About me

Denis Vedernikov

Trust. Experience. Support

Project Director

MSc., MBA, PMP, PgMP, RICS

20+ years in Project Management:

- Construction, Capex, engineering
- New construction, repair, reconstruction
- Oil & gas, extraction, chemical, logistics, manufacturing, retail, etc.

Master in:

- Industrial Management
- Economics and Management
- Engineering and Mathematics

English, German, Russian, French

Case «Smart city» inputs – part 1

Inputs:

- You are invited to take on a key management position in the City project — a new smart city in the A Region. The project is at the greenfield stage — there is no existing engineering or social infrastructure, except for an approved master plan and government support.
- You are expected to develop an implementation strategy, account for risks, establish effective collaboration with contractors, government authorities, and partners, and ensure quality control at all stages.

Target of the case:

- Assess the management approach, strategic thinking, systems thinking, knowledge of development processes, ability to lead a project from the ground up, and adapt to conditions of high uncertainty.

Case «Smart city» inputs – part 2

Block 1. Strategic Vision for Project's Launch

- Describe the basic standards for decision-making within the project
- Where would you begin the implementation of this project, and why?
- What key resources would you need in the first year of working on this project?

Block 2. Team, Risks, Budget Optimization

- How will you build the team and allocate functions at the project's start?
- What key risks do you foresee at the early stage of the project, and how do you plan to minimize them?
- How can the budget be reduced without compromising quality during the site preparation and launch phase?

Block 3. Control and Management

- What monitoring and quality control systems would you implement within your area of responsibility?

A total of 7 questions. Deadline – 1 week. Use of AI tools is prohibited.

Answers. Block 1. Strategic Vision for Project's Launch

Describe the basic standards for decision-making in the project.

The implementation of the project (or project portfolio) must be carried out in accordance with international standards:

- ✓ PMBoK (PMI),
- ✓ PRINCE2,
- ✓ ISO 21500 / ISO 21502,
- ✓ FIDIC (International Federation of Consulting Engineers),
- ✓ Lean Construction & BIM, ISO 9001 (Quality Management),
- ✓ OECD Principles of Project Governance,
- ✓ ISO 31000 (Risk Management), Environmental and social governance (ESG),
- ✓ The Standard for Portfolio Management (PMI) and
- ✓ The Standard for Program Management (PMI).

It is recommended to follow the principle of IPD (Integrated Project Delivery) in the project implementation.

Answers. Block 1. Strategic Vision for Project's Launch

Where would you begin the implementation of this project, and why?

Stage 1 – Initiation Stage.

Duration: approximately 5–6 months.

Outcome of the Initiation Stage:

- Project (portfolio) management plan
- Project charter
- Project communication plan
- Project (portfolio) metrics
- Risk management plan
- Stakeholder management plan
- Management plans for portfolio components (programs and projects): high-level overview

Stage 2 – Planning Stage.

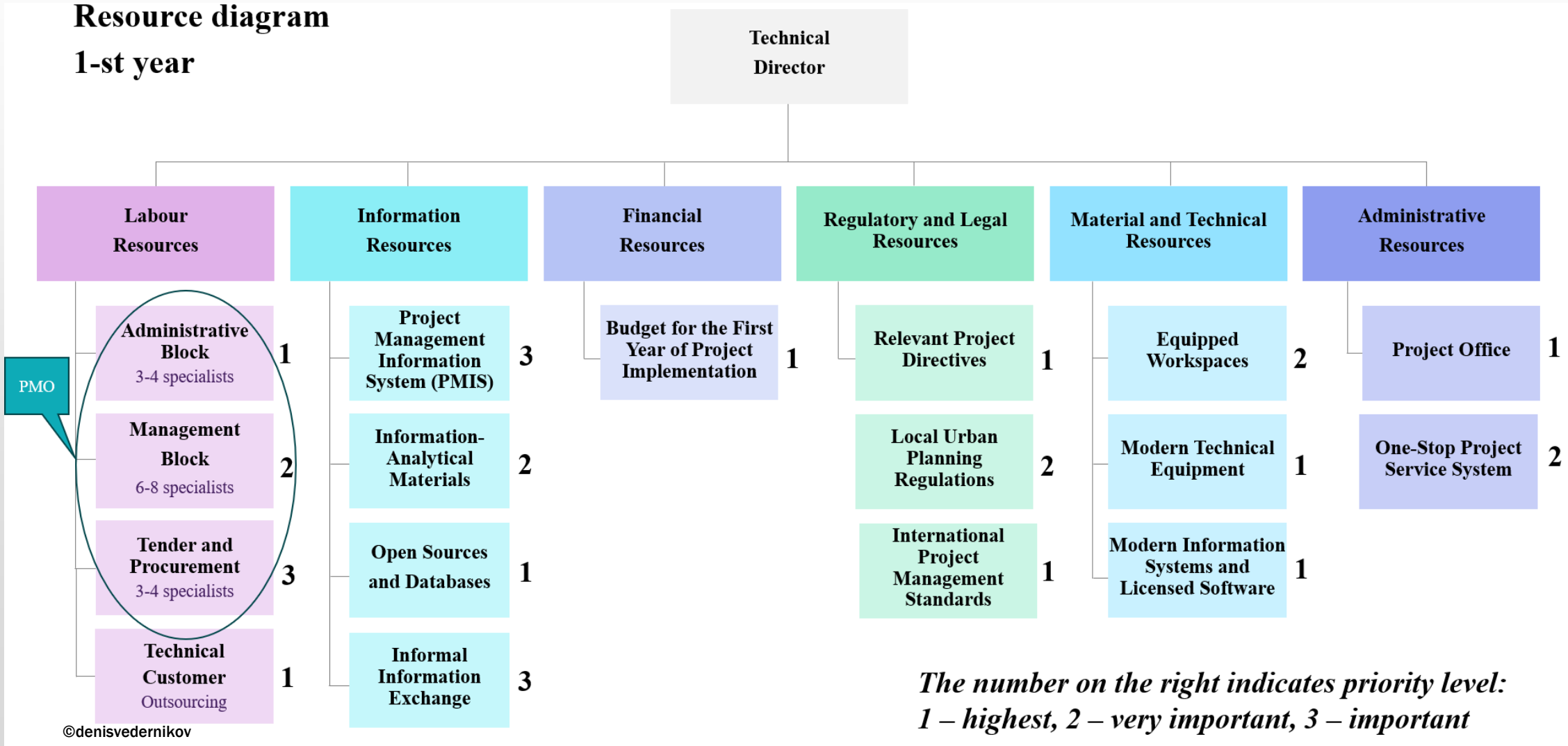
Duration: approximately 7–8 months.

Outcome of the Planning Stage:

- Project office of 1st and 2nd levels
- Final approved project decomposition into programs and subprojects
- Communication plan for startup zones
- Resource requirements calculation for startup zones
- Approved technical customer
- Selection of the Project Management Information System (PMIS)
- Initial technical specifications (TS)
- Established pools of designers, suppliers, and construction contractors
- Approved parameters of technological equipment for startup zones
- Preliminary technical assignments for equipment manufacturing
- Prepared tender packages for preparatory works and mobilization of 1st priority projects
- Design terms of reference for the P-stage projects of 1st priority

Answers. Block 1. Strategic Vision for Project's Launch

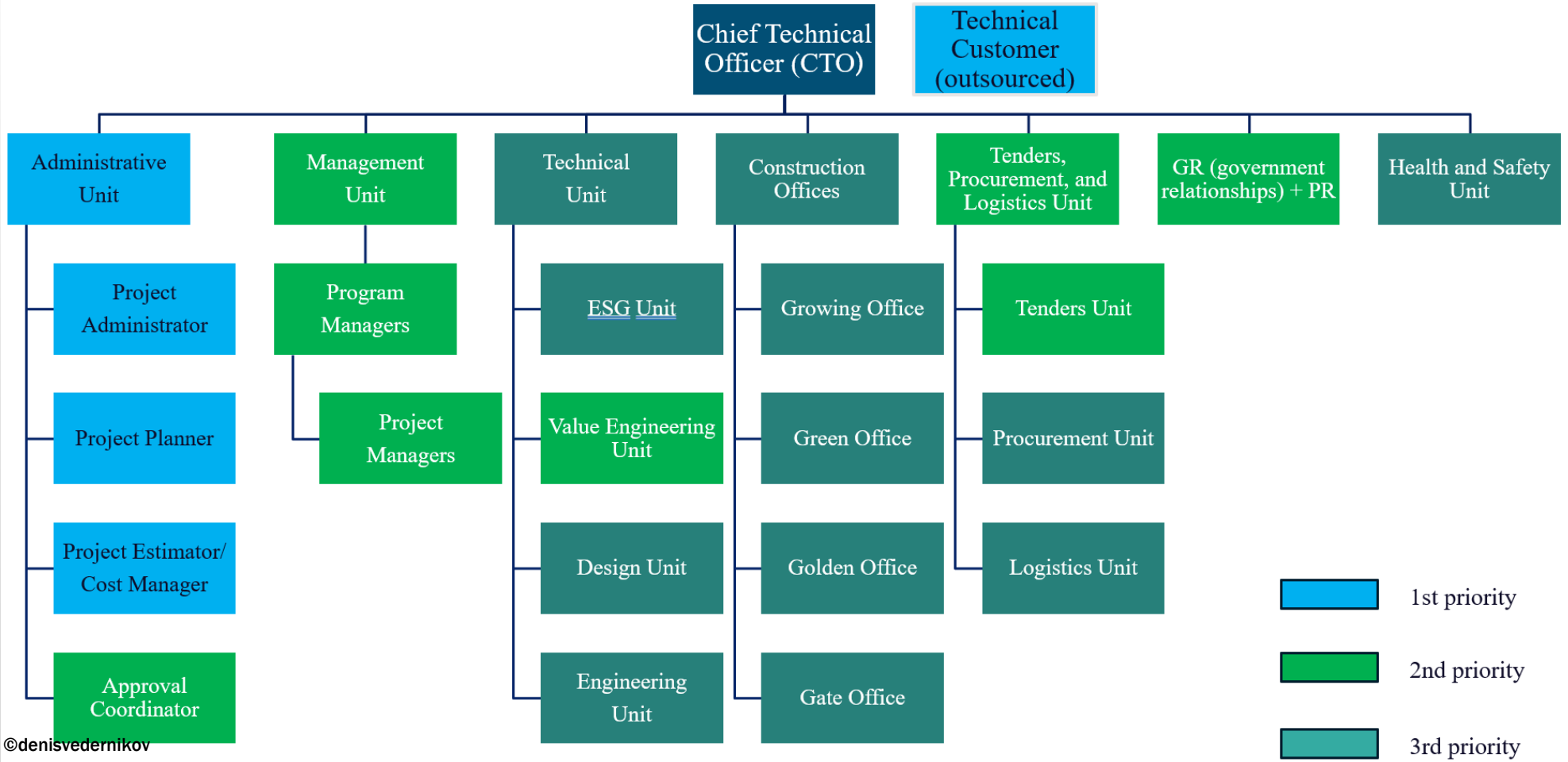
What key resources will you need in the first year of working on this project?



Answers. Block 2. Team, risks, budget optimization

How will you form the team and distribute functions at the start?

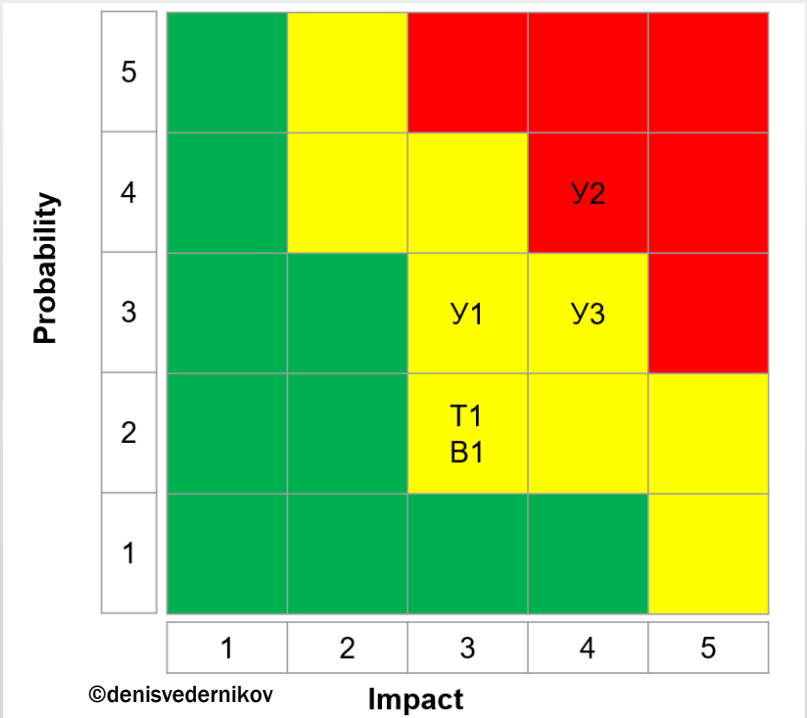
PMO (Project Management Office)
organigram: 1st year and 2nd year



Answers. Block 2. Team, risks, budget optimization

What key risks do you see at the early stage of the project?

No	Name	Abb	Probability	Impact
1	Risk of a flawed project concept	T1	2	3
2	Risk of Limited Technical Competence	У1	3	3
3	Compliance and Administrative Risk	B1	2	3
4	Risk of Limited Authority	У2	4	4
5	Risk of Insufficient Resources	У3	3	4



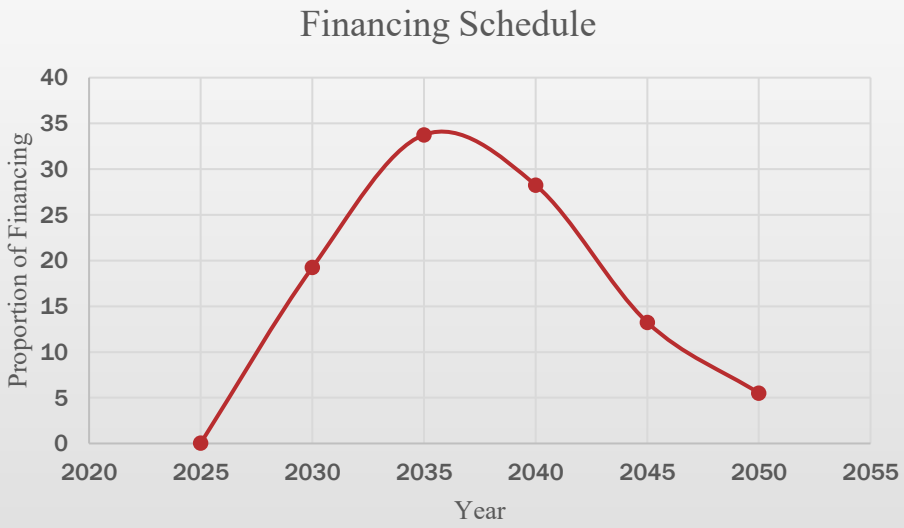
As can be seen from the presented risk map, the greatest attention at the early stage should be paid to risks U2 (red zone risk) and U3 (yellow zone risk with high impact). None of the risks are in the green zone, which means that all the listed risks require continuous monitoring and control.

Answers. Block 2. Team, risks, budget optimization

How can the budget be reduced without compromising quality?

Some ways to optimize the budget:

- revision of conceptual solutions; application of more efficient infrastructure solutions (road network, routing of utilities, etc.)
- search for alternative engineering and technological equipment options with similar or comparable performance parameters
- conducting multi-stage transparent tenders for design, supply, and construction/installation works
- exploring more cost-effective solutions at the tender stage with potential finalists
- motivating suppliers and contractors at the contracting stage (bonuses for savings)
- reviewing applied structural solutions at the design stage; implementing more economical alternatives
- revising client requirements and requests (very often, technical specifications from clients contain excessive and/or unjustified demands)
- analyzing specifications, scope of work, and tender proposals using machine learning and AI tools.



Answers. Block 3. Control and Management

What monitoring and quality control systems would you implement?

End-to-end monitoring and control system at the project organizational structure level
Project Portfolio Level
Project Program Level
Subproject Level
Quality control system at the project stage level
Control at the project concept stage
Control at the design stage (quality of design documentation, P and RD phases)
State and non-state expertize of project documentation
Control at the construction tender stage (quality of suppliers and contractors)
Control at the contracting stage (incoming inspection of project documentation)
Control at the construction and installation stage (continuous quality control)
Quality control system at external and internal project levels
Quality control of project management (internal audit)
Independent quality control of management (regular external audit)
Periodic monitoring of customer satisfaction

Thank you for your attention!

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My podcasts:

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