting user-submitted words alongside the remaining metal "DESIGN" lettering (see figure 1).

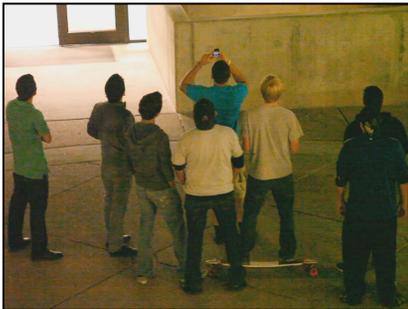
The goals of the project were multifold. Firstly, we wanted to allow the broader community (students, faculty, staff, visitors) to submit their own suggestions as to what the word/concept/practice of DESIGN meant to them. Secondly, we wanted this process of community interaction to occur publicly, in a way that would complement other forms of public discussion such as Twitter messages, townhall meetings, discussion forums and email lists. *Your \_\_\_\_\_ here* fills a unique niche that is not addressed by these more "traditional" methods: by its situation in a public plaza and the immediacy of feedback response, *Your \_\_\_\_\_ here* encourages interaction on a relatively unlimited timescale from any user equipped with a mobile phone. It is as accessible to the general public as a billboard, but is capable of accepting input at any time from



**Figure 2:** The scale of *Your \_\_\_\_\_ here* relative to the building on which it was initially implemented.



**Figure 3:** System diagram. The web client is used only for administration (eg., removal of profane messages that passed through the blacklist) and is not user-facing.



**Figure 4:** A number of users observing and interacting with the system. Note user taking a photograph with his mobile phone.

nearly any person viewing the system. In this respect, *Your \_\_\_\_ here* can possibly be seen as a form of crowd-sourcing [1] – carrying out a task (in this case, encouraging public ideation) through a large, undefined public group.

### Prior Work

Our work builds on prior art in SMS-driven projections and general projection mapping. Cheok et al's *Blogwall* [2] similarly is composed of a public display that accepts SMS messages. However, the *Blogwall* system is an indoor, screen-based system, the size and location of which limits the possible audience scope. In contrast, *Your \_\_\_\_ here's* placement in an outdoor plaza makes it accessible to a much broader community of users. Furthermore, *Your \_\_\_\_ here* directly integrates with the physicality of the building, forming a unified, relational installation.

Cheverst et al. developed *Hermes* [3], a system to promote awareness among small groups; users can send messages to each other through a combination of a web client and a physically-installed wall tablet. The *InfoGallery* system [4] is similar to *Your \_\_\_\_ here* in its use of a mobile phone to interact with a public display, but data transfer is primarily one-way — users can interact with existing content, but unlike our project, cannot submit their own. The *SMSlingshot* system [5] developed by the VR|Urban collective represents an exploration into physical/digital integration of text-messaging. Again, it is similar to our work in its use of a projection on the outside of a building, but differs in that it allows the user to pick any location to “shoot” their message with a slingshot-like device. The specificity of the required system device again limits participation, while *Your \_\_\_\_ here's*

agnostic input allows nearly anyone to contribute. Furthermore, *SMSlingshot* emphasizes a graffiti-like “cover-up” of the underlying building, whereas *Your \_\_\_\_ here* attempts to integrate *with* the existing infrastructure.

### Design and Implementation

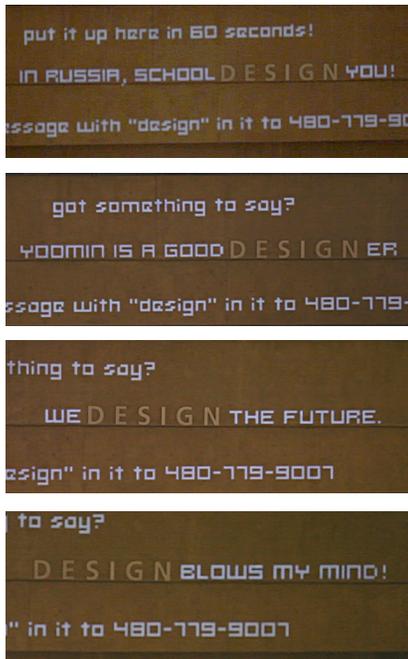
*Your \_\_\_\_ here* is implemented as two parts of a client-server model (figure 3). A server receives and formats SMS messages into structured text for the client system, while the client (a low-profile PC and the digital software and hardware necessary to display the messages.

We use a Google Voice account and telephone number for gathering text-messages from system users. These messages are forwarded to a Gmail e-mail account, which is then accessed by a Ruby application running on a server. The Ruby application filters the messages for profanity using a blacklist, automatically rejects any that do not contain the word “design”, and stores them in a database. When new messages are requested by the client, the server selects a database entry, splits it at the word “design”, and passes the resulting fragments as an XML file.

The client application is written in Adobe Flex. It handles requesting the message XML file from the server, controlling their position of text blocks in the projection (adjustable by an administrator through a settings menu), and animating each message as it appears on the wall.

### Installation Observations

*Your \_\_\_\_ here* was installed for an initial 10-day period on the façade of the former College of Design



**Figure 5:** Some of the messages submitted to the system. Top to bottom: a pop-culture reference, self-referential bragging, a reflective statement, and a humorous comment.

building in our home institution. The client system was activated each night from sundown (5:30pm) to 10:00pm each night. While the number of users and their level of interaction varied, overall the response to the system was positive. We received a mean of 14 submissions per night, of which an average of 9 were accepted. We observed a significant percentage of passersby interacting with the system – watching it as they walked by, stopping to see the messages change, submitting messages themselves, and discussing it with others. Over the 10-day installation period, the system received 144 text messages. The largest group of these messages, totaling 30 submissions, could be classified as “bragging” – messages such as “XXX is the design man” or “Design > business”. The next-largest set (with overlap) was school-related messages in general, such as “I’m so done with design for this semester!” Our statistics also display the popularity of self-reference (23 messages, “I can design everything, give me a job”) and pop-culture and internet memes (16 messages, e.g. “all your design are belong to us”). 49 messages of the original 144 were rejected for various reasons such as profanity, inappropriate content or failure to include the word ‘design’.

Generally, the system worked most effectively when a small group of people (2-10) encountered the system simultaneously (figure 4). As we had hoped, *Your \_\_\_\_\_ here* also generated real-world conversations: some users would “one-up” each other by successively bragging about themselves, while others were overheard to discuss the messages and the system in general even if they had not submitted anything. At least one viewer telephoned a friend to say “I just saw your name on the wall.”

## Conclusions and Future Work

We expect a number of expansions of *Your \_\_\_\_\_ here*. We plan to study use in other locations; within days of first putting up the system, we began to receive requests from university members to install the system in other areas, with the next expansion scheduled already. We also plan to examine how we can coax a greater depth and breadth of submission from the users; one way might be to pose specific, provocative questions with a blinking insertion point displayed below, suggesting that the user should reply specifically to that question. Finally, based on user suggestions and requests, we intend to develop *Your \_\_\_\_\_ here* into a complete standalone system that can be easily deployed at any nascent community location with a minimum of effort, forming a simple way to augment an environment and foster public engagement.

## References

- [1] Brabham, D. *Crowdsourcing as a Model for Problem Solving: An Introduction and Cases*. Convergence: The International Journal of Research into New Media Technologies. February 2008 14: 75-90
- [2] A. D. Cheok, A.-u.-R. Mustafa, O. N. N. Fernando, A.-K. Barthoff, J. P. Wijesena, and N. Tosa. *Blogwall: displaying artistic and poetic messages on public displays via SMS*. In Proc. MobileHCI '07, 483– 486
- [3] K. Cheverst, A. Dix, D. Fitton, M. Rouncefield, and C. Graham. *Exploring awareness related messaging through two situated-display-based systems*. Hum.-Comput. Interact., 22:173–220, May 2007
- [4] K. Gronbaek, A. Rohde, B. Sundararajah, and S. Bech-Petersen. *Infogallery: informative art services for physical library spaces*. In Proc. JCDL '06, 21–30
- [5] Fischer, P. T., Zöllner, C., Hoffmann, T., and Piatza, S. 2010. VR/Urban: SMSlingshot. In Proc. TEI '10, 381-382.