Requirements Traceability:
Lessons from an industrial case study

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- Background & motivation
- Case study
- Lessons

Recognise This?

Hand-drawn cartoons here ...
To Avoid Questions...

“REQUIREMENTS TRACEABILITY (RT) refers to the ability to describe & follow the life of a requirement in both a forwards & backwards direction”

(i.e., from its origins, through its development & specification, to its subsequent deployment & use, & through all periods of on-going refinement & iteration in any of these phases)

Conventional (Artifact-Based) RT...

- Record traceable information
- Put in dependencies
- Organise for update & retrieval
Artifact-Based RT...

- **Strengths:**
  - answer questions about conformance, progress, change impact, etc
  - often sufficient

- **Issues:**
  - partial information with limited shelf life
  - staff turn-over & memory loss

Seem Familiar?

Hand-drawn cartoons here ...
Some Clarification...

“CONTRIBUTION STRUCTURES (CS) refers to an approach to develop a model that reflects the overall system of people involved in the production & evolution of requirements”

(i.e., a disciplined way to record, examine & retrieve information about stakeholders)

Extended (Personnel-Based) RT...
Managerial & developmental staff

End users & customers

Extended (Personnel-Based) RT...

Development & evolution

End users & customers

Managerial & developmental staff

End users & customers
Personnel-Based RT...

- **Strengths:**
  - firm anchor
  - answer questions about sources, coverage, commitment transfer, etc
  - reveals actual process to inform improvement

- **Issues:**
  - practical?
  - useful?

Case Study - Application of Approach...

Company & project

Artifact structure  Part of contrib structure
Case Study - Use of Results...

• Answers questions about:
  • involvement & remit
  • source & responsibility
  • collaboration & working arrangement
  • ramification & backup
  • change notification
• Value-added information:
  • profiles (contributor / contribution)
  • analyses (key / peripheral contributors)

Lessons - Application of Approach...

• Feasible & practical, but:
  • who does it, how & when
  • commitment
  • nature of contribution & granularity
  • the undocumented
  • other dimensions
Lessons - Use of Results...

• Answers Qs, gives further analyses, but:
  • time, effort & cost
  • analytical overload
  • sensitivity
  • generalisations
  • integration

Lessons - For Uptake...

• Culture for RT
• Need for CS
• Buy-in
• Champions & experts
• Accepted policies
• Incremental & benefit-driven
• Success criteria
• Tool support

That’s all folks