Pilot Implementation of HIS

The Benefits and Challenges of Using Pilot Implementations for Developing Health Information Systems

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Pilot Implementations of HIS: Issues and Challenges

• Pilot implementation: Testing a system in “real life” prior to full-scale deployment
  – A powerful approach for identifying design flaws and implementation issues

• Widely used in the development of Health Information Systems (HIS)

• The bad news is that pilot implementations often fail!

• Surprisingly little has been published about pilot implementation
  – Little is known about the reasons for failure
Aim of the Presentation

• Characterize the purpose and activity of pilot implementation

• Identify and analyze the challenges involved in conducting pilot implementations

• ... based on two case studies of “failed” pilot implementations within the Danish healthcare system:
  – An electronic shared care record (pregnancy)
  – A healthcare center workspace system (prevention & chronic diseases)
The Healthcare Context

• The Healthcare System
  – High organizational complexity
  – Highly politicized
  – Highly dynamic

• Health Information Systems (HIS)
  – Large, complex systems
  – Interface with multiple other systems
  – Involve many different user groups
  – Cross institutional, organizational and professional boundaries
Need for Experimenting

- The bottom line:
  - Difficult to elicit needs and specify requirements
  - Impossible to predict the (organizational, behavioral, economic, etc.) implications of introducing new systems

- This creates a need for an exploratory, experimental approach to design

- This can, for instance, be achieved by:
  - Prototyping
  - Pilot implementations
Definition of Pilot Implementation

A pilot implementation is an activity undertaken in the context of *systems development and implementation* to test a system in a *realistic setting* and thereby *learn* about the fit between the system and its organizational use situation and about changes necessary *prior to full-scale deployment*. 
Purposes of Pilot Implementation

- To **evaluate the usefulness and usability** of the system

- To **improve the systems design** based on user feedback, practical use experience, and observed results (“objective measures” – e.g. productivity or quality data)

- To **identify** necessary or desirable **changes in the work organization and processes** in which the system will be embedded

- To **provide input to implementation strategies and plans**, based on users’ reactions to the pilot
The First Challenge: Defining the Scope of the Implementation

• This involves answering two key questions:
  – Who (and how many) should be involved as test users in the pilot?
  – For how long should the pilot last?

• It entails a difficult trade-off between cost & realism
Example: The Pregnancy Record

- Hospital: 120
- Midwives Clinic: 5
- GP: 10
- Woman: 100

ePR
The Second Challenge: Managing the Implementation Process

• This is an ongoing process that involves:
  – Training users
  – Coping with unanticipated technical problems (immature technology)
  – Reorganizing work and reconfiguring the work space

• In most cases this requires the establishment of ad hoc structures and processes
  – Tension between innovation and operations
Example: The Healthcare Center Workspace System

A Generic Framework:

- Interface Layer
- Functional Layer
- Model and Database Layer

Developed and maintained by different developer groups, who work in a release-based mode.
The Third Challenge: Ensuring Commitment from Users

- There is always an important risk in that the pilot implementation will loose out to other priorities, because it is “just an experiment”

[The reason for not using the ePR] is primarily lack of time, because we have had this new database [the ultrasound database] that was being implemented at the same time, actually. And we are more dependent on that, because it is not a pilot project, it must be functioning right away. And then we also started up with these new neck fold scannings. So, there has been so much to do, so I think we haven’t prioritized [the ePR]. We have used it if possible, but if we didn’t have the time, then it was just too bad. [Nurse at the hospital]
Why is a Pilot Implementation Different from a “Normal” Implementation?

- The system is under development
  - The central purpose is learning
  - Errors, breakdowns, design flaws, and other problems are inevitable

- It is by definition a limited implementation
  - May create problems of scope
  - The new system does not replace the old one

- It is temporary
  - Requires establishment of ad hoc structures and processes
  - May lead to problems of commitment
Conclusion

IMPORTANT BUT DIFFICULT