

# Systematic Innovation Tool Applicability



Problem Modeling		Technical Application Score	notes	Business Application Score	notes
Cause and Effect Chain (CEC)		A	identifies root causes	A	identifies root causes
Functional Modeling		A	removes mental inertia by focusing on functions rather than components	B	can get complicated especially when capturing harmful, excessive and insufficient actions
Process Function Analysis		A	chronological series of functional models	B	can get complicated capturing all of the process steps
Perception Mapping		-	not effective for tech systems problem ID	B	points to correct problem to work on in an organization
Perception Mapping + CEC		-	not effective for tech systems problem ID	A	adds Root Cause Analysis
Su-Field Analysis		A	Analysis at the object and interaction field level	B	analogy - excellent for breaking mental inertia
Technical Contradiction		B	IDs contradictory requirements - easier to solve than Phy Con but less robust solutions	B	IDs contradictory requirements - easier to solve than Phy Con but less robust solutions
Physical Contradiction		A	IDs contradictory requirements - harder to solve than Tech Con but more robust solutions	A	IDs contradictory requirements - harder to solve than Tech Con but more robust solutions
Patent Analysis		A	much more effective than simple legal maneuvering	n/a	no patent application in business systems
Contradiction Matrix - parameter focus		A	creates clear understanding of improvement requirements	B	parameters are not universally accepted but great at focusing on requirements for effective resolution
Solution Modeling		Technical Application Score	notes	Business Application Score	notes
Contradiction Matrix - Principle ID		B	40 Principle ID tool - most useful for intro to principles	C	most useful for training
40 Inventive Principles		A	empirically validated and excellent for mental inertia breaking	B	developed for technical but with business examples
Effects and Knowledge DBs		A	proprietary software and data bases are best resources	B	not well organized but quite applicable
76 Standard Inventive Solutions		A	empirically validated and excellent for mental inertia breaking	B	developed for technical - analogy
Separation Algorithm		A	empirically validated and excellent for mental inertia breaking	B	analysis algorithm is strong but associated Principles loosely validated
Satisfaction Algorithm		B	different cut of Separation	C	different cut of Separation
By Pass Algorithm		B	different cut of Separation	C	different cut of Separation
Trimming		A	improvement through simplification - directly supported on technical trend	A	directly supports one business trend
Feature Transfer		A	combination of features from competing systems - power concept for mental inertia breaking and innovative solution generation	B	drives organizational or business process design
Trends		A	empirically validated but not all trends have application algorithms developed as of yet	B	early development stages
Ideal Final Result		A	established best possible outcome for maximizing solution	A	established best possible outcome for maximizing solution
Others		Technical Application Score	notes	Business Application Score	notes
Resource Analysis		A	helps understand and id available resources for solutions	A	helps understand and id available resources for solutions

Note - regardless of score, each tool is superior to most commonly used practice of problem modeling guesses followed by "brain storming"

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