



## Initiating SPI in small enterprises

Experiments with the Micro-Evaluation framework

Alain Renault

[www.cetic.be](http://www.cetic.be)

# CETIC

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  - Webmining
- Electronic systems
  - Embedded software & hardware design
  - Wireless technologies





## Your speaker

### Alain RENAULT

Cetic (2001-)

Research and Technology Transfert in SPI

University of Namur (1998-2001)

Software Quality Lab

Software Engineer (1989-1998)



31-May-05

SWDC-REK 05

3



# Initiating SPI in small enterprises

Experiments with the Micro-Evaluation framework

Experiment made by

- University of Namur
  - Naji Habra
- Cetic
  - Alain Renault
- Ecole de Technologie Supérieure du Québec
  - Claude Y. Laporte
  - Jean-Marc Desharnais
  - Mohamed Mounir Abou el Fattah
  - Jean-Claude Bamba



## Agenda

- What is the Micro-Evaluation
- The concepts behind the framework
- The experimentation
- The limitations of the first version
- The next generations of the Micro-Evaluation



## Agenda

- ***What is the Micro-Evaluation ?***
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## What is the Micro-Evaluation ?

- Origin
  - University of Namur : OWPL project
- Original objectives
  - Make a first **global** inventory of the software capacity in the local SMEs
  - This must not be time consuming, but must be reliable
- Provide input to the OWPL project
  - Help start a first SPI initiative
    - o Hilight strengths and weaknesses
  - Rize the awareness level of SMEs
    - o on software quality
    - o on spi



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# The concepts behind the framework

## Hypothesis

- SME = specific context
- SME = low maturity level
- Poor culture of quality
- Process vocabulary is too much complicated, not accessible
- Process improvement objective
- Label, quality level not so important



# The concepts behind the framework

## Original constraints

- Evaluation tool
  - Easy
  - Lite
  - Pragmatic
- Evaluation report
  - Lite
  - Simple and concrete
  - Usable
- Approach
  - Open minded
  - Objective (analysis)
- Team evaluated
  - One person has sufficient visibility
  - Trust this person



# The concepts behind the framework

## Structure of the framework

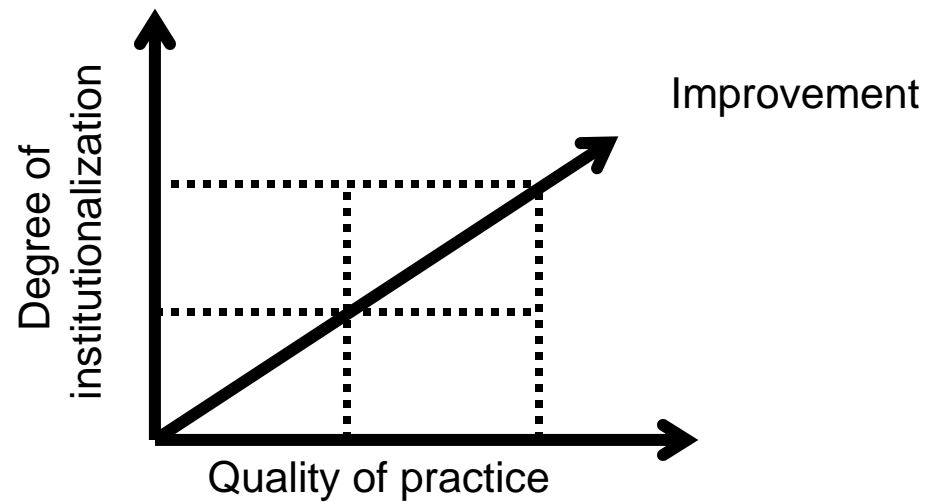
- Coverage : 6 axes
  - o Quality assurance
  - o Customers management
  - o Subcontractors management
  - o Project management
  - o Product management
  - o Training & human resources management
- Depth : 16 topics
  - o Open question and/or sub-questions



# The concepts behind the framework

## Structure of the framework

- Evaluation grids
  - o Objective evaluation
  - o Open questions



# The concepts behind the framework

## Structure of the framework

- Example of question

6a. **How do you select your subcontractors ?**

- Do you have regular subcontractors or do you sometimes question this choice ?
- Do you have a well-defined procedure to select your subcontractors?

Proposition	Projects	
	Some	All
According to isolated criteria like cost, reputation		
According to a rigorous selection procedure (Request for Proposal (RFP), selection criteria)		

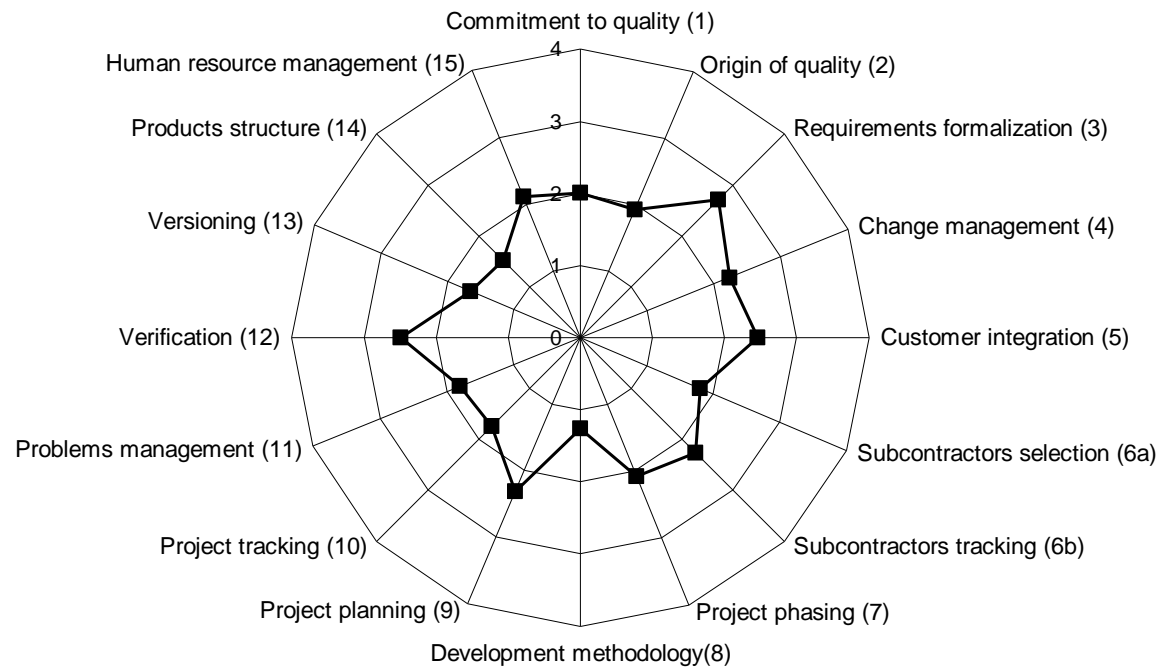
***As far as « Subcontractors Management » is concerned, do you consider that what is done is efficient and provides expected results ?***



# The concepts behind the framework

## Structure of the framework

Example of Capacity Profile



# The concepts behind the framework

## Structure of the Evaluation Report

- Practice description - summary of each axis
- Strengths and weaknesses
- Risks and opportunities
- Recommendations (short and mid-term)



# The concepts behind the framework

## Structure of the Evaluation Report

- Practice description - summary of each axis

*“There is no configuration management nor version management. During a modification the last version is overwritten. A specific directory contains all the standard modules, but there is a non negligible risk to overwrite these sources with others.”*

- Strengths and weaknesses
- Risks and opportunities
- Recommendations (short and mid-term)





# The concepts behind the framework

## Structure of the Evaluation Report

- Practice description - summary of each axis
- Strengths and weaknesses
  - **Strengths**
    - *Awareness of the current weaknesses*
    - *Will to improve practices*
  - **Weaknesses**
    - *No products versions management*
- Risks and opportunities
- Recommendations (short and mid-term)



# The concepts behind the framework

## Structure of the Evaluation Report

- Practice description - summary of each axis
- Strengths and weaknesses
- Risks and opportunities
  - **Opportunities**
    - *Use the version management provided by the IDE*
    - *Use of the backup tools provided by the IDE*
  - **Risks**
    - *Risk of source code loss*
- Recommendations (short and mid-term)



# The concepts behind the framework

## Structure of the Evaluation Report

- Practice description - summary of each axis
- Strengths and weaknesses
- Risks and opportunities
- Recommendations (short and mid-term)
  - **Short term**
    - *Define the way the documents are used or managed (sources or others)*
  - **Medium term**
    - *Define standards, procedures and good practices that the team should follow for its project management, testing and development (coding rules)*



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# The experimentation

## First experimentation

- In Wallonia (Belgium)
  - 20 organizations (1998-1999)
  - 7 re-evaluations (2000-2001)
  - 12 new evaluations (1999-2004)

## Second experimentation

- In Québec (Canada)
  - 23 organizations (2004)
  - New evaluations foreseen in 2005

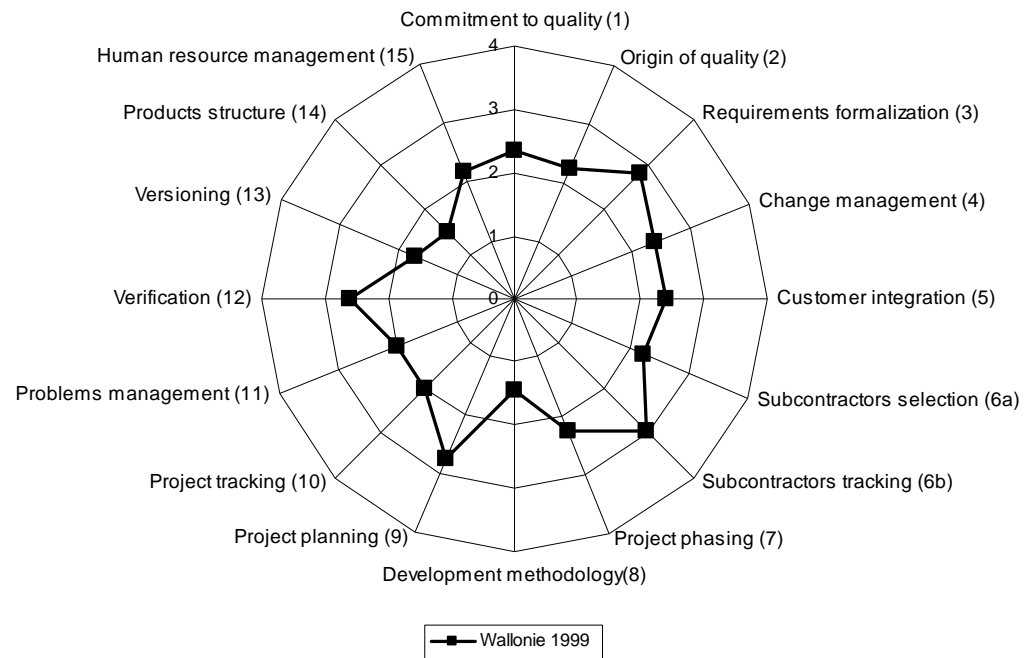


# The experimentation

## First experimentation in Wallonia (Belgium)

- 20 organizations (1998-1999)

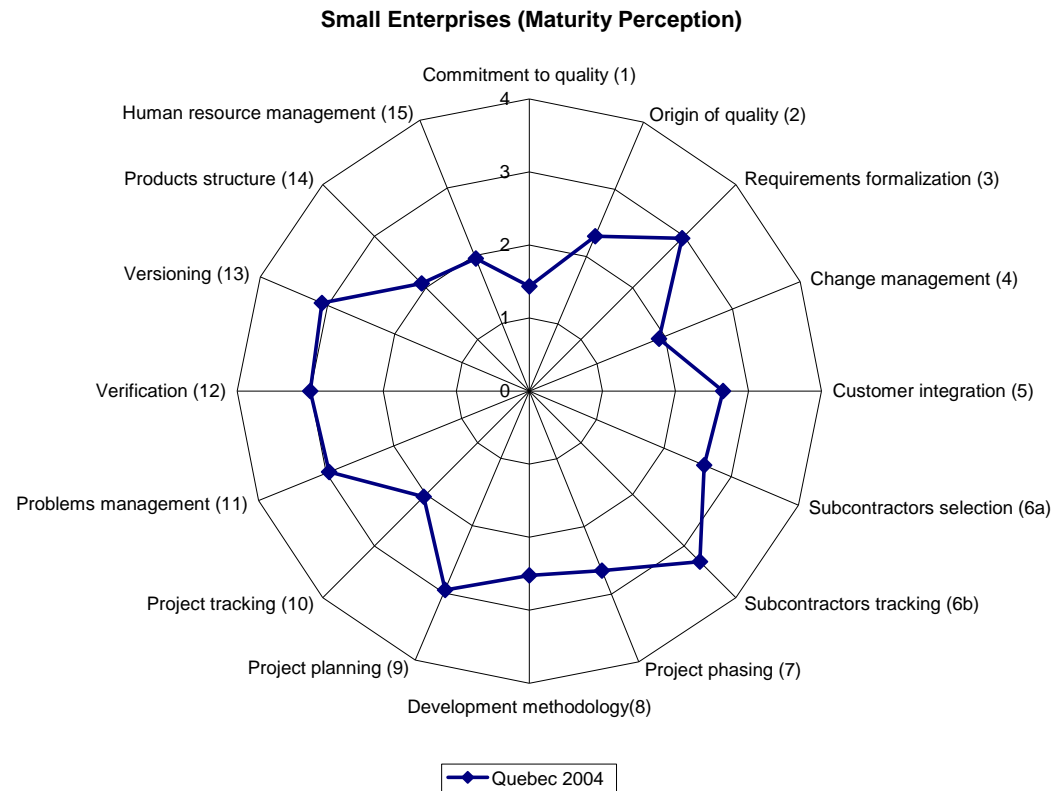
**Small Enterprises (Maturity Perception)**



# The experimentation

## Second experimentation in Québec (Canada)

- 23 organizations (2004)

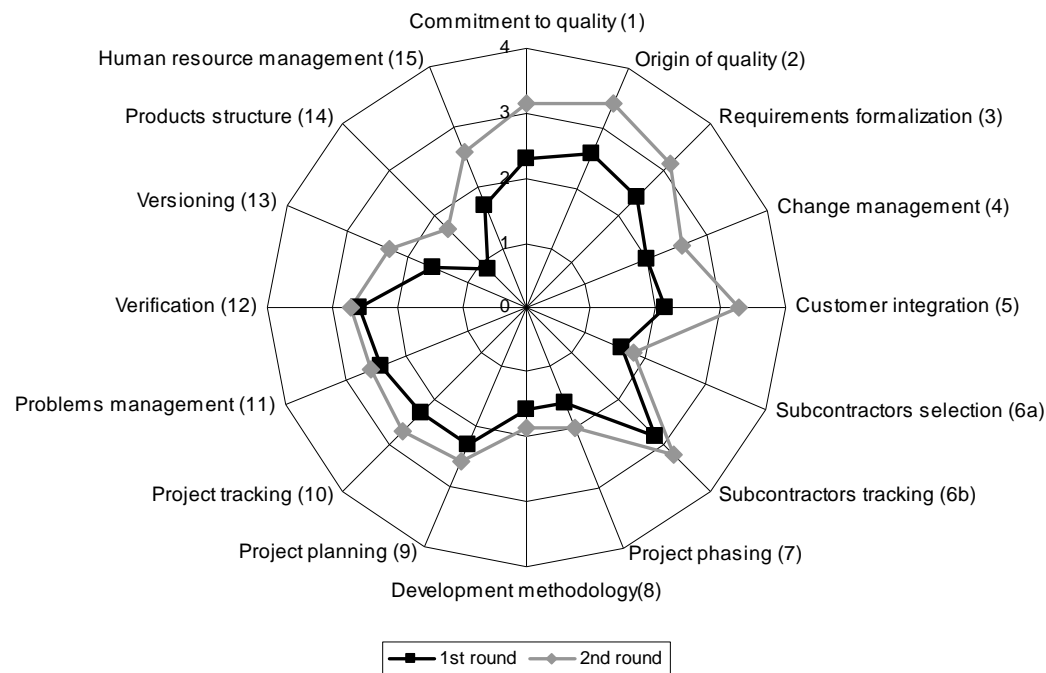


# The experimentation

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Small Enterprises (Maturity Perception)





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## Limitations of the first version

- The Micro-Evaluation
  - The Micro-Evaluation is very attractive as a tool for VSE
  - It offers optimum ROI
  - It gives an accurate insight into assessed organizations
  - It is affordable thanks to its simplicity
  - It takes context into account
- But ...
  - It is limited to small teams, small projects with expected low maturity level
  - It rests on one trusted person
  - It can be further simplified (concentrate on one single project or team)
  - More precision is required in the evaluation grids
  - The context needs to be even more taken into account (i.e. Agile practices)



## Agenda

- What is the Micro-Evaluation
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- ***The next generations of the Micro-Evaluation***



# Next generations of Micro-Evaluation

- Even more simple
  - Terminology improvements
  - Questions and items rephrasing
  - Change order of questions
  - Concentrate on one single project or team

6b. **How do you monitor your subcontractors' activities ?**

- Do you keep in touch with your subcontractors during the projects ?
- Do you hold regular meetings with your subcontractors ?

	Projects	
	Some	All
Proposition		
Occasional meetings, on demand		
Regular meetings		

13.- **What relations, what contacts do you undertake with your suppliers during their taking part to the project ?**

- Does the supplier regularly take part to project activities ?

Proposition	Answer
Only if necessary	
On a regular basis, on fixed milestones	
As often as possible	
Continuously, the supplier participates to the project	

More propositions	Answer
Don't know	
Not applicable	

# Next generations of Micro-Evaluation

- Even precision and objectiveness
  - Improved evaluation grid

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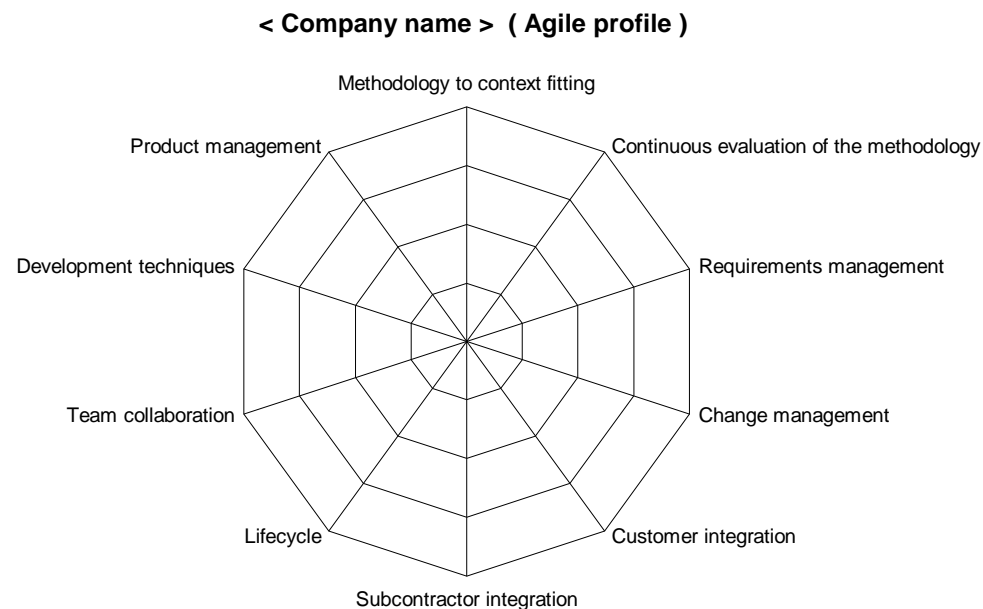
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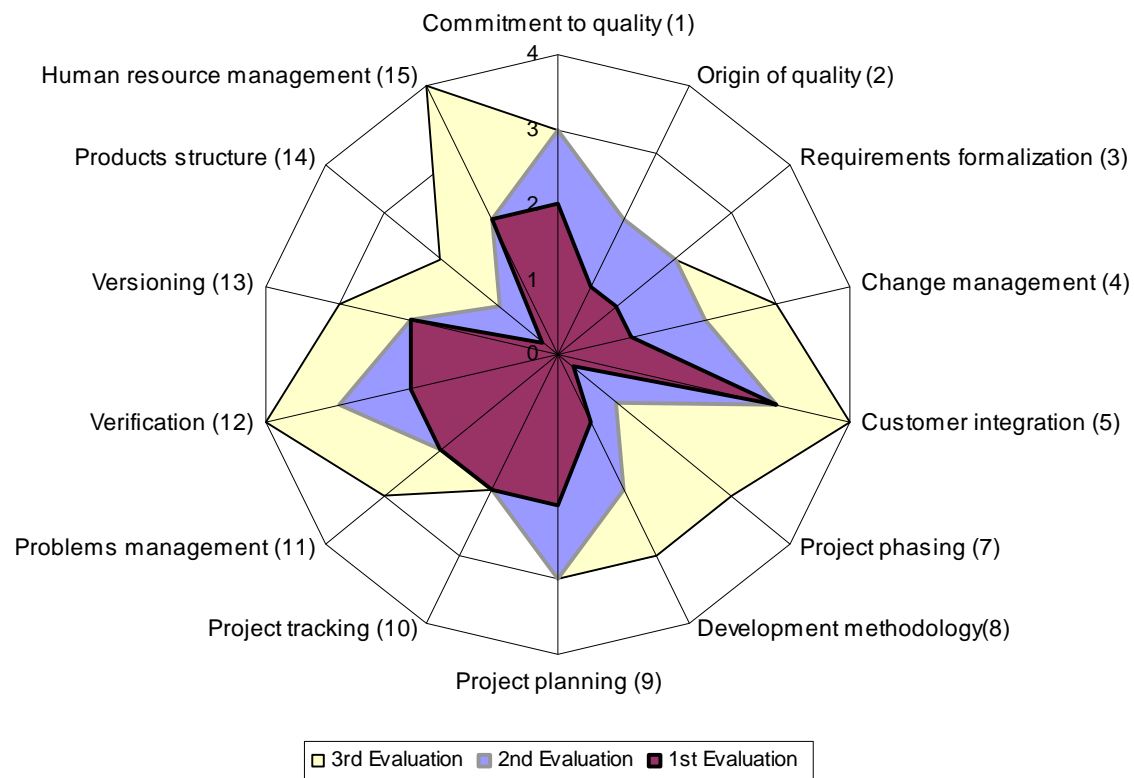
# Next generations of Micro-Evaluation

- Even more contextual
  1. Use of OWPL Success factors
  2. Integrate more Agile concepts
  3. Provide with an « Agile profile »
  4. Create an « Agile Micro-Evaluation »



# Conclusions : VSE can improve their maturity level

One company evolution (Maturity Perception)



## Conclusions

### VSE can afford SPI

- Micro-Evaluation can help
- No need of a huge methodology
- No need of a huge budget

### Human factor is an important concern

- communicate by yourself
- select the « right » contact person
- identify critical (positive and negative) individuals

### Context must be considered

- are current practices efficient ?
- is current project a good candidate for SPI ?
- what are the business objectives of the organization ?





**Thank you for you attention ...**

**[www.cetic.be](http://www.cetic.be)  
[alain.renault@cetic.be](mailto:alain.renault@cetic.be)**

