FP&A TRENDS
Best Practice in Financial Planning and Analysis

Maximizing Potential:
Unleashing the Power of Predictive Planning & Forecasting within xP&A

How leading companies use predictive intelligence

FP&A Trends
Research Paper 2023

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I. Introduction

Predictive Planning and Forecasting (PPF) is a game-changing approach that addresses the limitations found in traditional planning. Conventional processes that rely on the presumption of a predictable future are outdated and insufficient in today's fast-paced business world.

Businesses that adopt PPF create a single, harmonized planning process across the organization that covers strategic, financial, and operational requirements. This allows them to leverage Predictive Analytics, implement driver-based models, and manage multiple scenarios. In these businesses stakeholders can make data-driven decisions and allocate resources more efficiently. They can respond rapidly to changes in the business landscape by identifying trends and patterns, most of which are hidden through conventional planning methods. Inherently PPF allows businesses to be more agile and gain a competitive edge in today's dynamic market.

> **"Predictive Planning and Forecasting should be a top priority for modern FP&A departments as it overcomes the weaknesses of traditional planning and helps organizations become more agile."**
>
> **Alberto de Freitas, FD, Customer Global FP&A at CWT**

PPF involves more than just employing Predictive Analytics (PA) for technology-based forecasting or adopting Extended Planning and Analysis (xP&A). PPF necessitates a comprehensive reevaluation of an organization's planning ecosystem, integrating state-of-the-art PA within an xP&A mindset while focusing on decision-making at all levels of the organization. Despite the abundant literature on these topics, there remains a lack of guidance on effectively utilizing them to transform organizational planning within turbulent business environments.

To meet this need, our research paper explores the combination of PA with xP&A and *how* organizations are using this combination to transform their planning and forecasting processes to create a more analytical and harmonized approach. We showcase methods to implement a PPF approach through consultations with senior finance practitioners, case study analysis, and recent polling data. By providing concrete examples of the benefits of this approach, our research paper adds value to the field of Financial Planning and Analysis (FP&A), helping organizations better understand the potential of this powerful combination to transform their processes and achieve greater success.

Additionally, we developed the Predictive Planning and Forecasting Maturity Model that enables organizations to assess their transformational journey and understand the steps they can take toward a more intelligent and integrated planning and forecasting process.

II. Dynamic Shift: PPF Outperforms Traditional Planning

Predictive Planning and Forecasting is a dynamic, data-driven approach that integrates strategic, financial, and operational planning processes by using flexible driver-based models and Predictive Analytics (PA) to inform decisions. By enhancing collaboration and responsiveness to change, PPF sets itself apart from traditional planning methods, which are often static, rely on fixed calendars, and struggle in environments laced with uncertainty.

PPF is significantly different from conventional planning in several ways (Figure 1):
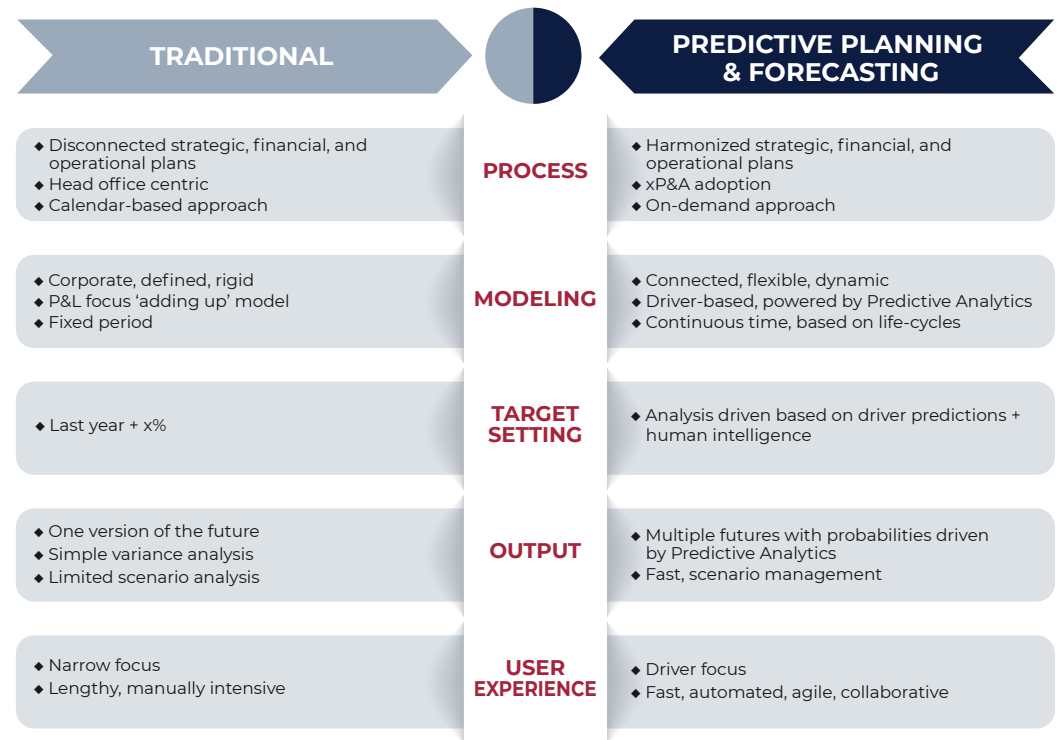
TRADITIONAL		PREDICTIVE PLANNING & FORECASTING
◆ Disconnected strategic, financial, and operational plans ◆ Head office centric ◆ Calendar-based approach	**PROCESS**	◆ Harmonized strategic, financial, and operational plans ◆ xP&A adoption ◆ On-demand approach
◆ Corporate, defined, rigid ◆ P&L focus 'adding up' model ◆ Fixed period	**MODELING**	◆ Connected, flexible, dynamic ◆ Driver-based, powered by Predictive Analytics ◆ Continuous time, based on life-cycles
◆ Last year + x%	**TARGET SETTING**	◆ Analysis driven based on driver predictions + human intelligence
◆ One version of the future ◆ Simple variance analysis ◆ Limited scenario analysis	**OUTPUT**	◆ Multiple futures with probabilities driven by Predictive Analytics ◆ Fast, scenario management
◆ Narrow focus ◆ Lengthy, manually intensive	**USER EXPERIENCE**	◆ Driver focus ◆ Fast, automated, agile, collaborative

Fig 1:
Traditional vs. Predictive Planning and Forecasting

> "PPF offers on-demand planning and forecasting that allows for quick responses to our constantly changing environment."

Process:

Traditional planning typically involves siloed strategic, financial, and operational activities that apply different forecasting methods. PPF unifies these processes into one cohesive activity with shared assumptions. This helps foster collaboration among departments to allow accurate and informed decisions to be made based on a holistic understanding of data and key business drivers. Unlike the traditional fixed calendar-based approach, PPF offers on-demand planning and forecasting that allows for quick responses to our constantly changing environment.

Modeling:

Traditional planning models tend to be less dynamic than PPF models, mainly because they rarely use a fully driver-based approach and often only focus on the profit and loss (P&L) with no consideration of other financial statements. Our research demonstrates that only 14% of organizations utilize fully driver-based models, and only 15% of respondents use 3-way connected models that cover the P&L, Balance Sheet, and Cash Flow statement.

In contrast, PPF models are not only fully dynamic but also provide a completely connected financial perspective. They combine three fundamental financial statements, the P&L, Balance Sheet, and Cash Flow. This approach not only takes into account profitability but also cash and return on capital investment in a single view. As changes occur in one area, the system automatically updates the entire plan or forecast, reducing misunderstandings and fostering effective decision-making.

Target Setting:
In traditional planning, goals are set using last year's performance as a benchmark, often adding an arbitrary increment that may not be aligned with current market trends. With PPF, Predictive Analytics is used to identify hidden patterns in internal and external data and make predictions, from which managers can create informed targets. This means goals can be set with more accuracy and performance can be better controlled and monitored by managing drivers.

Output:
PPF's multi-scenario approach sets it apart from traditional planning, which usually focuses on a single future outcome (one plan-one forecast). By utilizing driver-based models and Predictive Analytics, PPF allows for swift, on-demand scenario management. This helps managers better prepare for, capitalize on, and mitigate the effects of expected outcomes. The xP&A approach harmonizes scenario management processes across the whole organization which allows for immediate visibility of the full impact of any updates that come from any level of the organization. This heightened level of insight and preparedness is crucial in today's rapidly changing business environment, offering a more dynamic and intelligent approach to planning and forecasting.

User Experience:
Where traditional planning processes require significant human intervention, PPF automates most, if not all, activities involved including loading historical data, setting targets, developing forecasts, and reporting actual performance through driver-based models. These models are agile and can therefore adapt quickly to new conditions while ensuring that historical comparatives are automatically aligned. This automation allows users to focus on generating insights and collaborating with other departments to make informed decisions.

III. PPF Solution Framework

> **The goal of a Predictive Planning and Forecasting solution is an agile approach to scenario management. In today's unpredictable business environment, this is the only way that organizations can plan and manage the future.**

Scenario management involves the entire organization continually assessing potential risks and opportunities that could affect the organization's ambitions. PPF facilitates quick evaluations and prepared responses, ensuring that the organization can implement essential changes in order to stay competitive.

Our 2022 FP&A Trends survey revealed a concerning lack of capability in scenario assessment. Only 38% of respondents reported having systems that allowed accurate scenario assessment, and of those, a mere 20% could perform them in less than a day. Additionally, 26% reported being unable to run scenarios altogether. Such a lack of quick scenario assessment in today's uncertain climate is a significant failing of the decision-making process.

To enable effective scenario management, the framework of a PPF solution comprises five key elements: integrated processes, driver-based models, Predictive Analytics, a modern technology platform, and new FP&A skill development. (Figure 2):
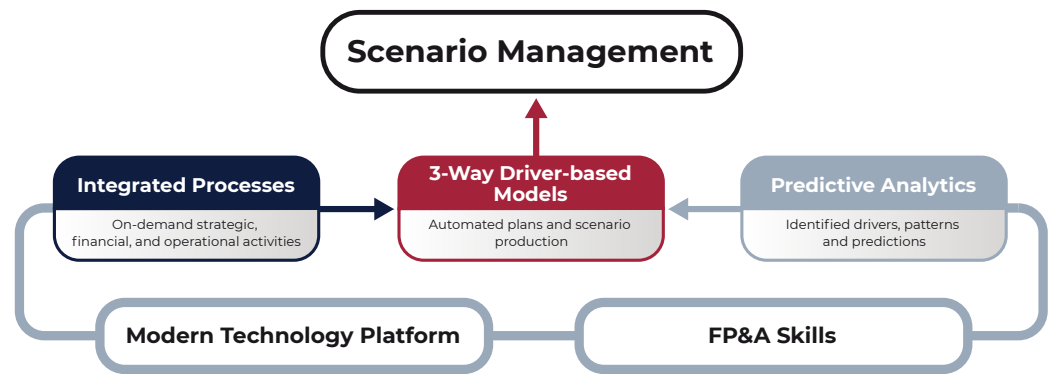
Fig 2:
Five key elements of
PPF solutions

Scenario Management

Integrated Processes
On-demand strategic, financial, and operational activities

3-Way Driver-based Models
Automated plans and scenario production

Predictive Analytics
Identified drivers, patterns and predictions

Modern Technology Platform

FP&A Skills

Let's delve deeper into the five key elements of Predictive Planning and Forecasting solutions.

1. Integrated Processes

Predictive Planning and Forecasting (PPF) streamlines, harmonizes, and automates the activities involved in strategic, financial, and operational planning. This approach enables senior managers to assess and set strategic targets that can be automatically cascaded through the organization via driver-based planning models. When operations adjust their plans to address unexpected challenges, forecasts are automatically consolidated and displayed alongside the strategic plan.

> **"FP&A processes must be crystal clear and meticulously planned, ensuring everyone is primed and ready for action. Our aim is to work with the data, unlocking its potential, rather than merely working on it."**
>
> **Wojciech Porebski, VP of Finance, Grids & Power Quality Solutions at Hitachi Energy**

PPF incorporates Extended Planning and Analysis (xP&A), a concept that, despite its relatively recent acronym, is not new. xP&A involves extending planning and analysis beyond finance to encompass all departments within an organization. This integrated approach enables the evaluation of multiple scenarios and adjusts resource allocation as necessary instead of relying on arbitrary timelines.

2. 3-Way Driver-Based Models

PPF processes are designed around models that connect strategic, financial, and operational plans. These models are built on key business drivers - both internal and external - that automate the production of the P&L, Balance Sheet, and Cash Flow statements through 3-way modeling.

Drivers are measures that represent specific business activities or factors that have a direct impact the company's financial result. For example, the volume of enquiries and competitor activity can be linked to future sales revenue, while inflation rates can be used to predict the future cost of raw materials. This approach ensures that the results produced by the plan are more than just arbitrary numbers but are grounded in actual data and validated assumptions.

However, not all relationships between factors can be considered drivers. For example, a model that calculates sales as the product of volume and price, where volume is determined as a percentage of sales calls, is not fully driver-based. That's because the percentage applied has not been linked to the underlying factors that determine its value, and hence the reliability of the results predicted.

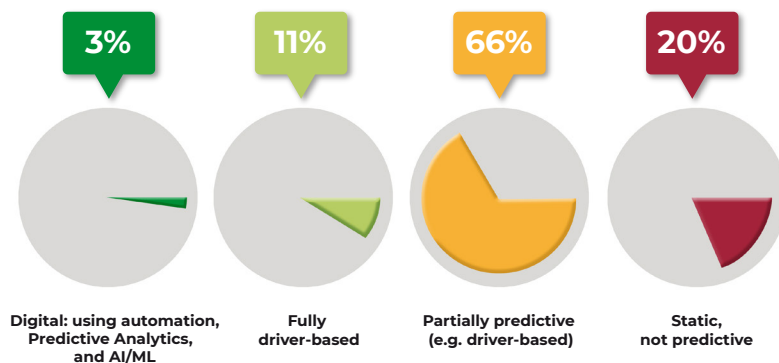Today, few organizations have models that are truly driver-based (Figure 3).

3%	11%	66%	20%
Digital: using automation, Predictive Analytics, and AI/ML	Fully driver-based	Partially predictive (e.g. driver-based)	Static, not predictive

Our ongoing FP&A Trends webinar survey shows that only 14% of organizations have fully driver-based models, with only 3% using Predictive Analytics. The majority (66%) have some predictive elements, while 20% use static 'add up' models.

Drivers are identified through a combination of historical analysis and local knowledge, which are then used to make predictions. However, modern Predictive Analytics can do this analysis with vast quantities of data in very short periods of time.

As a result, 3-way driver-based models with Predictive Analytics enable fast, on-demand scenario management along with a comprehensive understanding of profitability, cash flow, and return on investment (ROI) implications. This empowers informed decision-making helping towards organizational success.

Our research has identified five key benefits that driver-based models provide for organizations:

1. They are easy to understand as they relate to what people do, therefore increasing ownership of plans.

2. They enable efficiency gains by using fewer resources to plan.

3. They increase agility by providing opportunities for ad-hoc forecasts and exploring different scenarios.

> "3-way driver-based models with Predictive Analytics enable fast, on-demand scenario management."

4. They increase awareness of essential areas by focusing the users' attention on the drivers that matter for execution.

5. They require a relatively small IT footprint.

Overall, these benefits make driver-based models an attractive option for organizations looking to significantly improve their planning and forecasting processes.

3. Predictive Analytics

Predictive Analytics is a powerful tool that facilitates informed decision-making by uncovering trends and patterns within historical data. In the past, statistical modeling techniques like regression and time series analysis were the primary means of achieving this. But with the increasing prevalence of Machine Learning (ML), algorithms can *be trained to learn* from the data to enhance their prediction abilities. This data analysis approach enables organizations to identify performance drivers and make more precise future result forecasts.

Our research has found that 25% of organizations are currently using Predictive Analytics and are experiencing efficiency gains and new insights. Whereas 25% plan to implement it in the short term, and 27% see it as a part of their long-term strategy (Figure 4). As part of a modern planning platform, Predictive Analytics is now widely available, and its benefits are increasingly recognized as a vital component of successful planning and forecasting.
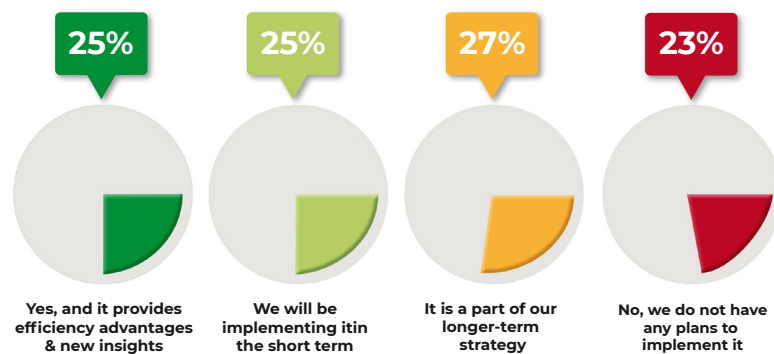
Fig 4:
The impact of
Predictive Analytics
215 respondents

25%	**25%**	**27%**	**23%**
Yes, and it provides efficiency advantages & new insights	We will be implementing it in the short term	It is a part of our longer-term strategy	No, we do not have any plans to implement it

Machine Learning in FP&A

Machine Learning, a component of Predictive Analytics, can play a critical role within FP&A by using algorithms to learn from the data therefore improving its ability to predict results. **Wibe Spekking, CFO, Netherlands at Microsoft**, gave us examples of how the different types of algorithms can be used:

- **Regression algorithms** can answer the questions of "How many?", such as predicting the revenue in Q3 for product X or estimating the number of salespeople by the end of Q4.

- **Classification algorithms** can provide probabilities, for example, predicting the types of products that customers will purchase or estimating the number of customers who might switch to a competitor's product.

- **Clustering** can identify groups of customers with similar purchasing habits and determine which product bundles will sell well.

- **Anomaly detection** can highlight situations where performance deviates significantly from the norm. For example, it can identify potentially fraudulent expense reports or predict which customers are likely to default on payment.

4. Flexible Modern Technology for FP&A

Our survey highlights an ongoing dependence on Excel-based systems in FP&A. Of surveyed organizations, 58% use spreadsheets for planning and forecasting, 6% employing dated consolidation systems and 7% use accounting-integrated planning modules. Sadly, these tools hinder agile planning.

On a positive note, the adoption of modern cloud-based planning platforms supporting PPF has surged, leaping from 10% in 2020 to 20% in 2022 (Figure 5). We predict these cutting-edge platforms will soon dominate the field.
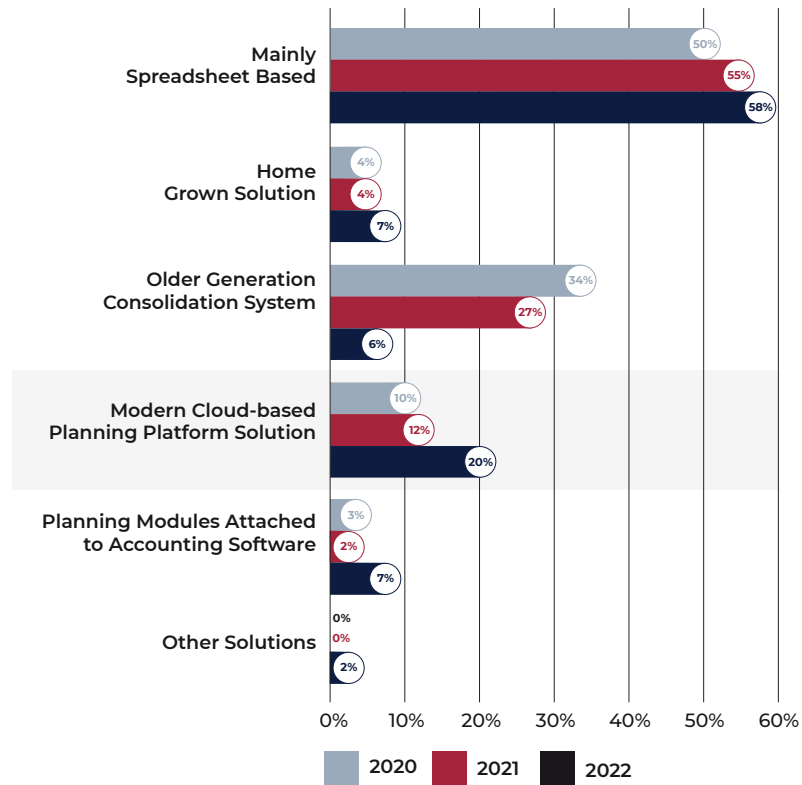
Fig 5:
The growth in modern technology platforms for planning

Michael Conley, Associate Director, Technology Sales Support at Wolters Kluwer, enthusiastically shares, "Modern planning platforms are revolutionizing the industry, eclipsing traditional budgeting, forecasting, and analysis point solutions. These dynamic cloud-based platforms offer comprehensive, integrated models for every organizational planning and forecasting need, armed with state-of-the-art predictive capabilities, all accessible from any internet-connected device."

As we have observed, the advantages of these contemporary platforms are substantial. They bolster integrated planning across the enterprise, foster alignment with strategic objectives and allow for collaboration while ensuring accountability within functional areas. Alterations in one functional plan reverberate throughout the entire plan, enabling everyone to visualize the impact on both their specific area and the organization as a whole.

> "Modern planning platforms are revolutionizing the industry, eclipsing traditional budgeting, forecasting, and analysis point solutions."
>
> Michael Conley,
> *Associate Director, Technology Sales Support at Wolters Kluwer*

5. Multi-Skilled FP&A Professionals

The final part of the PPF solution framework is people. PPF requires skills not traditionally found in finance. The 2022 FP&A Trends survey reported that the most significant skills gap between traditional management accounting and those required by PPF was in technology and data (Figure 6).
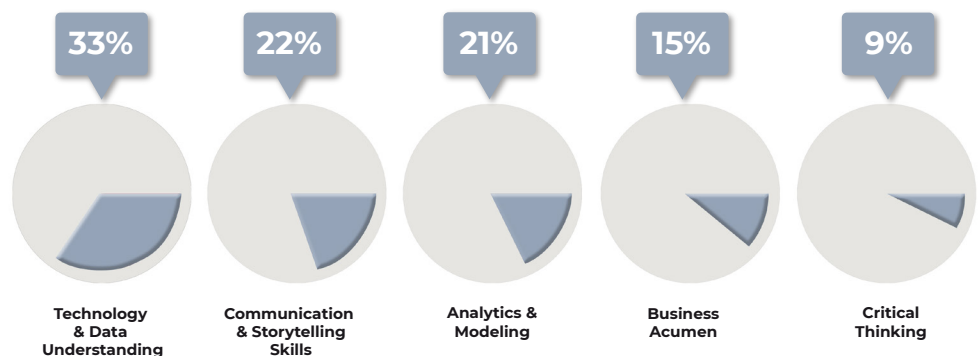

Fig 6:
Significant skills gaps between management accounting & FP&A

Kajetan Lubina, Senior FD at CommScope, said that the main challenge is grasping the complexity of drivers with multiple factors - not everyone can create such a model or understand the models that have been built by someone else. He is also concerned about the correct interpretation of result as he says ML algorithms "require a high level of understanding and critical thinking to gain confidence in why a given model should be trusted."

To bridge the gap between finance and data science the two following roles are required.

- **FP&A Architect:** A professional who facilitates communication between finance and IT functions, who is involved in designing systems and processes, creating driver-based, real-time analytic models, and ensuring their interconnectedness.

- **FP&A Data Scientist:** This is the primary connection between the finance and data science functions, responsible for extracting, cleansing, organizing, combining, and analyzing data. They have a strong grasp of statistical modeling and ML algorithms to uncover drivers, patterns, and trends.

As a matter of course, anyone analyzing data should also have a basic understanding of how Predictive Analytics work.

> **"Mastering statistics is the key to unlocking the true potential of findings, allowing us to distinguish between statistical significance and mere coincidence, as well as to differentiate causation from correlation, ultimately leading to insightful discoveries and informed decisions."**
>
> **Khaled Chowdhury, Data & Finance Transformation Leader**

IV. Benefits of PPF

Predictive Planning and Forecasting provides numerous benefits over traditional approaches to planning. By combining human intelligence with Artificial Intelligence/Machine Learning (AI/ML) algorithms, PPF delivers greater accuracy, faster forecasting, improved business insights and actionable outcomes, resulting in more informed decision-making. This allows FP&A to use their time more wisely, for example analysts are able to focus on higher ROI projects rather than spending hours preparing forecasts.

Additionally, PPF helps overcome conscious and unconscious bias by using highly accurate statistical models while also aiding in faster budget production. Ultimately, PPF helps organizations achieve their goals by making more informed decisions that are grounded in data and analytics.

Below are some of the practical benefits being realized by the organizations we interviewed.

Improved Accuracy with Less Effort

- **Patric Somlo, VP Head of Finance for Biologics Division at Lonza**, found that their first automated predictive forecast for net working capital was around 85-95% accurate while requiring significantly less time and effort than traditional forecasting methods. He believes that with more training, the models will only become more accurate.

- **Sebastian Poduch, currently Head of FP&A at Royal Schiphol Group**, reported that based on his past experiences at various companies, using Predictive Analytics for financial forecasting can improve short-term revenue forecast accuracy consistently reaching more than 95% accuracy level. Additionally, the time taken to produce a rolling forecast can be reduced from several weeks to just several days.

- **Takeshi Murakami, Country CFO, Thailand & Vietnam at Microsoft**, shared Microsoft ML case, which the model brought capability to reduce their forecasting process from 2-3 weeks involving around 60 stakeholders to almost real time with just a few people. And despite the significant time reduction, the model brought more accuracy.

- The well-known travel organization was able to save around 30,000 full-time equivalent (FTE) hours per year by using PPF. They were able to gain real-time insights into the factors driving their business in specific markets, which led to faster management decisions.

- **Scott Campbell, Head of Digital COE - Finance / FP&A at Philips**, reported that they are able to run a new forecast and generate 80% of the complete P&L automatically in under 3 hours from receiving a new set of sales figures. Previously this would have taken several days involving 200 people. Overall, machine language predictions are better than business predictions by 1.6%.

Better Use of FP&A Time

- **Wibe Spekking, CFO, Netherlands at Microsoft**, found that by using Predictive Analytics, they increased the efficiency of the finance team by allowing analysts to focus on higher ROI projects rather than spending hours preparing forecasts.

- **Sebastian Poduch** noted that PPF ultimately leads to improved business insights, stronger collaboration, and a fact-based mindset in decision-making.

- The 2022 FP&A Trends survey found that organizations that use the different elements of PPF were able to spend more time on high-value activities such as insight generation and action driving (Figure 7). In figure 7 below, the *Average* column represents the time spent by all respondents on high value activities, irrespective of whether they used PPF or not. Using PA alone gave the teams a 16% increase compared to the average. Planning platforms gave teams a 4% improvement compared to the average while driver-based models improved time spent by 2%.

"Organizations that use the different elements of PPF were able to spend more time on high-value activities such as insight generation and action driving."

	Average	Use of PA	Planning Platform	Driver-based
Insight Generation	**18%**	**25%** *+7%*	**21%** *+3%*	**19%** *+1%*
Driving Actions	**15%**	**24%** *+9%*	**16%** *+1%*	**16%** *+1%*
TOTAL	**33%**	**49%** *+16%*	**37%** *+4%*	**35%** *+2%*

In conclusion, the benefits of PPF are numerous and significant. All of our respondents agreed that moving to a Predictive Planning and Forecasting framework takes time, but the results are worth it in terms of better business outcomes and increased competitiveness.

Overcoming Bias and Transforming Business Culture with PPF

All the respondents agreed that PPF effectively combats planning and forecasting bias. Traditional forecasting methods can lead to missed opportunities or false market assumptions. Employing PPF to detect patterns and trends enables companies to make unbiased, informed decisions, resulting in improved accuracy, better predictions, and enhanced business outcomes.

Wibe Spekking underscored the importance of highly accurate statistical models in eradicating both conscious and unconscious bias from planning. Similarly, **Sebastian Poduch** highlighted PPF's role in enhancing business insights, fostering collaboration, and promoting a fact-based decision-making mindset. These advantages showcase PPF's potential to revolutionize a company's culture and propel forward superior business results.

V. Challenges of PPF

Although the benefits of moving to PPF are compelling, many organizations struggle to make the transition due to various challenges. During our interviews, six key areas were identified as the most significant obstacles (Figure 8).
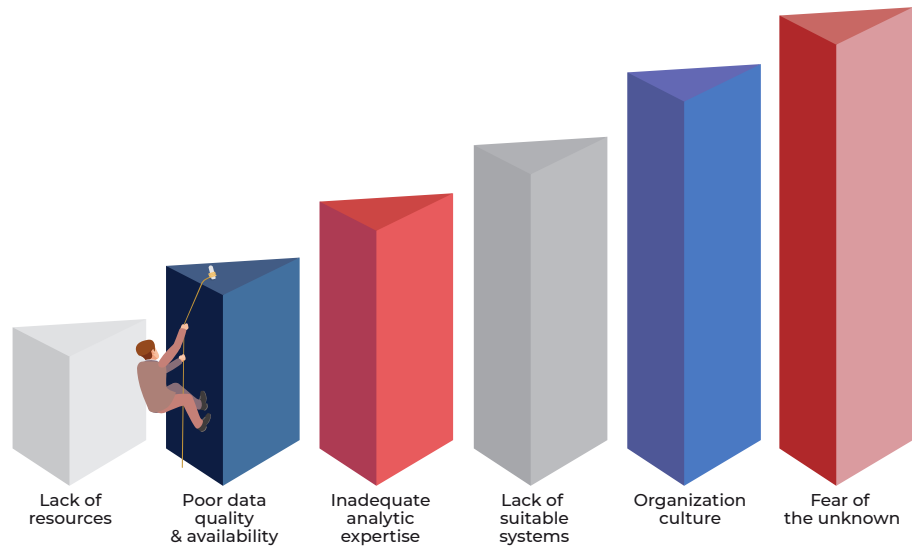
Lack of resources | Poor data quality & availability | Inadequate analytic expertise | Lack of suitable systems | Organization culture | Fear of the unknown

1. Lack of Resources

FP&A staff are often overwhelmed with day-to-day tasks, leaving them little time to focus on value-adding activities. According to the 2022 FP&A Trends survey, 16% of FP&A teams feel they need help to keep up with current demand, while 67% still rely on manual work and have a long journey ahead to improve (Figure 9).

1% Optimized to perform | 16% Performing well with a few more areas for improvement | 25% Communication & Storytelling Skills | 42% Developing but still does a lot of manual work | 16% Struggling to keep up with demand
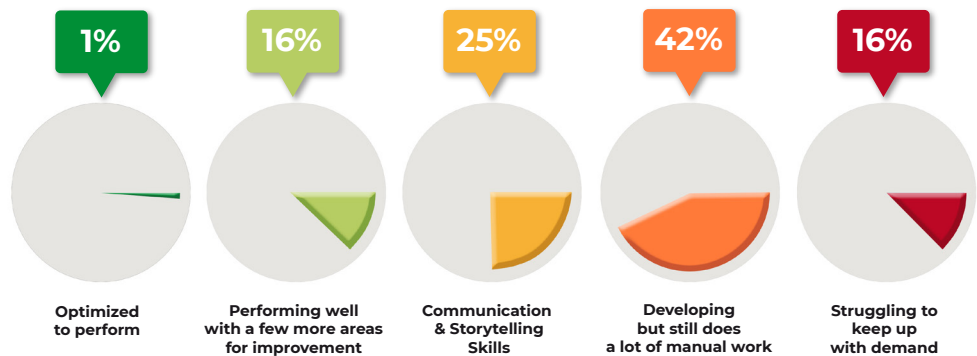
Fig 9:
How FP&A teams classify
their performance

The survey also revealed that FP&A teams spend 45% of their time on low-value activities, such as data validation and managing multiple spreadsheets. They only use only 33% of their time for high-value activities like scenario planning and supporting the decision-making process. These figures have remained largely unchanged over the past four years.

Adding to this challenge are the evolving environmental, social & governance (ESG) reporting requirements as well as other regulatory demands, which increase FP&A's workload. Technology can play a significant role in alleviating the workload by automating low-value tasks and freeing up FP&A's time for high-value activities.

2. Poor Data Quality and Availability

Poor data quality and availability is a significant challenge for organizations implementing PPF. Predictive technologies rely on clean, accurate, and timely data sources with sufficient detail to produce reliable forecasts. However, according to the 2022 FP&A Trends survey, data issues are widespread, with many organizations facing the following problems:

- 27% of organizations do not have a single source of data that everyone trusts.
- 20% of organizations find the data too complex, making reporting difficult.
- 15% of organizations encounter too many inconsistencies in taxonomy and definitions.
- 13% of organizations report that the data is not timely and often out of date.

Addressing these data issues is crucial for PPF to be effective. Organizations need to prioritize improving data quality and establishing a reliable data governance framework to ensure the accuracy and consistency of data used for predictive planning.

3. Inadequate Analytic Expertise

PPF requires specialized expertise in constructing advanced analytical models and applying complex algorithms to identify drivers and make accurate predictions. For instance, during the COVID-19 pandemic, many businesses faced unprecedented disruptions that affected their operational and financial performance.

Constructing predictive models, that can handle such distortions in data and accurately forecast future trends, requires advanced analytical skills that are not typically found in the skillset of a traditional FP&A team. As organizations have started to recognize the need for advanced analytics expertise in PPF, the demand is growing for data scientists and analytics professionals that can support FP&A teams to develop and implement effective PPF strategies.

4. Lack of Suitable FP&A Systems

PPF necessitates modern FP&A systems that support a collaborative, agile approach to planning and forecasting. However, the 2022 FP&A Trends survey indicated that about 50% of FP&A departments are using outdated technology, more than three years old, that is making it difficult for them to adopt PPF. The most significant obstacles to investment in new systems is the challenge in justifying the ROI when compared to shorter-term sales or marketing initiatives (28%) and FP&A not being regarded as a strategic investment area (21%).

5. Organizational Culture

PPF is about changing how organizations plan, forecast, and make decisions. It means embracing xP&A fully. In other words, extending planning outside of the finance department and into the whole organization, supported by modern technology platforms. The challenge is to establish a culture that supports and values collaboration, transparency, and data-driven decision-making. The 2022 FP&A Trends survey showed that only 16% of organizations had fully embraced xP&A, with 49% in the initial stages of adoption (Figure 10). This highlights the need for organizations to shift their culture towards a data-driven mindset to fully benefit from PPF.
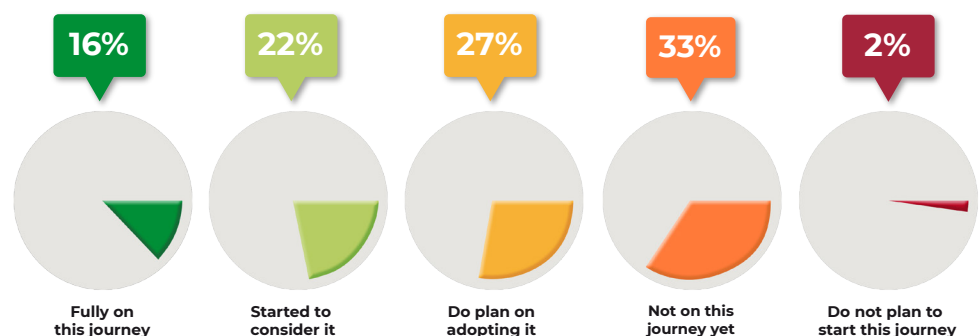
16%	22%	27%	33%	2%
Fully on this journey	Started to consider it	Do plan on adopting it	Not on this journey yet	Do not plan to start this journey

Fig 10:
Adoption of Extended Planning and Analysis (xP&A)

6. Fear of the Unknown

Fear can be a big issue in preventing change. **Alberto de Freitas, FD, Customer Global FP&A at CWT**, comments, "Change is the only constant in life, and it can be easy to get excited about making changes in your organization when you're the force behind the change, but not everyone may share your enthusiasm." He goes on to explain that "while resistance to change is natural and inevitable, it's not insurmountable. To overcome it, you must understand the reasons behind the resistance and work to move past them."

Fabrizio Tocchini, Head of Innovation at CCH Tagetik of Wolters Kluwer, feels there is still much skepticism towards predictive analytic tools. He identified the following three leading causes of concern:

1. Whether FP&A has sufficient skills. Do they need to recruit statisticians, and will they need new advanced training to understand how to use machine learning?

2. Do they need to redesign the planning process? If so, this could be a substantial new investment that may take a long time to go into production.

3. Can they trust a black-box approach, meaning they will lose control over business drivers?

In each case, these perceptions can be addressed through senior management support and education on the ways in which technology enhances and adds value to FP&A.

VI. Case Studies

This section features four case studies of organizations that have successfully implemented Predictive Planning and Forecasting (PPF) processes. Based on interviews with senior FP&A practitioners, these case studies offer valuable insights and lessons that can be applied to other organizations who are seeking to optimize their FP&A processes. The studies highlight the importance of data quality, algorithm selection, and human intelligence in achieving accurate predictions and informed decision-making. They also demonstrate the successful application of PPF across various industries.

1. A Case Study of Philips:
Real-Time Automated P&L Forecasting with Machine Learning

Philips is a well-known Dutch multinational conglomerate with a diverse product line that ranges from simple items, like toothbrushes and razors, to more complex ones, like MRI scanners and their associated maintenance. While predicting run rates for simple products was relatively easy, forecasting the complex products was more difficult due to the uncertainty around the timing of deliveries and their associated service events. In an effort to improve forecast accuracy and get early warnings of potential issues, Philips initiated a project to shift from batch forecasting to a real-time automated P&L that could serve as the foundation for planning.

According to **Scott Campbell, who serves as the Head of Digital COE - Finance/FP&A at Philips**, the company had various distinct systems for each function, such as advertising, promotions, and human resources, that they aimed to integrate. They also sought to integrate Machine Learning into the forecasting process where relevant while allowing for modifications based on the insights and expertise of local market personnel.

To start their journey, the team employed Machine Learning to forecast costs. Leveraging their existing connections with individuals operating in various markets, they utilized diverse algorithms to pre-fill predictions for future sales and costs based on previously collected sales data. At the local level, they relied on basic time series analysis to anticipate sales figures. These projections were then refined by combining them with extra factors like product launch schedules and market share growth. At the group level, the team incorporated variables such as inflation by country, shipping container expenses, and helium costs, which can be significant for certain MRI machines. These elements were all combined to develop a comprehensive digital P&L.

According to **Campbell**, their approach was to look back two years and employ a combination of statistical methods with machine learning algorithms to train their models and generate predictions. As each quarter passed, they recorded the accuracy of the predictions and shared them with teams across the organization, allowing them to compare historical projections against actual information. This process facilitated fact-based discussions about the accuracy of Machine Learning and ways to improve it in relation to business plans.

Currently, the system can execute 17 distinct types of linear and non-linear algorithms on historical data, then automatically use the most effective results to generate predictions about the future, considering factors like product, territory, and customer group. The resulting projections are then shared with every team who can utilize their local knowledge to further refine the models.

While not every prediction turned out to be accurate, the team discovered that, overall, Machine Learning predictions outperform the business by 1.6%. **Campbell** is of the opinion that true success is achieved when the system can generate predictions at the same level of accuracy as the business. Since then, it allows for significant time savings by eliminating the need for manual processes. At present, the team at Philips are capable of producing a new forecast and generating 80% of the complete P&L automatically within 3 hours of receiving new sales figures. Previously, this task would have taken several days, requiring the involvement of 200 individuals.

> "Philips initiated a project to shift from batch forecasting to a real-time automated P&L that could serve as the foundation for planning."

> **Lessons and Recommendations:**
> - **Educate** all stakeholders on the underlying principles of Machine Learning, as it is essentially a mathematical process.
> - Initially **run manual and Machine Learning processes separately**, in parallel until the accuracy of the Machine Learning models has been proven.
> - **Start with smaller projects** to gain experience in using Machine Learning but think big about the potential future applications.
> - Secure an **executive sponsor** and build the right team to ensure the success of the project.
> - **Dedicate ample time and resources** to ensuring high-quality data, as this is a critical component of effective Machine Learning.

2. A Case Study of Moderna (USA): FP&A Transformation in the Face of Unprecedented Pandemic Growth

Moderna USA, a leading pharmaceutical company in vaccine production, experienced explosive growth during the Covid pandemic. Within just three years, their staff increased from 800 to over 3,500 FTEs. This rapid expansion included progressing from clinical trials to mass-scale commercial manufacturing in just a few months and producing more than 800 million Covid vaccination doses in 2021. This all resulted in significant international expansion.

Svetlana Sigalova, VP of FP&A at Moderna, USA, discovered that her department faced immense challenges. For example, 60% of employees had spent less than 12 months in their roles, everyone was working remotely due to COVID-19, and there was a lack of training. Additionally, processes were manual, relying on offline models that were not well defined.

In addressing these challenges through Predictive Planning and Forecasting, the department had a strong desire to change. **Sigalova** stated, "We knew that we couldn't survive as we were, but there was a strong desire to change. We had a good understanding of the reporting requirements, and we were supported in our mission by the senior management team and investment."

Svetlana Sigalova recognized that addressing all the challenges at once was not feasible, so they implemented a Predictive Planning and Forecasting framework in a structured manner:

1. The first step involved establishing master data governance to align account definitions and organizational structures across the company, keeping their reporting needs in mind.

2. Next, they appointed functional champions who understood the objectives they were trying to achieve.

3. As the system evolved, they introduced quarterly improvements based on user feedback. **Sigalova** noted, "It allowed us to fix a lot of small things that had a big impact on FP&A."

4. When preparing forecasts, they started utilizing trends and run rates, allowing users to make adjustments without compromising data integrity. Adjustments were separated to distinguish between those made at a local level and those made by the group.

5. They employed scenario modeling to monitor assumptions and forecast KPIs.

Currently, they are in the process of transferring the entire process onto a cloud platform for improved business partner reporting.

> "We knew that we couldn't survive as we were, but there was a strong desire to change."
>
> Svetlana Sigalova,
> *VP of FP&A*
> *at Moderna, USA*

Lessons and Recommendations:

- **Adopt a structured FP&A framework**: Implement a phased approach focusing on data governance, forecasting, and scenario modeling to address growth challenges.

- **Empower functional champions**: Identify key individuals who understand the company's objectives to drive change across the organization.

- **Adjust forecasts with data integrity**: Separating local and group-level adjustments to allow users to make adjustments to forecasts without compromising data integrity.

- **Utilize cloud platforms**: Transition systems onto a cloud platform to improve business partner reporting and collaboration.

- **Prioritize automation**: Focus on automating processes to increase efficiency, speed up plans, and reduce manual effort, therefore enhancing overall productivity.

3. A Case Study of Lonza:
Leveraging Machine Learning for Efficient NWC Forecasting

Patric Somlo, VP Head of Finance for Biologics Division at Lonza, focused on leveraging ML predictive capabilities by evaluating use cases that offered the best returns relative to risks and effort. Over six weeks, they weighed the benefits of increased accuracy versus time savings, assessed the availability of data and processes, and considered the complexity of the analysis. Ultimately, they chose to improve net working capital (NWC) forecasting first, as it would provide a quick win before addressing more challenging areas.

To enhance NWC forecasting, the team collected and cleaned data on inventory, payables, and receivables by removing any outliers. They then tested a variety of algorithms on each NWC component, including exponential smoothing, seasonal trend decomposition, and auto-regressive integrated moving average, to determine the most effective approach for each. These individual results were then combined to produce an overall forecast.

Somlo reported that the predictive forecast achieved an accuracy of 85-95%, which was consistent with their manual estimates. However, the AI/ML forecast required considerably less effort, and the potential for more accuracy will develop as the models learn and improve over time.

> "The predictive forecast achieved an accuracy of 85-95%, which was consistent with their manual estimates. However, the AI/ML forecast required considerably less effort."
>
> Patric Somlo,
> *VP Head of Finance for Biologics Division at Lonza*

Lessons and Recommendations:

- **Assess ML use cases**: Weigh up the returns, risks, effort, and complexity of each potential applications.

- **Prioritize quick wins**: Focus initially on areas with immediate benefits, like NWC forecasting.

- **Clean data**: Ensure data quality by removing outliers and preparing key components.

- **Test algorithms**: Experiment with different methods for each component and combine the results for a comprehensive forecast.

- **Refine models**: Continuously monitor and improve AI/ML models to enhance accuracy and reduce effort.

4. Lessons from United Airlines: The Importance of Human Intelligence in Predictive Planning and Forecasting

Frances DeBlasio, VP of FP&A at Cars.com in the USA, emphasizes the importance of human intelligence within FP&A. She explains that while algorithms can provide valuable insights, they may not be able to predict unexpected events or provide meaningful analyses when there is limited data available. Additionally, only humans can interpret the results of analyses in the context of the decisions that need to be made.

DeBlasio has relied heavily on human intelligence and has standardized, robust processes to build predictive revenue and expense models throughout her career. At United Airlines, for example, the company invested in human resources and processes following 9/11 to navigate the severe drop in revenue, which led to a need to rightsize the organization.

"United Airlines, where I worked before, was heavily invested in human resources and processes, which came to their rescue following 9/11. One area that came into scrutiny was the operational staffing costs. We had models we could use to make minor adjustments but nothing on the scale needed by the sudden downturn. You just can't switch pilots on and off overnight or get them to fly a different aircraft at a moment's notice. We had to introduce an inefficient component to the models rather than have them optimize labor and aircraft costs. This was a new driver introduced to the models through human intelligence, and we had to ensure the results reflected our new situation," said **DeBlasio**.

She also emphasized the importance of effectively communicating with top management about why unit costs would grow - something that only a human can do.

> When using predictive technology to identify drivers, **Frances DeBlasio** recommended the following five steps:
>
> - **Confirm key drivers** with stakeholders to ensure that they can identify with them.
> - **Measure the accuracy and predictability** of models and continually refine them to explain current performance.
> - Invest in building both human intelligence and robust processes, as they are essential to a strong foundation of AI/ML-derived drivers.
> - Start with a **limited scope** when using AI/ML, such as a few measures rather than the entire P&L, to demonstrate the value of predictive analytics.
> - **Gradually increase the scope** of predictive technology once proven and as more data becomes available.

By combining human and Artificial Intelligence, organizations can achieve more accurate and efficient Predictive Planning and Forecasting, especially in complex situations where unexpected events may occur. While AI can help identify drivers and provide data-driven insights, human intelligence is critical for applying the impact of factors not found in the data. Information such as an upcoming announcement of a major product improvement, or a sudden breakdown in the supply-chain due to a natural disaster. In these cases, Human Intelligence is necessary for interpreting results from models and in understanding context.

The key to success is to invest in building both human and AI/ML capabilities, to communicate effectively with stakeholders, and to start with a limited scope before gradually expanding the use of AI/ML in decision-making.

"Human intelligence is critical for applying the impact of factors not found in the data."

Fig 11: Maturity Stages in Adopting Predictive Planning and Forecasting

PREDICTIVE PLANNING AND FORECASTING MATURITY MODEL

	DEVELOPING STATE		INTERMEDIATE STATE	LEADING STATE	
	LEVEL 1 - BASIC	LEVEL 2 - DEVELOPING	LEVEL 3 - DEFINED	LEVEL 4 - ADVANCED	LEVEL 5 - LEADING
MODEL CONTENT	SEPARATE MODELS	SEPARATE MODELS WITH SELECTED DETAILED SUPPORTING MODE	LINKED MODELS	LINKED MODELS	INTEGRATED MODELS
	SUMMARY P&L	SUMMARY P&L + KPIS	P&L + KPIS	P&L, B/S, AND CASH FLOW	INTEGRATED P&L, B/S, AND CASH FLOW
	FIXED TIME HORIZON	FIXED TIME HORIZON	FIXED YEAR + ROLLING FORECAST	ROLLING FORECAST CALENDAR	FLEXIBLE, LIFE-CYCLE CALENDAR
	USER-DEFINED RULES	USER-DEFINED RULES	SELECTED MANUAL ML DRIVER RULES	AUTOMATED SELECTED ML RULES	AUTOMATIC ML DRIVER RULES
	GROUP VIEW	GROUP VIEW	DEPARTMENT, LINE OF BUSINESS	BUSINESS ENVIRONMENT VIEW	HOLISTIC BUSINESS VIEW
PREDICTIVE ANALYTICS	USER-DEFINED DRIVERS	USER-DEFINED DRIVERS	USER-DEFINED DRIVERS	MACHINE-IDENTIFIED DRIVERS	MACHINE-IDENTIFIED DRIVERS
	USER-SET TARGETS	STATISTICAL PREDICTIONS	SELECTED ML PREDICTIONS	SELECTED ML PREDICTIONS	AUTOMATED ML PREDICTIONS
	AGGREGATED LEVEL OF ANALYSIS	AGGREGATED LEVEL OF ANALYSIS	GRANULAR LEVEL OF ANALYSIS	GRANULAR LEVEL OF ANALYSIS	GRANULAR LEVEL OF ANALYSIS
TECHNOLOGY	SPREADSHEET BASED	SPREADSHEET & DISCONNECTED PLANNING SYSTEMS	SPREADSHEETS, SPECIALIZED ML TOOLS & PLANNING SYSTEMS	MODERN PLANNING PLATFORM WITH EMBEDDED PA & LINKED PLANNING SYSTEM	MODERN PLANNING PLATFORM WITH EMBEDDED PA & INTEGRATED PLANNING
	MANUAL DATA LOAD FROM EXTRACT FILES	MANUAL DATA LOAD FROM EXTRACT FILES	AUTOMATED DATA LOAD	AUTOMATED DATA LOAD	DIRECT ACCESS TO DATA SOURCE
	STATIC VARIANCE REPORTS	SEPARATE BI VIEWING TOOL	USER ANALYSIS THROUGH BI TOOL	END USER ANALYSIS THROUGH BI TOOL	REAL-TIME VIEW AND ANALYSIS OF RESULTS
	LIMITED SCENARIO ANALYSIS	LIMITED SCENARIO ANALYSIS	REASONABLE SCENARIO ANALYSIS	SCENARIO MANAGEMENT CAPABILITY	ON-DEMAND, REAL-TIME SCENARIO MANAGEMENT

VII. Implementing PPF

Putting Predictive Planning and Forecasting (PPF) into practice can be daunting for organizations, despite its benefits. They need to overcome various hurdles to fully realize the benefits of PPF. According to our interviews, PPF implementation usually occurs in phases. To guide organizations on this transformational journey, we developed a Predictive Planning and Forecasting Maturity Model outlining five stages, from basic to leading (Figure 11).

It is based on three important PPF dimensions: model content, Predictive Analytics usage, and technology utilization. While becoming a leading PPF company overnight is unrealistic, specific practical steps can help organizations move towards a higher level of PPF maturity. By identifying their current position and creating a transformational plan, organizations can achieve a higher PPF maturity and gain quick wins along the way.

Let's take a closer look at each stage.

Stage 1: Basic

Models: Models are typically separate for strategic, financial, and operational planning purposes and contain high-level P&L summaries. They have fixed calendar time periods.

Predictive Analytics: Drivers are chosen based on human intuition and often result in incomplete relationships and less accurate predictions. Driver values tend to be set using simple extrapolations.

Technology: Mainly spreadsheet-based with limited scenario analysis capability. Data is manually loaded at the period end via files extracted from relevant systems.

Example: A well-established retail store uses basic spreadsheet models to track sales, expenses, and profits. They use simple mathematical formulas to create forecasts based on human intuition. Their technology is limited to basic spreadsheet-based tools, resulting in less accurate predictions and limited scenario analysis capability. In some cases, these businesses on the basic state are not even using data to support their plans, but simply relying on intuition alone.

Stage 2: Developing

Models: High-level P&L summary models are still separate, but some measures have more detailed models such as sales and/or inventory. Driver variables are user-defined, with fixed calendar time periods and formulae to calculate totals and forecasts.

Predictive Analytics: Basic statistical methods, like regression and time-series analysis, are used to generate future values based on historical data. These methods are applied in separate models for specific measures, with results passed back into the primary model to generate financial statements.

Technology: Spreadsheets and disconnected planning systems are combined with statistical packages that analyze specific measures. Data loading and transfers are manual, and results are viewed via a separate BI application. There is limited scenario analysis capability.

Example: A growing e-commerce company has adopted the developing stage of PPF. They use separate spreadsheet models for financial planning and forecasting, with some measures having more detailed models. They now incorporate basic statistical methods to generate future values based on historical data. While technology is still a combination of spreadsheets and disconnected planning systems, they use statistical packages to analyze specific measures. Data loading and transfers are manual, and results are viewed via a separate BI application. They recognize the need to improve their processes to move towards higher PPF maturity.

> "Statistical methods, like regression and time-series analysis, are used to generate future values based on historical data."

Stage 3: Defined

Models: Models are still separate, and P&L based but with automated links that allow data to flow between strategic, financial, and operational plans. The P&L includes a line of business or product groupings with more detailed models for specific measures. Drivers for models are user-defined, and they have a traditional fixed calendar time period with a Rolling Forecast capability.

Predictive Analytics: Models use Machine Learning (ML) algorithms to predict future values for some measures. These algorithms work at a granular level of detail, such as sales to individual customers, by product, and within specific geographical regions. Results are passed back into an aggregated model to generate financial statements.

Technology: This stage uses a combination of spreadsheets, specialized ML tools, and a central planning application based on a modern planning platform. Data transfers are automated, and users can analyze results through a self-service BI application. This setup provides a reasonable level of scenario analysis.

Example: A retail chain with multiple stores and product lines is at the defined stage of PPF adoption. They use automated links between their strategic, financial, and operational plans, with detailed models for specific measures such as sales by store and product. They use user-identified drivers and have a traditional fixed calendar time period with a Rolling Forecast capability. They also incorporate machine learning algorithms to predict future sales based on detailed customer and product data. They use a combination of spreadsheets, specialized ML tools, and a central planning application to automate data transfers and analyze results through a self-service BI application.

Stage 4: Advanced

Models: At this stage, models contain a 3-way view that covers the P&L, Balance Sheet, and Cash Flow with detailed lines of business or product groupings available for most measures. These models are capable of supporting strategic, financial, and operational planning with automated links that allows data to pass between the different planning focusses while always providing a complete view of the business environment. Driver relationships are a combination of human intelligence and those derived from ML algorithms, and models have a rolling time calendar that spans multiple years.

Predictive Analytics: Models use ML algorithms not only to identify drivers but also to predict future values. The system is capable of automatically selecting which algorithms provide the best results and which of those are then passed back into the integrated central planning model.

Technology: The system at this stage is built on a modern planning platform with embedded Predictive Analytics tools that support linked planning models. Data transfers are automated and available on demand. The system also supports end-user self-service reporting and analysis and powerful scenario management capabilities.

Example: A multinational retail company adopted advanced PPF with integrated planning models and a detailed line of business/product groupings for most measures. The models support strategic, financial, and operational planning with automated links between different planning activities. They also have a rolling time calendar spanning multiple years with driver relationships combining human intelligence and ML algorithms. Their Predictive Analytics use ML algorithms to identify drivers and predict future values, automatically selecting the best results that are passed back into the integrated central planning model(s). They use a modern planning platform with embedded predictive analytical tools that support linked planning models and automated data transfers. The system also supports end-user self-service reporting and analysis, as well as powerful scenario management capabilities.

> "Driver relationships are a combination of human intelligence and those derived from ML algorithms."

Stage 5: Leading

Models: Models contain a 3-way view, including the P&L, Balance Sheet, and Cash Flow, backed up by data models that contain detailed lines of business and/or product groupings for all measures. Driver relationships are automatically derived from ML algorithms augmented with human intelligence. The model harmonizes strategic, financial, and operational planning within one cohesive system providing a holistic view of the business.

Predictive Analytics: Embedded ML and statistical models automatically select the best algorithms to identify drivers and predict results. These relationships automatically update model rules and predictions.

Technology: Modern planning platform embedded with Predictive Analytics tools which support linked planning models and provide a real-time view of the business. Source data is accessed directly, and analyses and revised forecasts are available on-demand. The models' functions are fully automated, therefore, supporting rapid scenario management.

Example: A leading international technology company fully embraces the leading stage of PPF. They integrate a 3-way view (P&L, Balance Sheet, and Cash Flow) with detailed data models for all business operational measures. Driver relationships are derived through a combination of ML algorithms and human intelligence to provide a cohesive and holistic view of the business. Predictive Analytics leverage embedded ML and statistical models to respond quickly to market changes and trends. Their modern planning platform includes embedded Predictive Analytics tools that support linked planning models. Analyses and revised forecasts are available on demand. Most functions of the model are fully automated to support fast scenario management.

Insights When Moving Between PPF Stages

The different stages outlined above serve as a roadmap for organizations to grow into Predictive Planning and Forecasting (PPF) maturity. However, the full benefits of PPF are only realized once the leading stage is achieved. It is important to note that a stage is considered complete when all of its criteria have been met. For instance, an organization might have a modern technology platform and use ML to uncover drivers (stage 4), but if they aren't producing a 3-way view of the business then they will remain at stage 3.

Based on our interviews, we gathered the following insights on how organizations progressed between PPF maturity stages.

Senior Management Support for Change

Transitioning to PPF and advancing through the stages begins with the acknowledgment that current processes and techniques are insufficient for meeting the organization's current needs. It necessitates an endorsement from senior management of the shift toward a more agile and fact-based approach to planning and decision-making.

A Small, Dedicated and Skilled Team to Implement Changes

To minimize disruption to existing processes, one of the FP&A Directors we interviewed established a small, dedicated team within the finance department. This team included individuals who could bring essential skills from outside the organization, for example an FP&A Data Scientist. Additionally, it had members who would serve as system champions, and it defined dedicated regional managers who were responsible for implementing changes.

> **"The (PPF) team must be well-versed in the business landscape, understanding the intricate connections between its various components. Only then can they transform raw numbers into a compelling story that drives informed decision-making."**
>
> **Wojciech Porebski, VP of Finance, Grids & Power Quality Solutions at Hitachi Energy**

> "The full benefits of PPF are only realized once the leading stage is achieved."

Begin with the End in Mind

Mauro Aieta, Finance & Administration Director International at Bolton Group, emphasized the importance of conducting a comprehensive analysis phase and having a clear vision of the desired outcome. For them, this analysis phase considered the following:

- The requirements of business partners, including their processes, reporting systems, and functional needs.

- The required technological interactions with other software, for example ERP or business intelligence systems.

Armed with the above information, the PPF team can effectively define the necessary processes, the extent of detail required, and the level of flexibility demanded by its users.

Identify Key Business Drivers

Fabrizio Tocchini, Head of Innovation at CCH Tagetik of Wolters Kluwer, shared that beginning with current budgets and plans is an effective way to pinpoint key business drivers. He suggests:

- **Choosing a measure with significant organizational impact**, such as revenue, and gathering at least two years of detailed, consistent, and reliable historical data. This data should include the measure to be predicted, in this case sales volume, as well as potential drivers like price, customer retention, and interest rate, among others.

- **Employing a predictive machine learning regression model** to determine the accuracy of the correlations that best explain the outcomes. This may take several iterations to achieve results and may necessitate data science expertise to apply algorithms.

- **Engaging in discussions** about the identified key drivers with the people most familiar with their predicted measures. **Tocchini** believes that understanding business drivers helps users grasp the *why* behind planning, eliminates guesswork, and results in more informed decision-making.

Balance Change with Easy Wins

Understand that you cannot change everything at once. **Patric Somlo, VP Head of Finance for Biologics Division at Lonza**, emphasized that beginning with the difficult areas of PPF may cause disappointment and a loss in momentum. Instead, start with smaller projects, such as improving the forecast speed and accuracy of just a few measures. This approach may involve hiring new talent and providing training because it is crucial to begin developing in-house capabilities early. **Somlo** also believes it is essential to manage expectations and foster a *trial-and-error* mentality. "Sometimes implementation works, and sometimes it does not," said **Somlo**, "however, it is helpful to be able to explain why."

Build Confidence in Using Predictive Analytics

Predictive technologies such as Machine Learning are often perceived as a 'black box' that generates numbers without explanation. **Patric Somlo** noted that it takes time for people to gain confidence in its predictions. He suggests that organizations new to Predictive Analytics run manual and predictive forecasts simultaneously in order to build confidence in AI/ML's predictive qualities. As this grows the manual process can be phased out and time increased on more strategic activities of developing insights and driving actions.

> **"It takes time for ML-based forecasts to surpass the accuracy of FP&A team forecasts, so running both processes concurrently can be instrumental in persuading stakeholders of their valuet."**
>
> **Wibe Spekking, CFO, Netherlands at Microsoft**

Similarly, **Wibe Spekking of Microsoft** emphasized the importance of adopting a *test, learn, improve* mentality when using PA. He also recommends fostering a close partnership between finance and data teams. While ML algorithms excel at analyzing data, human collaboration is necessary to provide inputs and draw meaningful insights.

> "Understand that you cannot change everything at once."

VIII. Conclusions and Next Steps

In today's unpredictable business climate, merging Predictive Analytics with driver-based models and integrated processes can create a powerful decision-making system that propels organizations toward their corporate goals. Embracing a PPF approach is essential for FP&A to become a valued business partner as it can help offer insights and guidance that drive organizational success amidst an ever-evolving business landscape.

> **"FP&A must embark on a transformative journey, embracing advanced finance technology, elevating skillsets, refining the scope of analytical business support, streamlining processes, and adopting a lean mindset to propel the organization forward."**
>
> **David Moreira, CFO at Manifesto Market**

In this paper, we have demonstrated that Predictive Planning and Forecasting call for organizations to acknowledge the insufficiency of traditional planning processes for effective decision-making. PPF goes beyond merely implementing PA technology or adopting xP&A. It develops a comprehensive ecosystem centred on decision-making at every organizational level.

Therefore, transitioning to PPF requires strong senior management support, investment in technology, and development of new skills within the FP&A team. This gradual change can yield incremental benefits throughout the journey.

IX. Acknowledgments

We would like to express our heartfelt appreciation to the following colleagues for their invaluable time and insights that significantly contributed to the development of this research.

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- FP&A Trends White Paper 2020: Predictive Planning: Managing Uncertainty

- The Artificial Intelligence / Machine Learning FP&A Committee

- FP&A Trends Webinar series

- International FP&A Board

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