

COMS W4170

Case Study: Piles

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Piles Mander, Salomon, & Wong 1992

- Ethnographic study performed to determine how people deal with info
 - 13 Apple employees (marketing, support, HR)
 - Recorded videos of 30–60 min interviews in participants' workspaces
 - Described info they handle, how it arrives, gave tour of their workspace
 - Asked to judge nature of a set of test docs
 - Explained how they worked (would work) with assistants

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Piles Mander, Salomon, & Wong 1992

- Workspace artifacts

- Folders
- File cabinets
- Binders
- **Piles**



The SOTO Pile Box:
"perfect for keeping your
workspace clutter-free by
supporting the behavior of
piling work"

out-of-sight

Layering surfaces minimizes the appearance of piles. By locating piling surfaces below and behind the main workspace, your piles remain accessible yet private and out-of-sight.



Steelcase

The team was inspired by work on piles in the office

T. Malone, "How Do People Organize Their Desks", *TOIS* 83
<http://doi.acm.org/10.1145/357423.357430>

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Piles Mander, Salomon, & Wong 1992

- Results: Piles

- Hierarchy not needed or required for many tasks
- Self-revealing—browsable
 1. Edge browse
 - Look at outside edge, color, texture, thickness
 2. Restack
 - Lift each item from top in sequence, and place elsewhere
 3. Hinge
 - Hinge pile open at different points to inspect
 4. Spread out
 - Spread out pile contents to see all/many simultaneously

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Piles Mander, Salomon, & Wong 1992

- Results: Assistants
 - People who didn't have an assistant wanted one
 - Assistants
 - Filtered
 - Sorted
 - Created piles

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Piles Mander, Salomon, & Wong 1992

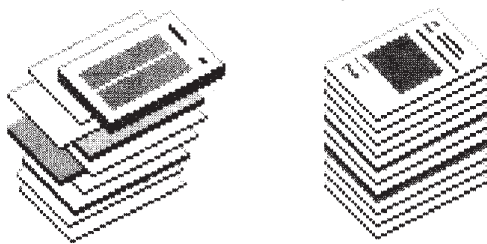
- Created interactive design sketches
- Used design sketches to guide group discussion

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Piles Mander, Salomon, & Wong 1992

- Design sketches for group discussion
 - User-created pile → sloppy
 - System-created pile → neat

User-created vs. system-created piles

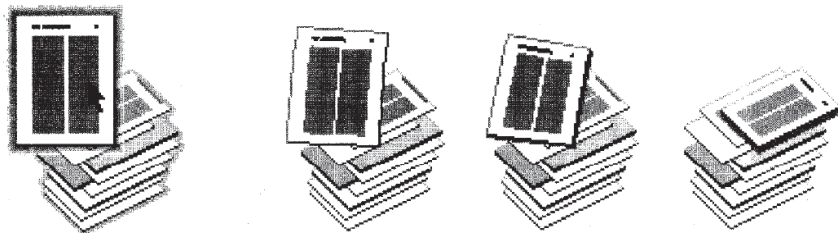


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Piles Mander, Salomon, & Wong 1992

- Design sketches for group discussion
 - User-created pile → sloppy
 - System-created pile → neat

Adding to a user-created pile

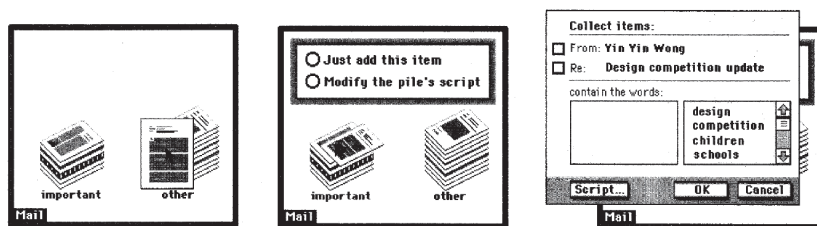


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Piles Mander, Salomon, & Wong 1992

- Design sketches for group discussion
 - User-created pile → sloppy
 - System-created pile → neat

Moving items from one system-created pile to another

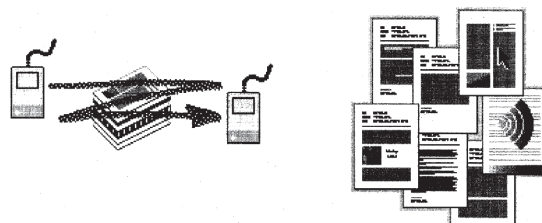


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Piles Mander, Salomon, & Wong 1992

- Design sketches for group discussion
 - Browsing
 - Edge browsing by virtue of design
 - Spread out

Spread out



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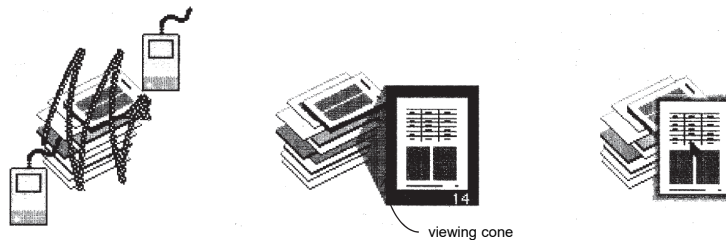
Piles Mander, Salomon, & Wong 1992

- Design sketches for group discussion

- Browsing

- Edge browsing by virtue of design
 - Spread out
 - Hinge (kind of)

Hinge (kind of)



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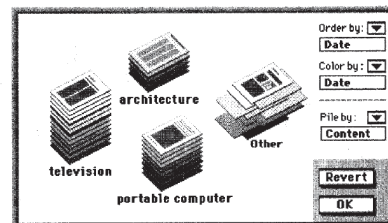
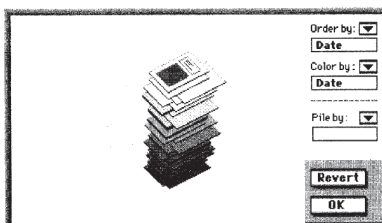
Piles Mander, Salomon, & Wong 1992

- Design sketches for group discussion

- Managing piles through visualization

Order by (for a single pile)

vs. Pile by (to create multiple piles)



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Piles Mander, Salomon, & Wong 1992

- Created interactive mockups to test a prototype
 - Ten non-technical users, within-subject
 - Videorecorded, think-aloud protocol

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Piles Mander, Salomon, & Wong 1992

- Created interactive mockups to test a prototype
 - Comparison of viewing cone browsing
 - Participants preferred *b* or *c*



(a) stationary



(b) side shift

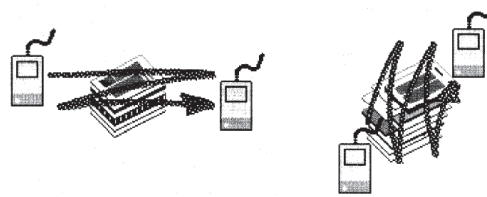


(c) document pull-out

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Piles Mander, Salomon, & Wong 1992

- Created interactive mockups to test a prototype
 - Comparison of double-click or gesture to browse (spread out/hinge) a pile
 - Participants preferred double-click



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Piles Mander, Salomon, & Wong 1992

- Document-centered vs. pile-centered mockups
 - In both, placing a document on a document created a pile
 - Difference: Was pile a distinct manipulable entity?
 - Document-centered: Documents could be moved individually by clicking and dragging, but piles could not be moved
 - Pile-centered: Piles could be moved by clicking and dragging, but not documents in piles
 - Participants divided as to which was best

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Piles Mander, Salomon, & Wong 1992

■ Issues

- If documents can be placed in a pile, can folders be placed in a pile?
- What happens if a document is placed on a folder?
- How to fit into Mac desktop metaphor?
- Adding groups of items to a pile? Naming piles? Ordering piles? Determining where a document goes in a pile? ...



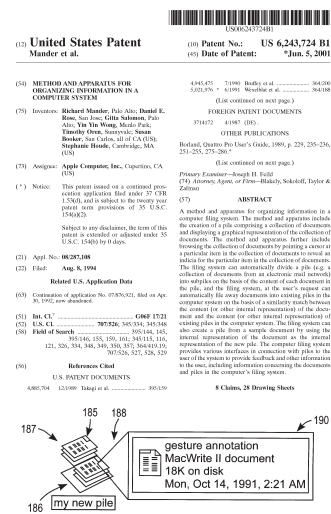
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Piles Mander, Salomon, & Wong 1992

■ Patent issued in 2001

■ And then,...

- E.g., see <http://www.asktog.com/columns/035SquanAdv.html>

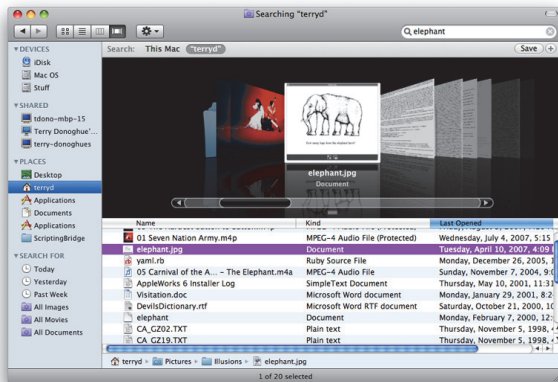


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October 26, 2007

Cover Flow in Mac OS X Leopard...

- Automatically generated piles with “hinge browsing” (viewing cone browsing)



https://developer.apple.com/library/mac/documentation/UserExperience/Conceptual/Quicklook_Programming_Guide/Articles/QLUserExperience.html

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October 26, 2007

Stacks in Mac OS X Leopard,...

- Items can be added to a *stack* (initially for downloads) in the dock, and displayed in a fan or grid

<https://support.apple.com/en-us/HT201955>



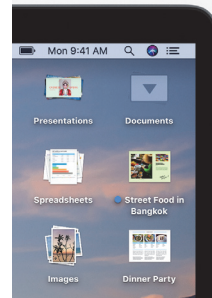
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September 24, 2018

Stacks in macOS Mojave, ...

- Stacks can now be on the desktop, are created automatically based on kind/date/tag, can be opened/closed, scrubbed through in place with a gesture, acted upon

<https://support.apple.com/en-us/HT209101>



<https://support.apple.com/guide/mac-help/organize-files-in-stacks-mh35846/mac>

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Piles in Other Work



<http://bumptop.com> → <https://bumptop.github.io/>

http://www.ted.com/talks/anand_agarwala_demos_his_bumtop_desktop

A. Agarawala and R. Balakrishnan, Keepin' it real: Pushing the desktop metaphor with physics, piles, and pens. *Proc. CHI 2006*, 1283–1292. <http://doi.acm.org/10.1145/1124772.1124965>

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