WiFi.ArtCache
Julian Bleecker
http://www.techkwondo.com/projects/artcache/
julian (at) techkwondo.com

Overview
The proliferation of digital mobile communications devices – cell phones, WiFi, Bluetooth – saturates the space around us with data. While technology evangelists clamor for wirelessly extending the blanket of the global Internet *everywhere*, this WiFi network "cloud" alters the uses and meanings of the public spaces, spaces that are now entangled with the bits and bytes of the "wireless web." [1, 2]

WiFi.ArtCache helps us reach into this space. It reveals the leaky, spongy abutment joining our data and our physical world by tracing

out the contours of wireless networks. Through the limited range of WiFi systems, the Cache's 802.11 radio creates a spatially

constrained "range of influence." Rather than relying on 802.11 WiFi technology to extend the reach of the Internet into physical space, WiFi.ArtCache uses 802.11 in a reverse mode of operation – it relies on its limited range to create a small, local network cloud.

The design challenge of this project is to create an apparatus that brings together physical proximity, narrative, interactivity and physical space in such a way as to engage a discourse about ubiquitous computing and the production of space [3].

When you are within proximity of its network, you can connect to the Cache as if it were a typical WiFi access point, only this one is not the Internet. The Cache is a "free floating" 802.11 WiFi node purposely disconnected from the public Internet. You could not connect to the Cache through your Internet connection at home or work. You must be physically in the presence of the Cache in order

to connect to it through its WiFi network. Instead of accessing the Internet, you download to your WiFi-enabled device artist-created Flash animations whose narratives respond to social and location-based activity occurring within range of the Cache's 802.11 network.

Visitor's to the Cache use their WiFi-enabled device (PDA, laptop, etc.) with Macromedia Flash capabilities in order to download, view, and interact with digital art as if it were a wireless gallery [4, 5]. (The project also has an LCD display so that visitors without a WiFi-enabled device can interact as well.) The artist-made objects served by the Cache are programmed to alter their behaviors and appearance based on five criteria:

1. Whether the object is in or out of range of the Cache
2. How many of the same kind of object are active in range of the node and have been downloaded to participants' computers
3. How many of any kind of object is active in range of the node
4. How long has the object been out of the node
5. How long has the object been "available" on the node (i.e. what is its "age"?)
6. How many copies of a particular digital art object have been downloaded?
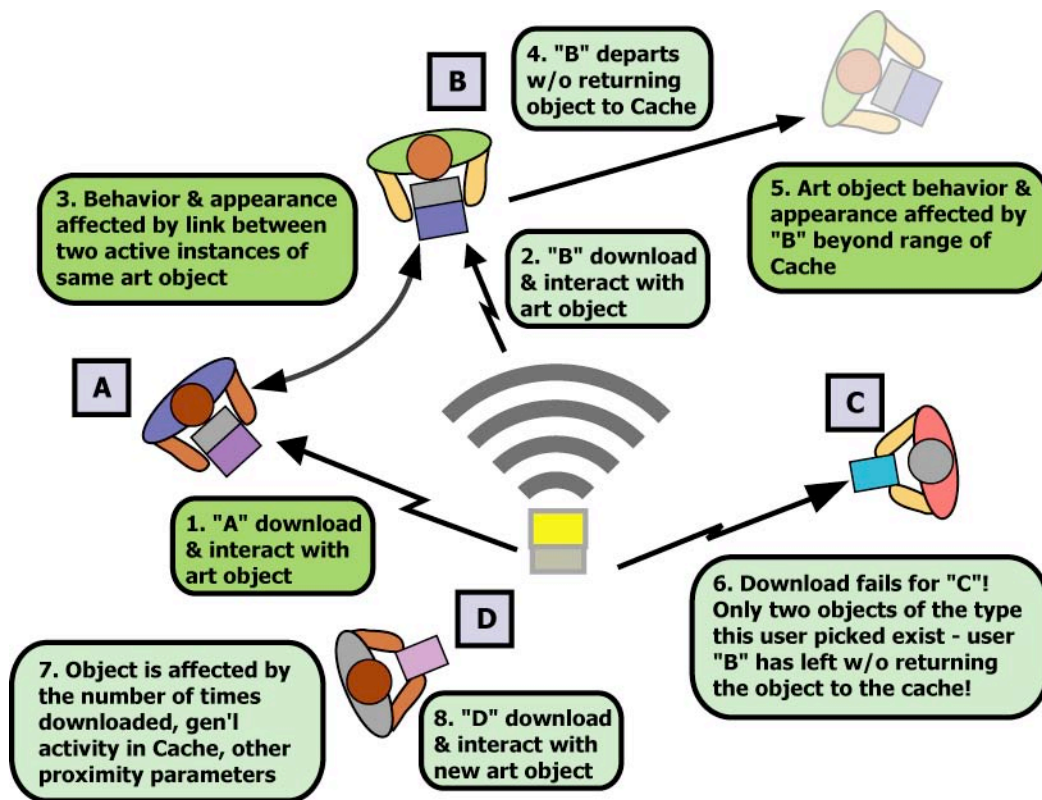
Example Scenario
One digital art object authored for the WiFi.ArtCache is called "Plant Life," authored by the polymedia artist Marina Zurkow. It has the proximity-influenced narrative described below. What unfolds in this narrative is affected by whether the object running on a hypothetical user's computer is in or out of range of the Cache's WiFi node, how many other objects are active while this user is in range of the node, and bits of communication that take place between various visitor's instances of the Plant Life object.
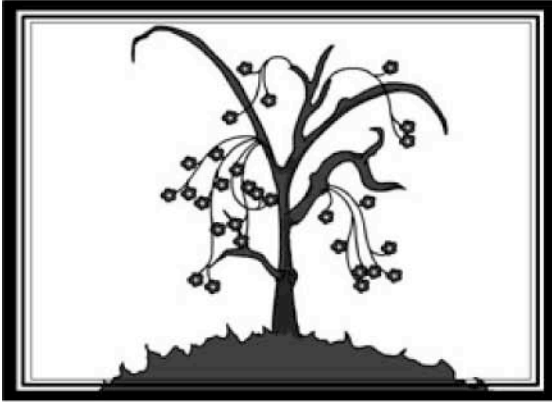
Plant Life
This WiFi.ArtCache object is designed to represent the vagaries of an imaginary forest. When you download Plant Life objects to your

WiFi enabled laptop, PDA or desktop, you see a small, lone tree. The tree sways lightly in the wind, and the day, as indicated by the sun low on the horizon, is young. As more people download these Plant Life objects, other trees begin to appear. The scene begins to assume a less barren appearance. Birds and a spider monkey appears, and your tree as well as others' begin to mature and bloom.

You've downloaded your Plant Life object to your mobile device so you can continue to interact with it later when you go home. But when you get home, the scene is different. It's late fall, and your tree is in a distinctive autumnal state. Leaves slowly fall to the ground in a pile, the sky is dark despite the fact that it is only three in the afternoon. Most markedly, there is no sign of activity. No other trees are around and the animals have all gone away.

B

4. "B" departs w/o returning object to Cache

3. Behavior & appearance affected by link between two active instances of same art object

5. Art object behavior & appearance affected by "B" beyond range of Cache

2. "B" download & interact with art object

A

1. "A" download & interact with art object

C

6. Download fails for "C"! Only two objects of the type this user picked exist - user "B" has left w/o returning the object to the cache!

7. Object is affected by the number of times downloaded, gen'l activity in Cache, other proximity parameters

D

8. "D" download & interact with new art object

"Plant Life" Appearance With No Social Activity WIthin Range of the WiFi.ArtCache - No Other Users Are Interacting With Instances of "Plant World." Absent Social Beings Engaged In Activities In A Bounded, Physical Space, "Plant World" Lies Dormant.

Other Users Are Engaged In Various ArtCache Activities Within Range Of The Cache - Other Users Are Interacting With Instances of "Plant Life." Engagement And Social Activity AreThe Pivots Upon Which This Piece's Visual Narrative Is Inflluenced.

"Plant LifeWhen You Have Moved Beyond Range Of The ArtCache. Your Location, Geography, And Physical Proximity To Other Social Beings Matters.

The Cache electronically advertises itself the same as a typical WiFi node. Once a user connects their computer to the node's WiFi access point, they open a web browser, type in any address and are automatically directed to the WiFi.ArtCache home page. From there one browses the available art objects within the Cache and chooses one to download. Once downloaded, the narrative of the artist-created object begins. The behaviors and visuals of these objects are wholly controlled by the Flash artists who have programmatic access to the rich proximity characteristics broadcast by the Cache.

Although the Cache typically contains several different art objects, each one made by an artist, these objects can respond to the general activity around the Cache *or* activity particular to just the downloaded copies of itself. For example, an artist may decide that their object should only be influenced by the number of copies of itself that are running, or they may decide that the narrative they are constructing should be informed by how many of *any* object has been downloaded. In either case, only activity occurring within range of the Cache's WiFi node is significant. If an visitor moves outside the range of the Cache and attempts to interact with their downloaded object, the behavior will be influenced by the fact that they have moved beyond the proximity of the Cache.

Motivation
WiFi.ArtCache is inspired by a paradox of the Internet: it makes it possible for us to stay in touch – with our family, colleagues, business partners, friends, and so forth - with the paradox that we may remain physically distanced. The Internet has divested proximity of its sense of closeness and touch. Semantically, proximity has been loosened of its sense of physical distance and material substance. By using proximity and the dance of bodies in a shared physical space as an interface modality, WiFi.ArtCache is designed to foreground this paradox, and the tension between being in touch, while being at a distance [3].

The Internet has always been about diminishing the constraints of physical geography and the perceived burden of distance, space and matter [6]. This project deliberately inverts this logic. WiFi.ArtCache is meant to remind us of a kind of materiality of

virtual worlds, and, through artist-made visual narratives, reveal the ways in which we actually share our bulky, physical space with our airy, ethereal data.

The abutment WiFi.ArtCache illuminates - where the data that swaddles social beings is made evident - is consequential and significant. The junction has a material and metaphorical quality that is refashioning public and private space – particularly as our data finds its way into more of our world's nooks and crannies [7, 8].

WiFi.ArtCache makes apparent the boundaries of networks, but does so not to suggest that the virtual and physical are different. This project is not one that relies upon binary distinctions between an existence either "on" and "off" the network . Rather, it is intended to suggest that we live in a world of hybrids where it isn't even possible to consider self as distinct from networks or data. But note that this is not the old 20th Century cyberfantasy of the self fully jacked into networks, leaving the flesh behind. That promise of that particular technology dream is, thankfully, passé. The purpose of seeing the world from the perspective of a shared existence with our data is to force us to change the way we think about the places we live, and to consider how we can share those places with our ulterior data in a livable, habitable, and aesthetically rich way.

Development Support
Conceived and developed during Summer and Fall 2003 R+D Residency at Eyebeam Atelier.

Exhibition History
Eyebeam Atelier, "Beta Launch" show
October 23 – December 13, 2003.
http://www.eyebeam.org/engage/exhibitions/betalaunch/beta_bleecker.html

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