

Initiating Software Process Improvement with a light model for Small Enterprise

Presenter

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Origin

- **Origin**
 - University of Namur : OWPL project
 - *OWPL* stands for Observatoire Wallon des Pratiques Logicielles (Walloon Observatory for Software Practices)
- **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 (Software Process Improvement) initiative
 - Highlight strengths and weaknesses
 - Rise the awareness level of SMEs
 - on software quality
 - on SPI



Experimenters

- **École de technologie supérieure**
 - Jean-Marc Desharnais
 - Claude Y. Laporte
- **University of Namur (Belgium)**
 - Naji Habra
- **Cetic Technology Transfert Center (Belgium)**
 - Alain Renault
 - Simon Alexandre



What is a small Enterprise ?

- VSE (Very Small Enterprise) = less than 25 employees
- Scope includes also **small project** or **department** within a larger organization



Small Software Enterprises: Greater Montreal

Number of employees	Number of Enterprises	Percentage	Number of Jobs
1 to 25	540	78%	5105
25 to 100	127	18%	6221
Over 100	26	4%	6056



The concepts behind the framework OWPL

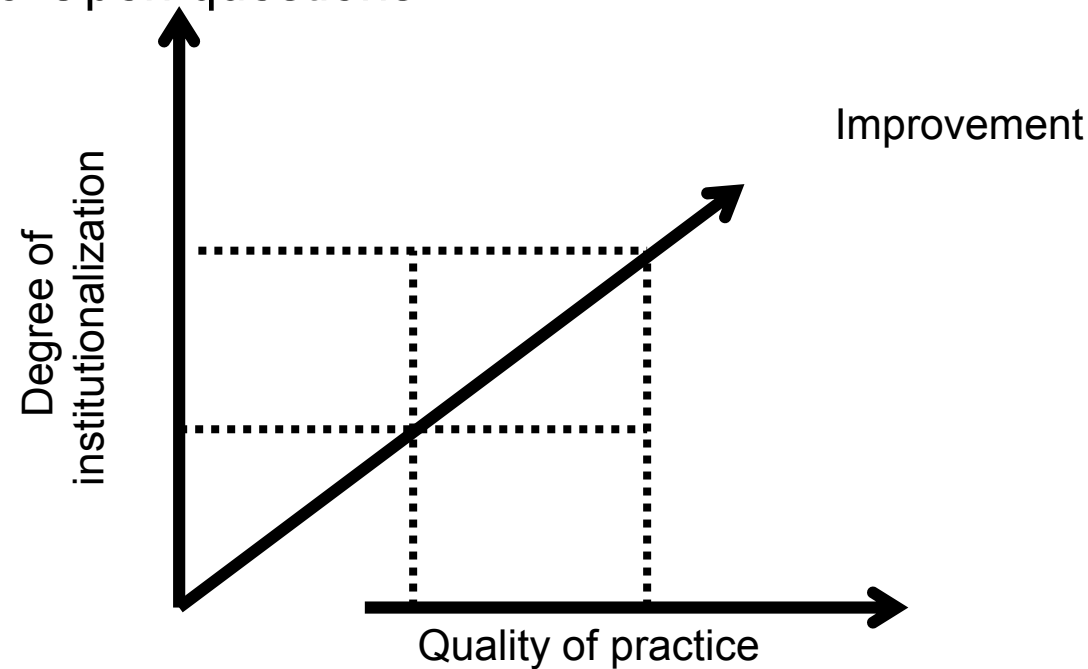
- **Coverage : 6 axes**
 - o Quality assurance
 - o Customers management
 - o Subcontractors management
 - o Project management
 - o Product management
 - o Training & human resources management
- **Depth : 16 topics**
 - o Open question and/or sub-questions



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?

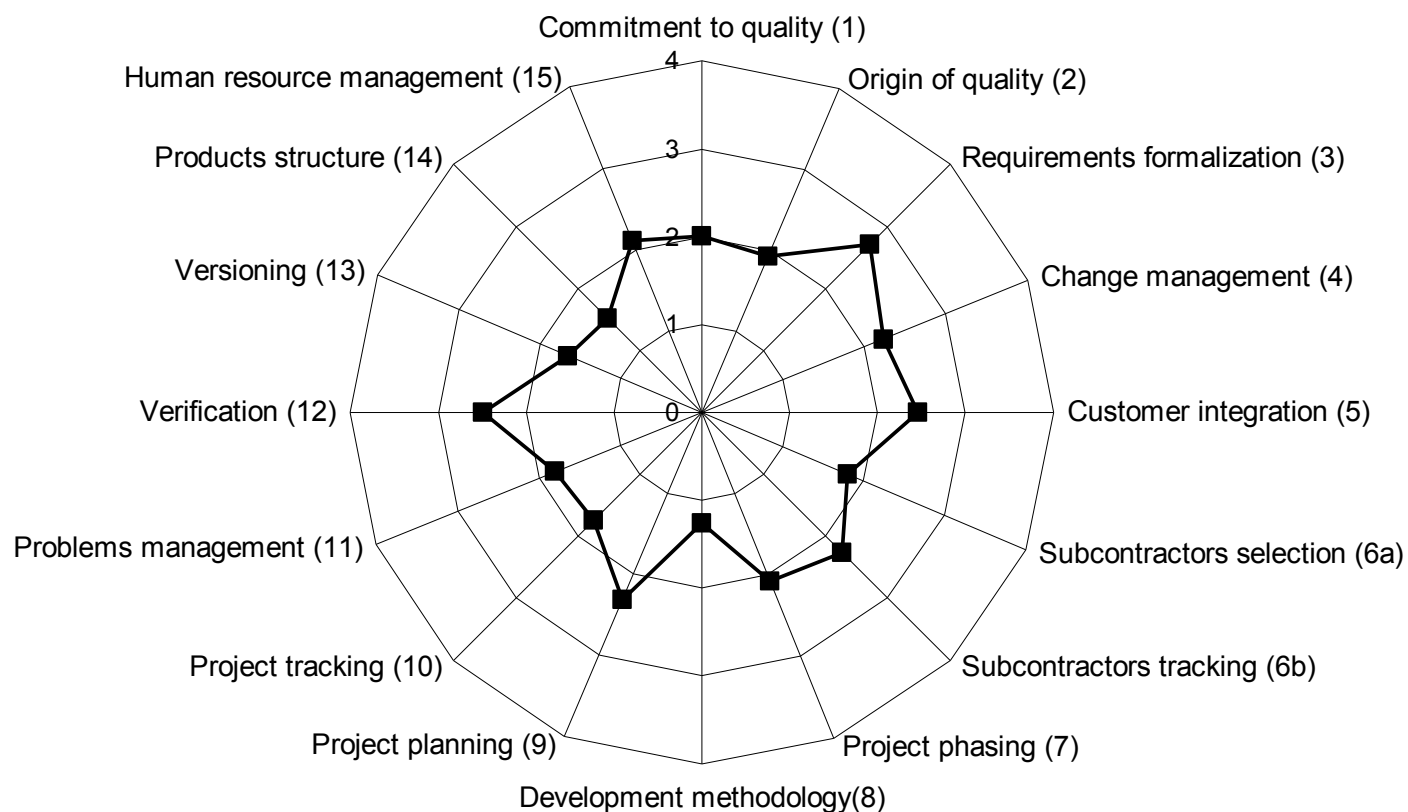
Proposition	Projects	
	Some	All
According to isolated criteria like cost, reputation		
According to a rigorous selection procedure (Request for Proposal (RFP), selection criteria)		

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

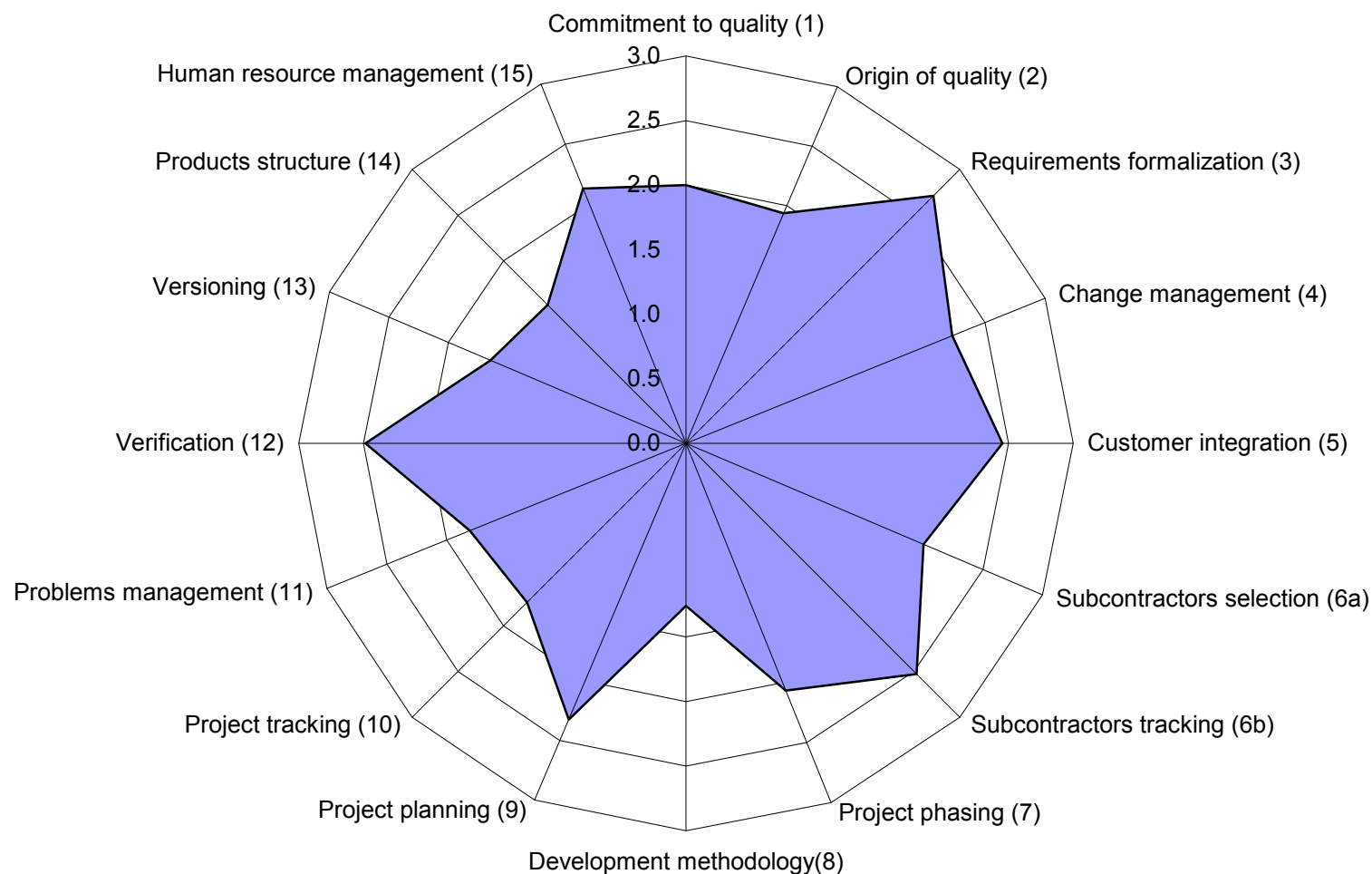


Initiatives and Results

- Evaluations in Wallonie, Belgium (20 enterprises)
- First evaluations in Québec (22 enterprises)
- Evaluations in France (9 enterprises)
 - Anabel Stambollian
- Second evaluations in Québec (32 enterprises)



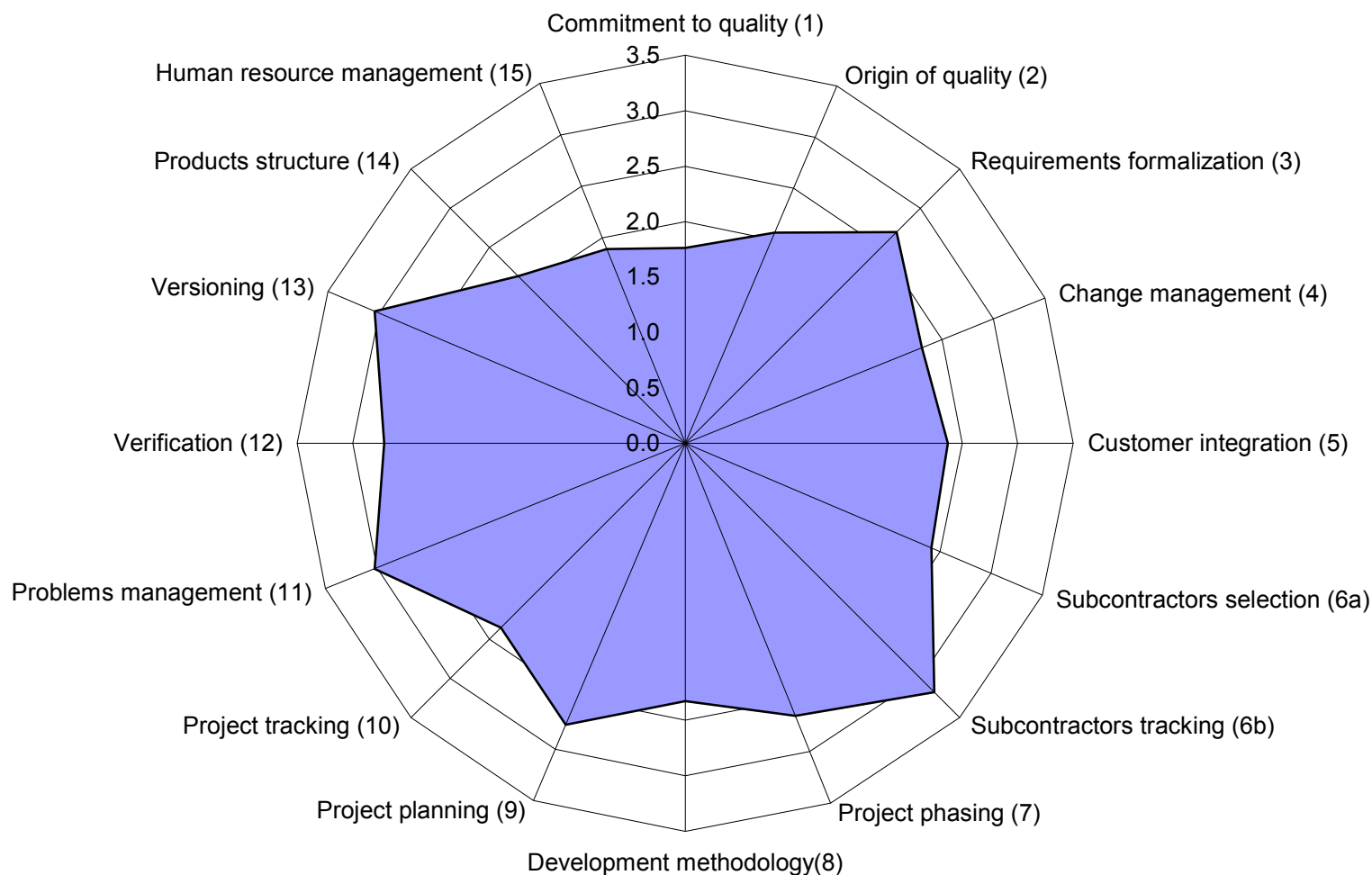
Evaluations in Wallonie



Wallonie 1999



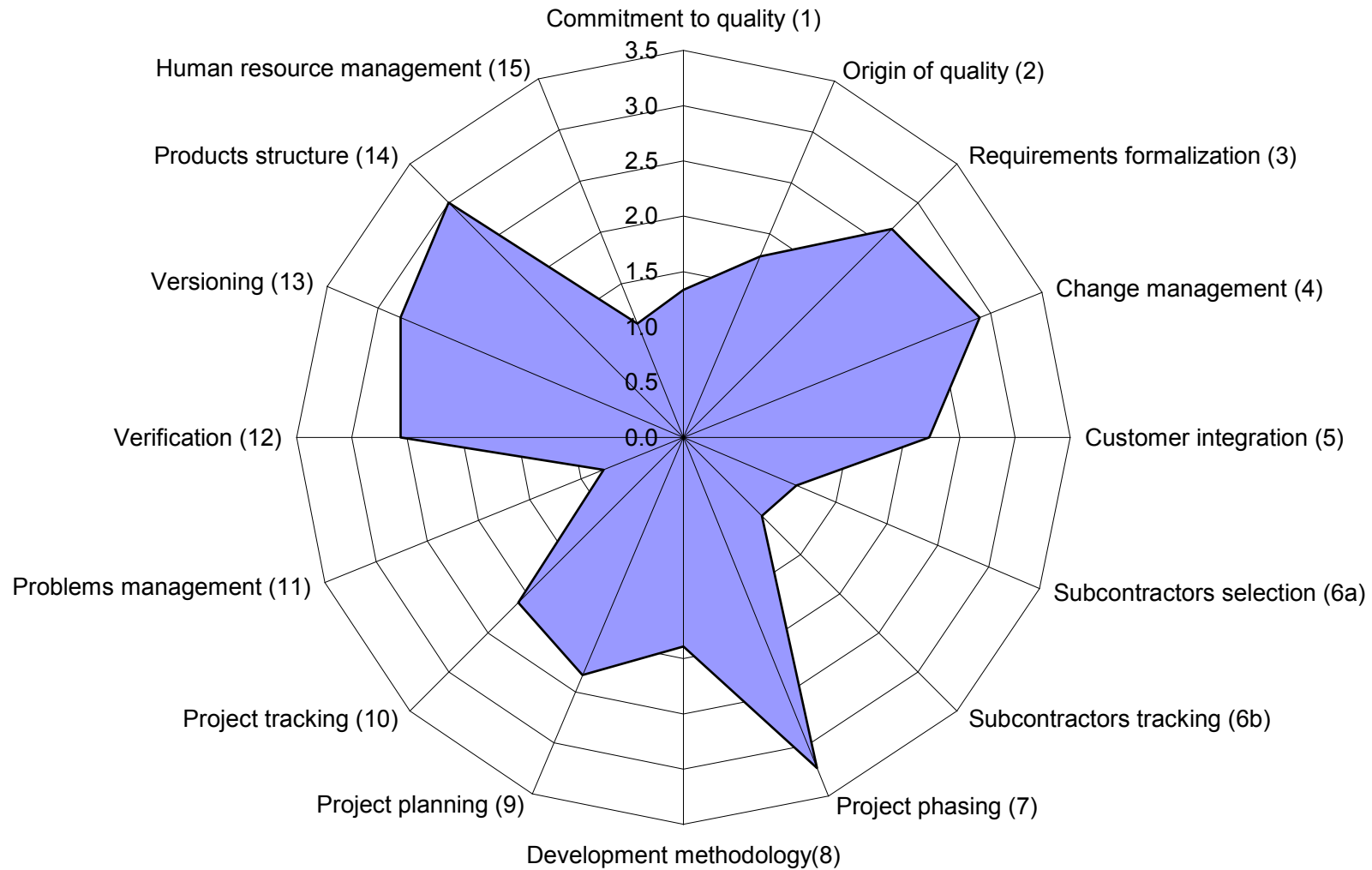
First evaluations in Québec



Québec 2004-2005



Evaluations in France



France 2005



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Second Evaluations in Québec

Average of all companies
(32 Company)



Why quality management has a low score?

- Most of the quality management activities have been reduced to testing the code only.
- Code testing is performed mainly by the programmers in an ad hoc manner, i.e. no clear testing plans are used.
- There are no specialized or trained employees that can apply quality management activities.
- VSE depend on the personal skills for their employees in performing their tasks.
- Most of the VSEs are not aware of the quality management activities.



Micro-Evaluation' weaknesses

- Because of the lightness of the *Micro-Evaluation*, the questionnaire has a small number of questions. These questions sometimes cover far too much terrain, making the evaluation scope too vague.
- Some of the *Micro-Evaluation*'s questions are redundant.
- The *Micro-Evaluation* is not adapted for small enterprises that do not have direct clients (if they function on government funding for example, if they produce “of the shelf” or “R&D” types of software).
- A criteria should be added to each question, to specify if a given answer (by an interviewed employee) has been interpreted by the interviewer, or if it has been transcribed literally. This would give some added value on how reliable and objective the scores are.



***Micro-Evaluation*' strengths**

- The *Micro-Evaluation* is a simple and low cost assessment.
- The *Micro-Evaluation* gives an accurate insight of the assessed enterprises teams.
- The *Micro-Evaluation* can be tuned to match the enterprise's available resources (big or small)
- A simplified vocabulary is used, making the *Micro-Evaluation* understandable to whom are not experts of the software quality improvement aspects.



CONCLUSION AND FUTURE WORK (1)

- Refining the evaluation's questions and scales to attribute quality levels to each practice, making the mapping easier, between the answers collected and the evaluated practices.
- Adapting the *Micro-Evaluation* in reference to “Agile” development practices to obtain a better representation of the reality.
- Adapting the *Micro-Evaluation* in reference to those enterprises who develop software type products that exclude direct client stakeholders.



CONCLUSION AND FUTURE WORK (2)

- Modifying axis labels so that direct interpretation drawn from the charts themselves will be more understandable.
- Refining (or adding) questions to the *Micro-Evaluation*, to better assess the existing software practices.
- Adding the “objective/subjective” criteria to each of the *Micro-Evaluation*'s questions to add value to the collected answers.
- Preparing a course on the *Micro-Evaluation* that targets assessors, to improve and normalize the assessment technique and eventually, the collected answers.



References

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