



AI FOR THE IT FINANCE PRACTICE

A detailed analysis of the current and prospective uses of AI for IT Finance

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Executive Summary

The digital era has ushered in new paradigms of operation for businesses worldwide, particularly within the realm of IT Finance Management. Traditional methods of data processing and decision-making can fall short in the face of the vast, complex information businesses handle today. Consequently, the adoption of Artificial Intelligence (AI) has become a necessity rather than a luxury, helping organizations make sense of this informational deluge, streamline operations, and optimize decision-making processes.

In 2023, the financial services sector allocated roughly \$35 billion towards AI projects. Recent projections estimate that the global AI in finance market is expected to reach **\$190.33 billion by 2030, growing at a compound annual growth rate (CAGR) of 30.6 % from 2024 to 2030.**

In this paper we will review the type of GenAI models (LLM and LQM) that can be used to enhance the IT Financial Management Practice, as well as how they can be integrated into ITFM automation platforms to enhance the user experience.

LLMs shine in transforming messy, unstructured information into insight-rich language assets. They are your interface between technical models and real-world understanding. **LQMs** power the math behind the scenes – handling simulations, forecasts, and optimization of cost structures. They provide depth, accuracy, and repeatability. Used together, they create a closed-loop system where: LLMs convert financial conversations into data inputs, LQMs model outcomes and risks, LLMs then interpret and communicate those results clearly and contextually.

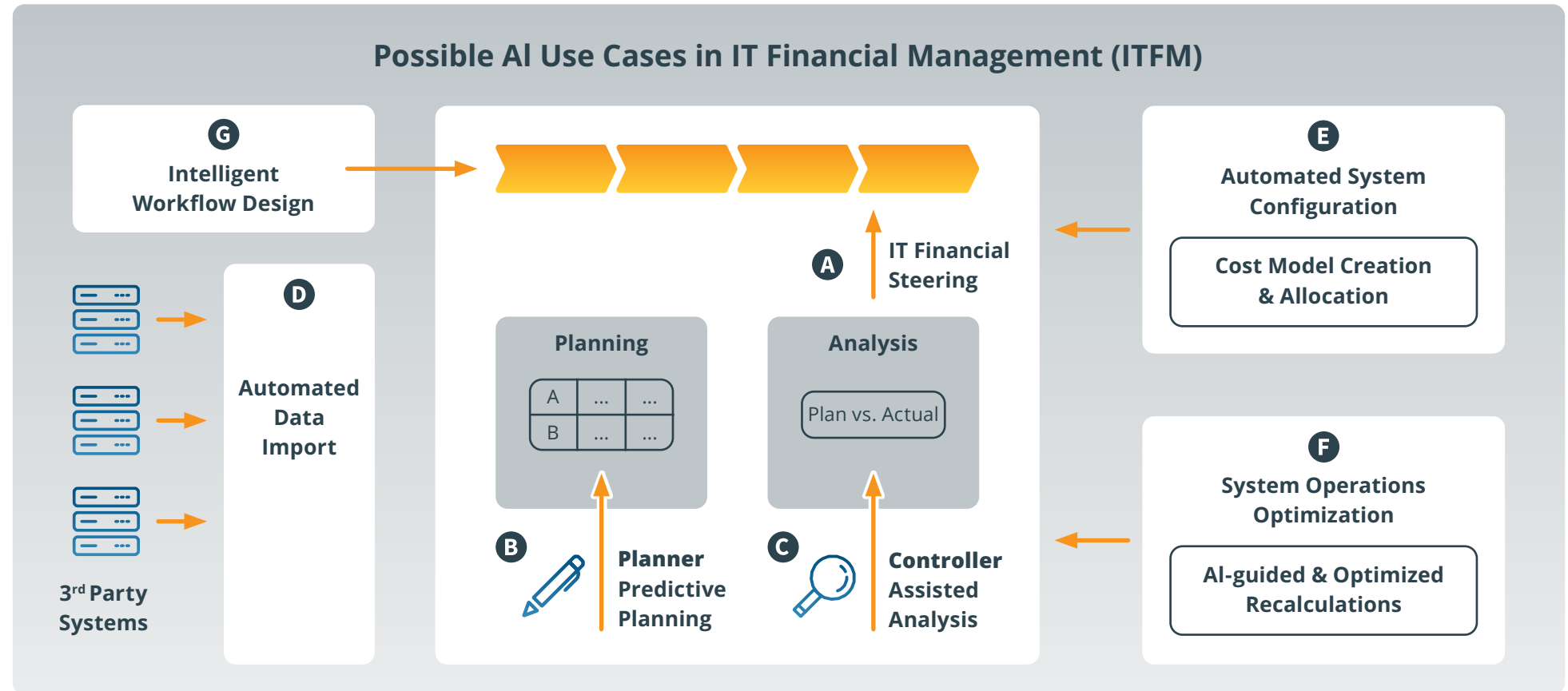
ITFM Practice Areas – AI-Driven Transformation with LLMs & LQMs

ITFM Practice Areas: AI-Driven Transformation with LLMs & LQMs

In this table, we summarize how Large Language Models (LLMs), and Large Quantitative Models (LQMs) could be leveraged in each of the 4 ITFM practice areas. Figure 1 shows the typical data flow in an IT Finance Practice (especially leveraging an automation platform) and the highlighted areas where AI could improve processes.

PRACTICE AREA	LLM CONTRIBUTION	LQM CONTRIBUTION
Budgeting	• Auto-generate budget narratives and variance reports • Summarize historical trends from unstructured text • Interpret stakeholder commentary into planning inputs	• Forecast spend based on time-series and historical usage • Simulate budget scenarios under different drivers • Identify non-linear cost behaviors and anomalies
Investment Management	• Extract key metrics and insights from investment proposals • Generate ROI justifications and alignment summaries • Assist in drafting business cases from financial inputs	• Optimize investment portfolios using mathematical models • Run predictive risk assessments across tech initiatives • Evaluate time-value and performance volatility of investments
Cost Modeling	• Explain model logic and assumptions in plain language • Translate complex outputs into stakeholder-friendly summaries • Document version changes and rationale automatically	• Model cost structures with granular variable analysis • Simulate utilization-driven price changes and break-even scenarios • Identify sensitivity across cost dimensions
Bill of IT	• Generate tailored service descriptions and usage summaries • Handle user queries via chatbot interfaces • Translate billing logic and policies for diverse audiences	• Compute service-level costs from usage patterns and rate tables • Detect billing outliers or inefficiencies using statistical thresholds • Perform dynamic allocation by service unit or consumption
Allocation to the Business	• Create intuitive allocation rationale summaries • Enable natural language Q&A on cost allocation logic • Document impact of allocation changes automatically	• Model cost allocation formulas based on business rules • Simulate what-if scenarios for departmental charges • Identify optimization opportunities across shared services

We will furthermore dive into concrete use cases and describe in more detail the application of the above stated AI capabilities for the IT Finance application.





Generative AI Overview

Generative AI (GenAI) refers to a class of artificial intelligence models that can create new content – whether it’s text, images, music, code, or even video. Unlike traditional AI that mostly analyzes or classifies data, generative AI is built to **produce** data that mimics human creativity. The GenAI model types that have the most direct application to IT Financial Management Practices are Large Language Models (LLM) and Large Quantitative Models (LQMs). A **Large Language Model (LLM)** is a type of artificial intelligence designed to understand and generate human language. These models are trained on massive datasets – think billions or even trillions of words – to learn the patterns, structure, and meaning behind text. A **Large Quantitative Model (LQM)** is a type of artificial intelligence system designed to perform advanced mathematical reasoning, numerical analysis, and data modeling, especially in fields like finance, engineering, and scientific research.

Large Language Models (LLMs) – An IT Finance Perspective

Large Language Models (LLMs) are changing how finance teams interact with data, automation, and decision-making. For IT Finance professionals navigating complex systems, budgets, and forecasts, LLMs offer a new dimension of efficiency and insight.

What Are LLMs?

LLMs are advanced AI systems trained to understand and generate human-like text. Think of them as virtual analysts – able to read, interpret, and create financial narratives and technical documentation on demand. Large Language Models (LLMs) are revolutionizing how IT finance teams process, interpret, and communicate financial and operational data. From budgeting narratives to cost allocation transparency, LLMs offer intelligent automation and strategic augmentation for core practices within ITFM.

Beyond just text generation, LLMs support broader natural language processing tasks:

- **Named Entity Recognition (NER):** Extract company names, project IDs, financial instruments.

- **Sentiment Analysis:** Gauge confidence levels in stakeholder communications
- **Text Summarization:** Distill long procurement or budget proposals into key points.

What LLMs are available and how do you access them?

LLMs are accessible through platforms like OpenAI, Google, and Hugging Face, which provide APIs or open-source models. These tools can be integrated into financial systems to support a very wide variety of use cases.

Challenges with LLMs

For IT Finance professionals, caution is key. Consider these challenges when bringing LLMs into your practice:

Hallucinations: LLMs may fabricate plausible but incorrect facts – especially in financial contexts. LLMs can reflect data biases or generate inaccurate content (“hallucinations”). To mitigate risks, implement validation steps using human-in-the-loop review.

Bias in Data: If trained on skewed datasets, models may introduce unintended risks. To help mitigate this, use specially constructed prompts specific to IT Finance.

Explainability: Outputs may lack transparency, complicating audit trails and stakeholder trust. To mitigate this risk, maintain audit trails for LLM-generated outputs.

Overall, organizations should combine LLMs with rule-based systems, validate model outputs using domain-specific checks and educate users on the limitations and ethical use of AI.



Strategic Impact of LLMs for IT Finance

For IT Finance, LLMs can interpret large volumes of financial and operational text. This positions them for use across the ITFM Practice with the following benefit potentials:

Objectives for LLMs in IT Financial Management

OBJECTIVE	LLM VALUE PROPOSITION
Increase reporting efficiency	Automate generation of financial summaries and insights
Enhance decision support	Translate complex data into clear, actionable language
Improve stakeholder engagement	Create personalized, intuitive financial communication
Strengthen cost transparency	Clarify service value through natural-language explanations

Practice-Level Integration

Budgeting

The goals of using LLMs during the planning period would be to improve planning cycles, narrative quality, and variance analysis. During the budgeting process, budget coordinators

and managers can use LLMs to draft budget narratives, variance explanations, and historical insights. You could auto-generate budget justifications and summaries from financial data. In this way, they would assist in collaborative forecasting by interpreting historical patterns and stakeholder inputs. LLMs could be integrated into Finance budgeting platforms and ITFM automation platforms for real-time commentary generation. This would enhance storytelling and context, reducing manual effort in recurring reports.

Investment Management

The Goals of using LLMs in this part of the practice would be to support portfolio analysis and business case development. True predictive forecasting and Portfolio Financial Management are areas many IT Finance Groups struggle with. Leverage LLMs to summarize investment proposals and risk assessments from extensive documentation, making the ongoing management in this area more streamlined.

LLMs could extract ROI narratives and/or key metrics from the usually unstructured inputs, and then summarize proposals, taking manual data parsing out of the loop and freeing up time for deeper analysis. They could also identify redundant or low-impact investments through text clustering. A System could have embedded, or you could leverage tools that apply

Natural Language Processing (NLP) to scan business cases for strategic alignment and ROI signals.

Cost Modeling

The overall goals of using LLMs in the cost modeling processes would be to improve ease of model creation, as well as assist with interpretation and creation of narratives around the model outputs.

Practitioners spend substantial time on creating rules and distribution keys for a cost model, prototypes from multiple vendors already show that it is feasible to have an LLM create proposals for allocation logics. A simple example could be the analysis of texts available in cost vouchers, e.g. A vendor or even a service name that allows for a direct allocation to the respective service may be discovered and used.

Building cost models is a skill that some IT Finance teams have invested in over the last decade, however being able to analyze the results and do What If modeling is still a challenge for them. LLMs can generate executive briefs from simulation results for faster review cycles, Translate complex model outputs into executive-friendly language. They could also Analyze cost-driver trends and suggest optimization opportunities and conduct comparative analysis across different cost model outputs.

Bill of IT

LLMs in a Bill of IT, either for show back or chargeback, could automate service cost and consumption explanations and enhance the creation of actionable impacts for the organization outside of IT. By generating service descriptions, cost breakdowns, and usage narratives or creating tailored billing communication for different business units LLMs could transform reporting to be more transparent and self-service without significant team member effort. Embedded into an ITFM automation platform, LLMs could be used to answer user queries regarding service consumption using chat-driven interfaces.

Cost Allocation

LLMs can be leveraged in cost allocations to enable accountability and communication of shared service costs. By analysis of outputs and calculations, they can Clarify allocation rules and logic to non-finance stakeholders. An LLM could be used to automate allocation explanation reports at department or project level or summarize impacts of allocation changes on business performance. An LLM embedded into an automation platform could empower business-facing analysts with LLM-driven assistants to improve stakeholder engagement, allowing them to use natural language questioning and reducing friction between stakeholders and the IT Finance team.

Future Strategy

In the future, LLMs will unlock broader opportunities in ITFM such as conversational cost analytics dashboards, real-time financial assistant chatbots, and continuous budget forecast refinement via language input. As LLMs evolve, they'll continue to reshape IT finance functions – from automating reporting to enabling predictive cost modeling through language. The goal isn't just efficiency, it's unlocking intelligence hidden in your financial text streams.

Large Quantitative Models (LQMs) – An IT Finance Perspective

What are LQMs?

Large Quantitative Models (LQMs) represent a specialized class of artificial intelligence designed to uncover insights from structured numerical data. Unlike LLMs, which excel in processing and generating natural language, LQMs focus on identifying quantitative relationships, forecasting trends, and modeling financial systems with mathematical precision. These models apply a range of techniques – from statistical inference to physics-based simulations – to tackle complex numerical challenges across finance and IT operations. Their strengths lie in tasks that demand rigor, accuracy, and dynamic modeling, such as cost prediction, risk evaluation, and portfolio optimization. LQMs outperform traditional statistical and machine learning models by incorporating cross-domain data – such as market sentiment, macroeconomic indicators, operational data and volume metrics – to generate more robust and realistic forecasts.

How LQMs Learn: A Two-Stage Training Process

LQMs undergo a disciplined training process that consists of two distinct phases:

1. Pretraining

The model is exposed to extensive financial datasets such as historical market prices, economic indicators, and corporate financial records. During this phase, LQMs build a foundational understanding of patterns, relationships, and behaviors across different quantitative domains.

2. Fine-Tuning

The pretrained model is adapted for specific use cases, today these commonly include, but are not limited to stock price prediction, portfolio optimization, or risk management. This pretraining could be for any specific use case that data is available for. This customization allows the model to excel in narrowly defined financial scenarios with high accuracy.

What LQMs are available today and how can you access them?

There are several commercially available pretrained models that can be refined for your uses, but most of the LQM use today is done in proprietary models that give significant market advantage to the organization. Some LQMs (e.g. Sand-

boxAQ) are available via Google Cloud Marketplace or NVIDIA DGX Cloud, and most require licensing. There are a few open-source LQMs that exist; most require fine tuning on proprietary data that you would provide, and would require some internal development to be user friendly.

FinanceGPT Labs

also integrates to Teams

- **Focus:** Quantitative finance – portfolio optimization, risk modeling, and forecasting.
- **Model Type:** VAE-GAN-based LQMs tailored for financial data.
- **Access:** Currently experimental; enterprise partnerships or custom deployments are typical.

Talbot West Cognitive Hive AI (CHAI)

- **Focus:** Modular LQMs for forecasting, scenario modeling, and symbolic computation.
- **Model Type:** Ensemble systems combining LQMs with symbolic reasoning.
- **Access:** Consultation-based access for enterprise clients.

SandboxAQ's AQBioSim & AQChemSim

- **Focus:** Drug discovery, materials science, cryptography, and navigation.

- **Model Type:** Physics-based LQMs trained on molecular, chemical, and biological data.
- **Access:** Available via SandboxAQ's enterprise platform, often deployed through Google Cloud and NVIDIA DGX infrastructure.
- **Use Case:** Biopharma teams simulate molecular binding, toxicity, and efficacy before lab testing.

Challenges with LQMs

As LQMs gain traction in ITFM for cost forecasting, budgeting, and scenario modeling, several practical and strategic hurdles have emerged that finance leaders should anticipate.

Proprietary Model Limitations

Many of the most advanced LQMs are proprietarily developed by organizations where predictive capability in public markets offers significant competitive advantage. For example, BloombergGPT is optimized for financial news and market analysis but is not publicly available for broader enterprise use. Internal LQMs trained on proprietary corporate data provide targeted forecasting capabilities but lack cross-organizational applicability, making their insights non-transferable.



Emergence of Pretrained Platforms

To address these gaps, we're seeing the rise of platforms like SandboxAQ, which offer pretrained LQMs tailored to specific domains (e.g., quantum optimization, health-care simulation). These models typically require fine-tuning on an organization's unique datasets to yield meaningful predictions, echoing trends in open-source LQM development where initial pretraining is followed by enterprise-specific customization.

Data Availability for Fine-Tuning

Access to clean, complete, and historically consistent data is a recurring challenge. During typical ITFM or TBM engagements, clients commonly struggle with producing even one full fiscal year of historical financials due to system silos and restrictive access controls. To fine-tune LQMs effectively, IT FP&A and data analytics teams often need elevated privileges across enterprise systems, which may introduce governance and compliance considerations.

Managing Accuracy and Volatility

LQMs introduce statistical nuance that can challenge traditional expectations around model consistency. Unlike static models, LQMs may output variable results based on small shifts in input assumptions or prompt phrasing. To mitigate risk:

- **Set clear expectations** with stakeholders about model sensitivity and volatility.
- **Institute version control** and scenario locking for financial presentations.
- **Benchmark models** against established metrics (e.g., forecast error thresholds) to validate performance over time.

Strategic Impact of LQMs for IT Finance

For IT Finance, LQMs can help analyze, correlate and even amend and improve large data sets. This positions them for use across the ITFM Practice with the following benefit potentials:

Objectives for LQMs in IT Financial Management

OBJECTIVE	LQM VALUE PROPOSITION
Increase reporting efficiency	Identify and highlight deviations/anomalies for review
Enhance decision support	Create alternative scenarios to compare and evaluate
Improve stakeholder engagement	Identify and correct/complete data inaccuracies and inconsistencies
Strengthen cost transparency	Analyze recommendations for cost savings and usage optimization

Practice-Level Integration

LQMs are already transforming key financial functions outside of IT Finance. **Siemens** reported a 10 % improvement in forecast accuracy by integrating AI-driven models into their

FP&A processes. IT Finance directors should leverage their successes within IT Finance to bring world class methods into their ITFM practice. By integrating LQMs into ITFM systems, finance teams can gain deeper clarity into financial trends and outcomes, enabling smarter, faster decision-making.

Some other ways that LQMs are used in IT Finance today include:

- **Revenue & Expense Forecasting:** Predicting financial outcomes with greater accuracy, even when historical data is sparse.
- **Fraud Detection:** Identifying anomalies and patterns that signal potential financial misconduct.
- **Risk Management:** Modeling exposure scenarios and stress-testing forecasts.
- **Derivative Pricing:** Generating realistic options pricing and implied volatility curves.
- **Forecast Enhancement:** Supplementing limited historical data to improve model reliability.

Budgeting

Using AI in budget analysis is an unexplored area for IT Finance but could add actionable insights and help to define steps to manage variances in the future. Correctly fine-tuned models could provide high-fidelity modeling of spend patterns and variances that would feed into the budget process.

Investment Management

Today, forecasting and variance analysis for OpEx spend is a rear-view window activity, an accountability activity after the fact. This requires accounting skills to tie the plan to the general ledger actual transactions exactly but is always an explanation of what happened. What if the IT Finance team could start to predict the variances that are likely to happen, and the risks associated with those, and then work with the business to decide whether to act or not? LQMs would not create the “official forecast” that is entered into organizational systems of record but instead would be internal analysis models and reporting. LQMs fine-tuned for forecast variance prediction would be able to model behavioral patterns of budget managers and project lifecycle trends and identify the likelihood of over- or under-forecasting based on historical variance and modeled future trends. LQMs could transform this analysis into IT service portfolio analysis where IT services are treated as investment assets. In this case, the LQM could

evaluate performance based on rates, total cost of ownership (TCO), and business impact. Both would provide increased risk analysis, quantifying uncertainty in forecasts and simulating potential overspend or underspend scenarios across fiscal periods. Considering the project portfolio optimization portion of investment management, LQMs in other areas of IT Finance have successfully been used to automate waterline analysis to prioritize high-value initiatives, and to model project risk, delay patterns, and resource utilization.

Cost Modeling

If you’re exploring LQMs for internal forecasting or cost modeling, consider starting with a hybrid architecture: use LLMs for data extraction and transformation, then feed structured outputs into pretrained LQMs for simulation and optimization. This layered approach balances accessibility with precision. This can also be used to compare internal service costs against external market data or identify pricing gaps and optimization opportunities. LQMs in the cost modeling process could enable cost take-out opportunity identification by detecting underutilized resources and inefficient usage patterns and recommending actionable cost-saving strategies beyond traditional FinOps tools. Although LQMs are not currently used in ITFM cost modeling, they are increasingly being used to elevate cost modeling from static spreadsheets



to dynamic, simulation-driven decision tools. Here are some compelling examples across industries:

1. Construction & Infrastructure

- **Use Case:** Estimating total project costs under varying material, labor, and regulatory conditions.
- **LQM Approach:** Combines parametric modeling with probabilistic simulations (e.g., Monte Carlo) to forecast cost ranges and risk-adjusted budgets.
- **Example:** Bridge construction projects use LQMs to simulate cost impacts of design changes, weather delays, and supply chain disruptions.

2. Software Development

- **Use Case:** Forecasting development costs based on code complexity, team size, and delivery timelines.
- **LQM Approach:** Parametric models like COCOMO (Constructive Cost Model) use historical data and algorithmic formulas to estimate effort and cost.
- **Example:** Tech firms use LQMs to compare agile vs. waterfall methodologies in terms of cost efficiency.

3. Energy & Utilities

- **Use Case:** Modeling installation and operational costs for renewable energy systems.

- **LQM Approach:** Probabilistic models simulate turbine performance, maintenance schedules, and grid integration costs.
- **Example:** Wind farm developers use LQMs to optimize turbine placement and predict long-term ROI under different energy pricing scenarios.

4. Pharmaceutical R&D

- **Use Case:** Estimating drug development costs across clinical trial phases.
- **LQM Approach:** Simulation-based models incorporate trial success probabilities, regulatory timelines, and manufacturing scale-up costs.
- **Example:** Biopharma teams use LQMs to prioritize compounds with the highest cost-to-success ratio.

5. Retail Supply Chain

- **Use Case:** Modeling cost-to-serve across distribution channels.
- **LQM Approach:** Activity-based costing (ABC) combined with demand forecasting and logistics simulations.
- **Example:** Retailers use LQMs to compare costs of direct-to-consumer vs. wholesale fulfillment strategies.

Bill of IT

LQMs provide precision calculations based on service-level data by modeling cost drivers (e.g. labor, licensing, infrastructure) with far greater granularity than traditional allocation methods. They can also simulate cost behaviors under varying consumption patterns – enabling more accurate charge-back or show back figures.

Example: Instead of allocating cloud storage costs by average usage, LQMs can model actual peak demand periods, resulting in fairer and more realistic service pricing.

Cost Allocation

Because LQMs can analyze historical consumption and forecast service costs based on demand trends, business growth, or seasonal variation, this empowers IT Finance to anticipate shifts in usage and prepare budgets proactively.

Use Case: Predicting rising costs for remote collaboration tools based on historical adoption curves and headcount growth. LQMs could also be used for what-if scenario simulation, allowing stakeholders to ask “what if” questions: What if we double usage of virtual desktops? What if our storage cost drops by 15 %? These simulations support strategic decision-making around IT service provisioning and optimization.

Impact: Enables both business and finance teams to assess cost implications before deploying new tools or scaling services.

Future Strategy

LQMs are becoming the digital equivalent of a seasoned finance manager – one who understands historical context, behavioral nuances, and systemic trends. Their integration into ITFM workflows enables smarter forecasting, proactive risk mitigation, transparent cost allocation, Data-driven investment decisions.

These are strategic advantages for IT Finance teams because it provides:

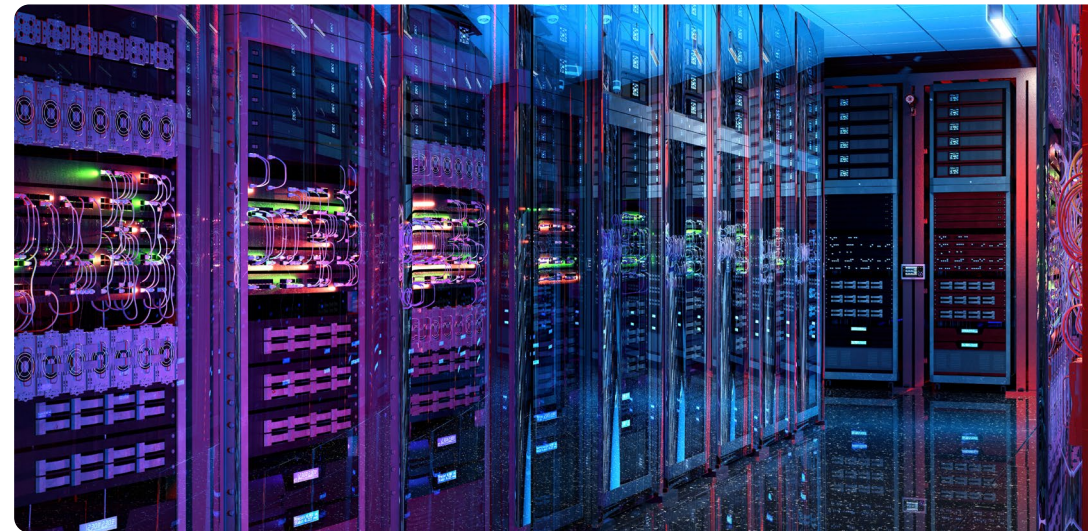
- **Accuracy at Scale:** Model thousands of variables with mathematical precision.
- **Efficiency Boost:** Automate analytical tasks traditionally done by financial analysts.
- **Adaptability:** Fine-tune models for industry-specific or organization-specific datasets.
- **Complexity Reduction:** Simplify the interpretation of multi-layered financial systems.

As financial complexity grows in hybrid IT environments, LQMs will play a vital role in transforming ITFM into a predictive, data-powered practice. Their unique ability to model dynamic systems and produce actionable insights sets the stage for more resilient and informed financial planning. This is an entirely new form of analysis for IT Finance, bringing the FP&A mindset to work to improve IT.

Summary Contrast – LLM vs LQM

In understanding the role of AI, it's crucial to distinguish between two primary types of AI models used extensively in contemporary IT finance management: Large Language Models (LLMs) and Large Quantitative Models (LQMs). LLMs are linguistic models, trained on copious volumes of textual data to perform a wide range of tasks, from providing comprehensive answers to questions to generating human-like text compositions. Their effectiveness lies in their ability to process, interpret and generate language in a way that's increasingly indistinguishable from human output. Their application within IT finance management spans across automated document interpretation, report generation, processing client inquiries, and more. On the other hand, LQMs are computational leviathans, crafted to manage vast datasets for the analysis of variable relationships, scenario simulation, and prediction. Fundamental to finance and engineering disciplines, these models are indispensable due to their ability to provide strategic insights and aid data-driven decision-making. In IT finance management they can be used to anticipate budgetary needs, conduct 'what-if' analyses, rebalance portfolios and even predict market trends.

Recognizing the nuanced capabilities and applications of LLMs and LQMs is a necessary foundation for effectively integrating AI into IT finance management. Throughout this whitepaper, we explored these models in depth, illustrating their unique functionalities, distinct applications, and overall significance in IT finance management.



AI in IT Finance: LLMs process language for insights; LQMs analyze data for strategic decisions.

Large Language Model versus Large Quantitative Model

Large Language Model (LLM)

Are sophisticated AI tools trained on extensive textual data, capable of generation human-like text and performing various linguistic tasks. Their utility ranges from answering questions to writing essays.

Characteristics

- Largely available from hyperscalers
- Vast capabilities of one model
- 80 % correctness is still “good enough” as humans can “interpolate” and understand also incomplete/imperfect sentences
- Imperfections and “hallucinations” are not easy to spot due to high quality
- Volatility of outcomes is not as big of a problem

Large Quantitative Model (LQM)

Are advanced computational tools capable of managing vast data sets to analyze quantitative relationships, simulate scenarios, make predictions and draw conclusions.

Characteristics

- Lower availability and typically from “niche” providers
- More specialized models for certain use cases
- For some use cases 80 % correctness is not “good enough”, 99 % + expected in financial context (if not 100 %)
- Fitting use cases exist, but have not been specified and adopted by most organizations
- Imperfections are equally hard to identify
- Volatility of outcomes is challenging



Training Data

LLMs are trained on unstructured datasets like text and imagery, connecting data types. In contrast, LQMs are trained on structured numerical data sets and first-principles equations that govern the real world (mathematics, chemistry, physics).

Outputs

LLMs excel at generating creative outputs, conversational interactions, or content. LQMs, however, are geared towards statistical analyses, mathematical forecasting, and formulating precise outcomes based on simulations.

Reliability

LQMs are designed to provide reliable and accurate outcomes because they are grounded in fundamental quantitative principles that are always valid. This means they are less prone to “hallucinations” (outputs recognizing non-existent patterns) than LLMs.

Selected Use Cases – How AI Assists in the ITFM Workflow

Before we dive into some use cases in more detail we want to elaborate on the general areas where AI can deliver benefits in the context of an IT Financial Management practice that leverages an automation platform. The integration of AI can significantly enhance the operational efficiency and strategic capability of ITFM in three key areas:

1. Human – Ai Interaction: AI-driven transformation of software user interaction highlights a pivotal shift from conventional modes towards intelligent systems. This evolution encompasses the integration of text and speech interfaces, epitomizing the concept of conversational AI. These interfaces allow for streamlined process execution via tools like “chat with your data” and “voice-driven planning,” harnessing the power of LLMs to abstract away complexity and democratize data accessibility.

2. Enhanced Support for Modeling & Planning: AI can circumvent the intensive human effort traditionally steered towards planning and modeling tasks such as cost and workflow modeling. By offering proposed values and models, AI

translates into tangible benefits in terms of optimizing time and financial resources while bolstering accuracy. Machine learning algorithms can analyze historical data, discern patterns, and propose data-driven models, rendering the planning process more efficient and reliable.

3. Actionable Insights and Decision Support: The core objective of implementing ITFM is the attainment of business transparency, an indispensable precursor for strategic decision-making. AI can enhance this transparency by mining valuable insights from complex data and suggesting specific actions. Advanced AI algorithms capable of predictive analytics can guide budget allocation and cost optimization, thereby catalyzing result-oriented decision-making and strategic execution.

Ultimately, the integration of AI in ITFM is not merely about algorithmic optimization. It involves leveraging the convergence of user interaction, modeling support, and decision facilitation to transform ITFM into an engine driving strategic financial management.

AI for ETL and Data Cleansing – Extract, Transform, Load (ETL)

LLMs in ETL Intelligent Automation & Enrichment

Extract

- **Unstructured Data Parsing:** LLMs extract structured fields from PDFs, emails, chat logs, and scanned documents using schema inference.
- **Auto-schema Generation:** LLMs infer field names and datatypes from raw text or semi-structured sources.
- **Multimodal Ingestion:** Combine OCR, speech-to-text, and LLMs to extract data from images, audio, and video.

Transform

- **Natural Language Transformation:** Users describe logic in plain English; LLMs convert it to SQL, Python, or dbt scripts.
- **Data Cleaning & Normalization:** LLMs detect and correct malformed entries, inconsistent formats, and encoding issues.

- **Semantic Chunking:** Break long documents into context-aware segments for downstream processing or embedding.
- **Entity Recognition & Relationship Mapping:** Enrich data with named entities and linkages for knowledge graph construction.

Load

- **Embedding Generation:** Convert text into vector embeddings for semantic search or retrieval-augmented generation (RAG).
- **Metadata Enrichment:** Add source, timestamp, and author info to support lineage and governance.
- **Destination Routing:** LLMs suggest optimal storage targets (e.g., vector DBs, data lakes, warehouses) based on usage.

LQMs in ETL Simulation, Forecasting & Optimization

Extract

- **Data Sampling for Model Calibration:** LQMs ingest historical data to calibrate cost, performance, or risk models.
- **Time-Series Data Integration:** Extract structured data for simulation inputs.

Transform

- **Scenario Modeling:** LQMs simulate outcomes under different assumptions (e.g., cost drivers, demand shifts).
- **Probabilistic Enrichment:** Add uncertainty bounds or confidence intervals to transformed data.
- **Monte Carlo Simulation:** Generate synthetic datasets for stress testing or forecasting.

Load

- **Model-Ready Structuring:** Format transformed data for ingestion into LQMs (e.g., matrix formats, time-series arrays).

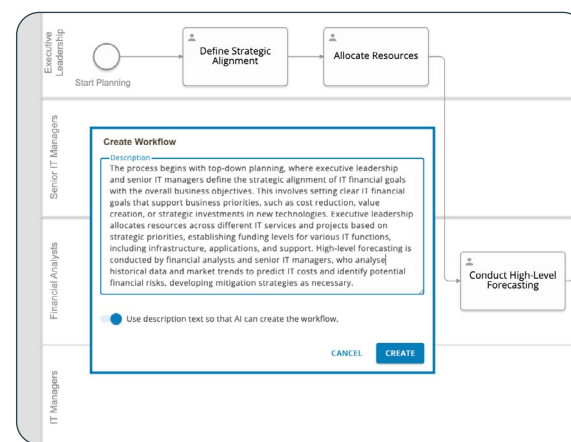
- **Feedback Loop Integration:** Load simulation outputs back into BI tools or dashboards for decision support.

Workflow Automation

Organizations are adopting innovative methods to simplify workflow management and boost efficiency. Business Process Management (BPM) now leverages Artificial Intelligence (AI) to streamline operations and reduce manual workload so precision and productivity are maintained. An AI-enabled ITFM toolkit transforms processes into visually intuitive, BPMN-based models using advanced AI techniques that understand complex textual descriptions. In ITFM, workflows clarify task sequences and define roles, crucial for interdisciplinary constructs. Well-designed workflows reveal bottlenecks and inefficiencies, driving process optimization and resource allocation. For example, a budgeting workflow begins with collating budget requests from IT departments, progresses through validation, and ends with formulating the annual budget so transparency and accountability are ensured.

Similarly, an IT cost allocation workflow identifies costs, determines drivers, and selects allocation bases before proceeding to cost allocation and chargeback reporting, culminating in analyzing financial impacts. Workflows also enhance automation potential, crucial for digital transformation. With RPA

and AI, tasks like data collation and validation are automated, freeing human resources for strategic roles. AI's deep learning algorithms enable automatic task generation by interpreting process descriptions, creating organized task lists so human error is reduced and productivity enhanced. This automation extends to role management within workflows, known as 'lanes'. The AI platform assigns tasks based on user roles so coordination is optimized, ensuring smooth task flow among parties. Transforming textual descriptions into BPMN-based processes by automating task creation and role assignments.



Example for a workflow creation based on natural language description.

Data Anomaly Detection

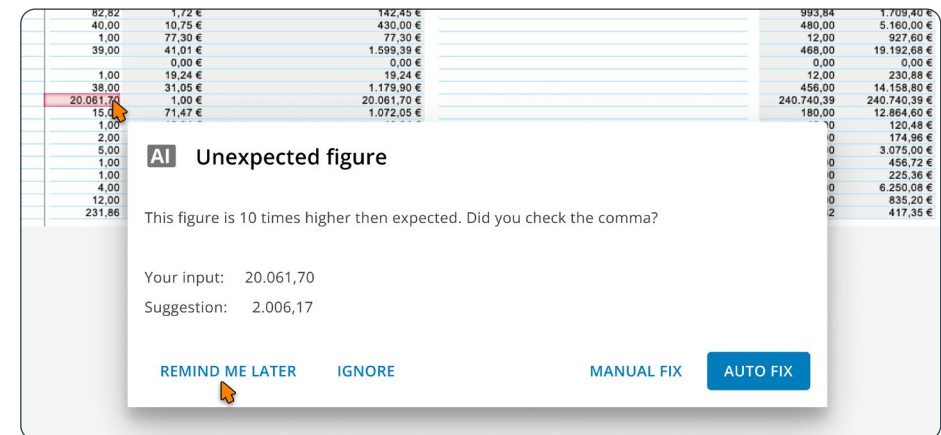
The traditional statistical methods, although effective to a degree, fail to offer the comprehensive insight and accuracy required to manage complex financial landscapes. Artificial Intelligence (AI), specifically machine learning algorithms, have shown enormous potential in addressing this gap and transforming anomaly detection.

Utilizing AI enables users to identify irregularities and discrepancies seamlessly in real-time thus preventing potential fiscal risks. Machine learning models can be trained to recognize patterns and deviations in large data sets associated with financial transactions, thus highlighting anomalies that may signify issues such as fraud, errors or significant changes in business patterns. The increasingly sophisticated AI algorithms can adapt over time, learning from new data, and enhancing their predictive capabilities. This adaptability results in higher accuracy rates and fewer false positives than traditional methods.

The integration of AI in anomaly detection not only ensures enhanced security but also aids in operational efficiency and informed decision making in IT Financial Management. Par-

ticularly in scenarios with lots of individual data points (e.g. consumption volumes on the technical services layer like RAM consumption from Databases) it is very difficult for the human eye to spot irregularities.

An AI assistant feature like shown below can help point out those anomalies for the user to review and either accept or correct – and the model then learns from every interaction.



Sample for anomaly detection – software prompt to a user about an unexpected figure.

“Chat With Your Data”

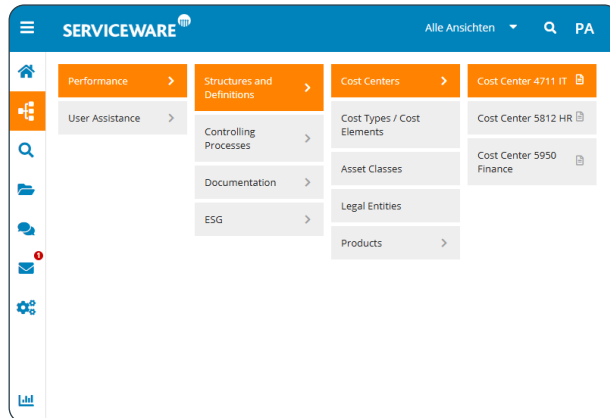
Based on the different model applications we differentiate between the LLM use case (“Chat with your qualitative data”) and the combined LQM/LLM use cases (“Chat with your quantitative data”).

“Chat with your (quantitative) data” in the context of IT Financial Management describes the interaction with financial data through conversational AI interfaces, like chatbots or voice assistants. This form of interaction allows users to articulate their data-related queries in natural, human language and receive instant responses. Instead of manually navigating through complex database structures or creating intricate query languages, users can simply “chat” with their data or ask direct questions and receive straightforward responses. In IT Financial Management, this kind of interaction can simplify access to financial records or metrics, such as real-time expenditure, budget allocations, charges, and more. For example, a user could ask an AI interface, “What was our total expenditure on IT infrastructure last quarter?” and receive an immediate reply based on the underlying data.

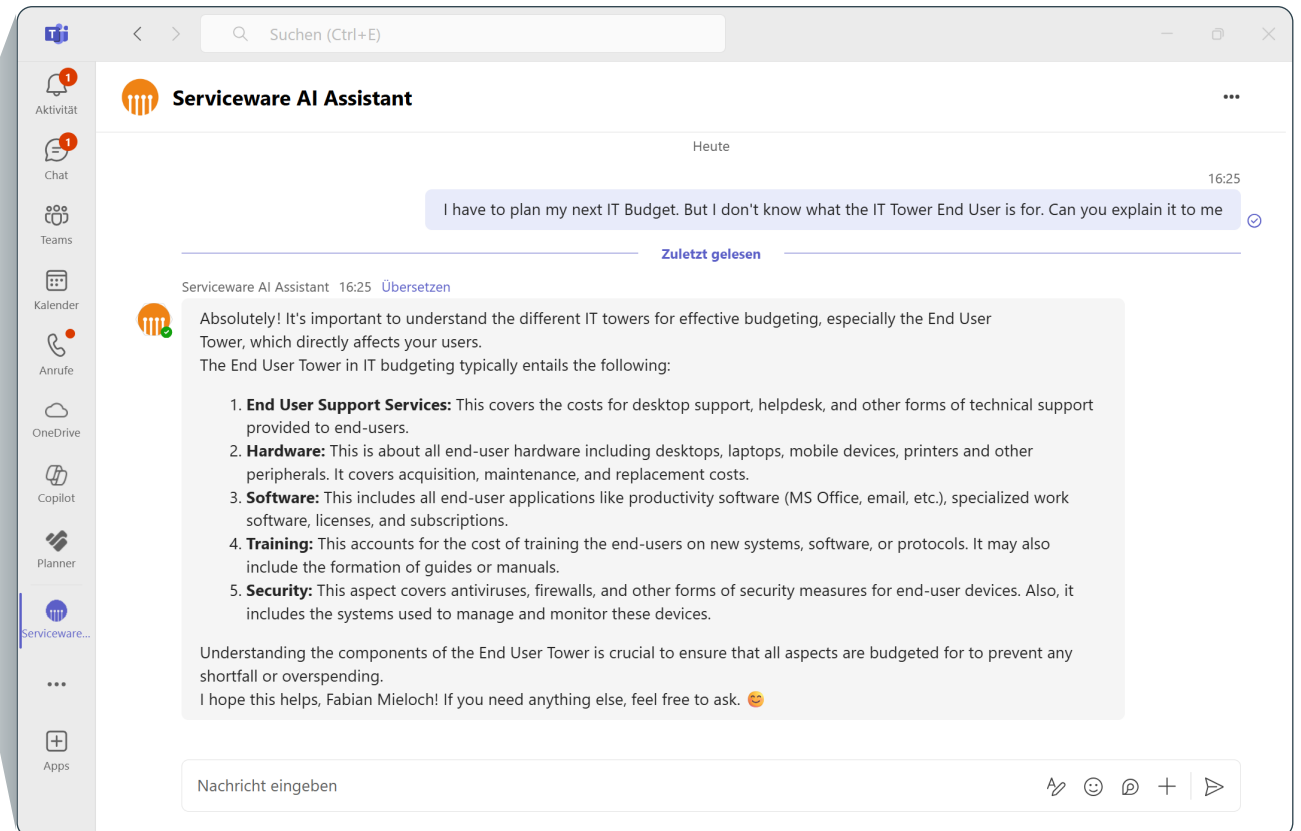
This process not only democratizes data access across the organization, regardless of technical skills, but also optimizes the time and efficiency of IT Financial Management teams. By asking the right questions, users can gain actionable insights, make data-driven decisions, and strategically plan their investments, thus ensuring effective IT Financial Management. For simple queries just asking to select/filter/display certain data elements this is a purely LLM based use cases as LLMs are capable of this data analysis and presentation. When mathematical operations or a more intense analysis (e.g. on correlations) are required LQMs need to come into play.

“Chat with your qualitative data” is a less known use case but equally valuable, as in the context of IT Financial Management there is a lot of relevant qualitative data out there e.g. rules and procedures, definitions of terminologies that are often very organization specific. Therefore, building a structured knowledge base with quality assured data using a LLM to query the knowledge base can be a big help for the professionals in the field.

Chat With Your Qualitative Data – Example



*Example for a chat on a qualitative question
based on a structured knowledge base.*



Summary – Strategic Integration of AI in IT Financial Management

AI is set to reshape IT Financial Management, with LLMs already delivering value through automation, insight generation, and enhanced decision support. However, the greatest potential lies ahead – in LQMs, which are rapidly evolving but not yet mature enough for broad application.

Current challenges with LLMs and especially LQMs – such as data volatility, result inconsistency, and limited transparency – require careful evaluation and disciplined integration. These hurdles are not technological alone; they demand a shift in mindset among finance professionals, particularly controllers. Adopting AI in financial domains means embracing agility, iteration, and probabilistic reasoning – principles that diverge from traditional accounting norms.

IT directors and executives should position AI initiatives in ITFM toward value-driven analytics rather than strict accounting use. Early investments in process design, governance, and user education will help scale adoption responsibly, bridging the gap between innovation and financial stability.



Authors



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Nancy (Nan) Braun has worked in and with Corporate IT for over 25 years. She has been a featured speaker and presenter at many IT Financial Management (ITFM) and Technology Business Management (TBM) conferences over the last twelve years, helping IT Business Analysts learn and grow.

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Serveware SE is delivering today several ready-to-use AI functionalities to the ITFM customers with an inspiring roadmap out of its AI Research Lab at the Technical University of Darmstadt.

About Serviceware

Serviceware empowers organizations worldwide to reinvent their service processes – digital and highly automated. At the core of our portfolio is the AI-native Serviceware platform. It transforms services across industries, aligns technology and service costs directly with business value, and intelligently connects people, processes, and data to form the foundation for service excellence in modern enterprises.

Since 2018, Serviceware has been harnessing the potential of artificial intelligence in service management. The continuous advancement of the platform is driven by Serviceware's AI competence center in close collaboration with TU Darmstadt, one of Germany's leading technical universities.



The Serviceware platform includes solutions for Enterprise Service Management, IT Financial Management, Knowledge Management, Corporate Performance Management, and Field Service Management – deployable individually or seamlessly integrated. Our portfolio is complemented by strategic consulting, managed services, and a strong network of partners in IT security, data management, and endpoint management.

Serviceware serves over 1,100 customers worldwide across diverse industries, including 18 DAX-listed companies and 5 of the 7 largest German enterprises. Headquartered in Idstein, Germany, the company employs over 450 people across 14 international locations.

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