The Gartner Hype Cycle

This is where things get interesting.
Technology context – Early 90s

- Before WWW was big (think AOL)
- Wireless data synchronization was not a thing
- Before mobile phones
- Laptops were for portable use cases
- People carried paper organizers
# Scheduling: Zoomer vs. Newton

<table>
<thead>
<tr>
<th>Action</th>
<th>Newton</th>
<th>Zoomer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule a staff meeting today from 9-10</td>
<td>1. Drag time</td>
<td>1. Click on time</td>
</tr>
<tr>
<td></td>
<td>2. Write info</td>
<td>2. Write info</td>
</tr>
<tr>
<td></td>
<td>Time (w/o text): 2-3 sec.</td>
<td>3. Set start time</td>
</tr>
<tr>
<td></td>
<td>Time (w/HWR): 12-20 sec.</td>
<td>4. Click OK</td>
</tr>
<tr>
<td>Move a mtg to different time</td>
<td>1. Drag to top of screen</td>
<td>5. Set end time</td>
</tr>
<tr>
<td></td>
<td>2. Click on new date</td>
<td>6. Click OK</td>
</tr>
<tr>
<td></td>
<td>3. Drag to correct time</td>
<td>7. Click OK</td>
</tr>
<tr>
<td></td>
<td>Time: 8-10 seconds</td>
<td>8. Click OK</td>
</tr>
<tr>
<td>Delete a mtg</td>
<td>1. Scrub</td>
<td>1. Open event</td>
</tr>
<tr>
<td></td>
<td>Time: 2-3 seconds</td>
<td>2. Delete</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Click OK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time: 8-10 seconds</td>
</tr>
</tbody>
</table>
Fast, accurate, frustration-free recognition. Just write on your Newton or Zoomer and watch typed text instantly appear.

For Zoomer

Recognition that works.

GRAFFITI™
Power writing software for your PDA.
Normal alphanumeric gestures

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 0 1 2 3 4 5
6 7 8 9 space return shift caps lock backspace
Learnings from Graffiti

• Customers will trade a small effort for significant benefit
• Absolute speed and accuracy aren’t as important as overall experience
• Value of heads-up interaction
The “$0 Billion industry”

MessagePad 100
- 7.25”
- 0.9 lbs.

MessagePad 2000
- 8.3”
- 1.4 lbs.

“Touchdown”
- 4.7”
- 0.4 lbs.
Palm Pilot

“Technology that doesn’t suck”

- Fits in pocket
- Fast
- Syncs with your computer
- Battery lasts for weeks
Constraints

- 160 x 160 monochrome display
- 16 MHz processor (no animation, drag and drop, etc.)
- 128k storage
Palm Computing Confidential

Note:
- Tuesday = blank arrow example
- Wednesday = full arrow example w/11pm data
- Friday = full arrow example
- Physical arrows and Date Book button work
Every pixel counted - layout
Every pixel counted – font design

• 160 pixels / 5 pixel width = 32 letters / line
• 160 pixels / 6 pixel width = 26 letters / line

1 pixel buys 23% additional text
FAST
SIMPLE
INTUITIVE
Date picker

- Two taps to get to any day in the year
- No OK button – low penalty for error
Time picker

- 2-3 taps to set time
- Default hours – work day
FOR SPEED:
MAXIMIZE NUMBER OF ITEMS ON THE SCREEN
FAST
SIMPLE
INTUITIVE
WHY IS THERE NO MOORE’S LAW FOR UX?
Working memory is a bottleneck
Hardware simplification
Visual simplicity
FOR **SIMPPLICITY**: MINIMIZE NUMBER OF ITEMS ON THE SCREEN
WAIT, WHAT?
INSIDE THE

SOVIET

ARMY

VICTOR SUVOROV

Foreword by General Sir John Hackett
Solving the paradox
Frequently used features must be fast

(But infrequently used features don’t)
Only a few features are used frequently

Usage of spreadsheet features (n=505)

- >80% of usage
- <20% of usage
- 0% of usage

Source: http://portal.acm.org/citation.cfm?doid=134347.134353
Paradox: efficiency vs. simplicity

- Simple: Must have few items on screen
- Fast: Must have many items on screen
Restate the problem

• Simple: Must have few items on screen

• Fast: Only need a few items on screen
Redraw the pie chart as a histogram
On screen /one tap
• Look up
• New
• View details

Two taps
• Edit contact
• Delete contact

Multiple taps
• Attach note
• Delete note
• Rename custom fields
“HotSync”
Origins

• The vision of freedom from your PC
Invisibility vs. control
FAST
SIMPLE
INTUITIVE
Familiar is intuitive – leverage what works

- Menu system
- Common controls (buttons, checkboxes, etc.)
- Scroll bars (from version 2)
Diverge when appropriate

Mutually exclusive selection (radio button equivalent)
Numeric keypad
System behavior

- Single-tap to launch app
- File system
- Launch app in known state
Text editing – early designs
Text editing – edit in place
UNORTHODOX OPTIMIZATION
(A.K.A. “DO THE RIGHT THING”)
“I JUST WANT TO...”
“IT’S INTUITIVE ONCE YOU FIGURE IT OUT!”
Challenging the app / record model
Infrared data transfer

One-touch business card beaming
LET’S MAKE A PHONE
Ringer switch
Carrier requirements
ONCE MORE,
WITH FEELING
“First such converged device to not be described using the term brick.”

– CNET
1\textsuperscript{st} generation keyboard interaction

- Hybrid stylus/keyboard model
- Patterned after PC mouse/keyboard model
- Text entry is problematic
2\textsuperscript{nd} generation keyboard interaction

- Centralize control
- Add focus
Treo 650

Carrier requirements
• Needs a removeable battery
• Need send/end keys
• Needs a numeric (10-key) pad
ZEN OF PALM: HOW DO YOU FIT A MOUNTAIN IN A TEACUP?
Bleeding-edge design

- When technology is immature, under-promise and over-deliver
- Understand the 4% (“I just want to...”)
- Apply asymmetric design and make hard tradeoffs
- Sweat the details
THANK YOU
AND GOOD LUCK!