Requirements Traceability:

Lessons from an industrial case study

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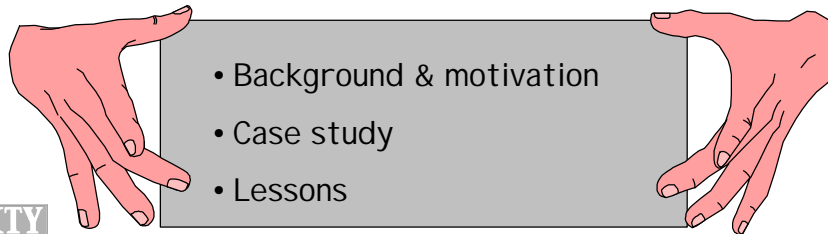
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- Background & motivation

- Case study

- Lessons

CITY
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Recognise This?

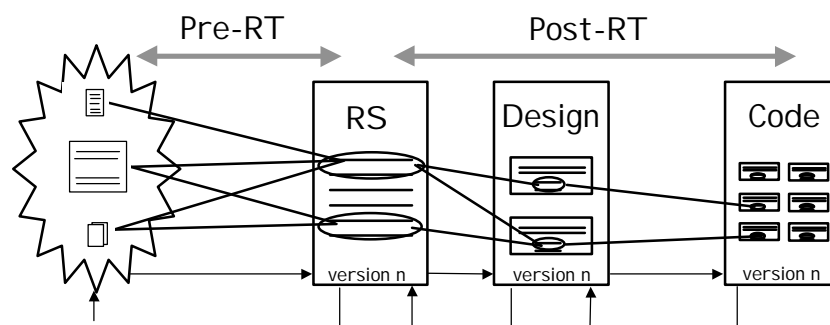Hand-drawn cartoons here ...

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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)
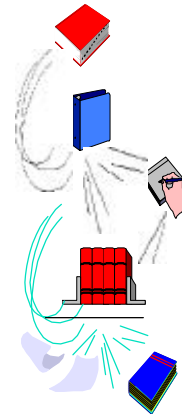
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Conventional (Artifact-Based) RT…

Pre-RT   Post-RT

RS   Design   Code

version n   version n   version n

✔ Record traceable information

✔ Put in dependencies

✔ Organise for update & retrieval

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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

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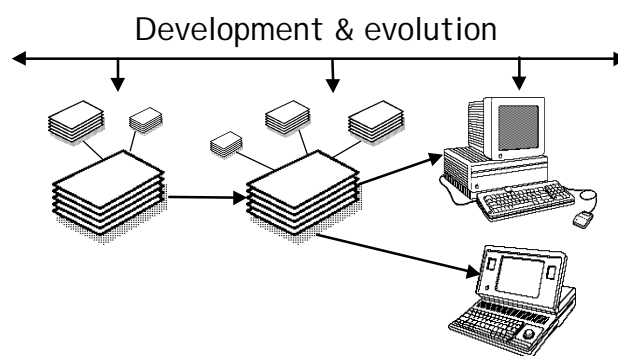## Seem Familiar?

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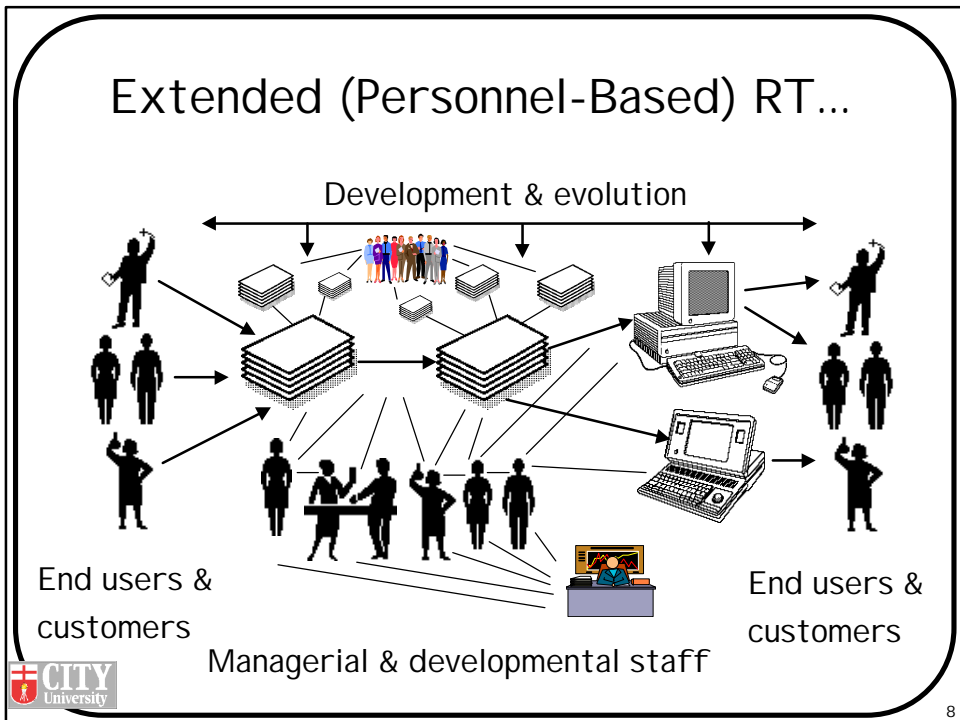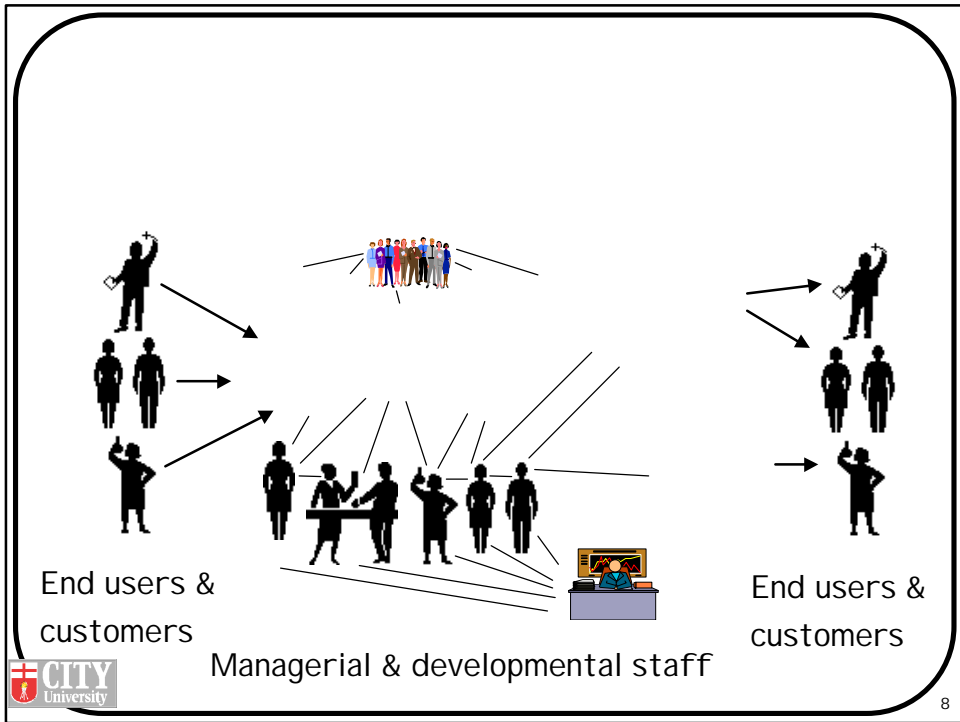
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Some Clarification...

"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)
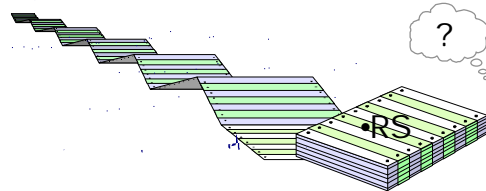
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Extended (Personnel-Based) RT...

Development & evolution

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End users & customers

Managerial & developmental staff

End users & customers

Extended (Personnel-Based) RT…

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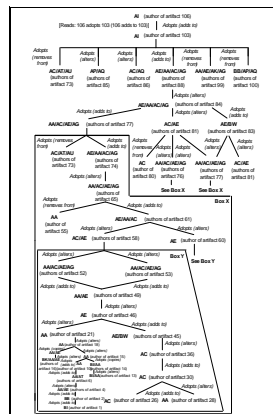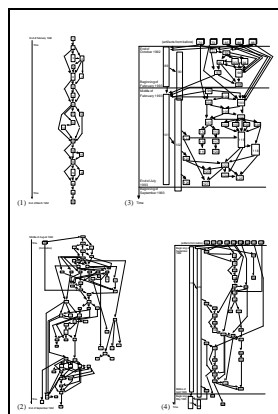
Personnel-Based RT...

- Strengths:

  - firm anchor

  - answer questions about sources, coverage,
     commitment transfer, etc

  - reveals actual process to inform improvement

- Issues:

  - practical?

  - useful?

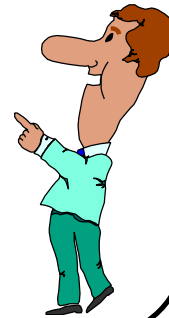# Case Study - Application of Approach...

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)

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Lessons - Application of Approach...

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

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Lessons - Use of Results...

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

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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

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