

Participatory Design Methods for C2 Systems

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Framework



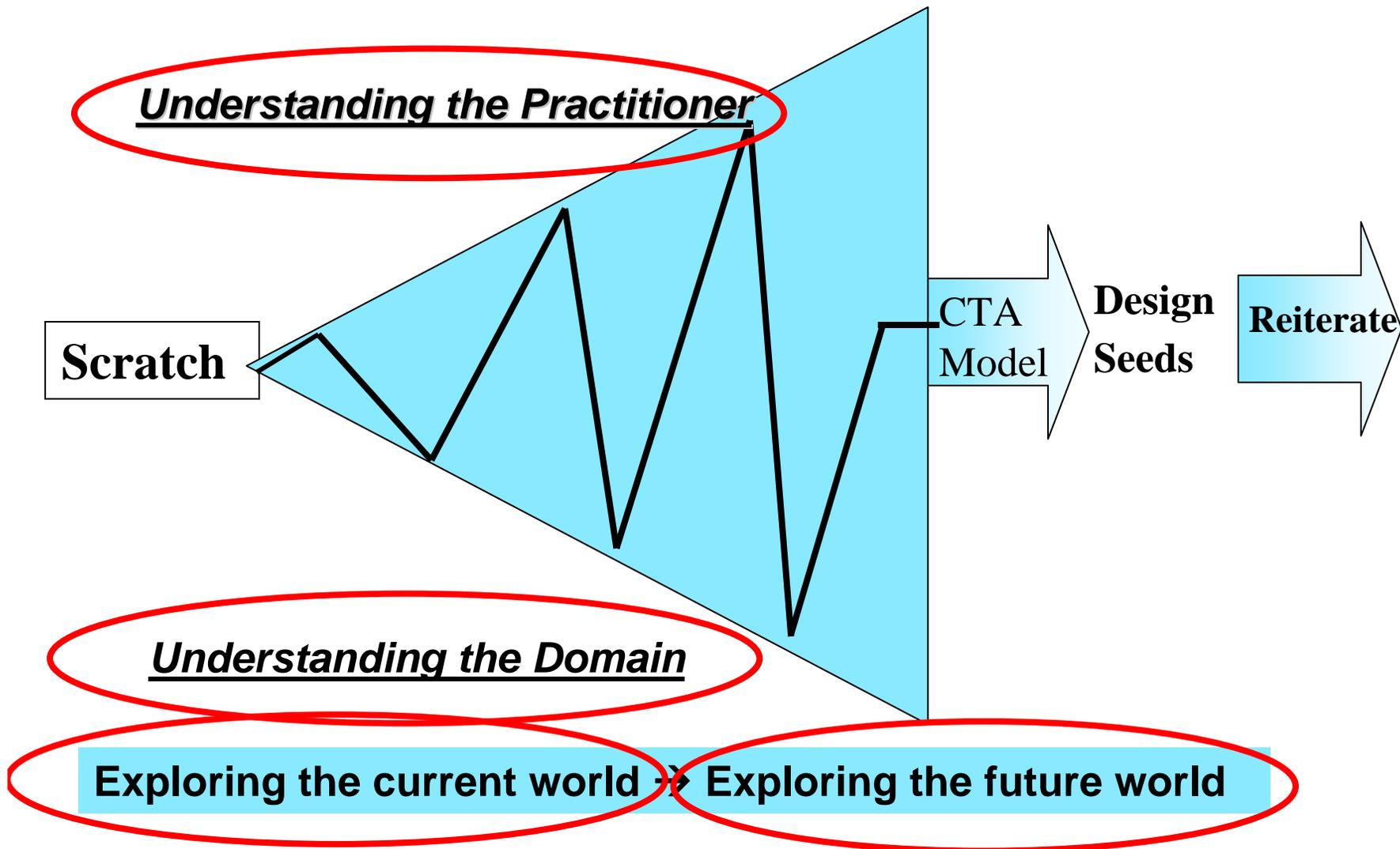
- **Engineers endeavor to develop useful, usable, understandable systems**
- **Users want useful, usable, understandable systems**

What a match!!

- **In-depth understanding of domain and practitioner is required for developing accurate, relevant training and support for net-centric environments**

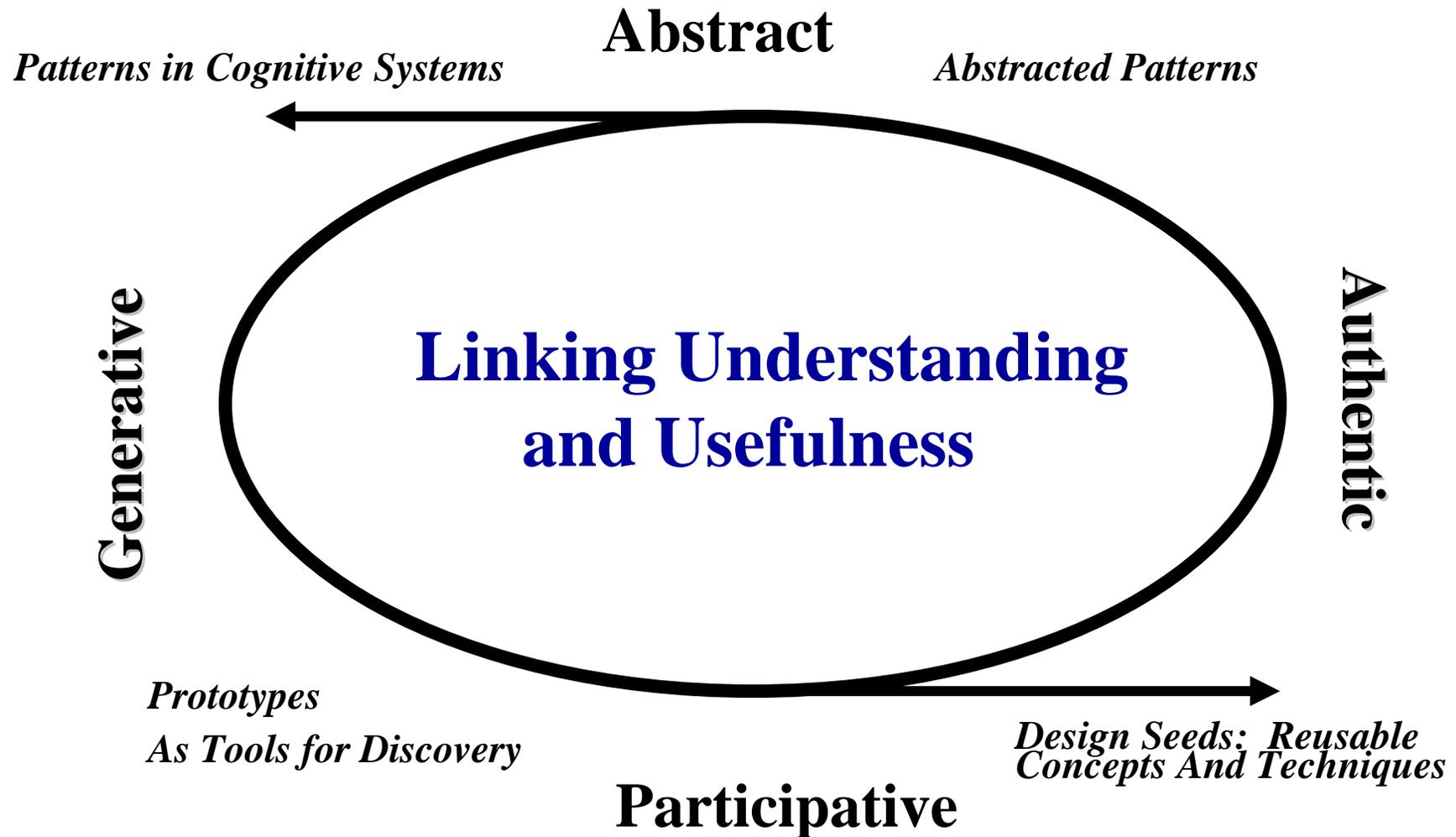


Gaining Understanding





Designing Tools for People





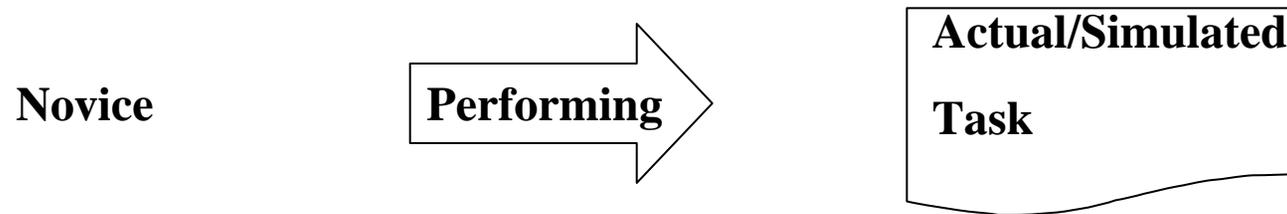
Participatory Design



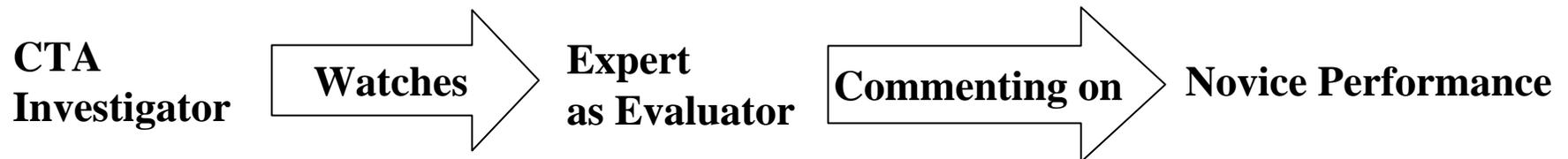
- An established, diverse research and practice area which has a goal of engaging researchers, designers, developers, practitioners and end-users in all of the various activities leading to the successful development and implementation of systems.
- Umbrella methodology which includes studies, theories, conferences and practices



Method 1: Elicitation by Critiquing (EBC)



Process of Novice Performing Domain Task





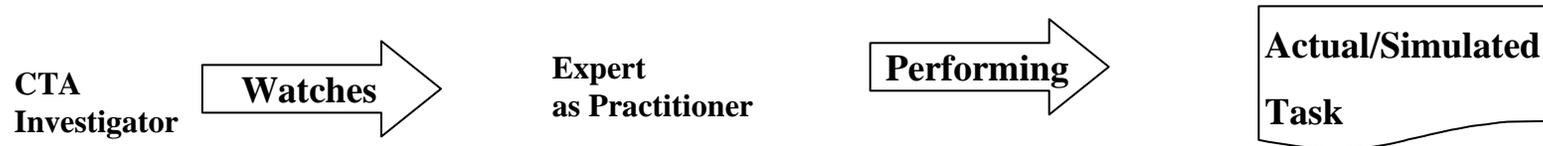
Comparison of Elicitation Methods



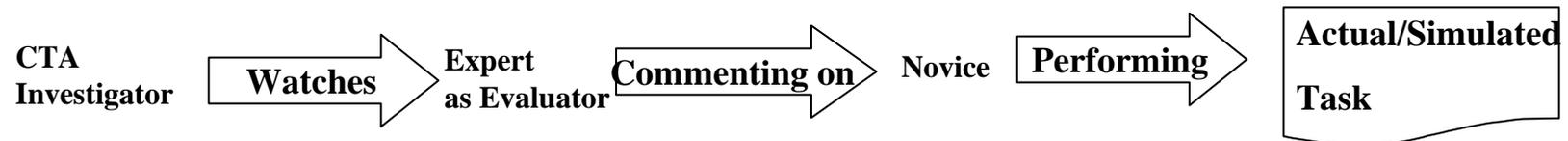
Elicitation by Interview



Elicitation by Observation



Elicitation by Critiquing





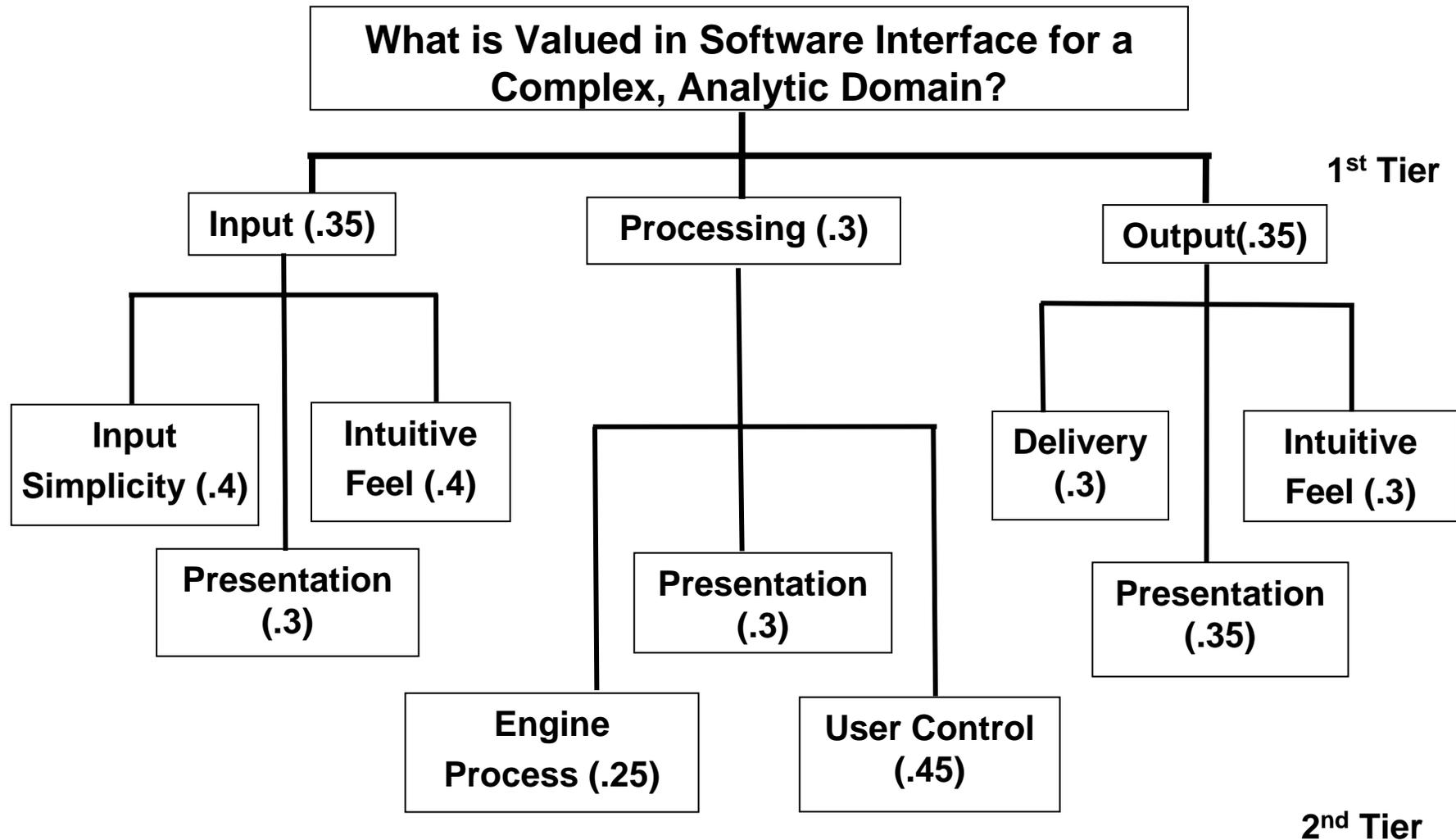
Discussion of EBC



- **Remember: Any method shapes the conditions of observation.**
- **Relationship to C2**
 - **Can be used in conjunction with Modeling & Simulation**
 - **Provides strong cue to focus**
 - **Participatory role**



Method 2: Value Elicitation





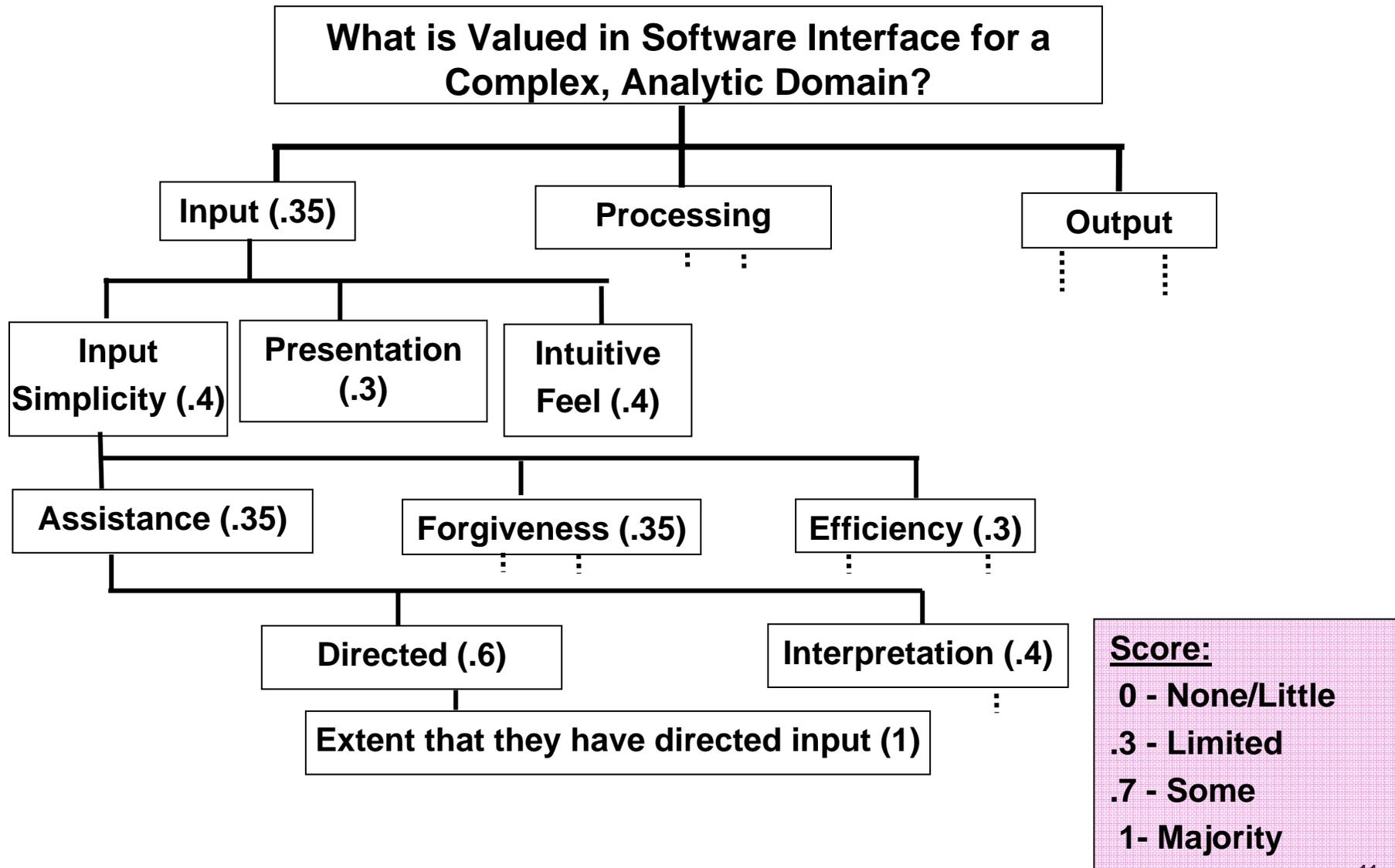
10 Steps



- 1. Define Problem**
- 2. Build Hierarchy**
- 3. Identify Evaluation Measures**
- 4. Establish Evaluation Functions**
- 5. Weighting**
- 6. Choose Alternatives to Evaluate**
- 7. Score Alternatives**
- 8. Deterministic Analysis**
- 9. Sensitivity Analysis**
- 10. Analyze Conclusions**



VFT with Intel Analysts





Discussion on Value Elicitation



- **Elicits from Practitioner**
- **Uncovers Hidden Objectives**
- **Improving Communication**
- **Guides Information Collection**
- **Facilitates Involvement in Multiple Stakeholder Decisions**
- **Guides Strategic Thinking**



Conclusion



- **Desired goal: Implemented systems that address real needs**
- **Participatory Design (PD): Involves all**
- **EBC and Value Elicitation methods support PD**
- **Outcome: Acceptance when implemented**