


# Informal Collaborative Note Taking for Classroom Education

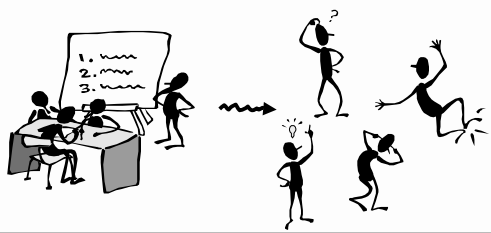
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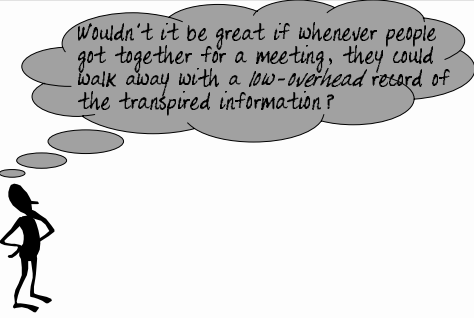
## Observation

We often leave meetings without a shared understanding about what occurred & what was important




## Vision

Wouldn't it be great if whenever people got together for a meeting, they could walk away with a low-overhead record of the transpired information?



## Problem: How to Create a Meeting Record?

✓ Option A: Private individual notes




✓ Drawbacks

- \* duplicated work
- \* individuals may miss some points
- \* miss others' perspectives

## Problem: How to Create a Meeting Record?

✓ Option B: Appointed scribe records




✓ Drawbacks

- \* scribe may not have necessary background
- \* scribe is overworked & can't participate
- \* notes biased to scribe's point of view

## Problem: How to Create a Meeting Record?

✓ Option C: Computerized meeting room



✓ Drawbacks

- \* expensive
- \* can't have meetings anywhere, anytime
- \* computers may impede interaction

### "Crystallized" Vision

Use PDAs and synchronize after the meeting!

### How NotePals Works

Meet in any environment

①

Take free-form ink notes on PalmPilots/Workpads\*

②

\*PalmPilots/Workpads are becoming ubiquitous

### How NotePals Works (cont.)

Dock Pilots with PCs & press "HotSync"

③

Browse notes on the Web

④

### NotePals User Interface (cont.)

Problem: HWR, Size & Res.

- ✓ Free-form ink notes
  - \* don't think about HWR
- ✓ Focus area lets users draw large text (2-3x)
- ✓ Context area shows entire page
- ✓ Move "cursor" with
  - \* gestures in focus area
  - \* dragging context area box

### Web-based Note Repository

Problem: How to Share & Use Notes

- ✓ Merge all notes on web
- ✓ Sort/Filter notes by:
  - \* project
  - \* creator
  - \* date
  - \* stationery type
    - action item, contact...

### Web-based Note Repository (cont.)

Issue: Follow-up

- ✓ View notes at full size
- ✓ Respond online

## NotePals for Classroom Note Taking

- ✓ Students always want slides in advance
  - \* often not practical or advisable
- ✓ NotePals solution
  - \* synchronize notes w/ presentation (slides or A/V)
  - \* students can browse their own notes w/ slides
  - \* students can share notes & cooperate
- ✓ Hardware requirements
  - \* Workpads for students
  - \* server space for repository
  - \* wireless networking for synch. (e.g., paging)

## Vision

Wouldn't it be great if whenever people got together for a meeting, they could walk away with a low-overhead record of the transpired information?



If we could just share our notes easily with each other we might end up with a good record of what happened! Has Prof. Landay thought about using PDUs? We could probably get a bunch of Newtons for cheap!!!

## Advantages of our Approach

- ✓ Lightweight infrastructure
  - \* no expensive hardware or special rooms
- ✓ Lightweight process
  - \* supports any style of meeting
- ✓ Lightweight interface
  - \* free-form ink lets users focus on meeting
- ✓ Lightweight sharing
  - \* share load of record keeping
  - \* not limited to a single perspective

## Current Work

- ✓ Better web organization & filtering
  - \* offline HWR & ink-based search
- ✓ More user testing and feedback
  - \* how does sharing change note taking?
    - will students share notes?
    - does sharing help teams?
  - \* works well in several other domains
    - small group notes (w/ no current scribe)
    - conference notes
      - + 300 notes taken by 7 individuals at CHI last week
- ✓ Synchronization with slides

## Contributions to IBM

- ✓ Great exposure with lots of students
- ✓ Improvements in classroom education
  - \* shared note taking is just the start...
- ✓ If it works well, everyone will need to buy
  - \* workpads
  - \* networking
  - \* servers
- ✓ Research collaborations
  - \* e.g., Noi Sukaviriya @ Watson

## Informal Collaborative Note Taking for Classroom Education

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