accenture

Active Environments:
Sensing & Responding to Groups of Inhabitants

Joe McCarthy

accenture

Active Environments

Most environments are *passive* --
deaf, dumb & blind --
unaware of their inhabitants
and unable to assist them in a meaningful way.

In contrast, an *active environment* is
a **physical space**
that can **sense** and **respond *appropriately***
to the **people** and **activities** taking place
within it

accenture

Sunset @ 200MHz

An interactive project for SIGGRAPH 97 at Billboard Live on Sunset Boulevard

"Sunset"

Margaret Crane-Dale MacDonald-Scott Minnerman-Jon Weiet
Xerox PARC Artists In Residence Program (PAIR)

accenture

Public Information:
Documents, Spectacles and the Politics of Public Participation

"Sunset: 200 MHz in a 35mph Zone"

- Scott Minneman, Xerox PARC (CHI '98)
- Interactive fiction ("drive-by soap opera")
  - 18 characters, 2700 pictures, theme music
    - looping, multi-layer vignettes
  - Billboard Live: Two 9'x12' Sony JumboTrons, 104.7 FM
  - Garage-door openers, alarm keyfobs: pacing, segues, next vignette
- Research issues
  - Public expectation (what to do & when)
  - Weak interaction (clicks)
  - Unpredictable exposure (6 seconds to 60 minutes)
  - Low resolution (92 x 44 pixels)

accenture

Projected Realities

- Presence Project
  - Gaver & Dunne, Royal College of Art, London (CHI ‘99)
  - communicate attitudes: private --> public
  - “provocative awareness”
  - *psychogeography*: emotional topology of an area
    - Situationists
  - Goals
    - raise awareness, communication, presence
    - encourage subversion, local obsessions, play

accenture

Projected Realities: Input

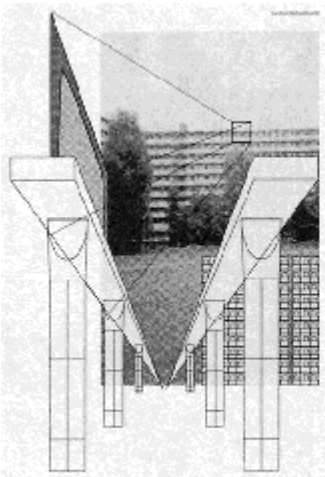
- Cultural probes: “gentle provocation”
  - 6 maps
    - “if Bijlmer were a body…” + precut stickers
  - postcards
    - “tell us a piece of advice”, “why do we have politicians”
  - disposable cameras
    - “what you will wear today”
    - “something beautiful”, “something ugly”
  - photo album
    - tell us your story in 6-10 photos

accenture

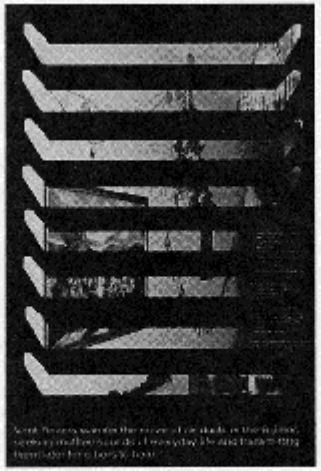
Projected Realities: Output

- Public displays
  - image boards along highways, railways
  - slogan furniture (benches with displays)
- Linked security cameras & monitors
- Ventrovers
- Psychogeographic pagers
  - fear / safety, boredom / interest

Projected Realities: Images

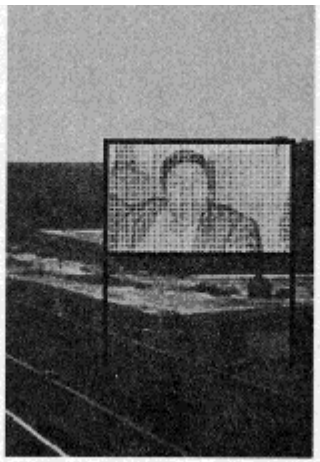


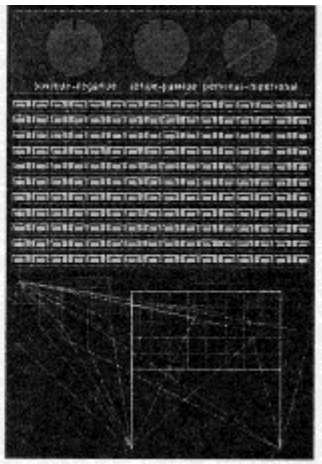
Early image board sketch



Vent rovers

Psychogeographic pager





MusicFX

accenture

MusicFX

- An active environment for the workout place
  - CSCW ‘98, IAAI ’99, CSCW 2000 (video)
  - Operational since November 1997
- Three components
  - Preference database
  - Group preference arbitration algorithm
  - Environmental “triggers”

accenture

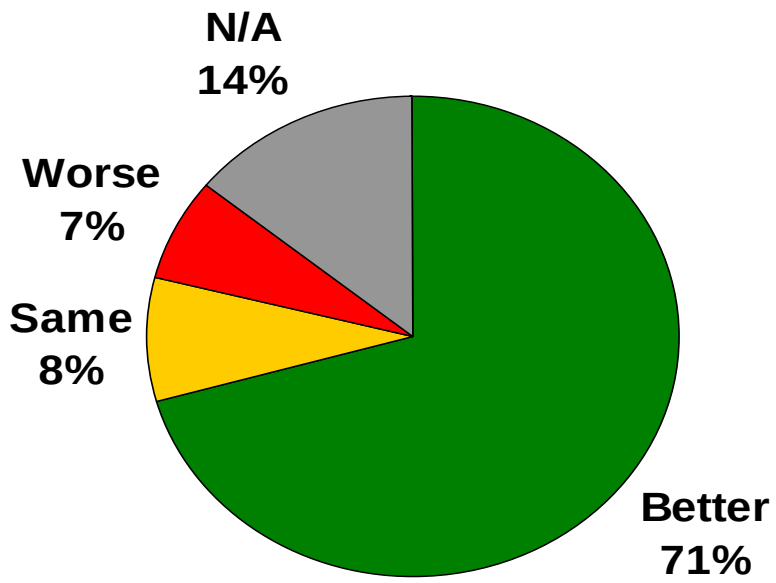
An example

i	*Genre* *Person*	A	B	C	D	E	GP_i	Pr_i
1	**Alternative Rock**	2	2	0	2	2	68	0.48
2	**Hottest Hits**	1	1	2	0	-2	38	0.27
3	**New Music**	1	1	1	0	0	35	0.25
4	**Hot Country**	2	0	0	0	-2	28	0.00
5	**Dance**	2	-1	1	-1	-1	28	0.00
6	**World Beat**	0	1	-1	1	-2	23	0.00
7	**Traditional Country**	1	0	0	-2	-2	17	0.00
8	**50's Oldies**	0	0	0	-1	-1	14	0.00
9	**Heavy Metal**	-1	-1	-1	-1	-2	4	0.00
10	**Polka**	-1	-1	-2	-2	-2	2	0.00

accenture

The Success of MusicFX

- Daily operation since November 1997
- Poll results (after 6 weeks)
  - +: increased variety, having some influence
  - –: abrupt changes, occasional “bad” music



accenture

From workout place to workplace

- We often talk/hear about a world filled with displays
  - "Walls in our offices & homes will be reactive displays"
    - Andries Van Dam, CACM, March 2001 (The Next 1000 Years)
      "User Interfaces: Disappearing, Dissolving, and Evolving"
- What will such a world be like?
  - What kind of content would be put on such displays?
  - How will the content be affected by context?
- UniCast, GroupCast & OutCast
  - Three steps toward ubiquitous peripheral displays

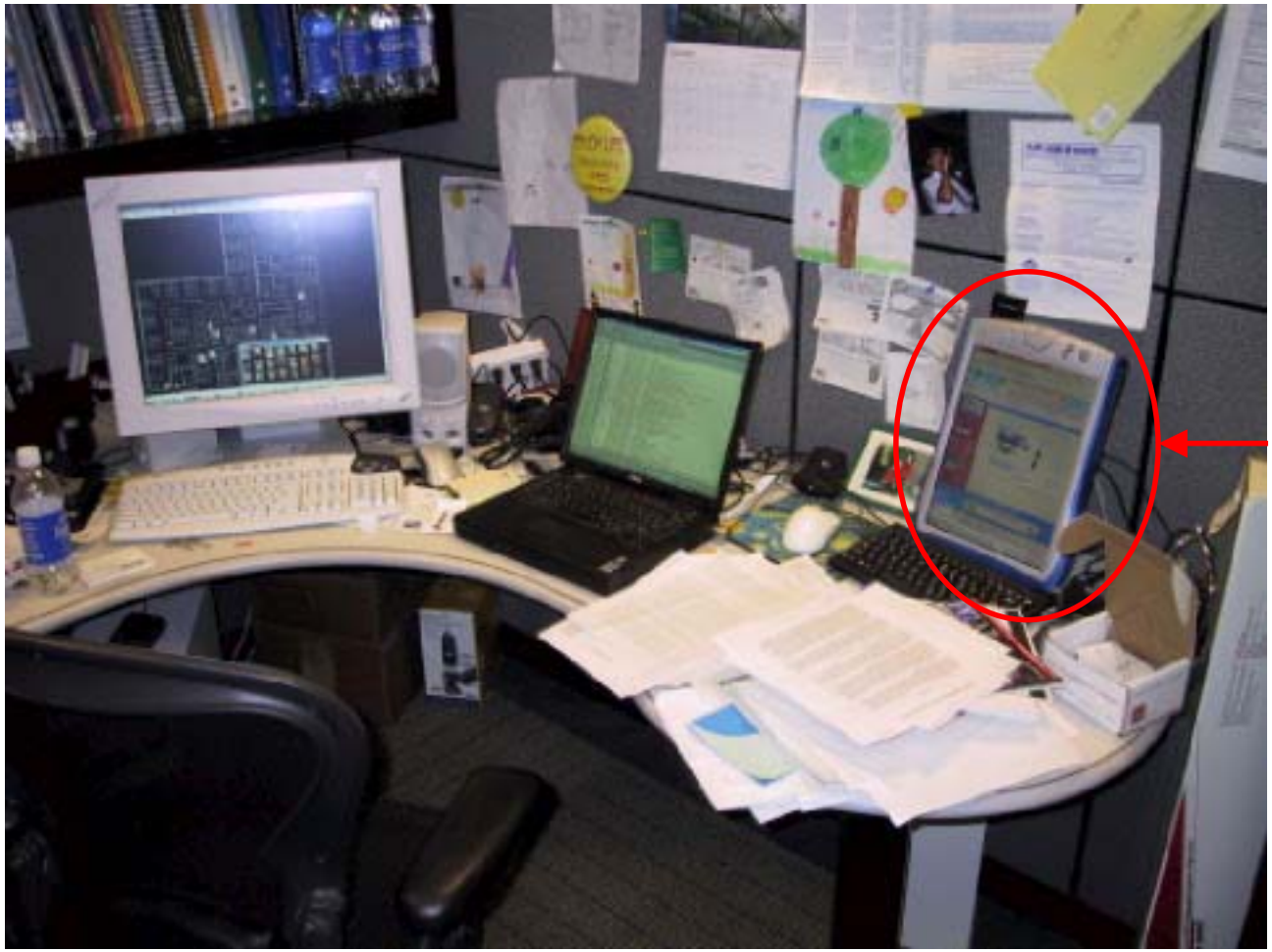
accenture

Peripheral Displays in 3 Contexts

- UniCast
  - Inside one's office
    - Interesting, non-urgent content
- GroupCast
  - In a public space
    - Conversation starters
- OutCast
  - Outside one's office
    - Content for visitors

accenture

UniCast in Context



unicast | Home : User Profile | Launch UniCast

User Profile

Overview . Add Module . Remove Module

Joseph F. McCarthy

Active Modules:

Config	Test	Deactivate	ActiveMap
Config	Test	Deactivate	Announcements
Config	Test	Deactivate	CSTaR Webcams
Config	Test	Deactivate	Factoids
Config	Test	Deactivate	Great Works of Art
Config	Test	Deactivate	Headlines
Config	Test	Deactivate	Reminders (Bread & Circus)
Config	Test	Deactivate	Reminders (Friday Seminar)
Config	Test	Deactivate	Stocks (media technology)
Config	Test	Deactivate	Stocks (technology)
Config	Test	Deactivate	Stocks (speech technology)
Config	Test	Deactivate	Stocks (biotech)
Config	Test	Deactivate	Stocks (nontech)
Config	Test	Deactivate	Stocks (new tech)
Config	Test	Deactivate	Stocks (b2b)
Config	Test	Deactivate	Stocks (indices)
Config	Test	Deactivate	Weather
Config	Test	Deactivate	Web Pages

Inactive Modules: Config Test Activate Stocks (Technology)

Update Arial ID: Arial ID: 1022 Lookup Arial ID Update

Update Refresh Rate: Refresh Rate: 15 seconds Update

unicast | UniCast : Joseph F. McCarthy : Web Pages

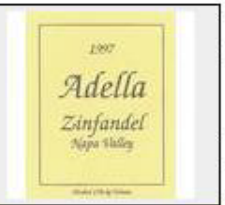
Pause | Back | Resume

Web Page http://features.yahoo.com/wineoftheday/index.html

AWESOME Deals! Click Here!

My Yahoo! Wine of the Day

1997 Adella Zinfandel, Napa Valley, California



Related Links from wine.com

- Purchase this Wine
- More info about this wine
- Monthly Wine Clubs

The addition of Sangiovese and Syrah to this Napa Valley Zinfandel gives the wine extra body, depth, and flavor. A big mouthful of a Zin that still offers supple smoothness and easy drinkability.

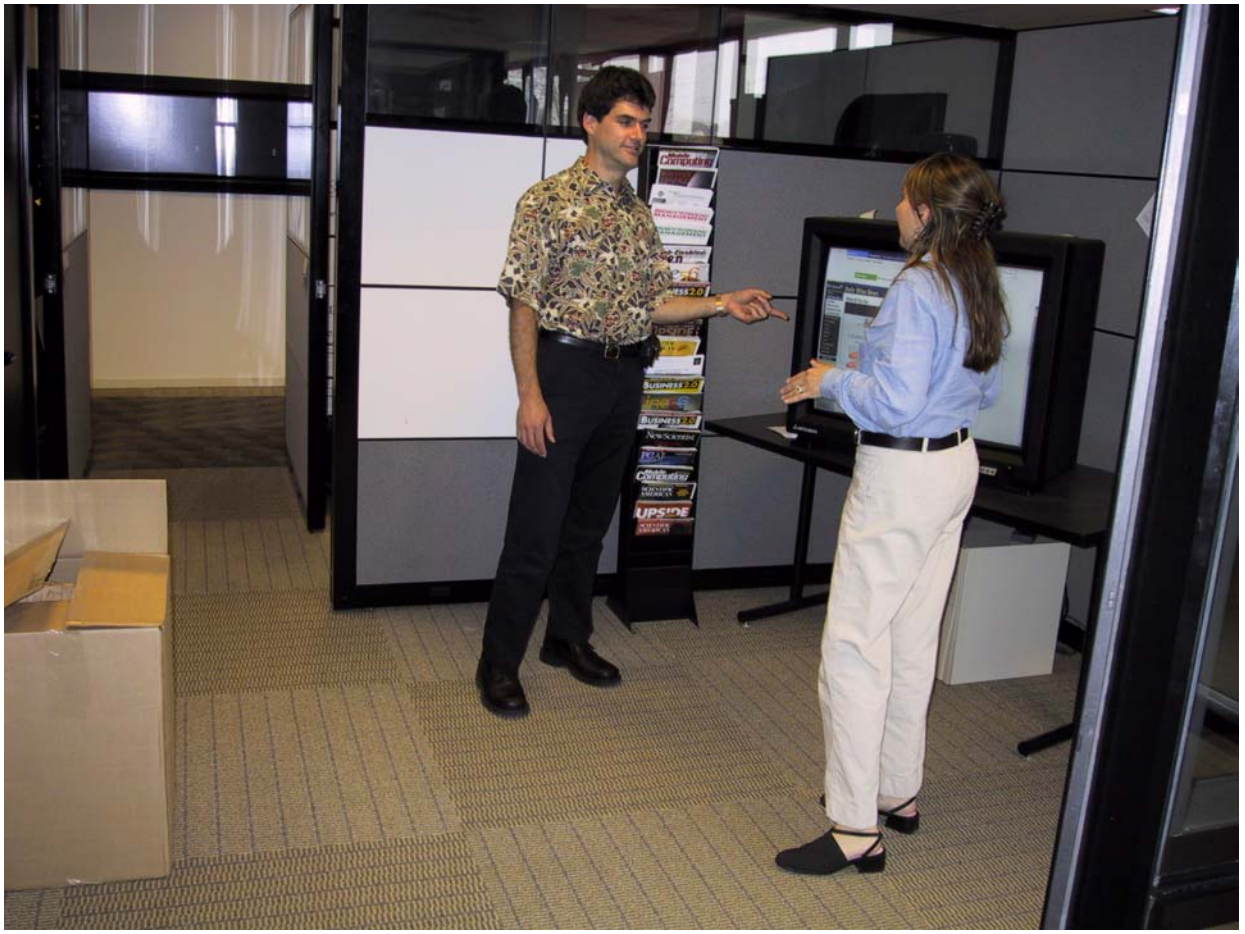
Adella is a brand-new winery, but these wines show the polish and deft touch of a veteran winemaker. The venture is the result of a collaboration between two former teammates at St. Clement Vineyards, Dennis Johns, a very talented winemaker, and Barbara Spelletich, now working together with their spouses. Each family has its own winery as well. Adella was created to keep a good team working together, and the results have paid off in spades. This wine makes you want to take a big gulp, but you're better off sipping to savor the nuances of this charming, lushly-packed beauty. The multi-faceted and sophisticated character of this Zinfandel showcases the considerable winemaking talent on this team. Adding Sangiovese and Syrah is a stroke of genius that gives the wine more depth and body, without taking it one degree off course. A perfectly targeted Zinfandel that hits the palate right in the bull's-eye.

Email this wine

Copyright ©2001 Yahoo! Inc. All rights reserved.
Privacy Policy - Terms of Service - Help

accenture

GroupCast in Context



accenture

GroupCast

- A system for the public display of content that is of mutual interest to passersby
  - Provide opportunities for conversation
    - Especially for conversationally-challenged (nerds)
  - Increase sense of “community”
    - Location matters -- what can we do for physically collocated workers?
    - Dynamic, project-oriented teams
  - Lay the groundwork for collaboration
    - More likely to collaborate with people I know

accenture

GroupCast Components

- Awareness system (IR badges & sensors)
- Profile of inhabitant interests (UniCast)
- Group Preference Arbitration algorithm
- Input / Output (sense / respond)

accenture

OutCast in Context

accenture

Active Environments: *Group* Issues

- What can we sense?
  - Who is this group?
    - detecting vs. identifying people
  - What do they want? (& how do we know?)
    - implicit vs. explicit
- How to respond appropriately?
  - ~~Foreground?~~
    - ~~Interactive TV?~~
  - Background
    - entertain (infotain?), provoke, present opportunities for interaction / understanding