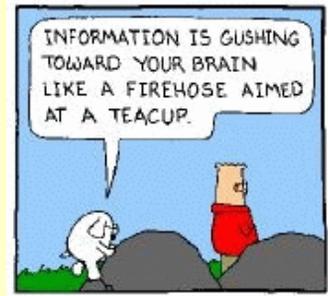


Notifications

Saul Greenberg



A fundamental issue with user interfaces is how to help users stay aware of information without being overly intrusive or distracting.

-from Sideshow: Providing Peripheral Awareness of Important Information. MSR-TR-2001-83

Strategies

Polling interfaces

- people repeatedly check or "poll" information
- e.g., visit the avalanche forecast site to see if conditions have changed

Problems

- easy to miss important events and critical updates
- memory burden: remember to poll, remember previous state
- excessive time and energy: have to find it, start it, navigate, etc.
 - partial solution: summarize results in one place

-strategies taken from Sideshow: Providing Peripheral Awareness of Important Information. MSR-TR-2001-83

Strategies

Alerts

- intentionally interrupt person when something important happens
- e.g., fire alarms, reminder windows, email updates...

Problems

- interruptions are also potentially distracting
- interface design:
 - decide *how* we interrupt people
 - decide *when* to interrupt people
 - decide *if* interruption is warranted given current context

-strategies taken from Sideshow: Providing Peripheral Awareness of Important Information. MSR-TR-2001-83

Strategies

Peripheral awareness

- fills our peripheral attention with information that envelops us without distracting us
- works - we have innate ability to stay aware of peripheral things
- e.g.,
 - the weather outside (if working by a window)
 - colleagues who are around
 - what others are doing...

Problems

- how do we create peripheral (or ambient) displays?
- how do we artificially find a balance between peripheral awareness and distraction?

-strategies taken from Sideshow: Providing Peripheral Awareness of Important Information. MSR-TR-2001-83

What are notifications?

Information delivered to you about events

- 'You have mail'
- Ringing telephone
- Postits placed on your screen
- Upcoming events (ads) in public places...

Notifications vs Information

- attention-getting
- directed to you
- relevant to you
- small units
- attract attention, and you can optionally take action on it



Notification systems

Computer systems that attempt to deliver

- current, important information
- in an efficient and effective manner
- that can be queried further

Can come from various sources

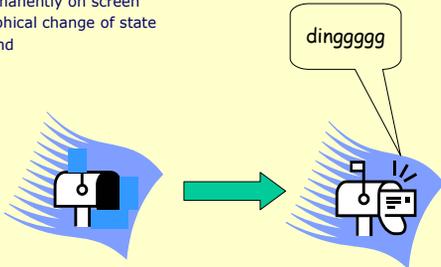
Can be presented in many different ways



Examples

Email notifier #1

- permanently on screen
- graphical change of state
- sound



Examples

Email notifier #2

- permanently on screen
- animated state



Examples

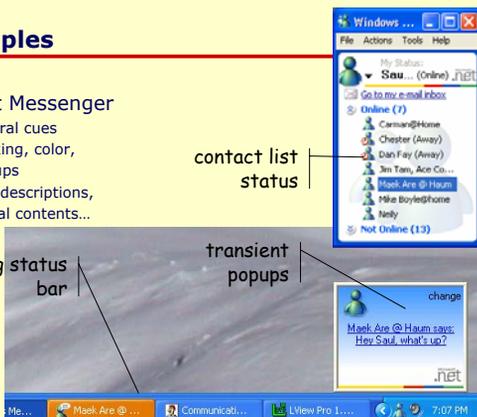
Instant Messenger

- several cues
- blinking, color,
- popups
- text descriptions,
- actual contents...

flashing status bar

contact list status

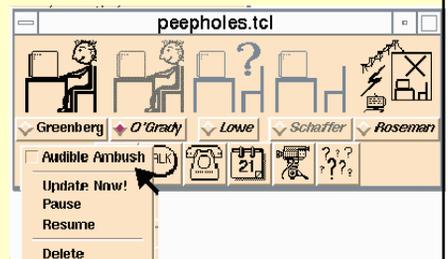
transient popups



Examples

Peepholes version 1

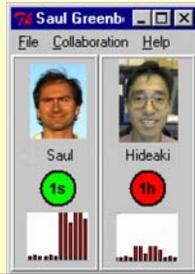
- graphical change of state
- sound (of someone typing)



Examples

Peepholes version 2

- fading images
- bar chart (motion in office)



Examples

Peepholes version 3

- video snapshots



Examples

Ticker tape (U Queensland)

- subscribe to messages
- appears as a marquee
- fades out over time
- animation, color, motion, temporary persistence...



Inspirations

Ticker tape (U Queensland)



Tickertape



Examples

CoffeeBiff (U Queensland)

- graphical change of state
- number (of people)
- cycles through names...



Examples

Physical but digital surrogates

- offload onto physical, peripheral display
- physically situated



With Hideaki Kuzuoka, Tsukuba

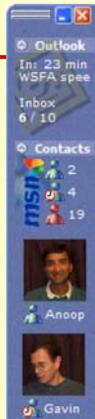
Examples



Hideaki Kuzuoka

Sideshow

designed to help people track pertinent, multiple sources of information



Sideshow

I have a meeting in 23 minutes

There are 6 unread and 10 total messages in my inbox.

2 of my buddies are online, 4 are online but unavailable, and 19 are offline.

Anoop is online (indicated by the icon and the picture of Anoop looking at me).

Gavin is online but unavailable (indicated by the icon and the picture of Gavin looking away from me).



Sideshow

Current information on how the stock market is doing.

There are 90 bugs in my bug database. 6 are high priority, 19 are medium priority, and 61 are low priority.

Current 5-day forecast for my region.

Snapshot of the traffic on the bridge I have to use to get home.

Map of the status of all the traffic in my region.

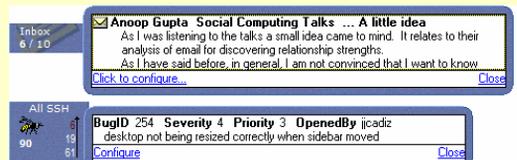
I can click the new button to add tickets to my sidebar.



Sideshow

Alerts

- fades in with summary of information



Sideshow

Tooltips

- quick detailed info access

Sideshow

Design principles

- make it always present
 - but at the periphery
- minimize motion
 - so its visually calm and not distracting
- make it personal
 - so its personally relevant
- support quick drilldown and escape
 - so people can retrieve highly detailed information and then quickly return to what they were doing
- make it scalable
 - so one can track many items (dozens?)

Notification Collage

GroupLab

Notification Server

Notification Server

Notification Server

