



**POLITECHNIKA
BYDGOSKA**
Wydział Zarządzania

Dr. hab. rer. oec., Dr.-Eng. Bogdan Lent, prof. P

PROJECT MANAGEMENT
UNIVERSITY of SCIENCE & TECHNOLOGY



PROJECT MANAGEMENT



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PBM: Problem Management

Bogdan Lent

60 Minutes



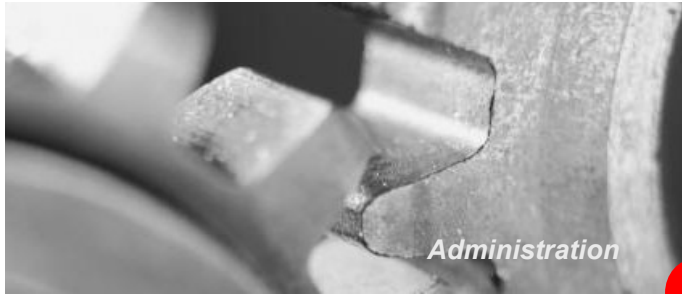
Project Management



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12:00 PSM Problem Solving Management



Administration
PBM
Problem



Problem Management

Project Challenges



Project Management



***Is that the way
you used to approach the problems?***





12:00 PBM Problem Management:

12:10 Goals Management of the solutions necessary to solve the technical and organizational problems within the financial and time constraints of the project.



Solution Analysis

Criterion	Well-defined problems	Ill-defined problems
Starting point	Clearly defined current state	Current state difficult to describe unambiguously
Objective	Precisely defined target state	Goal unclear, ambiguous or variable
Solution path	Known or clearly definable methods	No unambiguous methods, creative approaches needed
Range of possible solutions	Limited, easy to define and compare	Broad, scattered, difficult to assess
Typical approach	Linear procedure, analytical methods, auxiliary iterations	Heuristics, design thinking, creative team techniques
Example in a project	Technical component failure that can be fixed	Low team motivation without a single, obvious cause



Rationality criteria

Formal rationality	Substantive/content rationality
Refers to the logical consistency, procedures, rules and methods used in solving the problem.	Refers to the content and value of the decision: whether the solution is actually meaningful and adequate in a given social, ethical and economic context.
A decision is "formally rational" if it meets the criteria of measurability, predictability, consistency, compliance with established procedures and calculation of resources.	Substantive rationality assesses <i>the</i> purposefulness and effectiveness of the solution, not just the correctness of the procedure.
In the context of finding a solution to a problem: what matters is whether the problem-solving process is carried out in accordance with the chosen method (e.g. 5W analysis, TRIZ, RCA).	In problem solving: what matters is whether the the solution really solves the problem, is ethical, acceptable to stakeholders and leads to real benefits.
"Are we doing it right, according to the method?"	"Are we doing the right thing that makes sense in the real world?"

Analytical procedure

1. Creation of a Task Force.
2. Analysis of the current situation.
3. Verification of the planned target state.
4. Identification and description of differences (deviations)
5. Identification and description of the sources of differences.
6. Defining decision criteria.
7. Identification of cause-and-effect patterns.
8. Further information required?
9. Searching for solutions.
10. Analysis of the side effects of each solution
11. Necessary additions?
12. Evaluation according to criteria and selection of a solution.



Heuristic vs. Analytical Approach

Feature	Analytical approach	Heuristic approach
Nature of the problem	Well-defined, clearly specified objectives and constraints	Poorly defined, ambiguous objectives and incomplete information
Complexity	Low or medium, full identification of factors possible	High, many unknown links and interactions
Data availability	High – quantitative and qualitative data are available	Limited – data fragmentary or uncertain
Expected outcome	Optimal or near-optimal solution	Sufficiently satisfactory solution (satisficing)
Algorithmic	Algorithmic (see P.12.22)	"Framework" (rules, techniques, team atmosphere (see below)
Tools	Quantitative analysis, decision models, TRIZ, scoring, six thinking hats technique, optimisation	Brainstorming, expert experience, association maps, stimulating words
Time and resources	Requires time and stable conditions	Effective when time is limited and decisions must be made under pressure
Transparency	Easier to document and defend	More difficult to formalise, based on experience and intuition



Artificial Intelligence Support

Processes supported by generative artificial intelligence

- Support in building a framework for thinking
- Iterative dialogue with thought completion
- Constructive opposition supported by AI
- AI-supported breaks





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Nespresso. What else



NESPRESSO

Café com corpo e alma

**Coffee
Time till 11:00**