

Process Improvement
Through
Sustained Participatory Design
and
Effects-Driven IT Development

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SPI MANIFESTO

VALUES

We truly believe that SPI

A | People | **Must involve people actively and affect their daily activities**

NOT to show-off or be focused on management alone



B | Business | **Is what you do to make business successful**

NOT to live to deploy a standard, reach a maturity level, or obtain a certificate



C | Change | **Is inherently linked with change**

NOT continuing as we do today

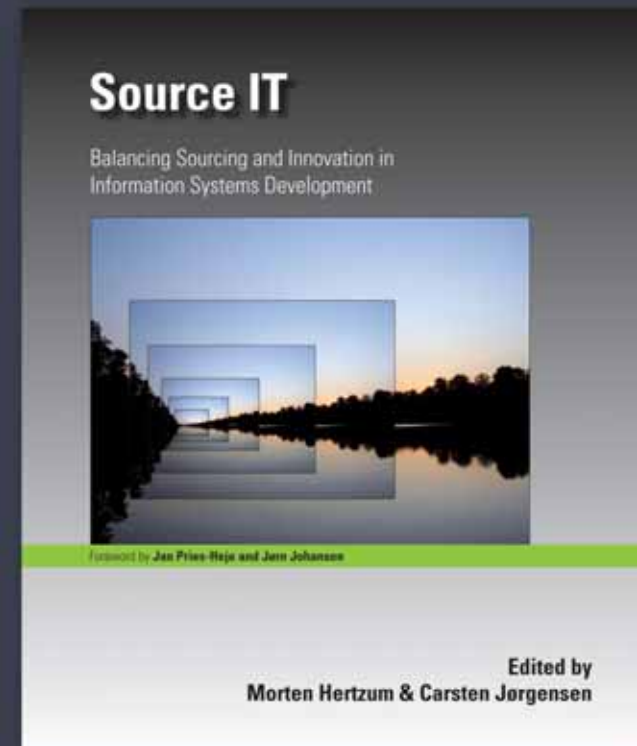


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Effects-Driven IT Development

- ▶ Focus: Effects enabled by using IT
- ▶ Specifying measurable and desirable effects from using system
- ▶ *Formative* evaluation of the effects during real use of the system
- ▶ Supports the management of a sustained 'people involvement'
- ▶ Initiated in 2004 by me and Morten Hertzum
- ▶ Currently 5 Ph.D's., 2 vendors and 3 (out of 5) healthcare regions in Denmark



See chapter 7, 8, and 9

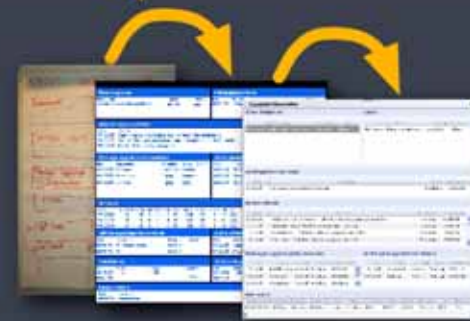
- Planned/realized
- Planned/curtailed
- Emergent
- Opportunity-based

Effects
specification

Planned/anticipated



Pilot implementation
and real use



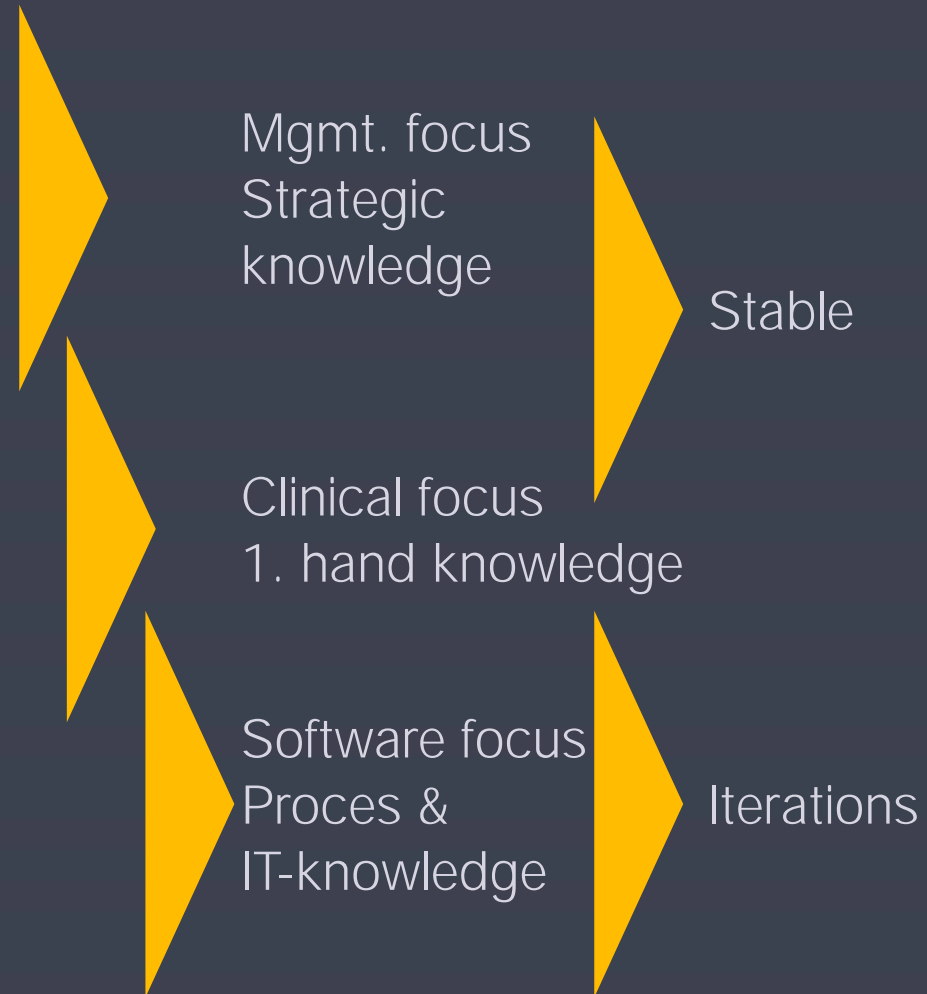
Iterative design

Effect specifications

Hierarchi	NIP
1. Environment (political demands, organizational culture, national standards, legislation, etc.)	<ul style="list-style-type: none">• National Indicators increase quality of treatment
2. Business Strategy (relation/function/response to environment)	<ul style="list-style-type: none">• High quality of NIP reporting
3. Business Processes (recurrent, familiar input-output relationships)	<ul style="list-style-type: none">• Well documented patient trajectories for stroke patients
4. Work Process (critical with regard to IT systems support)	<ul style="list-style-type: none">• Situations where NIP data emerge
5. IT Requirements (functions, information, categories, computations, GUI, standards, etc.)	<ul style="list-style-type: none">• IT functionality that captures data at the source

Effect specifications

Hierarchi	NIP
<p>1. Environment (political demands, organizational culture, national standards, legislation, etc.)</p>	<ul style="list-style-type: none"> National Indicators increase quality of treatment
<p>2. Business Strategy (relation/function/response to environment)</p>	<ul style="list-style-type: none"> High quality of NIP reporting
<p>3. Business Processes (recurrent, familiar input-output relationships)</p>	<ul style="list-style-type: none"> Well documented patient trajectories for stroke patients
<p>4. Work Process (critical with regard to IT systems support)</p>	<ul style="list-style-type: none"> Situations where NIP data emerge
<p>5. IT Requirements (functions, information, categories, computations, GUI, standards, etc.)</p>	<ul style="list-style-type: none"> IT functionality that captures data at the source



	Example effect	Evaluation method
Planned-realized	Better overview of patients	Mental workload/TLX
Planned/curtailed	Improved NIP recordings	Audit record (paper and EPR)
Emergent	Collective investigation of the EPR	Observation
Opportunity-based	Sharing nursing observations during the team conference (increased structuring of nursing record)	Observation and focus-group interview

	Example effect	Evaluation method
Planned-realized	Better overview of patients <div style="border: 2px solid orange; border-radius: 15px; padding: 5px; display: inline-block;"> Quantitative assessment & documentation </div>	Mental workload/TLX
Planned/curtailed	Improved NIP recordings	Audit record (paper and EPR)
Emergent	Collective investigation of the E <div style="border: 2px solid orange; border-radius: 15px; padding: 5px; display: inline-block;"> Qualitative identification & evaluation </div>	Observation
Opportunity-based	Sharing nursing observations during the team conference (increased structuring of nursing record)	Observation and focus-group interview

Neurological Ward



Emergency Dept.

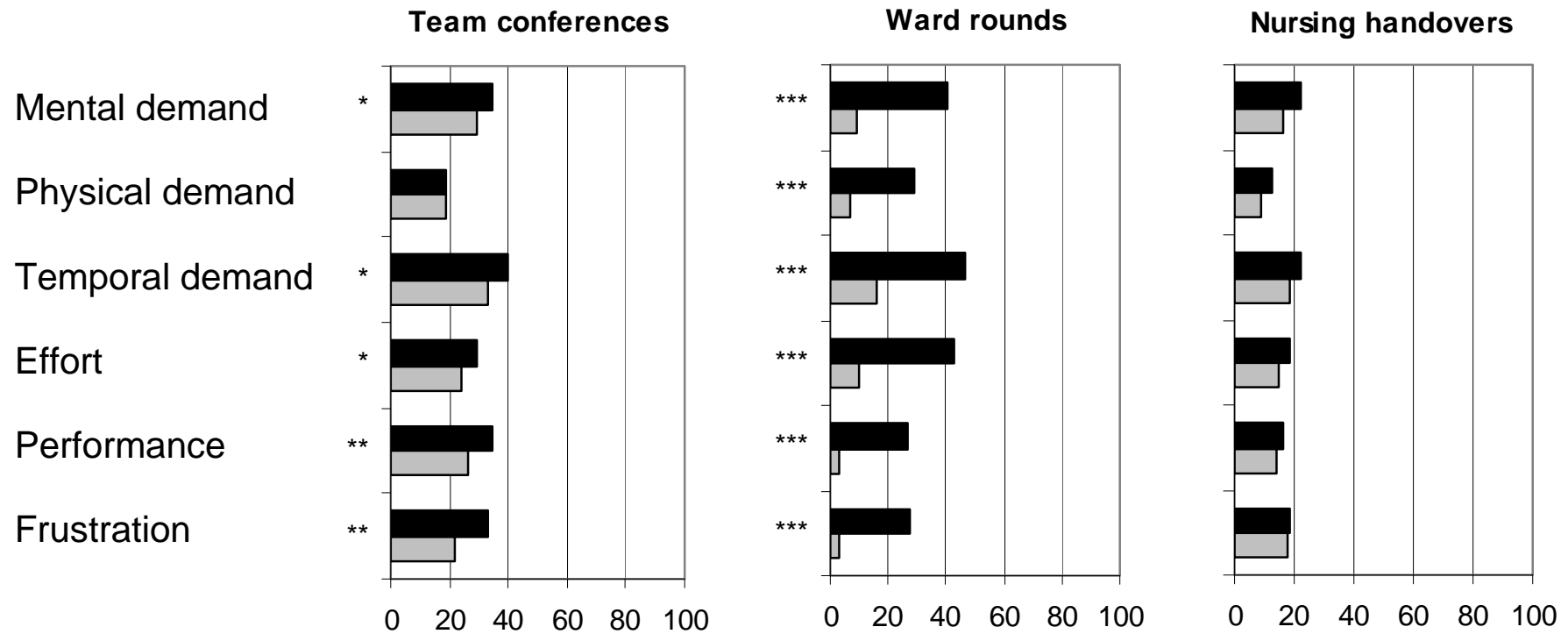




More time at the patient side:
"Patientfocus", "Making cold hands warm"
of patient environment

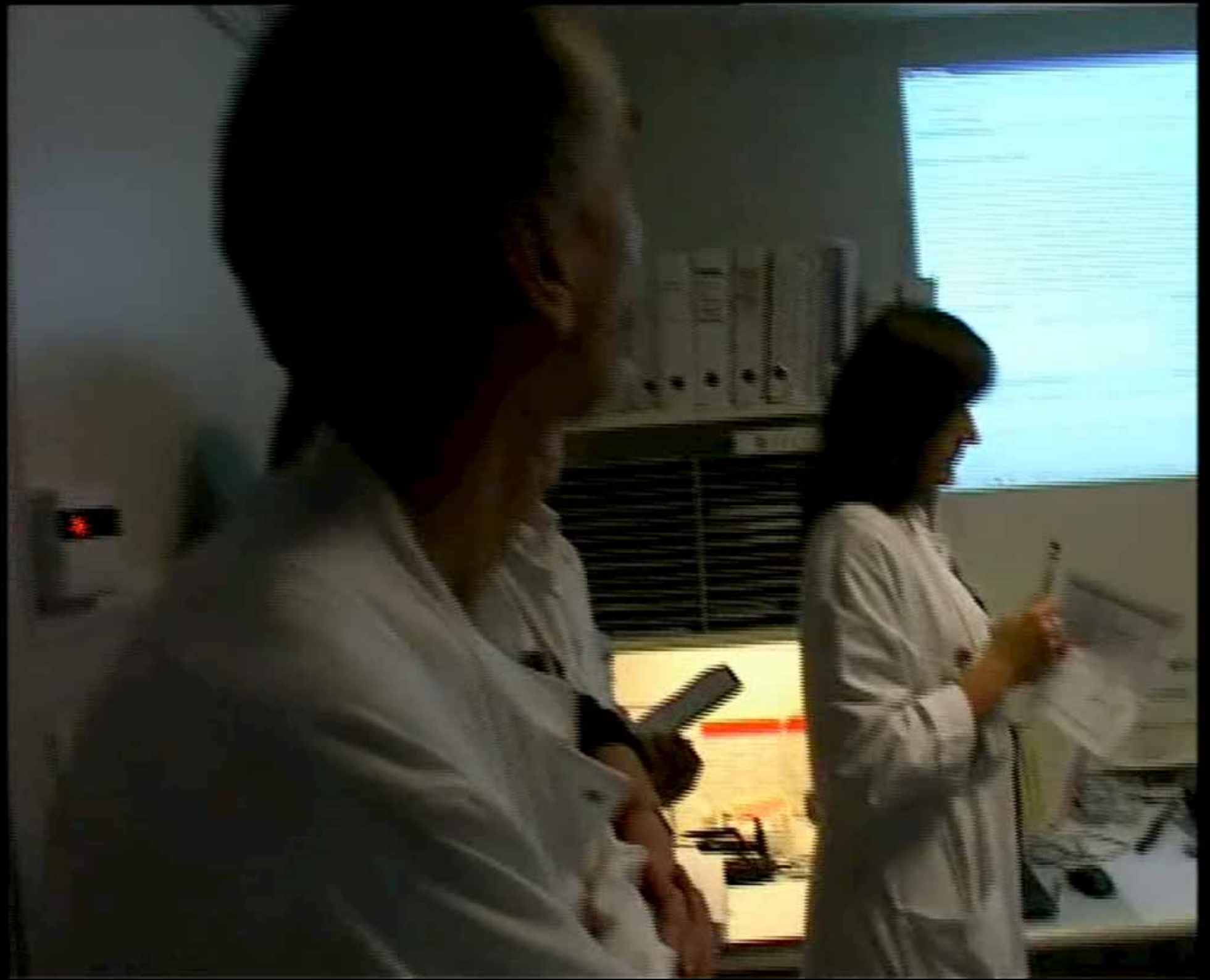


Mental workload - TLX



Unanticipated effects - emergent and opportunity-based effects

Video-example



Learning from implementation

- ▶ Chief physician: “She must be highly prioritized. How do we record that?”
EPR-unit manager: “We do that in the task-list that we don’t have”
- ▶ Collective investigations of patient records (emergent effect)



- ▶ Nurses’ observations became part of the shared agenda during team conferences (opportunity-based effect)

14.12.05
NSA-R

OBS !! (3)


klædes problem	NSA-R	Status
↳ Ind og udgiftmåling	NSA-R	Åben
↳ formodentlig nedsat kraft i høj arm og	NSA-R	Åben
↳ urinretention, kateter	NSA-R	Åben

Resultat	Status	Indiarriser af
er : går til og fra toilettet med rollator og 1 pers	Afsluttet	N61APO-RG
a har tolket for pt, det er dog svært at kommunikere med pt	Afsluttet	N61APO-RG
ation : pt har gennem de 12 sidste timer haft stigende creati	Afsluttet	N61APO-RG
t mat men vågen og relevant. Følger opfordringer der forstås	Afsluttet	N61APO-RG
ler : Gået med følge af 1-2 person til badeværelset (TV)	Afsluttet	N61APO-RG
ædning : Hjulpet med nedre toilettet ifm toiletbesøg. Hjælp til i	Afsluttet	N61APO-RG
taler ikke dansk, vanskelig gør kommunikationen. Gør sig fors	Afsluttet	N61APO-RG
lse : søn oplyser der den seneste tid har været lidt huske pro	Afsluttet	N61APO-RG
ryk : opleves ikke umiddelbart smerteklager hos pt (TV)	Afsluttet	N61APO-RG
ation : Indl-advis faxet /ph)	Afsluttet	N61APO-RG
ation : cin: forestår vist ikke helt opførelserne, er derfor over	Afsluttet	N61APO-RG

Planlagte interventioner (20)

Interventions	Start	Intervention	Overfølgning	Status

00:00:36

	Example effect	Evaluation method
Planned-realized	Better overview of patients	Mental workload/TLX
Planned/curtailed	Improved NIP recording (and EPR)	
Emergent	<p>We truly believe that SPI</p> <p>A People Must involve people actively and affect their daily activities</p> <p>NOT to show-off or be focused on management alone</p> 	Observation
Opportunity-based	Sharing nursing observations during the team conference (increased structuring of nursing record)	Observation and focus-group interview

Effects-Driven IT Development

- ▶ Specification and formative evaluation of usage effects in IT and process improvement projects
- ▶ Stimulating sustained 'people involvement' & mutual learning process
- ▶ Increasing interest from both user and developer organization:
 - ▶ User: From specifying technical requirements to desired outcomes in terms of effects; Easy to understand, specify, and prioritize; Stable over time
 - ▶ Developer: Instrumental to manage agile process; From delivering products to solutions; Marketing effect

Thank you for
listening