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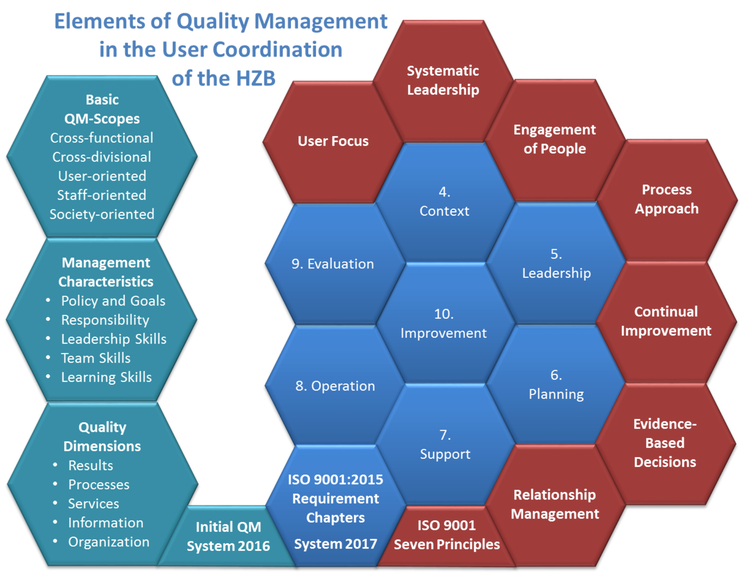
QUALITY MANAGEMENT IN USER COORDINATION FOR SCIENTIFIC INFRASTRUCTURES

Elements, Principles and Working Tools for ISO-9001-Certification

INTRODUCTION

The department “User Coordination” (NP-ACO) at HZB is responsible for coordination of and service for the use of scientific infrastructures, namely the synchrotron light source BESSY II and the CoreLabs which together tally at more than 3000 user visits per year. The development of a quality management system (QMS) for the tasks NP-ACO performs started in 2014. Now ISO 9001:2015 is used for the QMS and it concerns all processes of the department. Established 30 years ago (1987), this is the most common standard for quality management. Worldwide more than one million organizations are ISO 9001-certified. Therefore it is an internationally accepted and reliable system. The main benefits of the application of ISO 9001 to the User Coordination are more transparent and efficient processes for the user, and having a working tool for continual improvement.

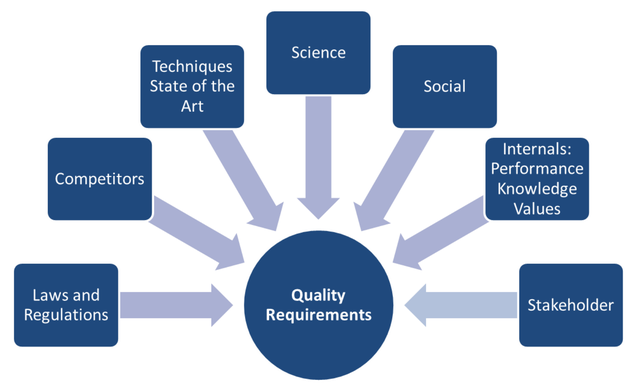
QUALITY MANAGEMENT SYSTEM



The QMS for the User Coordination has been developed in two steps. The initial system QMS 2016 was based on total quality management (TQM, left side). The current QMS 2017 follows the seven main requirements chapters (right side in blue) and the seven Principles (in red) of the ISO 9001:2015

REQUIREMENTS AND CONTEXT

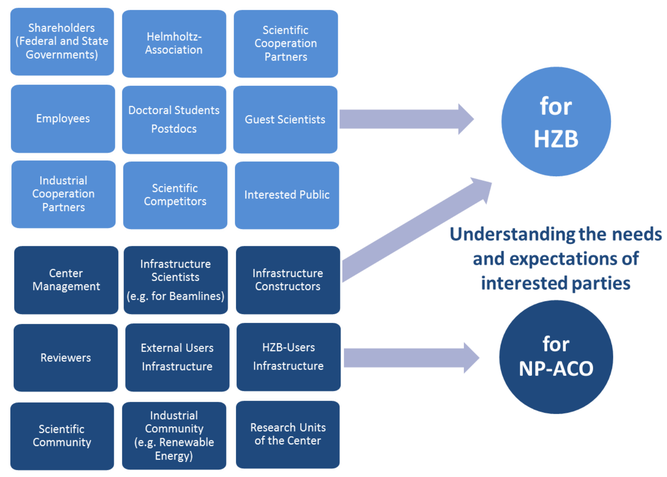
The Simple Definition of Quality[1]
Quality is an agreement of people and it is defined case-by-case.
Quality is the degree to which user service fulfils quality requirements.



[1]ISO 9000:2015: quality is the degree to which a set of inherent characteristics of an object fulfils requirements

The input for quality requirements is mostly influenced by stakeholders, especially by users and funding partners. The main influencers from the context of User Coordination are the Internals. User satisfaction is the main requirement and now further on the 53 requirement sub-chapters of the ISO 9001.

STAKEHOLDERS



Data about interested parties for HZB from:
[1] KOMMUNIKATIONSSTRATEGIE zur Flankierung der Strategie 2020+ des HZB”, HZB November 2016, p. 14-15.
[2] STRATEGY PAPER: THEORY & SIMULATION. A Basis for Research and User Service at HZB, HZB Mai 2015, p. 30-31.
[3] STRATEGIE PAPIER: Dachpapier, HZB 2020+, HZB Juni 2015, p. 24-25´.

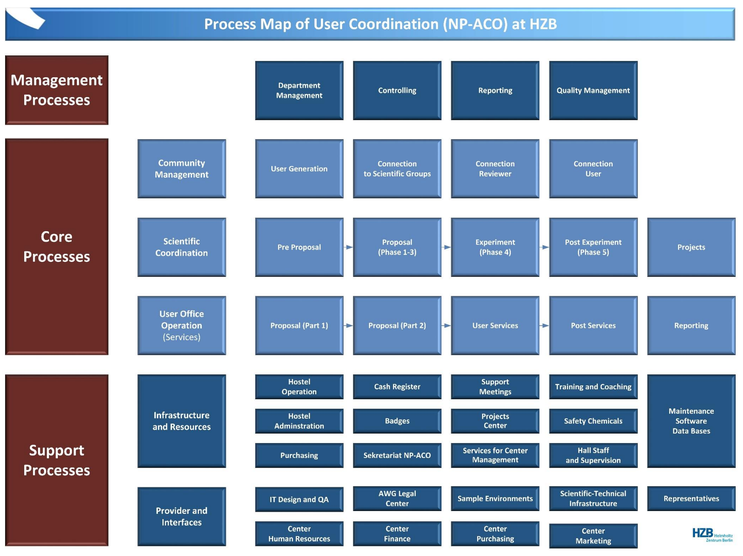
The stakeholders or interested parties of User Coordination (NP-ACO) of the HZB are very diverse. To understand the needs and expectations of interested parties, staff members of NP-ACO participate regularly in internal and external committees. Community management is a further information source.

MAIN WORKING TOOLS

Seven ISO 9001 Principles	Main QM-Working Tools in User Coordination
1. User Focus	Transparency, Feedback and Community Management
2. Systematic Leadership	Policies, Goals, Responsibilities and Resources
3. Engagement of People	Competence, Team Talks and Management by Objectives
4. Process Approach	Process Maps and Defined Process Procedures (SOP)
5. Continual Improvement	Committees Work, Plan-Do-Check-Act Cycles (PDCA), Training
6. Evidence-Based Decisions	KPI[1]-Reports and Statistics
7. Relationship Management	Beneficial Relationships with Providers (Especially Internal)
…. and Special Attention for	Context (Organization), Stakeholders and Risk-Based Thinking

[1] KPI Key Performance Indices

PROCESS APPROACH AND MAP



PROCESS PARAMETERS

1. Process Objectives	What is the purpose of the process?
2. Responsibility	Who is responsible? Who is the deputy?
3. Input	What is required as inputs?
4. Output (Results)	What must be the results?
5. Process Steps	What are the tasks? Are they **traceable**?
6. Requirements	Which standards and guidelines must be observed?
7. Performance index	What are the key performance indices?
8. Resources	What resources are necessary?
9. Risks	What are the risks and opportunities?
10. To Do	Are there optimization themes?

Relevant processes in the HZB and User Coordination are described by ten parameters (see above 1-10). The description is part of process-oriented operation and the starting point of process management.

IMPROVEMENT BY PDCA CYCLES

PDCA CYCLE
(PLAN-DO-CHECK-ACT)

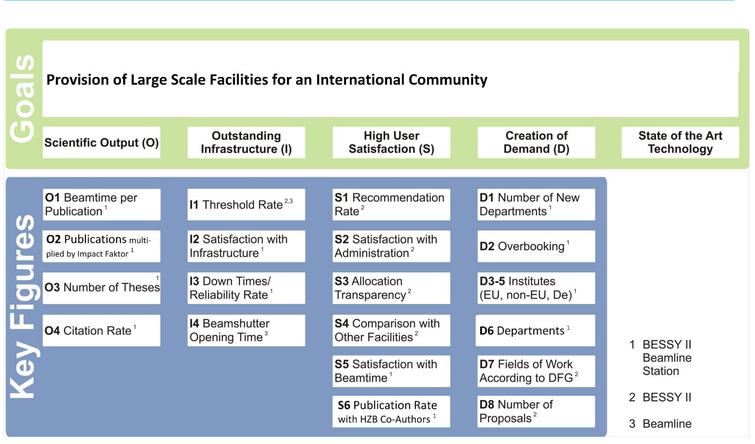
PDCA-Cycles are used in NP-ACO for
- all working processes
- conception for IT-design
- communication
- management

The PDCA cycle was developed by W. Edward Deming and it is therefore called Deming-Cycle too. Deming was one of the most famous quality managers and made his PhD in Mathematical Physics 1928 in Yale[1].

[1] Crainer, S. (1999): Managementtheorien, die die Welt verändert haben, 287 p. (German edition of “Key management Ideas”)

PDCA Cycles (Plan-Do Check-Act) are the main tools for continual improvement. PDCA Cycles are within the structure of the ISO 9001 and in all processes of the User Coordination (e.g. by using KPI for Controlling).

KPI KEY PERFORMANCE INDICES



KPI (Key Performance Indices or Key Figures) are used for evidence-based decision makings. The KPI have four overall goals (O, I, S, D). These will be used e.g. for management reviews. For NP-ACO the satisfaction with infrastructure (I2) and the general user satisfaction (S) are most important.

CONCLUSIONS

The ISO 9001 quality management system offers added values for the User Coordination

- Most common and international standard for user satisfaction (comparability)
- Systematical way for improvement - especially in quality & processes
- More transparency for user
- More planning security for all partners
- Innovative in services for research (unique feature)
- Image enhancement to increase users interest
- Good in communication with stakeholders and funding partners (reliability)
- Expandable to include more infrastructures easily (e.g. more CoreLabs)
- Applicable to further units of the HZB
- Synergies with other management systems in HZB e.g. for compliance, process, project, risk, security, safety and POF Program-Oriented Funding, GLP Good Laboratory Practice, GSP Good Scientific Practice

KEY REFERENCES

(1) DIN EN ISO 9000:2015: Quality Management Systems – Fundamentals and vocabulary. 104 p.
(2) DIN EN ISO 9001:2015: Quality Management Systems – Requirements, 71 p.
(3) ISO International Standard Organisation: www.iso.org/iso-9001-quality-management.html

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MORE INFORMATION

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