

Modeling Non-Functional Requirements Using Soft Goals

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What are soft goals?

Goals without clear-cut criteria.

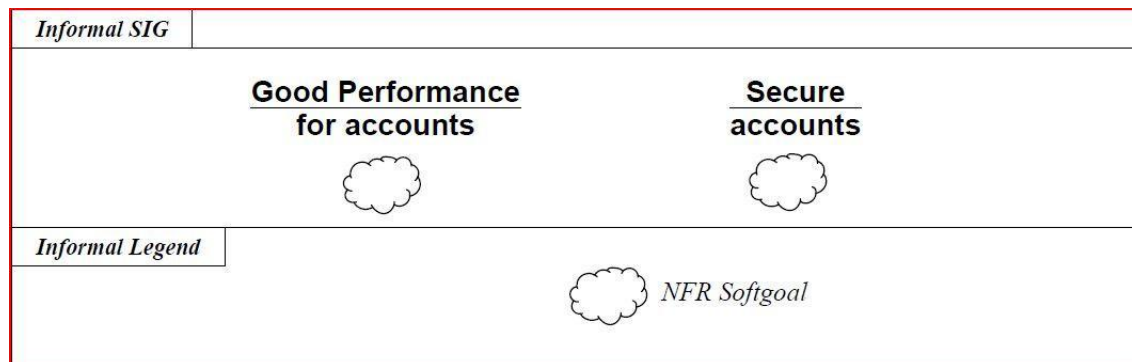


Chung Breaks this down into 3 types:

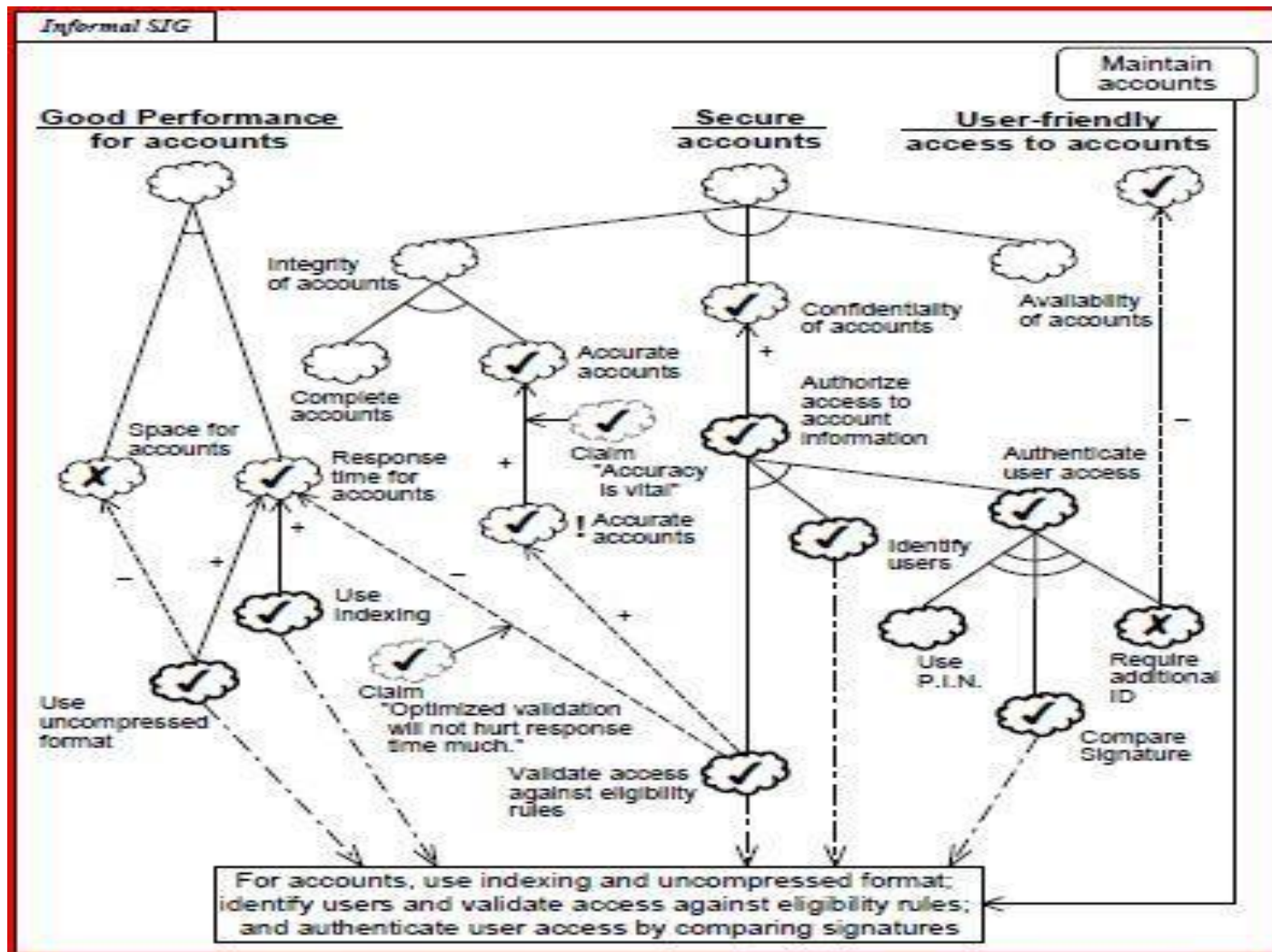
- Non-Functional Requirements (NFR)
 - Criteria used to judge the operation of a system
 - Do not define specific behaviors
- Operationalization
 - Development technique that can be implemented
 - No longer a NFR
- Claims
 - Design rationale
 - Used to Rationalize Tradeoffs

Why is this important?

- Elicitation process not systematic or well documented
 - Consequences of decisions vs being decisions
- Terms can be used to move from abstract NFRs to Quality Requirements, through Softgoal Interdependency Graphs (SIGs)
- Guidance and reasoning support for software system design.



From Abstract to Implementable



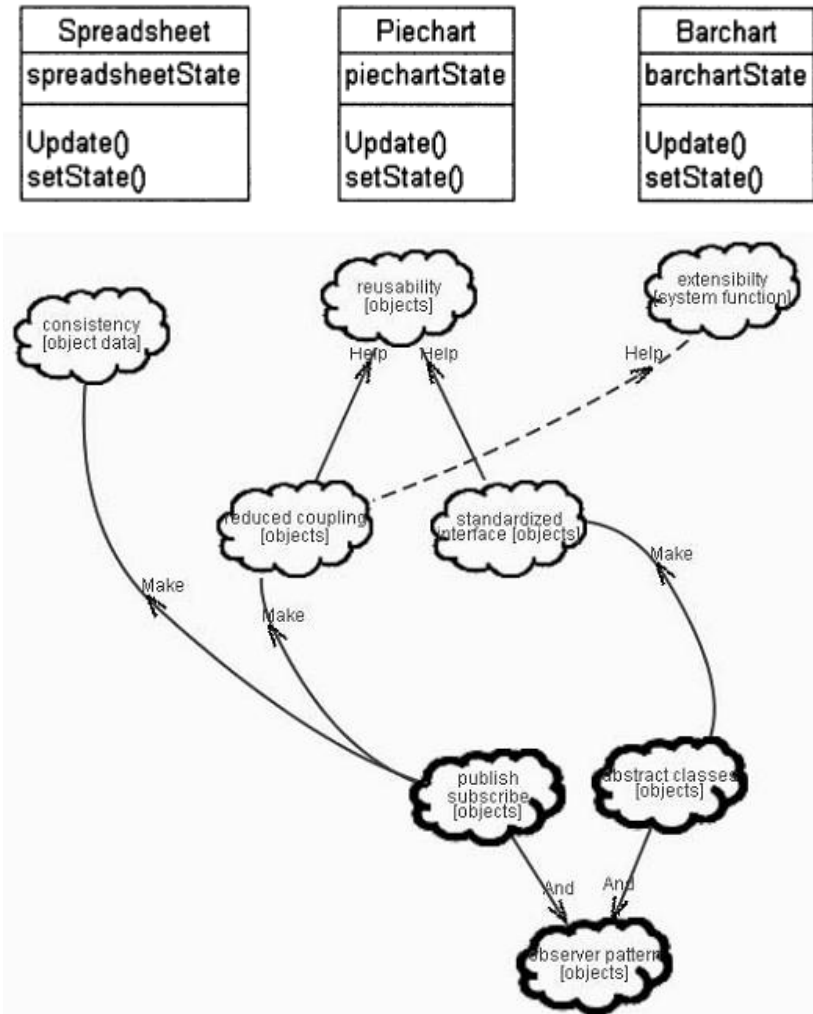
Relationship to Quality Requirements

- NFR Softgoals impact how the system performs
- Through the SIG process, softgoals can become implementable quality requirements
- These can be said to "satisfice" the original NFR Softgoals



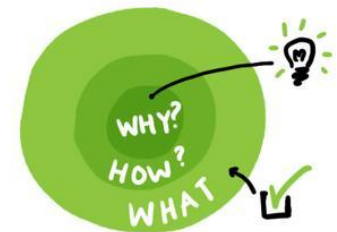
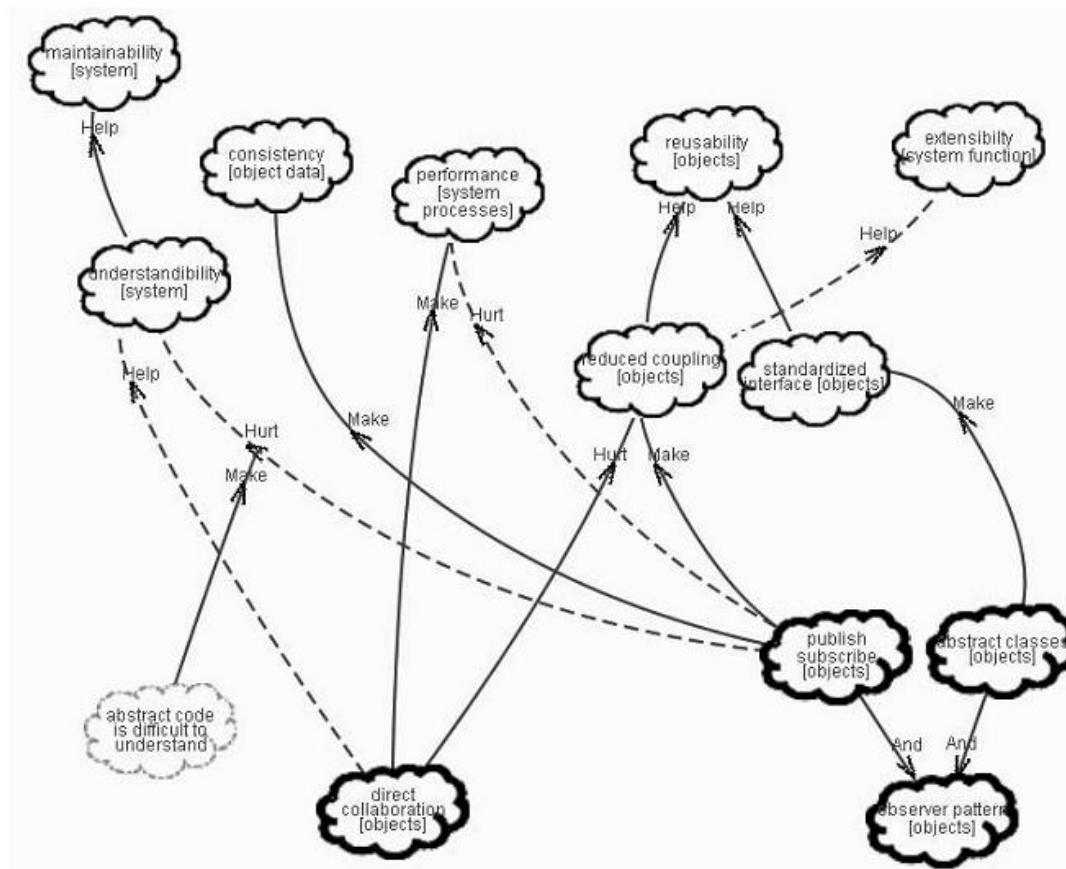
NFR as a Guide to System Design I

- Maintain consistency between related objects
- Objects should be reusable
- Loosely coupling



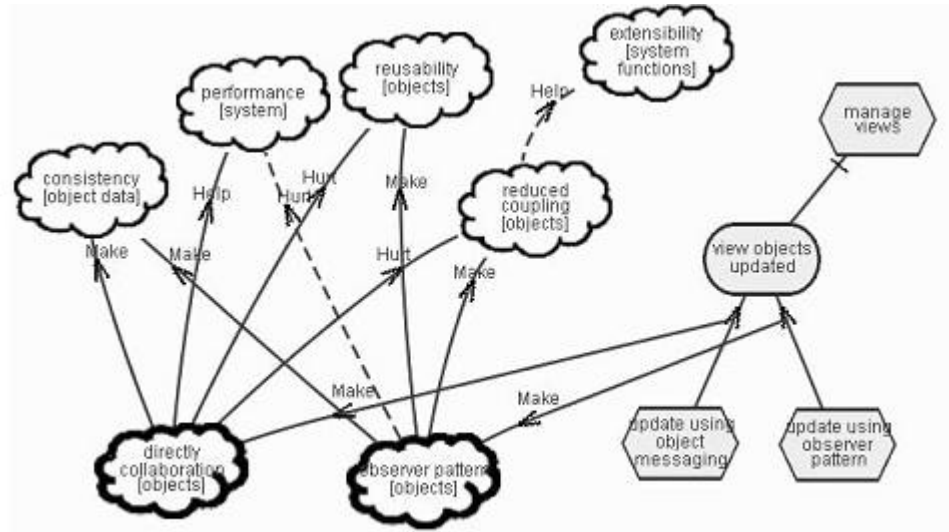
NFR as a Guide to System Design II

Tradeoffs between **Direct Contribution** and **Observer pattern**



Applying NFR pattern during Design

NFR Goal Graph and Functional elaboration



Conclusion



- Better understand and analysis of complex tradeoffs
- Allows exploration and retention of the design history
 - Alternative design choices
 - Rationales and reasons
- Justification of design.
- NFR approach is goal driven
- Pattern approach is solution driven
- Combining two help to identify design decisions

