



# The CTO's Guide to AI Project Budgeting

How to Calculate the True Costs of Your AI Initiatives

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# The CTO's Guide to AI Project Budgeting

With AI, the journey from concept to implementation is full of financial hurdles. Studies indicate that a significant portion of AI initiatives—approximately 60% to 80%—do not advance beyond the proof of concept (PoC) stage. This high failure rate can largely be attributed to the unexpected costs associated with these projects.

As the CTO, your responsibilities now extend far beyond managing technology infrastructures like architecture, data, and security. These days, you also need to wear your financial wizard hat—because let's face it, AI isn't just about smart algorithms; it's also about smart spending.

The financial complexity of creating AI solutions from the ground up is daunting. So daunting, in fact, that Gartner predicts that by 2028, over half of all organizations might abandon their AI strategies due to these financial challenges.

Such a scenario places you, the CTO, in a precarious position—No one really looks forward to explaining why, after a year of heavy investment, the only 'magic' to show is the vanishing act of your budget.

Embracing your role means getting comfortable with budget sheets and not just code sheets. It's about making sure your AI projects don't just start off well but also move smoothly past the PoC stage without breaking the bank.

Remember, a successful CTO not only plans for what AI can do but also for what it might cost.

Let's get started.

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# Mistakes to Avoid when Starting a New AI Project

Starting a new AI project is exciting, but it's easy to get caught up in the buzz and overlook some crucial cost details. To keep your project from running into budget troubles down the line, it's important to keep an eye on all the potential costs, not just the initial ones. Here, we'll highlight a few common cost-related mistakes that can sneak up on you, and offer tips to help you manage your AI project's budget effectively.

**Underestimating Total Cost of Ownership:** Many AI projects fail to account for the total cost, including not only initial development and implementation but also ongoing operational costs such as maintenance, updates, and necessary improvements over time.

**Scaling Costs:** Failing to plan for scaling costs can lead to budget overruns. As AI systems scale, the costs for infrastructure, data storage, and processing power can grow significantly, especially if the system uses large data sets or requires real-time processing.

**Ignoring Hidden Costs:** There are often hidden costs in AI projects, such as the need for additional training data, specialized personnel, and unexpected needs for regulatory compliance. These costs can escalate quickly if not planned for in advance.

**Costs of Model Training and Running:** The computational cost of training and running AI models, especially large models, can be substantial. Overlooking these costs can lead to significant budget issues, especially when using cloud-based resources where expenses scale with usage.

**Data Management Costs:** Managing, storing, and processing large volumes of data require significant resources. Costs associated with data handling – such as ensuring data quality and security – can be higher than anticipated.

**Vendor Pricing Models:** Relying on third-party vendors for AI services can introduce variable costs based on usage (e.g., API calls, data processed). These costs can fluctuate significantly, making budgeting difficult and potentially leading to unexpected expenditures.

**Integration and Change Management Costs:** Integrating AI into existing systems can be costly and complex. Costs associated with modifying existing infrastructure, training staff to use new systems, and managing the change process can add up quickly and are often underestimated.

**Risk of Project Abandonment:** Due to unforeseen costs and complexity, 60-80% of AI projects are abandoned after the proof of concept stage. This results in sunk costs without realizing any ROI

Getting the budget right for an AI project is kind of like packing for a vacation. You want to include a little extra in your suitcase for those unexpected adventures! By thinking ahead about all the potential costs—not just the initial ones—you'll be all set to enjoy the journey without any budget woes. Happy travels in the world of AI!

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# **Keeping Up with Costs: Understanding AI's Price Tag**

Jumping into the world of AI comes with some serious costs. And the costs are not always clear.

Pricing changes often, and keeping up with it can feel like trying to catch a fast-moving train. To get a handle on what you might spend, it's a good idea to map out the best and worst-case scenarios with a solid plan. The framework and tools we provide below can help you start this analysis and keep refining it as things change.

Beyond training and running AI models, there are other costs that might not be so obvious. Testing them out during trials might be inexpensive, but figuring out how much they'll truly impact your business and what they'll cost down the line is tricky. We're still learning how these models will be used, so it is tough to predict the full cost of rolling these technologies out on a large scale in your business.

## Real-World TCO Example

Consider this TCO example from a medical research company that was deciding whether to implement GenAI-assisted support or build a custom LLM.

Category	Details
Initial Pilot and Roll-out	~\$750,000 to \$1 million - Includes developers; data engineers; data scientists; security, GRC; product management working for 6-12 months, user training
Recurring Costs	~\$750 to \$1,000 per user per year including: <ul style="list-style-type: none"><li>• API consumption fees</li><li>• 3 to 1 GenAI query to search usage Ratio</li><li>• Three API calls per GenAI query</li><li>• GPUs for embeddings</li><li>• Application and model maintenance of 20% of initial deployment costs for 1,000 users</li><li>• AI and data management licenses</li></ul>
Value	~\$4,000 to 10,000 per knowledge worker per year for 20% to 59% productivity improvement with a 20% to 30% productivity leak, assuming 30% of time spent on searching for information
Sample KPIs Impacted	<ul style="list-style-type: none"><li>• Percentage of knowledge worker time spent on the highest-value tasks of their role</li><li>• Time to answer client questions</li><li>• Content quality/</li><li>• Error rates reduction</li></ul>

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# How to evaluate the expected ROI of AI projects

Now for the good part....how much money can you expect to make from your project? Here are the steps for assessment:

## 1. Assess Costs and Value

*Define Success Metrics:* Establish both financial and strategic KPIs for each pilot or initiative. This helps in understanding the direct and indirect impacts. For example, if deploying an AI for customer service, measure both the reduction in call handling times (financial) and improvements in customer satisfaction scores (strategic).

*Measure Actuals:* Develop a systematic approach to track both costs and benefits. This should include:

- Gauging time savings. For instance, if an AI tool reduces the time engineers spend on data analysis from 3 hours to 1 hour, calculate the cost equivalent of two saved hours per engineer per day.
- Integrating AI-related costs and benefits into FinOps. Regularly update financial operations to reflect AI expenditures and gains, such as the reduced need for certain IT support services.
- Conducting A/B tests. Test multiple AI tools to determine which one provides better accuracy or faster responses in real-world scenarios.
- Using Automated Metrics. Utilize automated productivity metrics within existing enterprise software wherever possible. For example, implement AI-driven analytics in CRM systems to track salesperson productivity automatically, comparing periods before and after AI integration.

## **2. Measure and Manage Outcomes**

*Realize Value:* Account for investments in new technologies necessary to optimize AI benefits. For example, adopting vector databases might be essential for improving data retrieval speeds in AI applications that require quick access to large datasets.

*Outcome Analysis:* Continuously evaluate who is using the AI capabilities and how it affects their work. Adapt your metrics and focus based on the real benefits seen as deployments evolve. For example, after implementing AI for email marketing, monitor both the increase in campaign conversion rates and any shifts in team workflows or resource allocations. Adjust the measurement criteria as more data on performance and efficiency becomes available.

## **3. Build Financial Partnerships**

*Finance Collaboration:* Work closely with the finance department to create a solid AI finance framework and a thorough cost-benefit analysis process. For example, compare the ROI of an AI project aimed at automating inventory management with that of hiring additional staff. Set a clear timeframe (e.g., 12 months) for assessing the returns on AI investments.

*Support and Accountability:* Ensure roles within finance help validate and approve the financial impacts reported, such as verifying the accuracy of cost savings from an AI that automates expense reporting.

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# How a Data and AI OS can Reduce AI Project Costs

A Data and AI platform is designed to help you fulfill your ambitious AI plans while optimizing costs. Its infrastructure changes to fit your needs and resource constraints, including incorporating new data and AI stack. This data and AI operating system is easy to use and scales along with you, ensuring your tools and skills are always in sync with the latest tech trends – without the DevOps burden.

The best part? You can get all these benefits with a simple subscription fee.

Here is how a Data and AI Operating System can be a game-changer in reducing these costs and keeping AI initiatives on track and within budget.

## 1. Initial Setup

*Investing in DevOps:* Building AI infrastructure is intensive and costly, requiring 12-24 months of dedicated work by two to three DevOps engineers, amounting to \$300K to \$400K in salaries. However, adopting a structured data and AI Operating System (OS) can streamline this process by providing tools that reduce the need for extensive data engineering, thus accelerating development.

## 2. Ongoing Maintenance

*Adapting and Upgrading:* Regular updates to your tech stack are necessary to stay competitive. A data platform can simplify this by adjusting to the current skills of your team, whether through upskilling or hiring new talent. This approach helps avoid the disruptive cycle of constant re-starts and disagreements over previous methodologies that new engineers might find when they join.

### **3. Time to Deployment**

*Simplifying Processes:* Traditional AI tool deployment can be bogged down by administrative procedures and testing. Switching to a data platform can cut down deployment time to just minutes with one-click setups, enabling quicker updates and feature rollouts.

### **4. Infrastructure and Storage Costs**

*Consolidating Expenses:* AI projects require extensive computing resources, often incurring high costs from subscriptions and premium services. A unified data platform can combine these into a single manageable fee, significantly reducing expenses.

### **5. Latency and Support Savings**

*Reducing Delay Costs:* Utilizing a data platform on a private cloud can decrease latency significantly, providing a strategic advantage in time-sensitive industries by allowing real-time data processing.

*Accessing Expert Support:* Rather than engaging expensive consultants for complex DevOps tasks, a data and AI OS can offer access to a customer success team with high-level expertise at a lower cost, optimizing both support quality and budget.

### **6. Time to ROI and Risk Management**

*Managing Financial Expectations:* AI projects have a waiting period before benefits materialize, often causing budget concerns. A flat pricing model of a data platform keeps costs stable, even as usage increases.

*Minimizing Compliance Costs:* By keeping data management in-house, a data and AI OS reduces the need for extensive audits and compliance checks, thus safeguarding the organization's data security and cutting down governance costs.

Adopting a data and AI operating system not only reduces the financial burden of AI projects but also speeds up innovation and deployment, keeping your CFO happy and making your AI initiatives more successful.

# Template table to calculate ROI of AI Projects

Activity	Cost
<b>Initial pilot and rollout costs</b>	
Developers	
Platform engineering	
Security	
Risk and governance for 3 months	
Change Management & Training	
<b>Recurring Costs</b>	
SaaS application pricing	
API licenses	
Data management and AI licenses	
<b>Productivity improvement</b>	



## ABOUT SHAKUDO

Shakudo creates compatibility across the best-of-breed data tools for a more reliable, performant, and cost effective data and AI operating system. As an operating layer on top of your cloud Shakudo allows you to pick the best-of-breed data tools for your needs, while providing a platform with fully automated DevOps experience. This combines the best of both worlds in data stack practices so you can focus on delivering business value with data.

Shakudo is the most **easy, secure, cost-effective, scalable** way to bring the most advanced data and AI tools to your data. Find out more at [shakudo.io](https://shakudo.io).