

IT Cost Simulation

How IT cost modelling and simulation can help to reduce cost and find the right level of in-house production depth

Authors: Norbert Skubch and Dr. Ulrich Tulowitzki

Need for Action

The overall economic situation is and remains tense. Germany has been in a technical recession since the beginning of 2023 and the inverted yield curve indicates an approaching recession in the USA too. The economic engine in China is sputtering.

The war in Ukraine and the conflict in the Middle East do not necessarily contribute to economic optimism.

In his article “Successful projects for a sustainable reduction in the IT costs” (from 2019) the first author pointed out that this of course also triggers or will trigger considerable pressure on the companies’ IT units. In this context, based on his project experiences, he also made five recommendations on how cost savings can be achieved sustainably in IT:

1. Separate the budget for innovations from the budget for IT commodities!
2. Distinguish between design/build (projects), run (operational routine) and governance!
3. Consider the regional/local component!
4. Implement stringent tracking/monitoring!
5. Explain the necessity and motivate action!

The issue of cost efficiency in IT will most likely remain with us for the coming years. This also means that the question of possible cost reductions must be answered regularly. This makes it a regular operational task, a task of continuous improvement and less and less a one-off act in the form of project work.

Associated with this change is that IT management must equip itself with adequate management tools that allow it to quickly evaluate an initial cost situation and, in particular, to better understand options for cost reduction in terms of their monetary effects and also their (unwanted) side effects.

The individual measures to reduce IT costs are diverse and ultimately well known to all CIOs:

- cancellation / delay of procurement (HW, SW, external services),
- cancellation / delay of development projects,
- elimination or simplification of infrastructure services,
- reduction of governance overhead,
- direct intervention on all primary costs and many, many more.

In addition, in many corresponding projects the question of changing the own vertical integration/performance is raised, combined with the objective of increasing the proportion of flexible costs compared to the fixed (and fixed-step) costs and thus the ability of the own IT organization to respond to fluctuating costs in order to be able to respond flexibly and quickly to demand changes.

If both directions are to actually achieve their promised goals, a complete transparency and a better understanding of your own cost situation and the dynamic relationships between demand, IT services / IT projects (supply) and their allocated cost types are required. The overall structure needs to be understood much better.

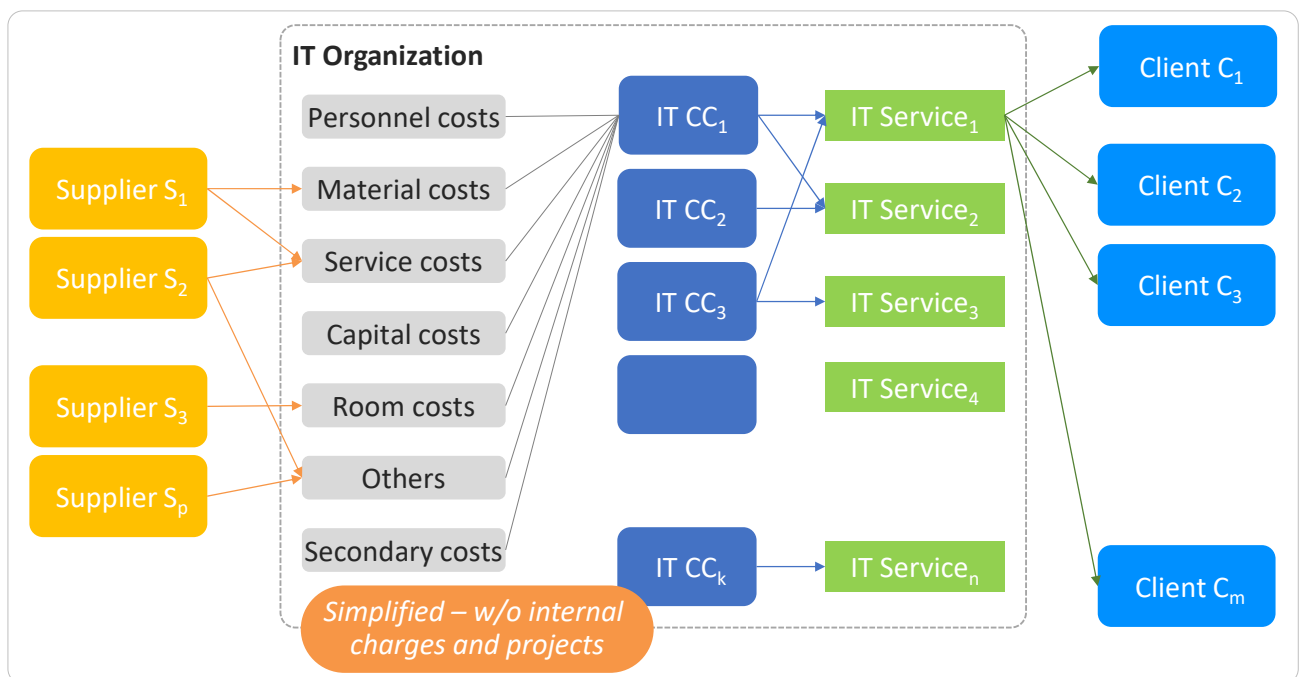


Fig 1: IT cost model (simplified)

Modeling and Simulation of IT Costs

For a quick identification and evaluation of the most effective measures to reduce IT costs and make them more transparent and flexible as well as minimize risks, software-based modeling and simulation of the IT costs themselves is the right choice. For this purpose, the following issues must be taken into account:

- Determine the right scope and definition - for reasons of time or complexity, it may be advisable to evaluate only a part of the IT. This is done by only looking at a subset of your IT services (e.g. all infrastructure services) or your IT projects (e.g. all R&D projects).

This allows the relevant internal customer cost centers to be determined in forward integration and the supplying IT cost centers/cost units and, if necessary, external suppliers in backward integration. This identified section is then the subject of optimization.

- In a simulation, the appropriate level of abstraction of the model objects must be found.

For example, companies often have service catalogs with several hundred elements, and OLAs are also used between IT cost centers themselves or costs are billed directly. Condensation using service classes of similar typology helps here.

The authors have also experienced that within IT, more than the final value is charged to internal customers. Of course, this is not necessarily valuable and it needs to be simplified in a meaningful way. The same applies to the correct level of detail for the primary and secondary cost types.

Ultimately, by choosing the right level of detail, the model remains manageable and still meaningful.

- In addition to the actual model objects (including IT projects, IT services - SLA / OLA, governance processes, IT cost centers and cost types), model rules must also be defined. The rules concern, for example, the allocation of costs to the individual services and the billing methods for the services to internal customers. When it comes to prices for IT services, a distinction must be made between the (incremental) fixed costs and the variable, quantity-dependent costs.
- The simulation model must be dynamically designed - all important influencing factors regarding demand quantity, employee, price and cost developments should be parameterizable over time (e.g. via annual percentage changes).
- It must also be possible to run scenarios – i.e. a subset of cost reduction measures – against the simulation model. Based on the model objects and rules, including parameterization over time, not only the net cost savings can be determined, but unintentional side effects also become visible (e.g. price increases in other areas due to fixed costs that are no longer covered).

- The model also shows how IT costs develop if the quantities of the service / project side change significantly. If you take this one step further, it allows an IT organization to install qualified and fact-driven S&OP meetings with its IT customers.
- And last but not least, various outsourcing options (from partial to complete outsourcing to external service providers) can be simulated, as are necessary to make your own cost structure more flexible, but also to cover peak loads through third parties.

A model of this quality exactly meets the objectives articulated at the beginning for more transparency regarding one's own IT cost situation - the solution is not guessing/believing, but fact-based simulation and looking for the best solution.

Of course, this cost simulation approach can also be easily applied to other internal service providers in a company (e.g. site operations, engineering, workshops).

Norbert Skubch, Managing Director and Partner
Mobile +49 (0) 172 407 5702
nsk@artistratis.com

Dr. Ulrich Tulowitzki, Management Consultant
Mobile +49 (0) 179 400 1047
utu@tulowitzki.com

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