MASTERING DATA IN FP&A
How to Build Analytical Capabilities for Strategic Growth and Informed Decisions

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INTRODUCTION

Analytics Is a Critical Capability for Organizations

We are surrounded by data, but why should leaders care? **Analytics is a critical capability for organizations to increase performance and outperform competitors. Thomas Davenport, an analytics thought leader,** coined the phrase "Competing on Analytics." To stay ahead, businesses must harness the data available to them and gain the agility they need to adapt to changing environments, to drive growth, and to boost profitability.

The capability to capture data, extract insights, and make informed decisions can significantly impact an organization's bottom line. According to a McKinsey report[1], the improvement can be as high as an additional 25% EBITDA for some organizations.

Despite the growing importance of data, many organizations continue to struggle with data quality and timeliness. In our 2024 FP&A Trends Survey, we found that 35% of organizations identify data quality and timeliness as the biggest barriers to achieving data-driven decision-making. This highlights the need for **a foundation of clean, accurate, and timely data to make smarter decisions**.

At the International FP&A Board, with 33 chapters across 19 countries, we have discussed the shift from **data-driven** to **analytics-informed** decisions. **Effective decision-making requires a combination of analytical insights and business acumen.**

To help organizations achieve this, the FP&A Trends Maturity Model outlines a path to mastering data and analytics in Financial Planning & Analysis (FP&A). This paper explores how to build these capabilities **through curating data, deploying analytics technology, and fostering a culture of analytics-informed decisions.**

Why Are FP&A Teams Failing to Become Analytics-Informed?

Although advanced analytics technologies have evolved, many FP&A teams are still slow to adopt them. According to the 2024 FP&A Trends Survey, 52% of FP&A teams still rely on spreadsheets for financial planning. **This reliance on outdated tools limits the agility and efficiency needed for a modern FP&A function.**

A key obstacle to technology adoption is the risk aversion prevalent in finance. **David Yates, CFO of Alveo**, explains: "Finance teams tend to be risk-averse, making it difficult to embrace new tools. Implementing these platforms requires a blend of finance expertise and change management skills. Furthermore, adopting these tools often demands costly specialist support, further discouraging investment in modern platforms."

Past implementation failures have left organizations hesitant to embrace new analytics initiatives. **Garrett Dennie, CFO of Knix**[2], notes: "Overcoming resistance to analytics often involves addressing the scars left by previous failed initiatives — trust must be rebuilt for transformation to take hold."

Another major challenge is the skills gap. To leverage modern analytics, FP&A teams must embrace data management, data science, and a strategic understanding of technology. Among FP&A Board members, we are seeing a few new roles emerging to address the data challenges:

- **The FP&A Data Scientist**: This role applies data science techniques, such as Predictive Analytics, Machine Learning, and statistical analysis, to data. Actionable insights are derived, and financial outcomes are forecasted to help drive smarter and faster decisions.

- **The FP&A Architect**: This role designs and manages an organization's FP&A data architecture and validates data integration across all systems. It enables real-time analysis and scenario planning.

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[1] https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/insights-to-impact-creating-and-sustaining-data-driven-commercial-growth
[2] https://fpa-trends.com/article/are-you-data-driven

Although organizations are beginning to recognize the need for these roles, finding professionals with this blend of skills remains to be a challenge since it lies beyond the scope of traditional finance roles.

Additionally, the 2024 FP&A Trends Survey reveals that 45% of FP&A team time is spent on low-value activities, such as data collection and validation, and only 35% of time is spent on generating insights.

To unlock the full potential of data, FP&A teams must first integrate data from a broad range of sources and then focus on generating meaningful insights rather than simply executing low-value tasks.

Key Steps to Achieve Analytics-Driven FP&A

1. Curate the data to deliver actionable and accurate insights.
2. Implement analytics platforms that unify data from multiple sources and instantly deliver key insights to decision-makers.
3. Foster a data culture so that each person can use data and insights to enhance value.

By embedding these strategies, FP&A teams can leverage data as a powerful asset for growth and agility.

A CURATE THE DATA

"Creating a single source of truth by eliminating silos and blending data across multiple sources is key to unlocking insights that align with financial and individual goals,"[3] says **Valerie Martin, Senior Finance Director of Autodesk**.

Curating data is a continuous, three-step process that ensures organizations work with relevant, accurate, and timely data. As shown in Figure 1, the process starts with an information strategy, to identify key business drivers, followed by a data strategy, to capture, clean, and organize data, and ends with data governance, to maintain data quality. These steps form a feedback loop to ensure continuous improvement.
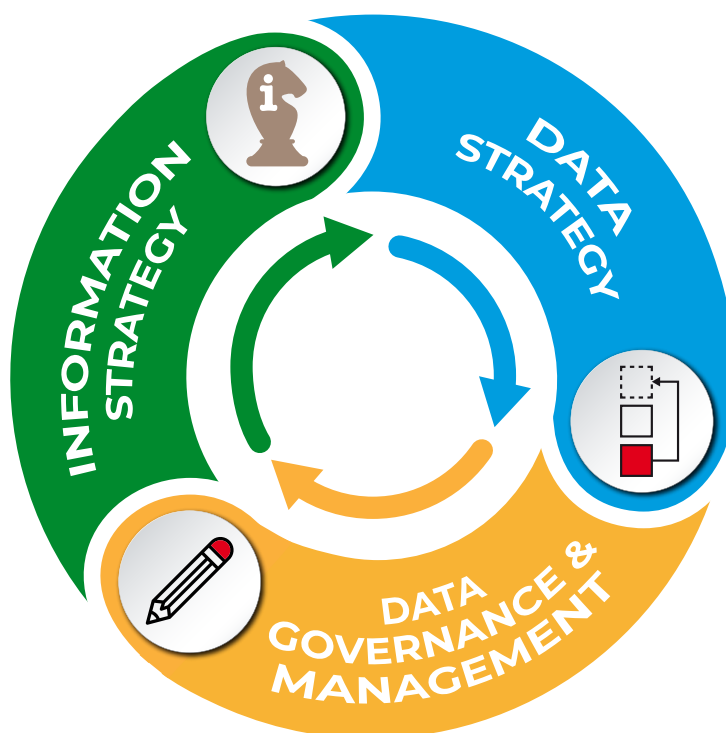

Figure 1: Three Steps to Curate Data

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[3] https://fpa-trends.com/article/guide-big-data-and-transformation-fpa

A1 Information Strategy

The first step for curating data is to identify the information required that will guide decisions and improve organizational performance. While some refer to this as a data strategy, FP&A teams must take a broader view. A holistic approach that we call information strategy focuses on understanding the drivers that drive performance and organizational value. This involves three key exercises: the top-down identification of key business drivers, the discovery of hidden drivers through data, and the creation of a decision calendar.

(i) Define key business value drivers (top-down)

The first step is to understand what drives an organization's performance. **For example, increasing profit can be achieved by either increasing sale volumes or prices.** Typically, this step is performed through workshops or desktop exercises, where teams identify key drivers and develop a value driver tree. These drivers help define the business KPIs and metrics necessary for monitoring performance and forecasting.

Figure 2 shows a value driver tree created for a consumer goods manufacturer. Financial measures, such as sales growth and cost base, are linked to specific actions or drivers like building brand value or reducing payroll costs.

The final columns distinguish between leading indicators, which predict future performance (e.g., consumer sentiment), and lagging indicators, which measure outcomes (e.g., net revenue). Leading indicators help anticipate trends, while lagging indicators reflect the results of past actions.

This example demonstrates how financial measures are linked to drivers and indicators. Leading indicators forecast future performance, while lagging indicators measure past results, allowing teams to monitor and adjust actions to align with organizational goals.
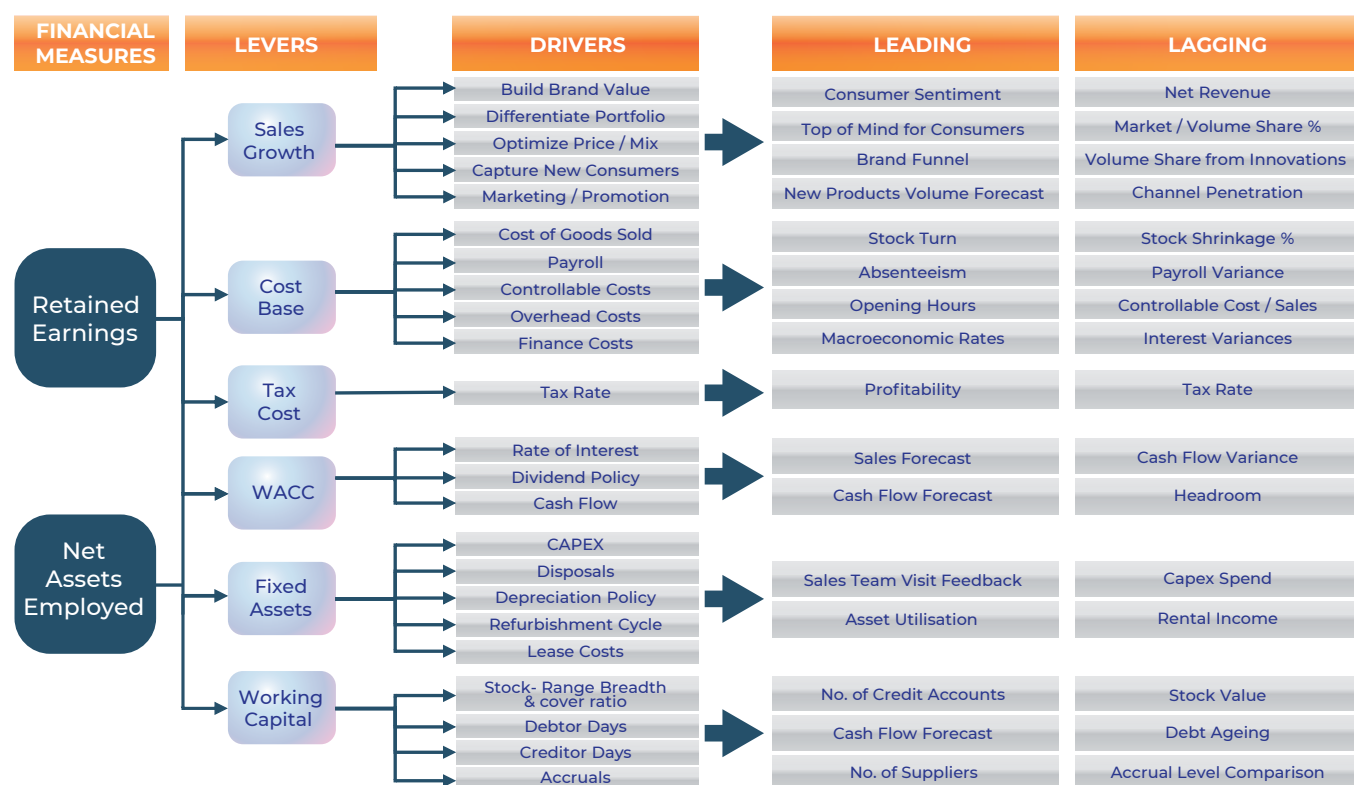

Figure 2: Value Driver Tree for a Consumer Goods Organization

(ii) Define key business value drivers (bottom-up)

During our global FP&A Board meetings, we reviewed multiple case studies that demonstrated the power of a bottom-up analysis for uncovering hidden performance drivers. While the top-down method is effective, it often relies on individual expertise, which may overlook crucial insights. Organizations can use bottom-up analysis, supported by advanced analytics, to identify hidden drivers that significantly enhance their value driver tree and improve decision-making.

One such example from the consumer banking industry highlights the role of survival analysis when identifying customer retention as a critical performance driver. During our discussions, we examined how analytics revealed external factors, like account age and customer behavior patterns, that had a significant influence on portfolio performance and long-term profitability. This case demonstrates the importance of understanding external drivers, such as market and customer behaviors, to refine strategic forecasts.

These examples, discussed in our global meetings, illustrate how bottom-up analysis can uncover external and internal drivers that directly influence business outcomes. To better understand how these drivers interact, we explored tools like the covariance matrix, which visualizes these relationships (Figure 3).
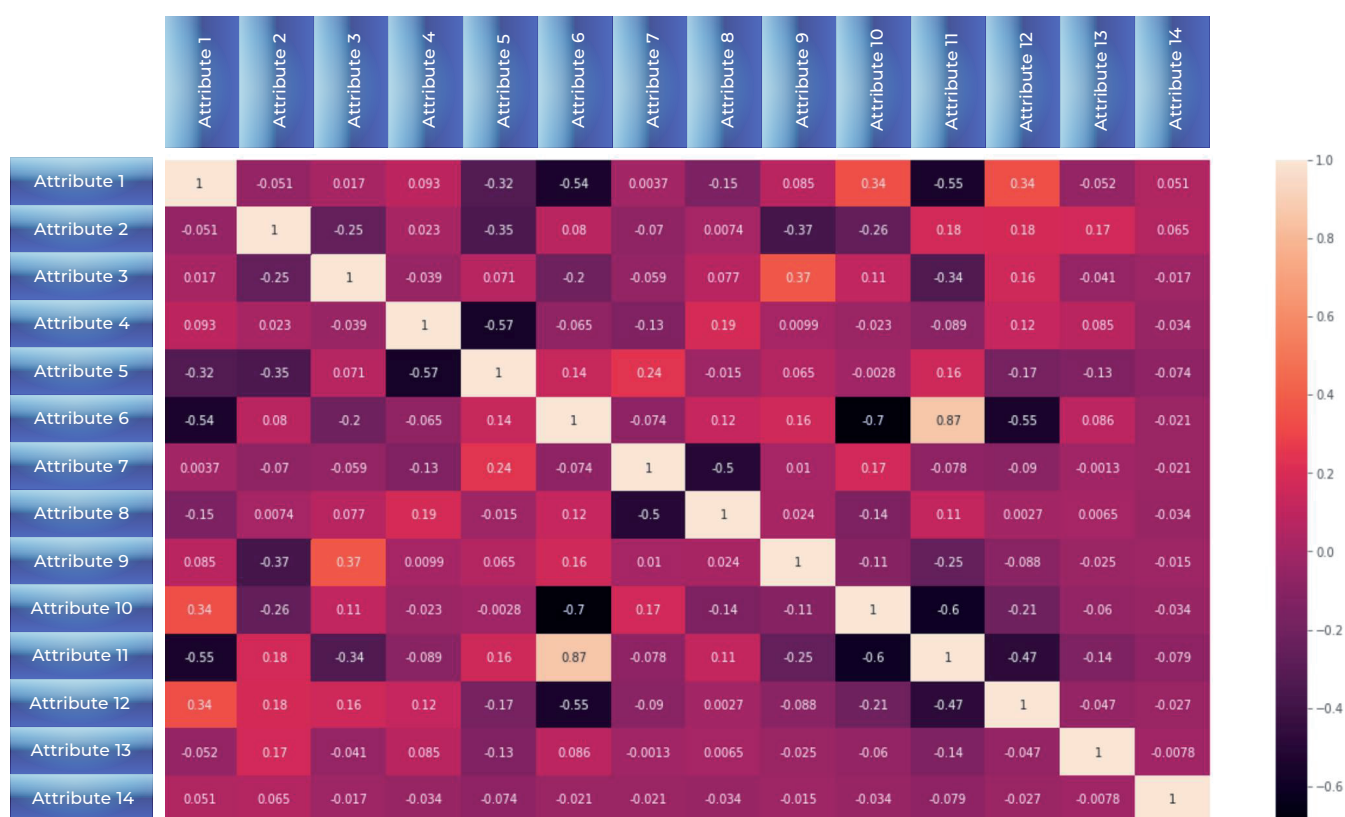
	Attribute 1	Attribute 2	Attribute 3	Attribute 4	Attribute 5	Attribute 6	Attribute 7	Attribute 8	Attribute 9	Attribute 10	Attribute 11	Attribute 12	Attribute 13	Attribute 14
Attribute 1	1	-0.051	0.017	0.093	-0.32	-0.54	0.0037	-0.15	0.085	0.34	-0.55	0.34	-0.052	0.051
Attribute 2	-0.051	1	-0.25	0.023	-0.35	0.08	-0.07	0.0074	-0.37	-0.26	0.18	0.18	0.17	0.065
Attribute 3	0.017	-0.25	1	-0.039	0.071	-0.2	-0.059	0.077	0.37	0.11	-0.34	0.16	-0.041	-0.017
Attribute 4	0.093	0.023	-0.039	1	-0.57	-0.065	-0.13	0.19	0.0099	-0.023	-0.089	0.12	0.085	-0.034
Attribute 5	-0.32	-0.35	0.071	-0.57	1	0.14	0.24	-0.015	0.065	-0.0028	0.16	-0.17	-0.13	-0.074
Attribute 6	-0.54	0.08	-0.2	-0.065	0.14	1	-0.074	0.12	0.16	-0.7	0.87	-0.55	0.086	-0.021
Attribute 7	0.0037	-0.07	-0.059	-0.13	0.24	-0.074	1	-0.5	0.01	0.17	-0.078	-0.09	-0.0013	-0.021
Attribute 8	-0.15	0.0074	0.077	0.19	-0.015	0.12	-0.5	1	0.024	-0.14	0.11	0.0027	0.0065	-0.034
Attribute 9	0.085	-0.37	0.37	0.0099	0.065	0.16	0.01	0.024	1	-0.11	-0.25	-0.088	-0.025	-0.015
Attribute 10	0.34	-0.26	0.11	-0.023	-0.0028	-0.7	0.17	-0.14	-0.11	1	-0.6	-0.21	-0.06	-0.034
Attribute 11	-0.55	0.18	-0.34	-0.089	0.16	0.87	-0.078	0.11	-0.25	-0.6	1	-0.47	-0.14	-0.079
Attribute 12	0.34	0.18	0.16	0.12	-0.17	-0.55	-0.09	0.0027	-0.088	-0.21	-0.47	1	-0.047	-0.027
Attribute 13	-0.052	0.17	-0.041	0.085	-0.13	0.086	-0.0013	0.0065	-0.025	-0.06	-0.14	-0.047	1	-0.0078
Attribute 14	0.051	0.065	-0.017	-0.034	-0.074	-0.021	-0.021	-0.034	-0.015	-0.034	-0.079	-0.027	-0.0078	1

Figure 3: Convariance Matrix to Identity Hidden Drivers

A covariance matrix acts like a map of how different business drivers relate to one another. Each cell in the matrix indicates whether two variables move together (positive values) or move in opposite directions (negative values). For instance, a positive value might show that as marketing spend increases, so do sales. Whereas a negative value might indicate that as prices rise, customer satisfaction drops. The matrix highlights the strongest relationships and often some hidden drivers of performance.

In the banking case, the matrix would show a strong positive correlation between account age and customer retention, helping the bank make more informed long-term decisions.

By combining the top-down drivers with bottom-up analysis, organizations can identify and focus on the 20% of drivers that have the greatest impact. This approach ensures that businesses can swiftly respond to changes in consumer behavior and optimize internal operations, which will ultimately improve performance.

(iii) Create a decision calendar

A decision calendar is an essential final step for developing an information strategy. It uncovers the key decision-making processes and cadence of an organization. Through our research and ongoing discussions with global finance leaders, we have observed that companies with a structured decision calendar find it easier to articulate their data system information requirements. Therefore, they are able to access more targeted data at critical decision points, which leads to more effective and timely decisions.

Completing the information strategy

The above three components will allow you to determine the key pieces of information needed to drive performance in any organization.

A global beverage company that undertook an information strategy project was able to deliver more targeted and relevant information to their commercial decision-makers – faster. Additionally, they reduced the size of their data footprint within the data architecture by just over 60%.

Based on our broader research across industries, organizations that lack a well-defined information strategy often encounter challenges such as:

- Evident gaps in data coverage for important decisions.

- An IT systems roadmap that does not include plans to capture data that is critical for decisions.

- An overly complex data architecture that is difficult to maintain (resulting in slow performance and poor data quality).

- Delayed information that leads to a lack of trust in the accuracy and relevance of data.

This approach, grounded in our observations and research, demonstrates how organizations can optimize both their data systems and their decision-making processes.

Information Strategy Takeaways

To build an effective information strategy, follow these steps:

1. Define the key business drivers (top-down): Identify performance drivers aligned with your business strategy.
2. Uncover hidden drivers with technology (bottom-up): Leverage advanced analytics and modern tools to reveal overlooked factors that impact outcomes.
3. Create a decision calendar: Use data-driven insights to ensure relevant information reaches decision-makers in a timely manner.

Completing these steps is essential before designing your data architecture.

A2 Data Strategy

According to the 2024 FP&A Trends Survey, 43% of respondents reported that their organization's ability to deliver real-time, data-driven insights is constrained by the limitations of their current technology infrastructure. There are two reasons for this. Firstly, organizations operate using a variety of legacy platforms which do not meet FP&A requirements. They have poor functionality and limited integrations. Secondly, organizations try to implement new systems without a data strategy. This will result in a system design that is not built around the informational needs of the organization, defined by the information strategy. It is likely that the build will, therefore, be overly complex and generate a lot of data permutations, but limited insights.

The FP&A data strategy focuses on the design of the technology for curating data. This project will articulate how to build data workflows from data sources to the end user reports, how to define the technology components needed, and how to design the database schemas that will store data in a way that allows for optimum performance. This is essentially the blueprint for delivering timely and accurate insights that have been prescribed in the information strategy.

Developing the data strategy will explore the following questions and review the trade-off decisions:

- **Where is the data held?** Identify all data sources (internal and external).

- **How is it accessed?** Create the code and routines needed to access and extract data.

- **How frequently is it needed?** The refresh frequency will have a big impact on the technology architecture requirements.

- **What changes are needed to make the data usable?** Ensure the data is cleaned, standardized, and made available for analysis.

- **Where is the curated data stored?** The type of database, physical location, and latency.

- **What is the optimal data model / schema design?** Create relationships between data tables and organize data into measures, facts, and dimensions in a manner that provides meaningful insights whilst ensuring the performance of reporting systems is maximized.

- **How will the data be presented?** Select the most effective tools for delivering insights, for example, dashboards, visualization tools, and email distribution.

A comprehensive data strategy allows organizations to design streamlined and high-performing data platforms. This also allows organizations to procure the right technologies at the right price point.

FMCG market example

An example of this, in the **FMCG industry**, is a global company that needed to integrate data from various sources, including sales numbers, customer feedback, and supply chain systems. The business goal was to optimize **inventory management**, predict demand fluctuations, and adjust production and pricing strategies in real time.

A data strategy allowed the company to define how they bring these data sets into one location as well as clean, standardize, and blend them for analysis within a data warehouse. Artificial Intelligence (AI) models were then applied to the data, and the organization was able to **reduce waste** and therefore **improve profitability.**

This data strategy ensured that the FP&A team and the organization's decision-makers created a platform that met their needs.

Real-world case study: Operational visibility and fully integrated planning at Hapag-Lloyd[4]

Hapag-Lloyd is a leading liner shipping company. Managing logistics on this scale requires immense coordination. Spreadsheets from 128 countries were used to manage the logistics, which was incredibly manual, time-consuming, and prone to error. The company implemented **Board** to digitize, accelerate, and automate the logistics process.

From a data strategy perspective, they had to consider the integration with their IT estate as well as the support needed for FP&A modeling, analysis, and reporting. The **Board solution** implemented was able to integrate with both upstream and downstream systems and created a single point of truth for planners globally.

> **Data Strategy Takeaways**
>
> The data strategy is the technology backbone of data curation in FP&A. Its aim is to design a solution that ensures the right information is captured, cleaned, stored, and delivered to its end users efficiently. Key elements include:
>
> - Capturing and cleaning data from various sources.
> - Storing curated data in structured systems like a data warehouse.
> - Leveraging technology like CPM and AI/ML to model data and deliver actionable insights.
>
> A well-defined data strategy reduces the effort needed for implementation and simplifies data system maintenance. It is a critical step to deliver insightful information that supports decisions and allows FP&A to remain agile and responsive.

A3 Data Governance

A data platform is only as effective as the **quality of the data** flowing through it. This presents a key challenge: **How do we ensure trustworthy information?** Poor data governance can undermine even the most advanced analytics, leaving organizations unable to respond effectively to changing conditions. At our recent New York FP&A Board meeting, one member highlighted the widespread concern, stating, "We are poisoned by bad quality data."

Simone da Silva Collins, Senior Financial Controller of Sony, stipulates that "data governance must be a priority in an organization's data management strategy to ensure that data is clean, consistent, and properly used. The lack of this hampers an organization's ability to grow, and, in some cases, can lead to the downfall of a business by leaving it ill-equipped to respond to an ever-changing environment. Without good data, organizations are less capable of responding efficiently and effectively during a crisis."[5] This statement emphasizes the critical role data governance plays in maintaining an organization's agility and resilience.

Data governance encompasses the policies and procedures that surround data **management, accessibility, and use** within an organization. It ensures that every stakeholder involved in the data lifecycle — from collection & cleaning to storage & usage — understands the guidelines and standards necessary to maintain data integrity. According to the 2024 FP&A Trends Survey, **35% of organizations identified data quality and timeliness as the primary barrier to making effective data-driven decisions**. This underscores the importance of strong data governance that ensures clean, accurate, and timely data is consistently available for smarter decision-making.

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[4] https://www.board.com/en/case-study/integrated-financial-operational-planning-hapag-lloyd
[5] https://fpa-trends.com/article/data-governance-and-data-literacy

In essence, data governance acts as a prerequisite to data quality.

Natalia Saukova, Senior Director of Finance of Oriflame Cosmetics, echoes this sentiment, stating that "maintaining data consistency is crucial for the forecasting process to ensure the accuracy, reliability, and credibility of financial information. Inconsistent data leads to inaccurate forecasts, reducing the reliability of financial analysis".[6]

There are several proven methods for overcoming the challenges present in data governance. We **recommend the following framework to embed data governance** into your organization:

1. **Assign business owners** to be accountable for data quality.

2. **Agree on the golden source** for each data object.

3. **Create a data catalog** to track **data lineage** and document the agreed golden source.

4. **Establish data quality review processes** to continuously monitor and improve data integrity (policies and standards are out of scope for this insights paper).

(i) Data governance operating model: Ownership and accountability

Someone needs to own an organization's data, and someone needs to support the monitoring and remediation activities. The goal of this step is to determine who is accountable for data quality and the split of responsibilities.

In our 2024 survey, **49% of respondents viewed data management as FP&A's responsibility**, expecting FP&A to handle data collection and cleaning. However, no single department has the functional knowledge to manage all data across an organization. For example, finance may not understand customer churn data as well as marketing. To address this, it is essential that data is divided into **functional domains** such as marketing, HR, operations, supply chain, and finance (see Figure 4).

Figure 4 illustrates how data is organized into functional domains (e.g., customer, product, supplier, employees). Each domain contains **data attributes** (e.g., customer name, product ID), and an accountability is assigned to a business data owner with support provided by data stewards in order to maintain data quality.

For each domain, a business data owner is assigned, typically a senior leader familiar with the domain's data. For instance, the Chief Human Resources Officer (CHRO) would oversee employee data. Business owners do not need to be data experts. They simply need to identify issues and make sure corrective actions are being taken, supported by data stewards who handle systems tasks.

MASTER DATA GOVERNANCE ACCOUNTABILITY							
Data Domain	**Customer**	**Product**	**Supplier**	**Employees**	**Finance - Assets**	**Finance - Site**	**Finance - GL**
Data Attribute	Account Number	Product ID	Account Number	Employee ID	Asset Number	Site Number	Account Number
	Customer Group Number	Product Range Number	Supplier Group Number	Employee Name	Category Number	Site Group	Account Name
	Customer Name	Product Name	Supplier Name	Employee Address	Asset Name	Customer Name	Cost Centre
	Parent Company	Product Range Name	Parent Company	Employee Team	Category Name	Site Group Name	Sub Account
	Bill Address	SKU	HO Address	Job Family	Serial Number	Location ID	Hierarchy
	Contact Name	Trading Description	Delivery Site	Job Title	Location ID	Site Address	Project Code
	Prospect	Product Dimension	Contact Name	Location Code	Cost Centre	Brand(s)	InterCo Code
	Category Segment	Packaged Dimension	VAT Reg	Team	Cost	Operations Manager	
	Share of Wallet	Feeder Delivery	Co House Reg	FTE	Depreciation Rate		
	Contract Number	Supplier Part Number	Contract Number	Salary	Utilization %		
	Finance Contact	Lead Time	Finance Contact	Gender	Acquired Date		
	Invoice Type	Barcode	Invoice Type	DoB	Retired Date		
	Invoice Terms	Unit of Measure	Invoice Terms	Qualifications	Business Rates		
	Rebate Terms	Supplier List Price	Rebate Terms	Contracted?	Lease Terms		
		Unit Sell Price		Start Date			
		Despatch Channel		End Date			
Business Owner	Leader 1	Leader 2	Leader 3	Leader 4	Leader 5	Leader 6	Leader 7
Steward	Steward 1	Steward 2	Steward 3	Steward 4	Steward 5	Steward 6	Steward 7

Figure 4: Data domains vs accountabilities in a retail / distribution organization

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[6] https://fpa-trends.com/article/data-accuracy-challenges

In one pharmaceutical company, data quality issues delayed an FP&A system implementation. There were several failed go-live attempts, and the project landed $30m over budget. Once senior business leaders were held accountable, they coordinated cross-department efforts and implemented stricter data protocols. The long-standing issues were resolved in a relatively short space of time, which allowed the implementation to proceed.

(ii) Identify the golden record (for a single source of truth)

Often, there can be multiple sources for one sole data point. For example, customer information may exist in several systems at the same time. An Information Services Organization that grew through acquisitions faced a problem with managing customer data. They had at least eight different systems that could be used to create new customer records, each with its own fields and very limited data validation. As a result, creating a clean customer listing became nearly impossible. This case demonstrates that **it is critical to define one place** where the initial record is created, also known as **the golden record**.

The **golden record** is a company-wide, **agreed-upon primary source of data**, where key information is first entered or captured at an organization. Although other systems may need access to this same data, they must pull it from the golden source rather than creating their own new entry fields. This maintains consistency and prevents errors across systems.

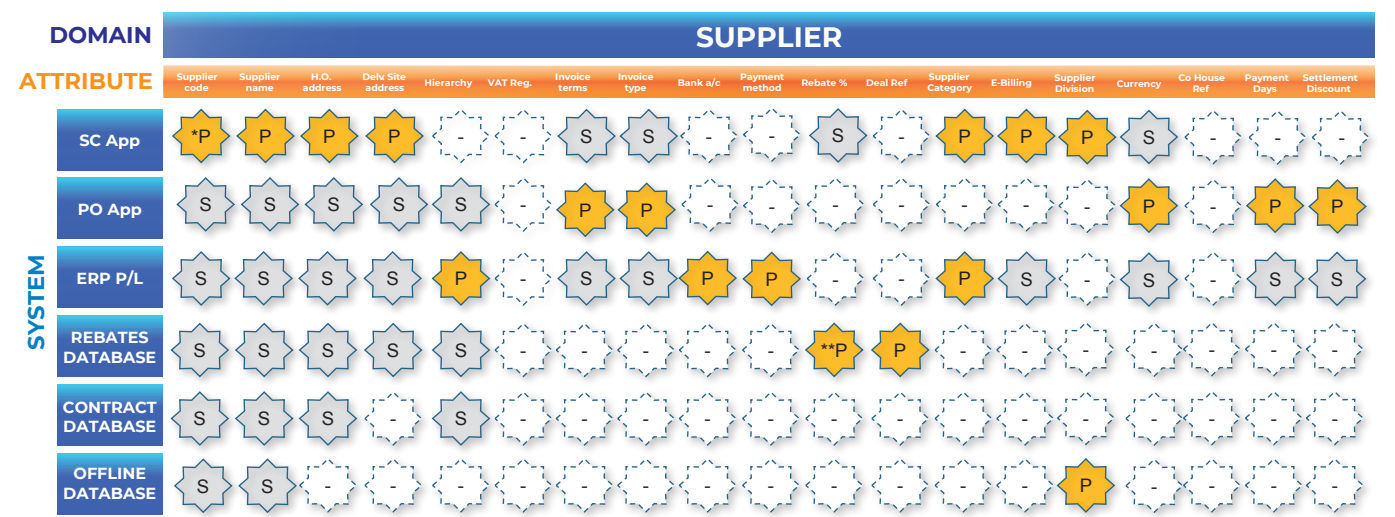| DOMAIN	SUPPLIER																		
ATTRIBUTE / SYSTEM	Supplier code	Supplier name	H.O. address	Deliv Site address	Hierarchy	VAT Reg.	Invoice terms	Invoice type	Bank a/c	Payment method	Rebate %	Deal Ref	Supplier Category	E-Billing	Supplier Division	Currency	Co House Ref	Payment Days	Settlement Discount
SC App	*P	P	P	P	-	-	S	S	-	-	S	-	P	P	P	S	-	-	-
PO App	S	S	S	S	S	-	P	P	-	-	-	-	-	-	-	P	-	P	P
ERP P/L	S	S	S	S	P	-	S	S	P	P	-	-	P	S	-	S	-	S	S
REBATES DATABASE	S	S	S	S	S	-	-	-	-	-	**P	P	-	-	-	-	-	-	-
CONTRACT DATABASE	S	S	S	-	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OFFLINE DATABASE	S	S	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-

Figure 5: Primary - Secondary Relationships between Golden Record and Dependent Systems

Figure 5 serves as a template for mapping out data attributes and their primary and secondary sources across your systems. Here's how to use it:

- Across the top, list the data attributes within each domain (e.g., supplier name, rebate percentage).
- On the left, list the systems used within each domain.
- Enter a 'P' in the systems where the data is first entered (primary source).
- Enter an 'S' where the data is needed but pulled from another system (secondary source).

If a 'P' is entered for the same attribute on more than one system, you will likely experience **data quality challenges** because there will be **multiple sources of truth**. This creates inconsistencies in the data that can undermine the integrity of your information.

By completing this mapping exercise, you can ensure that each data attribute has a single, reliable source and that all dependent systems refer back to this **golden record** to maintain consistency and accuracy.

(iii) Create a data catalog / dictionary

This is **the document that consolidates the knowledge of all systems**, databases, tables, and field names as well as contains the calculation definitions across the organization. The catalog includes metadata, which describes each field (e.g., when a record was created, who created it). This metadata is essential for managing and governing data. The document will also include the **data lineage**, that is where the record is sourced from, any changes that are made to it and where it has since been pushed to.

The **data catalog** will also include **data quality criteria**. This provides parameters that are used to determine whether a record is likely to be correct or whether further investigation or verification is required.

A well-structured **data catalog** enables organizations to maintain data integrity, allow robust change management for data systems, and ultimately facilitate the delivery of accurate and actionable insights.

Reporting from a 'single source of truth' (SSOT)

A SSOT is critical for reporting accurately and building trust among stakeholders. However, according to the 2024 FP&A Trends Survey, only 22% of organizations have successfully established a single source of truth for their data. This statistic highlights that there is more work to be done for organizations to be able to define and maintain a **golden source** for all data points and get to a healthy level of consistency and accuracy across the organization

An organization will have a higher ability to deliver a SSOT if the source of the transaction is defined through a **golden record** and its reporting database is documented in the **data catalog**.

(iv) Agree data quality review processes

Once a data governance framework is in place, the next step is to establish a process to continuously monitor and improve **data quality**.

Figure 6: An Example of a Data Quality Process

Figure 6 illustrates the five essential steps in the data quality process:

1. **Identify and prioritize common data objects:** Focus on the key data elements (e.g., customer or product data) and prioritize them, with rationale, for quality monitoring.

2. **Create rules and entry controls:** Set specific rules to ensure that data is entered correctly from the start. For example, a rule might be put in place to prevent a service engineer from entering more than 24 hours of time spent in one single day. Additional controls can be set up to ensure formats stay consistent, such as always using decimals instead of minutes when entering time.

3. **Create data quality reports:** Generate data quality dashboards that highlight data anomalies and errors. This enables proactive management of data quality issues.

4. **Identify and analyze issues:** Investigate the flagged anomalies and collaborate with data stewards to identify the root cause of the issue from both an IT and a business perspective.

5. **Initiate actions to solve data quality issues:** Implement corrective actions based on the analysis, with business data owners overseeing the process to ensure that solutions are applied effectively.

Other components of the data governance process

The full data governance lifecycle is out of the scope of this paper. This paper has so far presented the key steps to manage and maintain data quality. In large enterprises, there are dedicated teams for governing data that sit under a Chief Data Office (CDO). In addition to the above, their activities will include:

- Building a data quality vision (cascading from the information and data strategy).
- Setting policies, standards, and processes.
- Prioritizing critical data elements.
- Managing the metadata and **data lineage**.

AI and ML for continuous data quality monitoring

As data complexity increases, organizations are leveraging Artificial Intelligence (AI) and Machine Learning (ML) to improve real-time data quality management. These technologies can:

- Detect and correct errors at the point of entry, in real time.
- Use predictive algorithms to determine data quality thresholds based on historical trends.
- Identify anomalies in the data and alert data stewards for immediate investigation.

Data Governance Takeaways
- Hold senior functional leaders accountable for data quality.
- Establish and maintain a data catalog and track data lineage.
- Define and maintain a golden record for each data attribute to ensure consistency.
- Implement the data quality process outlined in Figure 6 to monitor and resolve data quality issues effectively.

B1 FP&A Data Architecture

Every organization operates with a unique combination of systems and data providers. However, common technology components for FP&A exist, as illustrated in Figure 7.

For most FP&A teams, data is stored in a data warehouse — a centralized system where operational data, from multiple sources, is blended and organized for analysis.

For data, within the data warehouse, to be useful, across a wide range of analytical queries, a data model is required to reflect the relationships between distinct data sets. The data model defines how the multiple tables are joined, the facts or measures to be presented, and the dimensions in which they will be sliced or analyzed. Table joins are significantly more robust and efficient than lookup functions in Excel as a way of bringing data from one table into another. Data modeling is part art, part science, and part experience. The design is critical for the performance and longevity of the final data model solution.

Corporate Performance Management (CPM) platforms are often integrated with data warehouses to provide additional financial modeling and calculation power. These platforms allow users to create budget and forecast templates and perform **advanced scenario modeling**, which is critical for FP&A. Increasingly, AI and ML models are being integrated into CPM platforms, enabling more granular forecasting and complex scenario planning.
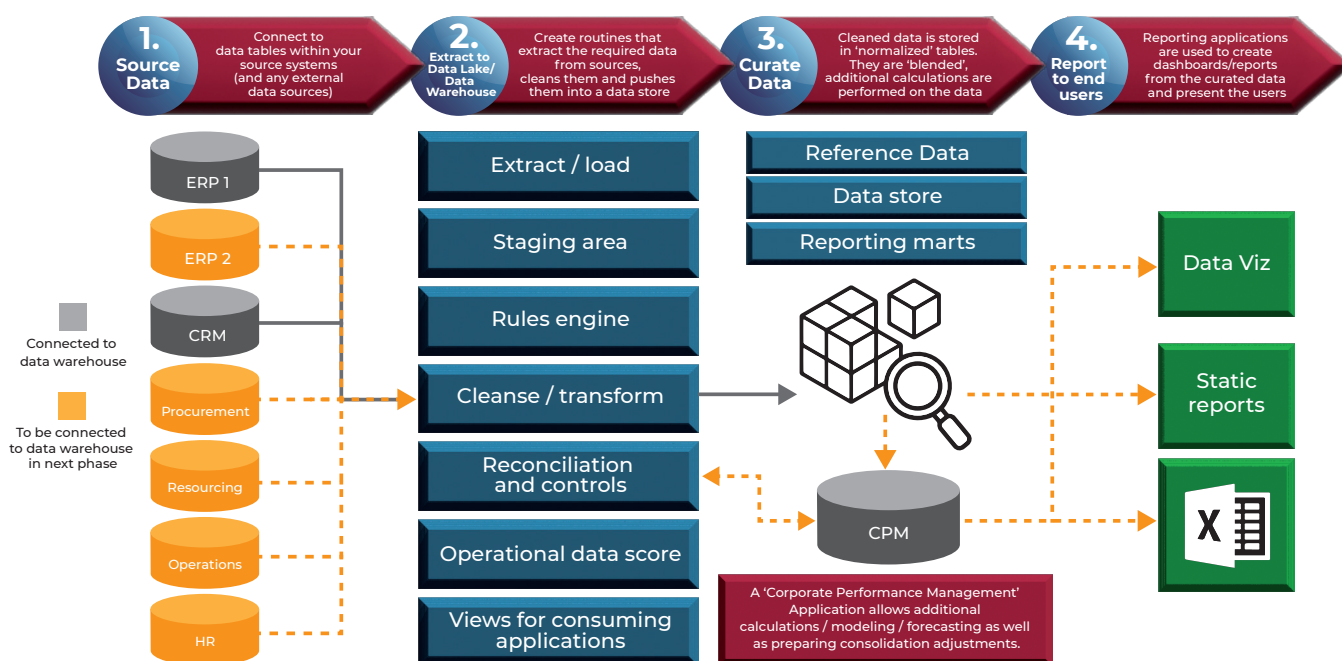
Figure 7: Typical Data Architecture for FP&A

A typical data architecture for FP&A includes:

1. **Source Data:** The journey begins with gathering raw data from various operational systems such as ERP, CRM, and HR platforms that hold crucial financial and operational data.

2. **Data Extraction and Transformation:** Source data is then processed through **Extract-Transform-Load (ETL)** processes. These extract data from source tables, cleans it, and puts it into normalized tables, usually within a data warehouse.

3. **Data Warehouse and CPM:** The data warehouse is a store of blended data from multiple sources. Corporate Performance Management (CPM) platforms perform more complex calculations, such as forecasting models or predictive algorithms. These platforms enable rapid financial consolidations and adjustments, which are then fed back into the data warehouse for further analysis.

4. **Reporting and Analytics:** The final stage is the presentation of data to users, which is typically performed through reporting platforms, like dashboards, or static reports, via portals or email. This provides decision-makers with actionable insights to support strategic goals.

Technology is no longer a barrier and is evolving rapidly. Cloud-based solutions have revolutionized both the procurement and maintenance of these data analytics technologies, making them more accessible and easier to scale.

Real-world example: Eversource Energy[7]

Following a merger, Eversource Energy needed to deliver financial data to corporate areas. The finance systems had limited usability, and the preparation and distribution of the necessary information was manual. Information was not made available to the right people often enough. The users needed real-time data. The **Board International** solution gave them a single platform that could be used to pull a large volume of data from all of its sources and deliver great performance visibility to its users instantly.

B2 Implementation Strategies

Implementing a comprehensive FP&A technology solution requires careful planning and incremental progress. Here are some key strategies to ensure a successful deployment:

1. Start with an information strategy: Define your drivers and metrics

The foundation of any successful implementation begins with a clear information strategy. Identifying the key drivers and metrics that align with your business objectives ensures that your data flows, data models, and reports are focused on the insights that matter most. Without clearly defined metrics, it is impossible to know if your models will produce actionable outputs.

2. Recognize the complexity of implementation

Understand that you cannot solve this challenge in one phase. Implementing technology, designing data architecture, and building models are all complex projects requiring technical expertise. However, the people challenge — integrating teams and changing processes — needs a more nuanced approach. As organizations evolve, like living systems, changes in one part often trigger reactions elsewhere. Focus your early efforts on building a solid foundation: Do you know your drivers? Do you have the right data? Are your models producing the right outputs? Involving the team in these activities will smooth any people challenges.

3. Create clear blueprints for IT

IT teams may not fully understand the specific needs of FP&A, so it is essential to provide clear blueprints. These can include **flowcharts** that outline data flows, PowerPoint **wireframes** of dashboard designs, to illustrate how reports should appear, and Excel templates to **demonstrate specific calculations**. These blueprints will give developers prescriptive requirements and leave little space for ambiguity.

4. Start small: Build and deploy prototypes

Leverage your information strategy to create a long-term roadmap while delivering immediate value through bite-sized prototypes. For instance, start by building a revenue model or an employee cost model using a few data sources. Once these prototypes are successfully implemented, expand them in subsequent phases, gradually adding complexity without overwhelming your team.

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[7] https://www.board.com/en/case-study/enterprise-wide-data-insights-reporting-eversource-energy

5. Foster cross-functional collaboration

Building your finance team's capacity to work in **cross-functional teams** is essential for allowing your organization to scale. Collaboration between finance and other departments allows your organization to tackle the complexities of business. No individual or team can have expertise across every area, so developing a **multidisciplinary approach** will leverage the strengths of the entire company.

6. Develop a long-term people strategy

Achieving horizontal integration across departments requires a people plan that focuses on the long term. To influence individuals and departments outside of finance, leaders need to develop a repertoire of **influencing tactics**. Whether you apply blunt force or the more subtle Nudge Theory, determine which method suits your organizational culture and use it to bring departments into alignment while fostering collaboration on your FP&A roadmap.

7. Focus on the end goal: Use it to motivate

Focusing on the end goal, where your FP&A team spends more time on high-value, strategic tasks, can be a key motivator. Companies have leveraged a variety of integrated planning solutions to streamline processes and improve efficiency. For example, **Toyota Motor Europe** adopted the **Board Enterprise Planning Platform**, one of several leading planning systems, to standardize financial reporting, variance analysis, and long-term CAPEX planning across 40 group companies. This implementation helped them automate data collection, reduce reliance on spreadsheets, and enable their controllers to focus more on analyzing data rather than compiling it. Ultimately, the goal is to optimize processes and empower FP&A teams to drive more informed, strategic decision-making.[8]

B3 Working with IT and Operations to Design and Deliver

Collaboration between IT, operations, data science, and FP&A is essential for creating a data-driven environment that supports both strategic and operational decisions. However, these functions often operate in a silo, with misaligned priorities that can lead to frustration and conflict.

The IT perspective and their priorities

The primary objectives of the IT department are to:

- Deliver a consistent service;
- Manage costs;
- Maintain technology and infrastructure governance; and
- Uphold information security.

While these goals are critical, they can clash with FP&A's need for agility and flexibility. This creates challenges such as:

- **Slow technology delivery:** FP&A often requires faster solutions than IT can deliver.
- **Generic solutions:** IT may deploy one-size-fits-all tools that are not customized for FP&A's needs.
- **Low adoption:** Solutions that don't align with FP&A's requirements often result in poor adoption.

Shadow IT: When functions go rogue

In response to these challenges, many functions, including FP&A, bypass IT and adopt their own technologies, a practice known as Shadow IT. This leads to fragmented systems and rising costs.

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[8] https://www.board.com/en/case-study/pan-european-planning-reporting-toyota-motor-europe

Additionally, Chief Information Officers (CIO) frequently express frustration at having to support tools they did not approve.

Example: a beverage manufacturer saw each division procuring its own data visualization tools, resulting in ten different systems across the company. This fragmented approach not only increased costs but also caused security and management challenges for IT.

FP&A is the bridge

How do we reduce the friction between IT and FP&A? A **translator** is a critical role that exists before, during, and after implementations. It requires a unique skill set and knowledge of both functional areas, FP&A, and technology. This role needs to manage both sets of stakeholders who have limited knowledge of the other areas. One of the emerging FP&A team roles, the **FP&A Architect**, has this ability and can drive transformation with both groups of stakeholders.

The **FP&A Data Scientist** also has a role to play. This role will develop the logic and methodology for building models, especially with AI and ML, and support a wider data analytics technology implementation with IT delivery teams.

By fostering these roles, FP&A teams can break down company silos, and create a cohesive working team that successfully delivers analytics technology within FP&A.

C FOSTER A CULTURE OF ANALYTICS-INFORMED DECISIONS

"The greatest barrier to analytical transformation is not the technology, but the people — ensuring they have the right skills and mindset is crucial."[9], says **Efe Can Tugbay, Senior Financial Analyst of ZOLA Electric.**

Leaders need to change the way they make decisions - from a gutfeel process to a data-driven one. However, our survey shows that 32% of organizations base their decisions on gutfeel rather than data. Conversations with our members revealed that this is not caused by a lack of data. Leaders are typically buried under too much data, and they can't make sense of what they have been given.

There are two action paths needed to address this problem. The first is to build the data literacy of the decision-makers in the organization. **Garrett Dennie, CFO of Knix**, claims that "Data literacy is not just a technical skill; it's about understanding the story behind the numbers and using it to drive business outcomes."[10]

This will equip each decision-maker with the skills to obtain, analyze, and contextualize the relevant data to support their decisions. According to **Nahuel Rozas Delpit, Regional CFO of GE HealthCare**[11], the three essential steps are:

1. Get the basics right, including integrity, stewardship, and data access.
2. Ensure sponsorship from top management.
3. Position data experts as partners.

Secondly, the FP&A team needs to be able to synthesize the key insights needed to support decisions. Managers do not want a 2000-page report – this is where a report factory falls short. They want a smaller number of insights from the data that indicates and recommends what they need to do. One prominent CEO told us that he was drowning in reports and just needed FP&A to tell him who he needed to kick each week.

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[9] https://fpa-trends.com/article/key-steps-fostering-data-driven-culture
[10] https://fpa-trends.com/article/are-you-data-driven
[11] https://fpa-trends.com/tv-series/learnings-practical-case-data-driven-culture

C1 Do Your Decision-Makers and Users Know How to Use the Information?

Intuition is a data science algorithm of the mind. Some people are naturally good at this, but for others, it takes more effort. Data-driven decisions are a way of leveling the playing field and ensuring all leaders are effective in this critical process. All leaders, and indeed everyone inside an organization, need to be data literate.

Here are eight 'nudges' to make this happen:

1. Create a new KPI. Of the key decisions outlined as part of the information strategy exercise, what % can be supported with analytics?

2. Emphasize the message from the top – "we must become data-driven, it is how we will achieve our strategic objectives" (stick).

3. Embed the requirement for validated reports (not Excel) as part of the risk policy (stick).

4. Cascade the need for data-driven decisions as part of HR performance reviews (stick).

5. When hiring, look for curious minds who will ask questions and demand analytics.

6. Provide training on data literacy for all managers above a certain grade (carrot).

7. Ensure that a link to personalized dashboards is on everyone's desktop or home screen (carrot).

8. Create analytical pathways for key decisions, guiding the user through the steps required for each decision and then pointing them toward the data to help make it.

C2 Is Your FP&A Team Sufficiently Skilled with Analytics Technologies?

Christian Martinez, Senior Manager of Finance Transformation of Kraft Heinz, states that "FP&A teams must go a step further than basic data literacy. To unlock deeper insights, these teams should receive advanced training in powerful data tools and technologies." [12]

However, FP&A teams do not have sufficient data skills, and this is often overlooked in data programs. Excel is taught in schools, however, very few learn about relational databases. When a financial model or report needs to be created, FP&A will defer to Excel, especially when under time pressure.

We have observed several organizations where data products were implemented successfully, and the applications worked as specified. However, usage was low, with users exclusively working with Excel. These analysts were not trained beyond Excel and had no understanding of data technology concepts. Unable to work with the newly deployed analytic models, they reverted back to the tools they were accustomed to using.

Ever since the days of Kotter and Lewin, the importance of change management during projects has been widely understood. Studies point to around a 70% chance of failure due to inadequate change management. Users need to have the right skills and need to see that their issues or bottlenecks are being addressed. They also need to feel that their lives will be simpler after implementation. They should be encouraged to be curious and explore the possible features that could improve FP&A processes. A good plan is to make the users think that the implementation was their idea, and that it has been built to accommodate the way that they work. When employees feel truly invested in change, it is 30% more likely to stick.

> **FP&A Data Literacy Takeaways**
> Give your team the time and support needed to learn the new technologies. As leaders, we must demand they become as proficient as they are in Excel with formula writing in CPM and analytics platforms.

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[12] https://fpa-trends.com/article/building-data-driven-culture-strategies-success

C3 The Data Literacy Maturity Matrix

The ability to achieve a successful analytical transformation is dependent upon both the ability to deliver curated and relevant information to the users, and, more critically, the ability of users to navigate this information. With this in mind, we have developed a maturity matrix that combines these two dimensions (Figure 8).
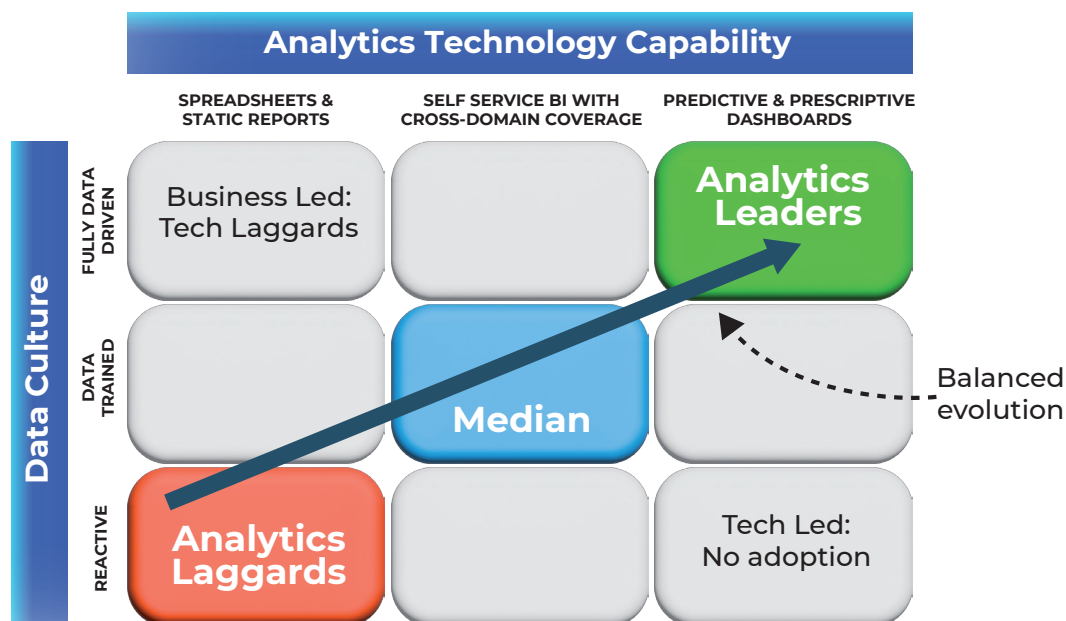

Figure 8: The Data Literacy Maturity Matrix

On the vertical axis is the data culture of the organization, i.e., how data is used within decision-making. The horizontal axis relates to the level of analytic technology implemented. Technology applications should be deployed at the same pace as the evolution of the data culture. If you deploy too fast, you will not achieve adequate adoption. If you deploy too slowly, you will have a community of frustrated business users.

In one organization we reviewed, the technology team deployed a sophisticated forecast and reporting model for workforce planning. However, the business users were not engaged with the build or trained on how to use the platform. Despite the model being, in our view, highly effective, it was never used. In fact, the business teams continued to create workforce forecasts on their one-dimensional spreadsheets.

Real-world example: KPMG Germany[13]

KPMG wanted to achieve greater efficiency, flexibility, and visibility in their financial planning. Their barrier was their technology. It was fragmented, manual, and had limited automation. Additionally, their technology did not provide the proactive early warning insights that their stakeholders were demanding.

Within the **Board Intelligent Planning Platform**, they achieved a single point of content that bundled all of their relevant planning processes together. It provided them with the crucial and actionable insights that their stakeholders had been craving.

> **Takeaways for Fostering a Data Culture**
> - A data culture directive needs to come from the top and be embedded into performance management systems.
> - All levels and functions of the organization need to be trained to use data.
> - The pace of technology deployments should be aligned with the data literacy level of the organization.

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[13]   https://www.board.com/en/case-study/digital-finance-transformation-at-kpmg-germany

CONCLUSIONS AND RECOMMENDATIONS

"To succeed in data management, organizations must focus on governance, literacy, and collaboration, ensuring that their data initiatives are aligned with broader business goals.",[14] states **Christian Martinez, Senior Manager of Finance Transformation of Kraft Heinz**.

We know that analytical transformation and data management are hard to achieve. Our FP&A Board members tell us this all the time. However, it is a problem that can be solved. Here are our recommendations:

1. **Get top-level buy-in** for analytics to use it as a strategic asset and to become a **data-driven organization.**

2. **Start with your information strategy.** Without this, you will have siloed planning and reporting models and data platforms that are difficult to maintain because they are trying to accommodate every possible data permutation. This will lead to significant data governance challenges.

3. **Ensure your data governance and data quality initiatives are in place.** Assign accountability for data quality to senior and influential leaders. Ensure that you have adequate controls set up at the point of data entry. Embed data quality reviews as part of your day-to-day operations.

4. **Invest in your people.** Every person in your organization needs to be confident with interpreting and gaining insights. Your FP&A team needs to be as confident with analytics as they are with Excel.

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[14] https://fpa-trends.com/article/building-data-driven-culture-strategies-success

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About the author

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Tanbir is an award-winning finance and analytics transformation leader and FP&A Trends author. He has a track record of delivering significant performance improvements in organizations. Having learned his craft at McKinsey and the Big 4, he has since held finance leadership roles at several global organizations. His expertise includes deploying finance and analytics systems, alongside building the required data culture that will maximize the benefits.

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