Market Guide for Artificial Intelligence Applications in IT Service Management

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Initiatives: I&O Operations Management

AI applications in ITSM use AI and GenAI to augment and extend ITSM workflows, providing intelligent advice and actions for IT support teams. I&O leaders can use this Market Guide to identify solutions and decide if needs can be met using ITSM platforms or if third-party extensions are required.

Overview

Key Findings

- The popularity of generative AI is prompting I&O leaders to look beyond previous-generation chatbot features in IT service management (ITSM) platforms.
- ITSM platforms provide a variety of AI features, but I&O leaders often purchase add-ons or integrate stand-alone products from third-party vendors when they require more extensive capabilities.
- While products from overlapping markets, such as AIOps platforms, also contribute to AI activities in I&O, the market for AI applications in the ITSM market is differentiated by the primary data source being ITSM information and metadata.
- Vendors frequently reference AI even when lacking AI capabilities, and seldom provide details of specific features, making it difficult for I&O leaders to identify which solutions may meet their requirements.

Recommendations

- Identify which AI use cases will provide the most transformational value, while being sufficiently feasible, by using Gartner's AI Use-Case Prism for IT Service Desk before determining your purchasing requirements.
- Exploit the benefits of generative AI capabilities beyond commoditized chatbots by investing in solutions that provide automated advice and actions to augment and enhance your I&O team's workflow throughout all ITSM practices.
- Build a shortlist for AI applications in ITSM that balances overhead with feature opportunities by including both ITSM platforms and stand-alone products in your evaluation.

Market Definition

Gartner defines artificial intelligence applications in IT service management as tools that augment and extend IT service management (ITSM) workflows using AI. These analyze ITSM data and metadata (primarily found in ITSM platforms) to provide intelligent advice and actions on ITSM practices and workflows, such as IT service desk and support activities. This software can either be a stand-alone product, capabilities within an ITSM platform or an add-on to an ITSM platform.

I&O leaders are challenged by rising costs of support, and declining employee engagement and productivity.

AI capabilities enable I&O teams to optimize IT support and service management processes (such as incident and problem management) through insight and automation. This can lead to tangible reduction in costs, such as labor savings by handling support issues and requests automatically, faster resolutions, and improved accuracy in triage, categorization and expert identification. In addition to addressing overheads, AI solutions can improve the employee-facing user experience and enhance IT's relationship with the business consumer. Some features, such as intelligent risk advisory, can help I&O leaders avoid disruptions and provide reliable IT services.

Generative AI capabilities are increasingly sought-after to automate content generation and improve communications. Examples include summarizing information, such as knowledge base articles or case work log updates, and generating major incident notifications.

The Use-Case Prism: Artificial Intelligence for IT Service Desk provides further details on the AI and generative AI opportunities that tools such as AI applications for ITSM are able to address.

At a minimum, an AI application for ITSM must generate advice or actions on ITSM practices, using AI- and machine-learning-assisted analysis of ITSM data and metadata.

The standard capabilities for this market include:

- Virtual support agent as a business-consumer-facing conversational interface.
- Simple knowledge discovery:
  - Solution and knowledge matching from one or more knowledge sources.
  - Public knowledge discovery using public large language models (LLMs).
- Agent advice via:
  - Intelligent triage, for guidance on prioritization.
  - Intelligent categorization of cases by service, configuration item or solution.
  - Intelligent escalation of cases before they hit timed service-level thresholds.
  - Intelligent risk advisory of planned changes using similar release history (clustering).
  - Intelligent swarming to identify experts and resolver groups.
- Anomaly detection powered by case clustering (with incidents, problems, changes, knowledge articles, configuration items) to provide:
  - Major incident detection when IT support teams receive incidents from end users that are very high-impact, but not already detected by monitoring or AIOps platforms.
  - Problem detection when multiple incidents are reported that may share a common problem and root cause.

The optional capabilities that are uncommon or differentiating features for this market include:

- Extended knowledge discovery:
  - Private knowledge discovery using a custom LLM trained on proprietary knowledge only.
  - Universal knowledge discovery via either custom pretrained LLMs or retrieval-augmented generation (RAG).
- Extended agent advice:
  - Root cause analysis for problem management based on related case cluster analysis.
  - Process optimization to identify bottlenecks and waste, and optimize workflows in the ITSM platform.
  - Emotion AI to warn of poor service experiences and/or low digital employee experience (DEX) scores when business consumers contact the IT service desk.
  - Identify a potential resolution to an incident by proposing a knowledge article or runbook.
- Content generation using generative AI:
  - Knowledge creation of solutions generated from case work log notes or collaborative support hub conversations.
  - On-demand communications to generate and refine case updates or major incident notifications.
  - Case summarization:
    - Incoming request summarization to help experts understand new incidents and requests.
    - Intelligent postcall wrap-up to refine and standardize agent shorthand case work log notes.
    - Summarization of major incidents for postincident reviews
  - Natural language case extraction.

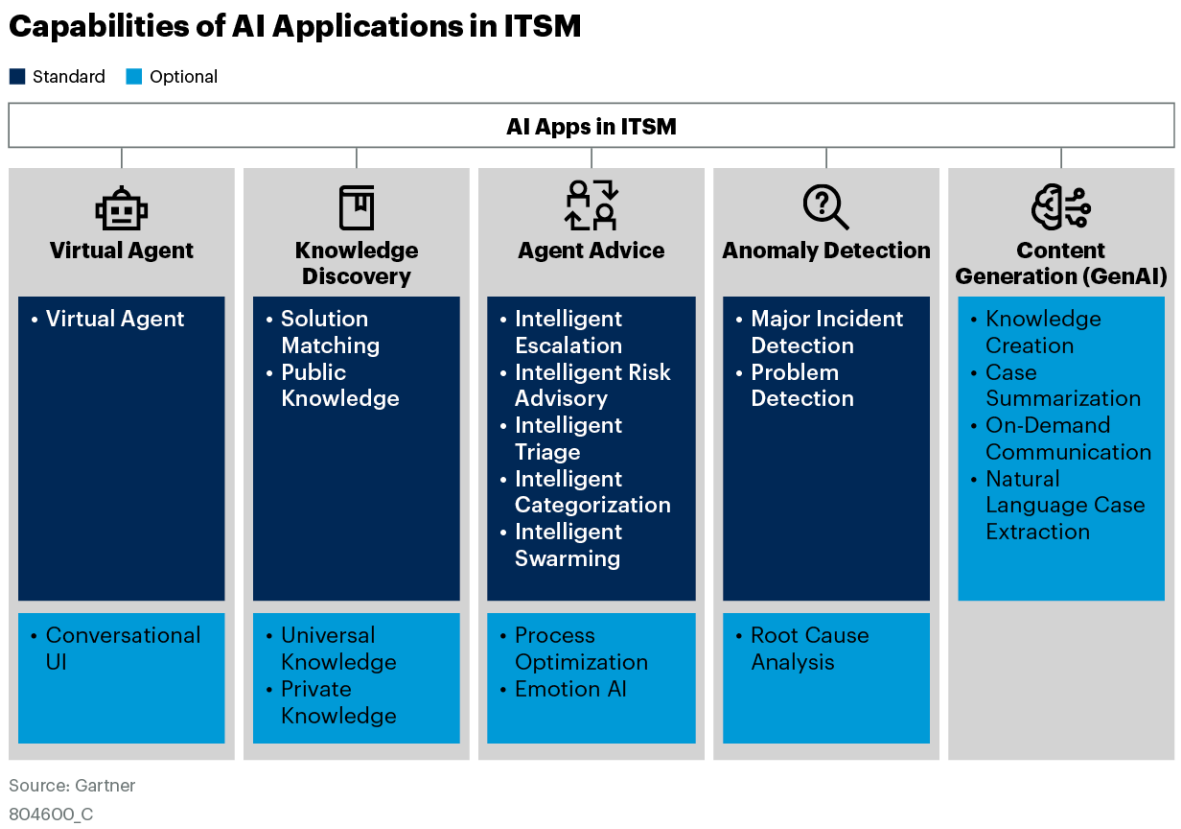
- Conversational interface for infrastructure and operations (I&O) staff to carry out actions or generate reports using natural language and LLM integration.

Market Description

AI applications in ITSM provide ready-to-use automated advice or actions on ITSM practices, powered by AI and machine learning. These rely on ITSM information (such as cases, metadata and workflows), alongside supplementary data sources such as unstructured text in natural language conversations, events and alerts from monitoring tools, public knowledge bases and large language models (LLMs). The primary source of ITSM data is typically an ITSM platform (see Market Guide for IT Service Management Platforms).

The capabilities of these tools largely align with enablement of the use cases described in Use-Case Prism: Artificial Intelligence for IT Service Desk. The labels and descriptions match the labels in that Use-Case Prism and by broader AI use-case families (as defined in AI Zodiac: Mapping AI Use Cases to Techniques). Figure 1 provides an overview of the capabilities of AI applications in ITSM.

Figure 1: Capabilities of AI Applications in ITSM



Market Direction

ITSM platforms have had rule-based scripts and run books for ITSM practices (such as request fulfillment) for several years. Additionally, I&O leaders have been deploying virtual support agents, or more general-purpose conversational platforms as an alternative to human contacts with the IT service desk. This has most commonly been intended to deflect simple requests and issues to reduce human-contact volumes, but some I&O leaders are more focused on the potential to improve employee engagement and reduce wait times.

The launch of public access to OpenAI's ChatGPT in November 2022 led to a significant increase in attention and interest in generative AI capabilities through 2023. I&O leaders are now looking for solutions that can create and modify content, and this has led to higher expectations of conversational platforms. As a result, the market has lost interest in previous-generation chatbot features in ITSM platforms.

Several ITSM platform vendors have some of the standard and optional capabilities in their products, or at least in their roadmap, although they report that customer adoption of these features is still low. All the vendors in the Market Guide for IT Service Management Platforms say they have a virtual support agent, and most aim to provide agent advice features that leverage case clustering. Adoption of these features follows a similar pattern. Just over half of vendors referenced in that Market Guide already provide some kind of LLM integration, and the rest are planning to roll this out in 2024.

Adoption of LLM integration is much higher in stand-alone and add-on products. For those vendors, generative AI and features branded with the term "copilot," popularized by Microsoft 365 Copilot, are central to their go-to-market.

Process optimization is the rarest capability. Case summarization is also uncommon, but is technically straightforward to implement using LLM integrations, so we expect to see that become more widespread through 2024.

There is a noticeable split in the type of LLM integration throughout all the products. Many provide API-based access to LLMs, such as GPT 2.5 and GPT 3 for public knowledge discovery, but solutions that leverage proprietary data are more fragmented.

One approach, private knowledge discovery, is to build or provide private LLMs (sometimes called small language models [SLMs]), which are trained and fine-tuned for domain-specific information and use cases.

Another approach is universal knowledge discovery, which uses retrieval-augmented generation (RAG) to locate and insert the proprietary information into a subsequent prompt to a public LLM. This is usually a more scalable method than building multiple private LLMs. This is not yet common (fewer than half of the vendors leveraging LLMs do this now), but this should become more generally available through 2024 as awareness of such approaches grows.

Nevertheless, some larger vendors take a more infrastructure-based view and prioritize the private knowledge discovery approach. This is also preferred by I&O leaders who are concerned about the privacy and security of proprietary data. LLM Prompt Engineering — A Needed Skill for Software Engineering Teams provides further detail.

As I&O leaders must choose between incumbent ITSM platforms and add-on products specialized in AI today, there is a significant chance that some smaller vendors may be acquired and merged into larger offerings in this market. (See Note 1.) It is difficult to predict which vendors will be involved. The high likelihood of this means that I&O leaders should discuss how this may potentially affect them when signing contracts, and continue to monitor developments.

Market Analysis

I&O leaders explain that they are challenged by rising costs of support and declining employee engagement and productivity. AI capabilities enable I&O teams to optimize IT support and service management processes (such as incident and problem management) through insight and automation. This can lead to:

- A tangible reduction in costs, such as labor savings by handling support issues and requests automatically.
- Faster resolutions and improved accuracy in triage, categorization and expert identification.
- Improved employee-facing user experience and enhanced relationship with the business consumer.
- Deeper insight into service, practice and staff performance through analysis of processes, tickets and workflows to identify opportunities for improvement.

Generative AI capabilities are increasingly sought-after to automate content generation and improve communications. Examples include summarizing information, such as knowledge base articles or case work-log updates, and generating major incident notifications. Use-Case Prism: Artificial Intelligence for IT Service Desk provides further details of the AI and generative AI opportunities that tools such as AI applications for ITSM are able to address.

Market Adjacencies and Overlap

There are several other solutions from overlapping and adjacent markets that offer AI capabilities that can be used for these use cases, but they have other primary data sources and are not dependent on ITSM workflows. The other overlapping and adjacent markets are:

Overlapping Market: AIOps Platforms

AIOps platforms analyze operational telemetry and events, and identify meaningful patterns that provide insights to support proactive responses. Their primary data source is IT infrastructure telemetry and events. They may optionally leverage ITSM data, such as the configuration management system, but the main interaction with ITSM platforms is to create incidents or changes as an output.

See Market Guide for AIOps Platforms for more information.

Overlapping Market: Enterprise Conversational AI Platforms

Enterprise conversational AI platforms automate multiple chatbot use cases within the enterprise, across their life cycles and across multiple business units. These software platforms are used to build, orchestrate and maintain multiple use cases and modalities of conversational automation. The primary market focus for most is external customer support, but increasingly these are also being used as a conversational agent for IT support, HR and other employee-facing functions. Their primary data source is application-specific. When used for IT use cases, they often leverage an IT knowledge base, and can provide status updates of cases in an ITSM platform.

See Magic Quadrant for Enterprise Conversational AI Platforms for more information.

Adjacent Market: Digital Employee Experience Tools

Digital employee experience (DEX) tools measure and continuously improve the performance of and employee sentiment toward organization-provided technology. Near-real-time processing of aggregated data from endpoints, applications, employee sentiment and organizational context surfaces actionable insights and drives self-healing automations, optimized support and employee engagement. Insights and self-healing can enhance employee interactions with self-service portals and chatbots. They also help IT support, asset management, procurement and other teams whose work depends on reliable information. Although these enable the endpoint anomaly response AI use case for IT service desk, they primarily use endpoint telemetry and events as their data source, and do not need ITSM data to operate.

See Market Guide for DEX Tools for more information.

Adjacent Market: Security Information and Event Management

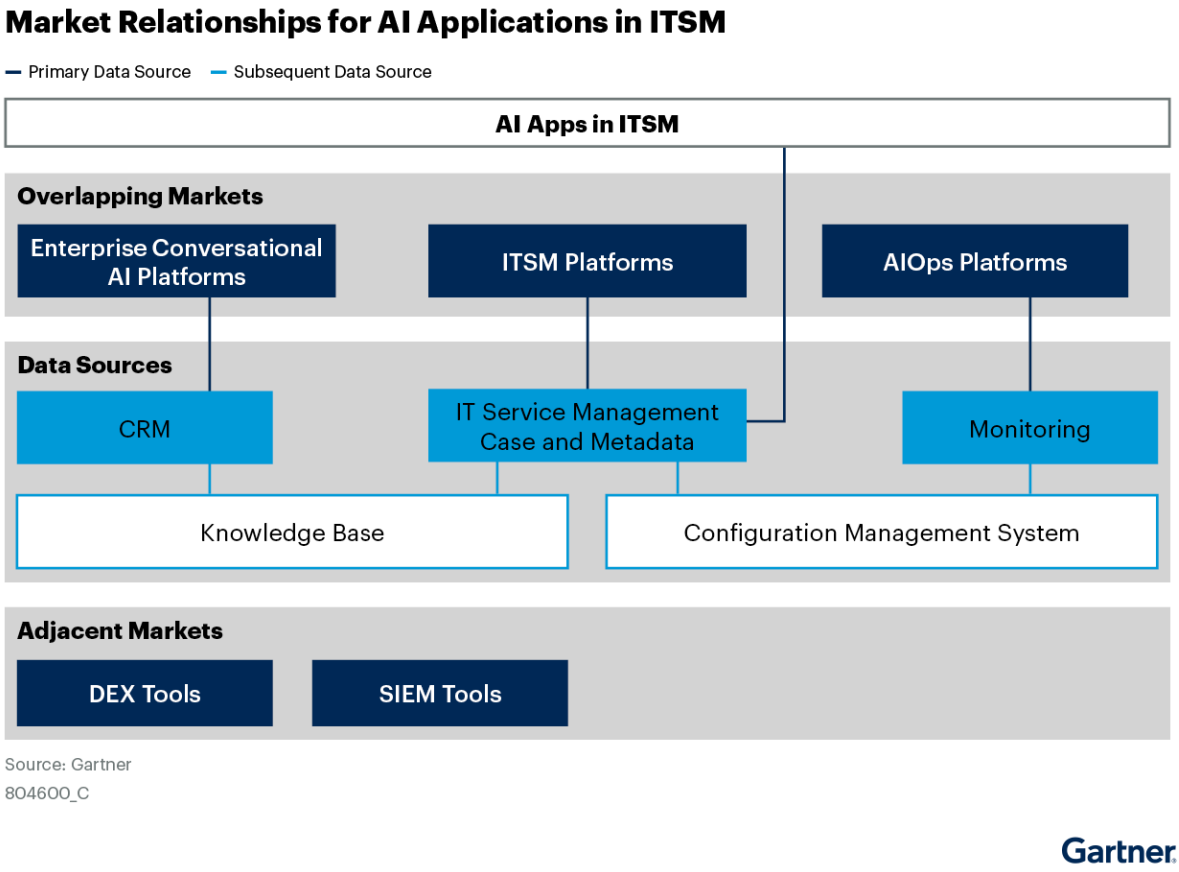
Security information and event management (SIEM) is a configurable security system of record that aggregates and analyzes security event data from on-premises and cloud environments. SIEM assists with response actions to mitigate issues that cause harm to the organization, and satisfy compliance and reporting requirements. Security-operations-related AI use cases that align with ITSM include:

- Synthesizing and analyzing threat intelligence.
- Generating remediation suggestions for application security.
- Identifying and graphing key security events in logging systems.
- Conducting risk and compliance identification and analysis.

See Magic Quadrant for Security Information and Event Management for more information.

The relationship of these overlapping and adjacent markets to AI applications in ITSM and common data sources is represented in Figure 2. This illustrates the market scope for AI applications in ITSM.

Figure 2: Market Relationships for AI Applications in ITSM



AI and generative AI solutions are emerging in many markets, and several of those can be used for the benefit of ITSM, as well as many other workflows and situations. The differentiating aspect of AI applications is that ITSM data and metadata is the primary source that these solutions require to operate.

Use Cases

There are three broad use cases for AI applications in ITSM, shown in Table 1 below.

Table 1: Use Cases for AI Applications in ITSM

Use Case	*Description*	*Primary Capabilities*
Virtual support agent	I&O wants a conversational platform to supplement human-provided contact channels, and automate incidents and requests.	Virtual support agent, knowledge discovery, conversational interface
ITSM advisory	I&O wants to improve the performance of service and support teams by using AI to provide insight that helps them make better decisions, orchestrate more efficient processes and prompt beneficial actions.	Agent advice, anomaly detection, emotion AI, process optimization
Content generation	I&O wants to leverage generative AI to streamline production of new content, such as knowledge articles or reports.	Knowledge creation, on-demand communication

Source: Gartner

These use cases can be combined. Some I&O leaders will be more focused on just one. The “entry-level” use case is often a virtual support agent, with either agent advisory or content generation following, depending on the desired focus for efficiency or employee engagement.

Representative Vendors

The vendors listed in this Market Guide do not imply an exhaustive list. This section is intended to provide more understanding of the market and its offerings.

Vendors are adding new AI and generative AI features and integrations at a rapid rate. Some of the AI capabilities offered by these vendors are not yet generally available to all customers, but are functional in early access.

I&O leaders looking to obtain AI applications in ITSM must choose between incumbent ITSM platforms and separate products or add-ons. Vendors that also have an ITSM platform are included in this list. All products featured rely on ITSM data to carry out the AI application functions.

Vendor Selection

Table 2: Representative Vendors in AI Applications in ITSM

(Enlarged table in Appendix)

Vendor	Product Name	HQ
Aisera	AI Service Desk	Palo Alto, California, United States
Amelia	Amelia Conversational AI	New York, New York, United States
Atlassian	Atlassian Intelligence	Sydney, Australia
AutomationEdge	DiscoveryEdge	Houston, Texas, United States
Avaamo	Intelligent Virtual Assistant	Los Altos, California, United States
BMC Software	Helix	Houston, Texas, United States
EasyVista	EV Service Manager	Noisy-le-Grand, France
Espressive	Barista	Santa Clara, California, United States
Everbridge	xMatters Service Intelligence	Boston, Massachusetts, United States
Freshworks	Freddy Insights	San Mateo, California, United States
Halo Service Solutions	HaloITSM	Stowmarket, United Kingdom
IFS	IFS.ai	Linköping, Sweden
Leena AI	Leena AI	San Francisco, California, United States
Moveworks	Moveworks	Mountain View, California, United States
OpenText	Service Management Automation X (SMAX)	Waterloo, Canada
PagerDuty	PagerDuty Operations Cloud	San Francisco, California, United States
Rezolve	Rezolve.ai	Dublin, California, United States
ServiceNow	ServiceNow IT Service Management	Santa Clara, California, United States
SymphonyAI	Symphony AI IT Service Management	Palo Alto, California, United States
Swish AI	Swish.ai	Tel Aviv, Israel

Gartner (December 2023)

Market Recommendations

- Develop a generative AI strategy for your organization beyond just I&O, as generative AI functionality is new to market and developing quickly, and current offerings may suffer early-product limitations.
- Use the Use-Case Prism: Artificial Intelligence for IT Service Desk to determine which AI use cases will provide the most transformational value, while being sufficiently feasible to implement quickly.
- Avoid overcommitting and overspending on new AI tool subscriptions by building a roadmap with implementation timelines, and purchase solutions that can be used over the next 18 months.
- Avoid overspending by evaluating general, nonspecialist tools (like ChatGPT) for short-term-value ad hoc activities, such as exploratory pilots.
- Look beyond chatbots and avoid overinvesting in features that are already approaching commoditization.
- Check if the incumbent ITSM platform can already meet these needs. If an add-on or upgrade is required then assess the licensing and implementation costs before comparing with third-party solutions.

Acronym Key and Glossary Terms

Cluster Analysis	Cluster analysis, also known as clustering, is the process of categorizing a collection of data objects into distinct groups, referred to as clusters. The primary objective is to ensure that objects within the same cluster are more alike to each other than to those in other clusters.
Generative AI (GenAI)	Generative AI techniques learn from representations of data and model artifacts to generate new artifacts.
Large Language Model (LLM)	Large language models are AI foundational models that have been trained on vast amounts of unlabeled textual data. Applications can use LLMs to accomplish a wide range of tasks, including question answering, content generation, content summarization, retrieval-augmented generation (RAG), code generation, language translation and conversational chat.

Note 1: Gartner's Initial Market Coverage

This Market Guide provides Gartner's initial coverage of the market and focuses on the market's definition, rationale and dynamics.

Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

Use-Case Prism: Artificial Intelligence for IT Service Desk

Market Guide for AIOps Platforms

Magic Quadrant for Enterprise Conversational AI Platforms

Market Guide for DEX Tools

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Atlassian	Atlassian Intelligence	Sydney, Australia
AutomationEdge	DiscoveryEdge	Houston, Texas, United States
Avaamo	Intelligent Virtual Assistant	Los Altos, California, United States
BMC Software	Helix	Houston, Texas, United States
EasyVista	EV Service Manager	Noisy-le-Grand, France
Espressive	Barista	Santa Clara, California, United States
Everbridge	xMatters Service Intelligence	Boston, Massachusetts, United States
Freshworks	Freddy Insights	San Mateo, California, United States
Halo Service Solutions	HaloITSM	Stowmarket, United Kingdom
IFS	IFS.ai	Linköping, Sweden
Leena AI	Leena AI	San Francisco, California, United States
Moveworks	Moveworks	Mountain View, California, United States
OpenText	Service Management Automation X (SMAX)	Waterloo, Canada

Vendor	*Product Name*	*HQ*
PagerDuty	PagerDuty Operations Cloud	San Francisco, California, United States
Rezolve	Rezolve.ai	Dublin, California, United States
ServiceNow	ServiceNow IT Service Management	Santa Clara, California, United States
SymphonyAI	Symphony AI IT Service Management	Palo Alto, California, United States
Swish AI	Swish.ai	Tel Aviv, Israel

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