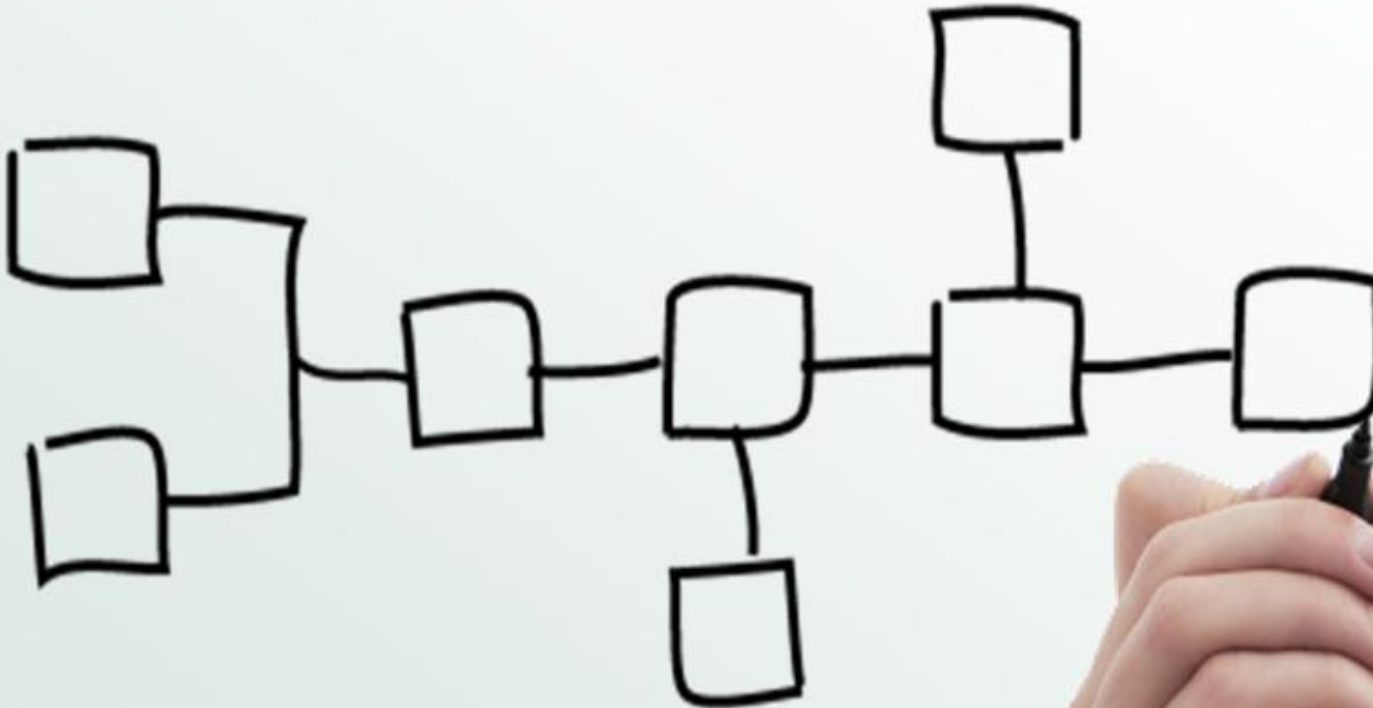


SCENARIO-BASED MANAGEMENT



Alireza Saebi

Fall 2012

<http://saebi.ir>

“Futurism is an art of re-perception. It means recognizing that life will change, must change, and has changed, and it suggests how and why.

It shows that old perceptions have lost their validity, while new ones are possible.”

Bruce Sterling



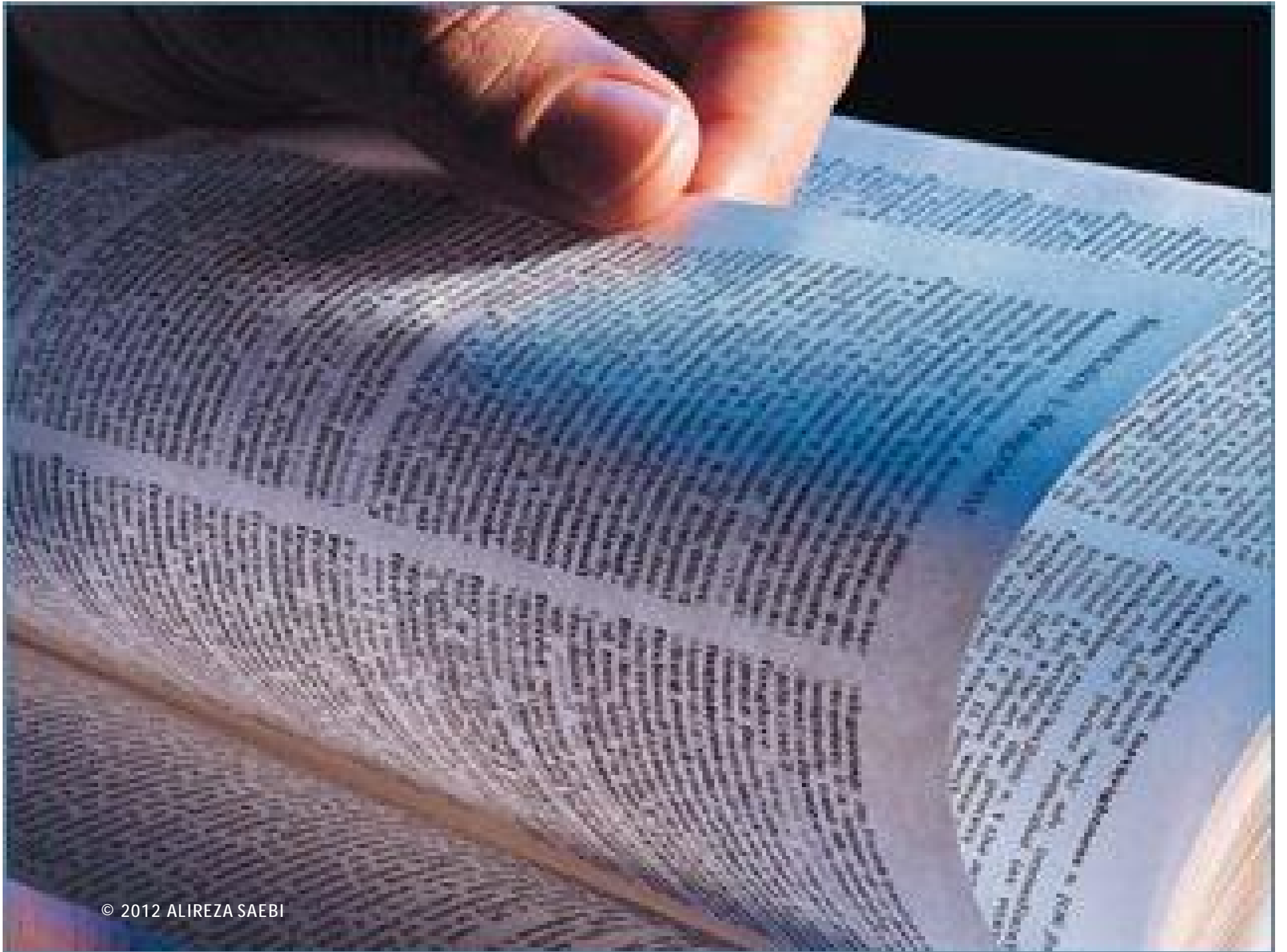
Scenario

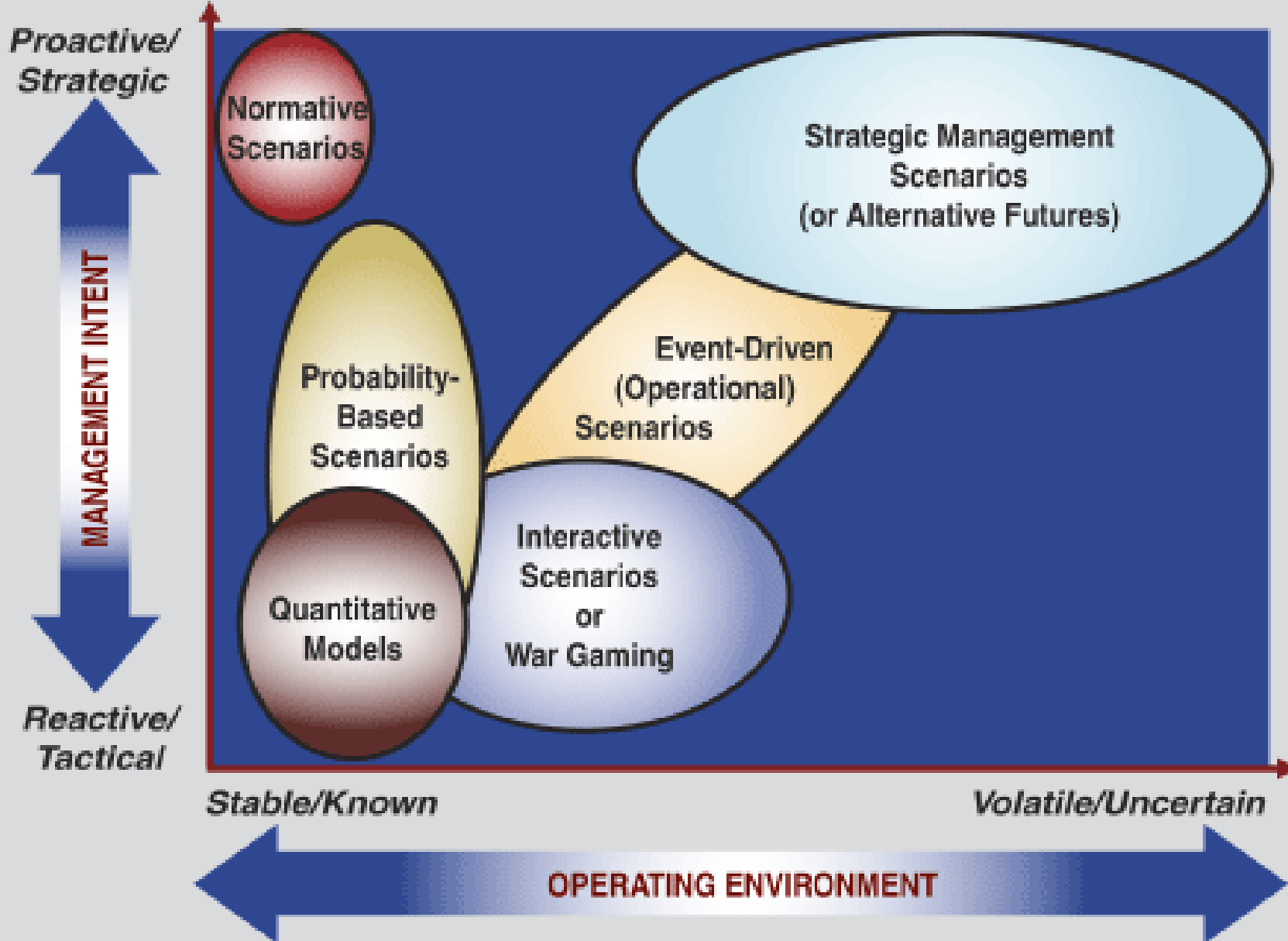
Scenario planning

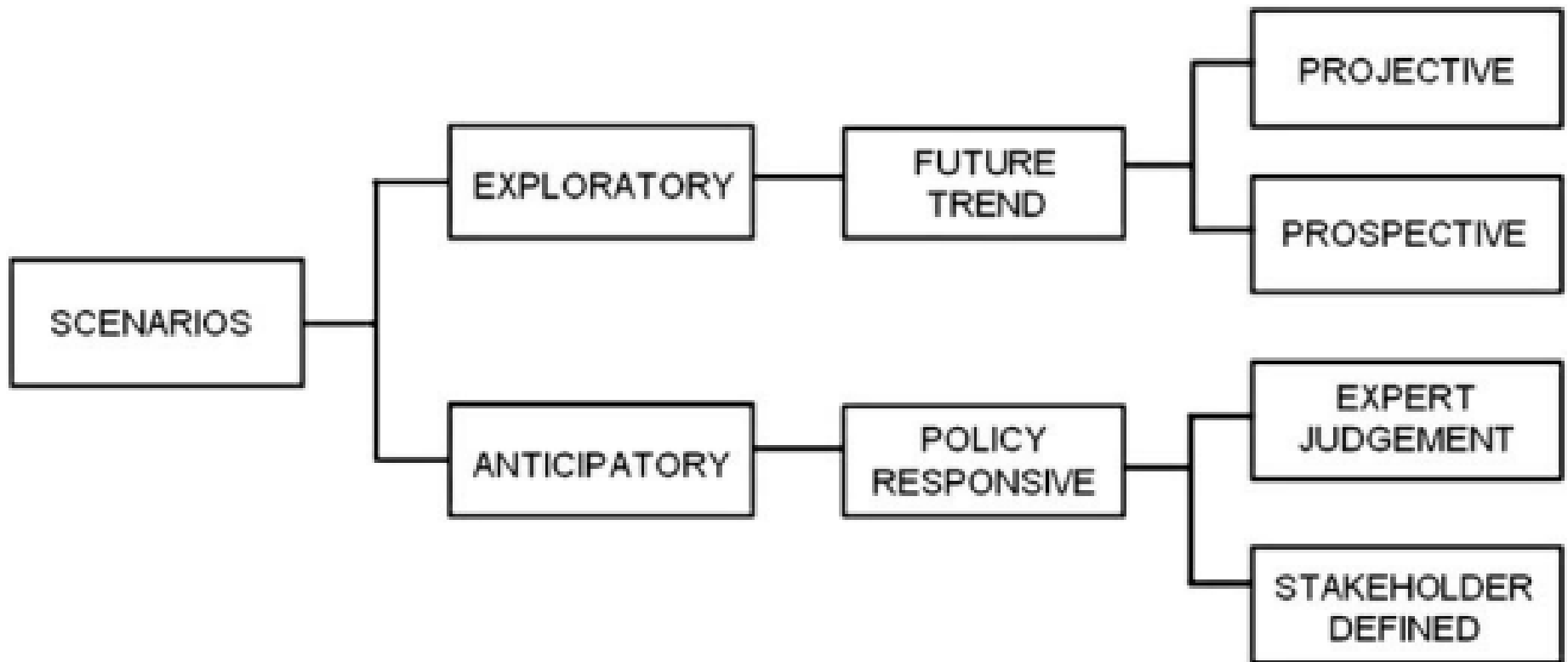
Scenario thinking

Scenarion analysis

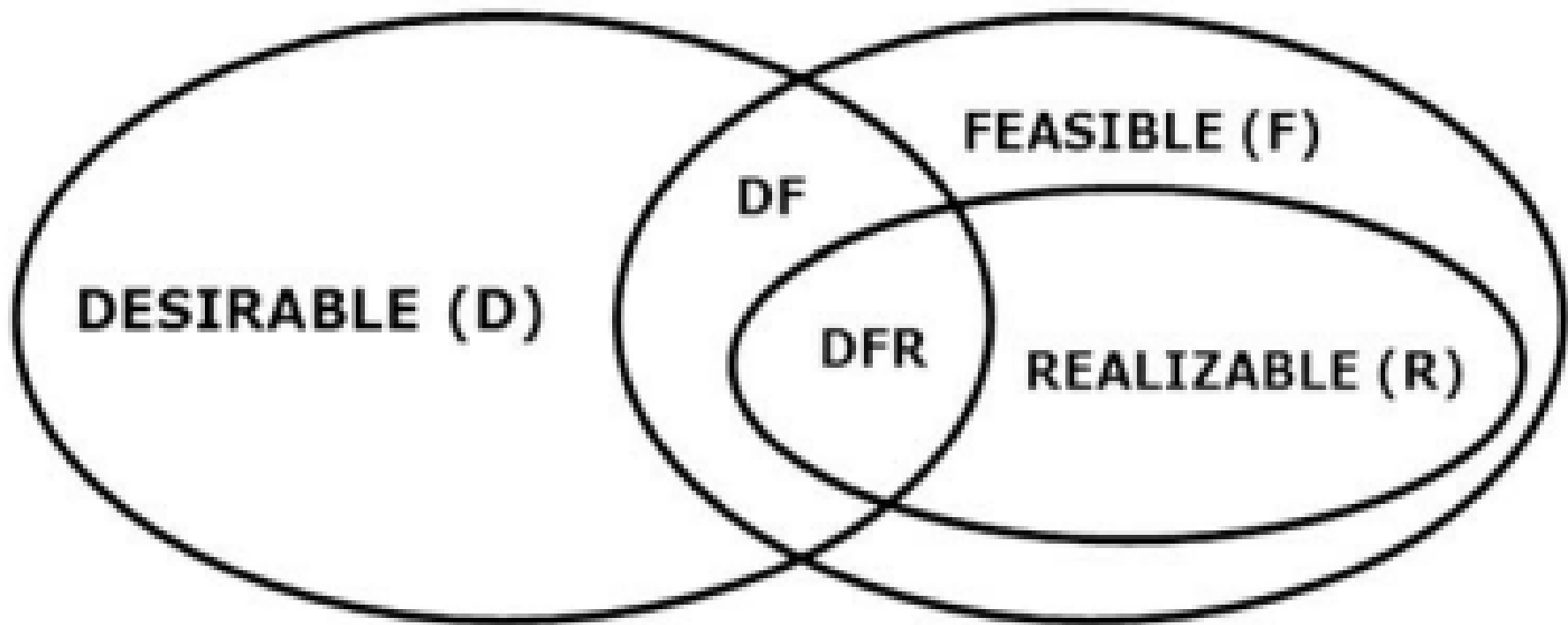
Why?





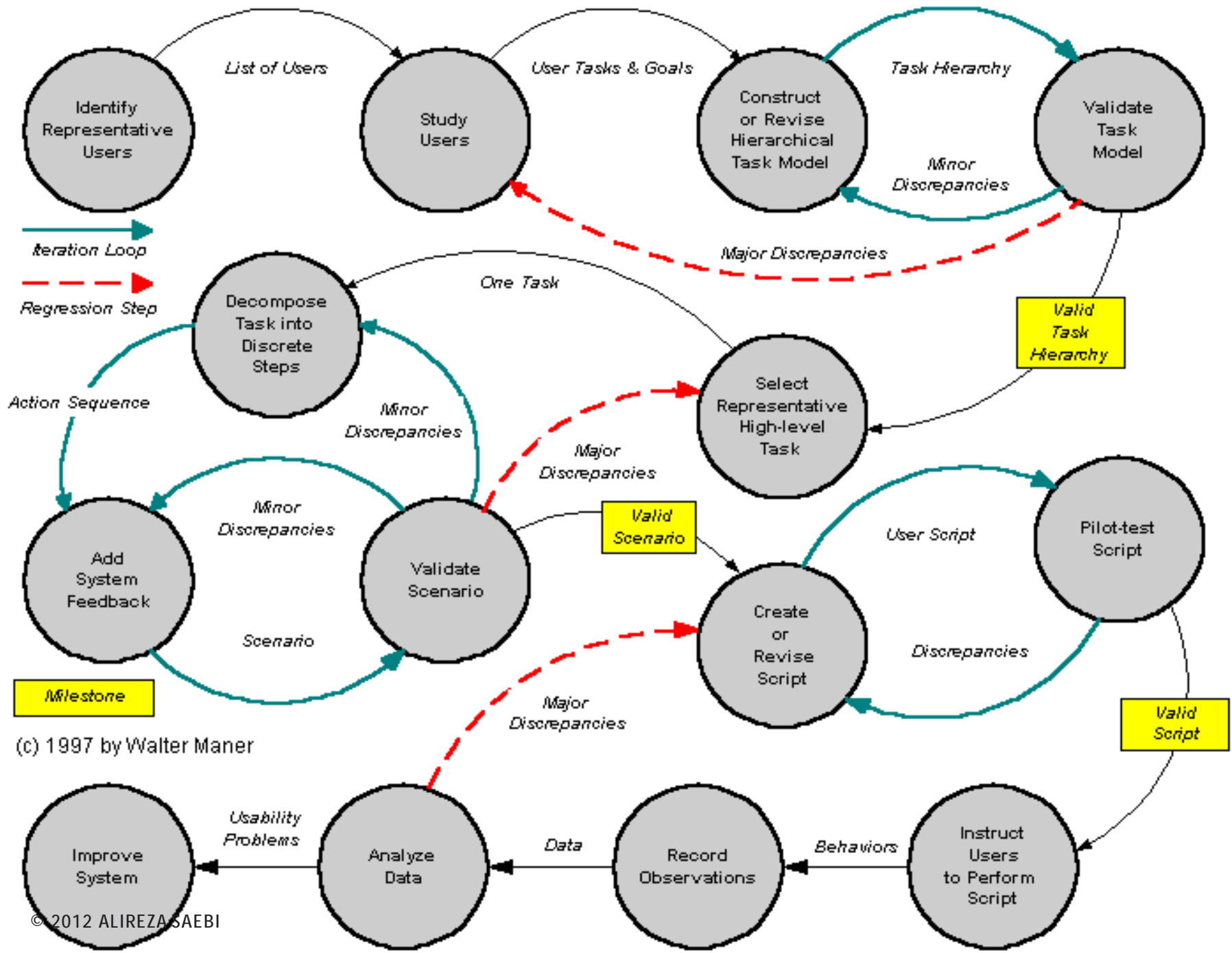


POSSIBLE





SCENARIO METHODOLOGY





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HOW

TO...

Scenario Definition

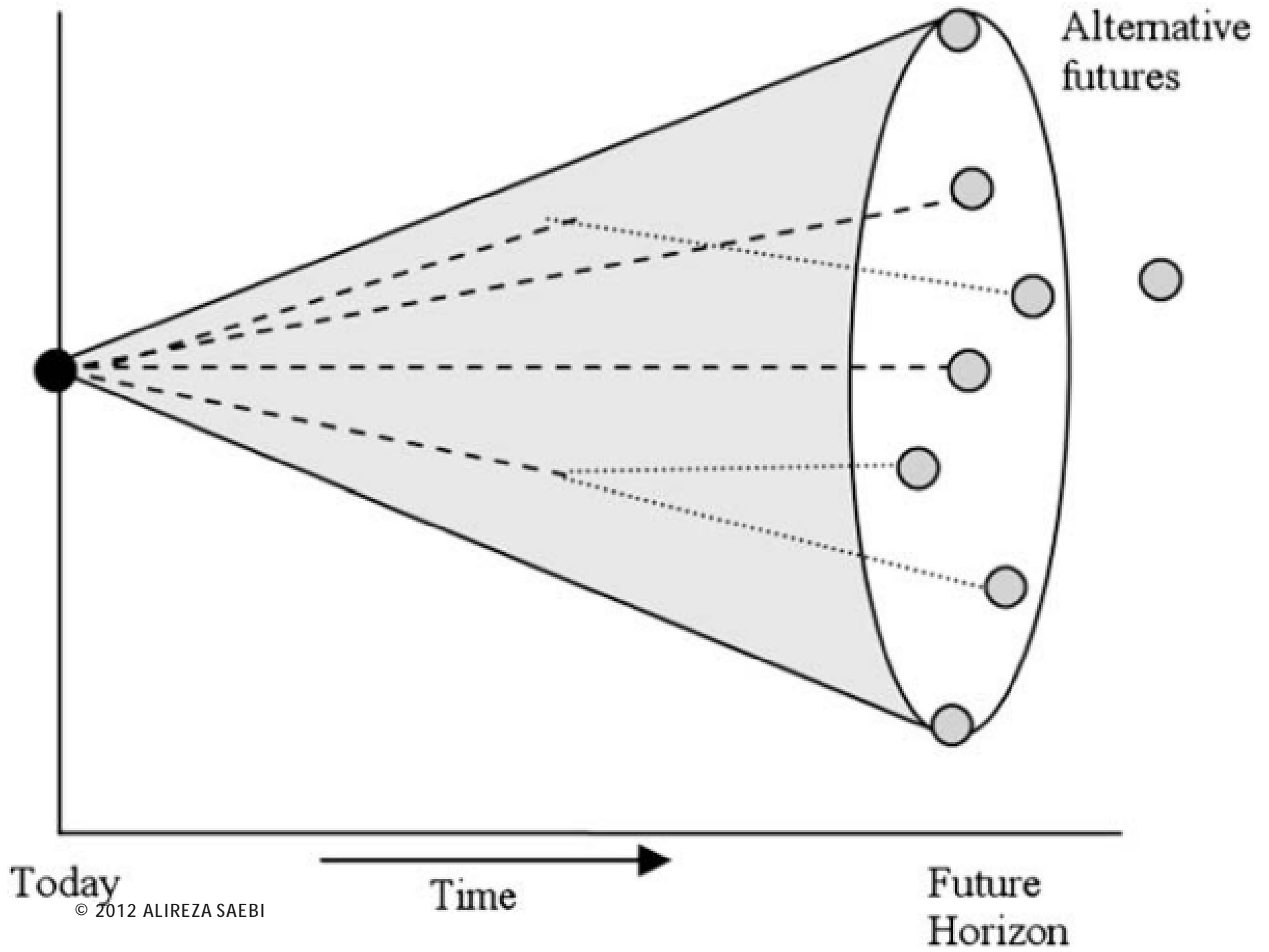
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graph TD; A[Scenario Definition] --> B[Scenario Construction]; B --> C[Scenario Analysis]; C --> D[Scenario Assessment]; D --> E[Risk Management];
```

Scenario Construction

Scenario Analysis

Scenario Assessment

Risk Management



Specification of Market Expectations

Asset class	Distribution property	(End of) Period 1	(End of) Period 2	(End of) Period 3
Cash—duration three months	expected value of spot rate	4.33%	State dep	State dep
	standard deviation	0.94%	State dep	State dep
	skewness	0.80	0.80	0.80
	kurtosis	2.62	2.62	2.62
	worst-case event	6.68%	State dep	State dep
Bonds—duration six years	expected value spot rate	5.91%	State dep	State dep
	standard deviation	0.82%	State dep	State dep
	skewness	0.49	0.49	0.49
	kurtosis	2.39	2.39	2.39
	worst-case event	7.96%	State dep	State dep
Domestic stocks	expected value total return	7.61%	State dep	State dep
	standard deviation	13.38%	State dep	State dep
	skewness	−0.75	−0.75	−0.75
	kurtosis	2.93	2.93	2.93
	worst-case event	−25.84%	State dep	State dep
International stocks	expected value total return	8.09%	State dep	State dep
	standard deviation return	15.70%	State dep	State dep
	skewness	−0.74	−0.74	−0.74
	kurtosis	2.97	2.97	2.97
	worst-case event	−31.16%	State dep	State dep

Statistical Properties Derived from the Marginal Distributions

	Expected value (%)	Standard deviation (%)	Skewness	Kurtosis*	Worst-case event (%)
Cash	4.33	0.94	0.80	2.62	6.68
Bonds	5.91	0.82	0.49	2.39	7.96
Domestic stocks	7.61	13.38	-0.75	2.93	-25.84
International stocks	8.09	15.70	-0.74	2.97	-31.16

Specification of Correlations

	Cash	Bonds	Domestic stocks	International stocks
Cash	1	0.60	-0.20	-0.10
Bonds		1	-0.30	-0.20
Domestic stocks			1	0.60
International stocks				1

Stability in the Objective Function Value for Three Different Sets of Specifications

	$E(x)$	STD(x)	High(x)	Low(x)
Set 1: EV, STDEV, CORR	112.31	0.384	113.48	111.51
Set 2: EV, STDEV, SKEW, KURT, CORR	111.99	0.203	112.74	111.47
Set 3: EV, STDEV, SKEW, KURT, CORR and worst case outcomes	111.98	0.183	112.48	111.61

Stability in the Decision Variables

	Cash	Bonds	Domestic stocks	Foreign stocks
Average optimal portfolio	3.6	77.7	9.3	9.4
Standard deviation in optimal allocation	3.5	2.5	1.1	1.4



The Industry Attractiveness-Business Position Matrix

		Industry Attractiveness			
		High	Medium	Low	
Company's Competitive Position	High	1	1	2	1 Invest / grow 2 Selective investment / maintain position 3 Harvest / divest
	Medium	1	2	3	
	Low	2	3	3	

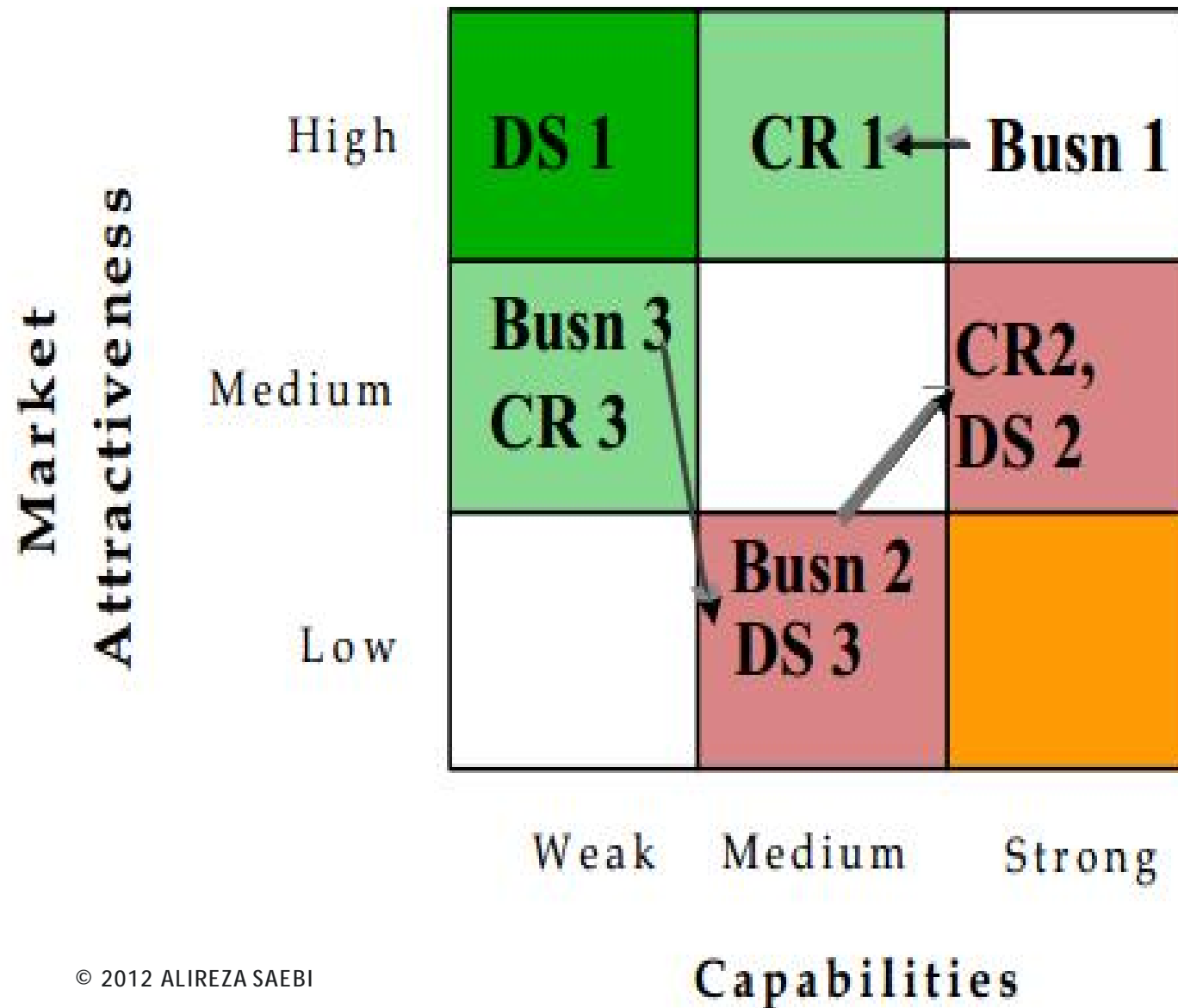
Variables that might be used to evaluate:

Company's / Brands Competitive Position

- Size
- Growth
- Relative S.O.M.
- Margins
- Consumer Loyalty
- Distribution
- Technology
- Marketing skills
- New Products
- Patents
- Customer S.O.M.
- Access / Control of Supply

Industry Attractiveness

- Size
- Growth Trend
- Margin levels / profitability
- Competitive intensity
- Profitability
- Technological sophistication
- Pace of technological change
- Government Regulations





UNCERTAINTY.
What will you do?