

Requirements Engineering

in & for

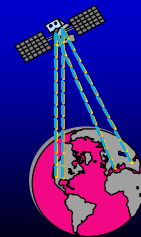
Networked Organisations



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Overview...

- Characteristics of networked organisations
- Requirements engineering challenges
- My position:
 - ◆ Role of
 - Requirements traceability
 - Contribution structures
 - Other things (?)
- A few points



What is a Networked Organisation?

Organisation:

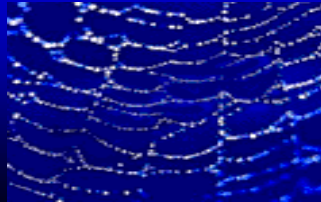
- "A body, system or society with a working (orderly) structure" - OED



What is a Networked Organisation?

Network:

- "A complex (intersecting, meshed or chained) arrangement of interconnected persons, operations, etc" - OED



What is a Networked Organisation?

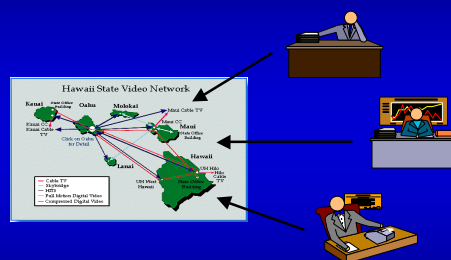
Networked organisation:

- A working arrangement in which members are distributed but (strive to?) work together to achieve its goals



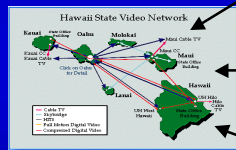
Types of Distribution in Networked Organisations...

- Physical distribution

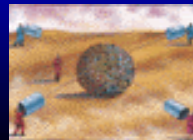


Types of Distribution in Networked Organisations...

- Physical distribution



- Conceptual distribution



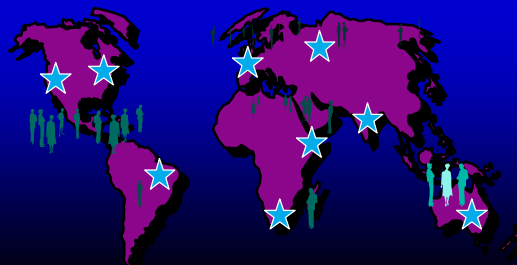
I don't agree!



The Reality...

Systems & software increasingly being developed:

- To fit in a networked organisation
- By a networked organisation



More Specifically...

Many (overlapping)
networked organisations

Developer
organisation



Custom
Turnkey



Shrink-wrap

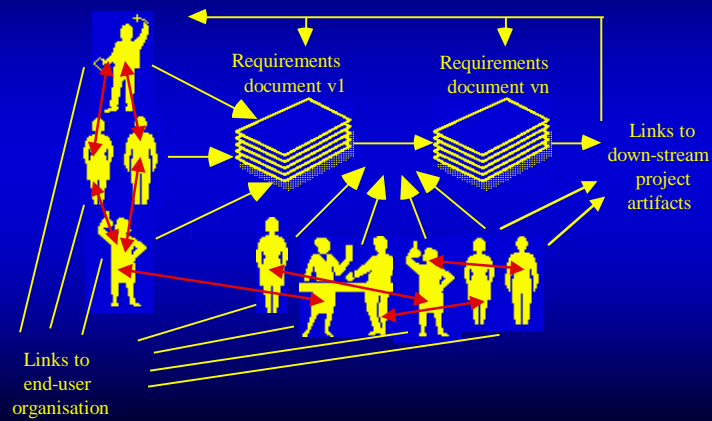
Organisation in
which system is
to fit



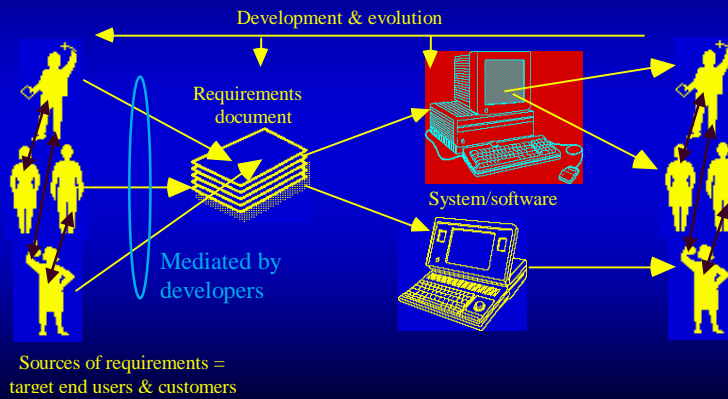
... Other organisations with a
stake in the system ...



Networked Developers...



Networked End-Users...



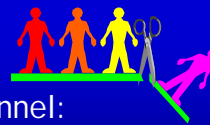
Requirements Engineering Some Challenges...

- Dispersed information & viewpoints:
 - ◆ Coverage, integration & checking
 - ◆ Inconsistency & conflict
 - ◆ Management



Requirements Engineering Some Challenges...

- Dispersed information & viewpoints:
 - ◆ Coverage, integration & checking
 - ◆ Inconsistency & conflict
 - ◆ Management
- Dynamic reconfiguration of personnel:
 - ◆ Part/flexi home workers & hot desks
 - ◆ Shifting roles, relations & commitments
 - ◆ Staff turnover & memory loss



Key Problems - My Position...

Even more rife in such networked organisations are problems with:

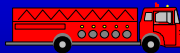
- Getting reqts
- Evolving reqts
- Changing reqts
- Emerging reqts
- Will lead to ever-deteriorating quality
 - Potential communication, co-ordination & control nightmares...



A Solution - My Position...

To the rescue:

- Requirements traceability?
- Contribution structures?



- Other things by & by... like web stuff



Requirements Traceability...



“RT refers to the ability to describe & follow information about 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)



Contribution Structures...

"CS refers to the overall system of people involved in the production & evolution of requirements"

(the richness with which this can be described depends upon: (1) how well the link between people and requirements artifacts is defined; & (ii) how well the different types of artifact-based relation are taken into account)



CS for RT...

- Remit
- Responsibility
- Ramifications
- Roles & relations



... A disciplined way to record & examine stakeholders
... Augments documented information



Rescue Services (Part 1)...

- Infrastructure for development & maintenance
 - ◆ Baseline management & drive
 - ◆ Change management & notification
- Contingency planning & preparedness
 - ◆ Who's in & who's out?
 - ◆ Anchors for communication
 - Negotiation & decisions
 - Augments info & org memory



Rescue Services (Part 2)...

- Process improvement
 - ◆ How RE is "really" done (ethno out!)
 - ◆ Inform distrib/collab methods & tools
- Organisational re-engineering
 - ◆ Stakeholder orgs & how intertwined
 - ◆ CF models & reality to inform modelling

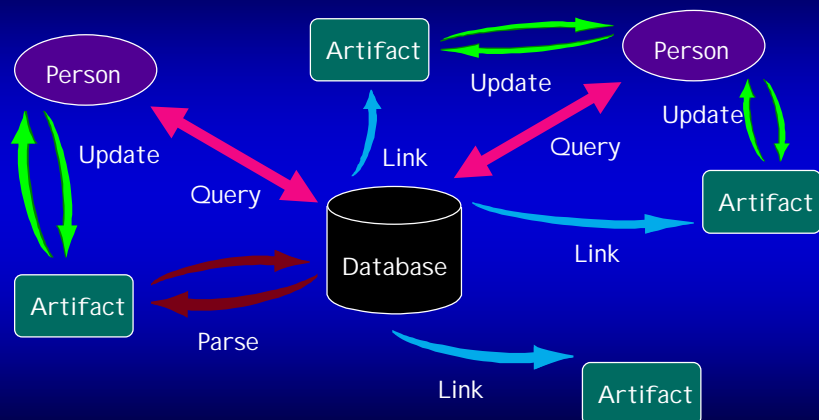


RT & CS on the WWW..

- Web servers for information repositories
- Diverse platforms & technologies
- Distributed architectures
- WANs out, intranet in
- Standard in industry
- Obvious really
 - ◆ Got to provide for RT & CS in this setting

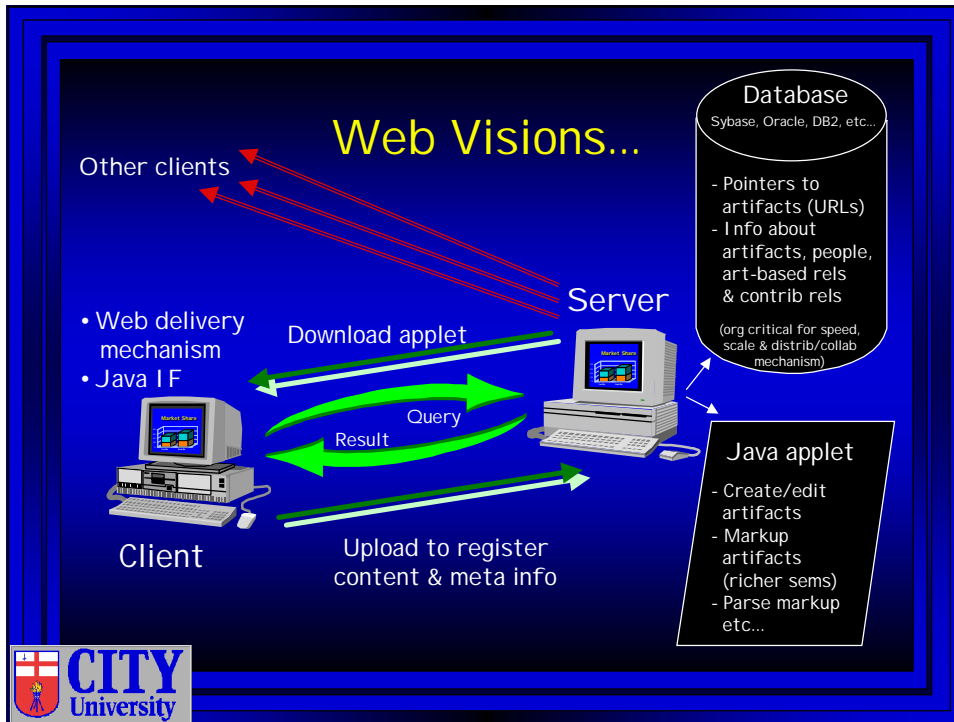


In Essence (Conceptually)...



- Web is natural mechanism to implement it





EG:

The screenshot shows a Netscape browser window titled "Netscape: RT & CS Workbench by Olly". The address bar shows the URL <http://web.soi.city.ac.uk/homes/olly/olly1>. The page content is as follows:

RT & CS Web Workbench

Person Profile

Identifier	Member of Group	Group Members
Olly	Requirements Engineers Designers	No

Contributions

Principal of	Author of	Documentor of
Artifact 1 Artifact 4 Artifact 7	Artifact 2 Artifact 5	Artifact 3 Artifact 6 Artifact 9

Roles & Commitments

Artifact	Social Role	Commitment to Artifact
Artifact 1 Artifact 4 Artifact 7	Relayer Sponsor True Author	Physical Effect All

Related People

Person	Relationship	Rationale
Fred Dave	Relayer-Devisor Sponsor-Ghost	Collaboration Collaboration

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EG:

Artifact Profile

Identifier	Member of Composite	Components
Requirements Spec V1	No	Functional Non-Functional Performance

Contributors

Principal	Author	Documentor
Olly Dave	Olly Dave Paddy	Olly

Roles & Commitments

Person	Social Role	Commitment to Artifact
Olly Dave Paddy	True Author Devisor Ghost	All Effect & Content Content

Related Artifacts (i)

Contains	References	Adopts
Functional Non-Functional Performance	Wish List Business Plan	Wish List Scenario Memo

Related Artifacts (ii)

Contained by	Referenced by	Adopted by
No	Design Spec Formal Documentation	Design Spec Requirements Spec V2

A Few Points...

- Hasn't RE always been carried out in & for networked organisations?
 - ◆ Do unitary ones exist? Old probs?
- Don't organisational structures influence how RE is done?
 - ◆ Understand first? New approaches?
- What is most pervasive?
 - ◆ Anchor to people or roles?
- Implications for web-based RE?
 - ◆ Heaps of junk? Best for? Real distrib?

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That's All Folks...



- Prepare for battle.....

