

---

# PDA

**Main design problems – cont.**



# Main design problems of mobile UI

## 1. Usage of the screen space

- 1a. Small screen space
- 1b. Flexible user interfaces

## 2. User interaction

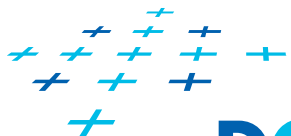
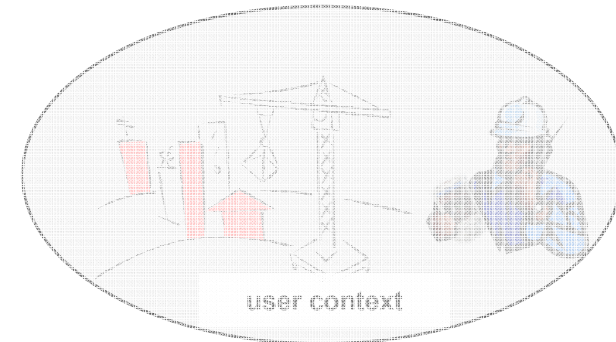
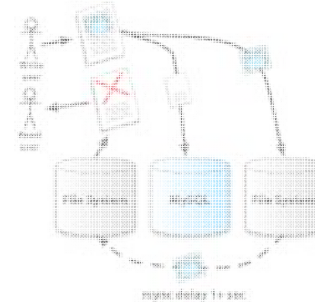
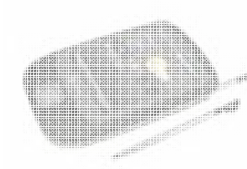
- 2a. Handling the user input
- 2b. Direct pointing (stylus/hand)

## 3. Design generally

- 3a. Guidelines
- 3b. Strange behavior

## 4. Exploiting context

- 4a. frequent changes
- 4b. variety of parameters
- 4c. context driven UI



# 1a. Usage of the screen space – small screens

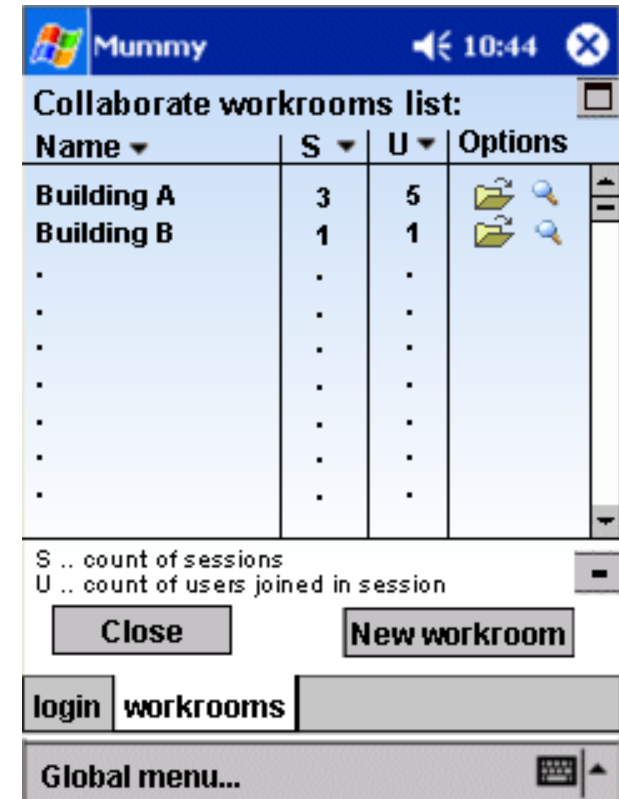
---

- Information grouping
  - principles
  - mechanisms
- Presenting elements in lists
- Information packing
- Scrolling mechanisms



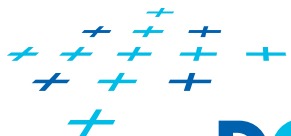
# 1a. Information packing – mechanisms

- Reducing white space
  - text based
    - condensed fonts
    - text structure redesign (e.g., removing line breaks)
  - graphical based
    - layout redesign
- Reducing the content part
  - text based
    - reducing font size
    - summarization, keywords, show/hide
  - graphical based
    - zooming techniques
    - focus & context techniques
- Reducing the space occupation of UI controls
- Why do we perform packing?



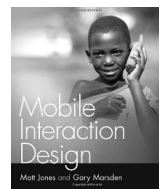
# 1a. Information packing – use-cases

## ■ Information browsing (WWW portal)

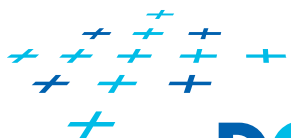


# 1a. Information packing – use-cases

- 1D browsing
  - horizontal scrolling removal
  - white space reduction
- 1.5D browsing
  - vertical scrolling reduction
  - inside one page vs. more pages
  - summaries
    - incremental
    - keywords
    - summary
- 2D browsing
  - graphical based approach
  - zooming
  - magnifying pop-ups
  - collapse-to-zoom
- Information visualization
  - Overview first (Shneiderman, 1996)
  - Focus + context (Card et al., 1999)
  - Fish-eye lens (Furnas, 1986)

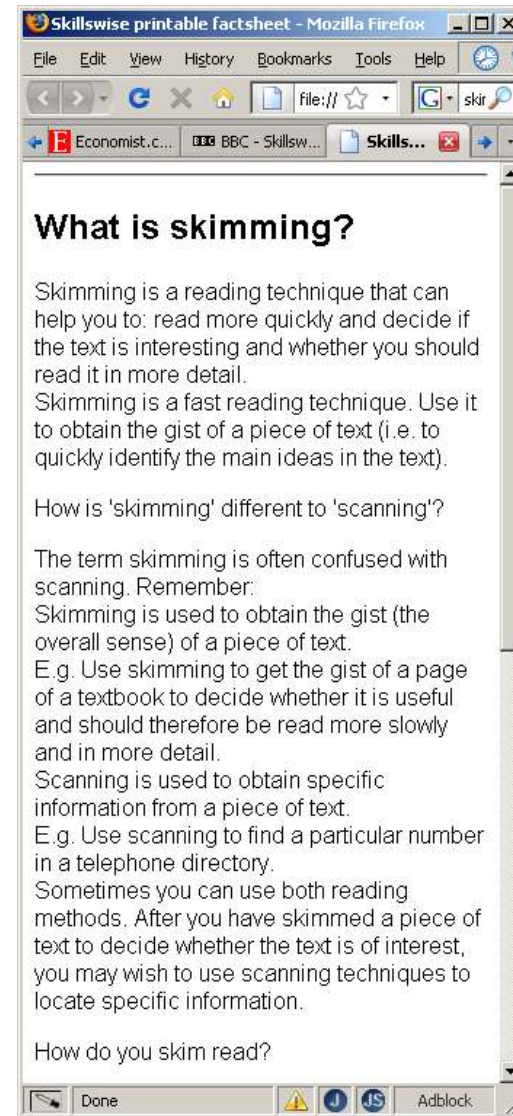


Ch 9.3.2



# 1a. Information packing – use-cases

- How the user actually reads?
  - skim reading
  - How to support this?
    - sections
    - keywords



# 1a. Information packing – use-cases

---

Je to bílý ovladač s poutkem na zápěstí, který monitoruje pohyb ve všech směrech, včetně rotace. Navíc má na sobě tlačítka směrového kříže a ještě nějaká další a nejlépe poslouží při hraní her. Že jsem právě popsal ovladač k herní konzoli Nintendo Wii? Ano, ale zároveň také **nový** ovladač Asus Eee Stick.



Nové ovladače Asus Eee Stick ▪ ovladač konzole Nintendo Wii

## Všemi směry

Asus Eee Stick je nové příslušenství určené pro počítače Asus Eee a Asus Eee **Box**. Ovladač převádí fyzické pohyby rukou na adekvátní pohyby na obrazovce **počítače**. Uplatnění najde především u zábavných funkcí a her, ale hodit se samozřejmě může jako dálkový ovladač.

Asus nabízí rovnou dvě verze svého nového ovladače – jednu s joystickem, druhou s tlačítky. Oba s počítačem fungují prostřednictvím USB vysílače fungujícím na frekvenci 2,46 GHz s dosahem až 10 m. Součástí výbavy ovladačů jsou i vibrace. Napájení obstarávají dva běžné AA články, které by měly vydržet až 72 hodin aktivního provozu.

Vestavěný snímač pohybů ovladače Eee Stick nabízí **tři různé provozní režimy**:

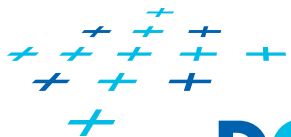
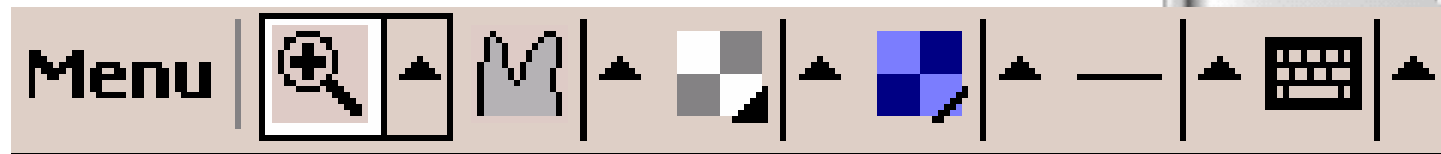
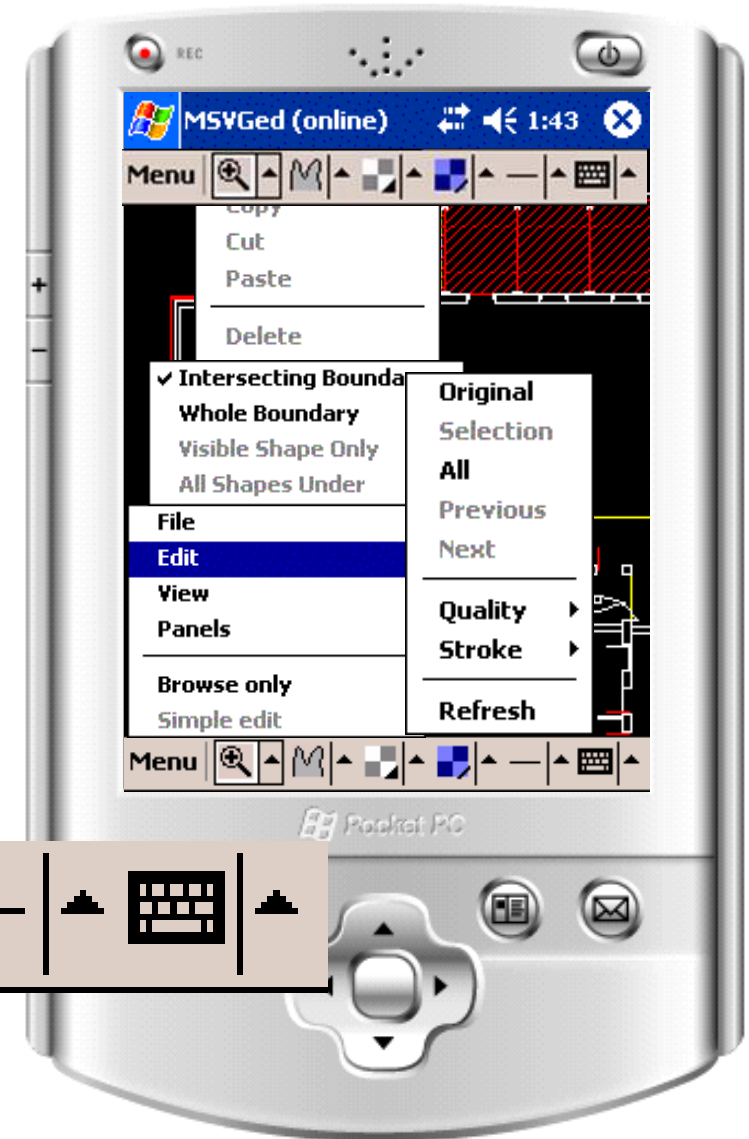
### 1. 3D pohyb





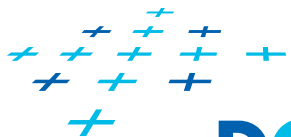
# 1a. Information packing – use-cases

- Beyond traditional packing techniques
  - RSS
  - alternative UI controls

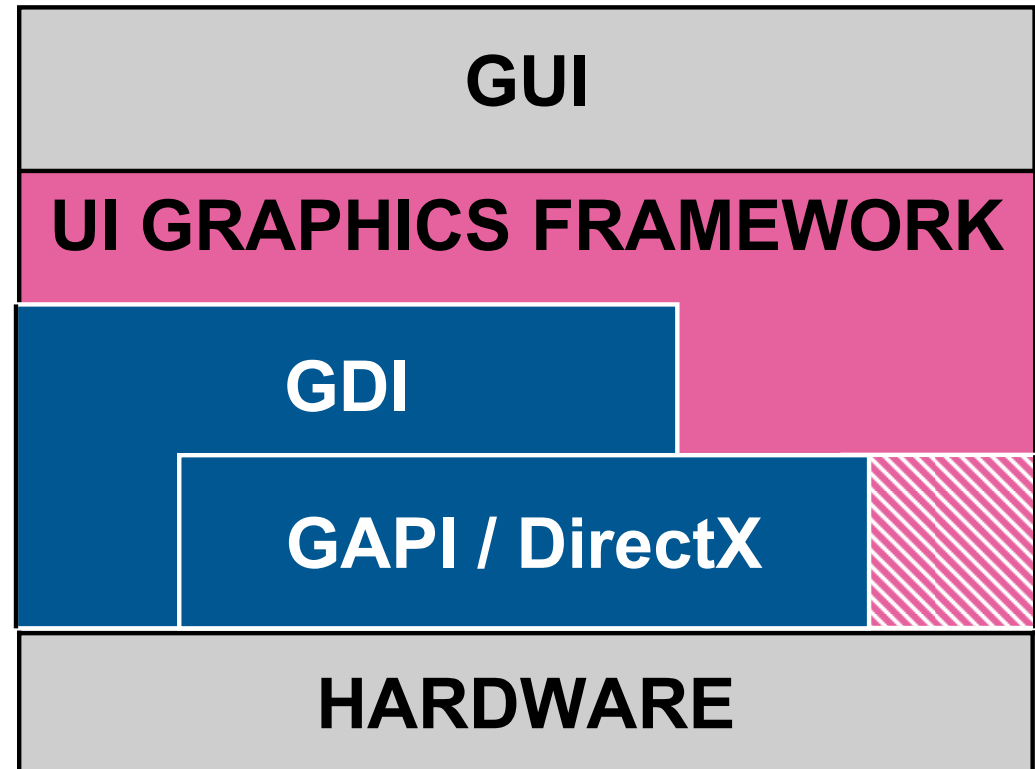
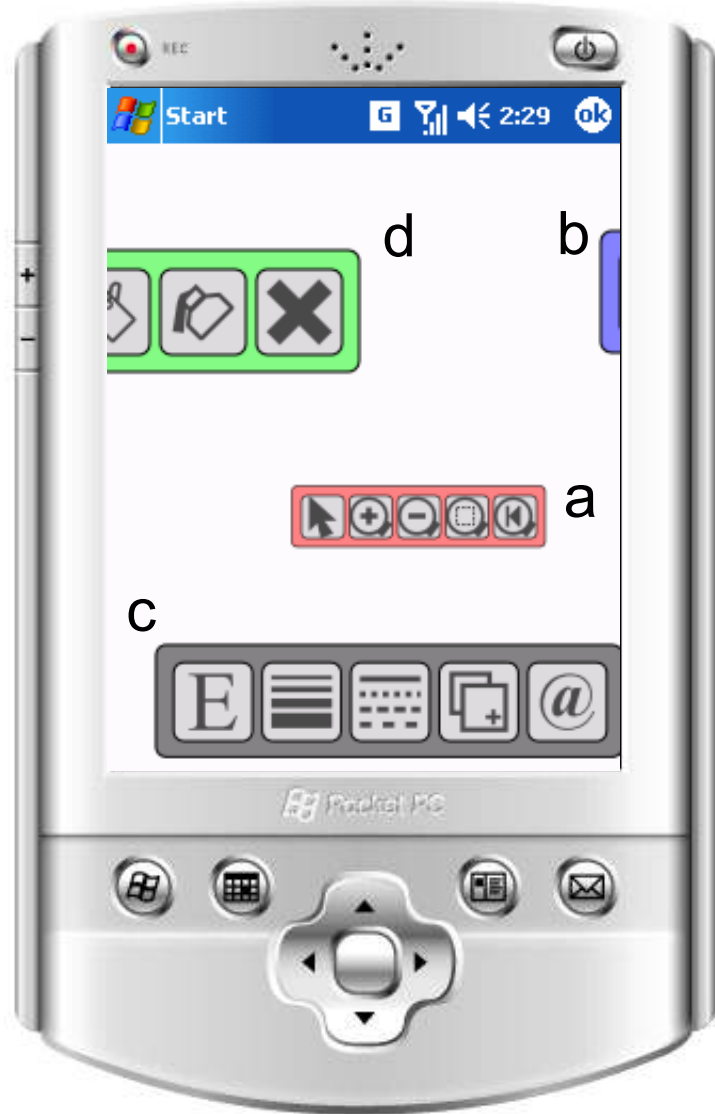


# 1a. Information packing – floating toolbars

- Position change
- Hide behind border
- Change the size
- Different colors



# 1a. Information packing – floating toolbars



# 1a. Presenting elements in lists, scrolling

## ■ What is the main problem?

- too much scrolling (vertical and horizontal)
- Solution?
  - selection
  - projection
  - sequence and size
  - more lines per item
  - more when selected

## ■ Select – open dilemma

- user uncertainty
- problems with scrolling
- Solutions?
  - Symbian
  - BlackBerry

## ■ Scrollbars vs. stylus/finger

## ■ Is there more lists on PDAs or PCs?

**Pocket\_PC**  
File Zoom Tools Help  
**Users-Roster** 8:55  
User list  Only online users

O.	Name	Username
	msvgged_2@kmob2	msvg
	msvgged_3@kmob2	msvg
	msvgged_4@kmob2	msvg

User Details Message Chat

Login Client Users

**Mummy** 10:44  
**Collaborate workrooms list:**

Name	S	U	Options
Building A	3	5	
Building B	1	1	
.	.	.	
.	.	.	
.	.	.	
.	.	.	
.	.	.	
.	.	.	
.	.	.	
.	.	.	
.	.	.	
.	.	.	

S .. count of sessions  
U .. count of users joined in session

Close New workroom

login workrooms

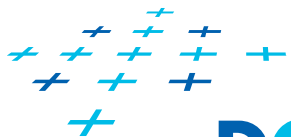
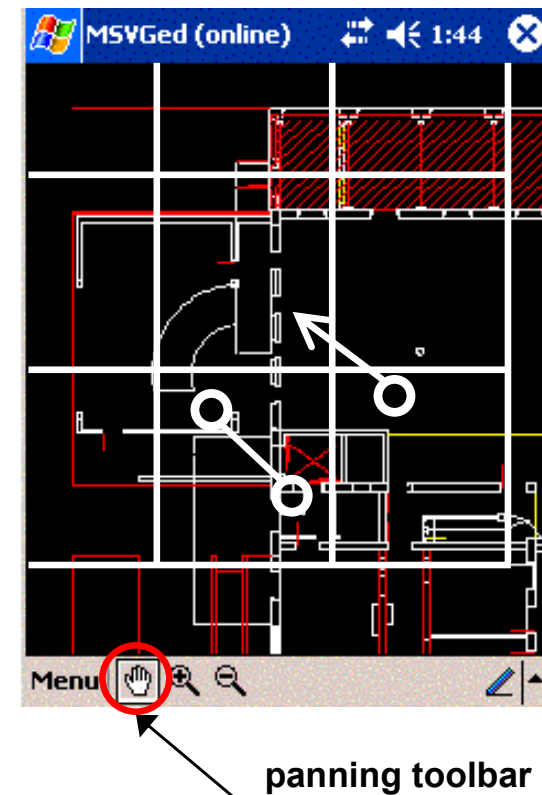
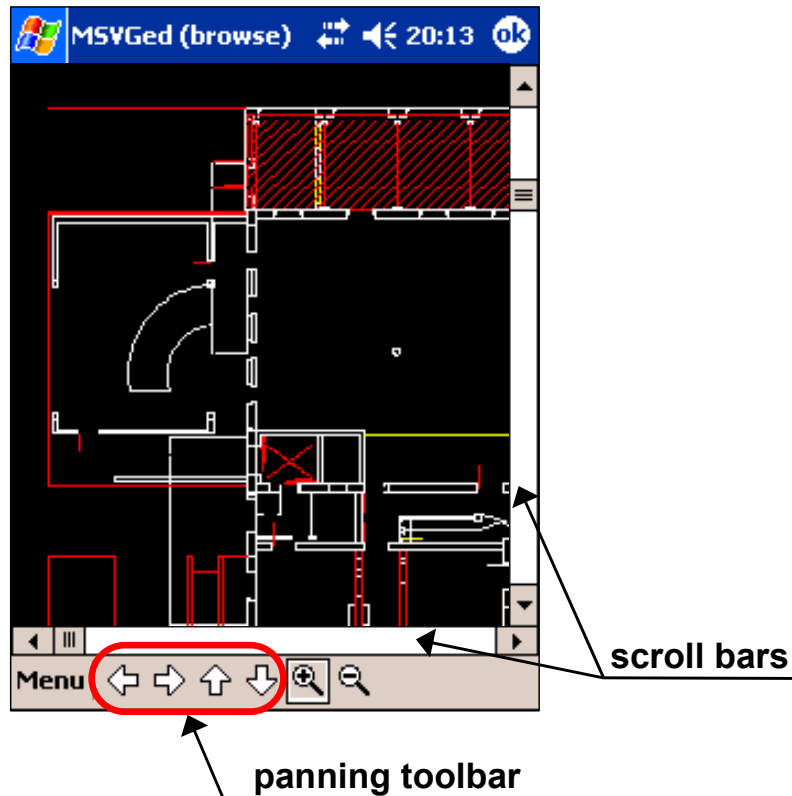
Global menu...

T-Mobile CZ EDGE 11:11  
pnanda@rim.com 18:29  
Fw: Device Status Info...  
donotreply@bl... 16:05  
This email account is...  
15:46  
14:23  
14:22  
8  
17:07



# 1a. Scrolling mechanisms

- Scroll bar vs. grasp hand
- Slow response -> feedback problem



---

# Thank you for attention

