ASSOCIATION FOR
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AFP® GUIDE TO

How FP&A is Improving Analytics

FP&A Guide Series

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How FP&A is Improving Analytics

Change is afoot. Experts agree that there's a shift in the kind of analytics FP&A is able and eager to run, driven by advanced tools new venues for analysis. These new developments are allowing FP&A to affect better decision-making by using tools such as multidimensional cubes and predictive analytics to improve forecasting and planning. While the percentage of companies using these tools remains small—around 20 percent—as the cost of system ownership falls and the demand for FP&A to provide business and management support rises, more and more organizations will continue to adopt them.

Introduction

Experts caution that whether a company is engaged in analysis depends on the company's definition of analytics. "I don't think that true analytics are used well by many people," said Michael Coveney, a business performance expert whose latest book, "Budgeting, Planning, and Forecasting in Uncertain Times" was published in February 2014. "I meet a lot of companies that talk about analytics, but when I ask what they're actually doing, it turns out they're just producing reports from the G/L" Coveney said. "Although we hear about companies that run advanced, real-time models, the majority of people in finance are still at a basic level."

According to Coveney, there's a lot of hype around analytics—in websites, software companies' marketing materials, etc.—it just doesn't get realized in practice. As a consequence, it's important for organizations to first define what analytics really means for them. "The concept isn't new," he said. "What is new is the availability of data and the accessibility of tools that can analyze that data."

According to Nigel Geary, BI specialist at British Gas, who spoke at a recent AFP London FP&A Advisory Board meeting, more companies of every size are making progress in harnessing data to drive business decisions. So far, he noted, "What I see is very basic. Nobody has even thought about predictive forecasting. "[Predictive forecasting] is what the trend tells us, for example, how a new product will affect sales and R&D. The first stage is getting the house in order and figuring out how to add value to management and performance."

"Our research shows that FP&A is doing at least an okay job of executing standard financial analysis," said Robert Kugel, senior vice president and research director at Ventana Research. "By that I mean the standard ratio analysis that goes back centuries and management accounting that was developed in the first half of the 20th century." However, past that the results are not so good. For example, only 10-15 percent are using predictive analytics, according to Kugel.

The 6 components of an analytics approach

1. **Data.** You need to collect a lot of it and in different formats, e.g., structured, unstructured.
2. **Context**. Explain what the data represents within a business model, e.g., to what location, product, month, or territory does this relate?
3. **Correlation**. Connect the model to an analytics engine that can summarize the data and create correlations between nominated variables or factors.
4. **Easily understood.** Develop a hypotheses that can be tested by the engine and reported to end users in a format that makes sense to them.
5. **Actionable.** Check that the results lead to actions that are within the business strategy, e.g., you want to expand in that country or sell more of a particular widget.
6. **Forecast.** Run multiple scenarios on any decisions to be made in order to predict what may happen in the future.

Inflection point

Things are changing. "We're at an inflection point," insisted Philip Peck, vice president at the Peloton Group. The place to start is to consider the context of what's happening in today's environment. "The pace of internal and external change continues to accelerate; our world is more complex, dynamic, and filled with uncertainty," Peck said. "From an FP&A perspective that means the organization is asking more of the finance function."

FP&A has customarily been responsible for activities such as orchestrating the annual planning process; completing variance analysis from budget, forecast, and actual results; and various ad-hoc analysis activities. "Now the imperative is for FP&A to step up and provide more advanced analysis and deeper, more robust insights to help shape companies' business strategies and improve data-driven decision-making in real time, so companies can be flexible and agile," Peck said. "To be indispensable business partners, FP&A needs to be better at performing analytics."

"Call it what you will: analytics, decision support, business intelligence, information discovery," said Peck. "Some form of it has been performed by FP&A teams for quite a long time, specifically at the operational level. Now we're seeing more of these analytical activities and analysis shifting to finance, and finance becoming more engaged in the core business operations. For FP&A to be sharp, it needs to increase its understanding of the organization's value chain and spread that knowledge across the organization. When FP&A is brought to the table, it can deliver more insight into the broader organizational performance."

"I am starting to sense that there's an uptick in the use of more advanced analytics," agreed Gary Cokins, a leading expert in the area of enterprise and corporate performance management (EPM/CPM) methods and author of "Predictive Business Analytics: Forward Looking Capabilities to Improve Business Performance."

"We've been seeing that the adoption rate is slow, and that's been said about enterprise performance management method overall and the role of FP&A within it," said Cokins. "FP&A faces some of the standard barriers: resistance to change (human nature), fear of knowing the truth and concern about being measured and held accountable— there's an endless list of human behavior issues that need to be overcome before adoption becomes more wide spread."

Still, Cokins said that he feels increasingly optimistic and is invited to speak more and write more on the topic. "Analytics is definitely a hot topic," he said. Another reason for Cokins' optimism is what he described as "the growing proliferation of more affordable software tools." He noted that these are indirect indicators that there are champions within companies who are working to pull their organizations into the 21st century. "We're into data scientists and Ph.D. statistics," he said. "There's growing ability to perform calculations for insights. The software has become more user-friendly and more capable at grabbing data from multiple IT sources." According to Cokins, the technical obstacles are not as intimating as they used to be using technologies such as ETL (Extract, transform and load).

"Finance should open the door to these more complex forms of analytics, rather than just looking at the balance sheet and income statement as it has for the past 20 years," according to Cokins. "Organizations should be doing probabilistic rolling financial forecast to produce a distribution curve of financial projections that include perhaps 15 key variables that are key to business performance and the budget."

Cokins observed that the bottoms-up cost center consolidations that use spreadsheets are flawed and cumbersome and involve substantial gamesmanship. The role of FP&A should be to construct top-down models that are also useful in the analysis of what-if scenarios. FP&A should refresh their model monthly and produce cash flow and P&L statements rather than wasting time on an annual forecast for potentially 100 separate cost centers that are, in reality, interdependent.

Five analysts in the finance and accounting function can perform the modeling by looking at multiple independent variables across the spectrum of worst-to-best scenarios for each variable, according to Cokins. Today, software can compute all of the combinations. "It's no longer a technology issue. It's a mindset. It's a behavioral issue. Technology is no longer an obstacle," said Cokins.

It's time to close the gap that exists between a company's CFO and chief marketing officer. The issue is not just growing market share and sales, but rather the growth of profitable sales. Finance can calculate P&L below the product gross profit margin line including

incurred expenses for channels and customers for the purpose to analyze how different types of customers contribute to shareholder wealth creation.

"Business complexity is one of the more significant challenges for the CFO and FP&A team. CFOs who are investing in common metrics and management reporting, common financial models, and a common business language are able to pierce through the fog of complexity to improve analytics and financial modeling capability," said Scott Brennan, managing director of Accenture Strategy. "All of our clients face increased complexity in their business; they've expanded into new markets globally and have introduced new product lines," Brennan

said. "A common financial language, common metrics, and consistency in how cost and revenue are recorded enables finance to make better decisions with less manual data aggregation and less brute force effort."

External events can also be addressed by analytics. When the Ebola outbreak emerged, many companies, including hotels, airlines, and rental cars, were running financial models in an attempt to predict its impact. "The sophistication of scenario modelling has vastly improved to keep pace with the rising tide of complexity," Brennan said. "Companies that model their scenarios with better data and collaborate across the company have a competitive advantage over those that don't," he said.

Analytics Maturity Model

The Gartner Maturity Model puts analytics in context. It describes the continuum along which companies climb as they increase their use of analytics from a more backward-looking analysis focused on what happened and why, to a forward-looking analysis focused on what will happen and how to create desired outcomes. "FP&A and finance are typically quite proficient at explaining what happened," Peck said. "But as you move up the maturity model and become more predictive and explore prescriptive capabilities, the value derived by analytics increases significantly as the business information and insights gleaned are proactively used to shape business decisions and improve performance."

Gartner published a research report that includes a roadmap enabling organizations to find out where they are in their usage of Business Intelligence (BI), as well as a path for progress that organizations can utilize to move up quickly in order to benefit from BI initiatives. A brief summary of the report is summarized below.

According to Gartner, there are 5 maturity levels:

1. Unaware

2. Tactical

3. Focused

4. Strategic

5. Pervasive

Level 1: Unaware
- Total lack of awareness
- Spreadsheet and information anarchy
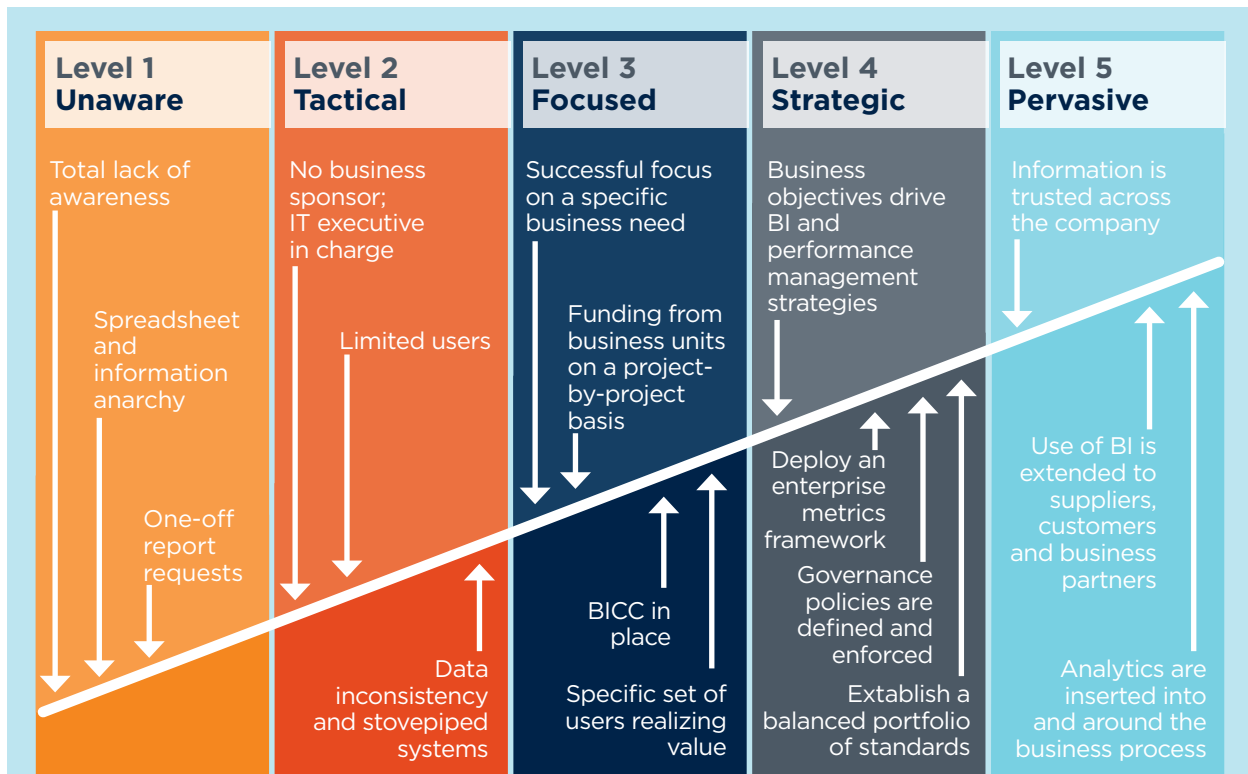- One-off report requests

What to do:
- Identify the business drivers.
- Get commitment and resources.
- Understand the data sources, data quality, architecture and systems.

Level 2: Tactical
- No business sponsor, IT executive in charge
- Limited users, mainly managers and executives
- Data inconsistency and stovepipe systems

What to do:
- Get funding from senior executives for finance-related BI initiatives.
- Define metrics to analyze specific departmental or functional performances.
- Find out what the requirements are for dashboards.
- Make the case for a BI Competency Center (BICC).

Level 1 Unaware	Level 2 Tactical	Level 3 Focused	Level 4 Strategic	Level 5 Pervasive
Total lack of awareness	No business sponsor; IT executive in charge	Successful focus on a specific business need	Business objectives drive BI and performance management strategies	Information is trusted across the company
Spreadsheet and information anarchy	Limited users	Funding from business units on a project-by-project basis	Deploy an enterprise metrics framework	Use of BI is extended to suppliers, customers and business partners
One-off report requests	Data inconsistency and stovepiped systems	BICC in place	Governance policies are defined and enforced	Analytics are inserted into and around the business process
		Specific set of users realizing value	Establish a balanced portfolio of standards	

BI = business intelligence
BICC = BI competence center
Source: Gartner (December 2008)

Level 3: Focused

- Funding from business units on a project-by-project basis.
- Specific set of users is realizing value.
- Successful focus on a specific business need.
- BI Competency Center in place.

What to do:

- Increase the scope of BI initiatives across multiple departments.
- Find BI investment and commitment for non-financial data, such as sales and product.
- Look for ways of integrating the data and consolidate disparate analytic applications.
- Create an enterprise-wide metrics framework.
- Expand the user base.

Level 4: Strategic

- Establish a balanced portfolio of standards.
- Business objectives drive BI and performance management systems.
- Deploy an enterprise metrics framework.
- Governance policies are defined and enforced.

What to do:

- Look to extend the BI application to supplies, customers and business partners.
- Determine how to use BI to support evolving business objectives and strategy.
- BICC should look at integrating BI Analytics with the business processes.

Level 5: Pervasive

- Use of BI is extended to suppliers and customers.
- Analytics are inserted into and around the business processes.
- Information is trusted across the company.

Please visit **here** for the complete report.

Practitioner perspective:
PAREXEL International

PAREXEL International Corporation, a biopharmaceutical outsourcing-services company, provides clinical research, clinical logistics, medical communications, consulting, commercialization, and advanced technology products and services for pharmaceutical, biotechnology, and medical device industries worldwide. There are approximately 16,500 people in the company and over 500 in finance.

The company is currently going through a finance transformation called F1T, Finance in Transformation, under the leadership of Ingo Bank, who became CFO in the fall of 2013. Mike Carpenter, senior director of finance, is driving the transformation within FP&A.

"Analytics, which drive decision-making, will become a huge part of our future," said Carpenter. "In particular on the metrics side, FP&A will look to link operational KPIs to predictive financial performance. We have been running regression analysis to determine the best KPIs and combining this by working with our business partners to ensure these metrics make sense from a practical standpoint. It's a work in progress."

The company is also shifting toward more of a top-down forecasting approach. Previously, forecasting was 100 percent bottom-up. Going forward, the forecast will be created at the top level, and then pushed down to operations for fine-tuning at the divisional level. "We are developing high-level predictive algorithms to create the initial forecast at the corporate level. From there, the financial analysts at the SBUs can tweak that forecast up or down based on the nuances of that particular project."

PAREXEL also uses straight-forward analytics when doing CAPEX business cases, M&A, technology evaluations, and when comparing PAREXEL's relative peer performance. "The lack of sophisticated analytical insight is one of the reasons we're going through this finance transformation," Carpenter explained. "We've not been as analytical as we wanted. Our goal is to spend 50 percent of our time in finance on decision support where we can put the 'A' back in FP&A."

Making the leap forward

"What we've noticed is that there are two types of approaches companies take to analytics," said Madison Laird, CEO of Funding Profiles, a software firm, "historical and forecast." Historical analytics looks at actual results in comparison to their plan. "In that case, FP&A is looking in a rearview mirror to make business decisions," Laird said.

"When you look into the future, you look into second generation applications," said Laird. Second generation applications include the application of predictive analytics to the world of finance. Predictive analytics is recognized as a growing field and is used in relatively sophisticated ways with big data and real-time analysis. However, it's still primarily used in operations and marketing disciplines, according to Laird. "In the finance world there are some specific and narrow ways it can be applied, for example fraud detection by banks," he said.

"In the FP&A world, we think that there are a couple of applications for predictive analytics," said Laird. One of those applications is forecast improvement—it's not as easy as pulling Excel forward. In the future, predictive analytics has the capacity to improve forecasts by determining what variables are changing to impact future currents and conditions, according to Laird.

The other application is early warning notifications. The idea is to create a system guided by basic business rules that would trigger an early warning notification. For example, "Alert me if these trends happen: if a product is less than 10 percent of revenue and growing to over 20 percent market share, and the gross margin has fallen by 0.5 percent over the last four quarters." "FP&A professionals might consider this product a very small element of the overall portfolio and miss the combination of factors, but because this product is growing quickly, it can dilute margins and impact the portfolio together," said Laird. "Being alerted to that trend a quarter earlier than any human might have noticed it may mean millions of dollars in savings."

"These are some examples of what we think is needed, and what is possible to achieve. Whether you consider that basic and advanced analytic capabilities can be left to others to define, as FP&A professionals, we have a job to do. It does not matter how it's classified, if it can help us make better decisions," Laird said,

Why predictive analytics can be useful for companies is twofold, agreed Kugel. First, "It enables companies to develop more accurate and nuanced models for future demand, expected costs, and for any number of things that they want to plan and model," he explained. Second, it can serve as an early warning system when business is not going according to plan. "For example, [it can be set up to alert businesses] when there's a sufficient deviation from expected volumes, cost ratios, or any other forecast results are not turning out as expected," said Kugel. The idea is that this sort of analysis enables management to take corrective action sooner, to seize opportunities, or to mitigate risk. Of course, to make it work requires enough data. But these days, large sets of data are fairly common, according to Kugel.

While it may sound very complex, "You shouldn't have to be a trained statistician to use business-focused predictive analytics," Kugel said. "In most cases, you're not trying to create a really clever model that Ph.D.s turn out for forecasting demand. That's not what FP&A groups need," he said. "They need to have the technology that allows them to take their basic understanding of their business and easily make use of that understanding to forecast more accurately and to get alerts when conditions don't meet expectations."

One reason for the limited adoption of early warning systems and more predictive approaches is that people remain wedded to their spreadsheets. "Spreadsheets are seductive in that they enable an individual to quickly translate a concept they have in their mind into a business model. They can easily prototype and refine that business model and update it rapidly as conditions change," Kugel said.

However, that's only the design and modeling phase. The production phase is where problems come up. At that point, the organization typically has to roll up multiple spreadsheets in order to create a consolidated operating model and forecast.

"They [spreadsheets] wind up becoming very time-consuming to use because unless you maintain columns and rows exactly the same, there's no referential integrity," Kugel explained. As a result, the time FP&A organizations waste putting up with the inherent technological limitations of spreadsheets prevents them from doing more analysis or becoming proficient in

How to get started?

Companies should not be intimated by the term "analytics." It's important for companies to step back and recognize that they're already doing some of it today. "It's not that you're starting from scratch," Peck said. "You have to do some level of analytics for the core work of FP&A. The object is to elevate those activities that are a little more advanced and institutionalize them."

1. **Start with your most critical business problems.** "Focus on a very specific business problem, partner with the business, and demonstrate that analytics can pay off," said Peck. From there, build a business case and link to the company's over-arching strategic objective in order to help convince management to allocate more resources to the issue.

2. **You have the data, now develop a hypothesis**. Analytics can come into play when you're exploring rich data, and you're not sure exactly what you're going to find. "There are new information tools available that make that exploration more productive," said Peck.

3. **Start small by doing prototypes, then kick it off with low-hanging fruit.** This enables FP&A to demonstrate its value. "Choose the right business areas," Peck recommended. Go with managers who are asking for help and who are open to collaboration. That helps facilitate the first success stories, tweak the process and spread it throughout the organization.

new techniques. "Learning new tools is impossible when all your time is being used being a spreadsheet jockey," said Kugel.

Although he admits that the best class adoption rate remains relatively low, "When it comes to analytics for FP&A, the discipline is emerging among organizations from all different sides," said Nick Castellina, research director for the Aberdeen Group's business planning and execution practice. According to Aberdeen data, 23 percent of "best in class" organizations use predictive analytics in their planning process. "The organizations that have technology also have the improvement in forecasting and the ability to provide more information to decision-makers while spreading more insight throughout the organization," he said. The analytics capabilities are increasingly becoming embedded in other solutions in finance, including planning and budgeting applications and other BI tools.

While some experts feel that marketing leads the way, Castellina doesn't believe finance is lagging. "When it comes to analytics, there are a lot of decisions to be made and a lot of use cases for Business Intelligence in finance—to create more accurate budgets and forecasts, and to gain insight into the cash position to help grow the company," he said.

The availability of cost-effective technology, like cloud applications, are making it more affordable for companies to implement analytics solutions. When it comes to creating a forecast today, companies typically need to do what-if analytics and historical analysis: that's the jumping-off point. From there, they can get more creative, performing Monte Carlo simulations and, ultimately, predictive analytics.

"The technology is out there," Castellina said. "We've got good data that shows that there are benefits." Finance organizations need to make it a key priority to explain to their stakeholders how the use of more advanced analytics can help create better forecasts and planning. "The tools give you the opportunity to add some analysis and make some connections to understand things you may not have been able to in the past," he said.

Practitioner perspective:
General Dynamics

General Dynamics is a 32BN multinational corporation made up of 12 business units. The company does not mandate that its BUs use a particular product or vendor for planning and business analytics. "Everyone can work on their own," said John Monczewski, senior director of Business Intelligence.

Monczewski's group works as an internal consulting arm interacting with FP&A and other finance and operational groups within the organization to provide support. "A lot of the work focuses on business analytics," he said. "We have a very strong team of people who work on getting the data because it resides in each BU." That's followed by a sorting process and an extraction process (ETL). "The key is understanding the business needs," he said, be they financial, operational or sales information.

There are a lot of different sources of information the businesses want to analyze. "We use a number of different applications (Primarily Oracle BI) to help them with the presentation of data and the analysis of the data," said Monczewski. At the analyst level, this means looking at how labor is performing in comparison to customer billing. People are able to drill down to the transactions level, i.e., who is being charged for the project, and what transactions and materials and other hidden cost are inside the project. If there's cost variance, "We can take corrective action," he said.

Sometimes that means looking at actual data, such as labor utilization, number of dollars spent, and how the unit is performing against the BU's plan, schedule and delivery. "For us, it's a systematic way to understand the needs of the BU and help them build toward a reporting strategy," Monczewski said. Some of the data is coming straight out of Excel, which provides information that's not always very useful from an analytics perspective.

At the same time, the BI team also provides high-level analysis for the executive team using a dashboard format with a drop-down menu that allows management to break data down by individual sectors and sub-sectors. "The idea is not to look at granular detail but [to] provide a snapshot against 4-5 KPIs against which every BU is evaluated," he said, which is tracked monthly.

The Pull of Systems

Traditionally, FP&A has used standalone Excel spreadsheets to come up with scenario models. "The problem with that approach is that it doesn't allow for cross-company and even inter-departmental collaboration," said Accenture's Brennan. While the tools are available, many companies are still using the basic Excel approach. "They use extracts from various databases and hope that they get the right data," said Brennan. "Many companies are viewing this as a problem and are trying to get out of that world and into a more rigorous data feed [in order] to get better data into their models."

As a result, "One of the trends we're starting to see is that FP&A is leveraging forecasting and analytical models that are not tied to Excel, but rather make use of advanced software, such as SAP, Oracle, Anaplan or another platform. This approach helps organizations create more sophisticated scenario-based models and allows them to share and collaborate in the office and across the world. "They can also help improve data integrity, which in turn helps support more precise models and inform fact-based decisions," Brennan said.

The issue with the evolving cast of dedicated applications is that most vendors haven't been able to make the front end of the modeling process as easy as using a spreadsheet. But there's a lot being done to allow people to work within a familiar environment behind which there's a real database with process control. These types of applications enable executives to create their own reports and simplify the act of getting data into single repository.

The leap to predictive models and analytics may not be as big of a jump as it may sound, according to Peloton's Peck. "FP&A essentially already handles future-oriented modeling by conducting planning and forecasting using data-driven algorithmic modeling. These are at their root prediction models. They tell us what to expect in 6, 12 or 18 months or significantly longer time horizons," he said.

Some older models rely heavily on simple trends, intuition, and guess work, but many companies have already started using more advanced tools. "Given that today you are able to model the world and understand the business drivers and the environment, you can definitely leverage more predictive and prescriptive analytics," said Peck.

"There's no question that tools used to produce advanced analytics are becoming more and more capable where some of the more recent market entrants have been delivering cloud based solutions," Peck said. But the tools cannot do the work without a deeper knowledge of the business. If FP&A doesn't ask the right questions, the technology can't provide the answers. "The tool can end up sitting on a shelf if you don't find ways to get people to get away from [the mentality of] 'how they've always done things.'"

There's a caveat: Running more elaborate correlations alone doesn't help you make better business decisions. The takeaway for finance is that they've got to understand what the technology can deliver, and then adapt it to their particular needs, according to Coveney. Just because companies can use technology to make their budgeting and planning processes faster, doesn't mean that the end result is any better. Data analysis has to be for a purpose, and it has to be done in the context of an organization's strategy. "Analytics technology is just a tool," said Coveney. "It doesn't replace good business judgement."

The business information is loaded into the BI application weekly to analyze results. "A lot of analysis goes into the numbers themselves, as well as frequency of information, so people can be far more proactive," he said. For example, if it's two weeks into the month and utilization is slow, they ask what the business can do to increase utilization to meet monthly targets, or at least understand why this is happening. "It's helped with a lot of forward-looking predictive analytics, as opposed to being reactive in the past," said Monczewski. "In the past, it was harder to shape the future."

Going forward, the company is doing research around prototypes on the data discovery side as to how to find information that's spread across multiple systems. "You don't care where the information is stored," said Monczewski. "The whole area of data discovery is a big opportunity for us."

Companies are moving more into virtual desktops, according to Monczewski, where everything is stored on virtual drives. Such a system will provide organizations with the ability to use a search engine to look across any data that's out there to find information from an analytics and audit perspective.

Applications used in the BI group, mostly Oracle products, source data from any ERP or other data source used by the BUs. "The packaged analytics help with frontend work and customized use of the information," said Monczewski. He noted that one of the biggest challenges they have is training people to use the application most effectively. "We want to teach people to fish, how to connect and build analysis," he said.

Oracle products integrate with Excel, which remains the number one reporting tool. As a result it's becoming easier and easier for people who are familiar with Excel to use these analytical tools. To find trends, the company relies on multidimensional cubes, such as looking at their customers or products. "We use multiple cuts of information," said Monczewski. "It's not just flat information. That's a big part of our strategy."

"I think FP&A needs to expand its analytics capability," Monczewski said. Historically, it was simply reporting the monthly results: here's the actual, here's the plan; let's try hard to explain the variances. But there's a lot FP&A can do with analytics to go beyond that, such as looking into the underlying causes of the variances and the key drivers of them. "A huge amount of time is spent trying to report the numbers to get the variances correct," he said. With these new tools available, "People can be much more proactive. The role should really be to work with the business and be proactive in making changes," he said. "Instead of 'here's what happened,' the goal should be, 'here's what we can do to correct the situation.'"

In his BI role, Monczewski is working with multiple FP&A groups within General Dynamics. "They appreciate the drill down capability. They can see the top 10 programs that change from a revenue or cost perspective. They don't have to start at high level. They can already see what project and what elements drive the variance," he said. "From my perspective of working with FP&A groups, it's essential that they use the tools; it gives them the ability to answer the questions themselves. Too many organizations spend 80 percent of the time getting the data and 20 percent doing the analysis. I would hope that as the technology changes, it will more rapidly change that equation, allowing FP&A to spend 80 percent of its time on analytics and driving business change."

The day-to-day implications

The key for FP&A is to adopt the whole notion of driver-based modeling and planning. "If I can create better predictive models that leverage a deep knowledge of operational activities, the relationship of these activities to financial outcomes, and define it in an algorithmic way using an array of multi-dimensional relationships, then you have a better chance of improving the quality and accuracy of forecasted financial results," said Peck. "Analytics are at the heart of these models."

Before FP&A can climb to the next level, however, some things needs to change.

1. **Where people spend their time.** Too many finance professionals spend much of their time collecting data, churning out reports, and validating reports. "It's taking far longer than it needs to, leaving limited time to deliver value added through insight and being more analytical. That's probably the biggest barrier," Peck said.

2. **Corporate inertia.** The organization may fail to see the business case for investing resources—human and technology/process—into improving its analyti-

cal capabilities. "They tend to fall back on the tried and true traditional rules of thumb and rely on individual specific intuition and experience," said Peck.

3. **Skill gaps.** Many finance organizations were built to deliver information and produce reports; they were not built to perform more exploratory work and to delve into the unknowns, according to Peck. "It's not necessarily in the DNA of many FP&A teams," he said.

4. **Data availability, access, quality, and integration across multiple internal and external systems.** More often than not, finance lacks access to the information sets needed to optimally leverage and deploy more advanced analytic capabilities. That's a big obstacle for many professionals.

"People are asking FP&A to do more," said Peck. That's in very large part the result of the explosion and proliferation of data—structured and unstructured—as well as its velocity and variability. "That creates much greater opportunities to leverage data from an analytics perspective," Peck said.

The key is to look at a multidimensional relationships. "The FP&A group is looking across the dimensions of geography, products and customers," Brennan said. "They intersect these 'cubes' to see where they will have the biggest opportunity. That's where the more sophisticated tools come into play. They allow you to load more data into multidimensional models and inform financial models."

According to Brennan, FP&A is making investments to improve analytics capabilities in order to improve its partnership with the business. The impetus for this investment often comes from a company's CFO. Finance organizations that lag in their efforts to make the right investments may find that they are not in a position to make a meaningful contribution to other business units. "If finance is to be considered a business partner, it needs to make the necessary investments to help the business make better decisions," said Brennan, which means not only finding the right tools, but also hiring the right people.

Another key area companies are working hard to improve is data integrity. This applies primarily to large, complex organizations using a variety of systems. Comparing data that comes from disparate systems can be a challenge. "There's a lack of consistency and comparability in the source data. Without that, there's lack of confidence in the analysis," Brennan said. "Companies

From cube, to hypercube to Hadoop

For many companies, the first step into more advanced business intelligence is constructing multidimensional decision-support tools, or "cubes," according to Geary. In the past, that had to be done on mainframes. Now it can be done in the cloud, making it more affordable for companies of all sizes. Companies first began using cubes in Excel, and it worked. "It allowed FP&A to build budgeting systems in their departments. It also minimized the amount of IT support needed to run the models," he said.

The next step in analytics, according to Geary, is the "hypercube." With budgeting, FP&A usually pulls down data from the G/L and creates multi-dimensional data sets each month to refresh the information and do variance analysis. The hypercube breaks down this process to allow users to be able to see the profitability of different activities within the business. "You can't do that if you have sales data in one cube and cost data in another cube," said Geary. "The idea is to roll all of that up into a single cube, and bring it all into one place. The hypercube ties all the ledgers together to calculate profitability by day, department, etc., and to provide drill-down capability by numbers, by transactions, and makes it possible to see any errors," Geary said. "The cube has been the natural view of the data for the FP&A people. The more sophisticated systems allow them to work with some big data technologies."

To deal with the flow of big data, which includes numbers, images, social networking, and free-flowing text, data scientists have come up with a new data storage and language called "Hadoop." Using Hadoop, companies can pull data out of new multidimensional databases that are not structured in the style of columns and rows, providing greater flexibility. Hadoop is used by the likes of Google and Amazon, Geary explained. But it's still in its early days, and some experts are already looking beyond to other languages that would allow more precise searching. "Hadoop is rocket science. Quite often there's a lot of data, and you run a lot of algorithms," Geary concedes.

should consider adopting a common business language so that they have more consistency in how they calculate data," he said. "You can develop the most sophisticated model, but without good quality data, you're going to be missing opportunities."

Practitioner perspective:
Norgine

"All businesses are craving data and analysis," said Hans Gobin, finance director at Norgine, a European healthcare company. "There's a lot of need," Gobin said. But many companies are still struggling with subpar data. "To get the data regularly and accurately is priority number one. Next, FP&A needs to be able to report on it in a timely manner and be flexible about it," he said. That may mean changing focus weekly or monthly. "It's got to be part of the business," said Gobin. "You want to know who's buying what and how often, and how you can shift people's perception in terms of consumer preferences."

While that may sound like a task for the marketing department, it's as much the responsibility of finance since those are the drivers of performance. In many cases, the obstacle to greater understanding of trends is that systems remain expensive, according to Gobin.

Consumer information helps in the planning of manufacturing capability, for example, according to Gobin, who's in the process of implementing a TMI planning tool for budgeting. "What sort of data you have available within the tool will impact what kind of scenario planning you can do," he said. "You need to have a sense of what is happening in order to integrate these trends into the planning process."

That includes not only financial drivers but also business drivers. "The plan should tell me what's going to happen in the future," Gobin explained. In too many companies, budgeting is basically an automatic exercise based on improving the previous year's results. For example, say the board wants to see 10 percent growth—the analytical tools can give you the data to assess its feasibility. "Such tools would be really helpful [in getting] finance to get to the next level," said Gobin. He predicts great change in the next five years. "You will have assumptions and [be able to] take market data and run it through analytical models to arrive at a better forecast and planning scenario."

Practitioner perspective:
Konica Minolta, Inc.

Konica Minolta is a Japanese technology company that manufactures business and industrial imaging products. The company manufactures its products in China and does its R&D primarily in Japan, according to Finance Director Igor Panivko. The reason the company's FP&A started performing a higher level of analytics was to break existing silos in the analysis of sales risk and operational risk, and to enable the mapping of general risks and opportunities across the organization.

"We have two key business activities—sales and printing servicing (split into four channels)—which are differently organized in our ERP system. Our customer sales period is around four years with various kinds deals during this period. FP&A faced the difficulty of calculating the margin on all activities with a particular customer because each business module had its own logic, and there was no way to set a solid benchmarking process across several business modules and types of transactions over a period of several years," Panivko explained.

"Moreover, planning existing customers' results was rather complicated as we had no accurate history of key drivers behind customer's activity," he said. "In our case, the long-term relationships with customers over four years have been tested for their competitiveness with prices, which tended to decline, and an ever-increasing demand for better service. We could manually collect the scattered data from the processes, but the challenge was to have an integrated outlook. So, all profitability ratios, for example, had to be integrated."

In addition, the company wanted to analyze its customer contracts. Those were organized in the G/L but were not connected. "It was very hard to get a full financial picture and to assemble the details to create a holistic picture," said Panivko. "Details existed in dispersed modules and departments, which made them hard to understand. FP&A's mission was to combine and warehouse all that data into one integrated logic that would be extracted and selected from the G/L but be overseen by a top-level analytical system," he said. The challenge was to make the analytics work from one source.

"As a solution, we have decided to build up a business intelligence (or data warehouse) model mapped to the standard financial metrics on the platform of Microsoft SQL Server, which has become the basis for develop-

ing our Integrated Analytical Model (IAM)," Panivko explained. "Our key goals for development of the IAM system are concentrated around the creation of a fast, accurate, non-contradictory, minimum time-consuming analytical system that is capable of providing answers that assist in the decision-making process."

"What I mean by 'analytical' is looking at a product by activity, geography and channel to find any anomalies, which are then researched by finance in order to understand the trends and to provide insight for the development of new ideas," he said.

In creating the analytical capabilities, "The biggest pain point was the data quality issue," he said. "It's not just an IT approach; there are a lot of definitions of data to use in decision-making to help direct the business. The quality of the data governance is handled by finance," he said. IT often doesn't fully understand the needs of FP&A from a business perspective, according to Panivko. "There are two options: Either IT become business leaders or we have to understand how technical solutions work. I had to deep-dive into the technical issues to understand how to integrate and understand the data."

It helped that Panivko took some basic courses at the university level in data integration and programing. "I was pretty comfortable in developing a multidimensional model (cube) that looks at various data interrelationships rather than only two intersection points," he said.

Before the new analytical process was put into place, it was difficult for departments to list all of the contracts and their various aspects. Through interaction with the finance team, "They now have the capabilities and expertise," said Panivko. "We can now work collaboratively with the business modules, share goals, and take a more agile approach."

"Finance plays a key role in the implementation of the analytical tool, as well as the analysis itself. We provide guidance regarding the financial direction, financial reporting and adjustment. We dive in and incorporate that through the allocation of resources and driving financial results," said Panivko.

"Developing the plan for the next year, and the budgeting for next year, and analyzing results using the cube requires the finance department," he said. "Business logic is preserved in the system. We run the drivers, not just the finance data, which enable us to understand the drivers of performance," said. "We produce more

information. We build models that are integrated into spreadsheets for scenario development."

Data is generated by the ERP, and the BI software they use is Microsoft SQL Server Analysis Services (i.e., the OLAP cube). A lot of the work is still done in Excel, concedes Panivko. But Excel is employed as a user interface for the entry of planning data and as a flexible online analysis tool of aggregated performance indicators through pivot tables and pivot graphs. It's a familiar front-end to users and management over the more complex logic hidden in the OLAP cube design.

All reports with analytical calculations are equipped with option buttons, which enable the user to select parameters, such as:
- period (month or combination of months)
- sales channel or combination
- branch or combination
- product segmentation
- transaction type

There is also a very powerful tool in place for ad-hoc analysis: Excel is directly linked to the OLAP cube. This functionality allows users to slice and dice any available information in whatever format they choose and to create new formulas or dependencies with the help of MDX language directly available in Excel. This is the tool for power users whose responsibility is finding new data insights for decision-making and forecasting solutions.

As the finance director for Moscow and the Ukraine, Panivko has already set the data analytics project in motion. However, there's continuous improvement. "It's not developed and frozen," he stressed, "because analytical needs are always changing."

"Looking forward, I see a lot of opportunities," Panivko said. "A lot of ideas and tools I want to use." For example, he would like to add more data mining and predictive analytics to his tool set. "The biggest problem right now with predictive analytics is the data," he noted. "You have to strive for real data quality. Based on that, you can create predictive scenarios with high predictability."

Predictive models are not designed to replace business intelligence, according to Panivko. "The past is still very important," he said. "The present and the past are used to develop algorithms to make future decisions. My goal is to have them integrated live into the models, so you can see how your business is doing all the time."

Conclusion

More companies are focused on doing the basics well, including streamlining processes, reducing planning and reporting cycle times through automation, institutionalizing standard reporting and defined analytic views, and deploying self-service models. As a result, FP&A professionals have more time to spend on value-add activities, such as leveraging analytics capabilities to optimally support the business.

The result is a movement toward more dynamic planning—being faster and more agile when adjusting and modifying plans, budgets, and forecasts; using more advanced analytical techniques and leveraging predictive models to improve the quality and accuracy of outputs. "They [companies] are beginning to better understand ongoing trends, and the correlation between data sets and not only understanding correlations but also establishing the causality between these data sets," said Peck. "Analytics plays a key role in understanding and optimizing the profitability of products, services, and customers."

How evolved companies can be in implementing these emerging tools really depends on their current state of technological advancement. "If the planning is not great, they should be looking at the tools that perform scenario modeling, and all basic tools today can give you that," Geary noted.

Companies can start by looking at historical patterns and the drivers of customers' behavior to identify business drivers and use the tool to analyze the data they do have to see what's driving their performance. Users should be able to look at reports in Excel and slice and dice the data to understand the business better. In the future, according to Geary, companies will be able to run more predictive models relying on bigger sets of data using new language like Hadoop. "Using data mining, the machines can be looking for the associations," he said.

"Data science technology is in its infancy," Geary said. "But that's changing. To get the best results, FP&A needs to be in charge of its own destiny."

About the Author

Nilly Essaides is Director of Practitioner Content Development at the Association for Financial Professionals. Nilly has over 20 years of experience in research, writing and meeting facilitation in the global treasury arena. She is a thought leader and the author of multiple in-depth AFP Guides on treasury topics as well as monthly articles in AFP Exchange, the AFP's flagship publication. Nilly was managing director at the NeuGroup and co-led the company's successful peer group business. Nilly also co-authored a book about knowledge management and how to transfer best practices with the American Productivity and Quality Center (APQC).

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