PARADIGM™ technology | ThoughtSpot®

Lens into AI-Driven Self-Service

Self-service business intelligence (BI) is the holy grail for many data-driven enterprises. But answering ad hoc questions is usually a manual and time-consuming process… even with visual discovery tools. Any company seeking to make impactful change – decreasing costs or risks, increasing revenue, creating innovative new products, or making employees and the organization more efficient overall – can do so using today's not-so-secret weapon: data.

Advances in AI and machine learning make gaining insights far *easier* for business users and more *accessible* to a wider range of users:
- Moving away from 'traditional dashboards'
- Automating basic analytical tasks using AI
- Maximizing cloud data warehouse investments
- Addressing and moving beyond the "dirty data" dilemma

BI Landscape Optimization with AI-driven Search

Analytical Reporting
Star Schemas | Historical Data | Granular & Aggregated Data | Intense Querying | Columnar Database | MPP Data Warehouses | Massive Compute Processing

Data Science
Processed Granular Data | Unstructured & Semi-structured Ingestion & Processing | Flat Structures | Massive Compute Power | Historical Data Storage

API Economy
Real-time & Batch Ingestion | Data Marketplace | Third-party Data Management | Caching | In-memory

Intelligent Apps
Enterprise Search | Alerts & notifications | Process Engines | Digital & AI Recommendation Engines, Segmentation, Image Classifiers

Exploration & Experimentation
Exploratory Sandboxes | Data Science Exploration | Analysis Using OLAP-like Structures | Querying & Searching | Beta Apps

Data Democratization
Publish - Subscribe | Download | Compute Processing | Secure File-based Storage | External Connectivity

Operational Reporting
Mostly Current Information | Less History | Light Queries | Near Real-time Processing | Change Data Capture | Traditional RDBMS

TRADITIONAL SOLUTION CHALLENGES WITH CLOUD DATA WAREHOUSES

Traditional tools can't query across the billions of rows of data locked in your cloud data warehouse without choking. They require a federated aggregate data source, a replication of data dashboards, limiting your insights to the data you have connected.

- Inability to use all available data and drill infinitely down or across datasets slows analysts down, forcing them to return to the data warehouse or custom blend data from external sources.
- In most cases, traditional BI tools require injecting middleware between the cloud data warehouse and insights and analytics tools to optimize performance or relay insights to the business users. This increases cost, bloat, and overhead to both manage and secure.
- As on-prem data warehouses require upfront infrastructure expenses, maintenance costs, and careful management of dependencies, traditional BI and desktop ETL tools need much of the same.

BUSINESS DRIVERS OF AUTOMATED ANALYSIS

The amount of data an organization collects, stores, and analyzes has grown exponentially. To address this information explosion, organizations are spending more on business intelligence tools to visualize their vast amounts of data.

Business intelligence tools collect and curate data into pie charts, graphics, and other visuals quickly both on cloud and desktop. Visualizing data is a good first step but creates the need for organizations to further analyze the information they see. Visualizations only provide answers to easy questions like:

- "How is our revenue performing?" or
- "How is the region contributing the most to our bottom line this quarter?"

Business intelligence tools only report on the metrics you explicitly tell them to report upon. There is no analysis performed on data not explicitly specified, meaning you will never find insights you weren't already looking for in the data. With customer behavior, demographics, and influences changing frequently, businesses need a solution that informs them of those changes, such as when a customer segment begins to buy products in a new way, indicating an emerging shift in behavior. Paradigm recently partnered with a big box retailer to highlight insights on these changes within their supply chain. Our Supply Chain 360 solution leveraged adaptive analytics to drive intelligent decision-making, ultimately maximizing the organization's productivity and enhancing customer experience.

If organizations continue creating more enterprise analytics dashboards and hiring more data scientists, they will continue missing important findings in today's data. Things like new customer purchasing trends or fraud patterns will remain hidden. Addressing this problem informs organizations of impactful moments as they happen, correcting course to identify new target segments and increase revenue.

Predicted business intelligence game changers:

- **Comprehensive AI-Driven Insights**: Automate complex data analysis to uncover root causes, understand key business drivers, compare cohorts, and identify meaningful segments in data.
- **Blazing Fast Data Analysis**: Instantly surface insights hidden across data silos. Extract important findings by analyzing billions of data points from multiple sources in seconds.
- **AI/ML for Data Analysts & Business Teams**: Put advanced analysis into the hands of more people. Bring together the power of domain expertise and data science insights.

With the above, find the needle in the haystack quickly and use it to answer questions like:

- What is influencing my marketing actions on my sales?
- What influence are my competitors' actions having on my sales?
- What is driving my competitors' sales?

TRANSFORM SELF-SERVICE BI CUSTOMERS WITH AI-INFUSED ADVANCED ANALYTICS

Building a self-service AI-infused culture doesn't happen instantaneously, it requires a sustained focus and purposeful decision-making over time. Business users utilize dashboards and metrics. Analysts prepare deeper insights to harder questions. Data scientists predict future performance through AI and machine learning capabilities.

Business Users	Analysts	Data Scientists
Natural Language Search	*Automated Insights Discovery*	*Automated Machine Learning*

Business Users
Natural Language Search

- Ad hoc query using plain language
- Smart suggestions and recommendation
- Search metadata and data
- Filtering and comparisons
- Instant visualization
- Low level security and access governance

Analysts
Automated Insights Discovery

- Uncover relationships and trends with embedded ML
- Understand performance change and business outcome drivers
- Discover hidden drivers, segmentation trends, and anomalies
- Narratives + visualizations
- Search for visualizations and custom story creation
- Eliminate manual exploration

Data Scientists
Automated Machine Learning

- Build, automate, and operationalize predictive models
- Create and evaluate models automatically or by point-and-click configuration
- Operationalize models
- Train models on scheduled basis
- Build citizen data science practice

Success Story – Modern Data Platform for Niche Retail Banking Company

Paradigm's client specializes in payments, commercial finance, tax services, and consumer lending to underserved niche markets.

Seeking to empower its business team with real-time access to ad-hoc analytics, the Bank leveraged Paradigm's thought leadership and ThoughtSpot's AI-driven tools to modernize its data platforms, enabling reporting agility and scalability.

Resolved 6-month - 2-year backlogs

Instant, self-service analytics

Trusted insight

Improved decision-making

" I think the speed and flexibility, especially for larger data sets, will be a game changer. I'd even venture to say life changing.

- SVP of Partner Services

SELF-SERVICE ADVANCED ANALYTICS & THOUGHTSPOT

According to ThoughtSpot sponsored research by Harvard Business Review, a whopping 86% of organizations say their frontline workers (read: business users) need better technology and more insight to be able to make good decisions in the moment.[1]

ThoughtSpot's AI-powered analytics platform enables users to search and discover with one click: discover insights instantly; uncover hidden performance patterns; ask questions in natural language; apply machine learning to a business workflow; clean, prep, and join data across sources; and answer common questions through easy-to-read and modify pinboards and visualizations.

> "Look at your organization and, assuming you're using dashboards today, do you have reports that – let's say you built three months ago – are obsolete today? The answer to that question is growing and growing. It simply takes organizations too long to have other groups or users build dashboards answer business questions.
>
> I would be classed as a business user, you know I'm fairly data savvy, but I don't have the ability to understand what data sets to hit, how to code and SQL. The idea that I might run across a business question I can't get the answer to, or I must go to somebody who's built a dashboard and ask them to factor in a new element doesn't cut it today.
>
> If you must wait for somebody else to help you answer your business problem, you're waiting too long. Either your competitors are going to get there ahead of you or you're going to lose the advantage of the business question you're trying to ask."
>
> *– Michael Setticasi, VP Strategic Partnerships, ThoughtSpot*

COMMON SELF-SERVICE ANALYTICS PITFALLS

To successfully execute on self-service analytics in the enterprise, it's first valuable to understand why implementation efforts often fail. Self-service analytics can miss expectations (ultimately becoming an expensive project providing little value) when:

Data access is an ongoing problem. Often, data exists and is centralized in a data lake, but isn't easily accessible for those who aren't technically trained or lack proper access rights. On top of this, self-service analytics often requires pulling data from a local database or spreadsheet, which can be challenging to cross-reference or use along with the centralized data. Implementing a solution that doesn't rectify this issue can render a self-service analytics system useless.

Tools and processes are not tailored to users' daily needs. When self-service analytics isn't built to suit its users, they will often face repetitive or complex requirements to perform analysis. This results in users who don't support use of the system or use it diminishingly if not convenient for their workflows, slowing (or halting) adoption.

There is no confidence in the data. By far the number one reason self-service analytics efforts fall flat is a lack of trust in the data: it's not updated regularly (ideally, it's real-time); data and data formats change, but there aren't devoted platform maintenance resources; or business users have access to datasets with no context (where it comes from or what it means).

There is confidence in the data… but there shouldn't be. Perhaps worse than no data confidence is users having confidence in the data given to them, using it to create projects and deliver insights, when, it's incorrect. Validating data accuracy delivered through a self-service analytics platform is critical. Users must ensure they understand the data being used and ask questions about doubts in quality or accuracy.

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[1] "The New Decision Makers: Equipping Frontline Workers for Success." Harvard Business Review, 2020.

Data security suffers.
Partially related to data confidence are issues of data security. Often, self-service analytics solutions don't provide a centralized (virtual) workspace allowing control over who can access what datasets, preventing datasets from being downloaded and manipulated on employees' local machines.

Strong visualization tools like Tableau, Qlik, and Power BI offer extensive capabilities for analysts and developers. However, at Paradigm, we see a self-service gap inherent in data consumption ecosystems, solved by technologies like ThoughtSpot.

When organizations implement instant insights for all through Paradigm Technology and ThoughtSpot insights, they empower business users by removing the middleman (data experts) and putting answers in their hands. They allow data leaders to maximize the value of a cloud data warehouse and accelerate speed-to-insight across the business. Product builders drive adoption by embedding search into business apps or Paradigm's custom low-code developer-friendly platform. And data analysts empower non-technical users to answer their own questions while building a single source of truth with security and governance at scale.

Self-service analytics gives you the edge in accelerating organizational intelligence. Harness the Power of Paradigm and (the not-so-secret weapon) data to rid your teams of the burden of manual and time-consuming processes, increase efficiency, and decrease cost and risk.

ABOUT THE AUTHORS

Azmath Pasha, Chief Digital Officer, Paradigm Technology - 25+ years leading large-scale and high-value digital transformation engagements across advanced analytics, AI, and cloud-based technology.

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An award-winning end-to-end professional services organization, Paradigm Technology is a leader in digital and business transformation, working for 25 years with the Fortune 500. We partner with clients to understand and solve business problems through innovative, value-driven solutions and strategies. Our team leverages years of experience and leading-edge technologies to deliver intelligent insights to answer the hard questions to grow revenues, reduce costs and avoid risk. We focus on delivering and communicating measurable value and impact above all else - that's the Power of Paradigm.

ThoughtSpot is the Search & AI-driven Analytics platform for the enterprise. Anyone can use search to analyze company data in seconds and get automated insights when you need them.

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