MANAGEMENT
A social technology applied to complex systems

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PDCA MANAGEMENT CYCLE

Solve real and potential problems - unexpected results and activities (corrective / preventive actions)

Define Objectives / Targets (what, why)

Provide Resources (how, who, when, where, how much)

ACT

CHECK

PLAN

DO

Compare the activities and results achieved in relation to the plan (internal / external)

Realize the activities and results according to the plan (competent / satisfied people)

Baldrige Criteria for Performance Excellence Framework: A Systems Perspective

Organizational Profile: Environment, Relationships, and Challenges

1. Leadership
2. Strategic Planning
3. Customer and Market Focus
4. Measurement, Analysis, and Knowledge Management
5. Workforce Focus
6. Process Management
7. Results

Butterfly effect (issues that were once peripheral or local now have global impact)

- Local livestock contaminations (e.g., mad cow disease, avian flu) threaten stability of global health and global food supply chains

As expectations change, issues may shift

Semiformal

Formal

Social contract

Frontier expectations

Business

Society
PDCA-BASED MANAGEMENT MODEL

1. DEFINE OBJECTIVES
   (Strategy / Process Structure and Deployment)

2. MANAGE HUMAN RESOURCES
   (Competence, Motivation, Well-being, etc.)

3. MANAGE SUPPORT RESOURCES
   (Finance, Information, Environment, etc.)

4. REALIZE PRODUCTS/SERVICES
   (Operational / Specific Processes directly related to the Business – Value Chain)

5. CHECK/REVIEW PERFORMANCE
   (Internal / External)

6. MANAGE IMPROVEMENTS
   (Preventive and Corrective Plans / Projects)

General Comparison Between PDCA and Other Management Systems

<table>
<thead>
<tr>
<th>MGT SYSTEM (PDCA-Based)</th>
<th>ISO9004</th>
<th>ISO9001 ISO9600</th>
<th>ISO 14001</th>
<th>OHSAS 18001</th>
<th>EFQM (Europe)</th>
<th>MBNQA (USA)</th>
<th>FNQ (Brazil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholders Results</td>
<td>All</td>
<td>Customers (Auto. Sector)</td>
<td>Society Environment</td>
<td>Workforce</td>
<td>All</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>1 – Define Objectives</td>
<td>4.1/4.3</td>
<td>5.1/5.2/5.3/5.4</td>
<td>7.1/7.2</td>
<td>4.1/4.2/4.3</td>
<td>4.1/4.2/4.3</td>
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<td>1.1/1.2</td>
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<tr>
<td>2 – Manage Human Resources</td>
<td>4.1</td>
<td>5.3/5.5</td>
<td>6.2/6.4</td>
<td>4.1/4.2</td>
<td>4.1/4.2</td>
<td>4.1/4.2</td>
<td>1/3</td>
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<tr>
<td>3 – Manage Support Resources</td>
<td>4.1</td>
<td>4.1/4.2/5.5</td>
<td>6.1/6.3/6.4</td>
<td>7.1/7.4/7.5</td>
<td>4.1/4.3</td>
<td>4.1/4.3</td>
<td>4.1/4.3</td>
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<td>4 – Realize Products Services</td>
<td>4.1</td>
<td>4.1</td>
<td>7.1/7.2/7.3</td>
<td>7.4/7.5</td>
<td>4.1/4.4/4.5</td>
<td>4.1/4.4/4.5</td>
<td>4.1/4.4/4.5</td>
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<tr>
<td>5 – Check/Review Performance</td>
<td>4.1</td>
<td>4.1/5.1/5.3/5.6</td>
<td>7.1/7.5</td>
<td>8.1/8.2/8.3/8.4</td>
<td>4.1/4.4/4.5</td>
<td>4.1/4.4</td>
<td>4.1/4.4</td>
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<tr>
<td>6 – Manage Improvements</td>
<td>4.1</td>
<td>4.1</td>
<td>8.1/8.3/8.5</td>
<td>4.1/4.5</td>
<td>4.1/4.5</td>
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<td>2/3/4/5</td>
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</tbody>
</table>
COMPLEX SYSTEMS MANAGEMENT / MODEL

SHAREHOLDERS

Deployment / Alignment

Suppliers

TACTICAL LEVEL
(FUNCTIONAL MANAGEMENT)

A P
C D

Product Quality

Human Resources

Environment

A P
C D

Realization

A P
C D

After Service

Workforce

Society

Design

Operational Level
(INDIVIDUAL MANAGEMENT)

CUSTOMERS

A P
C D

LUNG / FRACTAL MODEL

FERN / SELF-ORGANIZING MODEL
MANAGEMENT EXCELLENCE MODEL (MEG® / FNQ)

Systemic Framework - Performance Evolution

BRAZILIAN COMPANIES - REVENUE EVOLUTION (%)

INDUSTRY
- MEG USERS
- SECTOR

SERVICE
- MEG USERS
- SECTOR

COMMERCE
- MEG USERS
- SECTOR

BRAZILIAN HYDROELECTRICAL ENERGY - SECTOR PERFORMANCE

- IDAR - Customer Satisfaction
- DEC - Interruption Duration
- FEC - Interruption Frequency

DEFINITION OF STANDARDS/PRACTICES

EXECUTION PLANNING

EXECUTION

ACT

CHECK

IMPROVEMENT

ASSESSMENT
Selection and use of the ISO 9000 family of standards (in www.iso.org)


Criteria for Performance Excellence / Brazilian National Quality Award (in www.fnq.org.br)

ABRADEE - Brazilian Association of Electrical Energy Distributors (in www.abradee.com.br)