

# Place Storming: Performing New Technologies in Context

**Ken Anderson**

Intel Corporation  
211 NE 25<sup>th</sup> Avenue, MS JF3-379  
Hillsboro, OR 97124 USA  
ken.anderson@Intel.com

**Jane McGonigal**

University of California at Berkeley  
2109 Shattuck Avenue  
#2109 Berkeley, CA 94704 USA  
janemcg@berkeley.edu

## ABSTRACT

We present Place Storming, an original method of brainstorming technological concepts, particularly in the area of pervasive computing. Place Storming is context-driven and play-based, combining real world environments with the immersive and performative aspects of gaming. In this paper, we discuss the background and techniques we used to create and deploy our method. Examples are drawn from a March 2004 Place Storming event to highlight key strengths of the method. Suggestions are made for what produces successful Place Storming sessions.

## Author Keywords

Innovation techniques, brainstorming, pervasive gaming.

## ACM Classification Keywords

H.1.2 Information Systems: Models and Principals – *User/Machine Systems, Human Factors*

## INTRODUCTION

The familiar and habitual things we design, and the places we design for, are changing. The infrastructure rich environments envisioned by early architects of ubiquitous computing are becoming a reality, while mobile personal technologies like the cell phone and Wi-Fi devices are now pervasive. At the same time, once exclusively virtual worlds are slowly being supplemented by physical layers, as online communities find a need for complementary, real-world engagements. And in-between spaces such as cafés, trains, and automobiles increasingly offer more, and more varied, opportunities for personal technological practice.

Users are engaging with these interactive environments and pervasive technologies in different and more heterogeneous ways than they have historically with desktop technologies like the monitor, keyboard and mouse. This wider range of user expectations and goals poses a major challenge for engineers, marketers and designers, who must innovate for less familiar contexts. Envisioning what we can do to create useful and usable technology in early stages of development for emerging ecosystems of use is a difficult task, requiring innovators to move conceptually beyond their own experiences of home and work. Here we propose Place Storming as one tool we have found helpful in the fuzzy front end of context-driven technology development.

## BACKGROUND

Place Storming combines elements of street games, improvisational theater and brainstorming to enable participants to get *out* and get *physical*, in order to find *real* everyday contexts for technology innovation. Place Storming participants break into teams, take on roles, visit a series of situated places in targeted environments, and use props to accomplish site-specific missions. In completing their missions, Place Stormers become active, playful performers engaged in first imagining and then *enacting* technological innovations in context.

## Influences and Interventions

A number of performance-oriented methods have been employed in brainstorming processes previously. Two prominent examples are the “focus troupe” and “informances,” which enable designers to present specific technology concepts and designs to an audience, who can offer feedback [8,9]. In the past, these methods have been employed in design research most frequently as vehicles for communication with potential users. In contrast, our focus in Place Storming is on using performance for exploring and proposing new areas for concept development.

Perhaps even more than performance, we are interested in play. Recently, the field of game design has inspired numerous new play-infused design research methods, such as Eric Zimmerman’s “Play as Research” [7]. We are interested, however, in exploring the value of play to broader fields of interactive design. We draw inspiration from the fact that the word “play” comes from the Old English word for movement and originally referred to being active, operative or effective. For us, play is not only imaginary and imaginative, but also highly physical and world-building, in a real and material sense. We also take a cue from Mikhail Bakhtin, who described play as a way we explore, adapt and subvert facets of our everyday worlds [1]. Exploring and subverting everyday worlds is key to our desire to discover unfamiliar contexts in everyday sites, transformed by the ubiquity of computing technologies.

Another important influence on the Place Storming method is research at Helsinki University of Technology that blended ethnographically oriented observations with active user participation [2, 3, 4, 5, 6, 10]. In particular, “Role Playing” (RP) and “Situated and Participative Enactment of

Scenarios” (SPES) are directly relevant to our project in their emphasis on active performance and situated inquiry. Steve Howard’s prop enactment and Giles Lane’s “body storming” (which, developed at Probiscis, attempts to reduce the distinction between mind and body in the development of ideas) were additional important influences in their emphasis on materiality and physicality [3].

### THE PLACE STORMING EXPERIENCE

For our first major deployment of the Place Storming method (March 2004), we chose to investigate public, community, and transitional spaces. The participants were Intel engineers, designers and strategic marketers exploring new directions and applications for consumer electronics.

Our initial task was to develop an immersive backstory for the workshop. We chose to call our event a Place Storming Apprentice Training Session, which we described as an opportunity for participants to audition for an elite group of pervasive technology designers (the Place Stormers). As apprentices, their role was to “storm” public places following a script, or “manifesto,” which included of the following Place Storming *modus operandi*:

- (1) Create contexts and act in them;
- (2) Construct platforms and perform on them;
- (3) Build bridges and invite others to cross; and,
- (4) Define opportunities and seize them.

We delivered the manifesto to them a week in advance so they could prepare for their roles. Further, to help move them into a more playful mode, we had them use a special e-mail account to confirm their participation. Participants were asked to select a “secret word” by choosing a book at random, opening to a random page, and copying the seventh word on that page. They were directed to use this word to complete the email address “(your word goes here)@domain.com.” These “found” words were later used to name the workshop props, which participants knew as the special Place Stormer tools. The props we selected were everyday household and office objects, as opposed to the kinds of toys and arts & craft supplies that are frequently used in brainstorming. We wanted, instead, to deal with physical properties of everyday artifacts. The ordinariness of our objects built upon the idea in performance of “found art,” that is, ordinary things of interest either removed from or observed within their natural context and reframed as artistic objects. The singular characteristic of the props we chose was that they could be carried. The objects were then given names randomly based on the secret found words submitted by the participants. The props included: double tip permanent marker [dubbed the “exquisitely tool”], a baby bottle brush [the “performance tool”], a tissue box [the “happiness tool”], a post-it tab dispenser [the “refusing tool”], an elastic cord [the “vacuum tool”], a metal CD [the “surgery tool”], a kids knee pad [the “silently tool”], and a tiny wooden gift box [the “contemporary tool”]. These randomly chosen prop names had no prescribed meaning

whatsoever; we left it entirely up to our apprentices to discover what a “refusing tool,” e.g., might be used for.

Our next preparatory task was to select locations for the improvisational performances, that is to say, the enactment of our Place Stormer Manifesto. The locations were confined geographically to a 6 block by 8 block area in downtown Portland, allowing participants to perform in a variety of places within a 2.5 hour period. We scouted and selected a set of places from previous ethnographic work conducted in the urban environment. These particular places were based on the size of the space, the activities that normally occurred in there, openness to the public, and general purpose, ensuring that each space provided a different configuration of stimuli and affordances. Locations included: a river front park, a café, a phone booth, a light rail train, a courthouse, a public square, an elevator in a parking garage, the sidewalk, the lobby of a public utilities building, a hotel, a mall, and a movie theater. We also allowed teams to choose up to 4 locations on their own where they felt inspired to use their tools. The additional places our apprentices chose: an escalator, a skywalk, a car interior, a bus stop, and a flower stand.

The Place Storming event began when participants came to a room at a secret location remote from their usual office. The authors acted as facilitators. We broke the 13 participants into two groups of “apprentices.” The facilitators then took on the roles of evaluators and mentors to the apprentice Place Stormers for the day. This role allowed us to monitor, as well as guide, the participants. The kick-off of the Place Storming was performed entirely in character with the authors reading aloud the manifesto and explaining the day’s missions. The two teams then went off for 2.5 hours of Place Storming in downtown Portland, after which all participants and moderators reconvened at the starting location. No longer in character, the teams reported back what uses they had enacted, with which tools, and in which locations. Based on their innovations, implications for business, engineering and design directions were discussed.

### ANALYSIS

For our Place Stormers, playful brainstorming in real life contexts lead to highly reflective thinking about new technology concepts. For example, one of the initial uses the holder of the “refusing tool” invented was refusing to let him pass the Discovery Store without reminding him that he had a 20% discount coupon about to expire. The use was not particularly innovative; however, what happened with the tool over time was. Initially, team members chimed in by “refusing” to let the “refuser” holder go past any store without reminding him of a discount or special offer. Within a half an hour, however, this became so annoying that the refusing tool morphed into one that refused to let stores, cafes, etc. bother the user. The user was able to walk peacefully through the city. The “refuser” commented, “Having to ‘live with’ it made me think differently about new ideas — It wasn’t about coming up with something clever but something to fit into life.”

Indeed, both teams went through a transition where initially tools were used to extract more information from the environment, a common theme in traditional brain storming sessions. For both teams, however, as time wore on tools were re-appropriated to keep noise out. Noise in this instance could have been audio noise, visual noise, or social noise; the Stormers deployed the “vacuum” tool to create a vacuum from any/all of the three. This ability to escape parts of the environment was a key usage of many of the “tools”. Being tuned-out was as important as being tuned-in — a genuine insight for our participants.

Changing contexts spurred discussion of new ideas for the tools. The “refusing tool,” while on the street, moved from a reminder to a protective bubble over the course of the workshop. In other venues it developed other uses. In a coffee shop the tool refused to let the dieting user mindlessly buy a pink cookie, implementing a transactional delay time for the user to think about the purchase. At a hotel, the refusing tool refused to allow the user into the hotel because it was not “his kind” of hotel. Likewise, the refusing tool refused to let the user get off on the wrong floor at the parking garage. The tool’s uses highlighted issues around the personalization of technology and the importance of user control over the environment.

Changing contexts also allowed for natural extension of initial ideas. An example was the “happiness tool.” In the initial context of a phone booth, it was used to make the user happy when they had an unpleasant phone conversation with a girlfriend. In the park, it was used to make a little boy who was crying happy (of course, after asking his mom if we could talk with the boy). At the court house, it was used to make others in the court feel more comfortable about their appearance in court. Finally, the happiness tool was left at a bus stop to enable “random acts of happiness” in people’s lives. The sharing with others also turned out to be a common meta-goal for both teams.

In-situ brainstorming forced participants to confront issues around use that they felt they had not done in other settings. As participants enacted uses for their tools, they became aware how important naturalness of interaction with tools needs to be. Although we encountered no desk with electric outlets, light, AC, mouse, keyboard and screen, each context did have infrastructures that both enabled actions and presented barriers to them. An almost obvious barrier was merely carrying something around and out all the time.

Use in context brought into relief three other aspects of user interactions: direction manipulation, the multi-sensory nature of most interactions, and keeping it physical in interactions. For instance, most of the uses of the “contemporary tool” were around keeping a current situation alive for another time. Unlike photos, the users wanted to engage all senses: touch, site, sound, taste and smell. In using the tool they valued physical interaction with objects, like collecting flower pedals for capturing the

sight and smell of an urban garden. The “exquisitely tool” collected parts of your day (text, smells, sights, people) to form an “exquisite corpse” of your day to share with others via a broadcast medium like a blog. The “surgery tool” was used to cut parts of the environment out by physically coming into contact with them. The “performance tool” was constantly used in contact with something: at the movie theater, as a way of collecting movie trailers to take home; at the Gap window for capturing both the sale and items displayed for later use; touching a snack at a café to certify nutritional value; the air to determine pollen count and air quality; or touching items on a bill to make them part of an expense report. By being out, and in contact with environments, participants did not want the mediated distance that they had at the computer for all interactions; they wanted interactions that facilitated direct material interaction, even if it was for some informational feature.

In the “exquisitely tool,” almost every use scenario that developed and new concept that emerged out of the use-in-context had to do with the tools primary physical affordances: the “broad” and “fine” points of the two headed marker, as well as the “nob” nature of the cap. Through these features, Place Stormers creatively raised the issue of privacy. Not every action or thought in a public sphere, they observed, was meant to be captured and shared publicly. The users of the “exquisitely tool” “adjusted” the level of privacy for interactions: buying flowers and having them delivered to a date while interacting with a colleague, for instance, was private. The Place Stormers also invented a tool for leaving digital notes in public environments that could be modulated for tourists, colleagues, friends, or intimates only. The issue of privacy has often been presented as an either/or or on/off issue. Playing in contexts help to “make real” the complex and contextual nature of privacy, security, recommenders and filters.

## **FEEDBACK**

During the two weeks following the “Place Storming” we conducted one-on-one interviews with the participants, exploring their impressions of our new method. Generally, they felt the experience of Place Storming was unique in its focus on being creative in specific contexts. By being able to escape their roles at Intel and by enacting the uses in actual everyday spaces, participants commented that it made them understand innovative technologies in more “real” ways. They reported that being confronted by real environments presented them with the opportunity to design site-specific solutions and to imagine more context-aware future technologies and uses. The in-situ play also allowed a more balanced discussion: designers commented about how objects needed to have a form, engineers a function, and marketers a use value. Perhaps most importantly, by requiring sustained teamwork and high-level collaboration, Place Storming provided a common language and experiential reference for the designers, engineers and strategic marketers. In later discussions

during the groups' continued work to form strategies and directions, they continued to refer back to particulars from the Place Storming event to help center the discussion.

## CONCLUSION

Creative ideas for innovation can come from anywhere; indeed, than can come from paying special attention to *where*. By employing play in-situ, the contexts themselves (the "where") can provide productive triggers for innovation. Questions concerning how the built material and social environments might engage, hinder or refocus technological practice can be asked most directly and naturally when conducting pervasive brainstorming. Focus is extended from the interactions between things and people to the interactions between people, things and their contextual spaces. And real-world issues like privacy, security, and emotional states are more apt to be identified and considered in actual contexts.

Although the experience of Place Storming is likely to be highly variable depending on the skill of the facilitators, the participants, and the sites selected, overall we recommend the following three practice: 1) Facilitators should ethnographically explore a range of sites prior to the workshop and then make selections that provide a range in both *physical* affordances, intended uses, and emergent uses; 2) The tools adopted should keep their chosen attributes throughout the event, so that that their function across various locations can be observed and imagined. Also, you may wish to have the same person use the same tool throughout the exercise, so that individual participants can experience and reflect on how tools are effected and effective in a variety of contexts; and 3) Use at least two diverse teams. Teams create a sense of competition that helps drive the event. It also allows for post-workshop evaluation and comparison of concepts and uses.

We believe that combining play techniques and real life contexts in envisioning new concepts promises to be a fertile area for further development. We encourage readers to get out and get real in new concept innovation.

## ADDITIONAL MEDIA

You can download a PowerPoint presentation on the March 2004 Place Storming trial at: <http://avantgame.com/McGonigal%20Anderson%20PlaceStorming.ppt> .

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