

# **Business Activity Monitoring – Economic Impact on Industry Verticals**

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## **Abstract**

The importance and popularity of Business Activity Monitoring (BAM) is slowly spreading from large organizations to small and medium organizations due to the maturity of BAM technologies and an increased awareness. This article primarily covers challenges of various industry verticals, BAM implementation benefits, and a practical approach for realizing BAM solution.

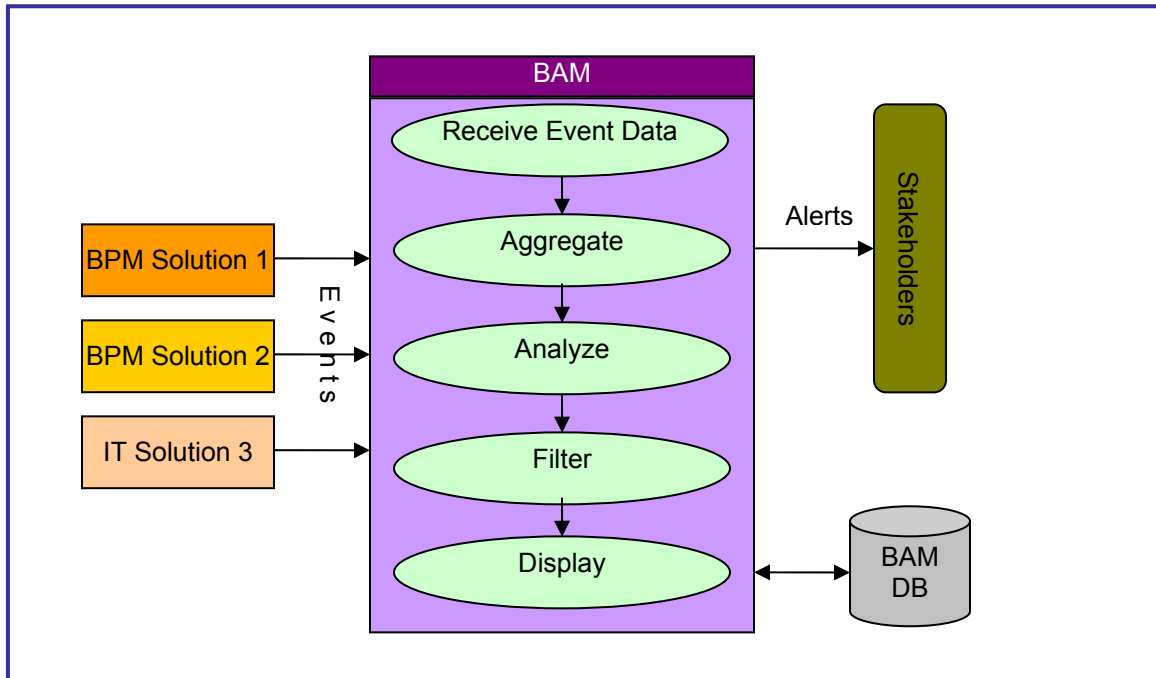
## **Introduction**

People, processes, systems, and customers are crucial for the success of an organization. These are four pillars of an organization. The objective of Business Process Management (BPM) is to provide integrated solutions for these pillars to improve organizational performance at much lower costs. Here performance does not mean an organization's internal performance; it has to reflect on the crucial fourth pillar, i.e., the customer. Anything that is done towards this objective can be termed Business Process Management.

Corporate performance is measured around these four pillars of an organization. To attain operational excellence and sustain competitive edge, organizations must have the capacity to measure and manage their performance in real-time.

Gartner defines BAM as a function or application that uses event processing and operational data polling to monitor the status and values of key business indicators in real-time, and issue alerts when indicators are out of normal, or specified conditions are met.

Business activity monitoring (BAM) refers to the aggregation, analysis, and presentation of relevant and timely information about business activities inside your organization and involving your customers and partners. – *Tibco*



**Figure 1. Business Activity Monitoring**

“You can't manage what you don't measure” is an old management adage very accurate in today's world. Compared to last decade, organizations are under constant pressure because of competition, compliance requirements, high customer expectations, escalating costs, and an increase in the number of interacting partners. Finally, due to globalization, there is an increase in the complexity of the remote management of branch locations, subsidiaries, and partners. BAM helps companies with more powerful mechanisms than typical business intelligence and data warehousing solutions to monitor and prevent any opportunity of error in real-time. At the same time, BAM is not supposed to replace BI & DW concepts but to complement them. All these non-BAM concepts happen to measure the past performance and help to prevent the mistakes in the future, but they really do not control the present.

*“Typical approaches to Business Intelligence are no longer sufficient, especially for Business Process Management and Business Activity Monitoring where the goal is to drive the real-time enterprise” - Mike Lough, Vice President of Marketing for Covelight Systems*

The latest trend of organizations is to concentrate on their core competency and to outsource all remaining non-core business functions to third-party providers. Even though organizations are reaping benefits from this trend, many of them are severely affected by on-time delivery commitments promised by third-party providers. BAM can help in such scenarios by bringing work-in-progress visibility and control over day-to-day operational transactions.

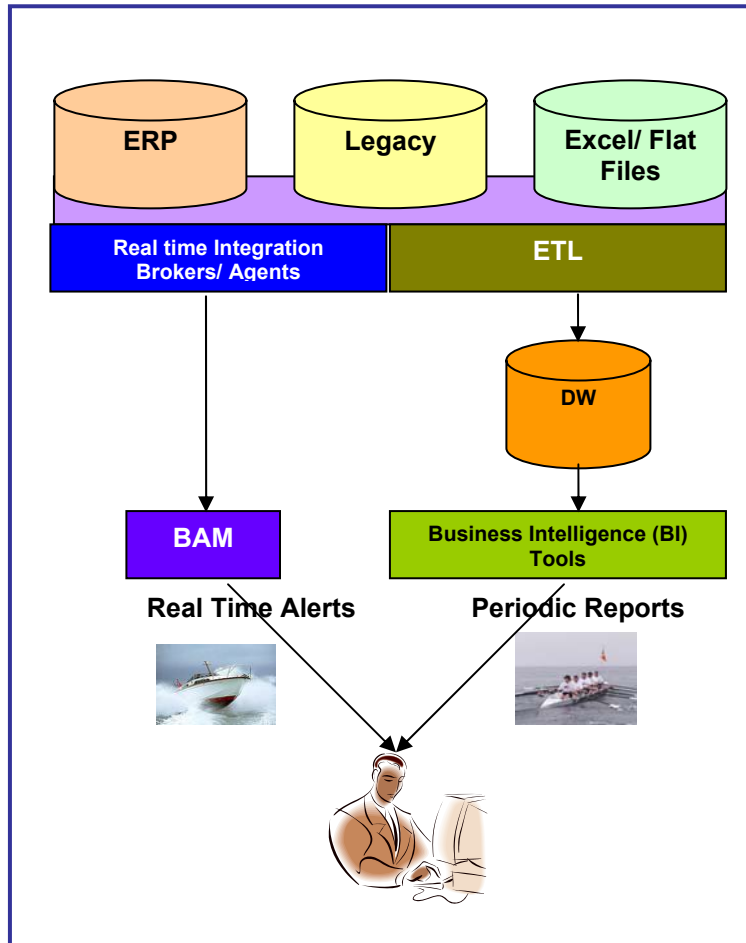


Figure 2. BAM Vs BI/DW towards RTE

### Primary Challenges Addressed by BAM

- BAM shortens the latency period between a significant business event and its notification to the right person in the organization.
  1. Industry verticals such as Energy and Utilities and Communications can use BAM to detect demand and supply disparity and emergencies.
  2. Healthcare industry can use it to watch HIPAA compliance errors, to detect outbreaks of illnesses and to find lost or contaminated blood.
  3. Financial services can use it for fraud detection.

Corporations not only benefit by observing threats but also by perceiving the opportunities in real-time, such as the occurrence of a large sales order.

- Operations managers are finding it difficult to manage targeted service level agreements (SLA) due to lack of confidence and to uncertainty relating to the reports generated from different points of time and sources. BAM not only provides visibility on multiple business events through dashboard but also allows process benchmarking. Operational intelligence

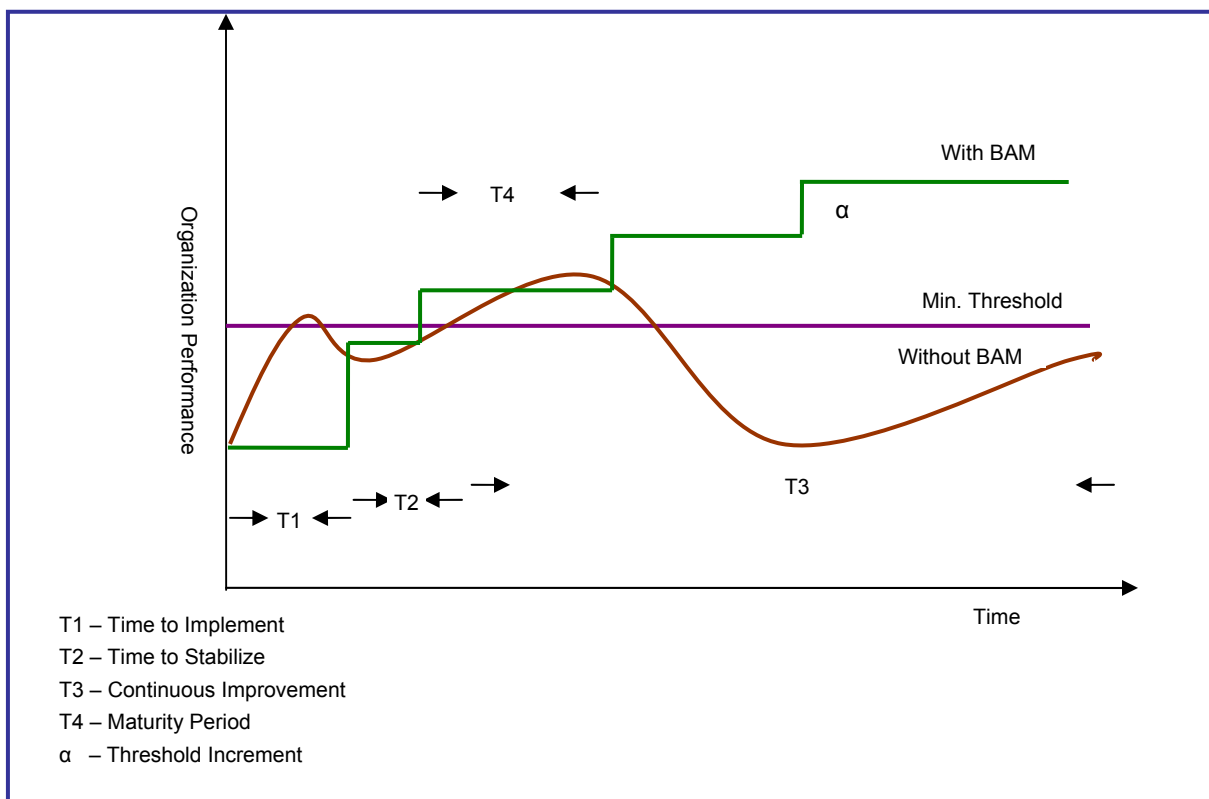
that is gained from BAM can be fed back to process governance team, allowing continuous improvement to the process.

- BAM allows a greater degree of process automation by closed-loop systems.

*“To automate business process without the ability to quickly assess business health and respond to exceptions is very risky” - Jim Rivera, VP Cape Clear Software*

All organizations currently perform some kind of business monitoring with less than 20% automation. This monitoring is limited to very critical business functions, and it is almost at the end of the value chain by means of manual process controls like daily and weekly reports. Now BAM technology is so matured that organizations can implement it at all critical points, right from the beginning of the value chain (product conceptualization, sales execution, order execution, logistics, and collection) for better control of their operations.

Figure 3, shows typical organization performance. Without BAM, organizations tend to fix issues in a reactive mode when negatively impacted. With BAM, organizations can monitor constantly and fix issues as they occur, in real-time. It is also possible to set higher performance standards through monitor-manage-feedback loop.



**Figure 3. Organization Performance Trend with BAM**

## **BAM Trends (source Gartner <sup>[7,1]</sup>)**

1. Gartner survey reveals that more than 80 percent of BAM projects have a positive ROI.
2. Through 2010, the adoption of BAM platforms will grow at least 200 percent from 2006 levels (0.7 probability).
3. By 2012, BAM solutions will be most frequently sourced from business application vendors (0.8 probability).
4. By the end of 2008, each of the major business intelligence vendors will build or buy BAM functionality (0.7 probability).
5. By 2012, the average BAM latency requirements will decrease to less than one minute, from an average of less than 15 minutes in 2006 (0.7 probability).
6. Organizations that have deployed BAM tend to move onto multiple projects.
7. In the long term, it is expected that most of the BAM deployments will be embedded within business applications.
8. Forrester predicts "Demand for Business Process Management Suites Will Accelerate Through 2009."
9. By 2012, integration costs for problem-specific BAM projects will rise to at least twice the software license costs (0.7 probability).
10. Leading industries in BAM implementation are energy, communications, financial services, and retail/wholesale.

### **Industry Verticals – BAM Benefits**

Every organization is unique in its culture, organizational processes, and its supporting IT landscape. However, due to influence of common external factors, their business issues are more or less similar. Table 1 lists pain areas of some of the verticals and the realized benefits by implementing BAM solutions.

Curtis Robb, CIO of Delta Air Lines and CEO of Delta Technology, highlights that even though Delta meticulously plans its schedule and logistics, it cannot control the weather and other unpredictable events that cause delays. If you have information about a gate change but it reaches customers, suppliers, and employees an hour late, that information is useless. The Delta Nervous System processes 5 million business events each day, dealing with gate, fuel, food, and customer data. The ability to share this information with our employees through BAM has allowed us to transform our business, improve customer service, and reduce costs.

When companies posted advertisements for global positions, "You wouldn't see that job on every region's site right away," says Joan Lawson, Director of Global Integration, Monster.com. Monster.com implemented the Oracle Business Process Execution Language (BPEL) Process Manager, Web Services Manager, Business Rules Engine, Business Activity Monitoring (BAM), and Enterprise Service Bus (ESB). Lawson singles out BAM for praise and suggests that, in future, it might be part of an enterprise portal commitment for Monster.com.

The primary challenge for METRO Group, Germany is to reduce the amount of money lost through goods in stores being out of stock or not on the shelf but in stock. METRO, a retail and distribution giant, successfully resolved this problem by using BAM solution on RFID tags.

Table 1. Business Benefits of BAM solutions

Vertical	Benefits Realized through BAM	Potential Pain Areas
<b>HealthCare – Insurance</b>	1. 50% gain in productivity 2. 10% reduction in customer service calls	Reimbursement Processing
		Fraud Prevention
<b>HealthCare – Hospital</b>	1. 40% gain in productivity 2. 50% reduction in manual steps	HIPAA Compliance
		Claims processing
		Clinical Document Management
		Bed Management
		Infection Control
		On-time patient service
		Emergency service
<b>Retail &amp; Distribution</b>	1. 1-2% of total revenue	Better Inventory Management (Not in stock , in-stock but not in shelf, inventory shrinkage)
<b>Banking/ Financial Services</b>	1. 40% - 80% increase in productivity 2. ~\$50 - \$100 million/ yr. savings in operational cost	Lease Management
		Claims Processing
		Credit Card Application Processing
		Opening/Closing and Changes to Customer Accounts

## **Practical Approaches for BAM Implementation**

There are three models for organizations to implement BAM solutions. Organizations have to pick the right model based on their current conditions. This section describes high-level practical approach for implementing BAM solutions.

1. **Big Bang Model**  
Organization tries to implement BAM solution in Big Bang way, through enterprise wide initiatives covering most business units and geographies. This model is suitable if the organization is either new or is stable but has aggressive targets for growth as a medium to long-term goal. These are forward looking organizations.
2. **Selective Model**  
This model tries to focus on a small sample of processes with maximum pain areas and quickly roll out to other prioritized value stream processes. This model is suitable for organizations that are under tremendous pressure to improve operational performance.
3. **Hybrid Model**  
This model focuses on processes that are in urgent need of attention as well as few processes from value stream. This model is suitable for an organization that is somewhat stable and has aggressive growth targets.

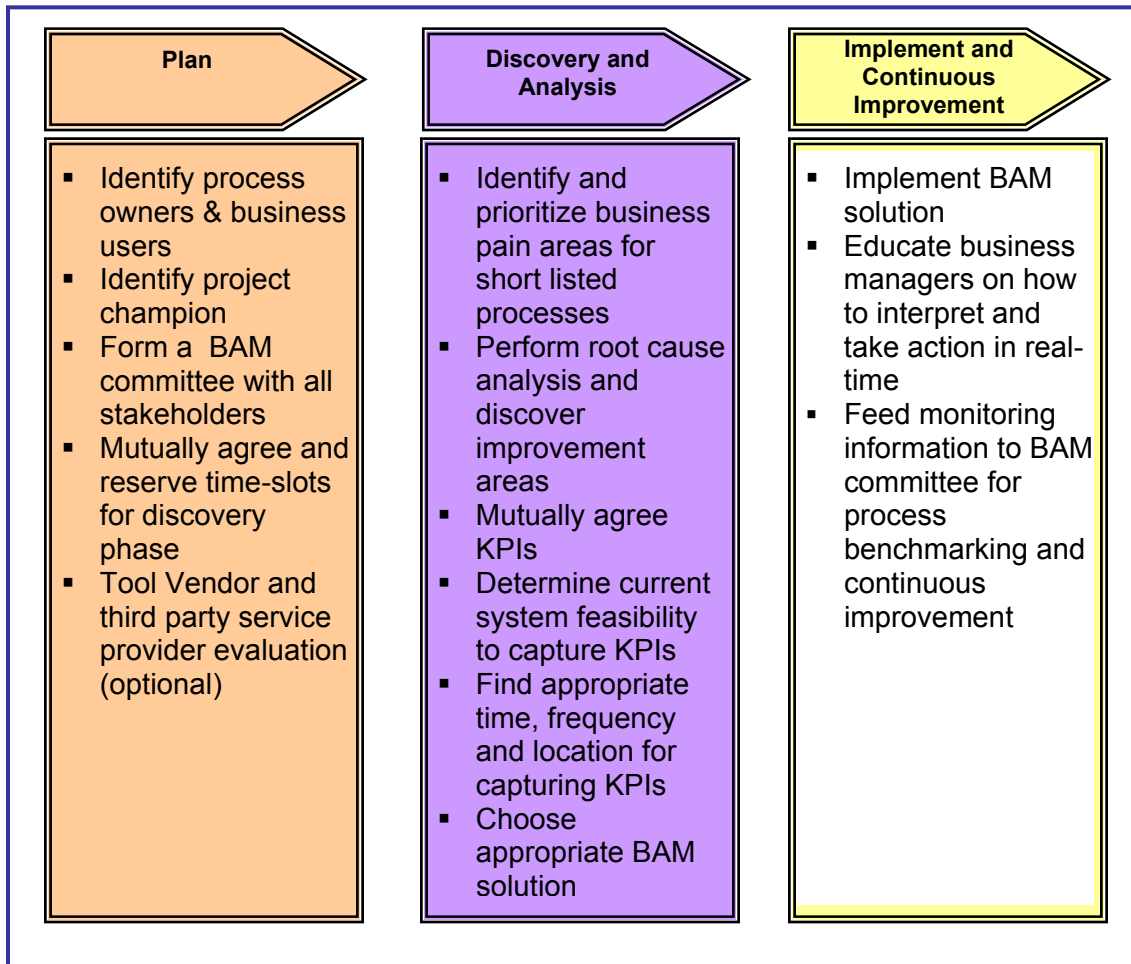
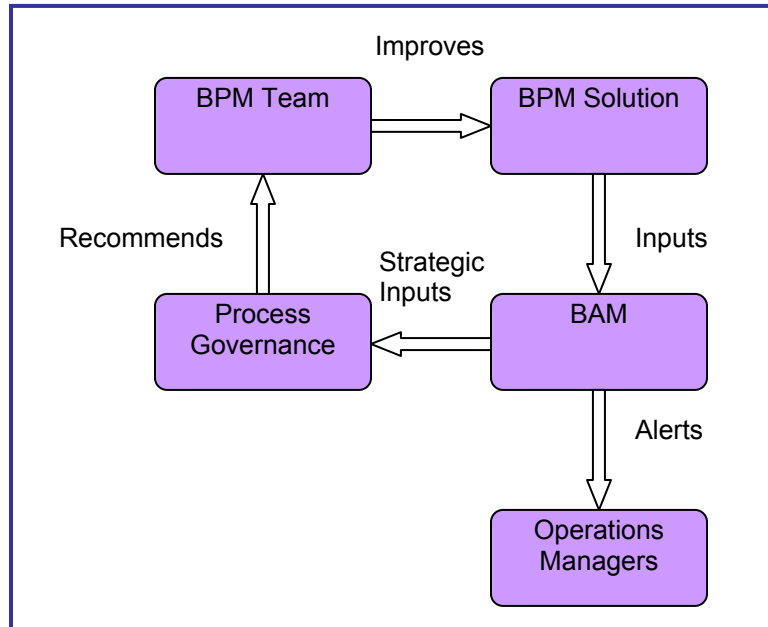


Figure 4. BAM Implementation Approach

The purpose of the Plan phase in Figure 4 is to spread the importance of a BAM engagement and prepare groundwork for the next phase. It is a well-known fact that during a Discovery and Analysis phase, organizations may find more than one BAM solution to improve productivity levels and to attain a higher level of customer satisfaction. The "Implementation and Continuous Improvement" phase should be as effective as possible to reap the benefits for long term. A corporation should define a process around BAM solution to take strategic inputs from BAM and feed it to a process governance team. The process governance team, in turn, analyzes those inputs and provides a direction to the BPM team to refine existing business processes and IT systems.



**Figure 5. Continuous Improvements through BAM**

### Key BAM Vendors

Due to the maturity of BPM and Enterprise Application Integration Technology, it has become easy to implement BAM solutions. BAM Vendors are also designing their products keeping in mind a closed loop solution. Features such as dashboard, correlation of complex events, and predictive analysis, once available at niche products, are slowly becoming available with most vendors at reasonable costs. There are two distinct kinds of BAM solutions.

- Real-time monitoring of business with analytical capabilities and dashboards.
- More advanced BAM that is capable of performing automatic correlation of complex events and predictive analysis through pattern matching of pre-defined threats and opportunities.

Gartner defines a BAM platform as a self-contained product that delivers BAM functionality without other specific software prerequisites. A BAM platform may be aligned or potentially integrated with other tools, such as a business process modeling application or enterprise service bus, but does not require its use. Additional characteristics of a BAM platform include

- Access to a wide variety of events and changing data sources through the use of messaging, adapters, and agents

- A rule editor and continuous operation rule engine with threshold, sequence, and time based processing of user-defined metrics
- A dashboard for the display of real-time metrics and alarms
- Optionally, a historical operational data store for trend analysis

Table 2 Top BAM Vendors

BAM Vendor	Product
Systar	BusinessBridge family of products
Oracle	Oracle BAM
webMethods	BAM is part of full featured webMethods BPM suit
Tibco	Tibco BAM
Cognos	Cognos 8 Business Intelligence
Axway	Synchrony Sentinel

## Conclusion

Business activity monitoring ensures that essential operational intelligence is gathered, analyzed, and acted upon so that organizations have the real-time insight needed to make informed decisions and also to sustain gains already achieved by the organization.

## References

1. Gartner Study Reveals Business Activity Monitoring Growing Value from Gartner – Bill Gassman
2. Business Activity Monitoring (BAM))\_ -- The New Face of BPM – white paper from webMethods, June 2006
3. Top 6 Benefits of Improving Operational Visibility into Business Processes – white paper from TIBCO Software Inc.
4. Enabling the Event-Driven Enterprise by Mike Lough, Vice President of Marketing for Covelight Systems
5. Speeding Toward Business Visibility by Beth Gold-Bernstein, VP Strategic Products and Services, ebizQ
6. Management Update: BAM Enhances Operationally Focused Business Intelligence by Bill Gassman
7. MarketScope for Business Activity Monitoring Platforms, 3Q06 from Gartner by Bill Gassman
8. Success Story: Data Takes Off in Real Time at Delta from TIBCO Software Inc.
9. Business Activity Case Studies from Oracle web site

## Glossary

BAM	Business Activity Monitoring
BI & DW	Business Intelligence and Data Warehousing

BPEL	Business Process Execution Language
BPM	Business Process Management
ESB	Enterprise Service Bus
ETL	Extract, Transform, and Load
HIPAA	Health Insurance Portability and Accountability Act
KPI	Key Performance Indicator
SLA	Service Level Agreements

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