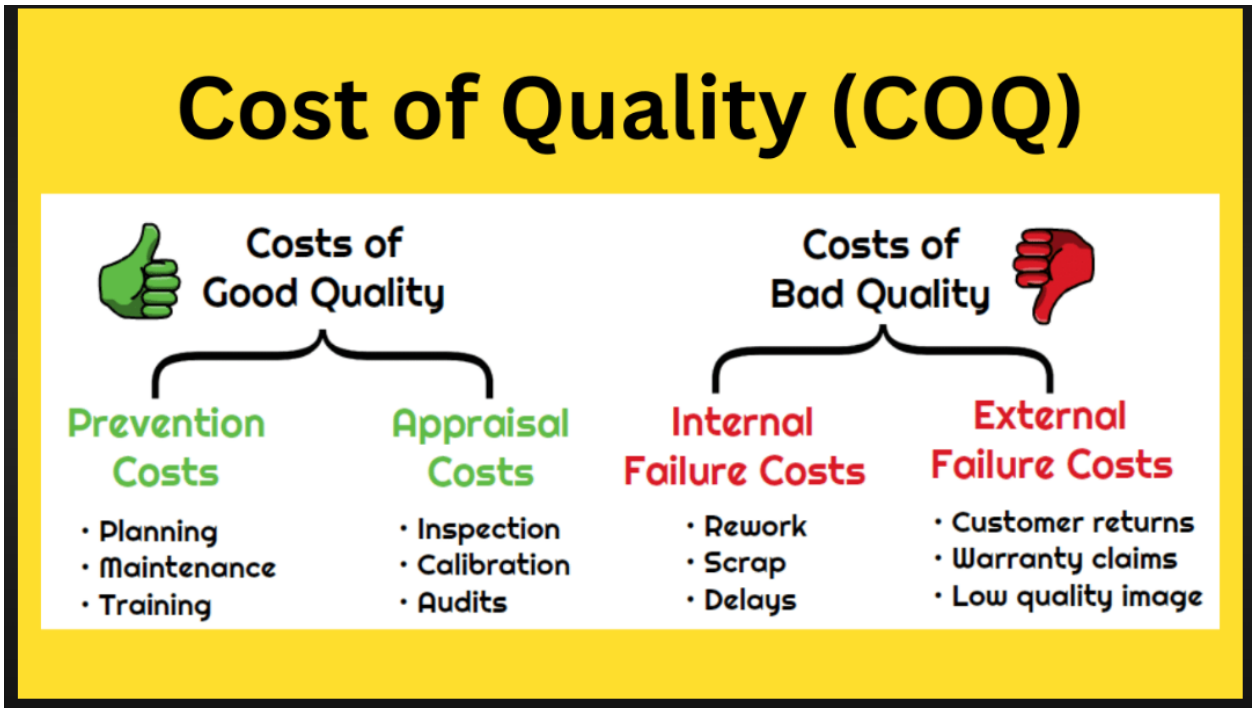
Name of article: COPQ Continuums and Sustainable Project Management



By

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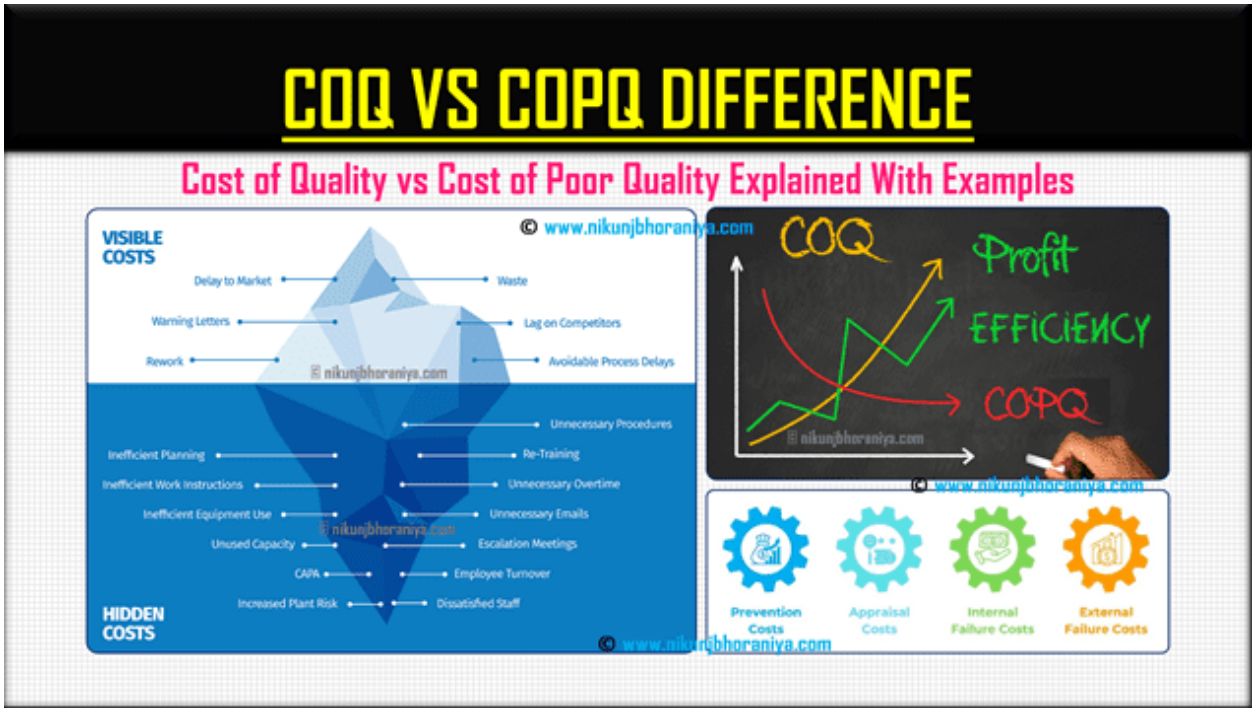
Sustainable development and growth is termed as development that meets the needs of the present, grows in terms of return of investment & profit margins, but does not compromise the abilities of future generations to meet their needs and issues of the cost-of-poor quality influencing leadership/productivity/credibility/building business.

It needs to be said that **Gap analysis for Sustainable COPQ Project Management** can help the MSME industry achieve this vision.

More importantly as the MSME industry is one where conformance to emergent and relevant quality practices helps production / service expectations, management interests in design for performance and productivity, gaining credibility and building business, managing the cost of poor quality in projects effectively right through the design-to-production and supply chain cycle is very much the need of the hour.

This article uncovers the subject of Sustainable COPQ Project Management.



A. What is being sustainable?

Reducing energy use, unnecessary water consumption, waste generation, operating risks and costs; **getting ahead of the regulatory curve; enhancing the environment for operations** and also improving an —organization's standing in the community.

With the dynamics of economics, make or build decisions, climate change, emerging cost of poor quality insights, being sustainable needs a long-term vision towards a strategic framework that maps cost of quality and cost of poor quality to a macro-micro goals / asset like approach

The macro-micro goals and asset initiatives need to be part of a vision for sustainability that develops a strategic framework that unifies everyone around the aim to **optimize benefits in three realms**: the environment, the economic, and the social—also known as the triple bottom line.

B. Excellence in the MSME industry (revisited)

For the MSME industry, the need for excellence is not only seen at the **macroscopic level (i.e. business at a site/ward/city-model level)** but also at the **microscopic level (as a cost-effective DMAIC roadmap for products or services)**.

This article states that **key performance indicators demonstrative of such macro-micro goal setting/asset development** include some of the following:

a. Reduced raw material/resource use
b. Reduced energy consumption
c. Improved process efficiency
d. Safer for the consumer and community products
e. Reduced waste generation and disposal costs
f. Utilization of recoverable resources
g. Sustainable production/technology development /services, where this goal is affected by dynamics in the safety and support systems expected in the commute or transport by road, with the government providing the backbone framework of road networks and infrastructure

This article reinstates that there are **several safety and support system pain points** that an organization will need to address to achieve continual excellence.

C. Common cost of quality, safety and support system pain points that occur in operational performance

The **common cost of quality pain points** in operational performance (which are mostly because infrastructure elements are afflicted by emerging demands) are as follows:

1. Increasing operations and maintenance costs for facilities
2. High electric power costs
3. Worsening power grid problems such as power quality and availability
4. Possible water shortages, and waste water disposal issues
5. Need to control waste generated via proper eco-friendly and conservative approaches
6. Pressure and responsibility to control utilization and reduce causative effect of harmful chemicals, and criteria pollutants
7. Growing concern about the aspect of Global warming and unprecedented climate change
8. Need to acknowledge environmental safety related product declarations
9. Health and productivity of employees and staff
10. Related need for risk mitigation and disaster management
11. Demand / supply dynamics (often highlighted by e-Commerce trends, changing volume and price levels)
12. Dynamics in the road network and infrastructure, where underlying dependencies on the reliability of this lifeline framework does affect the cost of quality in multiple dependencies.

Managing such cost of quality pain points requires the **adoption of an organizational culture**, where vision for national objectives led leadership, strategy development for safety and support systems intelligent management systems, provisioned resources and sustainable processes work together to produce results.

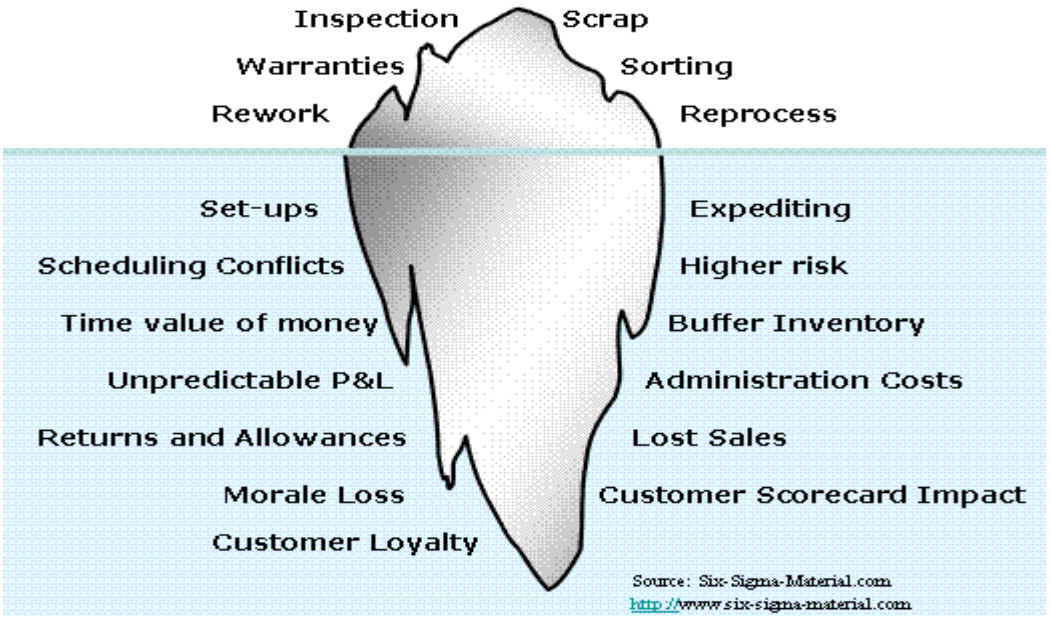
Making Project Management methodologies sustainable for the cost of poor quality is one such stepping stone in developing this organizational culture.

Costs of Poor Quality

(COPQ)

Internal Failure and External Failure costs.

The obvious and "visible" costs are a small portion of the overall COPQ. The bottom of the iceberg represents the majority of the COPQ and are not as easily identified and quantified.



TRANSFORMATION MODEL SIMULATION INFLUENCERS

Habitats and Ecosystems	I3 Continuum Editioning
Wildlife and Human conflict	Heartline and Lifeline Support
Biotic and Abiotic interactions	COPQ (Cost of Poor Quality) simulation for (CCMA)
Populations and Communities	SMART 360 Degree Coasting & Transformation
Food chains and Food webs	
TMS plotting/interlinking	

D. Some reflections on Sustainable Project Management

1. Organizations must make an effort to not only achieve appreciation in human knowledge and man-made capital in their product development / service foundation, but must also control and limit the depreciation to the natural capital (the environment) and relate to the cost of poor quality via national objectives.

2. Assessment of per capita consumption of resources (buildings, fossil fuels, electricity, water, other forms of energy, different kinds of equipment, raw materials, paper, food etc) must no longer be confined to specific businesses or individuals, but must become an important indicator for product development, service management or project management in all organizations.

3. Organizations must conduct periodic Lifecycle Analysis of the facilities being used to manufacture or deliver projects for solutions, products, applications and services. This responsibility is no longer limited to the facility management department of a company, but is vital for futuristic & productive businesses needing these facilities.

4. Organizations must define a new I3-catalog synergy in all projects, where this (Integrated Interoperability Interface (I3) based synergy or Green Product Culture) is conceptualized by a need for every project to conform to certain world-wide accepted practices for each aspect of being accessible, accountable, acceptable, affordable, safe and sustainable.

5. To incorporate this I3 based synergy in projects and Green Product Culture in products/technology development/services, AOEC states that organizations must design a Predictive I3 Lifetime Model for projects based on strategic involvement such as Definition of a LCIA I3 profile, Conservation, Planning, Enabling or Constraining, Monitoring and/or Controlling, and Commissioning for sustainability.

E. An overview of the Predictive I3 Lifetime Model for

projects Step 1: Defining a LCIA I3 profile for the project

It is a profile that captures different details of the organization and uses them to identify the need for standards. It is divided into different sections like the following:

1. Understanding the organization and its business model keeping in mind the need for the I3 synergy that affects the autonomic periphery for the business model

2. Benefits analysis to justify the need for a Lifetime model (which can integrate Systemic State Control into the organization for environmental & economic components of sustainable development and the triple bottom line)

3. Development of Autonomic Periphery Building services, where different industry standards are selected to be implemented according to a Plan-Do-Check-Act (PDCA) cycle with I3 synergy planning in dimensions relavent

4. Dependency on different assessment tools (where the dependency is recorded to help lifecycle assessment).

The author's —Gap analysis toolkitll contains information about all this. If this subject is of interest you can place your order for the same.

Conducting of Lifecycle Cost Analysis (LCCA) for a project

a. Who are generally involved in Lifecycle Cost Analysis?

The CEO, CFO, COO or proprietors, project stakeholders, project architects, project managers & specialists, project engineers, scope and lifecycle control surveyors, operations management teams & researchers, and others involved in sustainable project management practices.

b. When is the best time to perform Lifecycle Cost Analysis?

LCCA should be performed early in the design process while there is still a chance to refine the design to ensure both (1) sustainable cost of poor quality project management practices and (2) a reduction in lifecycle costs (LCC).

c. What are the various project lifecycle costs?

(1) Initial Costs—Purchase, Acquisition, Construction, Commissioning, Facility infrastructure, Customization or Renovation Costs, Technology Acquisition Costs and Building of I3 Coverage Costs and Human Capital Costs

(2) Project delivery specific Cost of sustainable Quality, Technology utilization and Human Capital Costs

(3) Project delivery specific Energy, Water and Fuel Costs

(4) Project delivery specific Waste management Costs

(5) Project delivery specific Operation, Maintenance, and Repair Costs

(6) Project delivery specific Replacement Costs

(7) Project delivery specific Residual Values - Resale or Salvage Values or Disposal Costs

(8) Project delivery specific Finance Charges - Loan Interest Payments

(9) Project delivery specific Non-Monetary Benefits or Costs, where benefits are more in terms of cost of poor quality levels, health, productivity etc, where the role of commuting/transporting goods by roads are influenced by enveloping ecosystems like the National Safety Council (NSC) that defines asset development for safety, BBMP Roads Infrastructure-Projects, BBMP Traffic Engineering, BESCOM, BWSSB, Healthcare Providers, Medical Supplies Providers, Supply Chains, Civic Amenity Providers, Banking institutions, Educational institutions, Corporate commuters, automobile dealers and manufacturers, IWST, KSFES (Karnataka State Fire and Emergency Services)

How is uncertainty controlled in the Lifecycle Cost Analysis?

LCCAs are usually performed early in the design process when only charters, or estimates of costs and savings are available, rather than well-known amounts. Uncertainty in the definition of influencers or input values means that actual outcomes may differ from estimated outcomes.

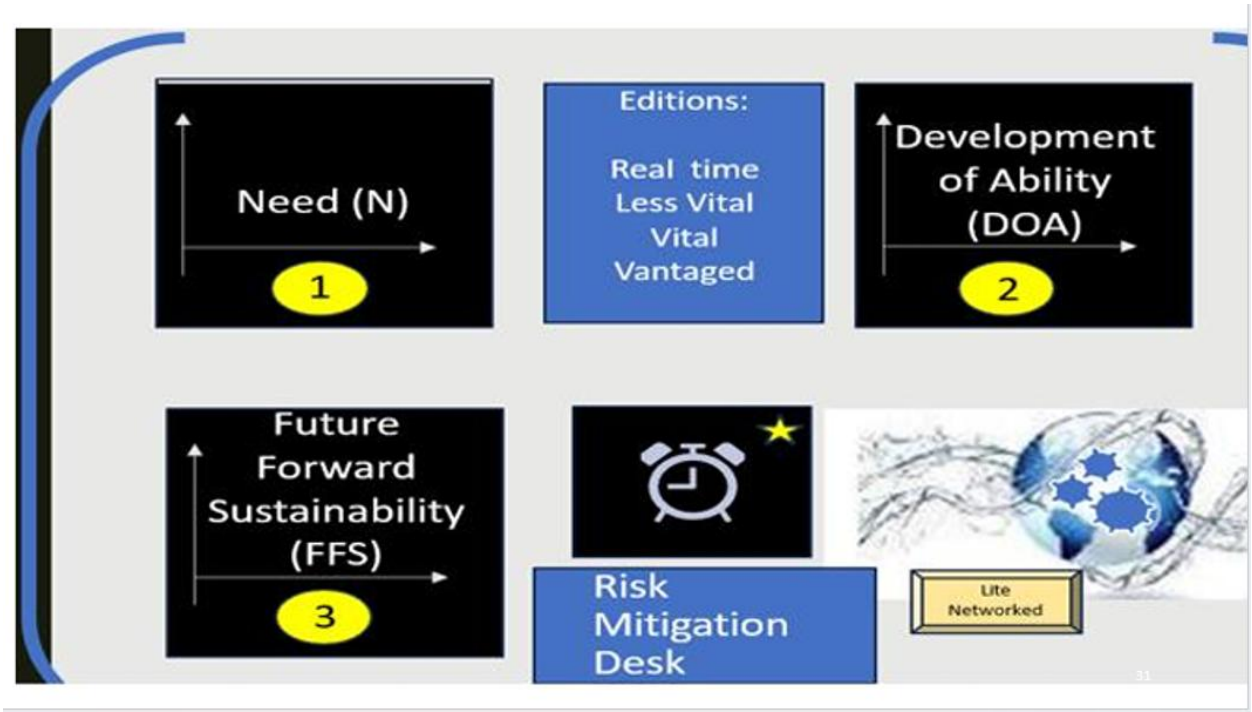
This makes it important for organizations to control the uncertainty in the Lifecycle Cost Analysis for a project. The next section provides an overview on how this can be done.

Uncertainty can be controlled by the following techniques:

(a) **Deterministic techniques**, such as complete project delivery model analysis, specific to requirement - sensitivity analysis or breakeven analysis or cost of poor quality analysis

(b) **Probabilistic techniques**, quantify risk exposure by deriving probabilities of achieving different values of economic worth from probability distributions for influencers or input values that are uncertain.

(c) **Design conformity based techniques** that reduce environmental impact and risk exposure by identifying I3 risk concerns, norms and parameters that need to be conformed to and assessed during a project to ensure the environmental impact is minimum. It needs to be mentioned that this toolkit focuses on the insights for sustainable COPQ project management and does not include in-depth information on controlling uncertainty.



Further said, deciding on the techniques that need to be adopted is dependent upon

(1) The size of the project/COPQ project

(2) Its importance, its role

(3) Knowledge, and Resources available for project implementation

(4) Triple bottom line benefits expected from project

(5) The project management methodology to be adopted for the project

Step 2: Including of the Conservation element

Writing of a business case that identifies which Sustainability Project Factors or Elements are important for the project's lifetime for e.g. Quality Management, Site of Building Management (or Building Design, Construction and Commissioning), Energy Utilization (and emissions), Water Utilization (and effluents), Waste Management, Chemicals Utilization, Value Stream Mapping, for Safety / Support, Supply Chain Management and Disaster Management.

Today this focus must include (1) Need to acknowledge environmental safety related product declarations in all aspects of the project delivery model (2) Health and productivity of employees and staff and (3) Related need for risk mitigation and disaster management for the value stream mapping during the project lifecycle.

Step 3: Including of the Planning element

1. Identification of pain points and drivers to justify the business case

2. Development of methodologies and strategies to implement sustainability

3. Definition of a roadmap and project charter for the systematic implementation of sustainability requirements and recommendations in the project's lifetime

Step 4: Adding the enabling or constraining element

A managing committee's compilation of project management methodologies and self-assessments can help understand the needs of the roadmap, charter and the gaps in the current delivery model for the expected continual excellence, conservation and sustainability.

Step 5: Adding the monitoring and/or controlling element

A managing committee's compilation of Lifecycle Patterns Assessments (LCPA) for projects can help understand the performance for continual excellence, conservation and sustainability. These details are available in the section of the toolkit titled ―Lifecycle Patterns Assessments‖.

The author finds that such assessments will compliment what is achieved via norms like

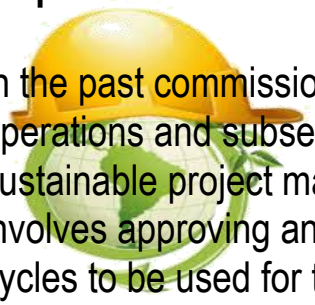
(1) Service Level Indicators for the project lifecycle

(2) Key Performance Indicators for the project lifecycle

(3) Gap Analysis for the Sustainability Factors or I3 influencers in the project lifecycle

The author states that norms (1) and (2) vary from project to project but norm (3) can be envisioned, so as to incorporate aspects like Design Elements Conformity, with the inclusion of Critical Control Variables and Critical Operational Symptoms projected as vital for sustainable projects.

Step 6: Commissioning for sustainability



In the past commissioning was known to clear a facility for business operations and subsequent utilization, from the context of COQ/COPQ sustainable project management – commissioning for sustainability involves approving and finalizing of the process groups and the P-D-C-A cycles to be used for the management of the project and its Need-Development of ability- Future Forward Sustainable lifecycle

1. **The Initiating Process Group** (Defines or authorizes the project phases)

2. **The Planning Process Group** (Defines, and revises value drivers, objectives and plans course of action required to attain the objectives and scope that the project was undertaken to address)

3. **The Executing Process Group** (Integrates norms for Design Elements Conformity, people and other resources to carry out the project management plan for the project)

4. **The Monitoring & Controlling Process Group** (Regularly monitors and controls progress to identify variances from project management plan and to carry out corrections to ensure that the plan will be met)

5. **The Closing Process Group** (Finalizes acceptance of the project, or result and ensures that the plan is brought to an orderly end with a **COPQ Project Management Proverbial** being updated)

Gap Analysis for the Sustainability Factors or I3 influencers in the project lifecycle

This gap analysis can improve —existing||processes, structures, hierarchy and people perspectives to deliver for the new vision of sustainable projects. This gap analysis includes assessments of adherence and results for 3 different aspects i.e.

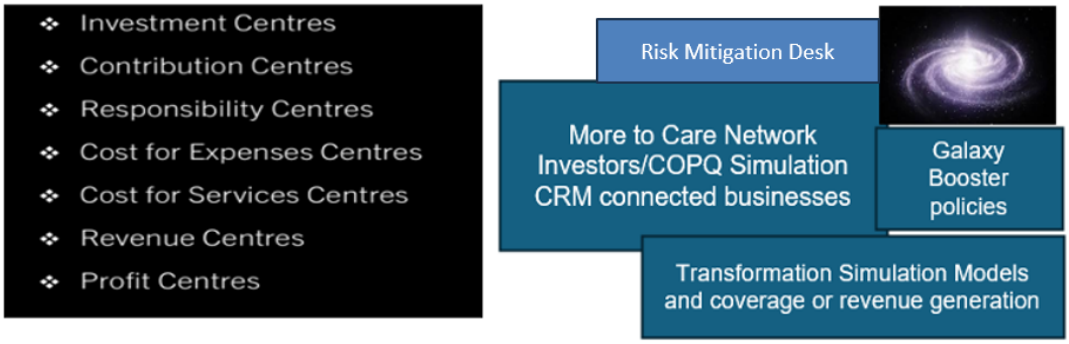
1. **Design Elements Conformity** (a new perspective for project management)

2. **Critical Control Variables** (an existing concept in project management)

3**. Critical Operational Symptoms** (an existing concept in project management)

4. COPQ Model Simulation amidst transformations

Objective analysis and planning needed for doing business / providing services amidst climate change adversity / road system issues in transportation and logistics for supply chain management



About Design Elements Conformity

The ISO 14000 family of standards for environmental management acts as a practical toolbox to assist in the implementation of actions supportive to sustainable development. AOEC finds that it is not so easy for a common organization to procure, interpret and incorporate the norms and recommendations of the entire ISO 14000 family of standards.

The author's toolkit helps alleviate this problem by underlining that certain Design Elements Conformity can be incorporated in project management methodologies.

This ideation begins with an understanding that there are certain key areas of project management that are important for every project lifecycle.

With this as the focus, it is then important to identify the gap or need for transformations that exist in the current PMBOK model, to make project delivery sustainable for the COQ/COPQ/N-DOA-FFS lifecycle.

It needs to be said that the PMBOK methodologies have evolved and persisted over time due to the continually excellent efforts of different teams and people interested in making project management end-to-end and efficient.

The author's identification of possible gaps is only from the point of view that certain areas of project management need revision to measure up to the global synergy expected in all organizations and their projects.

To know more about the gaps and global synergy expectations you need to place an order for the — **N-DOA-FFS Lifecycle** Gap analysis toolkitll.

F. Implementing all this and more

The author's **"N-DOA-FFS Lifecycle Gap analysis toolkit**ll can help a management team prioritize what an organization must take as most relevant steps to plan for, implement and achieve **project management** for sustainable development, growth and to stay ahead in this millennium.

The —**Gap analysis toolkit**ll for the MSME industry is soon to be available **either online or on printed media** as required by the subscriber.

For more information, contact the author at venkataoec@gmail.com or on +919342867666.