

Introduction to

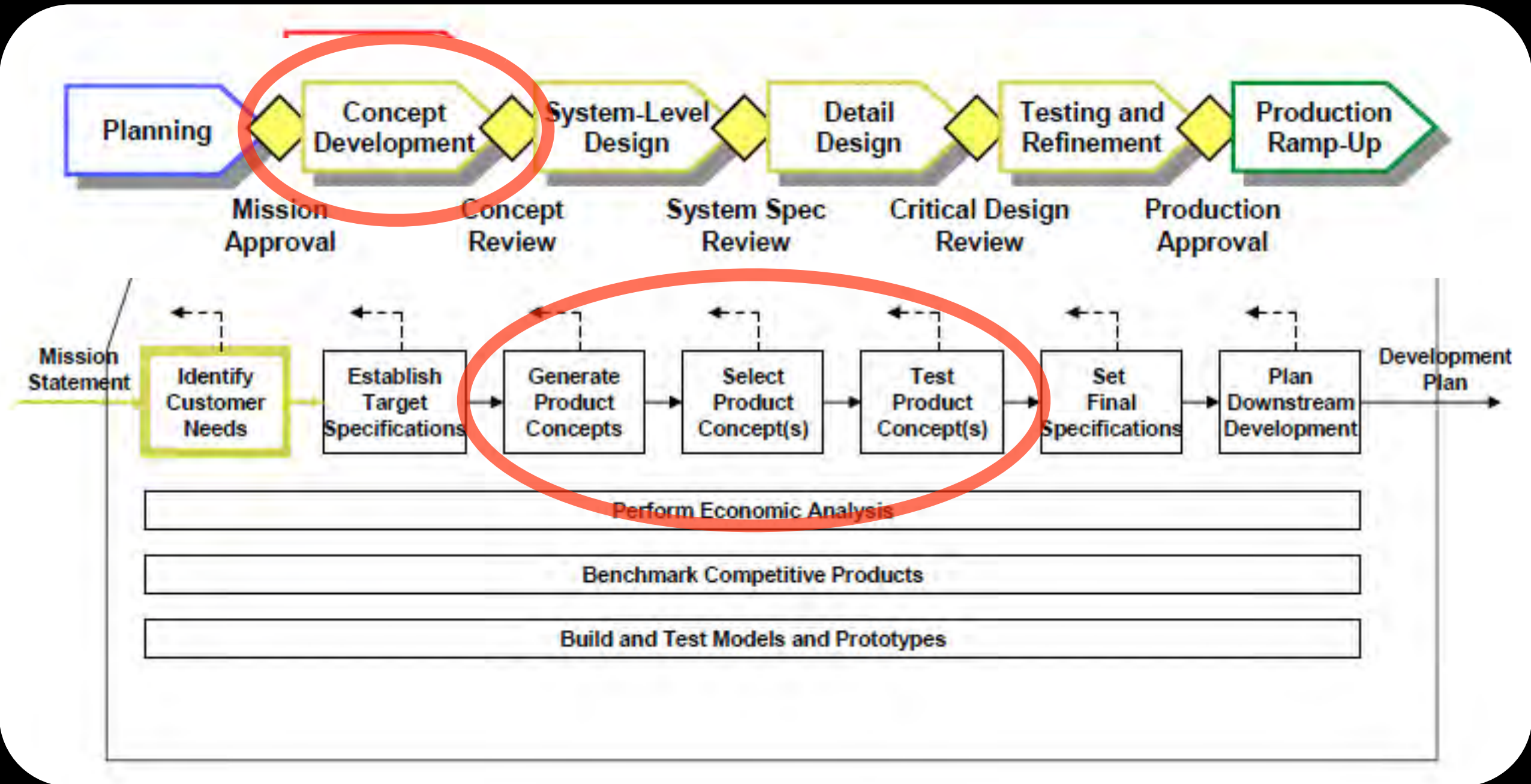
Product Design and Innovation

October 22nd, 2014

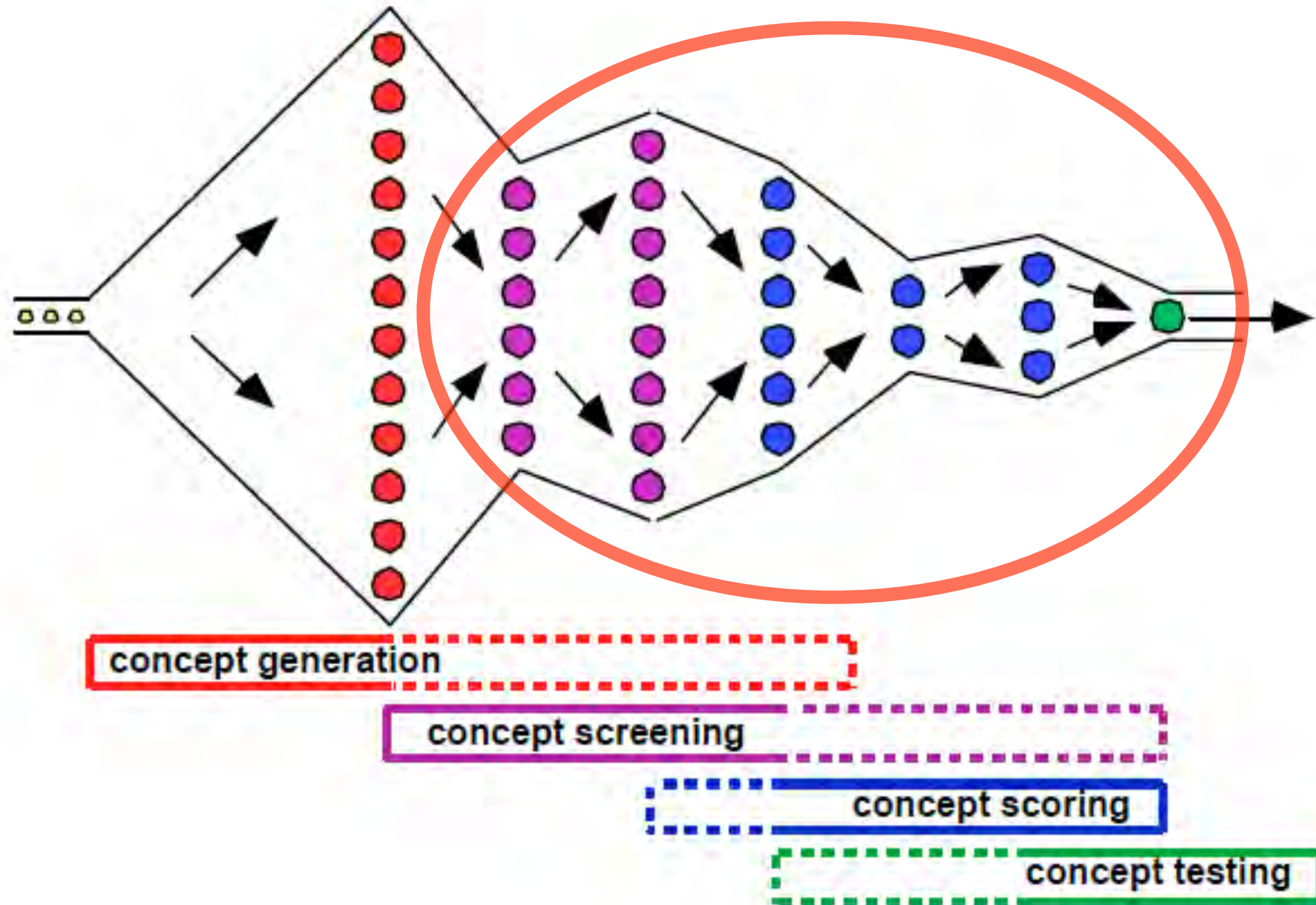
Concept Evaluation

Concept Development

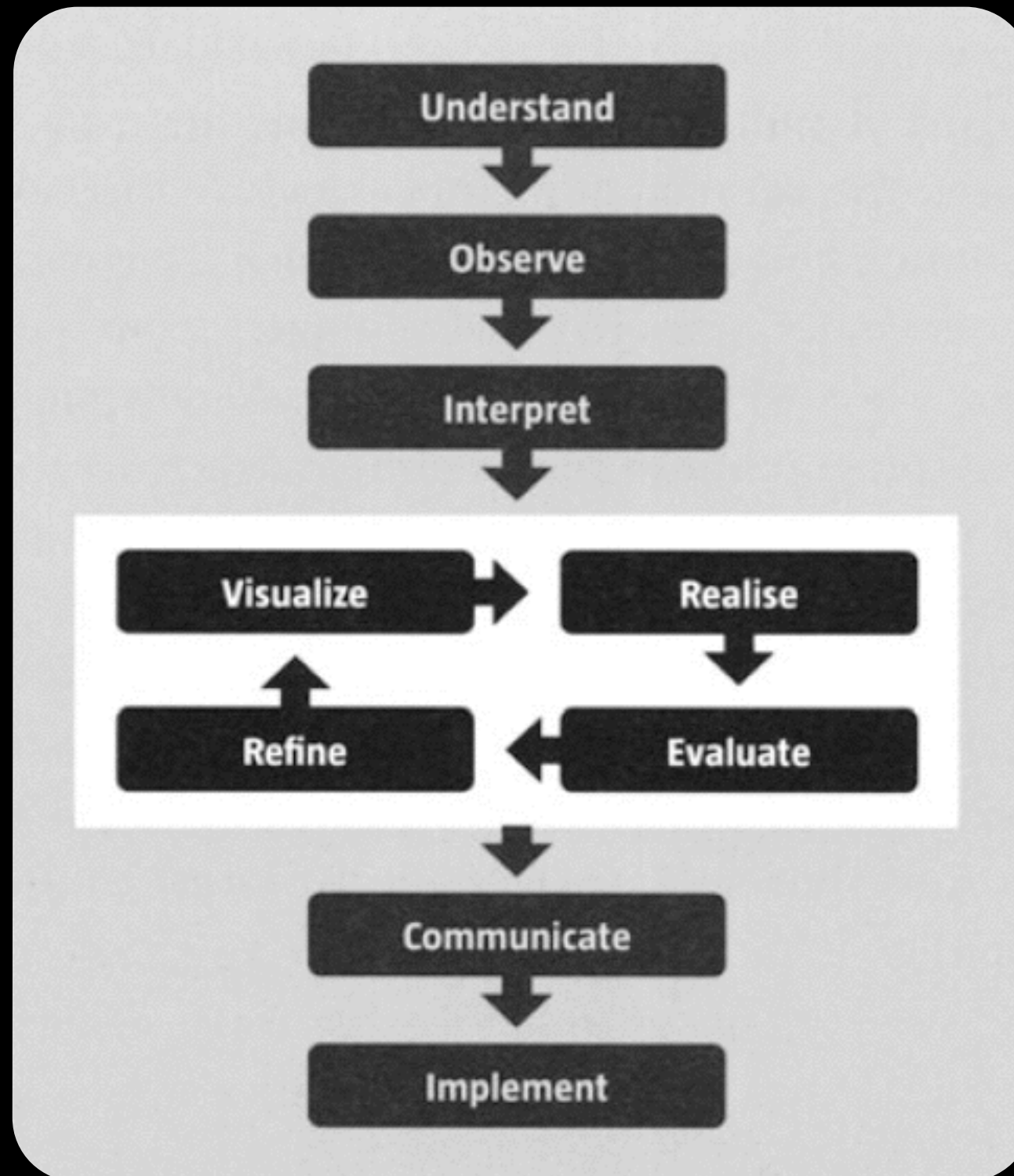
Concept Development



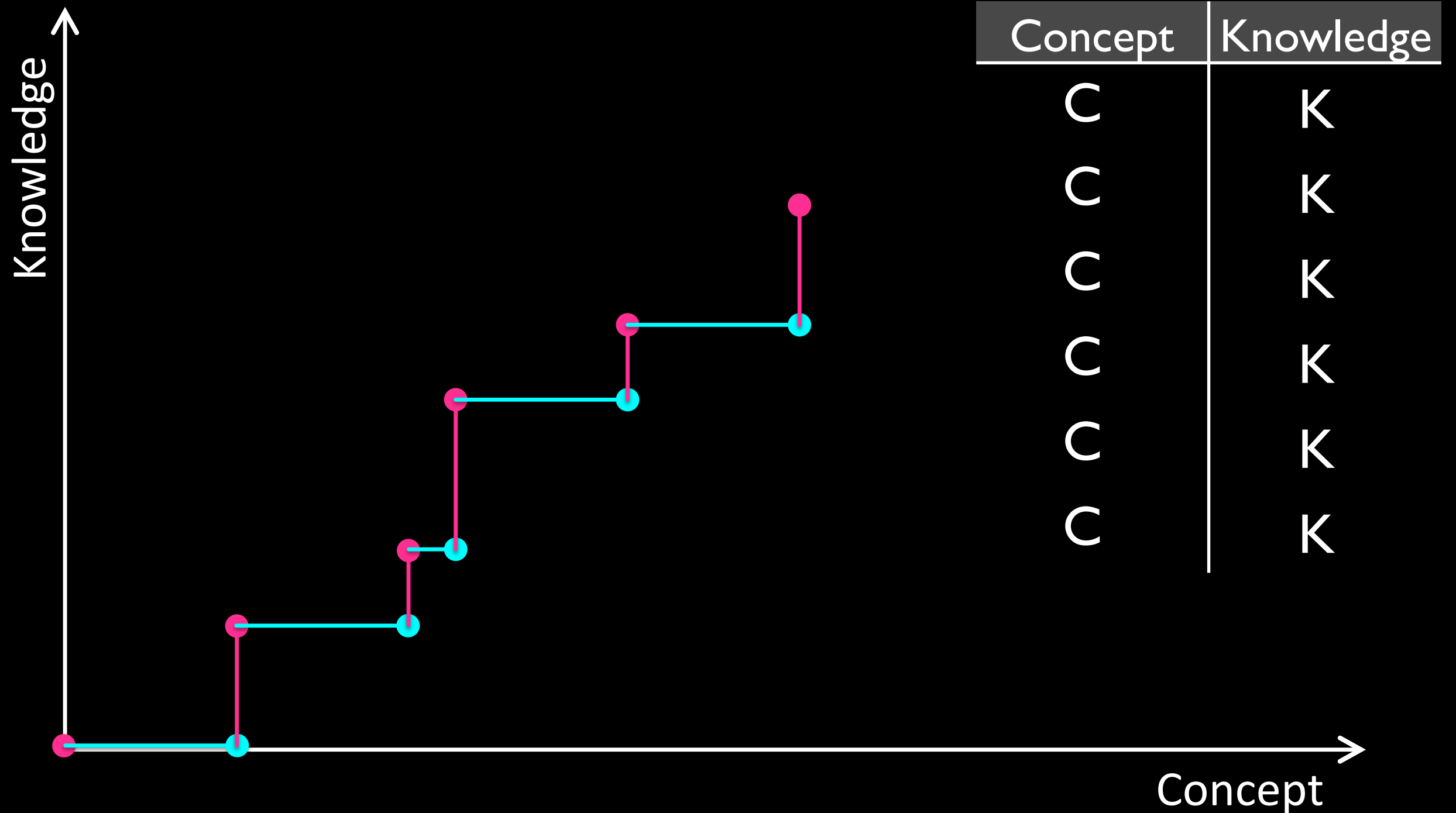
Concept Development



IDEO Deep Dive



C-K Theory



Concept Screening

SELECTION CRITERIA	A	B	C	D	E	F	G	REF.
Ease of Handling	0	0	–	0	0	–	–	0
Ease of Use	0	–	–	0	0	+	0	0
Number Readability	0	0	+	0	+	0	+	0
Dose Metering	+	+	+	+	+	0	+	0
Load Handling	0	0	0	0	0	+	0	0
Manufacturing Ease	+	–	–	0	0	–	0	0
Portability	+	+	–	–	0	–	–	0
PLUSES	3	2	2	1	2	2	2	
SAMES	4	3	1	5	5	2	3	
MINUSES	0	2	4	1	0	3	2	
NET	3	0	–2	0	2	–1	0	
RANK	1	3	7	5	2	6	4	
CONTINUE?	Yes	Yes	No	No	Yes	No	Yes	

- Quick & easy comparing of concepts
- Rule out worst concepts
- Identify exceptional elements

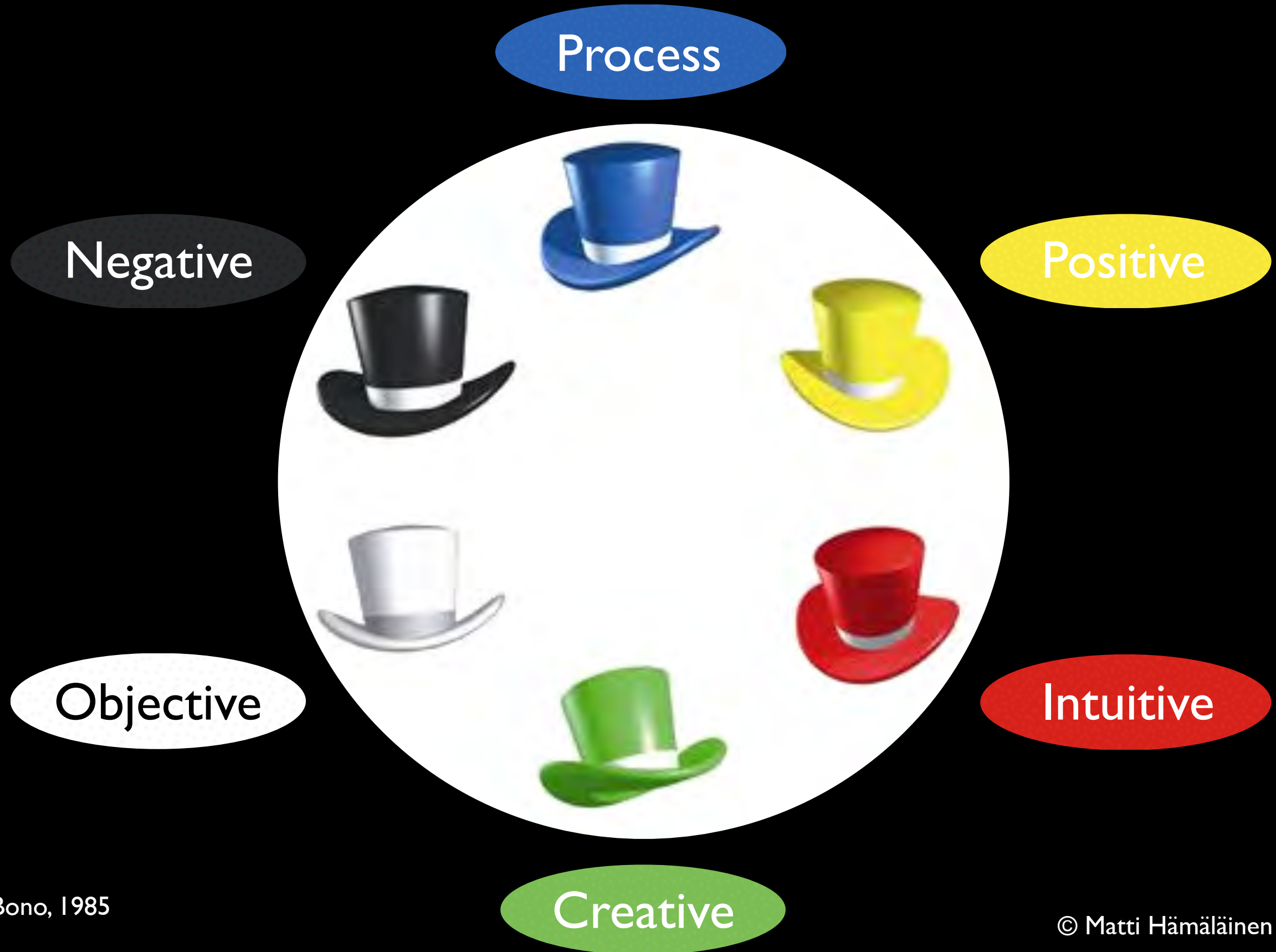


Concept Scoring

Criteria	Weight	A	B (Datum)	C	
Size and appearance	0,25	5	3	2	1 Much worse than reference
Manufacturing and assembly	0,15	2	3	4	2 Worse than reference
Installation and use	0,25	3	3	4	3 Same as reference
Service	0,35	4	3	2	4 Better than reference
Sum		3,70	3,00	2,80	5 Much better than reference
Rank		I	II	III	

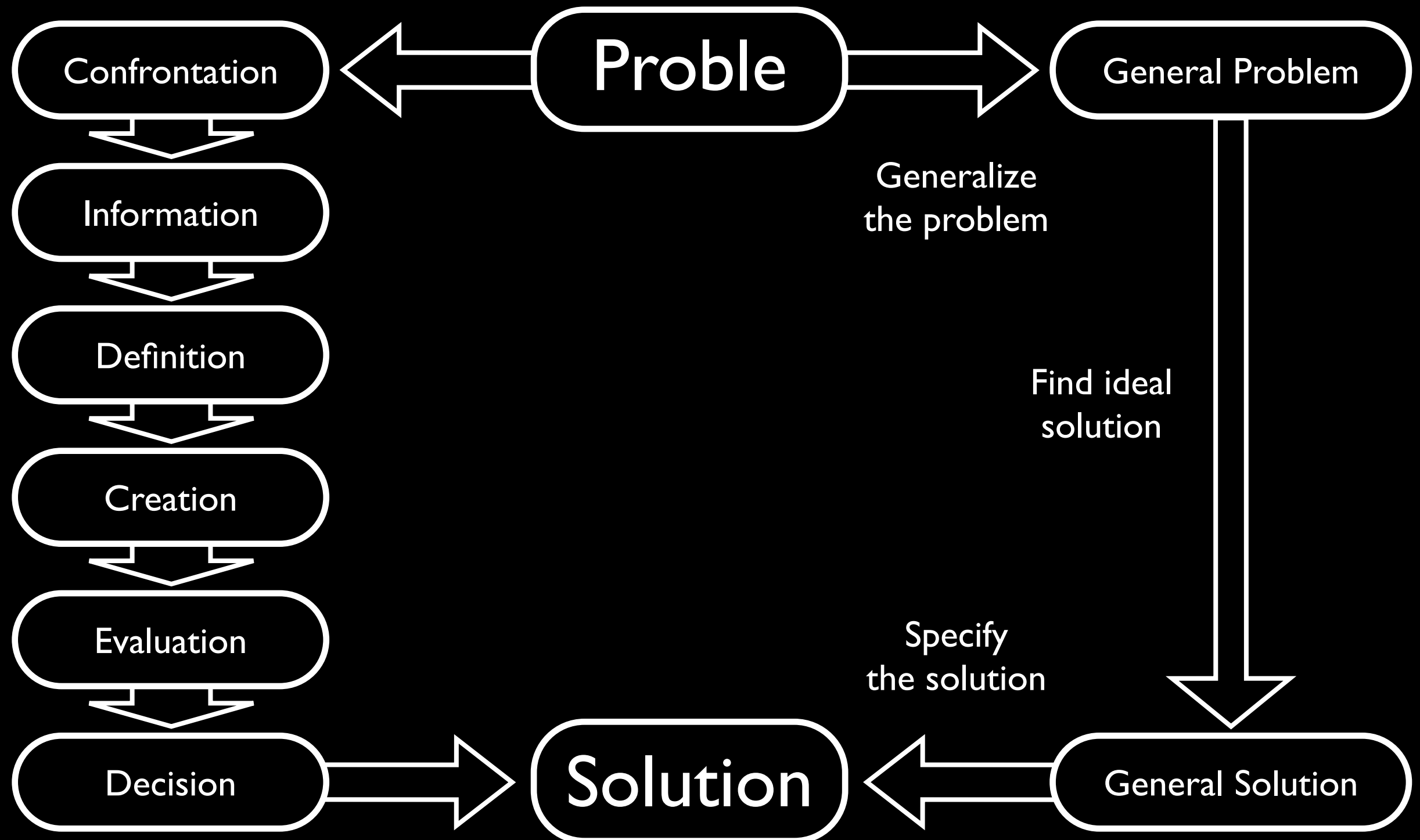
- Weighted comparison of selected concepts
- Good for Product Planning & Management

Six Thinking Hats

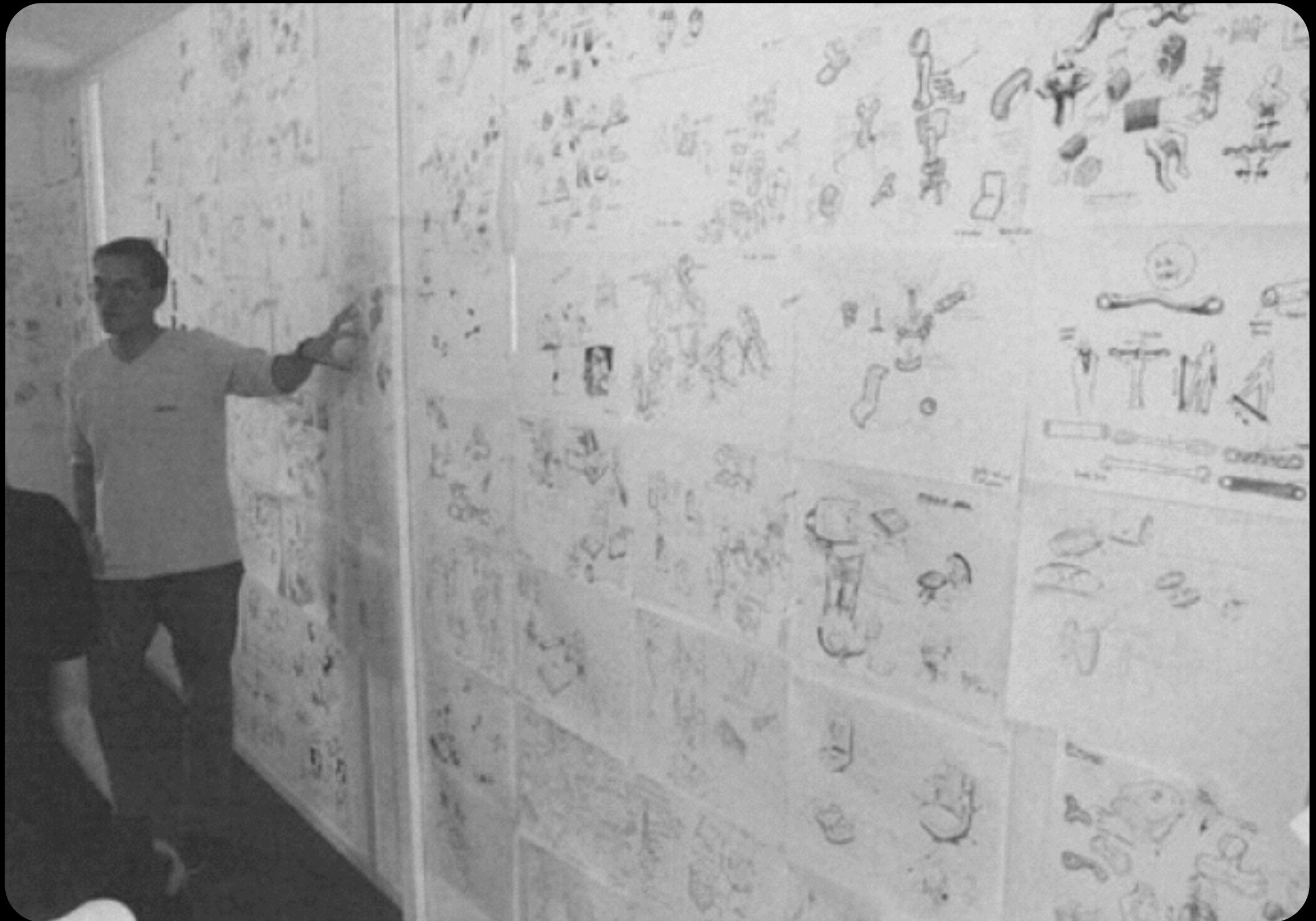


General Problem Solving Process

TRIZ

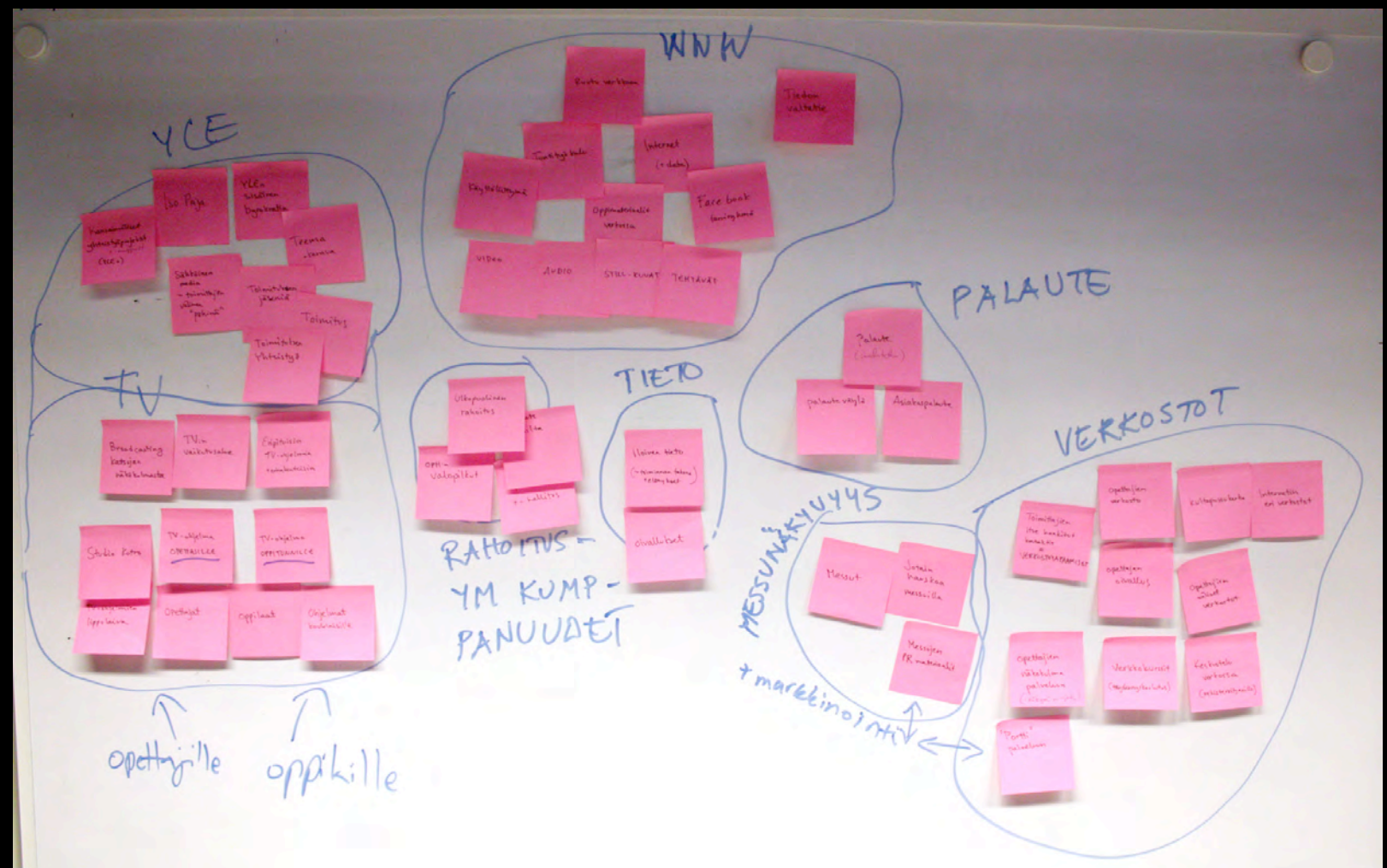


Comparing Concepts

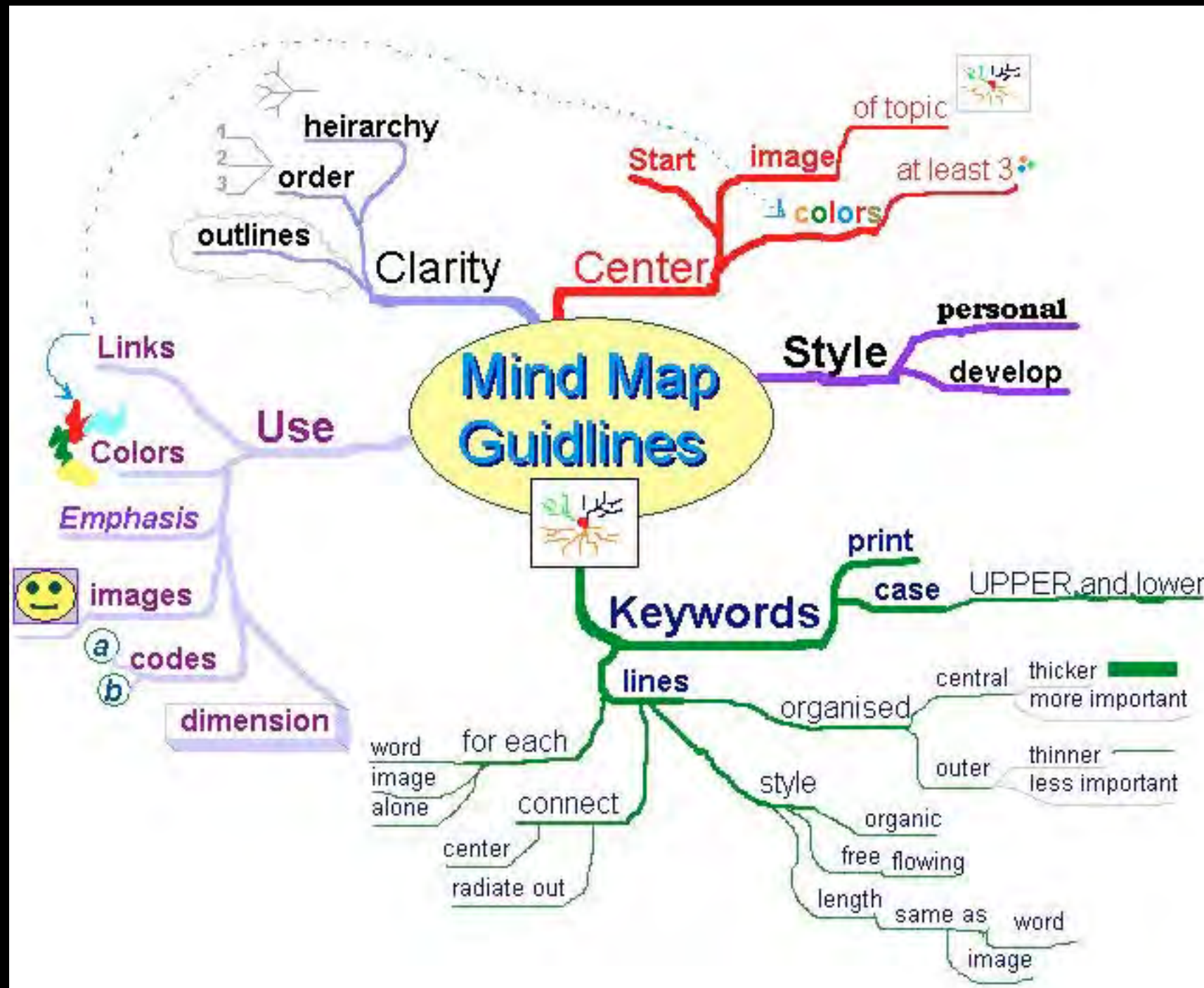


Affinity Diagram

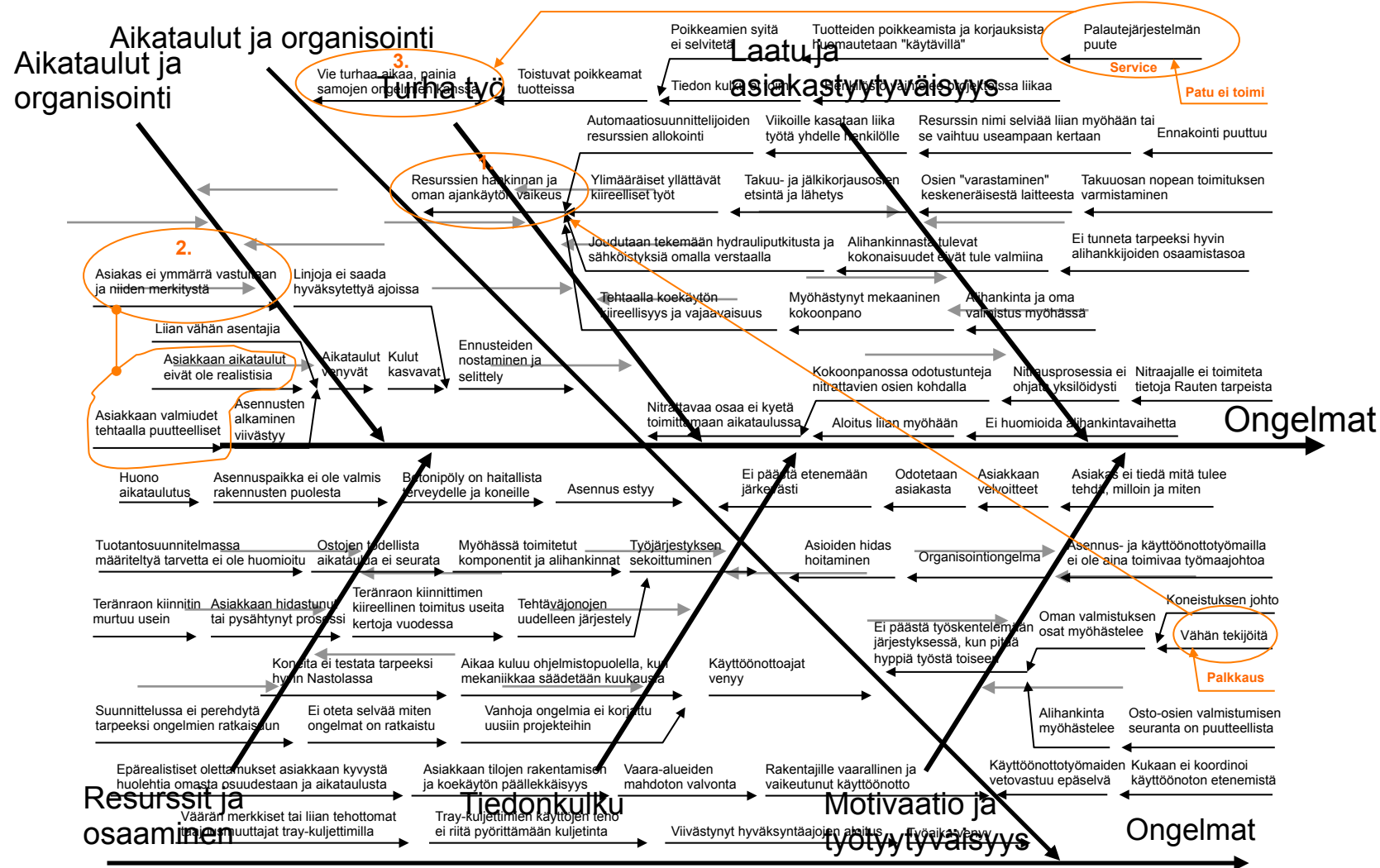
- Grouping similar ideas together
- Post-it notes are good for this



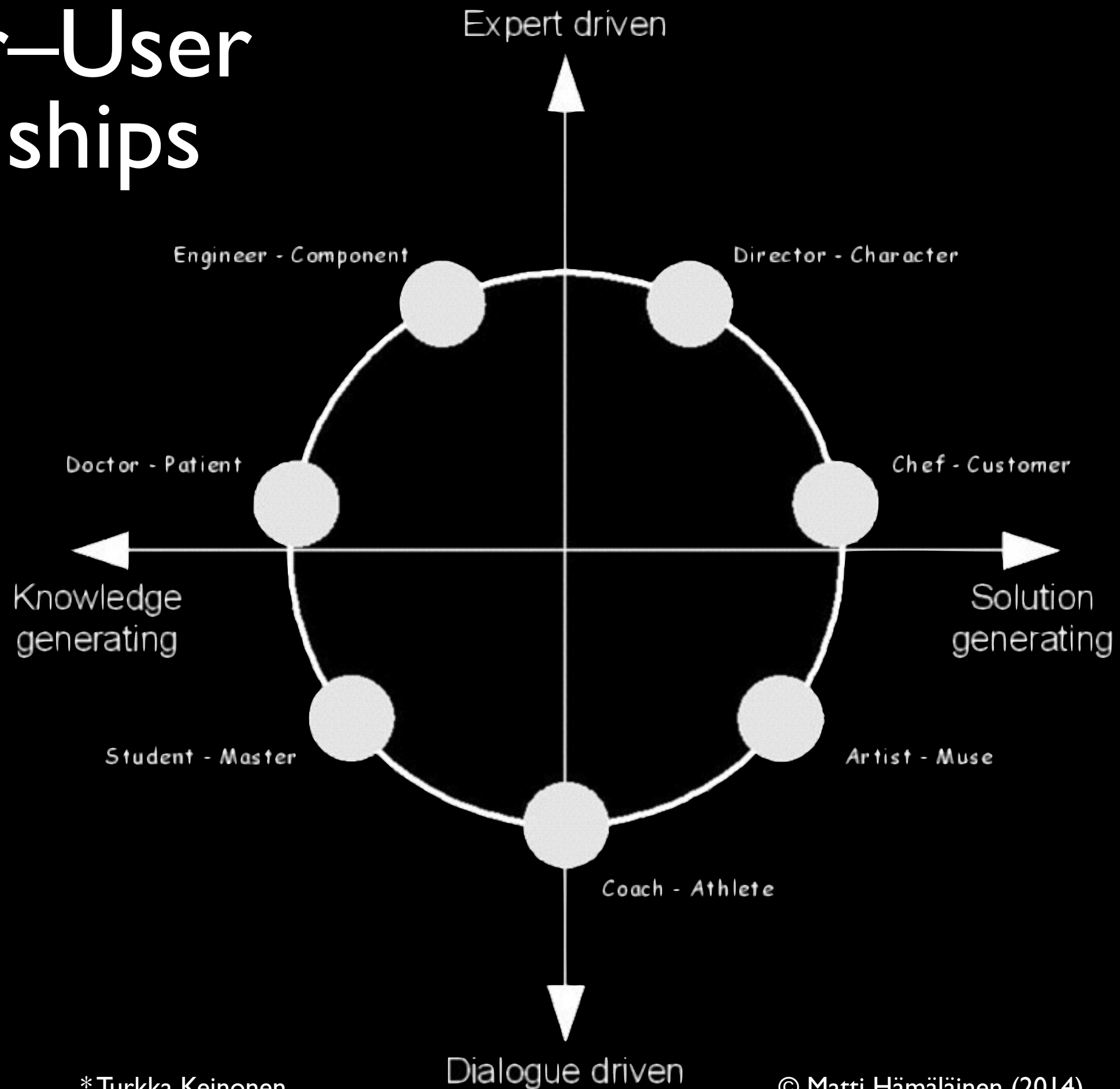
Mind Maps



- A.k.a Fishbone Diagram
- Big Picture & Causalities
- Good for analysis



Designer–User relationships

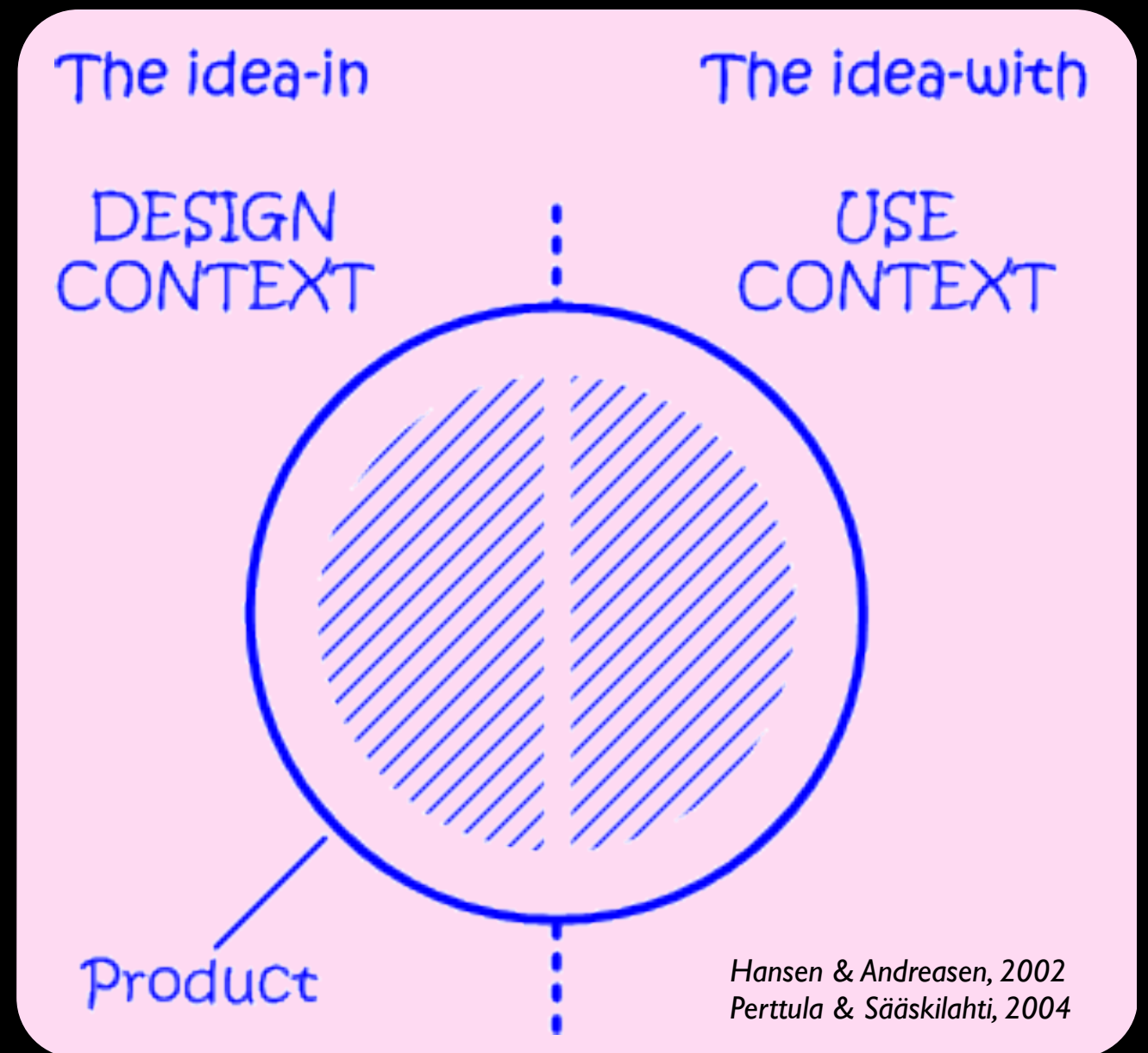


*Turkka Keinonen

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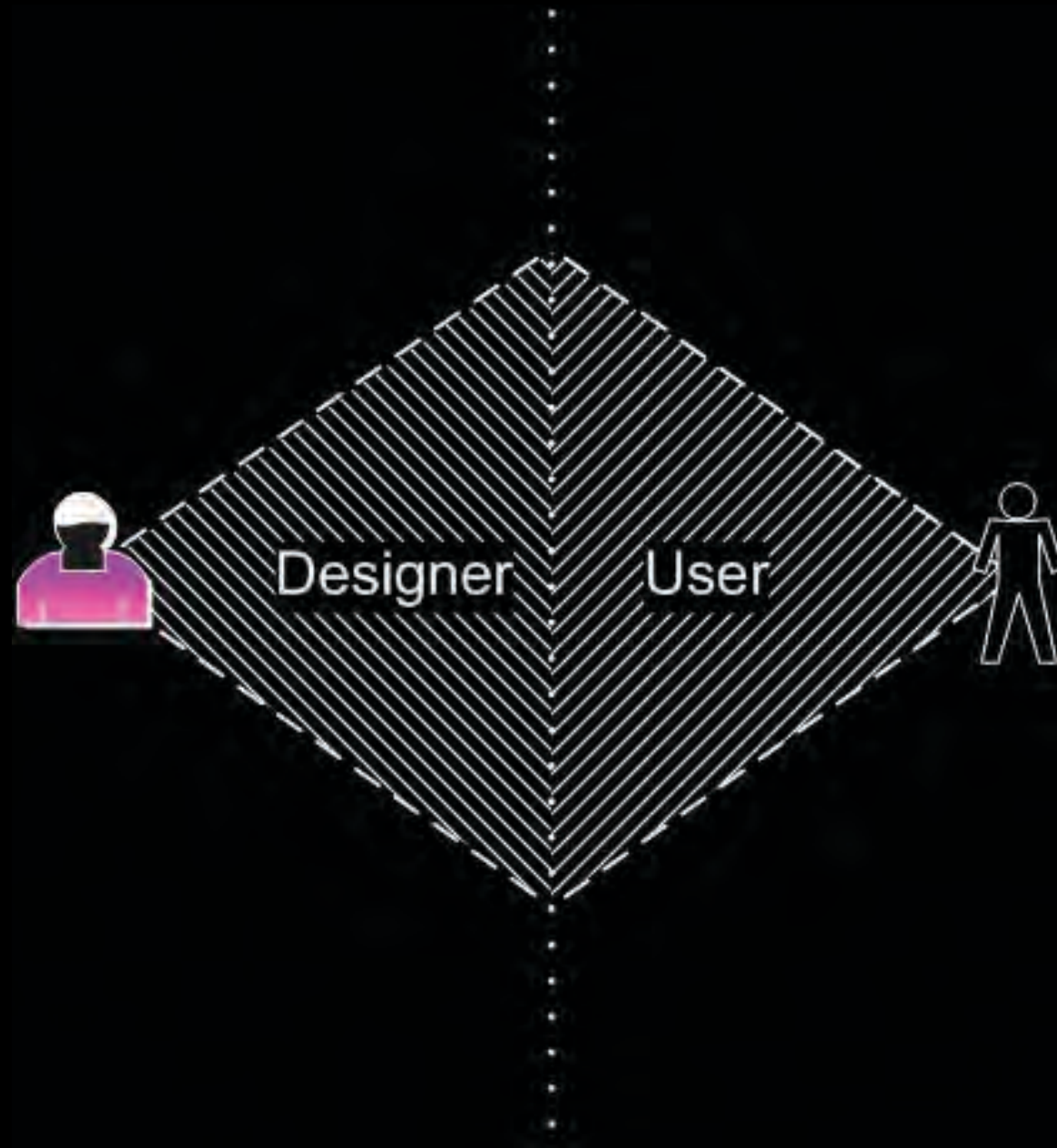
Two perspectives

- Product features vs. Product use



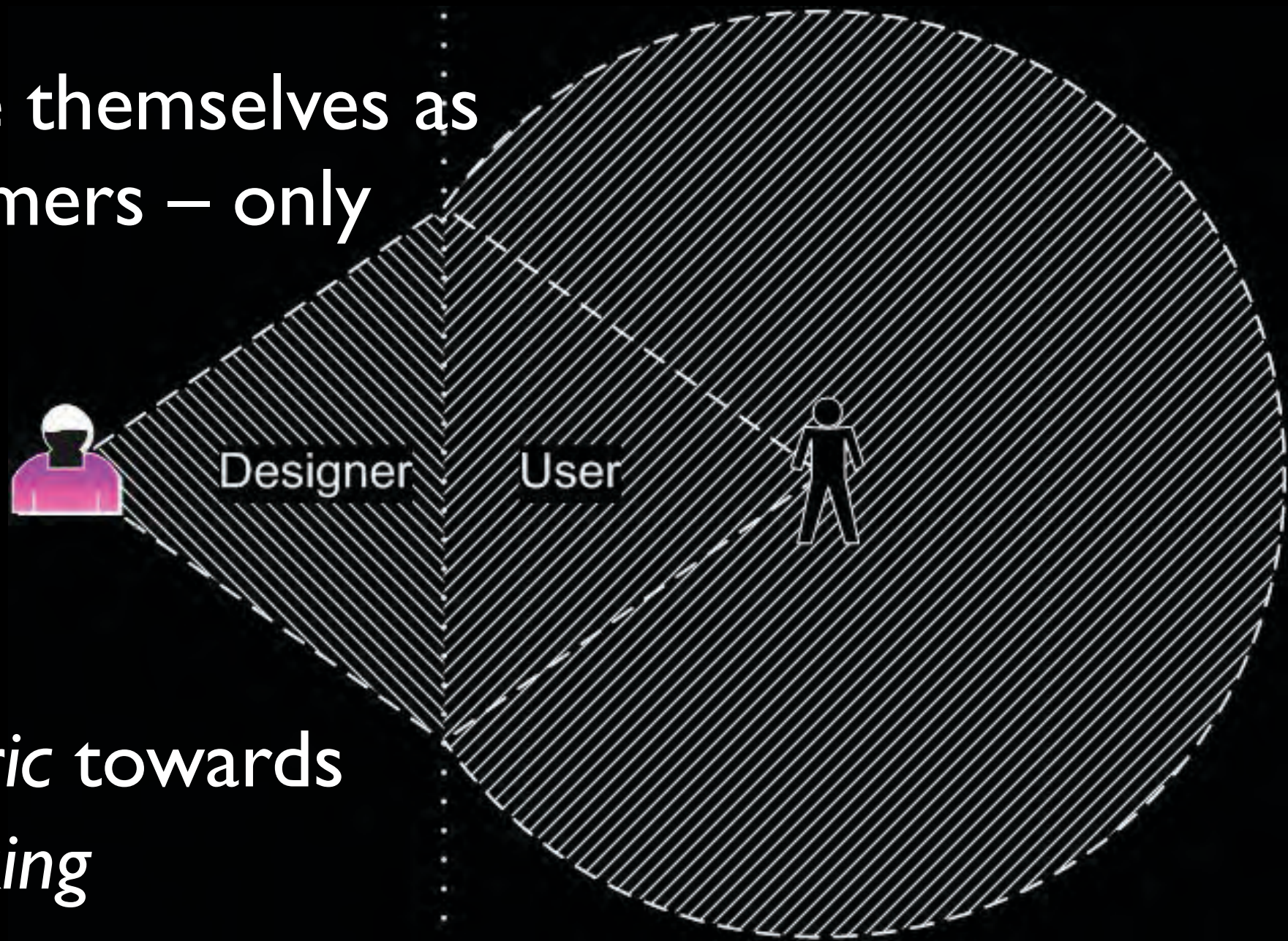
Two perspectives

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Two perspectives

- Product features vs. Product use
- Users don't see themselves as users or consumers – only designers do

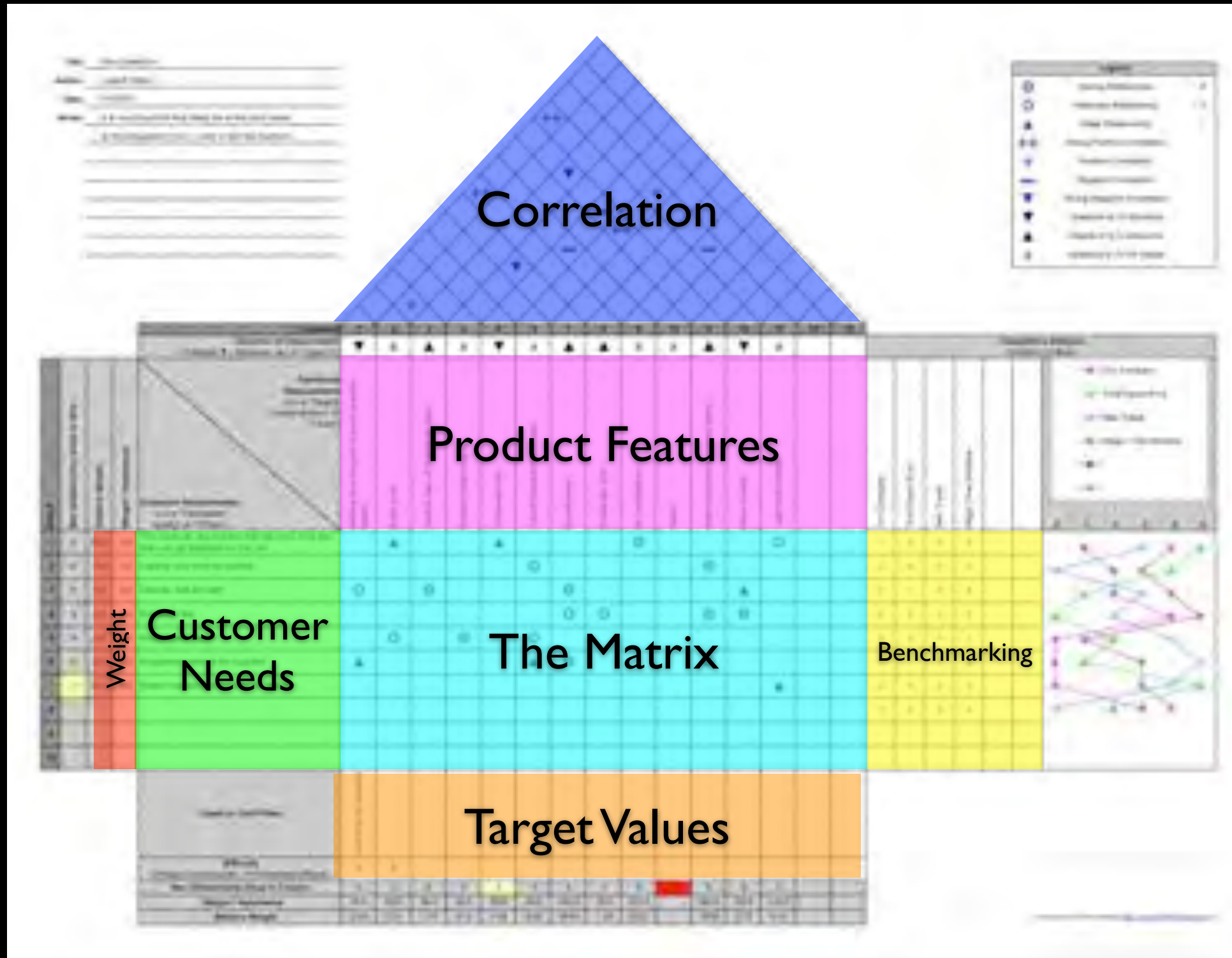


- From *User-centric* towards *Use-centric thinking*

Quality Function Deployment

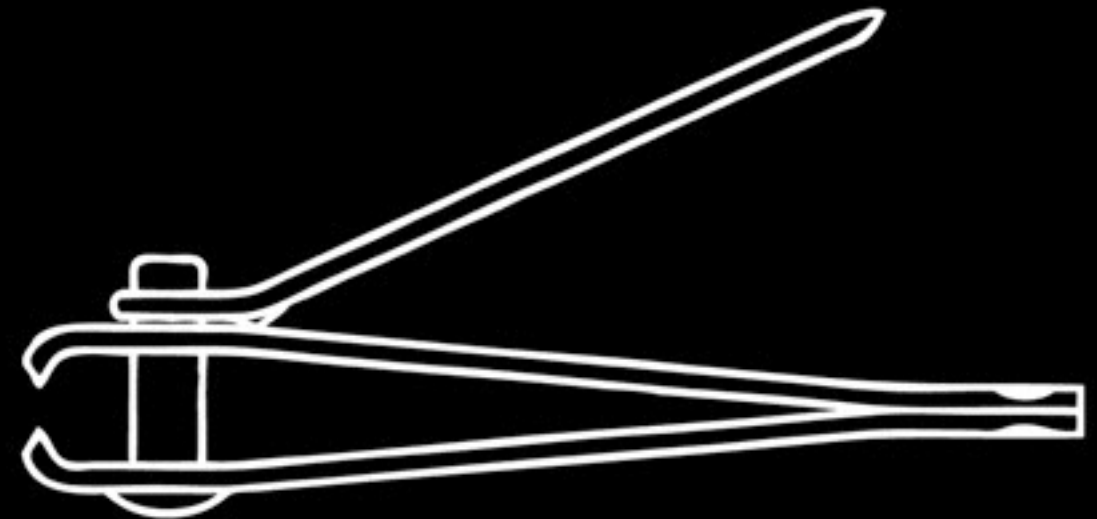
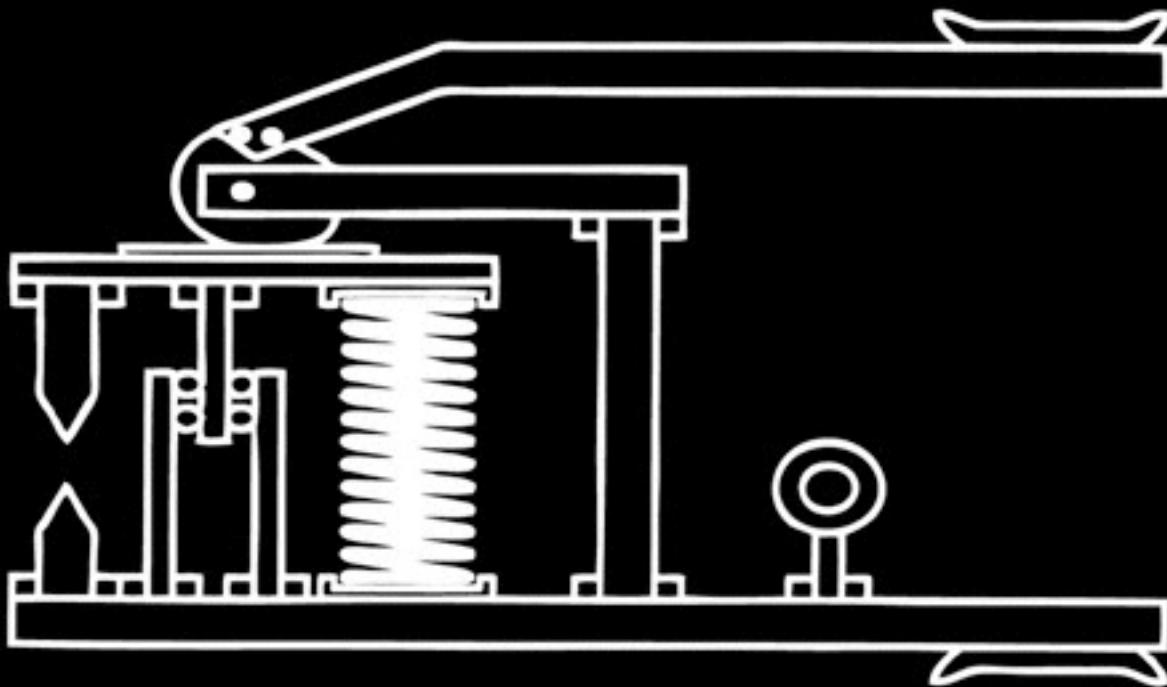
- Quality Function Deployment (QFD)
developed in Japan in 1966
- Principle: make sure that product features
match the customer needs
- Widely used in manufacturing industry

House of Quality (HoQ)



- Needs–metrics comparison
- Scale: 1, 3, 9

Modular vs. Integral



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