Financial-economic model of DC

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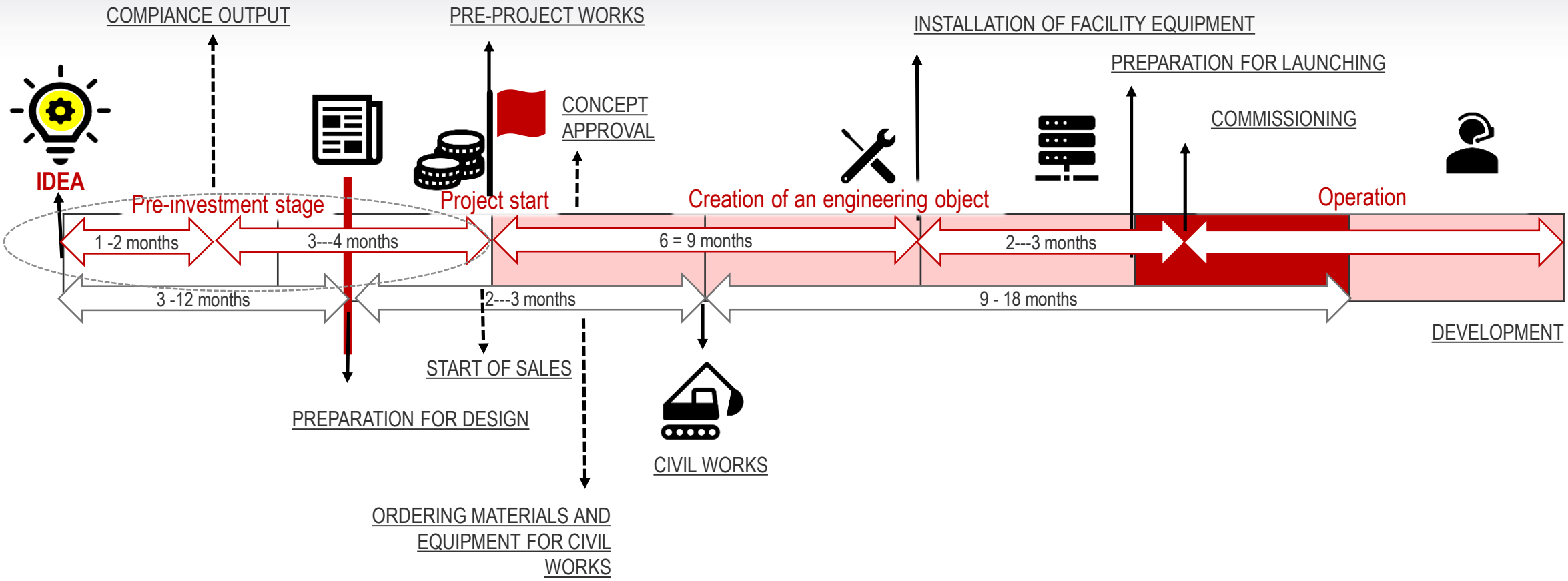
Topics of financial modeling

1. The role and goals of the financial model in the analysis of investment projects for the construction of DC
2. Definition of key performance indicators
3. Points of view on the effectiveness of DC construction projects (private investors, credit institutions, the state)
4. Evaluation of the estimated capital and operating costs of the project
5. Basic principles of financial modeling (structure / architecture of the financial model, main blocks, the relationship between them)
6. Analysis of investment attractiveness from the point of view of projects participants
7. Optimization of the financial model (selection of model parameters, sensitivity analysis to changes in input parameters)

Terms and stages of a data center construction project implementation



! At the pre-investment stage of the DC construction, the foundation is laid for the successful implementation of the project. The pre-investment stage can become a "valley of death" for an investment DC project.

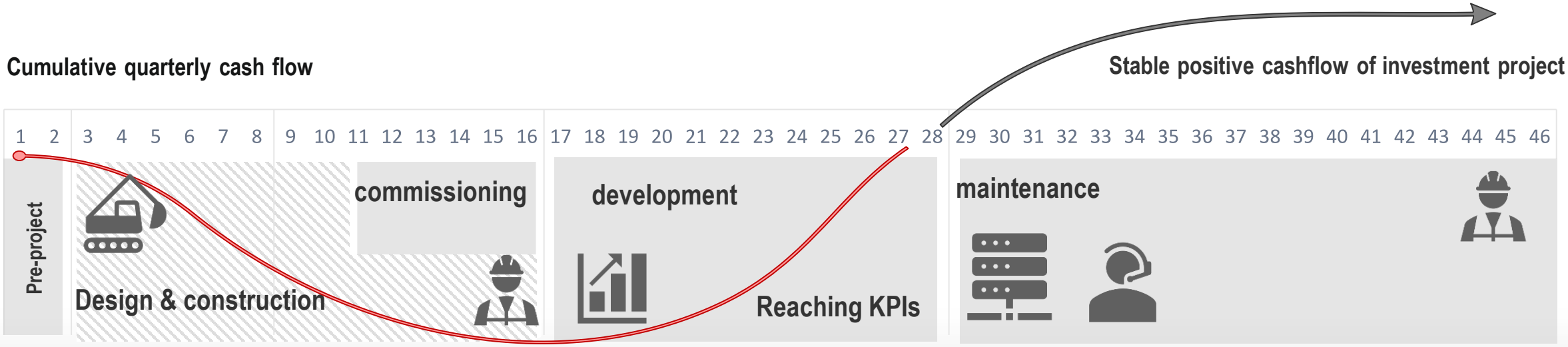
Investment characteristics of data-center

High cost of long-term Debt | **Long period of investment return** | **Moderate demand for DC infrastructure**

20-25%
IRR* Internal Rate of Return

8+years
Payback period

min
DC capacity surplus



Technical-economic parameters of the financial model for the construction of data centers

Parameters for evaluating the effectiveness of an investment project

- Return on investment
- NPV
- IRR

Construction parameters

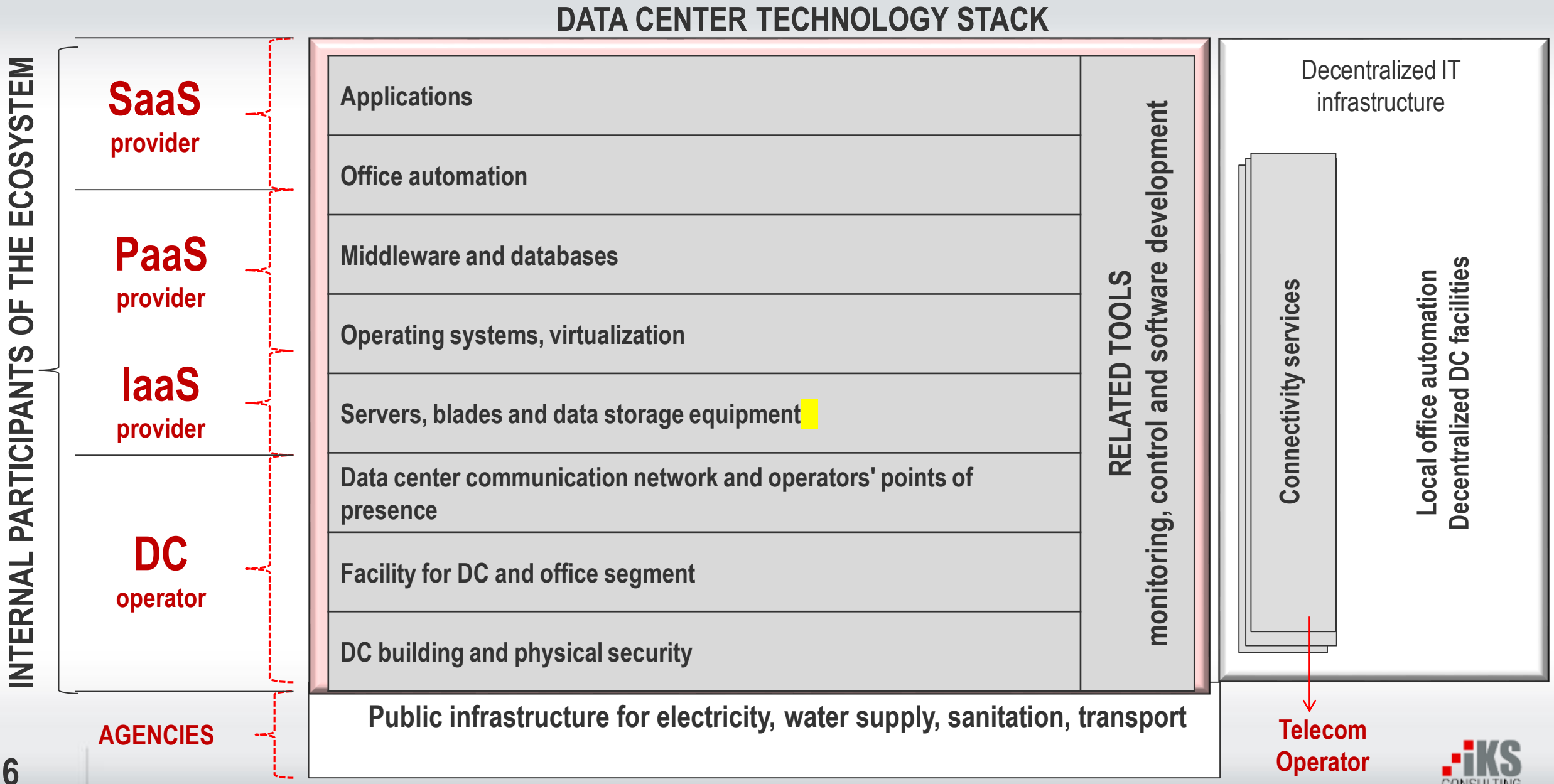
- Investment object parameters
- CAPEX
- Terms and stages of construction
- Ratio of own and borrowed funds, loan rate

Operating parameters

- Average monthly revenue per rack
- Capacity utilization level
- Operating expenses

Project participants may have different points of view on the effectiveness of DC construction projects

Estimation of Project Costs (1 of 3)



Estimation of Project Costs (2 - 3)

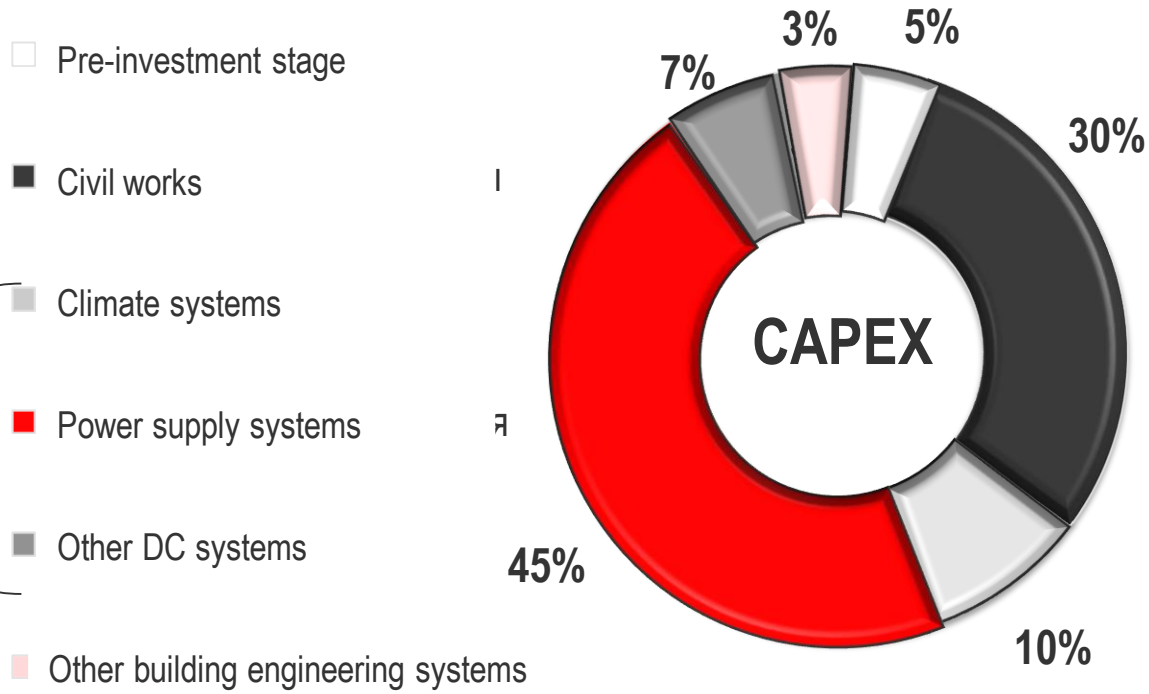
The main CAPEX groups of DC construction

1. Pre-design and design-survey works on DC
2. Preparatory earthworks
3. Organization of access roads and external communications
4. Civil works

57% 5. Purchase, installation and commissioning of engineering systems

6. Other costs (for audit and certification of project documentation and commissioned site, project management, other consulting services)

Structure of capital expenses of the project



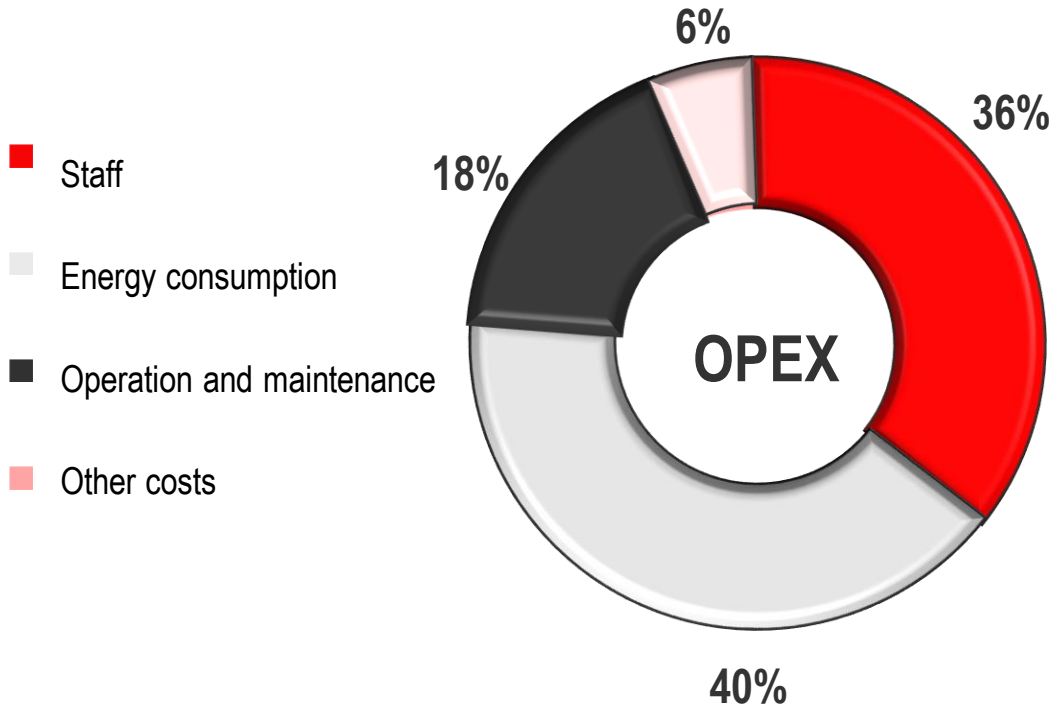
Source: iKS Consulting

Estimation of Project Costs (3 - 3)

Main groups of OPEX of investment project:

- Staff costs
  - Salary bill;
  - Training
- Energy expenses:
  - Critical load
  - Lighting load
  - UPS load
  - Air conditioner load
  - Deviation from the nominal mode of power supply
- Technological maintenance and operation of DC,
  - Consumables;
  - Commercial and managerial expenses;
  - Costs for organizing of services (renting virtualization software, renting communication channels, leasing servers, etc.);
- Other expenses
  - Office service,
  - Taxes,
  - % on loans,
  - Other

Structure of operations expenses of a commercial data center



Estimation of the revenue side of the project

Price for basic service (rack space)	X	Amount of sold services for the period	=	Revenue for the period
Price research		supply-demand model		

Basic principles of financial modeling

Standards

1 Goal setting

Desired reports from the possible data

The structure of the model depends on 2 main questions:

1) what question should be answered (this determines the financial model reports)
2) what data is available, what can be obtained in the financial model

2 Flexibility

Instant recalculation in new realities,

Change in the initial data should not affect the calculation formulas,

Addition of calculation blocks should take a minimum amount of time,

All the constants in the initial data block, the ability to implement project development scenarios, dynamic construction of deadlines and stages

3 Transparency

Easy verification (calculation logic is easy to be seen and confirmed, knowledge of xls, financial management is enough to understand the financial model)

4 Visibility

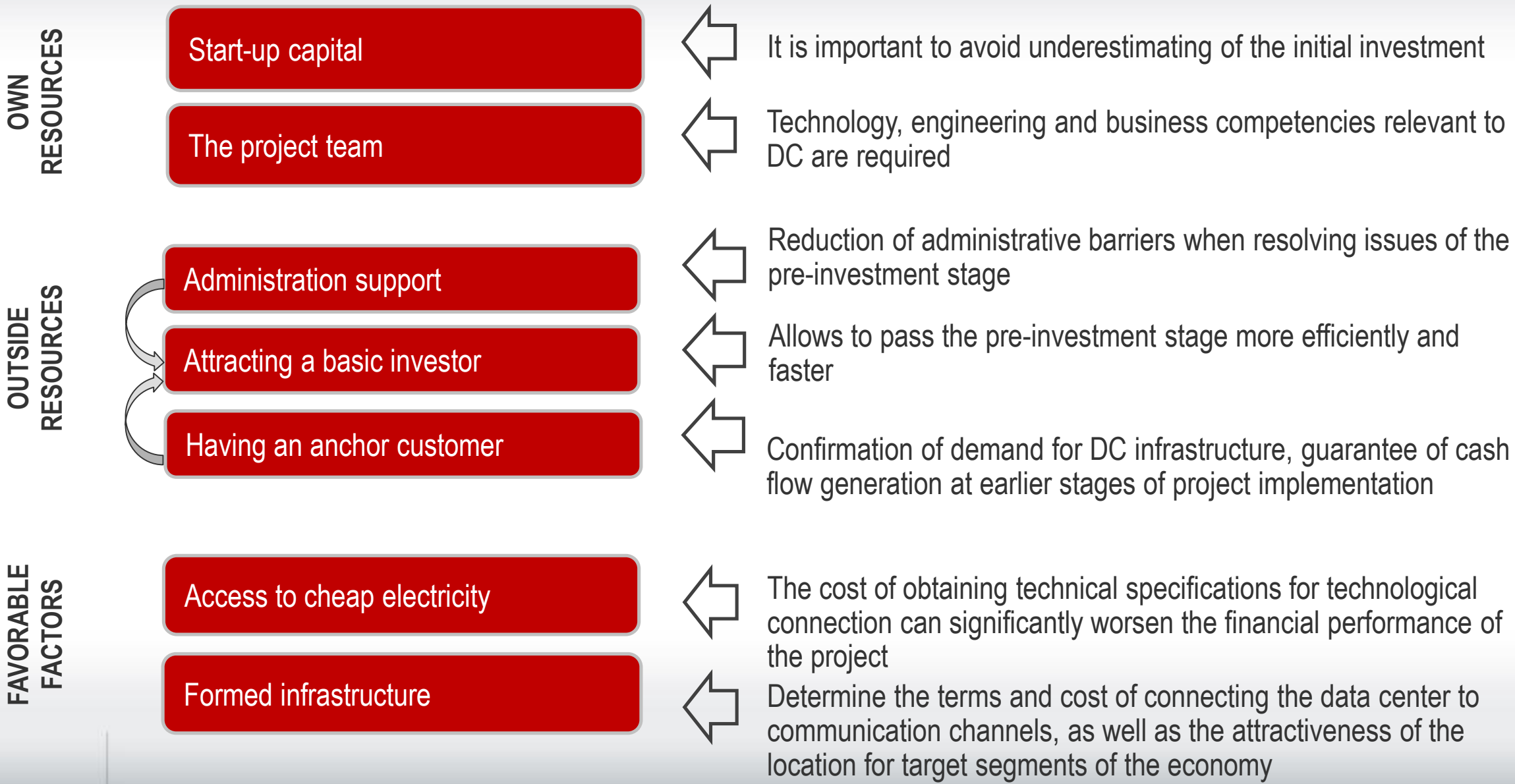
Clear answers to key questions

Factors affecting the cost level of a DC construction project

- Basic service – colocation
- Total project implementation capital cost per rack space (5kW, Tier III) can vary considerably.

- **Factors affecting the level of costs:**
  - Features of the location and parameters of the DC object itself
  - Availability of a land plot and/or a finished building for the DC
  - The intended purpose of its use and the requirements that target customers impose
  - Technical solution
  - Experience in DC construction,
  - Availability of financial resources for the construction of DC
  - Availability of other resources.

Seven Critical Conditions for a Successful Data Center Project



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