Stakeholder

TRAN VAN HOANG

Department of Software Engineering, CIT

Contents

- Boundaries
  - Identifying the scope of the problem
- Stakeholders
  - Identifying the problems
- Goals
  - Identifying the criteria
- Scenarios
  - Using examples to understand the problems

Where do we start?

- **Identify the problem**
  - **What is the objective of the project?**
    - e.g., "Scheduling meetings is too costly right now"
  - **What is the "vision"?**
- **Scope the problem**
  - **Given the vision, how much do we tackle?**
    - e.g. "Build a system that schedules meetings", …or…
    - e.g. "Build a system that maintains people's calendars" …or…

Where do we start? (cont.)

- **Identify solution scenarios**
  - Given the problem, what is the appropriate business process for solving it?
    - e.g. “Anyone who wants to schedule a meeting goes to the secretary, gives details and the secretary handles the rest”, …or…
- **Scope the solution**
  - Given a business process, what parts should be automated, and how?
    - e.g. “Computer takes in scheduling request details, outputs a solution” …or…
    - e.g. “Solution arrived at interactively by secretary and computer” …or…

Requirements Elicitation

- **Starting point**
  - **Is there is a "problem" that needs solving?**
    - e.g. dissatisfaction with the current state of affairs
    - e.g. a new business opportunity
    - e.g. a potential saving of cost, time, resource usage, etc.

Requirements Elicitation (cont.)

- **Collecting enough information to:**
  - **Identify the "problem"/"opportunity"**
    - Which problem needs to be solved? (identify problem Boundaries)
    - Where is the problem? (understand the Context/Problem Domain)
    - Whose problem is it? (identify Stakeholders)
    - Why does it need solving? (identify the stakeholders' Goals)
    - How does the problem manifest itself? (collect some Scenarios)
    - When does it need solving? (identify Development Constraints)
    - What might prevent us solving it? (identify Feasibility and Risk)

W6H

The journalist's technique:

What?
Where?
Who?
Why?
When?
How?
Which?

Requirements Elicitation (cont.)

- **Become an expert in the problem domain**
  - Learn how to find your way round a new problem quickly
  - Use your (initial) ignorance as an excuse to ask (dumb?) questions

Identifying the Problem

- **Vague problem stated by the customers:**
  - E.g. university textbook store:
    - Manager wants to computerize the book order forms filled out by instructors;
  - E.g. A large insurance company:
    - Claims manager wants to cut down the average time it takes to process an insurance claim from 2 months to 2 weeks

Identifying the Problem (cont.)

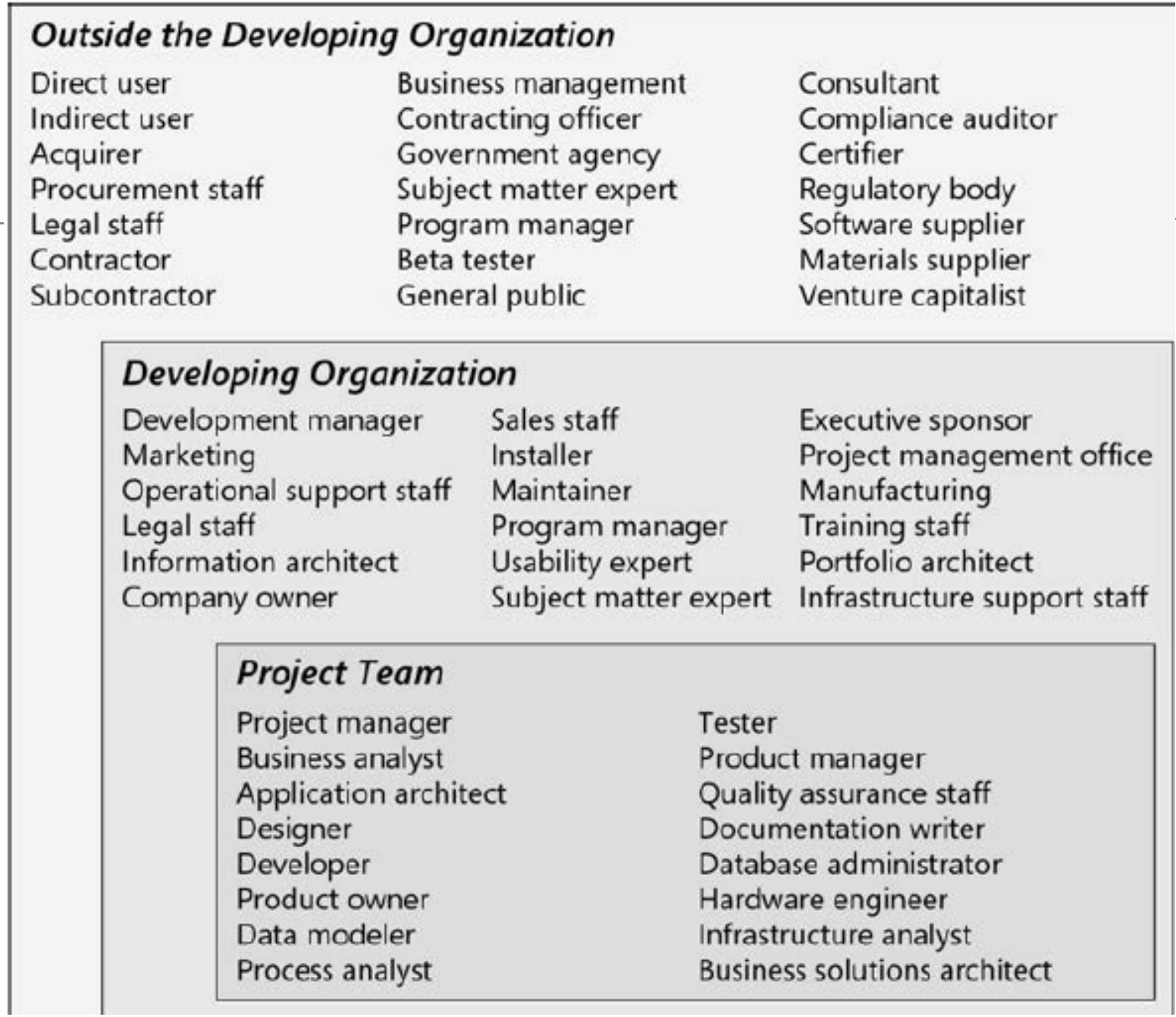
- **Often you only see symptoms rather than causes:**
  - E.g. “In a hospital, patients needing X-ray scans have to wait for months”
  - The long wait is the symptom, not the problem. The problem may be:
    - Shortage of X-ray machines;
    - Shortage of trained staff;
    - Shortage of doctors to process the data
    - Inefficient scheduling procedures

Stakeholders

- **Stakeholder**
  - A stakeholder is a person, group, or organization that is involved in a project, is affected by its process or outcome, or can influence its process or outcome.
  - Stakeholders can be internal or external to the project team and to the developing organization
- **Example stakeholders**
  - **Users**
    - concerned with the features and functionality of the new system
  - **Designers**
    - want to build a perfect system, or reuse existing code
  - **Systems analysts**
    - want to "get the requirements right"
  - **Training and user support staff**
    - want to make sure the new system is usable and manageable

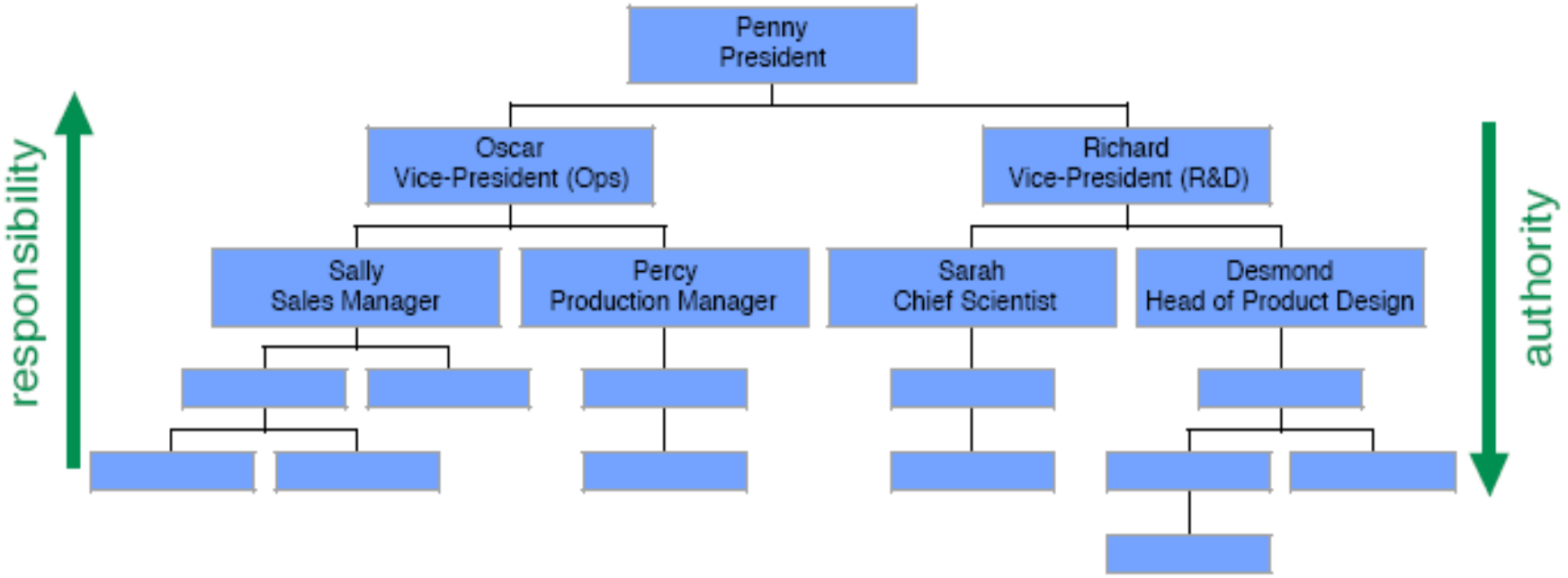
Stakeholders (cont.)

- **Example stakeholders (cont.)**
  - **Business analysts**
    - want to make sure "we are doing better than the competition"
  - **Technical authors**
    - will prepare user manuals and other documentation for the new system
  - **The project manager**
    - wants to complete the project on time, within budget, with all objectives met.
  - **"The customer"**
    - Wants to get best value for money invested!



Potential stakeholders within the project team, within the developing organization, and outside the organization

Finding stakeholders: The Org Chart



- Organization charts show
  - Areas of responsibility (flows upwards)
  - Lines of authority (delegated downwards)
- A useful tool for figuring out where the stakeholders are

Identifying Stakeholders' Goals

- **Approach**
  - Focus on why a system is required
  - Express the '**why**' as a set of stakeholder goals
  - Use goal refinement to arrive at specific requirements
  - Goal analysis
    - document, organize and classify goals
  - Goal evolution
    - refine, elaborate, and operationalize goals
  - Goal hierarchies show refinements and alternatives

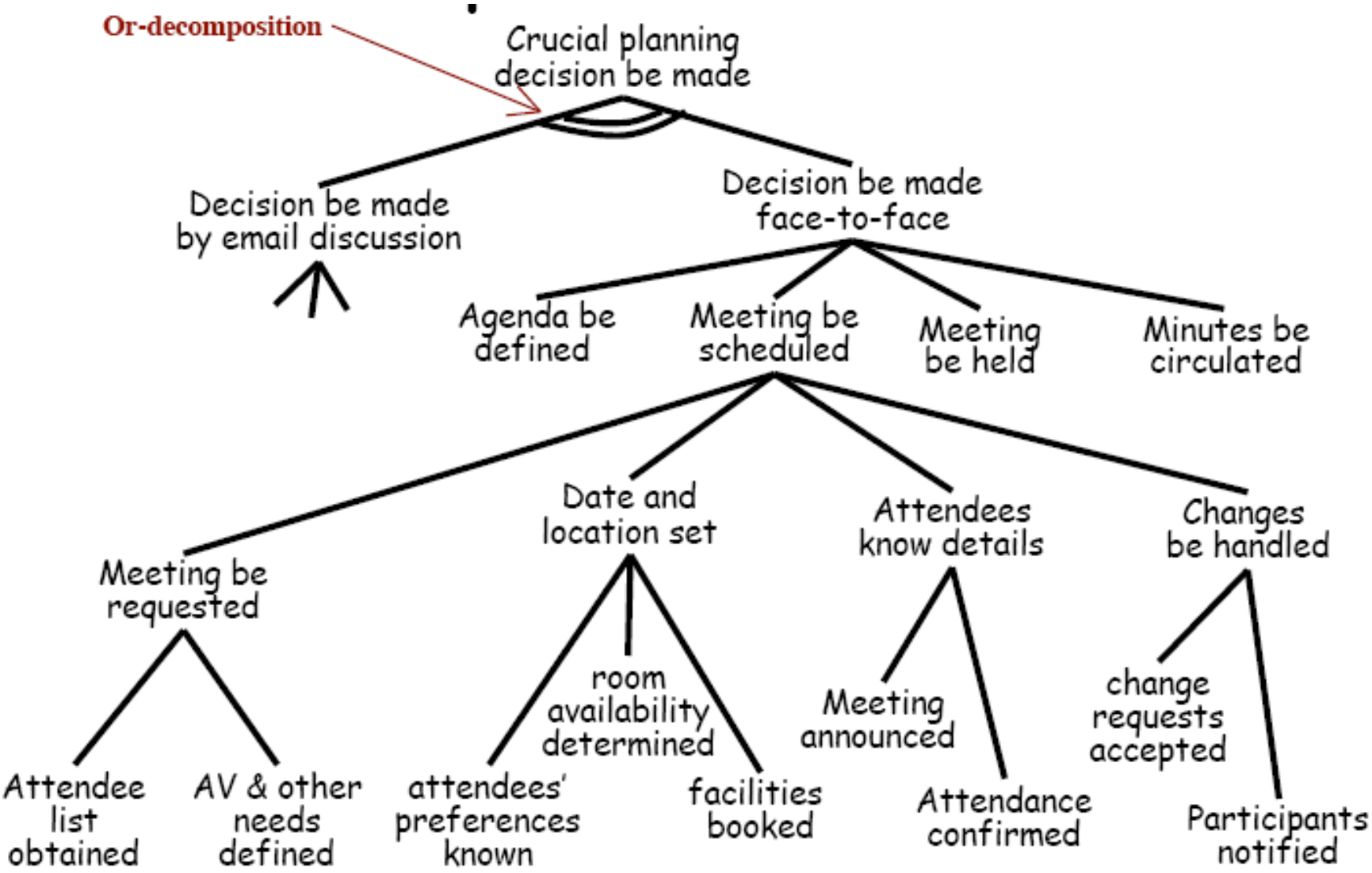
Identifying Stakeholders' Goals

- Advantages
  - Reasonably intuitive
  - Explicit declaration of goals provides decisions for conflict resolution
- Disadvantages
  - Captures a static picture - what if goals change over time?

Goal Modeling

- **(Hard) Goals:**
  - **Describe functions that must be carried out. E.g.**
    - Satisfaction goals
- **Softgoals:**
  - **Cannot really be fully satisfied. E.g.**
    - Accuracy
    - Performance
    - Security
    - …

Example Goal Elaboration

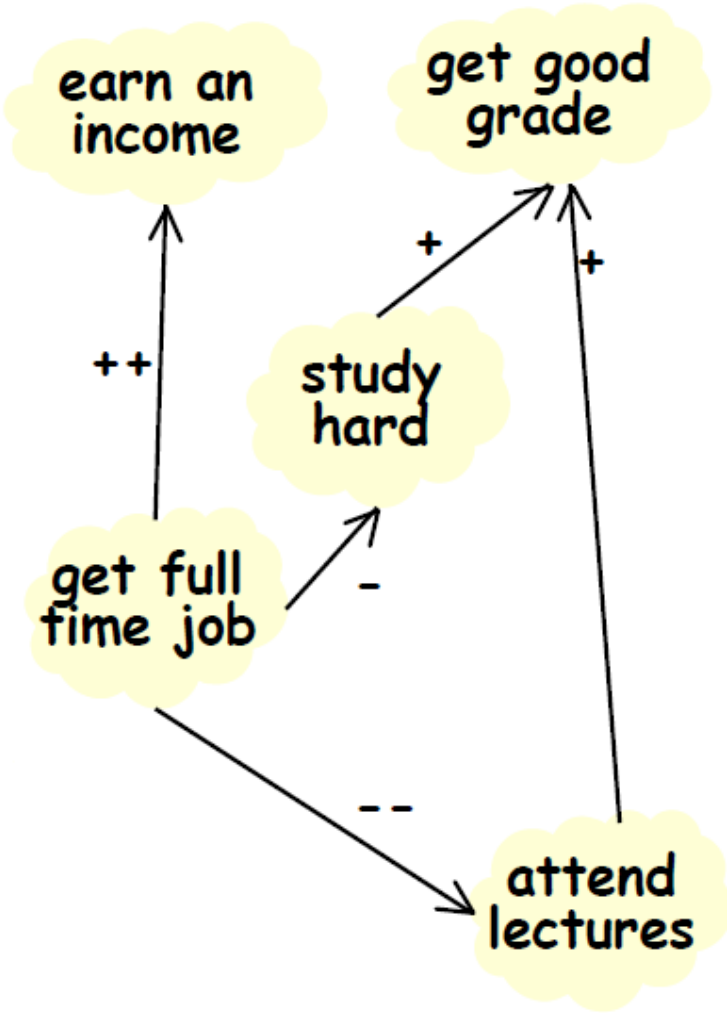


Goal Analysis

- **Goal Elaboration:**
  - "**Why**" questions explore higher goals
  - "**How**" questions explore lower goals
- **Relationships between goals:**
  1. One goal helps achieve another (+)
  2. One goal hurts achievement of another (-)
  3. One goal makes another (++)
     - Achievement of goal A **guarantees** achievement of goal B
  4. One goal breaks another (--)
     - Achievement of goal A **prevents** achievement of goal B
  5. Precedence ordering – if goals must be achieved in a particular order

Goal Analysis (cont.)

- **Example**

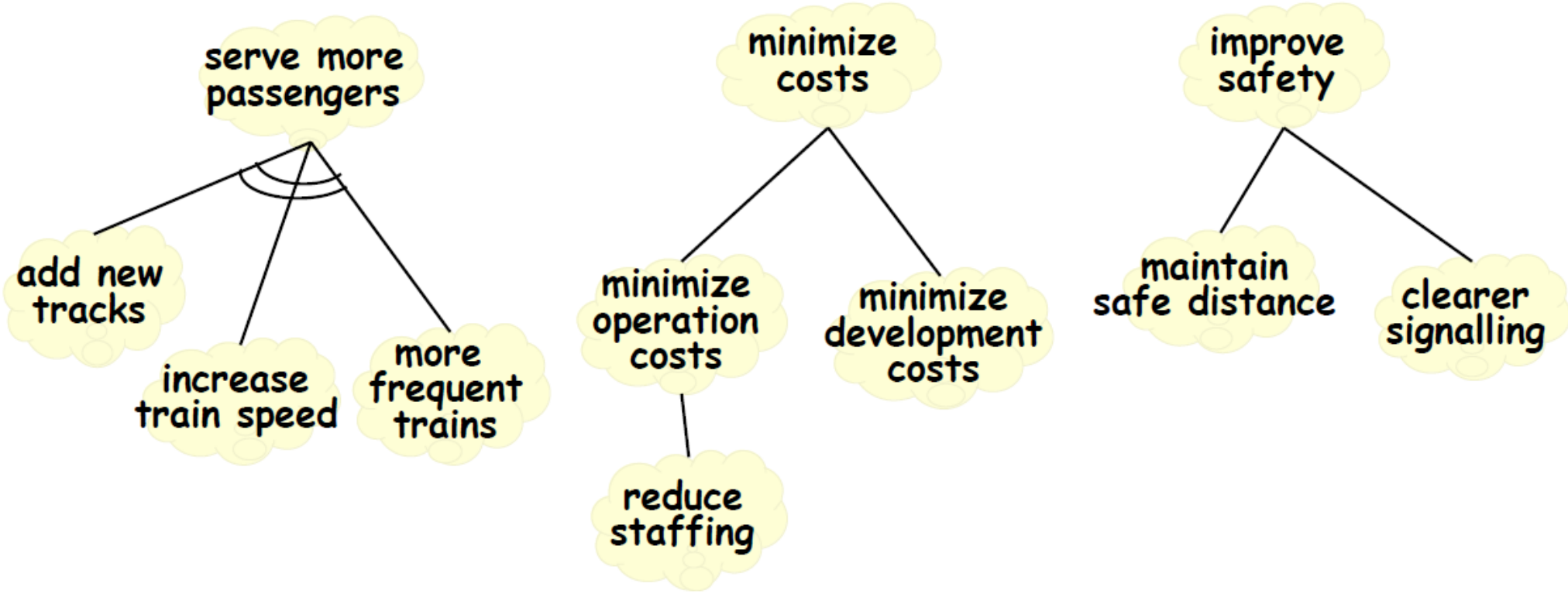


Softgoals

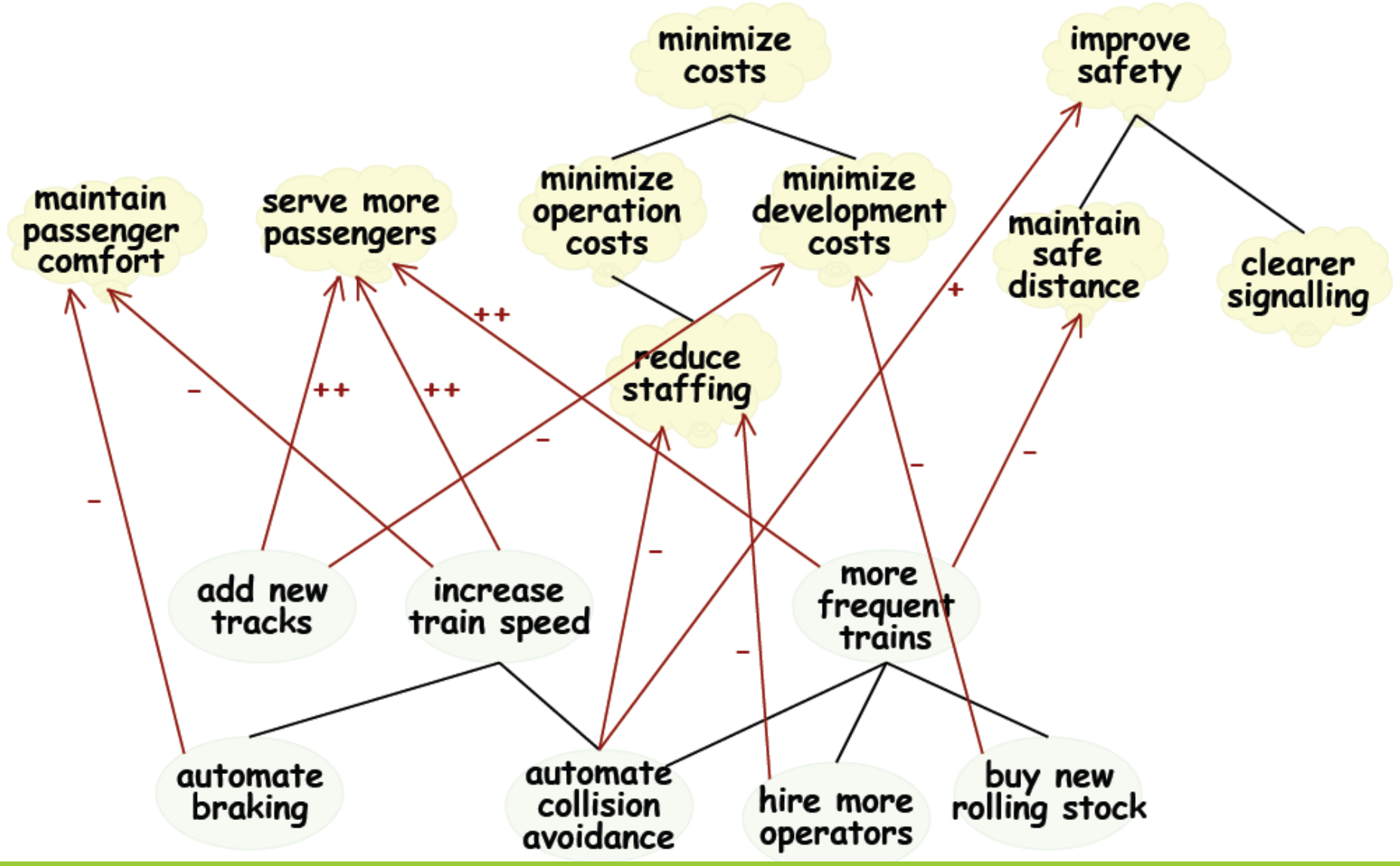
- **Some goals can never be fully satisfied**
  - **Being considered as softgoals**
    - E.g. “system be easy to use”; “access be secure”
    - Also known as ‘non-functional requirements’; ‘quality requirements’

Softgoals (cont.)

- E.g. for a train system:



Softgoals as selection criteria



Scenarios

- **Scenarios**
  - Specific sequence of interaction between actor and system
  - Tend to be short (e.g between 3 and 7 steps)
  - May be:
    - positive (i.e. required behavior)
    - negative (i.e an undesirable interaction)

Scenarios (cont.)

- **Advantages**
  - Natural: stakeholders tend to use them spontaneously
  - Short scenarios very good for quickly illustrating specific interactions

- **Disadvantages**
  - Hard to check for completeness

Example Scenario

Title: Successful meeting scheduled using messaging option Participants: Alice (initiator, not attending); Bob, Carlo, Daphne (attendees)		
Action	Goals satisfied	Obstacles / Problems
Alice requests meeting, specifying participants, timeframe	Meeting requested; Attendee list obtained	What if selected timeframe is infeasible?
AS sends participant requests to Bob Carlo and Daphne	?	Did we miss a goal? Can't detect when messages are read; what happens if Bob reads the message but doesn't reply?
Bob reads message	Participants informed	
Carlo reads message		
Daphne reads message		
Bob replies with preferences	Attendees preferences known	Should we allow some to be higher priority?
Carlo replies with preferences		
Daphne replies with preferences		
AS schedules meeting AS notifies Alice, Bob, Carlo, Daphne of time and location	Room availability determined; room booked Meeting announced;	How do we know if they've all read the announcement? What if the schedule is no longer convenient for

Main references

1. Prof Steve Easterbrook, lecture notes, University of Toronto, Canada
2. Software Engineering By Ian Sommerville - 8th Edition, Pearson Education, 2007

Q&A