Analysis & Modeling Cheat-Sheet

Technique	Situation	Presentation Notes
Decomposition	An entity is too complex and must be broken down into more manageable components.	Usually used for analysis only, but typically is manifested in requirements.
Addition/Subtraction	You need to understand the value or role of a component within a larger complex.	Usually used for analysis only, but typically is manifested in requirements.
Gap Analysis	You need to analyze the difference between the current state and the future state of something and to determine how to get from here to there.	Freely shared with and understood by stakeholders.
Decision Analysis	You have a decision to make, need to determine what options are available, and need to determine which option is best.	Freely shared with and understood by stakeholders.
Root Cause Analysis	You need to understand the causes of a particular problem or other effect.	Freely shared with and understood by stakeholders, although Ishikawa diagrams may need explanation.
Stakeholder Needs Analysis	You need to reconcile the conflicting needs of one or more stakeholders.	Usually used for analysis only and kept within the project team.
Flowchart	You need to illustrate a process graphically, and you don't know which actors are responsible for which tasks.	Freely shared with and understood by stakeholders.
Swim Lane Flowchart	You need to illustrate a process graphically, and you do know which actors are responsible for which tasks.	Freely shared with and understood by stakeholders.
Entity-Relationship Diagram	You need to model the "objects" in a system or organization and how they relate to each other.	Must be explained to stakeholders. Use judgment on whether or not to present.
State-Transition Diagram	You need to model the various states or statuses that an object can be in.	Must be explained to stakeholders. Use judgment on whether or not to present.
Data Flow Diagram	You need to model how data (digital or analog) moves around a system or organization.	Must be explained to stakeholders. Use judgment on whether or not to present.
Use Case Modeling	You need to model the interaction between a system and its users.	Freely shared with and understood by stakeholders.
Business Process Modeling	You are creating, improving, or reengineering a business process.	Freely shared with and understood by stakeholders.