

V. Goal Diagrams

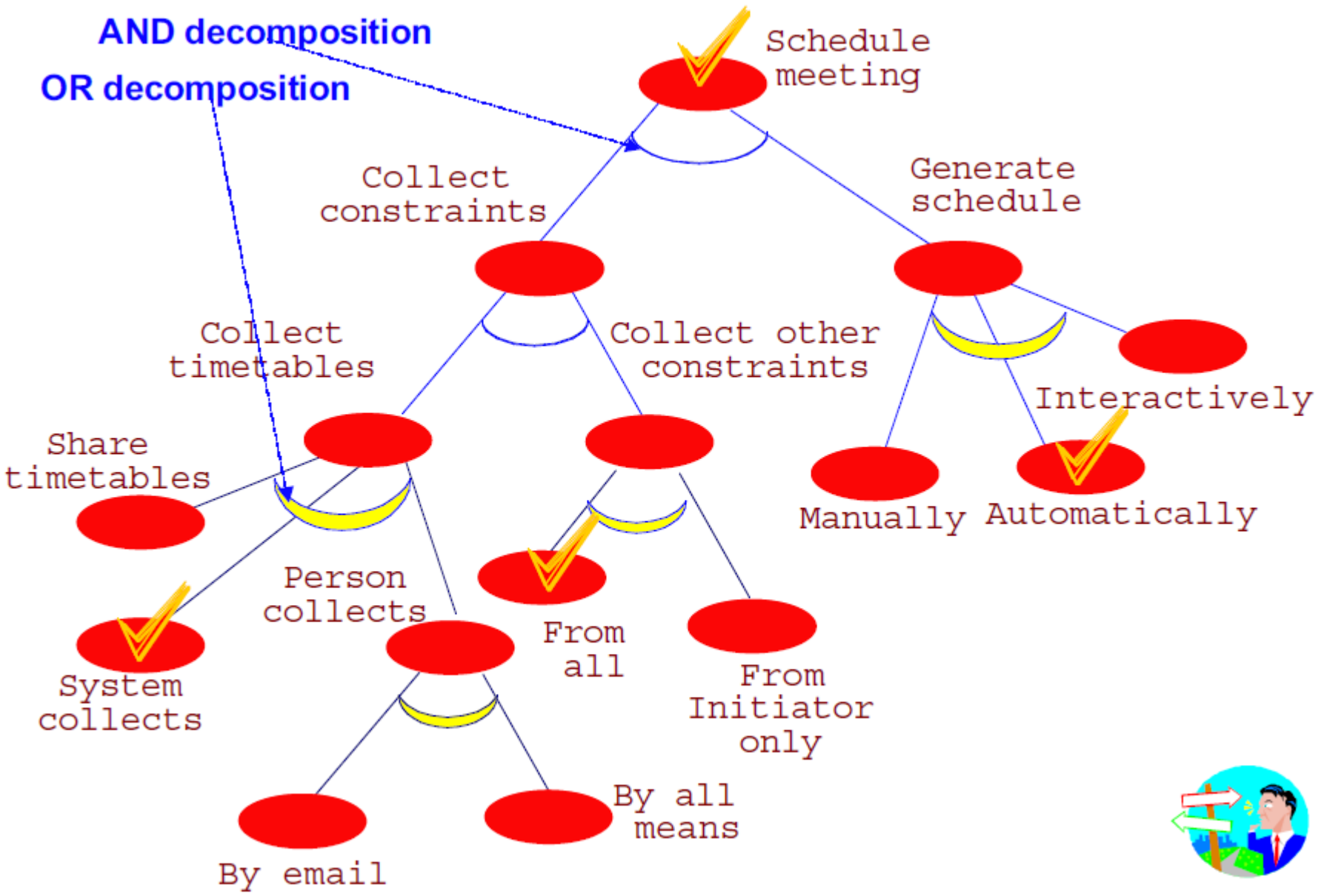
Goals and AND/OR Trees
Softgoals
Building Goal Diagrams
How and Why Questions



Acknowledgment: these slides are based on Prof. John Mylopoulos slides which are used to teach a similar course in the University of Toronto – St. George campus. Used with Permission.

Goals

- *Goals represent business objectives for the new system and its operating environment.*
- *For example,*
 - ✓ *“Fulfill every book request” (Library organization)*
 - ✓ *“Produce 1M MacG5s within a year” (Apple), or,*
 - ✓ *“Serve more passengers” (TTC)*



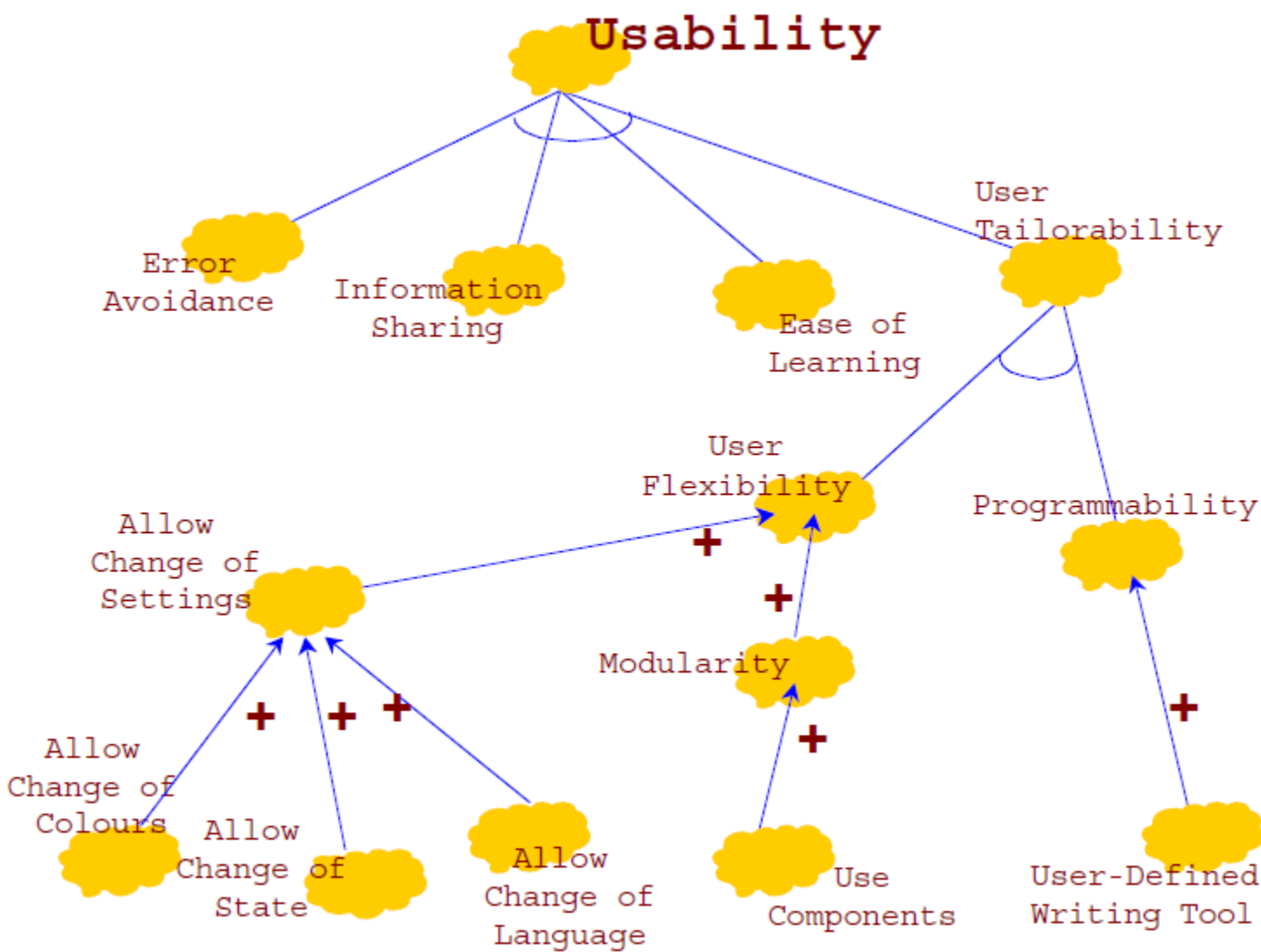
Alternatives for Satisfying Goals

- *An AND-goal is satisfied if all of its subgoals are; an OR-goal is satisfied if at least one its subgoals is.*
- *An alternative (solution) to a root goal G consists of a set of leaf goals which together satisfy G.*
- *There are 24 alternatives for the goal of the previous slide.*

Softgoals

- *These are goals that are used as criteria for comparing alternative solutions for other goals.*

*E.g., Higher profits [ProductionUnit3],
Better service, Satisfied customer,
User-friendly [Interface2]
Portable [Module4]*



Goal Relationships

- *We will use more than AND- and OR-relationships:*
 - ✓ *+ -- one goal contributes positively towards the fulfillment of another goal;*
 - ✓ *- -- one goal contributes negatively towards the fulfillment of another goal;*
 - ✓ *++ (--)-- one goal subsumes/negates another, i.e., if the first goal is fulfilled, the second is fulfilled/denied;*
- *With these enhancements, we can build goal models which could be useful for strategic business analysis or requirements analysis.*

Alternatives for Satisfying Goals

- An **alternative** (solution) to the fulfillment of a goal G consists of one or more leaf goals which together fulfill the root goal.
- A **goal model** defines a space of alternatives for the fulfillment of its root goal.
- An alternative A_1 is **better than** A_2 in fulfilling goal G with respect to softgoals G_1, G_2, \dots if A_1 's net contributions to G_1, G_2, \dots (e.g., positive minus negative contributions) is greater than that of A_2 .
- In general, goals and softgoals can be contradictory. Given a set of root goals and softgoals, there may not be an optimal solution [Simon68]. Hence the search for **good-enough solutions**.