Using PDA to transform the long MDS-HC evaluation form into a favored system

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Brisbane, Australia
August 21, 2007

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Backgrounds

- Basing on a ***well-developed and multi-purpose*** homecare evaluation instrument
- Looking for a ***simple and cost-effective*** mobile solution
- First Candidate: ***Palm-based PDA*** *(due to battery and robustness factors)*
- Challenge: ***Easy-to-use Interface*** from users' perspective

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Methods: Instrument

- The international ***InterRAI*** Instrument[1]
- A 20-A4-page-paper-based ***long form*** composed of 225 assessment questions from18 categories, such as cognition, physical functioning and structural problems

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Methods: Mobile Solution

- Palm-based Sony NX70V/TJ37(wireless)/Treo 600 series(phone)
- Development:
  - A development team of nursing users, nursing programmers and PDA programmers
  - prototyping approach
  - NSBasic 5.0
- Evaluation
  - a convince sample of 24 subjects
  - Davis' Technology Acceptance Model

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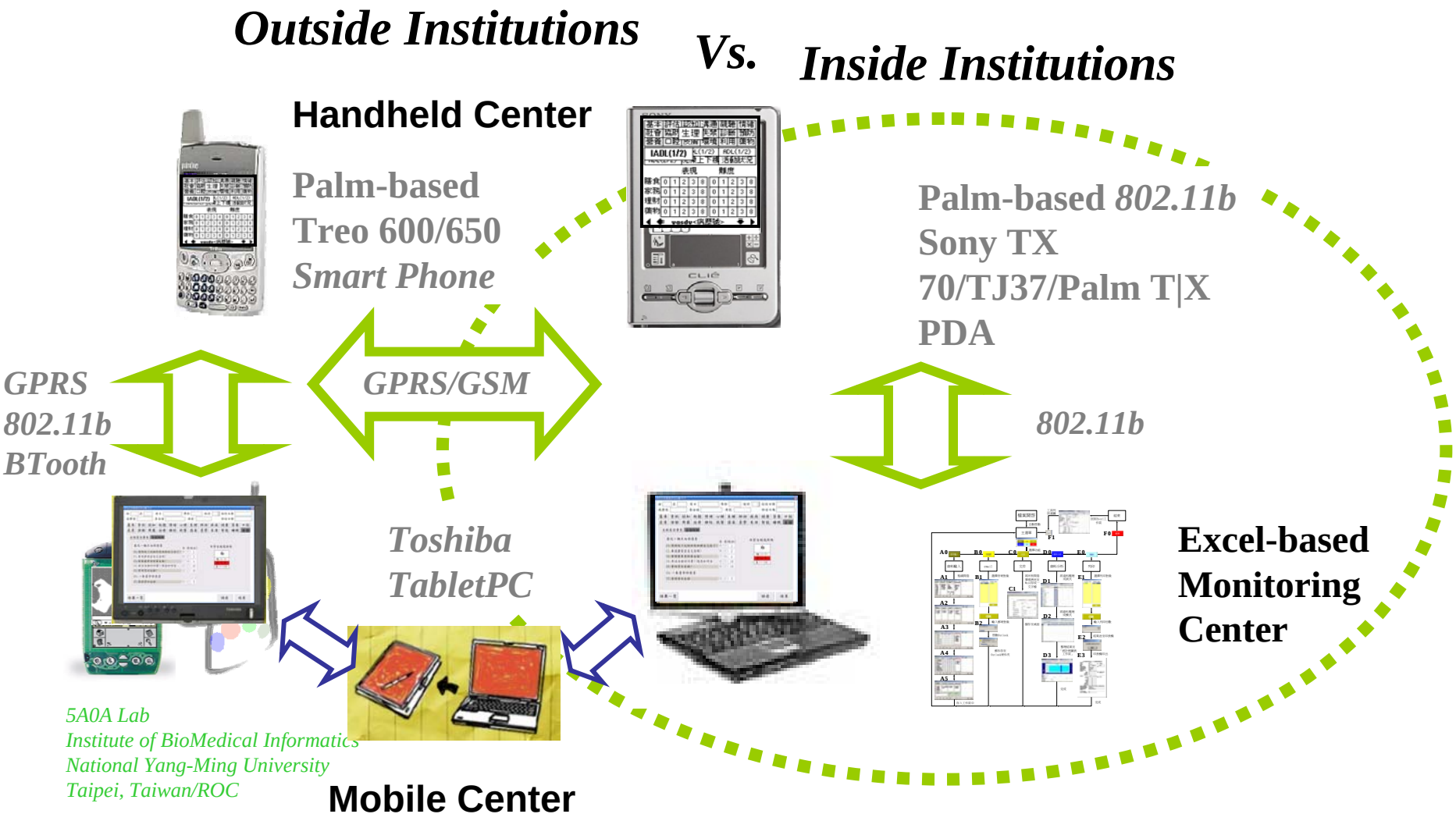
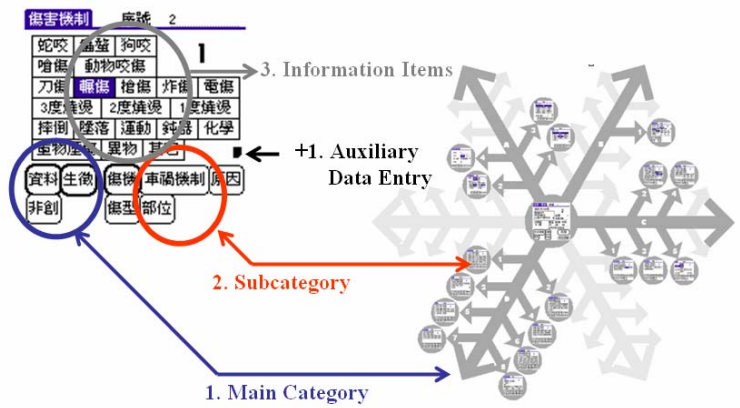
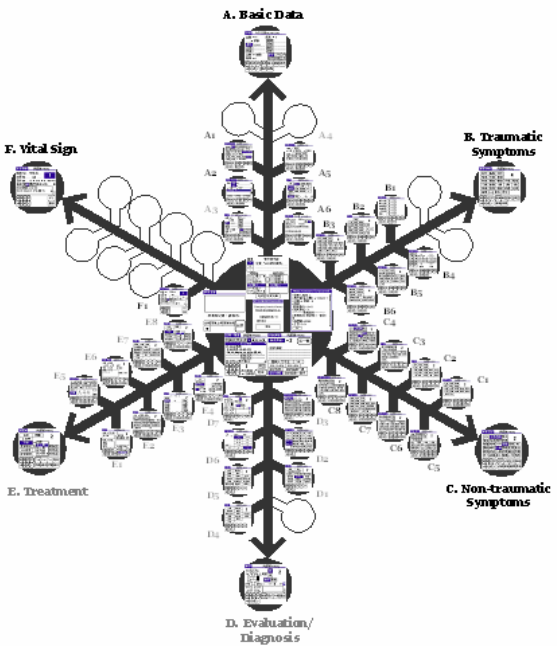
Mobile System Structure



PDA Interface Design

- Practically proven effective design protocol[2,3]





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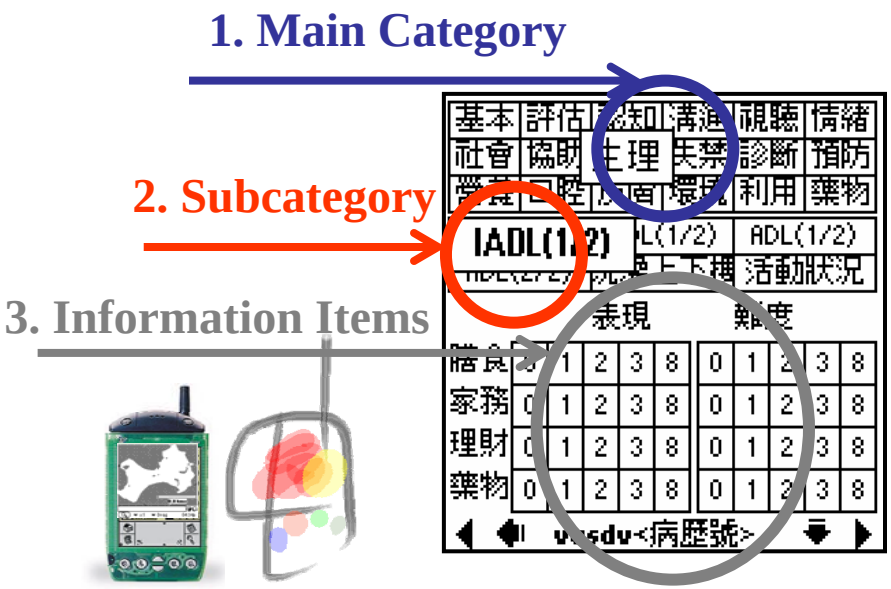
New Version: *3+ Grid Representation Approach*©



- To cover ***more*** Information ***items*** for a ***long form***
- To enhance **data entry, *ease of use*, *navigation***
- To better fit into user's ***workflow***

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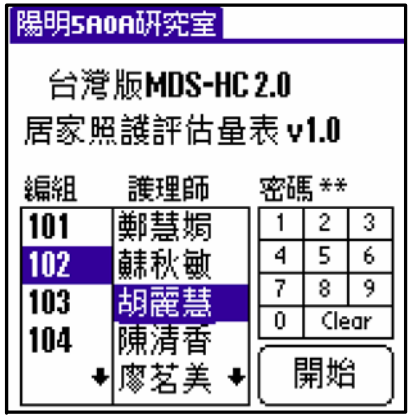
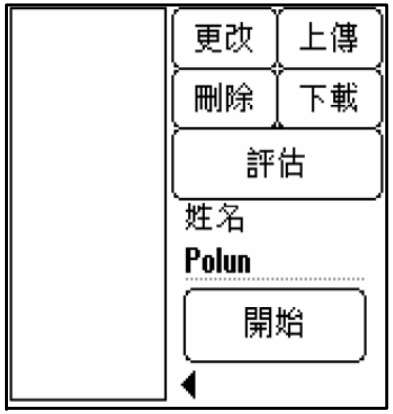
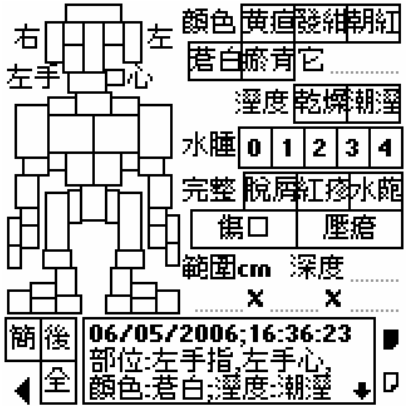
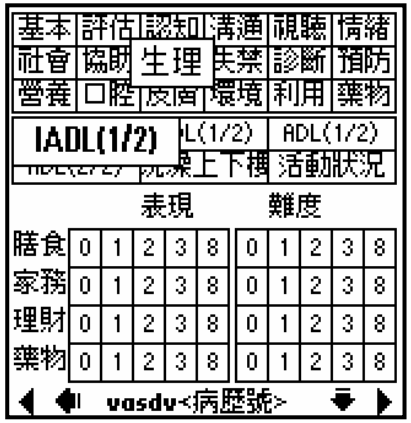
Results: Sample Screen Shots









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Results: Evaluation

- Average working experiences: 12.5 yrs
- 7 home-care nurses with 4.3 yrs of experiences and visiting more than 20 case per month
- ***100%*** agreed that system ***easy to use*** and ***75%, usefulness*** for their work

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Discussions and Conclusion

- ***Short and satisfying learning curves*** for both system and assessment instrument
- ***Satisfied with*** the solution
- ***Effective*** PDA interface design protocol[5]
- ***New project initiated*** to consist more assessment instruments and to extend into the institutional homecare service

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New Project for Longer Form

- ***15 extra*** assessment instruments added, such as
  - MOS SF-12
  - Geriatric Depression Scale
  - Mini-mental State Examination
  - The Pittsburgh Sleep Quality Index
  - Suicide Ideation Screen
  - Suicidality, etc.
- ***252 more*** questions

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[2] The 3+1 Snow-crystal-like Information Representation Approach© for PDA. The Journal of Taiwan Association for Medical Informatics, 2002, 15:17-32.

[3]Chang P, Hsu YS, Tzeng YM, et al. Development and Pilot Evaluation of User Acceptance of Advanced Mass-Gathering Emergency Medical Services PDA Support Systems. MedInfo 2004 Symposium, p:1421-1425.

[4] Chang P, Tzeng YM, Wu SC, et al. Development and Comparison of User Acceptance of Advanced Comprehensive Triage PDA Support System with a Traditional Terminal Alternative System. American Medical Informatics Association 2003 Symposium, p:140-144.

[5] Zwick C, Schmitz B. Designing for Small Screens. Switzerland: Ava Publishing; 2005.

Acknowledgements: Chung-Fu Lan, DrPh, Shinn-Jang Hwang, MD

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