



QUALITY, STATISTICS, AND COHERENCE

MANAGING COHERENCE AS A SUSTAINABLE VIABILITY FACTOR

E-21 System

Purpose

**Sustainable
Viability**

Metrics

C_p Indicator

Coherence

SVC

**Organization's
Shape**

Conclusions

Purpose

The purpose of this work is to understand:

- Sustainable Viability as the evolution of Quality
 - The relevance of Statistics in Sustainable Viability
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Sustainable Viability

- Excellence is known as the main purpose of Quality, as model of system management
- When different organizations, in the same marketplace, achieve Excellence the logical next step should be keep sustainable this Excellence: Sustainable Viability

Sustainable Viability is defined as

- Quality
- Efficiency
- Synchrony
- Coherence

'The capability of an organization to compete effectively and achieve and maintain a pre-eminent position in their marketplace on a long period of time'



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Metrics

- This step forward from Excellence to Sustainable Viability is led by two elements:
 - Causes analysis, but not symptoms
 - Metrics based on uniqueness and robustness

 - The characteristics of these metrics are:
 - *Uniqueness*, that guarantees *coherence*
 - *Robustness*, that guarantees *reliability*

 - Then, the question is:
Where are organizations able to find these characteristics?
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C_p Indicator

- After several years of research, the answer to this previous question has been found in Statistics, specifically in the

Capability Indicator (C_p)

$$C_p = \frac{USL - LSL}{6s}$$

- Consequently, considering the 7 Basic Tools as an essential part of Quality, as well as some other very important tools such as *SPC and DE*, it is clear that Sustainable Viability is only achievable by widely using Statistics

- Data Collection
- Stratification
- Histogram
- Pareto Diagram
- Scatter Diagram
- Graphs and Control Charts
- Cause-Effect Diagram

Source: Introduction to Control of Quality, by K. Ishikawa

[more about \$C_p\$ Indicator](#)



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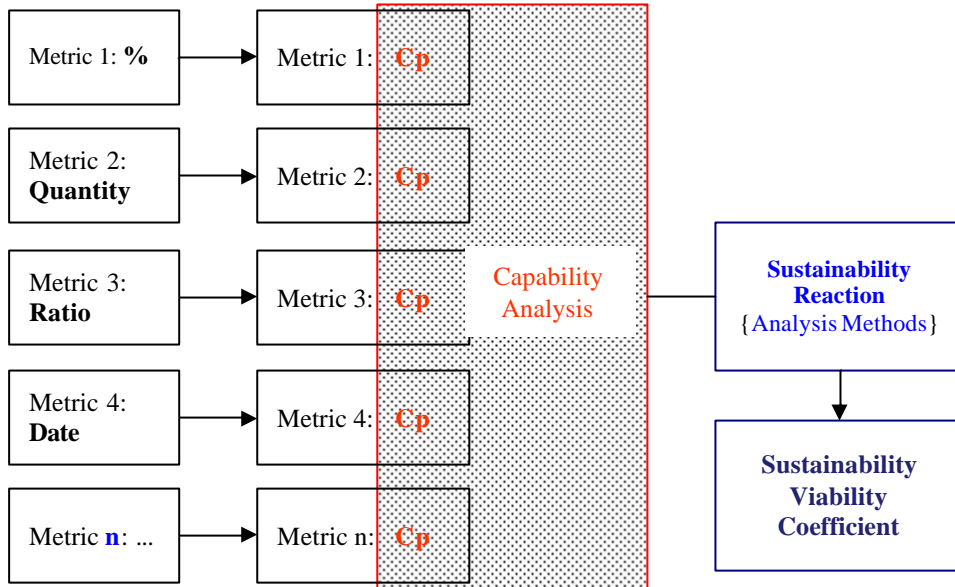
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Coherence

- Coherence, as one of the four Sustainable Viability Factors, is defined as

'The consistency with which the behavior of every person and the processes used within an organization aligns with the Mission, Vision and Values'

- Quality
- Efficiency
- Synchrony
- Coherence

- The ingredients to convert Coherence into a measurable metrics are:
 - A *framework*= organization's management model
 - An *analysis method*= Sustainability Reaction



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Sustainable Viability Factors

<i>Factor</i>	<i>Sub-factor</i>	<i>Analysis Methodology</i>
Quality	Process Capability	<i>Management by Modules & Partnership Satisfaction Audit {PSA}</i>
	Critical Factor Capability	
Efficiency	Leadership	<i>Business Diagnostics Analysis {BDA}</i>
	Facilitating	<i>Knowledge Value Analysis {KVA}</i>
	Learning	
Synchrony	People / Processes	<i>Knowledge Value Analysis {KVA}</i>
	People / Subjects	
	Processes / Subjects	
Coherence	Areas	<i>Business Diagnostics Analysis {BDA}</i>
	People	
	Strengths & Weaknesses	

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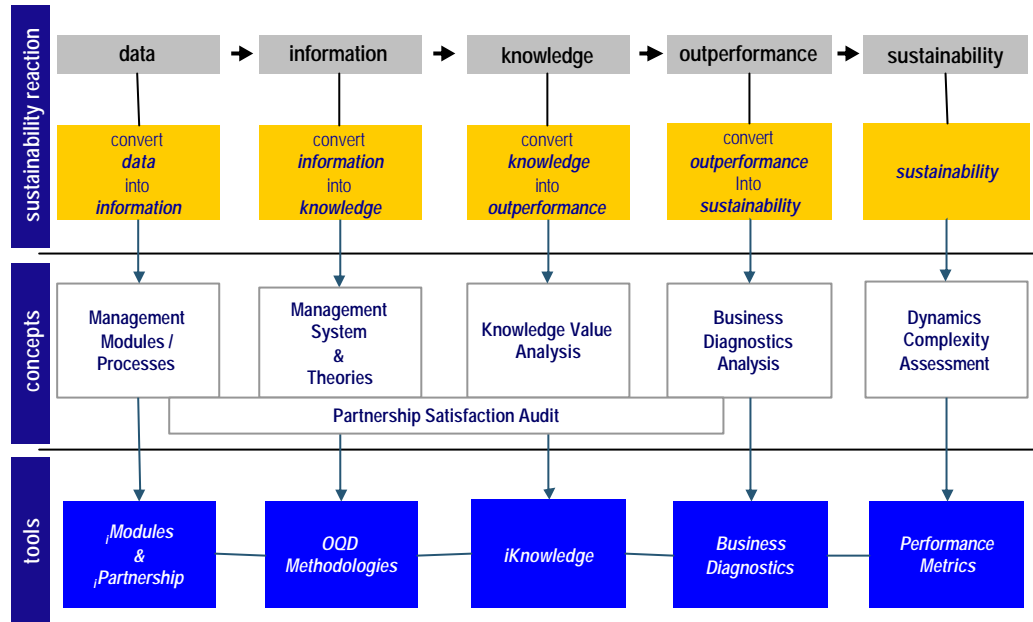
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Sustainability Reaction



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Sustainable Viability Coefficient

Summing up, the sequence of the followed reflection is:

1. Quality leads to Sustainable Viability
2. Sustainable Viability is supported by Statistics
3. C_p is the indicator provided by Statistics in order to build a *robust* and *reliable* set of metrics
4. This set of metrics is developed within the Sustainability Reaction framework
5. The deployment of this Sustainability Reaction gives the Sustainable Viability Coefficient

$$SVC = \left(\left(\frac{Q * E}{2} \right) + \left(\frac{Q * S}{2} \right) + \left(\frac{E * C}{2} \right) + \left(\frac{C * S}{2} \right) \right)$$



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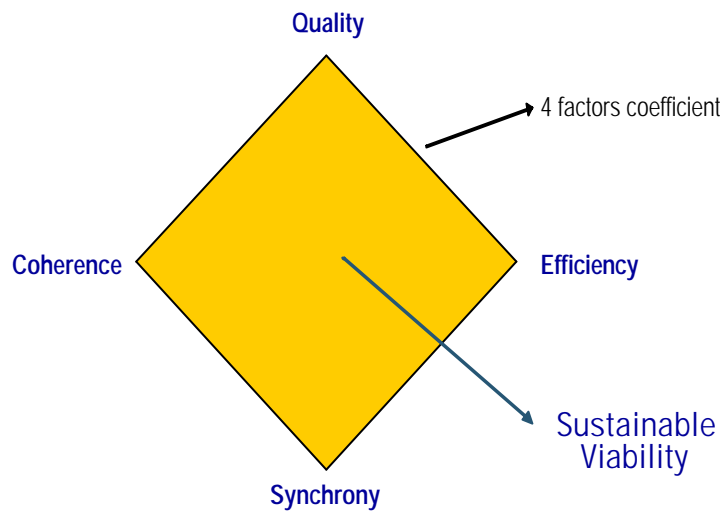
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Ideal shape

⇒ $C_p = 2$

⇒ $SVC = 200$



example



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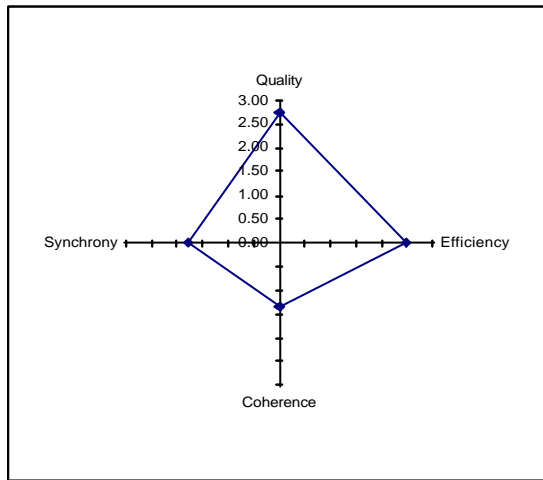
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Abstract from a case study

	<i>SVC</i>	<i>C_p</i>	<i>Profits</i>
<i>Achieved Value</i>	3.56	1.12	6.10%
<i>Ideal Value</i>	200	2	Max



<i>Factor</i>	<i>C_p</i>
Quality	1.75
Efficiency	1.37
Coherence	0.88
Synchrony	1.33

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The main conclusions from this approach are:

1. Considering Sustainable Viability as the new edge on business management, Statistics takes a paramount relevance
 2. Sustainable Viability Coefficient is able to quantify both tangible and intangible business issues, like the new Coherence factor
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