NICUS SOFTWARE | eBook

# A Practitioner's Guide to Cost Modeling

# Is this eBook right for me?

Not sure if this eBook is right for you? See the description below to ensure your experience level matches the content you are about to read.

**Who this eBook is for...**
This content is for readers who want to learn the basics of cost modeling, what it has to offer, and how to start using it. It's also good for those who may already have foundational knowledge but want a better understanding of industry best practices before attempting to launch a new cost modeling initiative in his or her organization.

**After reading this eBook, you should be able to:**
- Clearly articulate the structure and value of an effective cost model
- Build and manage your own basic cost model
- Avoid the 3 common obstacles of building and managing a cost model
- Judge the success of your cost modeling initiative
- Understand the tangible outcomes and use cases of your cost model
- Socialize your model and defend the new transparency it provides

# Table of Contents

SECTION 1

# Introduction

**The threads of technology, finance, and business strategy are becoming increasingly intertwined, making the conversation around costs more important than ever. In turn, high-performance IT organizations are in search of new approaches to promote impactful, fact-based spend decisions.**

But of all the ways to evaluate costs and inform decision-making, nothing is more powerful than cost modeling (aka service costing).

Cost modeling is the cornerstone tool of effective spend management, the catalyst for alignment between IT and the enterprise it serves, and the key to organizational maturity, e.g. “running IT like a business.”

This eBook is an introductory guide to implementing a cost model for the first time, understanding and communicating its value, and avoiding common pitfalls along the way.

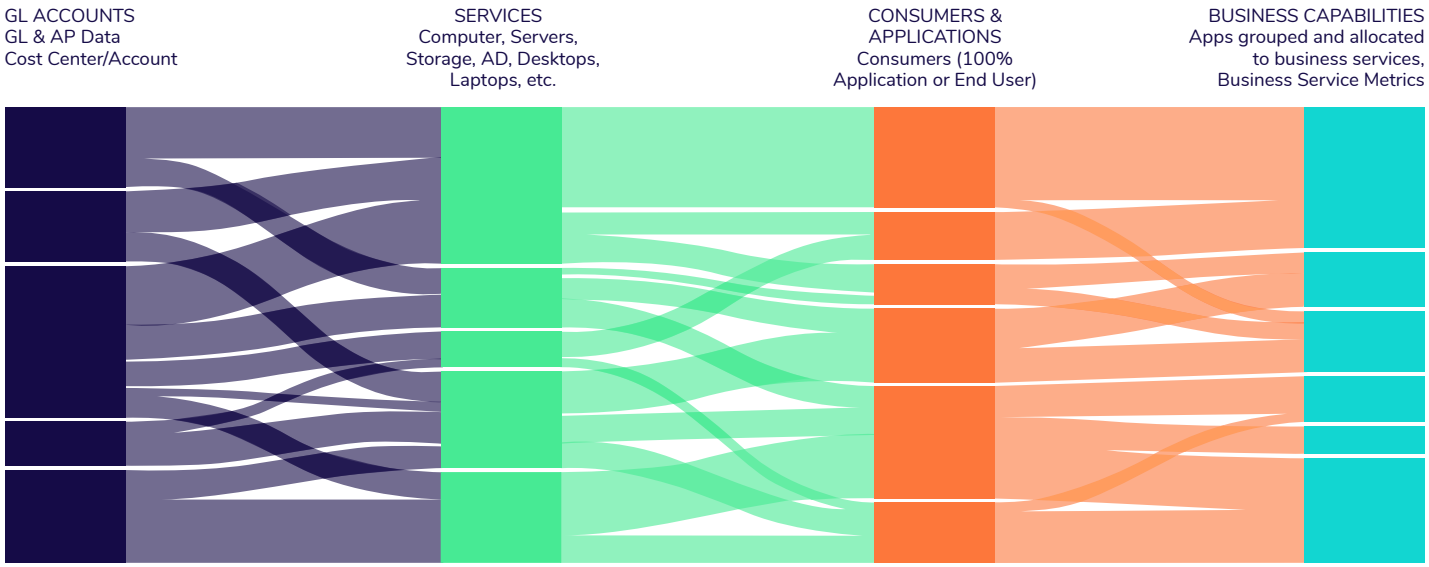
SECTION 2

# How does a cost model work?

**You may already have a basic understanding of what a cost model looks like. But in case you're unsure, let's set a clear definition of what cost modeling is and what it accomplishes.**

All cost models share a common goal: provide visibility of spend that traces from high-level source data through multiple key viewpoints, giving stakeholders a deeper understanding of cost vs. value for informed decision-making.

For example, the standard Nicus cost model structure can be seen in the graphic below:




Nicus Example: Standard Cost Model Spend Viewpoints

SECTION 3

# Key cost model capabilities

**Building upon our foundational cost model definition, let's take a deep dive into the specific core capabilities all cost models should include.**

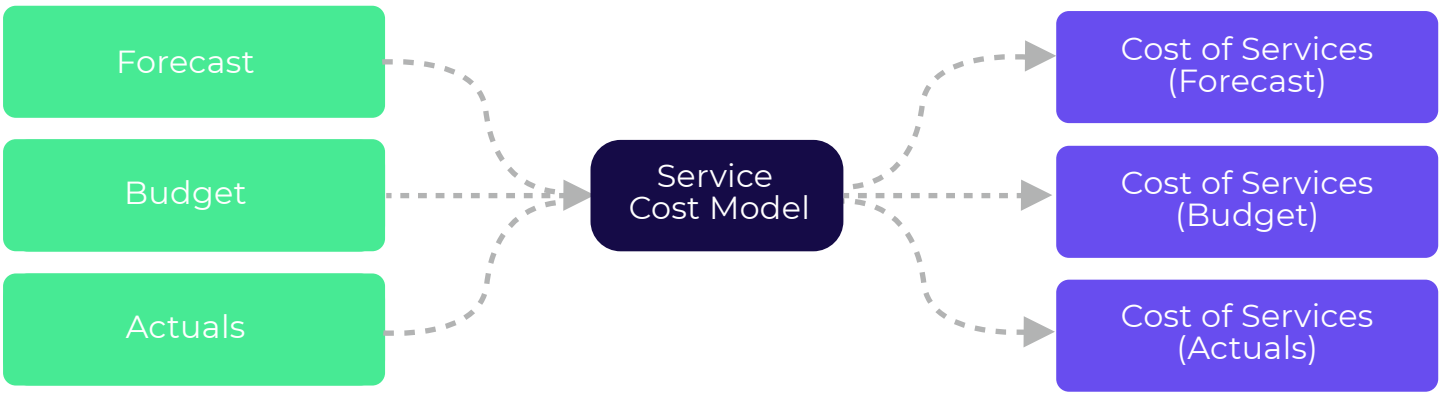
**Key capability #1: Create multi-dimensional views**

There are four layered allocation views in all standard cost models. Here's an explanation of each and what they accomplish for key stakeholders:

1) Services view – gives insight into technology service costs and unit rates, enabling service managers to drive rates down then benchmark against peers, outside suppliers, and internal performance metrics.
2) Consumer view – shows each organizational entity's service consumption and what it delivers, helping the CIO demonstrate value.
3) Application view – accurately calculates Total Cost of Ownership (TCO) for applications and enables application rationalization exercises.
4) Business capability view – demonstrates how costs support beneficial functions for the overall enterprise and helps CIOs align new and existing spend with valuable business outcomes.

**Key capability #2: Accept inputs from budgets, actuals, and forecasts**

Many models are designed to accept only one dimension of inputs, usually budget data. But building your model to accept actuals and forecasts in addition to budgets extends its utility by leaps and bounds.



By combining all three data sources, you get visibility of not only what services are supposed to cost, but also what they truly end up costing and what you can expect them to cost moving forward – enabling you to incorporate model outputs into service P&Ls, chargebacks or showbacks, and multi-year planning.

**Key capability #3: Trace costs forward and backward**

Having both forward and backward traceability in your model is important for two primary reasons:

1) Drilling backward lets you investigate each step in the model to pinpoint every cost driver behind any given business function – crucial for defending spend, spotting inefficiency, and proving value.
2) Drilling forward is essential for justifying new spend – giving you the ability to input projected costs of initiatives and projects, then run an impact analysis revealing how they allocate out to drive business objectives.

> **"Building your model to accept actuals and forecasts in addition to budgets extends its utility by leaps and bounds.**

SECTION 4

# Defining the value of cost modeling for IT

**The upfront value of cost modeling is easy to see – more visibility is always better. But the underlying benefits of that visibility add another layer of value:**

- **Aligns IT spend to business goals** – By allocating costs down through each layer of the model, it becomes far easier to align new and existing spend with positive outcomes for the business, while demonstrating exactly how costs translate to value.
- **Empowers the CIO to silence budget attacks and gain support for new initiatives** – Without full transparency, customers struggle to understand their IT costs, forcing the CIO into constant defense-mode. Cost modeling lets CIOs reframe the conversation with facts to justify spend and get buy-in for new projects.
- **Elevates IT from cost center to business partner by developing trust** – Cost modeling provides the means for IT and its consumers to control spend and maximize value collaboratively. When everything's out on the table, and it's clear that everyone is working together toward the same goal, a culture of trust and shared accountability starts to grow. And the business starts seeing its relationship with IT very differently.
- **Delivers targeted insights when and where they're needed most** – Successful cost models refine actionable data for each of IT's key stakeholder groups – enabling service or tower managers to drive down unit rates and benchmark against peers and third-party suppliers, helping customers proactively manage their consumption, and informing application owners on the lifecycle, run cost, and impact of their current and future app investments.
- **Enables practitioners to fully analyze, communicate, and justify the costs of what IT delivers to the business** – Evaluating costs from every possible vantage point is an invaluable exercise for practitioners, but doing it manually is a never-ending task requiring excessive effort. Cost modeling makes it simple, letting practitioners drill forward and back through every step of the allocation.

SECTION 5

# Model design & allocation methodology

**Now that you have a firm grasp on what cost modeling does – and its value to IT and the business overall – let's switch gears and cover the tactical elements you should understand before attempting to build and manage a model of your own.**

The technical workflow of assembling an entire cost model from start to finish is beyond the scope of this eBook, and the finer details of implementation can vary between organizations.

However, we can still help you get started with a high-level explanation of standard cost model design and allocation methodology, as well as frequently asked questions and common roadblocks you may encounter along the way.

**General methodologies: Double step-down and layered/tiered**

There are two cost modeling methodologies relevant to IT finance, the double step-down model and the layered/tiered model. We won't do a full breakdown of each, but here's an abbreviated explanation to guide you:

- Double step-down models are used almost exclusively by public sector IT organizations. This is because Federal regulation demands unique allocation strategies and reports for appropriation tracking and government chargeback.
- Layered/tiered models tend to offer more speed and functionality over double step-down models. Outside of government, they're typically the best choice.

That said, this eBook is written from a layered/tiered methodology perspective.

**First steps: Mapping cost centers to service views**

Every cost model starts by mapping cost center data from budgets, actuals, or forecasts to a defined service view. This initial layer is the foundation for everything else the model will do.

To create this first layer, you'll need to:

1) Establish a catalog of IT services you wish to cost with your model.
2) Look at each service and take thorough inventory of all cost centers required to deliver it.
3) Verify every service with finance to be sure its costs can be measured (or reasonably allocated).
4) Ensure all services are defined to allow for consumption tracking by IT.

Essentially, your first layer is all about establishing a service catalog and defining your services.

This is a crucial step, but don't worry if you're still unsure how to approach it. We'll provide in-depth guidance on service definition and rate setting in the next section of this eBook.

**"How many layers and tiers should my model have?"**

Your model's overall structure – the number of layers and tiers it includes – depends both on your goals and the data you have available. More detail in your service costing strategy will naturally require a greater degree of granularity in the model (additional layers and tiers), as well a higher quantity and quality of data.

But don't be afraid to start small. It's perfectly fine to build your model from a high level and add layers and tiers as it matures – especially since you can iterate the model to improve data and fill in gaps as you go.

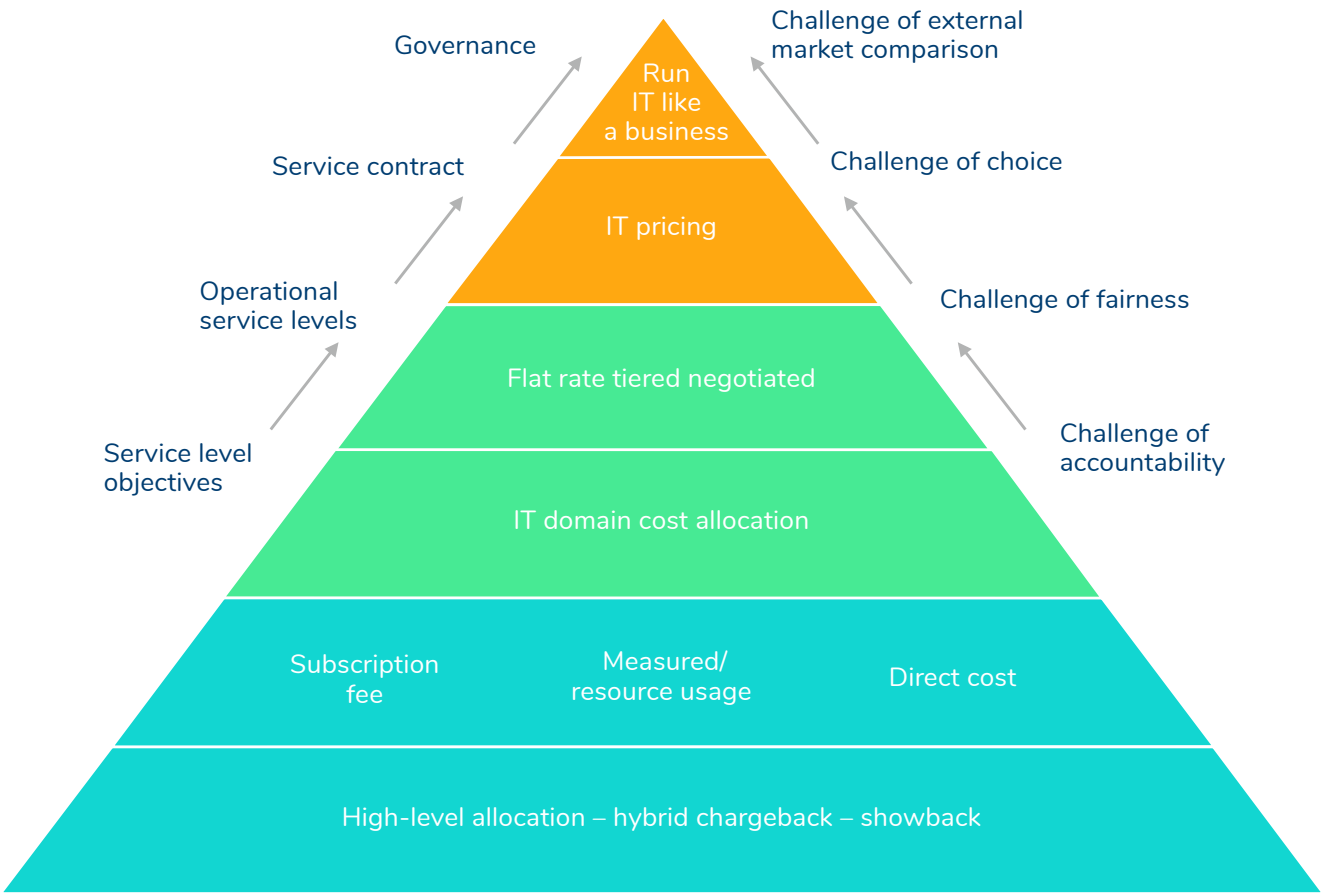
**Allocation strategies and how they impact your model**

The structure of your model is also reliant on the allocation strategy you want to use.

As your allocation strategy increases in detail – to achieve greater accuracy in costing, rate setting, and billing – your model will require more layers, tiers, and data to be effective.

Of course, everyone wants maximum detail and accuracy in allocations to "run IT like a business." But you can't run before you learn to walk.

Below is a visual representation showing how allocation methodologies mature in detail and specificity – illustrating the challenges and benefits along the way:



SECTION 6

# Defining services and setting rates

**Now that you have a solid grasp of cost model methodology and allocation strategy, let's investigate further into defining services and setting rates.**

Having a sound approach for service definition and rate setting is crucial for three key reasons:

1) Service definitions must be vetted to ensure costs can be measured by finance and consumption can be tracked by IT – both qualifications are mandatory to produce a cost of services, set rates, and bill consumers.
2) Consumers should be able to use service definitions to fully understand cost drivers and levers for control.
3) When establishing service definitions, you have a strategic opportunity to drive desired behavior – adoption of new technology, discontinuation of legacy services, and so forth.

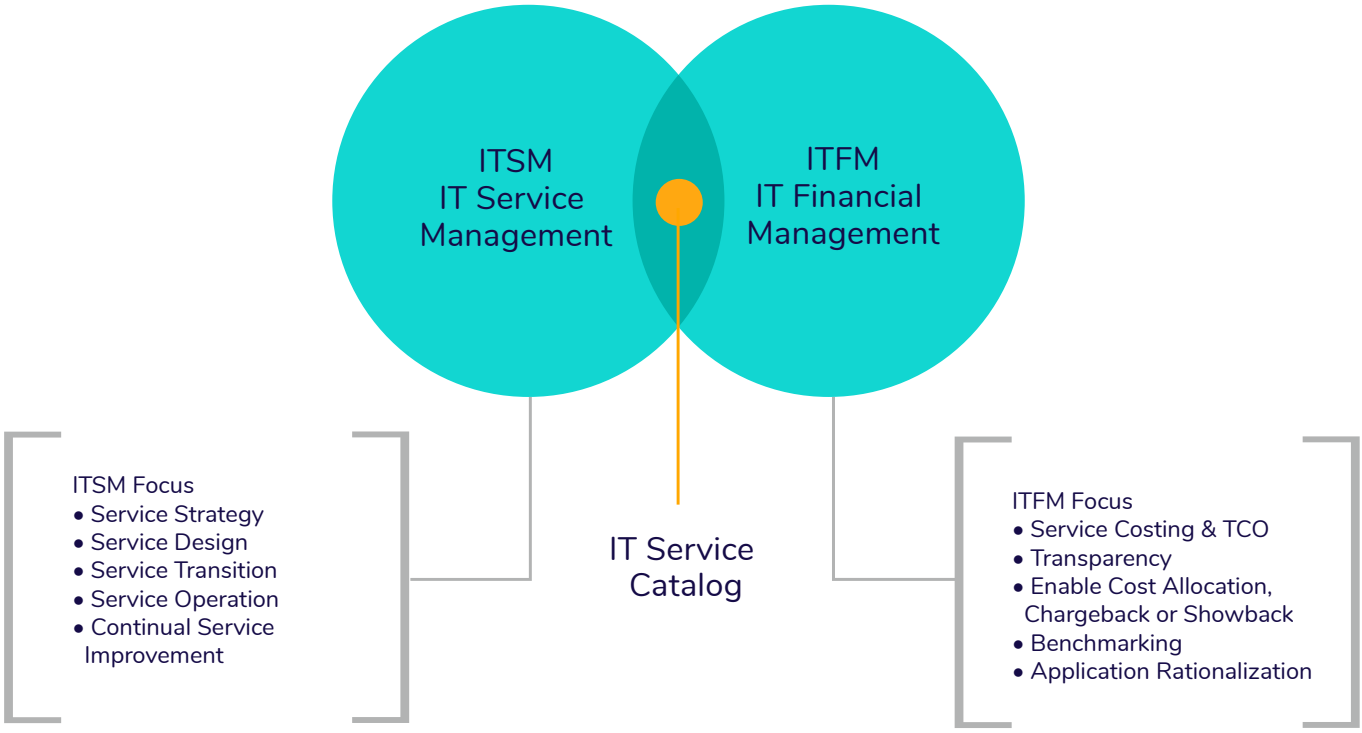
**"What if I don't have a service catalog yet?"**
You can still move forward without a finalized service catalog; you'll just be a little limited in the depth of your analysis.

If you're working without defined services, the best strategy is to get started by making sure all source data is allocated to high-level cost centers like infrastructure, compute, labor, etc.

Getting source data allocated to cost centers is a prerequisite you'll have to satisfy anyway, so your effort won't be in vain. And with those allocations in place, you'll be able to hit the ground running once services are defined.

**Internal and external collaboration is mandatory**
IT teams must work closely with one another – and in tandem with their finance counterparts – to write effective service definitions. Otherwise, things can quickly spiral out of control with unmeasurable services, runaway complexity, and a whole host of other preventable challenges.

The graphic below illustrates why the service catalog is a team effort between ITFM and ITSM:




**A simple checklist for writing solid service definitions**

As you begin defining services and building out your catalog, there are several things you'll want to keep in mind. Here's a simple checklist to keep the process on-track:

- ✓ Establish an initial definition based on the best data and understanding available.
- ✓ Develop strong channels of communication between Finance and IT to ensure service definition viability.
- ✓ Ask Finance to ensure costs can be measured (or reasonably allocated) before any new service is defined and added to the catalog.
- ✓ Verify that IT can accurately track consumption to evaluate usage and bill customers.
- ✓ Include visible cost levers to encourage accountability, guide consumption, and enable change.
- ✓ Think about the consumption behavior you want to drive and shape your definitions accordingly.
- ✓ Work collaboratively with ITSM teams to make sure services are never deployed without going through the complete vetting process.

SECTION 7

# Building and managing cost models

**As you embark on your cost modeling journey, there are three main obstacles you'll face. Thankfully, a little forethought and strategy makes them easy to overcome, or avoid altogether.**

**Challenge: Stale, flawed, or missing data**
Data issues are one of the biggest barriers to any new cost modeling initiative. You will inevitably discover gaps in data availability and quality that limit the amount of accuracy you can achieve.

**Solution: Limit scope, focus on core objectives, and iterate to improve**
There's almost always enough good data to begin a cost modeling initiative. The important thing is to take the first step; don't let data issues scare you away.

Start small, limit your model's scope, and let your core objectives guide the way.

Pick a small set of services to begin costing; limit your model to a select few applications or consumers; and focus on a predetermined set of questions you want to answer.

There's nothing wrong with using proxy drivers and alternate methods to get your model off the ground. And once you have some outputs to work with, you can start iterating to address problematic data over time.

This approach helps you get a few small wins under your belt to prove the value of your initiative, while building momentum and excitement to move forward.

**Challenge: "Directionally correct" assumptions**
It can be tempting to use "directionally correct" assumptions based on your model's outputs, especially if you're in the process of overcoming problematic data. In other words, this means you're delivering insights that are true from a broad perspective but that don't have 100% accuracy.

It can be okay to use "directionally correct" assumptions for certain types of decision-making, but they won't hold up for use cases like chargeback or showback where stakeholders won't tolerate anything less than complete accuracy.

**Solution: Know when "directionally correct" equals "good enough" and be honest with stakeholders**
You don't have to write off "directionally correct" assumptions entirely. You won't always be able to achieve 100% accuracy, and that's okay.

The key is understanding when "directionally correct" can give "good enough" insight to guide a decision. Acting today on 75% accuracy is often better than taking the same action six months down the road at 90% accuracy.

So how do you make that call? The answer is to work together with the business and be honest about the "directionally correct" accuracy of your insights.

Educate stakeholders on your model, its assumptions, and the conclusions you're drawing from the outputs. Don't hold anything back. Translate everything into terms stakeholders understand and pursue better decision-making together.

**Challenge: Managing complexity & precision traps**
Every force in your universe is pushing to increase the number of services in your catalog – making your model more difficult to manage and driving up overall complexity.

To illustrate further, the chart below shows four Nicus clients, their budget sizes, and some of the high-level details of their cost modeling programs:

| | Client 1 | Client 2 | Client 3 | Client 4 |
|---|---|---|---|---|
| IT Spend $ | $190M | $385M | $190M | $400M |
| Model Type | Decentralized | Centralized | Centralized | Centralized |
| # of Services | 100 | 50 | 100 | 450 |
| # of Budget Lines | <1,000 | <2,000 | <1,000 | 1,800 |
| Steps in Cost Model | -50 | -25 | -50 | -100 |
| General Methodology | Layered | Layered | Layered | Layered |
| Business Functions | • Budget Collection<br>• Demand Forecast<br>• Service Costing<br>• Rate Setting<br>• Invoice<br>• Actual Service Cost/ True-up | • Budget Collection<br>• Service Costing<br>• Rate Setting<br>• Invoice<br>• Actual Service Cost/ True-up | • Invoice<br>• Actual Service Cost/ True-up | • Budget Collection<br>• Demand Forecast<br>• Service Costing<br>• Rate Setting<br>• Invoice<br>• Actual Service Cost/ True-up |

Take a close look at clients 2 and 4. Does anything look strange?

Notice how both clients are similar in almost every way – except for their service catalog size. How can two businesses be pursuing the same goals, with the same amount of spend, and using the same type of model, yet end up with massively different service catalogs?

The answer is runaway complexity.

Most stakeholders will “demand” a greater level of detail and granularity in the service catalog. But they don’t always have good reasons for doing so. And unless IT is prepared to answer those demands with fact-based responses, complexity can and will explode out of control.

**Solution: Be intentional when defining new services**

Managing complexity in your model and service catalog doesn't have to be difficult. Follow these simple guidelines to avoid runaway complexity:

1) **Use a phased approach for expansion of the service catalog** – Once a service is defined and in-use, discontinuing it can be a battle. In other words, it's far easier to add specificity than it is to subtract complexity, so always err on the side of simplicity and only break out new services as needed.
2) **Be mindful of why different stakeholder groups push for complexity** – Business units want detail to track their consumption, finance wants granularity for billing, and internal IT stakeholders want technical accuracy. Be ready to defend your balance of simplicity vs. complexity with all this in mind – showing stakeholders how their desire for more granularity doesn't always trump the practical utility of existing definitions.
3) **Work with stakeholders to determine what's material enough to warrant separate services** – There's a simple litmus test for deciding whether to break out a service with more granular definitions. If you increase precision and drive up complexity with more definitions, is there a material difference in costs for IT or the business? Based on the answer to that simple question, the decision becomes easy. If there's a material difference, break it out. If there isn't, explain why and maintain the definition as-is.

SECTION 8

# Leading the transparency journey

**Ok, let's imagine your cost model is in place and you're starting to get usable insights. At first, things are great... But when you start sharing your model and the new transparency it's providing, stakeholders aren't quite as excited as you expected.**

In the long-term, your model will result in trust and better decision-making between IT and the business. But first, you must navigate a sometimes-tenuous "transparency journey" and lead the business to trust your model and the insights it delivers.

**Phase 1: "Black hole" (No cost model)**
This is where everybody starts, the status-quo. Stakeholders know there's a vast amount of data out there, but nobody knows how to use it. Insights are locked up, and questions go unanswered. There is zero transparency.

**Phase 2: Challenge defending transparency (New cost model)**
When transparency is first introduced, stakeholders are skeptical. All the data is finally on the table, but people are slow to trust it. IT is forced into a defensive position and conflicts arise.

This phase can be discouraging, but just remember... the data isn't flawed. What's truly flawed is stakeholders' perception of the data.

You must continually educate to fight doubt. Be prepared to answer questions like:

- ✓ Has the organization clearly defined and communicated the components used to calculate unit rates, consumption rates, service costs, etc.?
  - What are the specific calculations being used?
  - What is included/excluded?
  - Does data come from the same source?
  - Which cost groups are associated to costs?
  - How do general items (such as overhead) impact costs?
- ✓ What assumptions are being made? Are they accurate and agreed upon?
- ✓ What pieces of data are missing or incomplete?
- ✓ What data collection processes need improvement?
- ✓ Are there duplicated services and products?

**Phase 3: Transparency as a foundation (Mature cost model)**
When transparency becomes standard operating procedure, that's when the real magic starts to happen. As IT, executives, business partners, and other stakeholders see the data through the same lens, the dialog is elevated from being emotionally-driven to strictly fact-based.

Eventually, stakeholders come to trust IT and its data – letting transparency fully guide decision-making.

SECTION 9

# Education and socialization

**Doubt is inevitable as the business evaluates your new model's outputs, so you must be prepared to field questions and defend your data. Here are three crucial rules for responding to stakeholders and socializing new insights:**

- **Superior level of detail** – In the same way ambiguity leads to doubt, detail leads to confidence. Always provide the highest level of granularity possible. When consumers can see all components associated with an allocation, they ask fewer questions and have more trust in your answers.
- **Context and narrative** – Giving detailed, fact-based data is only half the equation; every response should also be framed with a strong narrative. Thoroughly contextualize your insights to prevent stakeholders from drawing their own conclusions. Leave nothing open to interpretation.
- **Rapid responses** – Strive to answer questions as quickly as possible. Delayed responses increase skepticism and mistrust. The longer stakeholders wait for a response, the more they begin to wonder if you're "cooking the books" or struggling to find a good answer.

SECTION 10

# Tangible outcomes and use cases of cost modeling

**Now that we've covered all the moving parts of a cost model, let's take a closer look at the tangible outcomes and use cases your cost model can enable:**

**Controlling costs and consumption**
This objective is by far the simplest to accomplish when starting out with cost modeling. With the initial transparency from a new cost modeling initiative, you can quickly:

- Drive down run costs by revealing inefficiencies
- Reveal waste, rectify it, and redirect the savings
- Enable better governance by uncovering mismatched or excess resource consumption

**What-if and impact analysis**
You can easily analyze the viability of new projects and allocations by running what-if scenarios and impact analyses through your model (e.g. "drilling forward"). In fact, this is one of the most powerful capabilities of a successful model, allowing you to do things like:

- Justify new spend by showing how it will be used to deliver business value
- Maximize financial visibility to inform multi-year budgets and forecasts
- Demonstrate proof of concept for new initiatives faster and easier

**Valuable benchmarking**
Once you have your services costed with an accurate model, you gain the capability to compare against rates from industry peers, outside suppliers, or internal actuals and forecasts. Some of the biggest benefits include capabilities to:

- Make apples-to-apples service cost comparisons
- Leverage benchmark cost insights during contract negotiations
- Identify and explain service cost variance
- Build defensibility into budgets by showing industry standards for each area of spend
- Prove internal efficiency and demonstrate cost-cutting progress

**Shared accountability**
Cost modeling puts all service cost drivers on the table for everyone to see. And when that happens, it becomes much easier to get consumers to share accountability for service costs with IT.

The question from consumers goes from "*Why are my technology costs so high?*" to "*What can we do to spend smarter?*"

**Multi-layer views (the big picture)**

As your model matures, you'll continue to discover new insights by digging through its multi-layer views. The possibilities are nearly infinite.

The chart below gives a big picture breakdown of a standard cost model – showing each layer, the questions it answers, the stakeholders it informs, and the value and insight it provides:

| Views | Services<br>Allocates GL costs to IT services | Consumer<br>Allocates service costs to consumers based on usage | Application<br>Allocates service costs to applications based on usage | Business Capabilities<br>Allocates service costs to applications based on usage |
|---|---|---|---|---|
| Examples | • Compute power<br>• Servers<br>• Storage<br>• Application Development<br>• Desktop/Laptop | • End user<br>• Business Partner<br>• Cost Center<br>• Department | • Hosting Applications<br>• On Premises<br>• Storage<br>• Cloud Hosting | • Marketing<br>• Sales<br>• Billing |
| Answers | • How much are we spending to deliver each service?<br>• What items and services are in my IT bill?<br>• What are our unit costs and how do they compare?<br>• What costs and services are included in the unit rate? | • Which business partners consume IT resources? (% and $)<br>• Why is my IT bill going up?<br>• What do I get for my IT expenditure?<br>• How do my expenses compare to other business partners?<br>• How/where can I impact my budget and corporate profits? | • What is the total cost of my applications?<br>• How much are we spending internally vs hosted? | • What are the technology costs associated with enabling my Business Capabilities? |
| Stakeholders | ✓ Executives<br>✓ Business Partners<br>✓ IT | ✓ IT<br>✓ Executives<br>✓ CIO | ✓ IT<br>✓ Executives<br>✓ CIO | ✓ IT<br>✓ Executives<br>✓ CIO<br>✓ Business Partners |
| Value & Insights | • Understand the cost of services and components<br>• Understand and drive down unit rates<br>• Benchmark against third-parties and peers | • Insight into which business partners benefit from IT<br>• Transparent view of consumption rates<br>• Helps show value | • Application Rationalization exercises | • Business Service Metrics<br>• Align new investments more directly to business functions |

SECTION 11

# Measuring success: 4 ways to judge cost model efficacy

**It's easy to get lost in the weeds when building and managing a cost model for the first time. In the end, the only way to truly judge success is to stay focused on value.**

Here are four simple questions to evaluate the success of your cost model and continually improve it:

- Do stakeholders understand their data?
- Does my cost model enable impactful decision-making?
- Is IT's relationship with consumers improving?
- Are consumers valuing IT and the services it provides?

SECTION 12

# Fuel your cost modeling initiative with Nicus

**Launching a new cost modeling initiative is intimidating, especially if you're working in the confines of traditional spreadsheets. The fear of failure stops many from ever taking the first step.**

Nicus offers a complete solution to make the process simple. We empower IT teams to uncover and leverage cost modeling insights faster – with a proven framework, expert practitioners, and a seasoned implementation team.

If you're ready to harness the power of cost modeling to elevate IT, let Nicus be your guide.

NICUS SOFTWARE

# Elevate IT. Ignite Possibility.

At Nicus, we empower organizations to realize their full potential by elevating IT. We're passionate advocates, providing financial management solutions that expand what's possible. We believe what we do with technology defines what we can do in the world.

**Contact us to learn more.**

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