

Visualizing Stakeholder Concerns with Anchored Map

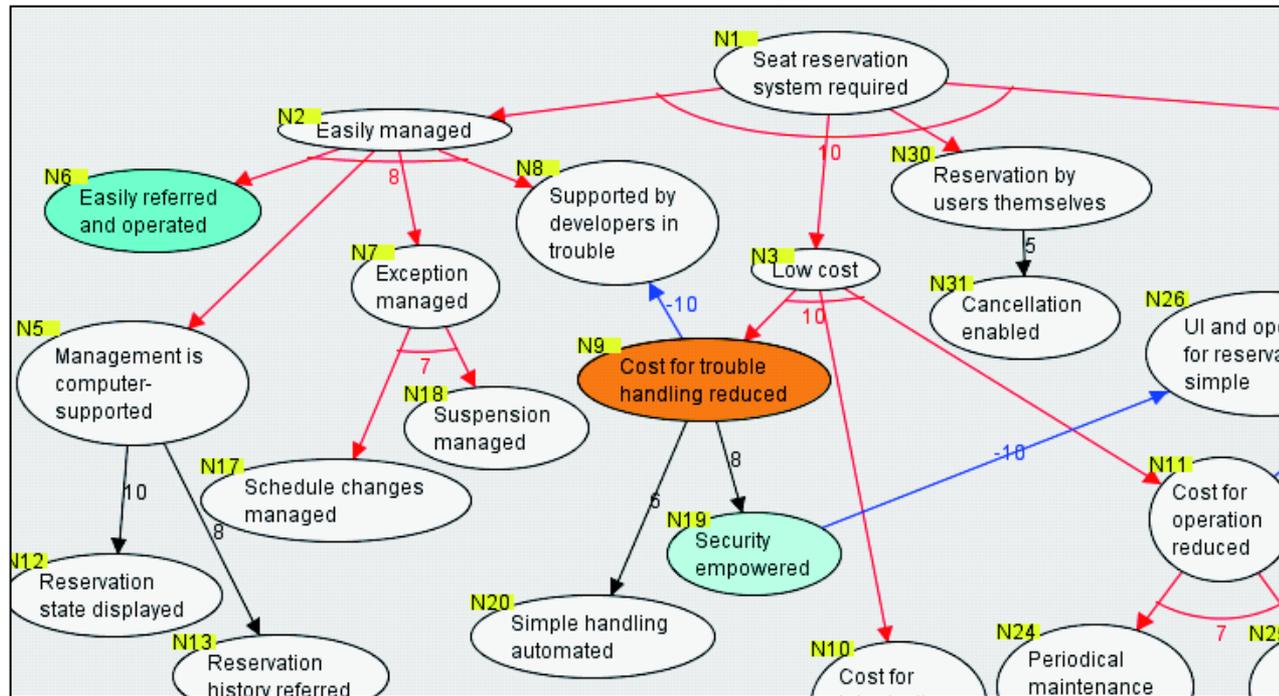
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- Software development is a cooperative work by stakeholders.
- It is important
 - to understand stakeholder concerns
 - to identify potential problems
 - imbalance of stakeholders
 - lack of stakeholders



Give Classification

Security Performance Usability

Resource Efficiency Maintainability

Portability

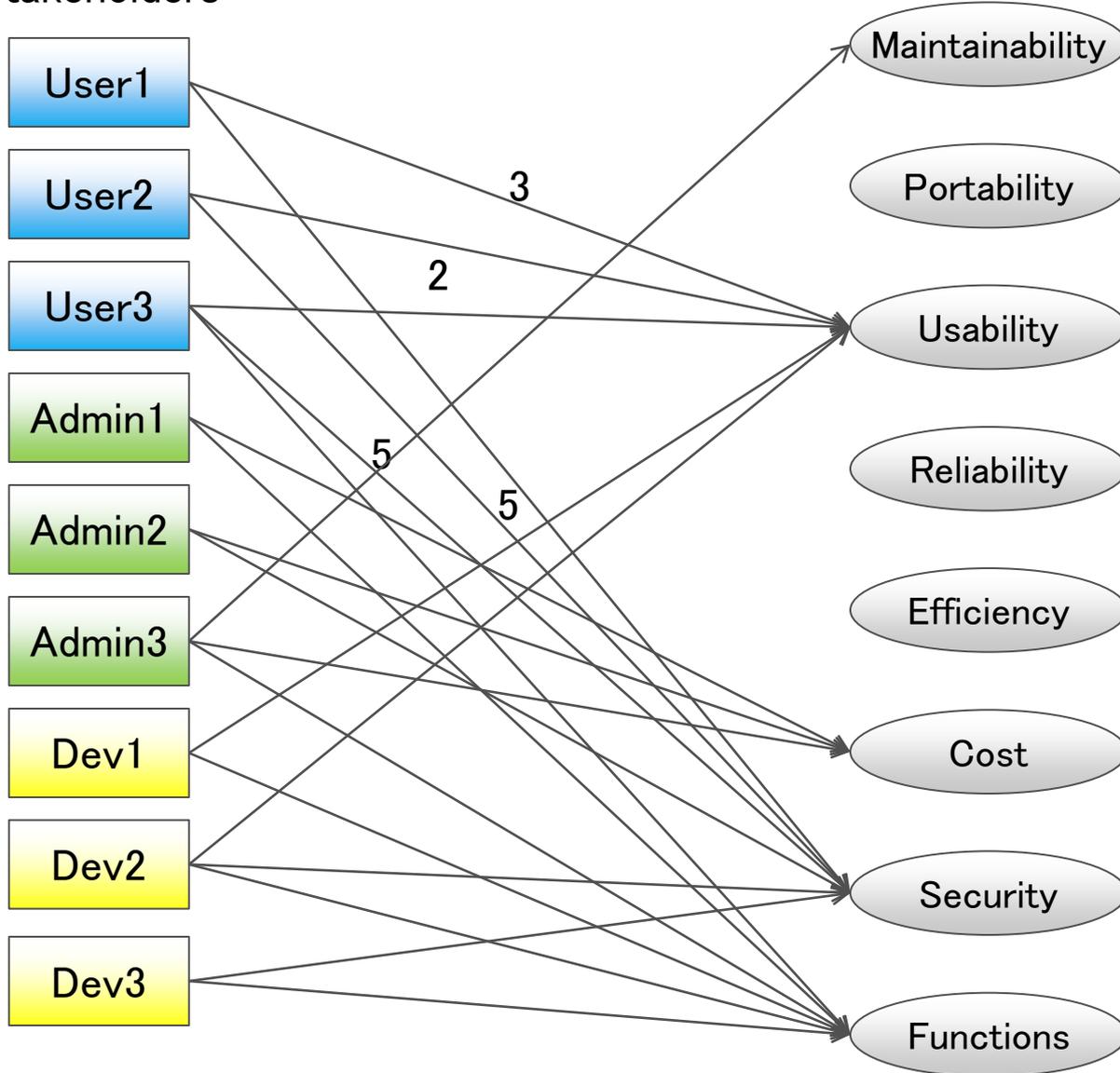
OK

Preference

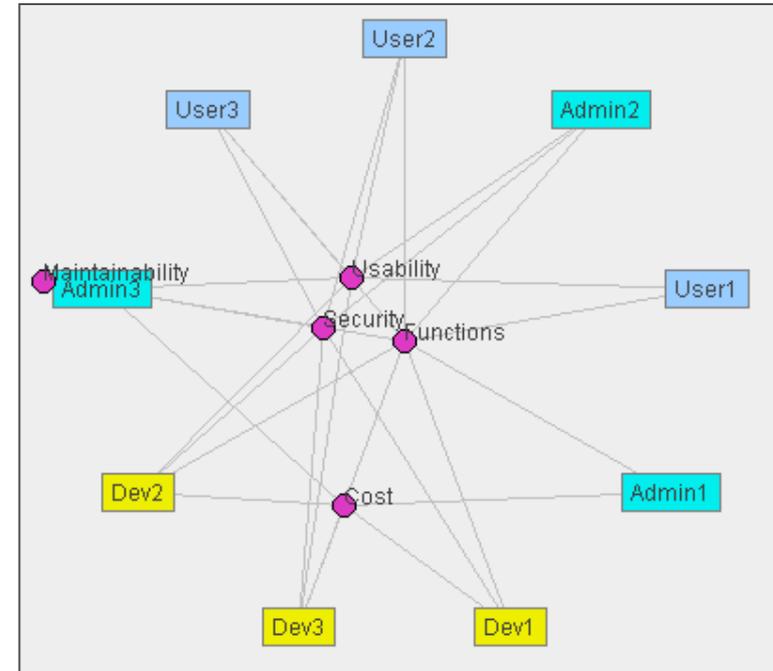
| | User | Adm... | Dev... |
|--------|------|--------|--------|
| User | -5 | 8 | 0 |
| Adm... | 8 | 9 | 0 |
| Dev... | 8 | 8 | 0 |

Stakeholders

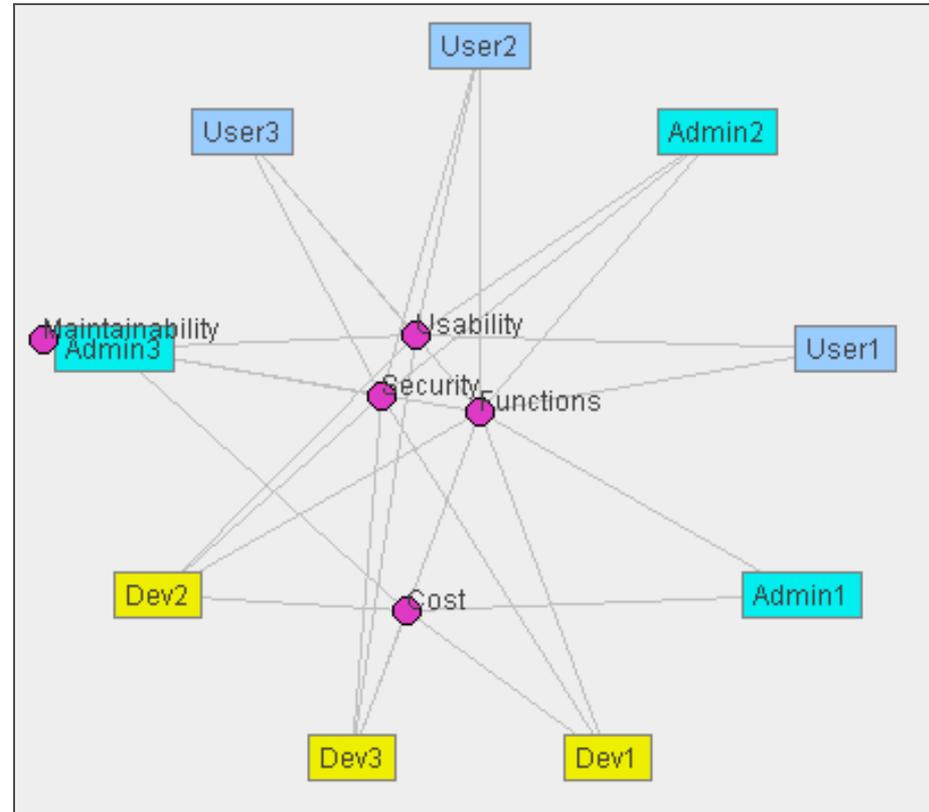
two-layer graphical representation



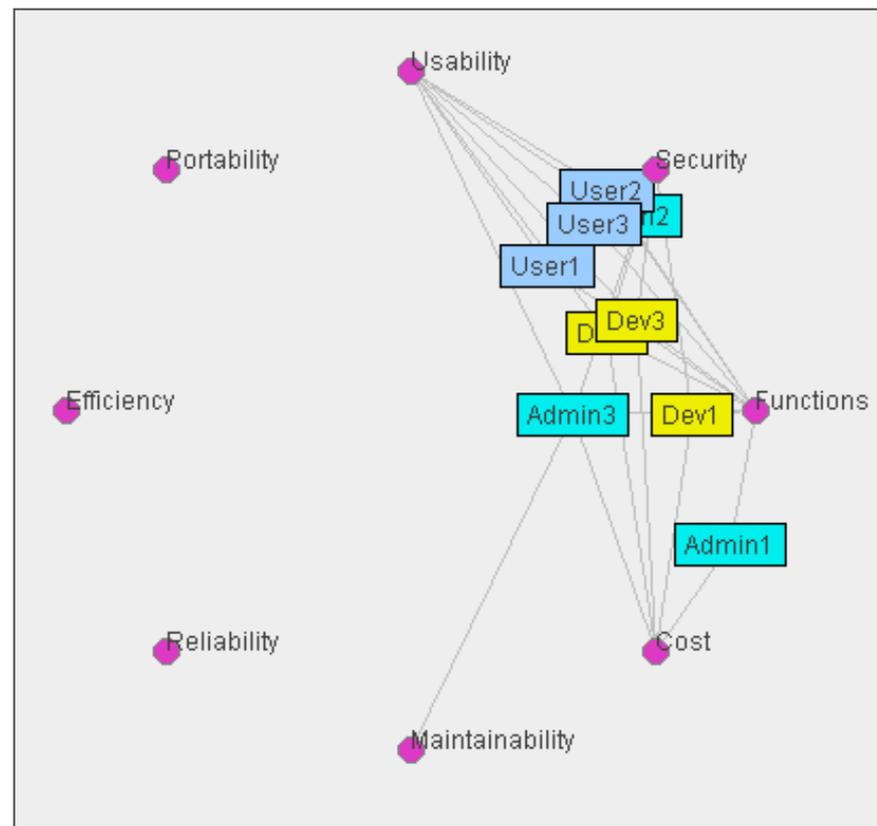
- The nodes in stakeholders, called “*anchor nodes*”, are arranged on the circumference
- The nodes in concerns, called “*free nodes*”, are arranged at suitable positions in relations to the adjacent anchor nodes.
- The strength of edge as a spring is in proportional to the value attached the edge.
- An anchor node and a free node are located closer to each other if the stakeholder is strongly interested in the concern.
- Supposing that the elements in concerns as anchor nodes and the elements in stakeholders as free nodes, a anchored map is generated with the same way



- Most of stakeholders are strongly interested in security and functions because they are located in the center of the circle.
- Developers, Admin1 and Admin3 are interested in cost but users are not.
- Users and Admin2 are interested in usability but developers are not.
- Only Admin2 is interested in maintainability.

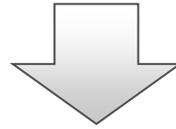


- All users are interested in similar concerns, and Admin2 is also the same as the users.
- Dev2 and Dev3 are interested in similar concerns but Dev1 is slightly different from Dev2 and Dev3.
- All administrators are interested in different concerns.
- Nobody is interested in portability, reliability and efficiency. This is because the goal graph describes business domains and does not describe the system infrastructure

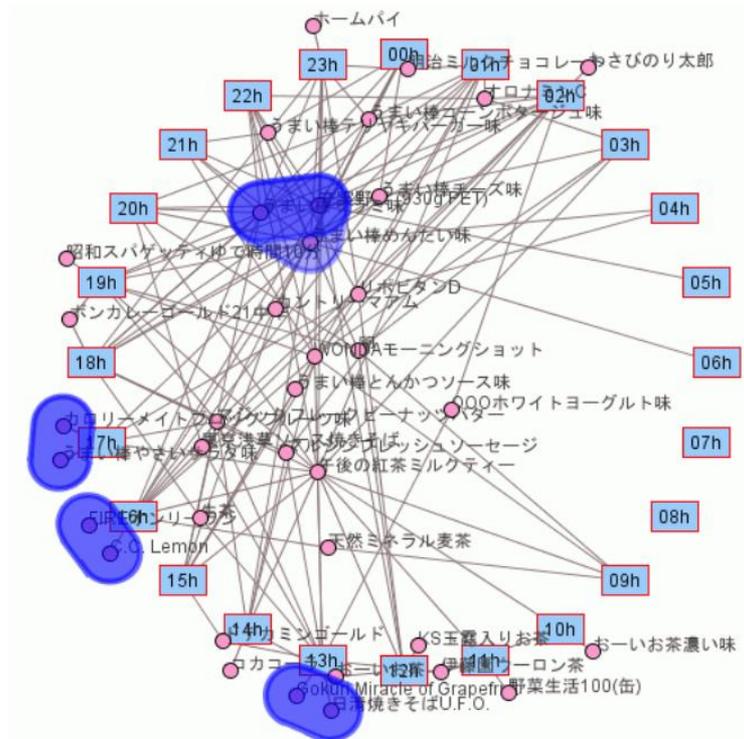


- This study presented a technique for visualizing stakeholders concerns in a project using an anchored map.
- The tool produces a graph which represents the relationship between stakeholders and system concerns.
- The tool can switch anchors and free nodes, and stakeholder preferences for goals are aggregated with semantic tags.
- Requirements analysts can easily obtain an overview of the analysis,
 - Find which concern has high priority for end users or system administrators, or
 - Identify the concerns which the smallest number of stakeholders are interested.
- A case study shows the system visualizes imbalance of stakeholders and lack of stakeholders and the information can give analysts suggestions.

- The system is able to handle data from thousands of stakeholders, but it is difficult to understand how the system is operating in this case



Clustering





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