

Advanced Project Management

IS 594, Section PJ



**Roadmapping,
Troubleshooting, and Causal
Models**

How do we Create a Roadmap?

What are the major features of a roadmap?

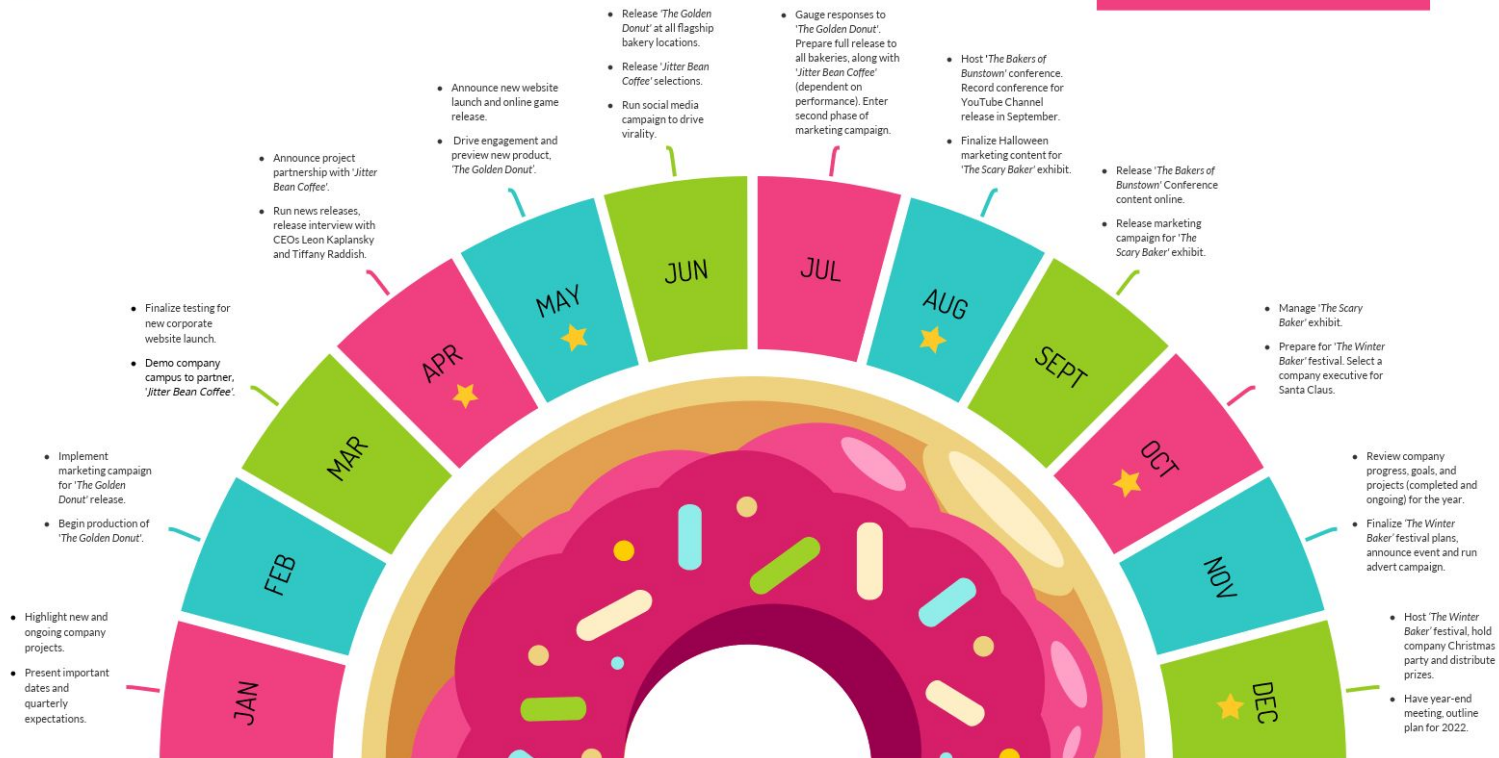
How do roadmaps help visualize process over the long term?

2021 Monthly Timeline + Project Milestones

★ Significant Public Relations
Announcement / Event Milestone



The
Happy
Baker



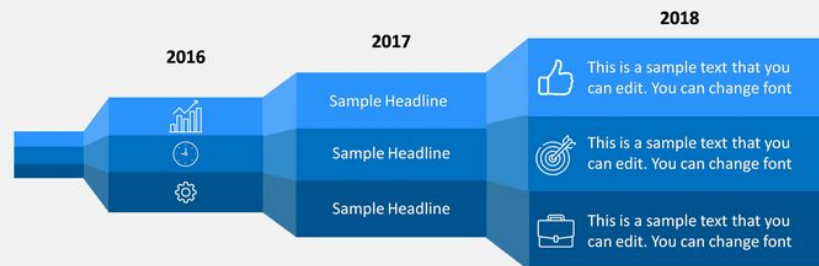
3 YEAR ROADMAP

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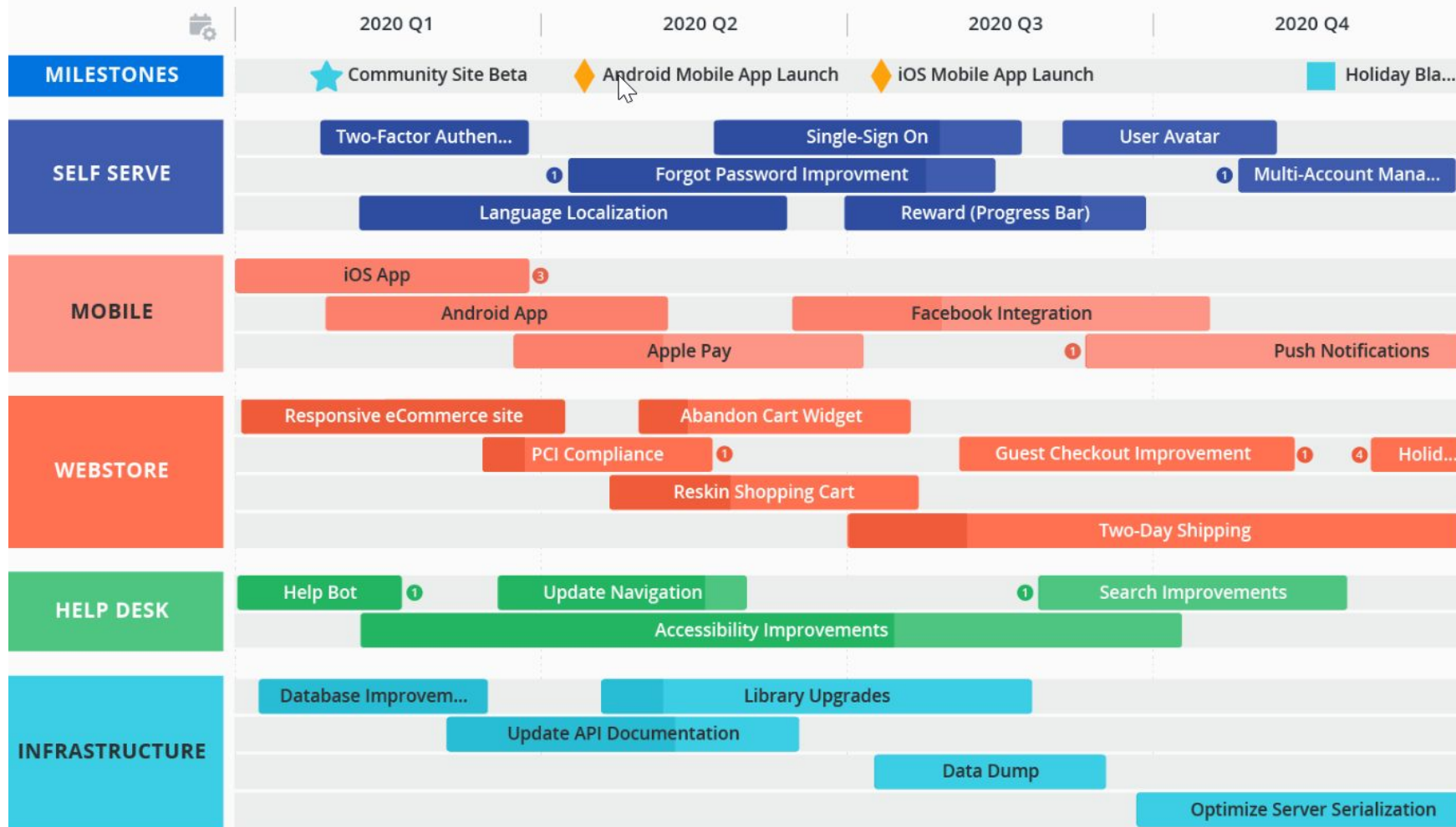
BUSINESS PLAN TIMELINE

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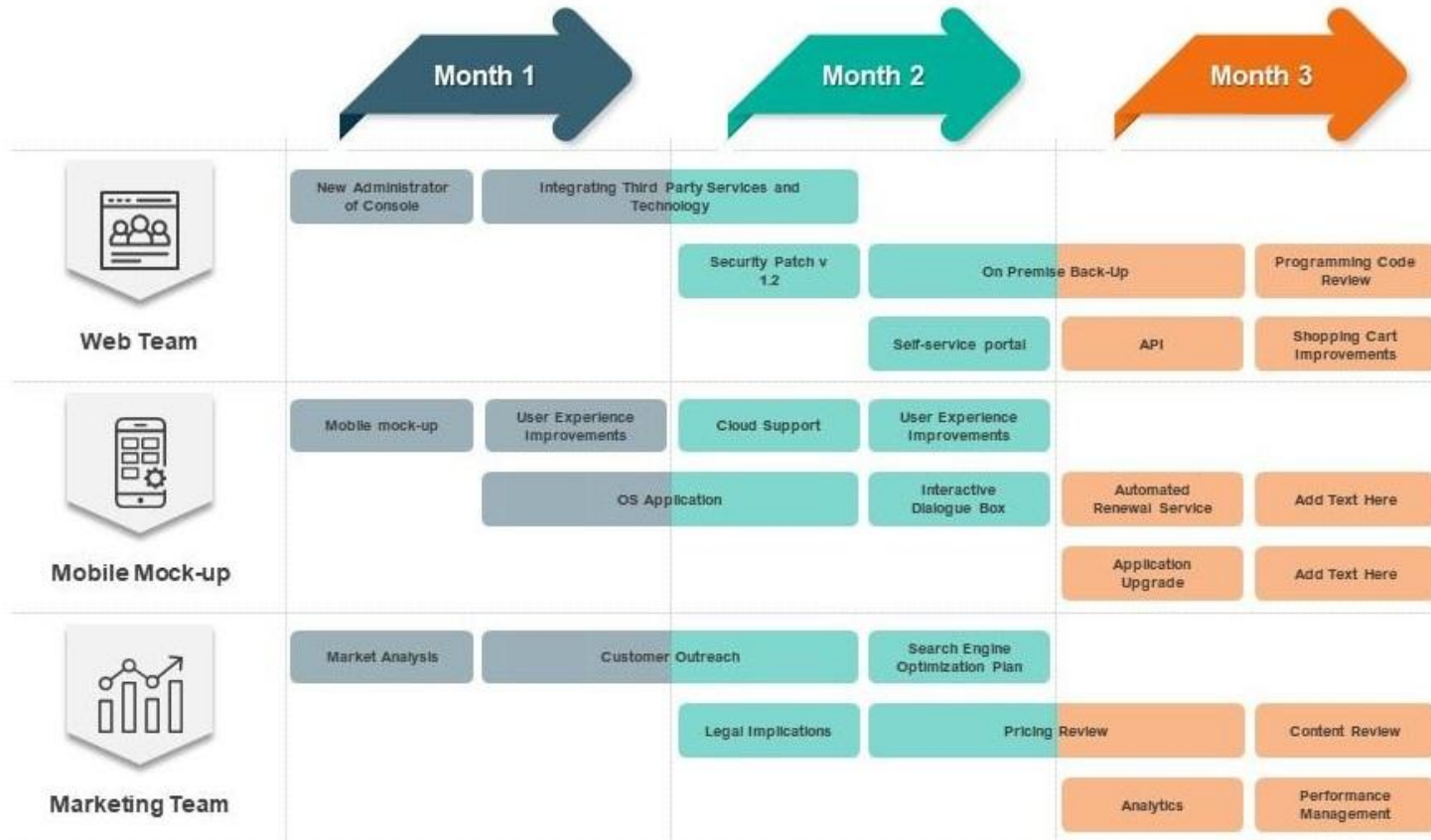


5 Year Roadmap for Issues Control and Governance Implementation





Three Months Product Owner Development Estimate Roadmap



**Strongly follows visualization (compositional)
rules, but not necessarily relational (logical)
rules**

Whatever Happened to the 3-year Roadmap?

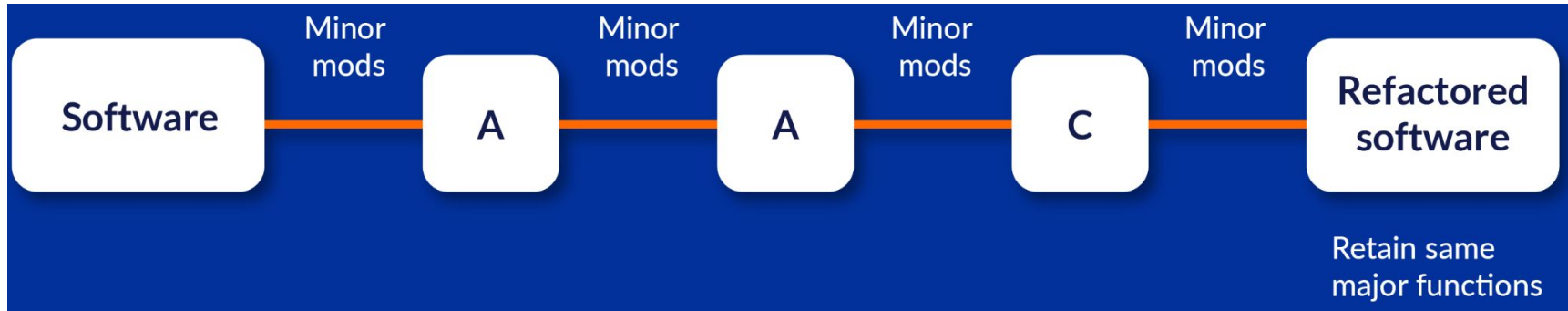
<https://www.cio.com/article/3618308?amp=1>

Shorter-term approach now preferred due to speed of innovation.

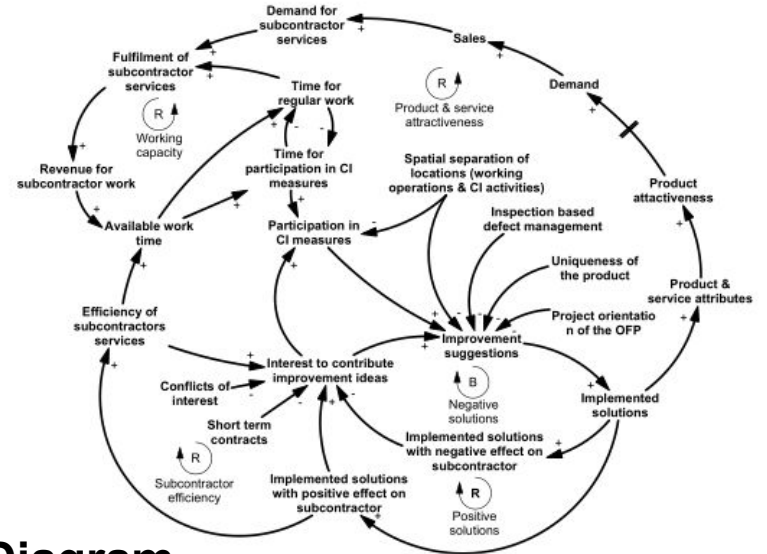
- 12-18 month window with flexibility.
- specific actions annually, strategic thinking beyond that.
- some changes require more time: cross-functional work, skill acquisition.
- In these cases, roadmaps are there to initiate conversation.

What if we want to improve our process without rescoping?

Refactoring: improve the design, structure, and/or implementation of the software (its non-functional attributes), while preserving its functionality.



Grenzfurter and Gronalt (2020). Developing a continuous improvement perspective for subcontractor involvement in the industrialised housebuilding supply chain. *Supply Chain Management*, 26(2), 174-191.



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Problem Structuring Methods

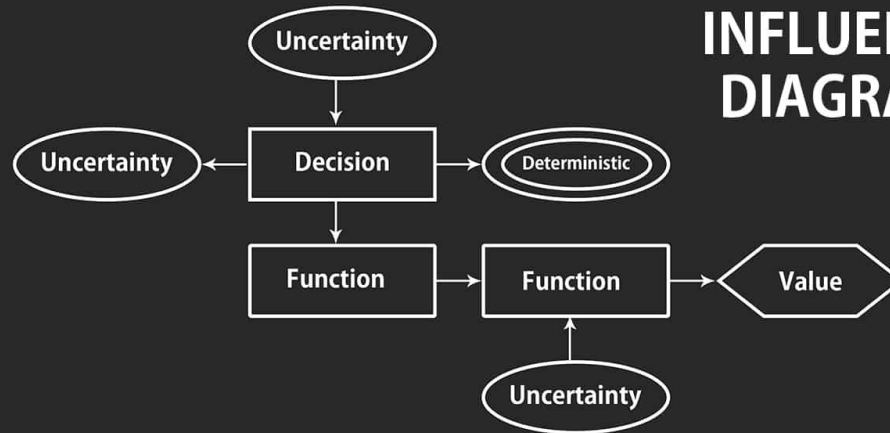
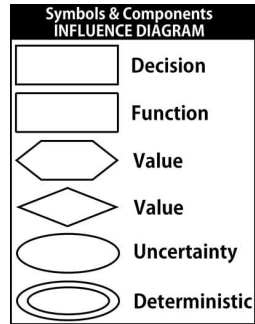
A way to clarify why a project might fail, or why chronic problems are persistent.

Examples: modeling disruption/delay, modeling project risk, strategy development, information systems development.

Tools: Influence Diagrams, Repertory Grids.

Influence Diagrams

Also called relevance diagram, decision diagram, or decision networks.
Generalization of a Bayesian network.



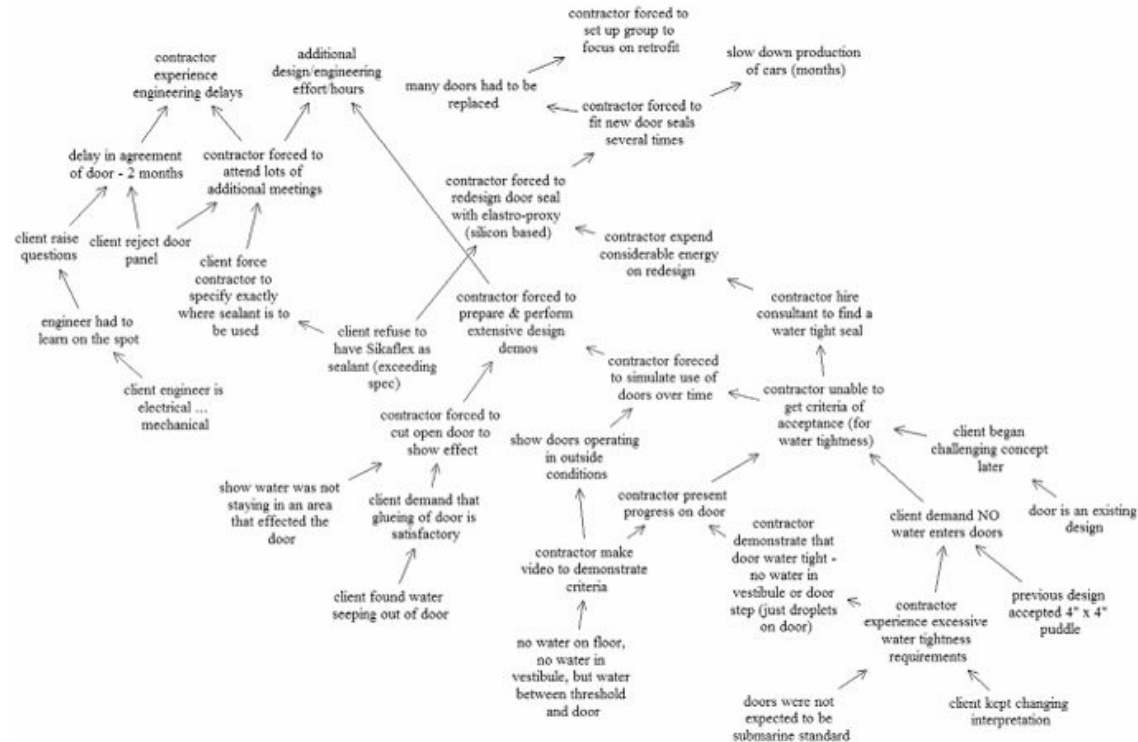
Repertory Grids

Involves four things: a topic, a set of elements, a set of constructs, and a set of ratings of elements on constructs.

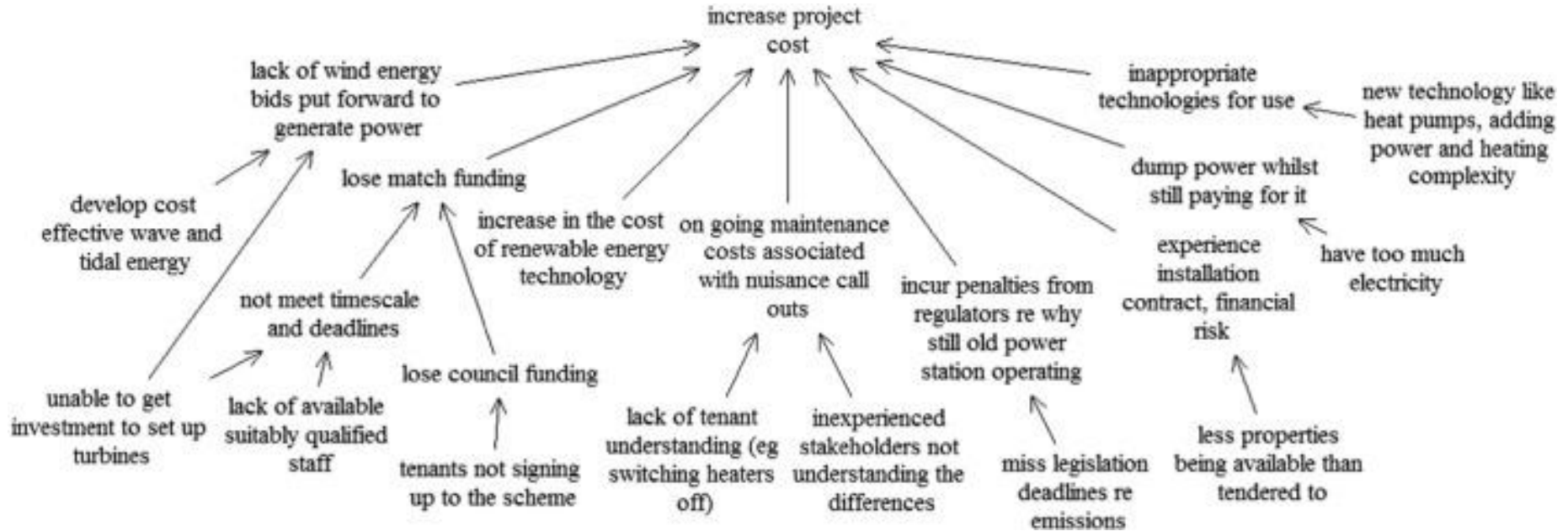
Can be analyzed for content (eyeball inspection) and structure (cluster analysis, multidimensional analysis).

	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	
Organized	7	7	9	7	3	3	1	4	4	Cluttered
Warm	8	8	6	7	3	3	2	2	2	Sterile
Colorful	7	6	4	5	9	3	1	2	2	Bland
For First Timers	8	8	7	8	9	5	1	2	2	For Experts
Lively	8	9	7	7	9	5	1	4	1	Dull
Small Number of Steps	4	5	6	9	1	1	1	2	1	Complex
Searchable	5	1	9	7	2	3	1	2	1	Not Searchable

Ackermann and Alexander (2016). Researching complex projects: Using causal mapping to take a systems perspective. *International Journal of Project Management*, 34(6), 891-901.



Idiographic Map



Idiographic: discovering specific facts and processes.

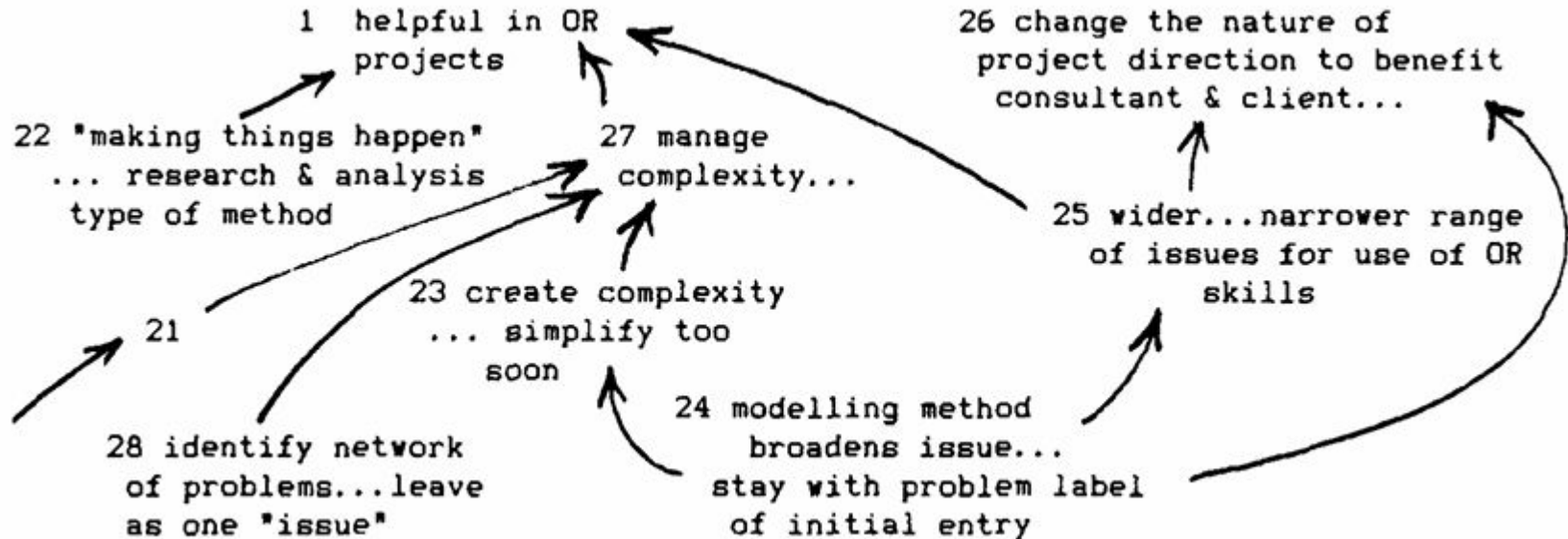
**How do I know what the relationships are
between my components (e.g. issues)?**

Eden (1988). Cognitive mapping. *European Journal of Operational Research*, 36, 1-13.

Approach to cognitive mapping (from Operations Research):

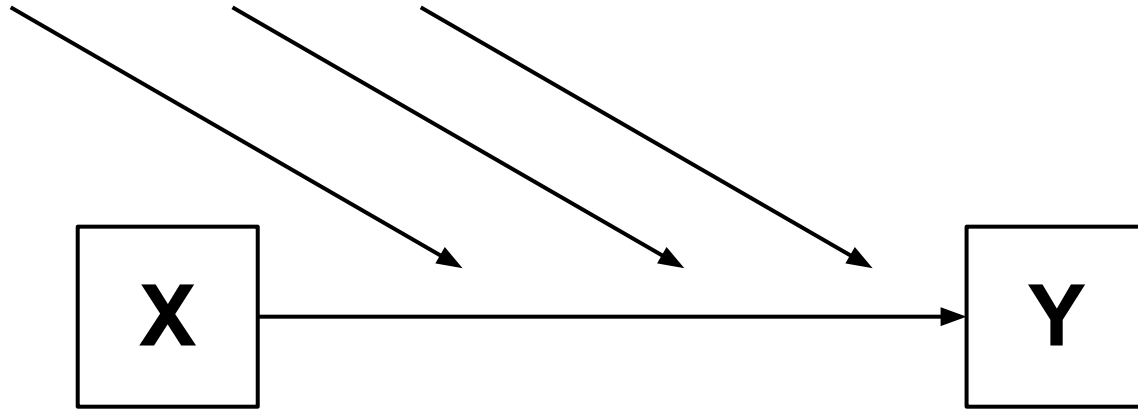
- * early view: single consultant builds a model that empathized with client's view of the problem.
- * newer approach: construct maps in small teams (6-10 people). Negotiate a consensus.
- * SODA (Strategic Options Development and Analysis) --> style, process, technique, and managing complexity.

Cognitive Modeling Example



Correlation is not Causation! How to Distinguish

Interventions



{U, V, E}

U = Exogenous variables (Interventions)

V = Endogenous Variables (X, Y)

E = Structural Equations ($X \rightarrow Y$)

Temporal precedence: Establishing order of events.

Covariation: Detecting variations in presumed influencing variables and calculating variations in the other variable.

Controlled studies: establish causality empirically (randomization, controlled experiments and predictive models).

Hill's Criteria of Causation: strength, consistency, specificity, temporality, plausibility, coherence, and experiments.

Ways to Establish Causality



https://en.wikipedia.org/wiki/Causal_research