Performance Measurement and Improvements of CNOs

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Outline

- Prevailing assessment methods
- CMMI – Capability Maturity Model Integrated
- EFQM – European Foundation of Quality Management
- BSC – Balanced Scorecards
- ISO 9001
Challenges for CNOs

• CNOs have huge improvement potential
  – Both in domain and collaborative capabilities

• Before implementing respective improvement measures
  – The performance in specific process areas must be assessed
  – Divided in domain (i.e. tourism) and collaborative ones.

• CNOs lack especially all collaborative issues and network initiatives
  – Be it as they are competitors or they fail all concepts and technical premises for building CNO’s.
Prevailing performance measurement methodologies
Model for evaluating software/hardware/systems engineering organizations

- Developed by the Software Engineering Institute (SEI)
- Initiated by DoD
- Headed by Watts Humphrey
Three Complementary Constellations

CMMI-DEV provides guidance for measuring, monitoring, and managing development processes.

CMMI-SVC provides guidance for those providing services within organizations and to external customers.

CMMI-ACQ provides guidance to enable informed and decisive acquisition leadership.

16 Core Process Areas used in all
Dynamic virtual organizations behave more or less like distributed projects.

- Most process areas of CMMI may be applied.

In the case of VBE every process area must be evaluated individually.

- Selected process areas have to be applied.

| Causal Analysis and Resolution | Project Monitoring and Control |
| Configuration Management       | Project Planning               |
| Decision Analysis and Resolution | Process and Product Quality Assurance |
| Integrated Project Management  | Quantitative Project Management |
| Measurement and Analysis       | Requirements Development       |
| Organisational Innovation, Deployment | Requirements Management |
| Organisational Process Definition | Risk Management               |
| Organisational Process Focus   | Supplier Agreement Management  |
| Organisational Process Performance | Technical Solution           |
| Organisational Training        | Validation                    |
| Product Integration            | Verification                  |
EFQM

- **Main focus**
  - Governance on
    - Strategy
    - Processes

- **Extensions (i.e.)**
  - VO operational governance models
    - Define the basis for the management of distributed collaborative organizations. The models characterize the VO and its behaviour on different organizational levels and in different tasks during its life-cycle.
    - Together with relevant guidelines the reference models for VO governance form the basis for management principles of highly distributed organizations.
Main focus
- Metrics
- Business Strategies

Extensions (i.e.)
- Value system and metrics for VO breeding environments
  - Consist of identities and characteristics of appropriate value systems for the VBE and its members. The result will describe issues of marketing and branding, and guidelines that an organization can use to create its own trust culture.
- Value system and metrics for PVC
  - Includes the identification of appropriate metrics for valuing the social and knowledge capital of PVCs and for measuring and rewarding individual-group collaboration.
• **Proceeding for the development of a BSC**
  – Determine the substantial success factors for the successful conversion of the strategy
    • business drivers
  – Development of the effect connections
    • driver tree
  – Formulation of goals
    • quantifiable, scheduling
  – Determination of metrics
  – Resolution of measures
• Broad consent and common understanding of the strategy
• Clear adjustment on the substantial common goals
• Balance of the relevant success factors of the business
  – business driver
• Clarify the effect connections of the business
• Strategy well communicatable
• Simple position-fixing

Important: Take time!
Continual improvement of the quality management system

Key

- Value-adding activities
- Information flow

Figure 1 — Model of a process-based quality management system
ISO 9001 / 2

MANAGEMENT RESPONSIBILITY

- Management commitment
- Customer focus
- Quality policy
- Planning (Q objectives, QM system planning)
- Responsibility, authority and communication (responsibility, representative, int. communication)
- Management review

RESOURCE MANAGEMENT

- Provision of resources
- Human resources (competence, awareness and training)
- Infrastructure
- Work environment
ISO 9001 / 3

PRODUCT REALIZATION

- Planning of product realization
- Customer-related processes
- Design and Development
- Purchasing
- Production & service provision
- Control of monitoring and measuring devices

MEASUREMENT, ANALYSIS and IMPROVEMENT

- Monitoring and measurement
- Control of nonconforming products
- Analysis of data
- Improvement
Thank you for your attention!

Questions?

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