Social-Networking Based Requirements Engineering Improves Diverse Stakeholder Convergence — *Better Understanding Faster*

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Problem

Lack of stakeholder involvement and convergence viewed* as leading causes of project failure

(Standish Chaos 2001 Report)

Executive Support — 18
User Involvement — 16
Experienced Project Manager — 14
Clear Business Objectives — 12
Minimized Scope — 10
Standard Software Infrastructure — 8
Formal Methodology — 6
Firm Basic Requirements — 6
Reliable Estimates — 5
Other — 5

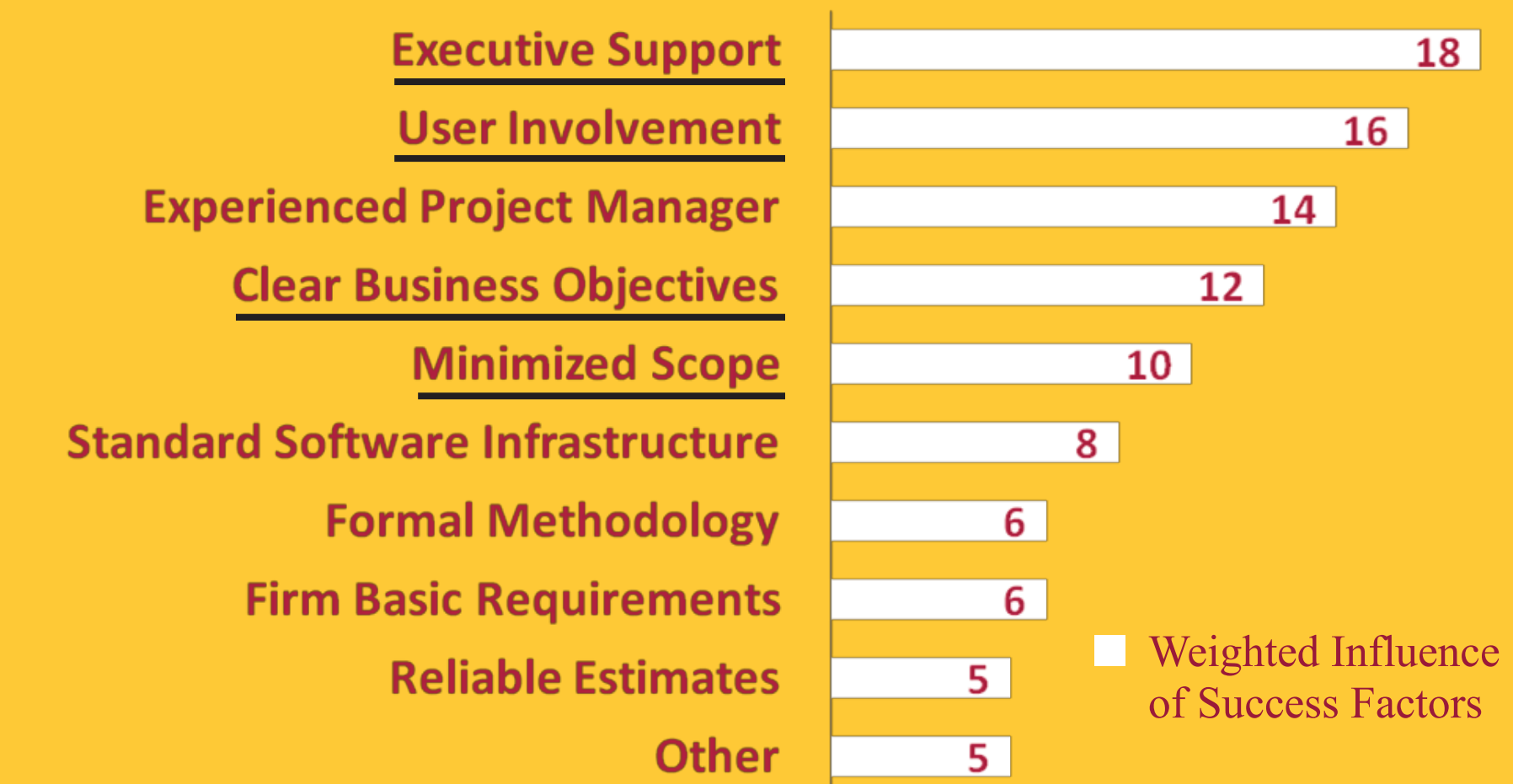☐ Weighted Influence of Success Factors

Figure 1. Top 10 Factors for Project Success

Solution Approach

Social Networking for Requirements Engineering...
...*based on the* **WinWin Negotiation Model:**

Stakeholders' desired objectives — Win Condition
Risk/concern associated with Win Condition — Issue
Involves
Covers
Addresses
Agreement — Adopts — Option
Shared commitment of stakeholders
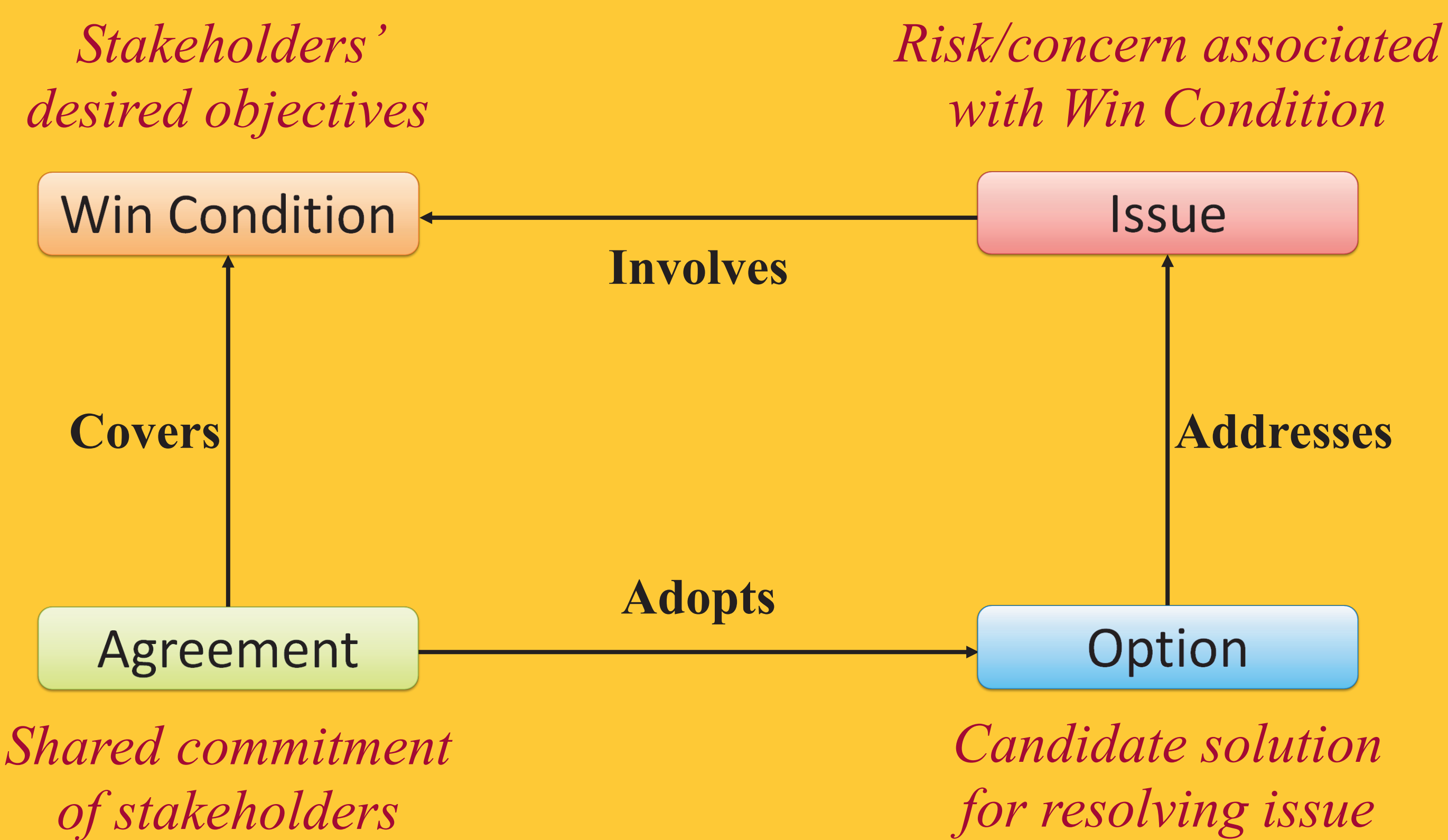*Candidate solution for resolving issue*

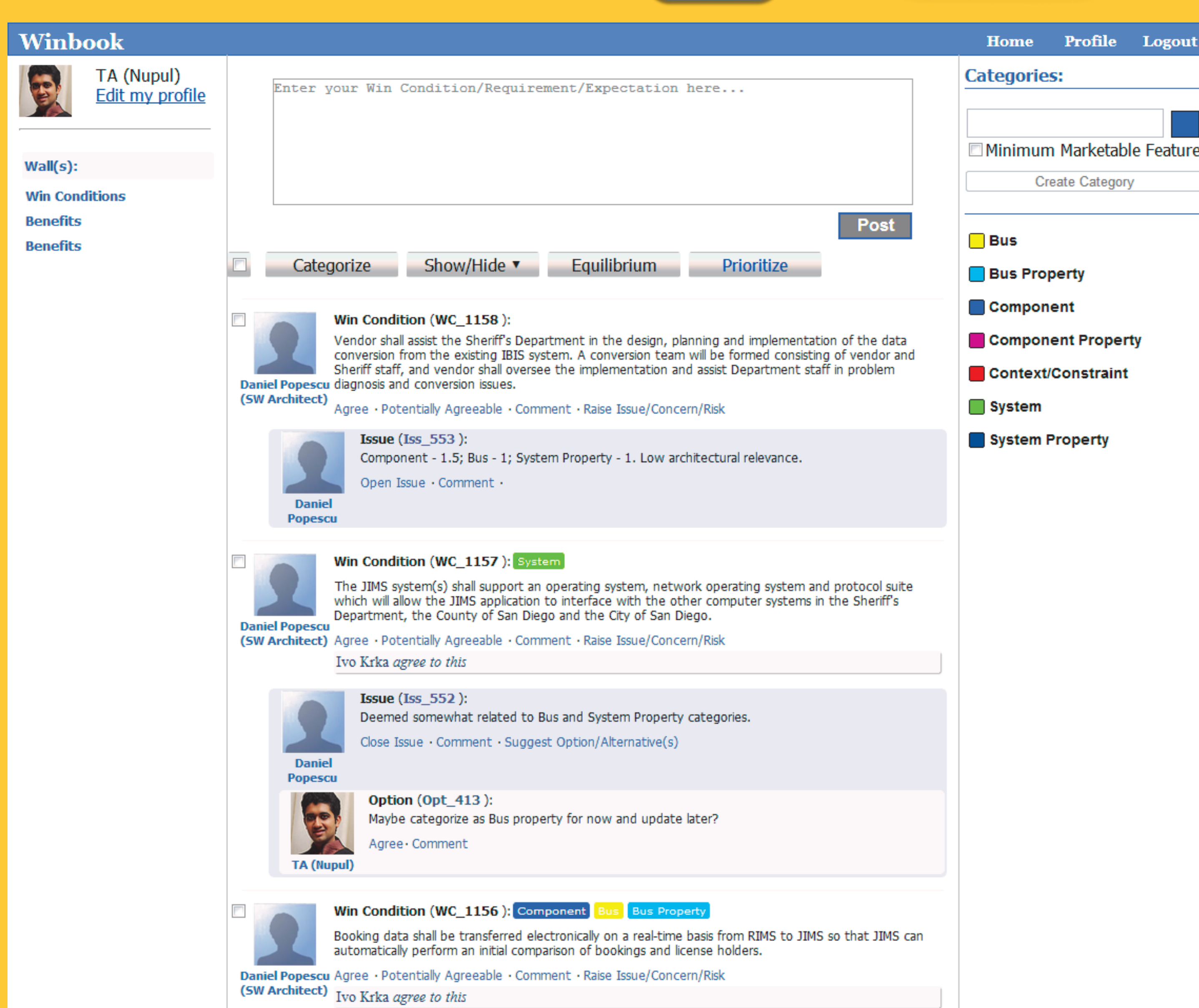*Figure 2. The WinWin Negotiation Model*

WinWin Negotiations Primer

1. Refine and expand negotiation topics (project scoping)
2. Collect stakeholders' win conditions (for all to view)
3. Converge on win conditions (disambiguation and de-duplication)
4. Define glossary of key terms (domain vocabulary)
5. Prioritize win conditions on:
   Business Value vs. Ease of Realization
6. Reveal/discuss issues and constraints (as result of prioritization)
7. Record issues and options (uncertainties/risks and resolution tactics)
8. Negotiate agreements (on win conditions and issue-options)

Above steps accelerated by a "Shaper" (i.e. facilitator)

WinWin Equilibrium

Every Win Condition and Issue closed by agreement

WINBOOK = f + M

Winbook

- Tool for Social Networking based Requirements Engineering
- Based on WinWin Methodology
- Social Networking paradigm similar to Facebook
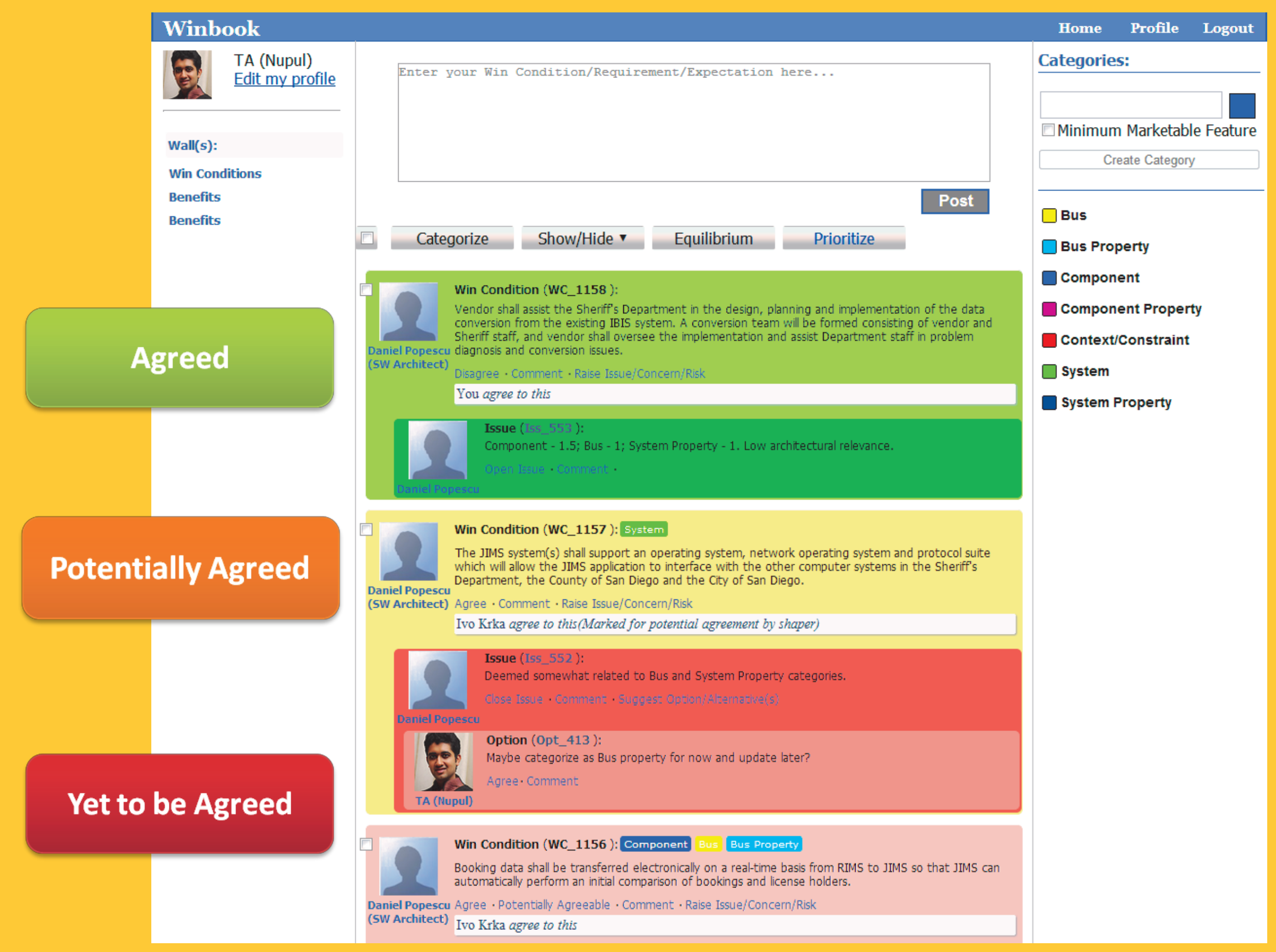- Color coded content labeling similar to Gmail

Figure 4. Color Coded Equilibrium Visualization of "Wall Page"

Experimental Setup

- 14 teams from Software Engineering course at USC
- Initial sessions conducted in a co-located setting
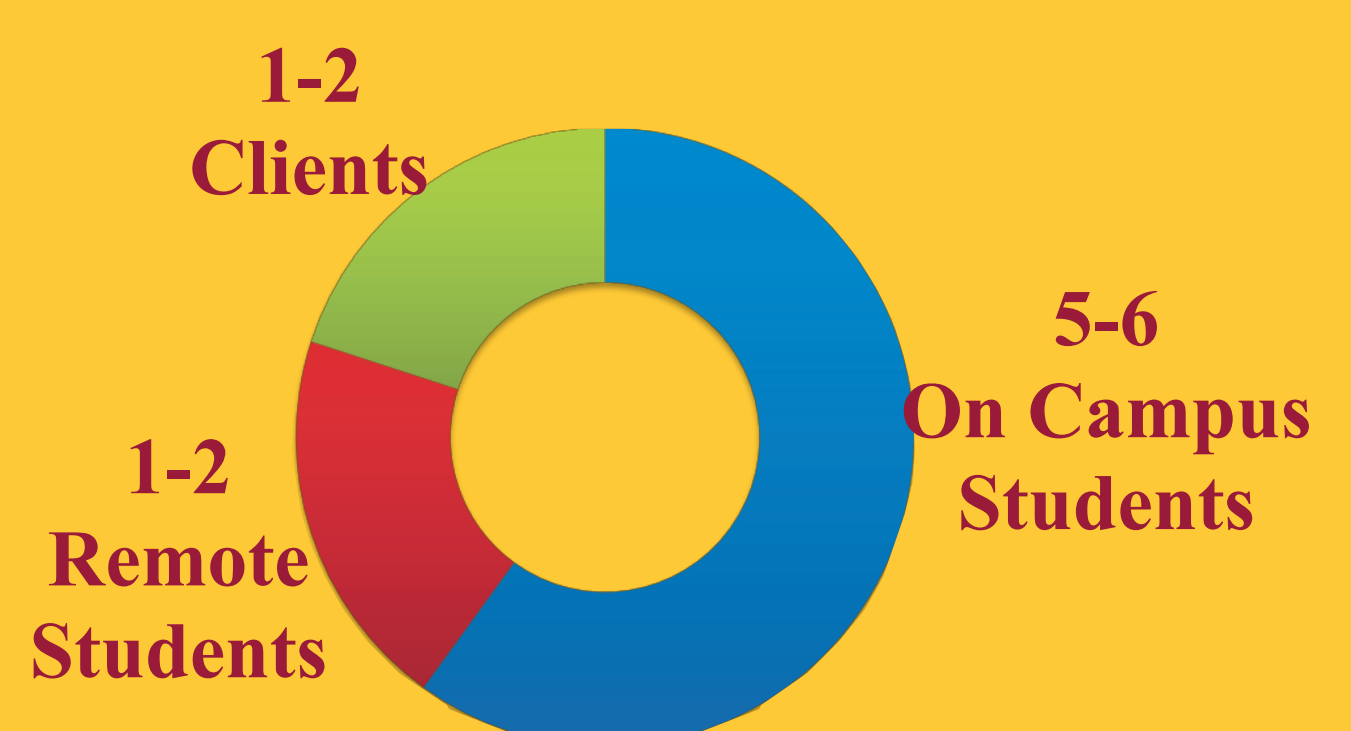- Teams use Winbook independently thereafter

1-2 Clients
5-6 On Campus Students
1-2 Remote Students

Figure 5. Team Composition (Partially Distributed)

Initial Evaluation

- Up-to-date rationale capture of stakeholders' needs
- Sustained renegotiation within Winbook itself
- Better understanding of clients' expectations and value propositions
- Win Conditions trivially exportable as User Stories! Eliminating need for detailed requirements!

— Winbook   — WikiWinWin*

Team Participation
70
30
% %
14 7
92 54
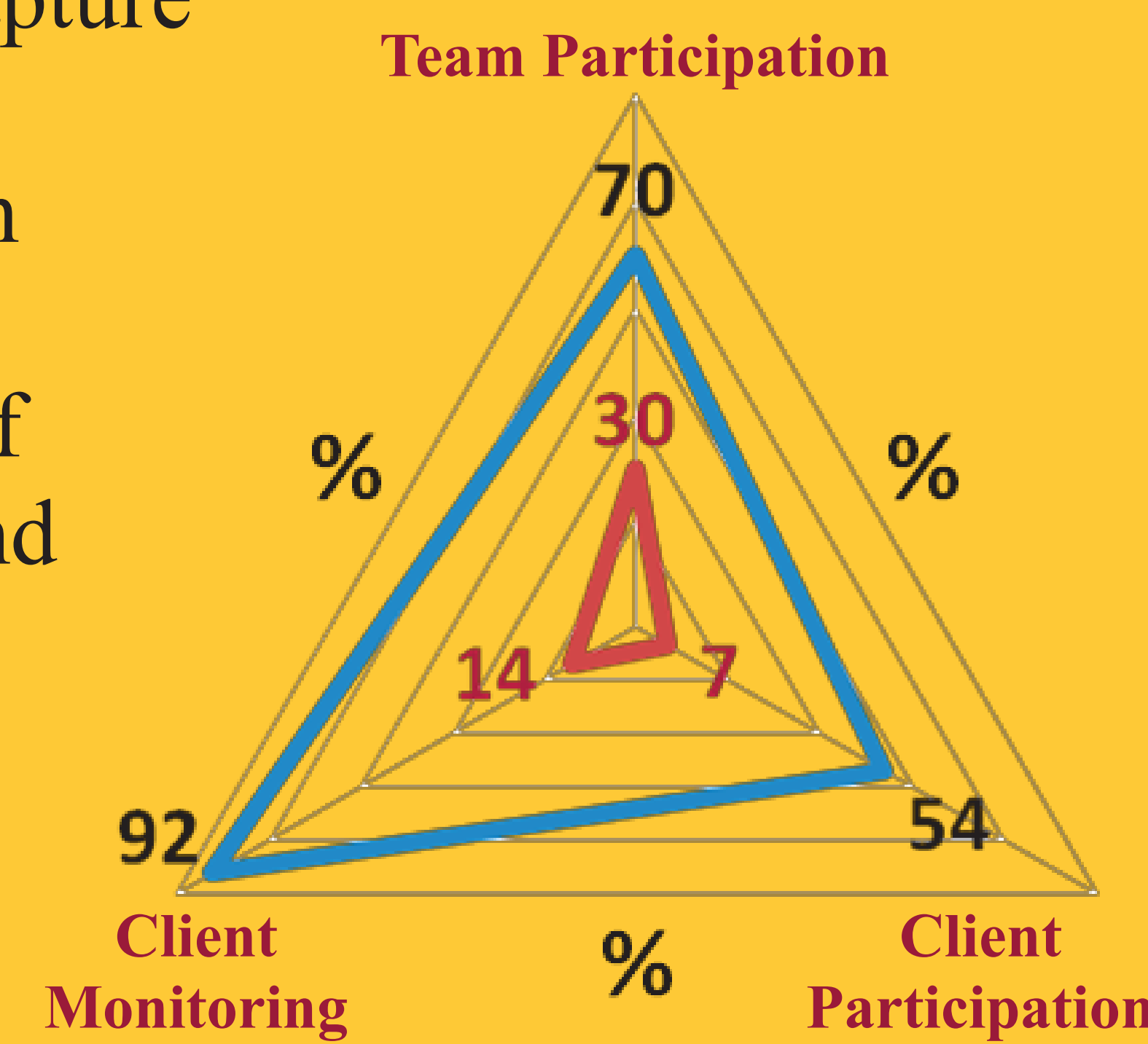Client Monitoring % Client Participation

Figure 6. Percentage increase in Stakeholders' Involvement

WikiWinWin—Previous incarnation of the WinWin Negotiation Framework based on Twiki (twiki.org)

Industry Applications

- LADOT* expressed interest in deploying Winbook for internal use for brainstorming and organizing ideas
- Adopted as part of project for major US Govt. organization to bridge gaps between requirements and architecture

(Los Angeles Department of Transportation, a community service organization in Los Angeles)

Next Steps

- Integrated support for planning poker to estimate/ prioritize win conditions
- Recording and linking Win Conditions to end benefits
- End-to-end tool for Value Based Requirements Prioritization (VBRP)
- Ability to capture "Acceptance Tests" for each win condition