LEADING PRACTICES FOR SALES REVENUE FORECASTING

Q&A with FP&A Expert Philip Peck, VP Finance Transformation and Advisory Services, Peloton Consulting Group

In April of 2019, Steve Player (senior research fellow, financial management at APQC) and Rachele Collins (principal research lead, financial management at APQC) interviewed FP&A expert Philip Peck on the topic of sales revenue forecasting. Peck is the vice president of finance transformation and advisory services at Peloton, a professional services firm helping organizations envision, implement, and realize the benefits of digital transformation across Enterprise Performance Management, Big Data & Analytics, Enterprise Resource Planning, Human Capital Management, Supply Chain Management, and data applications for the cloud.

CURRENT TRENDS IN SALES FORECASTING

APQC: Can you provide some background in terms of the work your organization does to help clients with sales forecasting?

Philip Peck: Peloton has worked with hundreds of clients over the past decade plus to help them embrace and configure best practices to improve and enhance their ability to model, plan, forecast, report, analyze, and manage sales revenue. In specific situations, we have also helped organizations optimize their sales revenue and related sales margins through better visibility and understanding around pricing discounts, price-volume-mix analysis, and profitability optimization. These projects have included business process improvements (streamline processes, integrated business planning, driver-based models and calculations, centralized assumptions), deployment of a purpose-built enterprise enabling technology platform (pre-defined out-of-the-box calculations, configurable, flexible, integration with other Enterprise Performance Management and Business Intelligence modules and applications), purpose-based reporting and advanced analytics, automated data sourcing, data integration and management, people and organization alignment (roles and responsibilities, organization structure), and holistic change management & adoption.

APQC: Give us a sense of where you see the market today in terms of the projects you carry out most frequently. What are the most prevalent projects right now?

Peck: I think there is always going to be an industry-specific answer to that question, but I'll give some observations across the industries that we work with. There's no question that

projects that have to do with integrated planning are becoming more prominent. Organizations are increasingly embracing the need to look across the value chain and break down any silos that might exist, whether those silos occur in business processes, between different functions, in the collection of and manipulation of data and information, and the development and usage of sales revenue planning models and related technology applications. We're definitely seeing organizations realize that they can plan better if they intentionally connect the dots in terms of having integrated data, processes, information, people, decision making, and end-to-end support for their planning, forecasting, and analysis activities. The theme of a holistic end-to-end process centric view across the value chain and integrated business planning is very pervasive right now. Collaboration is a critical element of these trends and emerging capabilities as well. The integrated business planning framework provides the foundation for optimally aligning operational activities with the expected financial outcomes including sales revenue forecasts.

At the same time, we're seeing organizations start to implement advanced practices like predictive analytics, machine learning, artificial intelligence (AI), natural language processing, cloud-based technology platforms, and robotic process automation. Organizations are doing pilots for these technologies and looking across their processes for opportunities to implement them. These projects are definitely gaining traction, even if things are still in a pilot phase and not fully implemented in many organizations.

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BEST PRACTICES FOR SALES FORECASTING

APQC: How do you see successful organizations conduct sales forecasting? What are the roles and responsibilities, process steps, and key inputs of that process? Do these differ significantly based on the industry or size of the organization in your experience?

Peck: I'll start with what we would typically see in terms of roles and responsibilities. FP&A/Finance typically owns the coordination of the overall budgeting and forecasting processes inclusive of sales revenue forecasting. As part of this role, FP&A establishes and then executes the overall planning calendar of activities. This includes collecting information from various constituent groups including Marketing, the Sales Group, Product Management, Operations/Production, and Distribution & Logistics. Using the inputs from the stakeholders, FP&A updates consolidated sales revenue planning models with prior period actuals and key driver inputs and then determines forecasted sales revenue as part of the broader overall P&L.

Best-in-class Process Steps

At the highest level, the basic process steps for forecasting sales revenue are reasonably similar across most industries. That said, there is significant variation when exploring the process steps in more detail. Key steps would include the following:

1. Determine the external industry assumptions (e.g. market growth/decline, consumer sentiment, specific events).
2. Incorporate industry-specific factors (e.g. seasonality, competitive landscape).
3. Incorporate revenue recognition considerations.
4. Determine expected volume (e.g., known, anticipated, unknown, on contract, proposed, speculative).
5. Determine expected price.
6. Determine timing (e.g., when will the product or service be delivered).
7. Assess ability to satisfy orders and/or deliver the services. From a forecast perspective, the revenue could "push" to a future period if something in theory could be sold but not delivered.
8. Load key drivers into the sales revenue models.
9. Assess the need for conservatism.
10. Produce base reports. This could include elements like PVM (Price-Volume-Mix) analysis by product grouping.
11. Review, identify changes, and update models.
12. Finalize the forecast.

Note here that there are often very detailed marketing, sales volume (demand management), pricing, production volume, and revenue planning models that feed more summarized, consolidated planning forecasting models used by the centralized FP&A and finance teams. These models are often owned by people within the business who serve as dedicated or defacto FP&A like roles within the business.

As part of the best-practice based sales revenue forecasting process design, it's critical to determine the appropriate level of detail as this will likely vary across the more detailed sales revenue forecasting models and the summarized consolidated forecasting models.

FP&A doesn't necessarily believe all of the upstream elements that feed into the forecasting process. Once the models are loaded with these assumptions, they exercise some degree of critical judgment. They might, for example, change some of those elements or pressure test them. They're going to go through iterations of a price/volume/mix analysis or analysis of other key metrics based on the industry and review, make changes, and finalize the forecast. That's typically what we see at a broader level for an end-to-end process.

Though the industry-specific lens, sales revenue forecasting must be reflective of the underlying nature of the business and the data, models, drivers, assumptions, and related activities involved in generating revenue for the organization. For example:

Potential Process Inputs

Representative process inputs associated with the above process steps include the following elements. Some are common across virtually all industries while others are specific to industry sectors:

- Market growth/Decline rates
- Consumer sentiment
- Days per month
- Seasonality factors
- Market penetration
- Promotions
- Marketing spend
- New store openings
- New product introductions
- Sales per square foot
- Units (By SKU, product family, channel)
- Book vs. backlog
- Gross price
- Discounts & rebates
- Net prices
- Estimate to complete
- Estimate at completion
- Number of projects
- Billable rates
- Utilization
- FTEs
- Product "end of life" dates

Aerospace & Defense

The sales revenue forecast is built up from the very granular contract details that make up all of the elements of a much larger program. Given the nature of government contracting, there are complex rules regarding what can be included in the rates charged to the government based on the contract parameters. In large part, revenue forecasting is a by-product of developing the total direct and indirect costs of the program/project/contract, determining what can be included in the billable rates, allocating costs, and then doing the revenue calculations as programs are executed over time.

Life Sciences/Pharmaceuticals

For relatively mature Life Sciences companies, there are typically three primary types of revenue forecasting models that are then supported by numerous more detailed revenue forecasting models. The first is the model for commercialized products (in-line), the second is the model for known products in the existing pipeline (launch), and the third is for unknown products far into the future as part of the pipeline. The revenue forecasting models are very different as the first model heavily relies on historical patterns (market share, gross-to-net ratios incorporating payer discounts and financial discounts, volumes, etc.) to forecast into the future. The level of detail is substantial. The second model uses fundamentally different algorithms to predict sales revenue with a fair amount of detail as the launch products are well defined. These include fairly sophisticated calculations to determine market penetration, end-user adoption, filling the wholesaler pipeline, and other considerations.

Higher Education (Heavy Online Presence)

In higher education, revenue forecasting starts with the number of students enrolled. Other key factors include modalities (how students receive learning–on campus, off campus/online, competency), type of class, cycles per year, tuition reimbursement parameters, marketing spend, attractiveness of class offerings, re-enrollment percentages, consumer sentiment, etc. The modalities have very different considerations specifically around the number of cycles per year ranging from twice per year for on campus to 10/11 for online to 6 to 12 for competency-based learning.

APQC: In addition to revenue recognition, the cash flow implications are also very important, and there are a lot of knowns and unknowns there. Broadly speaking, forecasting is a very complex process that relies on a lot of different assumptions, and good forecasting gets these assumptions to talk to each other. The good news is that the systems we have today are much more sophisticated in terms of being able to tell us about the inputs and what we're doing to them. It creates a lot more options to get smarter about what really came in and what really happened, which is very exciting.

Peck: I'm glad you brought up the connection to cash and cash-related planning. A lot of those upstream sets of assumptions that go into the revenue forecast are of paramount importance

when you're trying to produce a cash forecast, whether it's a 13-week rolling forecast or a longer-term cash forecast. We work with clients where things like discounting and timing have a very material impact on what an organization will need from treasury and FP&A in terms of cash management.

Another important question is: What is the real purpose of forecasting? We worked with one organization that said they wanted an estimate of expected future performance. FP&A would generate a forecast and the leadership team would say "that's not good enough." It became more of an exercise of trying to hit a previously-established target than doing a legitimate forecast that looks honestly at the knowns and unknowns. That's why you really need to flesh out why you're doing a forecast and what its true purpose really is.

APQC: Knowing the true purpose of forecasting is really critical for FP&A in general and for sales forecasting in particular. Forecasting is difficult because it involves trying to predict what you think is really going to happen, which in many cases is different than what you want to happen. An organization can do different iterations and say what alternative action plans they could implement to bring about a different outcome, but they shouldn't be putting a lot of wishing and hoping into the forecast. Instead, they should be looking at the key drivers to have a realistic sense of what's ahead. The days of the "trust me" forecasts are limited because organizations can now be much more precise about knowing what's going to happen and track the effectiveness of their response. At the end of the day, organizations have to make physical changes for financial results to change.

Peck: Absolutely. The goal is to produce the highest quality forecast to help the organization make better decisions. If there are gaps between a desired outcome and organization's current performance, it's important to be able to ask what actions you can take to mitigate that gap and do things differently. This also speaks to the critical linkage between active strategy management in terms of measuring, monitoring, and managing execution of enterprise strategy and the associated strategic initiatives and periodic forecast updates. Based on the information provided via high-quality best-estimate forecasts, organizations should revisit their operating plans, course correct as needed, and deploy/redeploy resources to maximize the likelihood of achieving goals and objectives.

APQC: Right, and management simply wishing it to be better or higher is not an action plan.

Peck: Very true. Earlier you asked about some of the key process inputs or drivers that you need to run a model and produce a revenue forecast. I think we've hit upon many of them already but depending on the business, there are a few more that are important to talk about. In a project-based business, you're going to have considerations like the number of projects, complexity of projects, expected utilization, and resources per project. The life sciences industry, for example, has to manage a portfolio of commercialized products that include things currently on the market, going on the market next quarter, or even going on the market 20

years from now. The modeling for those three elements will involve different algorithms, levels of detail, and sources of knowledge for generating the forecast.

APQC: Exactly. A pharmaceuticals organization might develop 30 drugs, and perhaps 27 of them will not generate revenue. They don't know which three will, but they are going to have to cover the cost of the other 27. It is in many cases a long-term exploration, especially where drug testing is involved. This is a big contrast to the banking industry, for example, which tends to move based on what's happening with cash. You have to be careful with forecasting because you may get it right for one industry but using the same elements to forecast in another industry may not produce a high-quality forecast.

Peck: Yes, and this is a good segway to some of the industry-specific forms of forecasting that we've seen. The one that I find the most fascinating because of the accelerated pace of change is higher education. One of our clients, for example, has transformed from a rather sleepy liberal arts-oriented university to one of the largest online universities in the world. How do you plan and forecast in a context where everything starts with the students? How do you predict something like enrollment? This particular organization is starting to embrace more advanced AI and machine learning algorithms to help them predict how many people will attend the university on campus vs. online, what types of courses they might be taking, how long they might stay at the university, and how they respond to different types of marketing. They have a relatively sophisticated modeling environment that helps them predict enrollment over time and that feeds into their planning, specifically around revenue for the university. The output of these forward looking demand generation models is also leveraged to proactively plan and manage staffing needs across the university.

APQC: We've been talking mostly in terms of larger organizations so far. What should the process look like for smaller organizations that might be more resource-constrained?

Peck: Leading practices apply regardless of the size of the organization. To the extent that they are able, small organizations should embrace more connected and integrated planning across the organization. They should work to minimize or eliminate silos, streamline the process wherever possible, and rationalize the level of detail they need to produce the revenue forecast. Smaller organizations need to be intentional about the planning process itself as well as what level of detail they need or don't need for a quality forecast. The price points for planning technology are significantly lower now, so even small organizations would be very wise to look into whether there are technologies that could help them to transform, improve, and optimize their sales revenue forecasting capabilities.

APQC: The wide accessibility of these solutions is one of the biggest shifts that we've seen in the last decade. Smaller organizations have to think about how to understand the business and the algorithms of the business. Whether it's a manufacturing company or a restaurant chain, you need a simple model of how each unit works so you can understand each unit's profitability. That way, when the organization predicts earnings, it creates a cycle around asking how the

organization can keep making its delivery models as flexible and agile as possible. Organizations shouldn't be trying to perfectly predict revenue, but should work to understand what is most likely to happen so they have the flexibility to deal with those ranges upward and downward and adjust as quickly as possible. More than simply predicting, it's about understanding how the organization will deal with whatever comes along.

Peck: Absolutely. Being an FP&A practitioner means being a business partner and doing what it takes to help the organization make better decisions. At the end of the day, you're looking to drive optimal performance for the organization and use your resources in the best manner possible against your core strategic objectives. A good FP&A practitioner knows the implications of all the ranges and possibilities, and provides the guidance and insight needed to shape those decisions.

FORECAST ACCURACY AND RELIABILITY

APQC: What performance metrics do you see people using when it comes to sales revenue forecasting?

Peck: Virtually every organization in some way, shape, or form measures forecast accuracy. Over time, the accountability in this area has grown—a forecast is no longer a wish, a promise, or a "trust me." Organizations can now leverage algorithms to seed a forecast and can apply human considerations like knowledge and intuition to adjust, modify, and change it. The solutions available now allow organizations to explode the model into different components, and it's a lot easier to track and improve the underlying driver relationships and algorithms over time. As I have highlighted in prior forecasting related discussions, the quality of the forecast in terms of driver assumptions, process standardization, modeling, and collaboration is also of paramount importance and has a direct impact on the accuracy of forecast outputs.

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From an overall process perspective, degree of automation is another key metric. The metric is a little more technical, but it speaks to the ability to get away from manual processes, hand offs, and extra work simply to reconcile, transform, or adjust data. Another important form of measurement is baselining where an FP&A organization stands today against where it wants to be in the future to ask if it's making the right amount of progress over time. That can be somewhat subjective, but it's still a measurable way of asking whether the organization is making enough progress to produce high-quality, accurate revenue forecasts and then use that information to make better decisions.

APQC: One big pitfall when it comes to forecast accuracy is that it is often understood as the ability to hit a number rather than understanding the numbers themselves. The people who reduce forecast accuracy to hit the numbers are in many cases missing the purpose of the measurement. It's about trying to understand natural variability and natural noise. If I learn something about my point estimate and the noise around it, then I learn something deeper about the process itself. Organizations should be working to filter out bias and trying to track how well the algorithms reflect what's really happening. The real learning happens when organizations understand the business more effectively rather than hitting a number.

We see in our benchmarking data that in top-performing organizations, the percentage error for the total sales forecast is one percent, the median is 1.6 percent, and bottom performers are at 2.2 percent. What is your reaction to this data?

Peck: On the surface, the numbers here are surprisingly good. There's often a tremendous amount of noise around the forecast and the known/unknowns, but that's not necessarily here in the bottom quartile. That 2.2 percent actually might be perfectly fine for some organizations. If they want to improve, they might need to ask themselves: Is the juice worth the squeeze? Is it worth the effort to try to reduce the variability at that point? Organizations will have to decide how much they're willing to invest in process improvement, technology, change management, or other capabilities and interventions to reach whatever aspirational number they have. It's a fair, legitimate, business case-oriented question and a value proposition dynamic. These organizations might decide that their existing forecast accuracy is perfectly fine and that there are simply going to be factors they can't control. They can predict, try to estimate, and put contingency plans in place, but it's not necessarily going to translate to better forecast accuracy.

APQC: What interventions would you recommend if people are starting to be overly optimistic or pessimistic in their forecasting?

Peck: I think that data-driven discussions, reviews, and evaluations of the modeling environments that focus strictly on facts allow an organization to see where things have been trending and often show where people have been sandbagging as well. If people are consistently over-promising and under-delivering, make it a much more fact-based discussion and work to identify areas of improvement. That could be in terms of the driver relationships in the models or the credibility and quality of the data, but you have to look for what you can improve over time and measure your improvement against that as you continually look for better ways to forecast. Organizations should also model and plan for anticipated biases leveraging historical analysis and other relevant information. Well-designed models can accommodate anticipated bias differences by region, function, channel, and by individual person.

APQC: What you're saying make sense. The data itself will reveal the bias one way or the other and sometimes, the best way to eliminate that bias is to show it. The other important move is to eliminate the things that create bias. For example, organizations should eliminate bonuses for

hitting a forecast number—you should never reward that or taint the drive toward accuracy with money. You should also remove any punishments for not hitting the number. Forecast accuracy is something that organizations should strive for, but the true goal is making the data speak so that the organization understands the business on a deeper level.

Peck: I completely agree. I think providing more transparency and visibility into the underlying assumptions can help an organization over time. In some cases, those black box models may be okay, but you should demystify them and make them visible to everyone to the extent that you're able, showing how the models work and how the assumptions are made. Over time, you'll get more alignment, elevate the organization's ability to forecast, and start some improvement cycles around the underlying assumptions of models.

APQC: What are your thoughts about best practices for creating a more reliable forecast?

Peck: When it comes to reliability, I advocate focusing on key elements from a people, process, enabling technology, and performance management perspectives.

Through the people lens, organizations must establish clear ownership and accountability for each component of the end to end process. They must also align operational planning activities with the financial planning and forecasting needs. As we stated earlier, they also must also define and embrace the real purpose of forecasting as the best estimate of expected financial performance.

Process best practices start with the framework of integrated, connected planning. Focus on delivering a streamlined process that leveraged common, consistent definitions and a well-defined set of activities aligned on the planning calendar. The process should balance the need for additional detail, complexity, and related level of effort with the value of the resultant output and its impact on making better business decisions. The process should also incorporate understanding of, modeling and planning, and making decisions around the operational levers that impact financial performance. Reporting and analytics should provide insights around sales revenue performance across the key business drivers, provide analysis and recommendations regarding future performance including potential actions for improvement, and provide robust analytics and data visualization.

For technology, organizations should look to leverage purpose-built cloud-based revenue modeling, planning, and forecasting solutions. As part of the solution, automation of data integration and data management activities are essential. They should also explore emerging frameworks and methodologies like AI, machine learning, and advanced predictive analytics to better forecast key driver inputs.

Lastly, organizations do need to measure forecast accuracy as well as track their ability to impact forward looking decision-making.

LESSONS LEARNED AND ADVICE

APQC: Do you have any advice or lessons learned for organizations seeking to improve their sales revenue forecasting?

Peck: I would encourage people to get started on improvement exercises and initiatives to produce better, higher-quality, more reliable forecasts, no matter how daunting it feels. Get your feet in the water and start moving. Of course, there's an element of "go slow to go fast" with these efforts. You will need a detailed game plan, you need to put a good team together, and you need to assess your current-state capabilities, but those things are not insurmountable challenges.

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I think sometimes there is a tendency for people to say, "I'm not even sure how to get started. This is such a Herculean effort that we'll never be able to crack the nut." You can have incremental improvement and ultimately transformational improvement, but you have to start somewhere. Keep in mind that there is no silver bullet solution, whether from technology, a structural change, or something else. Real improvement typically involves the combination of many best practices, focusing on all dimensions from people to data and information, tools, technology, business processes, change management, and organizational culture. All of those come into play as you're looking at improving your revenue forecasting capabilities.

APQC: We would certainly echo that. Organizations should view improvement as an opportunity to get deeper understanding of how the business really works. What is the algorithm? What does a sales funnel really look like? When you get it depicted in a model that reflects what is actually happening, you'll see that those models are never static because your sales process is continuing to evolve as technology evolves or your market gets more sophisticated. Using those models to understand your business and what drives competitive performance is an added benefit in working toward forecast accuracy and it also helps you to understand your sales effort. The better you get at understanding sales and the variability of sales, the easier it is to depict everything else that's happening. To us, that sounds like a great place to start.

ABOUT APQC

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