Integrating Sustainability in Decision-Making Processes:
A Modelling Strategy

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Sustainability

"ability to meet the needs of the present without compromising the ability of future generations to meet their own needs"
(Brundtland Commission)

Ecological Footprint

"the amount of biologically productive land needed to regenerate the resources of a set of human activities"

The Challenge:

How can organizations make their operations more sustainable?
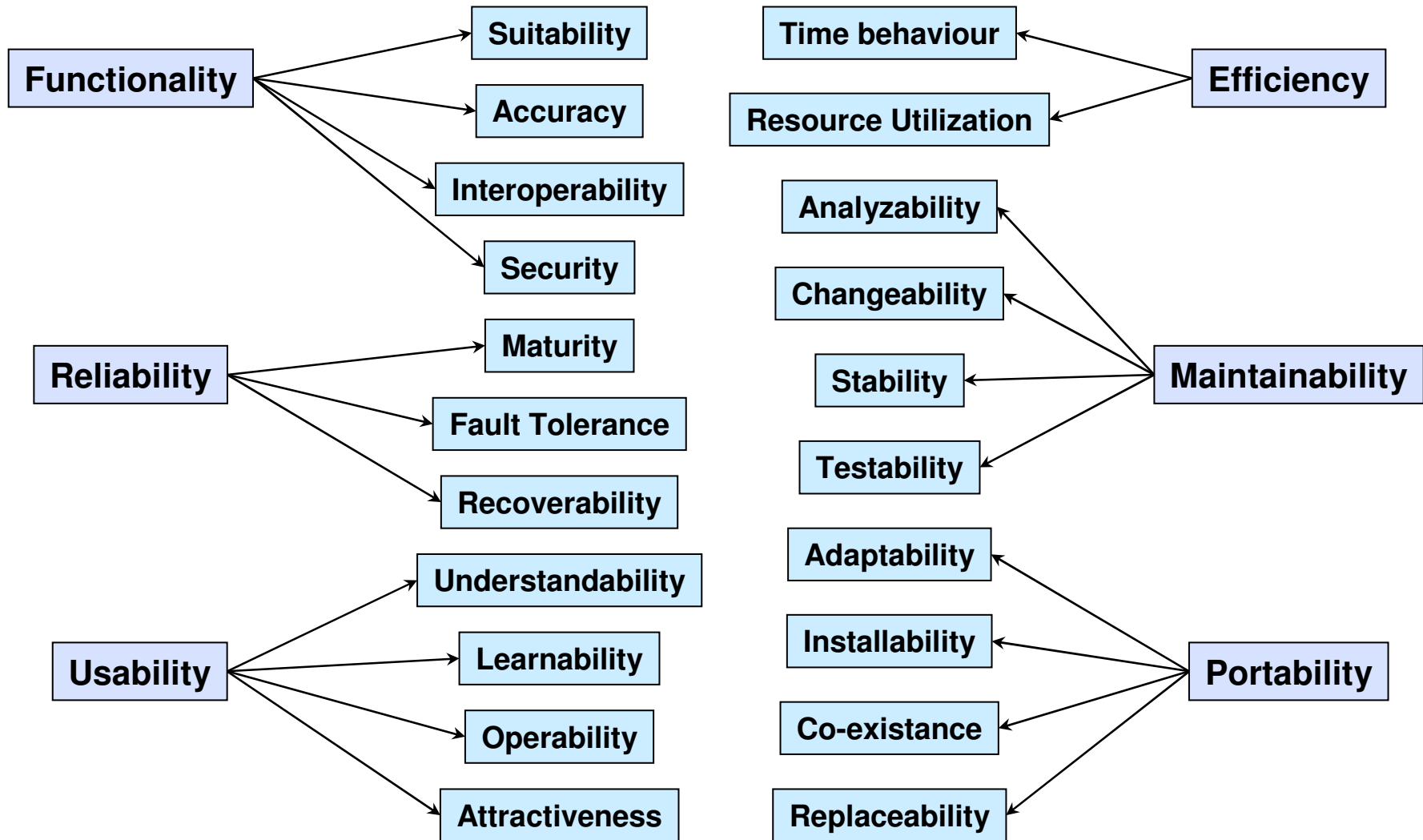
Can Software Engineering Help?

We can analyze trade-offs

adapt existing requirements modeling techniques to analyze trade-offs between sustainability and other business goals

We can incorporate sustainability into system design

integrate sustainability into the development of any software that may impact the ecological footprint of an organization

Sustainability: a missing requirement

Functionality → Suitability

Functionality → Accuracy

Functionality → Interoperability

Functionality → Security

Reliability → Maturity

Reliability → Fault Tolerance

Reliability → Recoverability

Usability → Understandability

Usability → Learnability

Usability → Operability

Usability → Attractiveness

Efficiency → Time behaviour

Efficiency → Resource Utilization

Maintainability → Analyzability

Maintainability → Changeability

Maintainability → Stability

Maintainability → Testability

Portability → Adaptability

Portability → Installability

Portability → Co-existance

Portability → Replaceability

Sustainability as a SoftGoal

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Welcome From the General Chair

ICSE 2009 promises to be an exciting event, and I would like to share some of the highlights with you. Of course, we have our always outstanding research track. I'd also like to make note of several new tracks this year. Software Engineering in Practice will have a combination of papers and invited speakers.

The New Ideas and Emerging Results track will include conference presentations for the first time. The format will be short "blitz" presentations and discussion that we hope will be both informative and fun. The Tools and Demos track will provide substantial presentations of both established and experimental tools. The conference will include a set of Technical Briefings on areas that we believe are of emerging importance for software engineering research.

You can find information about all of these conference tracks, plus the co-located meetings, workshops, and tutorials, by signing up on our mailing list or RSS feed. We will let you know as pages are updated with information.

One last note. We have decided to take a Green approach for ICSE09. We started out with a few ideas of our own, but have gotten many great ideas from others. If you have a suggestion for the greening of ICSE, please email me at fickas@cs.uoregon.edu. In fact, email me with any suggestions or comments you have about any ICSE topic. Glad to hear from you.

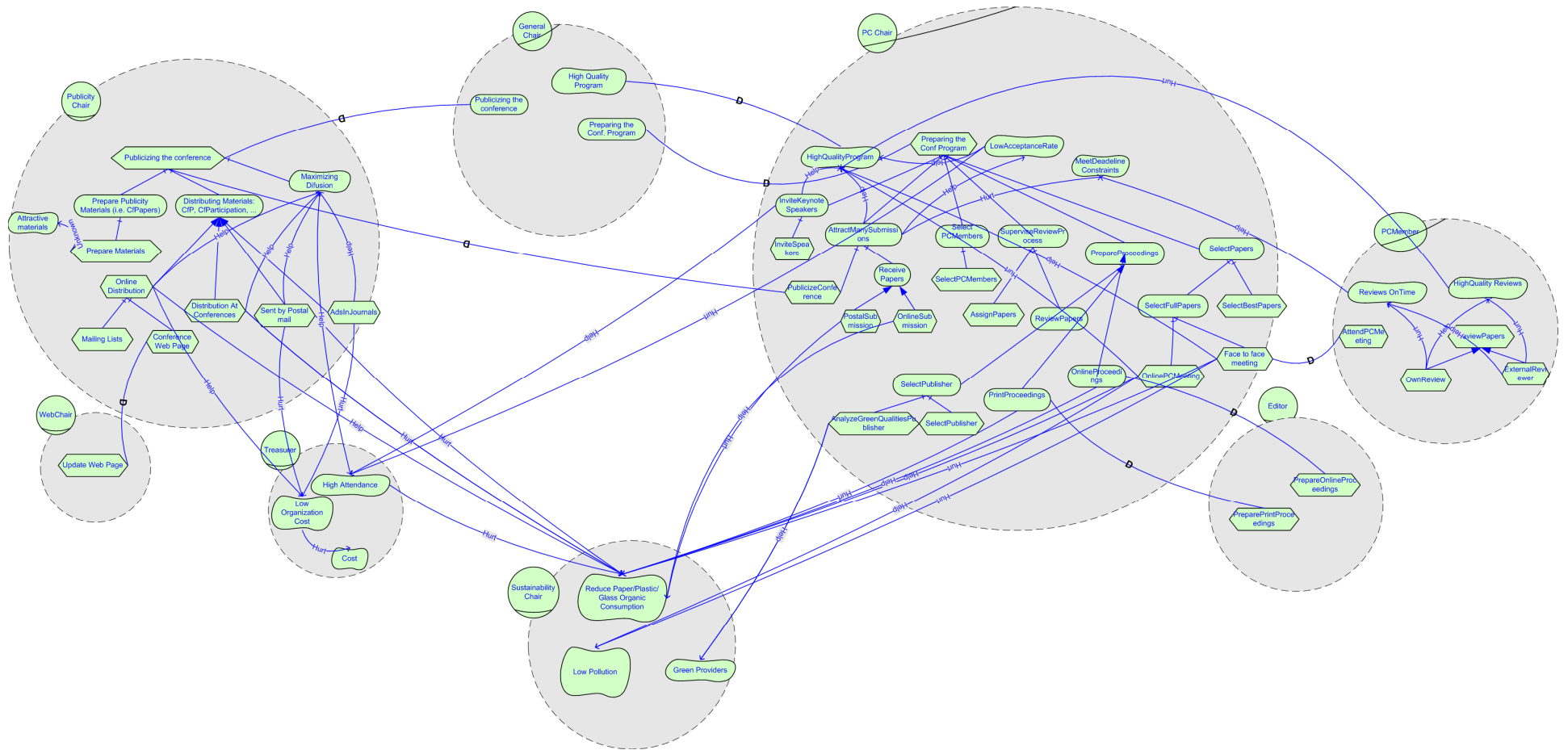Thanks, and hope to see you in Vancouver.
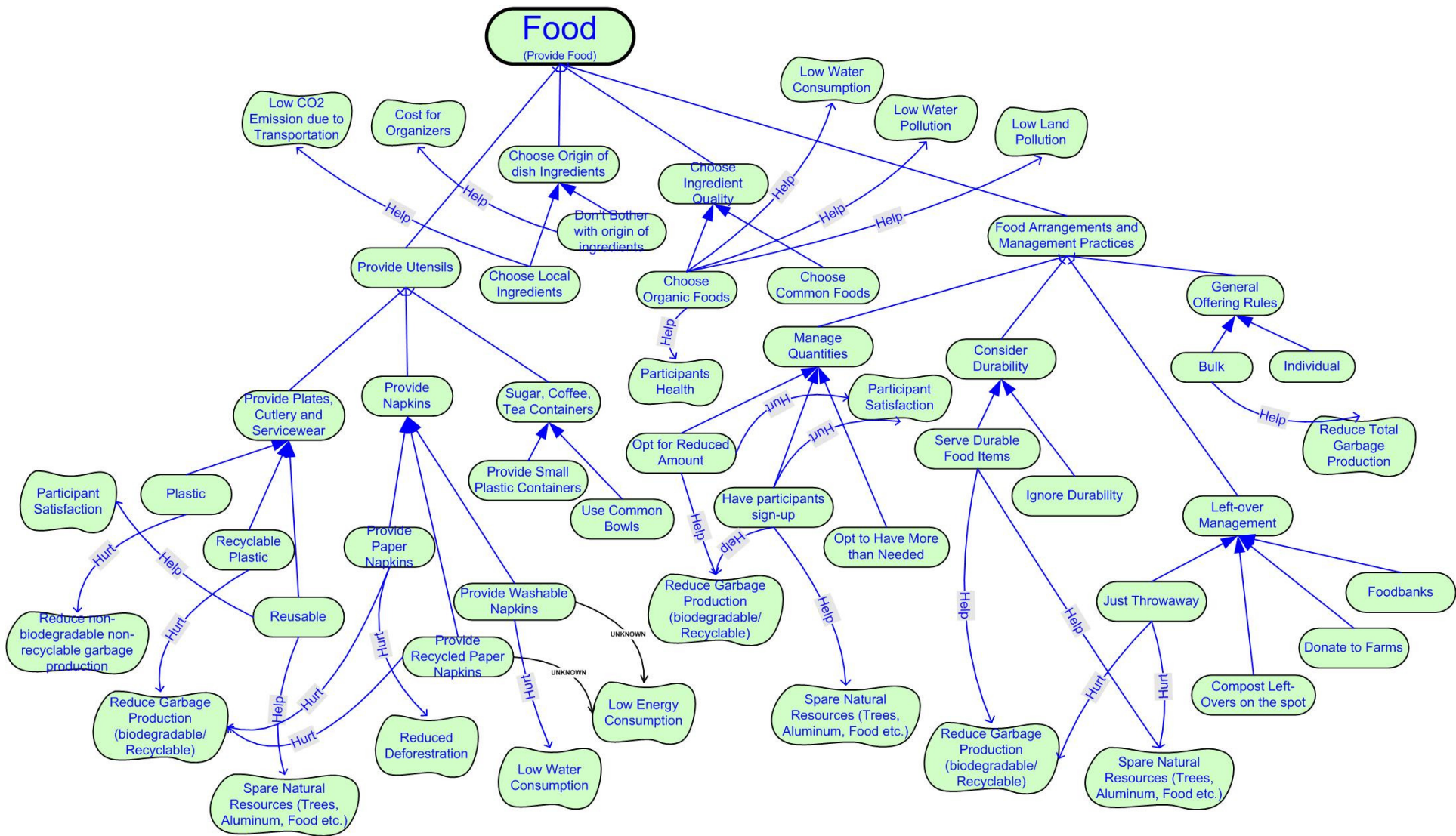
Steve

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News

- Keep your Tuesday evening open for IBM's Jazz event and the panel on The Role of Judgment in Software Estimation!

- Early birds are still early birds! If you registered early, you can add new events at early bird rate.

- Room sharing information on Hotel/Venue page

- Daily Conference Schedule now available

- Travel and tourism information has been updated.

- SIGSOFT Childcare Subsidy Program

-

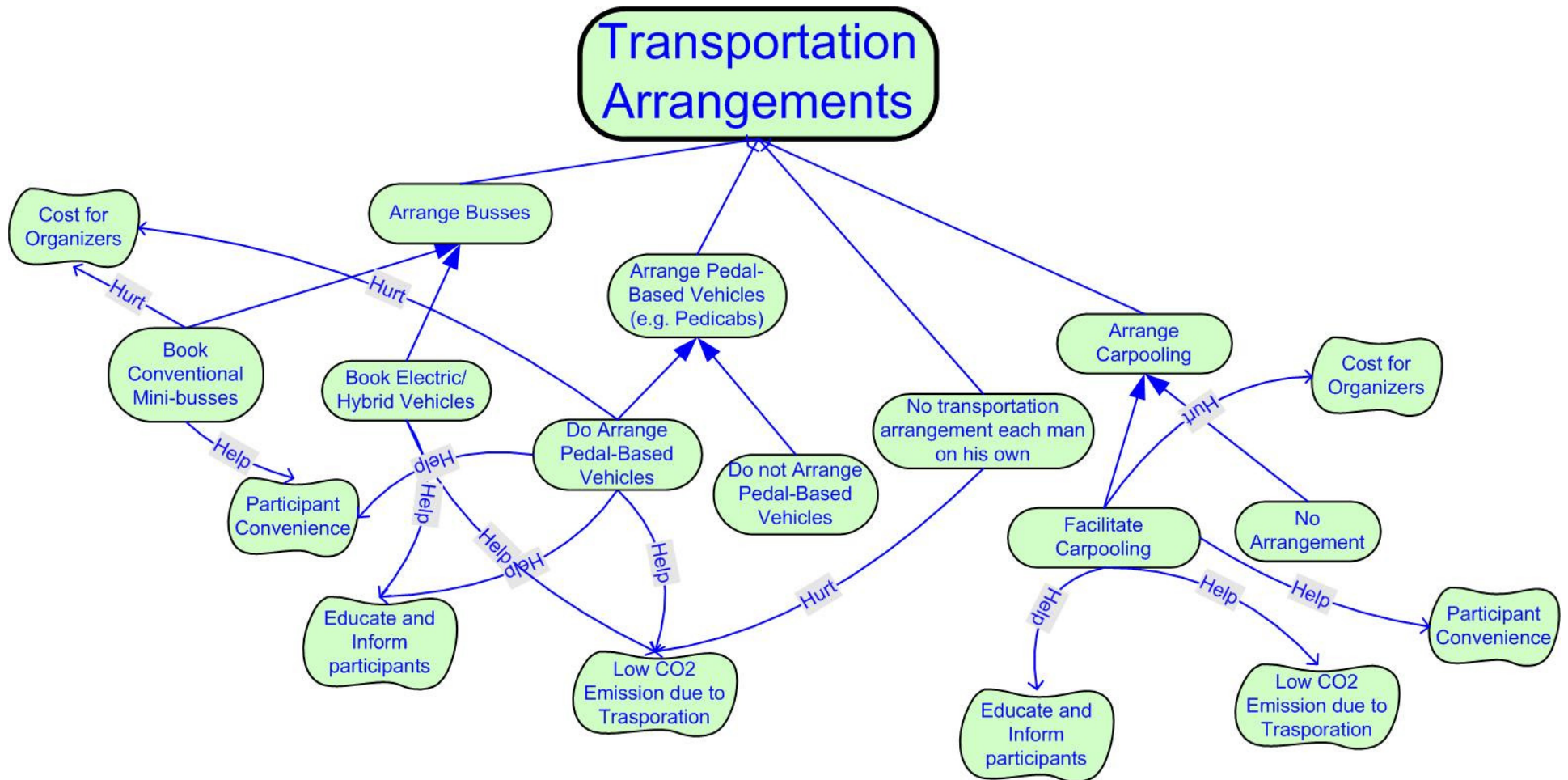# i* modelling

Alt 2
Everything

Tradeoff Analysis

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Explaining vs. Deciding

Challenges

Lack of standard definitions for sustainability concepts

Finding the right level of detail

Hard to incorporate quantitative analysis

Consistency of model semantics

Scalability

Validation of goal models

Towards a Goal Taxonomy…

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Please comment on the models for the different ICSE chairs:

- Sustainability taxonomy
- General Conference Chair
- Local Chair
- Program and Publications Chair
- Conference Experience Chair
- Sponsorship
- Attendee

Subpages (7): Attendee ConfExpChair General Conference Chair Local Chair Program and Publications Chair Sponsorship Sustainability taxonomy

⊞ **Attachments (0)**

Comments (2)

Jennifer Horkoff - Nov 3, 2008 11:06 AM - Remove

I've commented on some of the sytnax differences in the model.

I haven't commented on the semantic differences, in other words the places where the models match up. I find that really hard to do in that interface. You really need to be able to see more than one model at once, and scribble on them, so try and match them up. I can do this if we want, but it won't be on here.
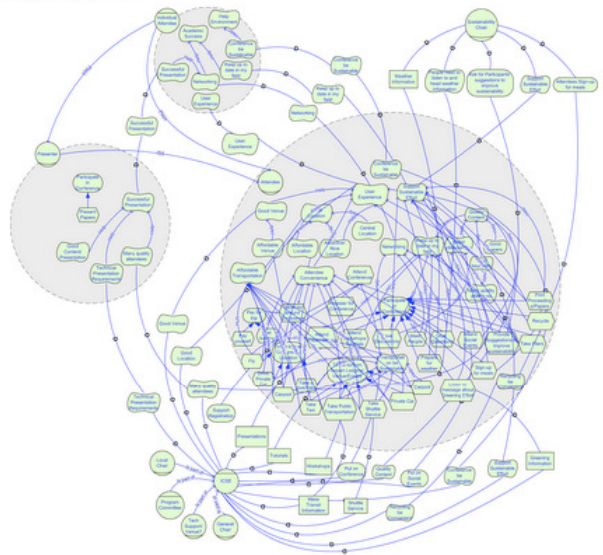
Lysanne Lessard - Nov 4, 2008 9:51 AM - Remove

I agree with Jennifer about semantic differences being difficult to solve. The conference experience chair has to be consistent with the local chair and attendee models, but I don't know where to start. We suggested previously to sit down face-to-face, by pairs, to do this. I would come back to that idea.

Add comment

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Lysanne Lessard - Nov 4, 2008 8:50 AM - Remove
  I know I've said this before and no one agreed, but I still think that sustainability goals should not be attributed to the Attendee. It's the ICSE chairs' goals. I beleive that it would be more useful to stick to regular attendee goals like "participate in conference", "have a positive experience (why "user" experience anyway??) and "network". We could then see which aspects of the greening effort would affect these goals, in positive and negative ways.

liaskos@yorku.ca - Nov 18, 2008 1:56 PM - Remove
  I agree, but I think it should be the Sustainability Chair who has that general goal.

Lysanne Lessard - Nov 18, 2008 2:01 PM - Remove
  True!

[   ]

Add comment

Conclusions

➲ **We have some new ideas about integrating sustainability into requirements analysis**

➲ **We have some emerging results on a sustainability taxonomy**