SOME RESEARCHER CONSIDERATIONS
When Conducting Empirical Studies in Industry

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THE PROBLEM PICTURE
(IN 5 MIN?)

› Do you fully understand the problem at hand?
› Communicating with the right persons?
› How do you relate to unpleasant results?
› How do you treat the business aspects and validity?
› How do you manage intellectual property?
› How is your competence valued?
REAL EXAMPLE
TESTING MUST GO FASTER

› Industrial Manager:
  – Testing takes too long!
  – We must test less!

› Academic Researcher:
  – Research on minimizing the regression test suites
TESTING OUR SYSTEM IS SO COMPLEX AND EXPENSIVE

› Industrial Manager:
  – Testing is so complex
  – We cannot find the real faults

› Academic Researcher:
  – Model-Based Test
  – Formal Verification

No, do not hire “Models” to create the test….
WHAT THE INDUSTRIAL MANAGER IS "REALLY" SAYING:

“We do not really understand this testing business, but somehow the cost and time spent seems to mismatch our expectations.”
INSTEAD THE PROBLEM MIGHT BE

› Wrong expectations?
› The process of testing is poor?
› It take too long “on the critical time line” before release?
› The organization finds faults too late in the process delaying release?
› Fixing the faults takes too long?
› The test suites are not effective enough (finds enough faults) to motivate the delay?
The test cases are poorly written (lacks architecture) & do not uses techniques?

The test skills are poor?

We have not understood test automation – we just automated our manual tests?

The understanding and measurements of what is “enough” tested for a certain quality is not yet sufficiently stated in this organization?

The Test Tools we use are old and too expense (or too difficult to change)?

The contract situation we signed is lousy – we loose money if it is too many faults or we get delayed….
Do YOU possess the skill to analyze what is really the issue?
Industry view
A SYSTEM
Series of “connecting” Problems:
People/org, hw, sw, $, process….

Academic view
A topic/area
A specific problem
(in a specific context)
DO NOT ASK PEOPLE WITH THE WRONG COMPETENCE, AND RIGHT POSITION!
LET US TALK MONEY!

› A highly distinguished professor at a US university
   “I did my math, and I could prove that my algorithm saved 50 000$” using my method – and STILL the industry was not interested?

› The questions the professor did NOT ASK!
   - How many people does this change affect?
     › 1000nds of developers, 1000nds testers?
   - Is it a relevant improvement for this project?
   - How many could be trained in the new way?
   - How many TIMES will this method be used or is it a one time save?
   - In what way does this affect the final product? How much money is saved?

“One week in my industrial project costs 300 000$”
The black cloud

Ethics, validity

Proportion of study?

Narrow or?

Who gains?

Real Problem?

Information hiding

IPR

Skewing

“adaptation”

Consequences?

Data secure?
Papers & electronic info gone?

Real Data?
Successful cooperation!

You are both returning to the collaboration!

Together you are Innovating and contributing to a world of better know-how

Both Industry and Academia get their goals fulfilled

Contribution is deployed and used

Both Gain Recognition (Publication)