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Building Trust in Touchless Planning

White paper

CONTENT

Introduction

Demand forecasting has always been the cornerstone of all planning activities in the supply chain. Today, the landscape of forecasting is undergoing a significant transformation, driven by the advent of much smarter forecasting engines, and the accessibility of structured demand driver data. These innovations are dramatically improving the forecasting accuracy of planning systems, enabling them to achieve, and frequently surpass, the accuracy levels of human planners. At the same time, the need for more granular forecasting—for example, daily rather than weekly or monthly demand, and forecasts for individual stores instead of just distribution centers—has greatly expanded the volume of forecasts required: the number of intersections planners must analyze is exploding. Based on these trends, more and more companies aim to change their planning paradigm and strive for what we call touchless planning. Touchless planning is an innovative approach characterized by a high degree of automation in the planning process that reduces the need for human intervention. Instead of planners making every decision at the moment of truth in traditional human-led planning, planners now guide the system to make decisions on their behalf.

	Human-led/traditional planning	Touchless planning
Planning paradigm	• Planner makes decisions at the moment of truth	• Planner guides system to make decisions on her behalf
Planner actively involved in decisions	• ~100%	• <25%
Key planning activities	• Manual data review • Make own forecasts • Enrich system forecasts	• Identify demand drivers • Curate data into system • Sense check forecasts
Interaction with organization	• Limited, due to available time	• High, to collect relevant data
Key metrics	• Accuracy	• Accuracy • Fraction of automated decisions • Forecast value add

Figure 1: Traditional human-led planning vs. touchless planning

As a consequence, the number of decisions the planner is actively involved in is dropping massively and their daily tasks and overall workflows change (see Figure 1). This shift not only streamlines the planning process but also allows planners to redirect their efforts towards more strategic activities and scenarios. By focusing on these areas, organizations can achieve significant cost reductions, boost their operational efficiency, and improve the overall customer satisfaction.

However, for successful and efficient touchless planning, planners need to trust the system and avoid spending time on wrong interventions that harm forecasting accuracy (and waste their time). Rather, they should focus on where their input matters most—where it doesn't make sense to let the machine take over, for example, when planners contribute valuable information not available to the system (e.g. local events, commercial insights from key customers, fashion trends, competitor actions, etc.). In this article, we will outline how to embark on this journey, creating planners' trust in touchless planning.

Elements of touchless planning

Central to any touchless planning process are six elements: **high fidelity input data, right granularity, advanced AI engine,** ultimately **high accuracy results, explainable forecast** and proactive **feedback mechanisms** (See Figure 2). We describe these elements in detail, as it is essential to understand how they interact and reinforce each other within the touchless planning ecosystem.

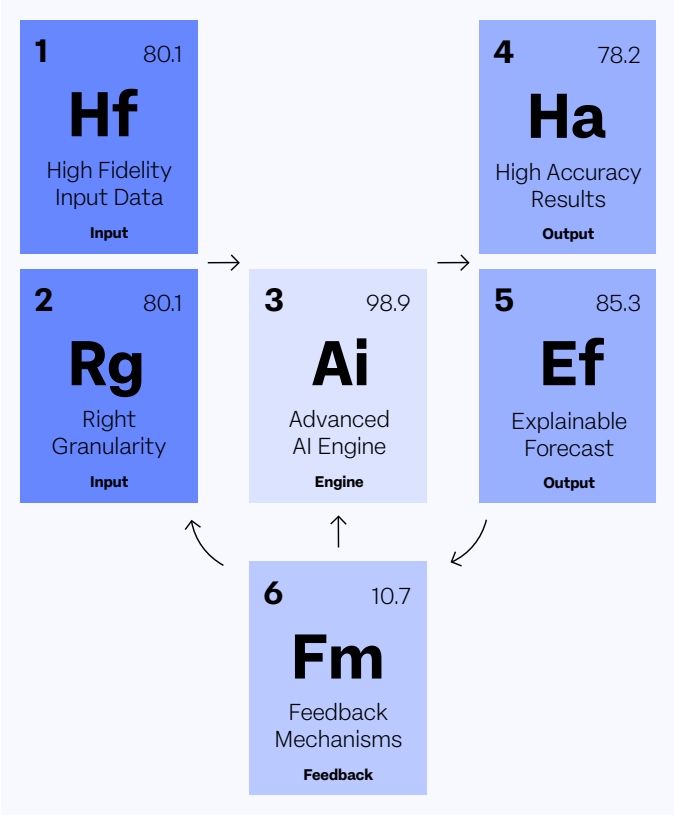

Figure 2: "Periodic table" of elements to build trust in touchless planning

"Continue to enrich—good luck and thank you for wasting your money"

—GLOBAL DIRECTOR DEMAND PLANNING,
GLOBAL BEVERAGE COMPANY

Input

High fidelity input data

Effective touchless planning requires complete, rich and accurate data as an input; this includes both historical and future-oriented information. Past data includes past sales, prior promotions, previous supply and capacity constraints or stock outs that are essential to identify causal relationships and to quantify demand drivers. Often, cleaning and preparing this data involves a meticulous and labor-intensive process. For forecasting the future demand, forward looking information must be available on drivers such as planned prices, upcoming retailer listings, and intended promotions.

Right granularity

The granularity of the input data is crucial, as it must provide precise information across various dimensions (e.g., time, market, product, product life cycle). The data input needs to be provided at the level at which it impacts demand. If the granularity of the input is not at the right detail, the AI engine is not able to learn from the data to forecast effectively. Granularity is also important for determining the right level for generating the forecasts. If you go too low level, the data is noisy and sparse and if you go too high level, accuracy is lost in later disaggregation.

Engine

Advanced AI engine

The core of any touchless planning system is an AI engine equipped with sophisticated machine learning algorithms. These algorithms must handle complex data sets, identify patterns, deal with outliers, and learn over time to improve forecast accuracy. They should be generalized enough to apply across different dimensions (products, markets) while being mature and robust to consider various drivers at different granularity. The AI engine's effectiveness directly impacts the system's overall forecasting performance.

Output

High-accuracy results

The output of a touchless planning process should be a high-quality forecast characterized by accuracy (i.e. low average forecast errors), bias (i.e. over and under forecasting trends), reliability (i.e., avoiding big outliers), and stability (i.e., low variations from one forecast to the next). Forecasts must accurately reflect future demand with minimal deviations, maintain consistency even in unusual circumstances, and avoid overreaction to minor data variations.

Explainable forecast

Explainable forecasts are essential for planners and critical for the successful adoption of touchless planning systems. Building planners' trust requires easy-to-understand explanations for forecasts, especially those that are unusually high or low. In this context, explainability refers to a system's capability to offer clear and understandable justifications for how it reached a particular decision or forecast, (e.g. high demand due to planned price reduction or social media activity). Additionally, providing a quantification of confidence levels in forecasts, along with presenting this information in an intuitive manner through the user interface, allows planners to easily understand and trust the system's outputs.

Feedback

Feedback mechanisms

Feedback is critical for the learning of planners when interacting with touchless planning systems. Systems need to provide detailed insights into forecasting accuracy and forecast value add (FVA) if planners decided to adjust system generated output. Without feedback, planners cannot learn which of their forecast enrichments added value and which not. In addition, systems should provide suggestions, such as identifying SKUs suitable for touchless forecasting. This continuous loop of feedback and system guidance is essential for identifying improvement opportunities and boosting adoption.

Ultimately, all the above elements work in concert not only to improve the efficiency of the planning process and the planners themselves but also to foster trust, ensuring the successful adoption of touchless planning systems.

Business Challenges

To gain deeper insights into the business challenges associated with transitioning to touchless planning, we conducted a series of interviews with supply chain leaders from numerous companies. These companies are at different stages of implementation and span a range of industries.

Knowledge Gap

Key among the challenges mentioned is the knowledge gap that exists as planners need to acquaint themselves with AI driven decision support systems. All too often, analytics and AI driven decision-making operate on principles far from their conventional expertise. Due to the lack of understanding and training many planners revert back to manual enrichments, thus unable to adopt touchless planning. For example, a leading global beverage manufacturer reports that in some markets with significant enrichments more than 90% of these fail to improve the forecasting accuracy.

"In my world, many forecast adjustments are full of dreams, but not full of accuracy"

—GLOBAL DIRECTOR DEMAND PLANNING, GLOBAL BEVERAGE COMPANY

Misalignment with Reality

Adjustments often stem from overoptimism on the success of a product launch or promotion. One interview partner remarked, "In my world, many forecast adjustments are full of dreams, but not full of accuracy", highlighting the discrepancy between wish and reality. Often, planners also inflate forecasts to increase inventories instead of adjusting safety stock parameters in their planning systems. Often planners overcompensate for past events without recognizing the system's true capabilities. For instance, planners might adjust forecasts for high-demand events like Black Friday, not realizing the AI has already incorporated the promotional plans into its calculations. Or, past forecasts for the Christmas season have been too low and planners would now inflate future forecasts without understanding that the system had already learned from previous inaccuracies. This misalignment underscores the crucial need for enhanced understanding and trust in the system's logic and capabilities.

"We're gonna get that blame whether it's a touchless environment or whether we did it ourselves"

—DEMAND PLANNING SUPERVISOR, FOOD DISTRIBUTOR

Shift in Control

Planners often struggle with the pivotal shift to touchless planning environments. While still accountable for the forecasting outcomes, planners find themselves with diminished control over the process. This paradoxical situation is summed up by a manager at a North America Food Distributor as "We're gonna get that blame whether it's a touchless environment or whether we did it ourselves." The lack of regular, structured feedback compounds this issue, leaving planners uncertain about where to focus their efforts. In many settings, there is (not yet) a process in place that provides planners with the right data to build trust. Information on forecast value added (did I improve the forecast?), clarity on demand drivers (which factors are most relevant for this product?) and explainability of models (why is the forecast that low?) are crucial.

Resistance to Change

Shifting planners' roles from active decisions at the moment of truth to overseeing and feeding a touchless process requires a fundamental mindset change. Planners who used to have a direct hand on the forecast may feel a loss of control and authority as systems become more autonomous. This transition forces planners to shift their perspective from one where they actively adjust outputs to one where they primarily provide input, allowing the system to learn and adjust itself. Moreover, there can be organizational resistance to adopting new ways of planning, with concerns about accuracy and the system's ability to understand changing market dynamics or react swiftly to unexpected changes. Despite all advances in touchless planning, some forecasts may inevitably err, potentially exacerbating resistance, underscoring the importance of alerts and guardrails to identify and catch these areas in advance. Building an understanding in the system's capabilities is critical towards creating planners buy-in.

Success factors for the transition to touchless

Based on our interviews we identified success factors that companies need to consider when embarking on the journey to touchless planning. Getting things done first time right is crucial for adoption as one interview partner indicated "it's very difficult to build trust if your initial implementation is not good. It's the first impression that lasts so long that it's just very hard to get away". Therefore, these five success factors incorporate a whole range of themes from standardizing processes to securing top management commitment.

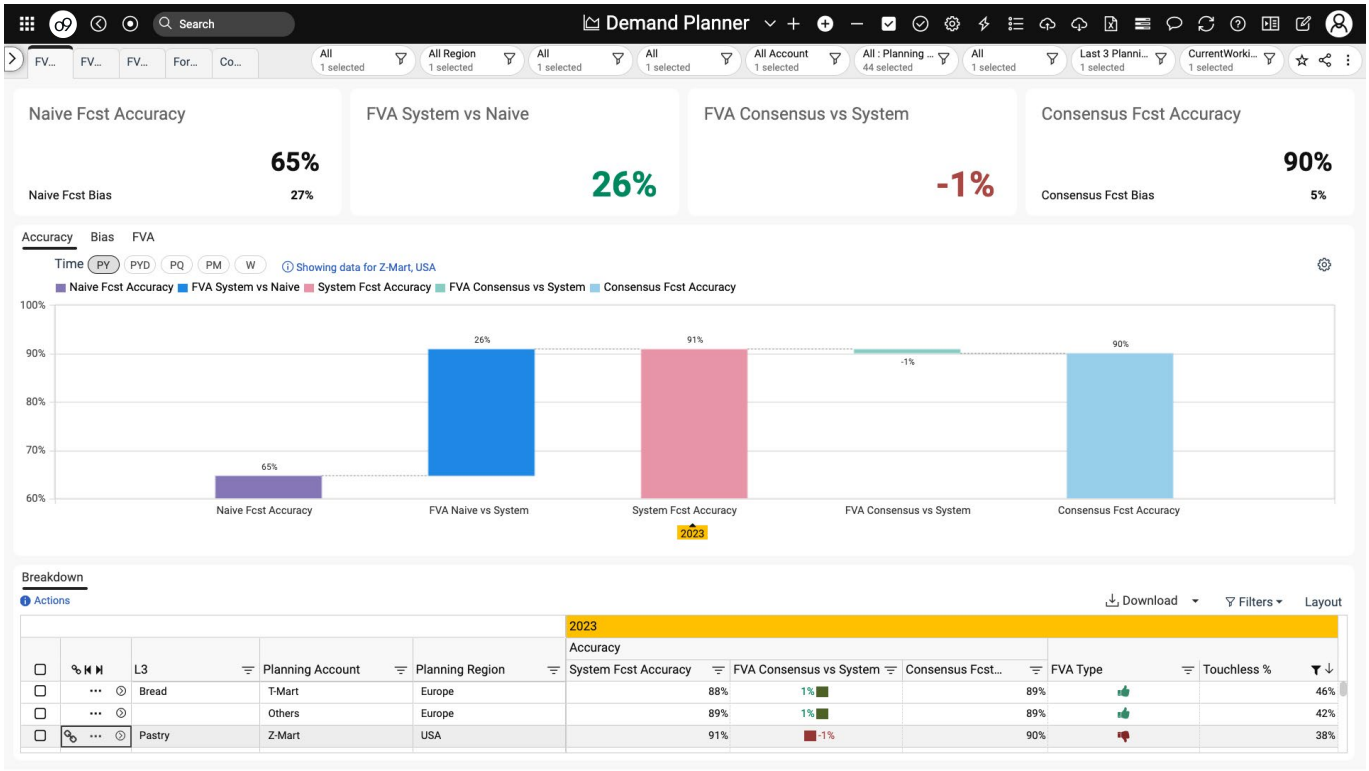

Figure 3: Measuring and analyzing key metrics such as "% touchless" and "forecast value add (FVA)" together helps organizations to identify areas of improvement and prioritize automation initiatives to accelerate their touchless journey.

Standardize processes and post game analysis

To ensure the success of touchless planning, it's critical to start with a common foundation for planning units involved. This includes standardizing processes, consistently reporting key metrics such as forecasting accuracy, share of touchless volume, and forecasting value add (see Figure 3). By having one common basis, companies can compare performance and track improvements more efficiently. Furthermore, regular audits of forecasting performance and insights into potential improvement areas, ensure that the planning processes continuously evolve. Conducting post-game analyses using historical data can showcase the touchless system's performance, further convincing stakeholders of its value.

Establish training and data culture

Training for planners is indispensable when maximizing the capabilities of any planning software. This includes identifying demand drivers and understanding data feeds. For example, rather than manually adjusting forecasts for promotions, planners should be trained to gather and input promotional information directly into the system. Creating a data-driven culture that emphasizes the transition "from qualitative to quantitative," as noted by one interview partner, empowers planners and equips them with the skills and mindset needed to leverage and curate data effectively.

> *"Seeing is believing"*
>
> —DIRECTOR, PLANNING SOLUTION

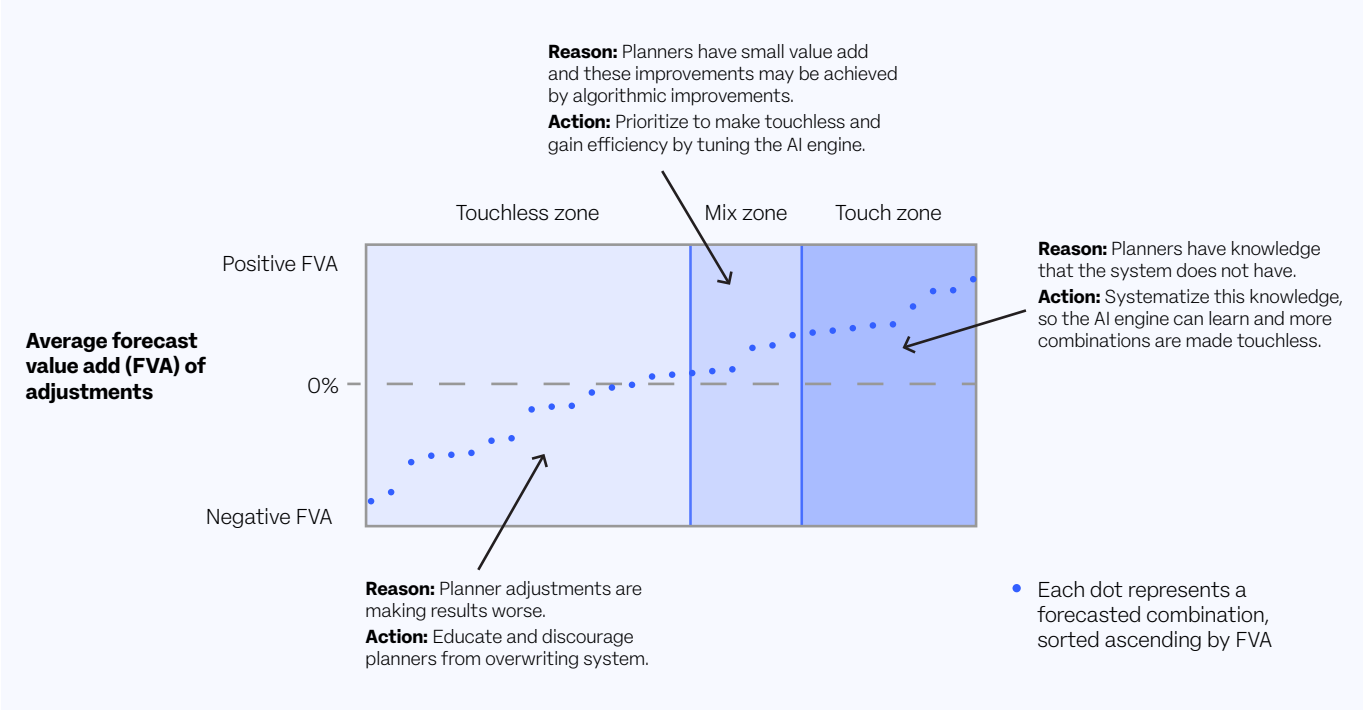

Figure 4: Feedback on forecast value add (FVA)

Create transparency for trust

Building and reinforcing trust in AI-based planning systems is paramount. This can be achieved by providing clear and timely feedback on the value add of enrichments, as one interviewee emphasized "Seeing is believing". Transparency on the types of overrides that add value through a root cause analysis (RCA) also can play a critical role (see Figure 4). Understanding why a forecast is set to a certain value and not another, based on key demand drivers, helps to demystify the AI's decision-making process, fostering trust among planners and stakeholders alike. When deciding on where to touch, planners need tools to evaluate whether modifying a forecast is worthwhile. This evaluation could be based on historical accuracy, the commercial relevance of the forecast, or whether discrepancies are already mitigated by safety stock.

"If you mess it up they will likely lose trust and it's very difficult to recover that trust if your initial implementation is not good"

—MANAGER SUPPLY CHAIN PLANNING AND INVENTORY, GLOBAL RETAIL CHAIN

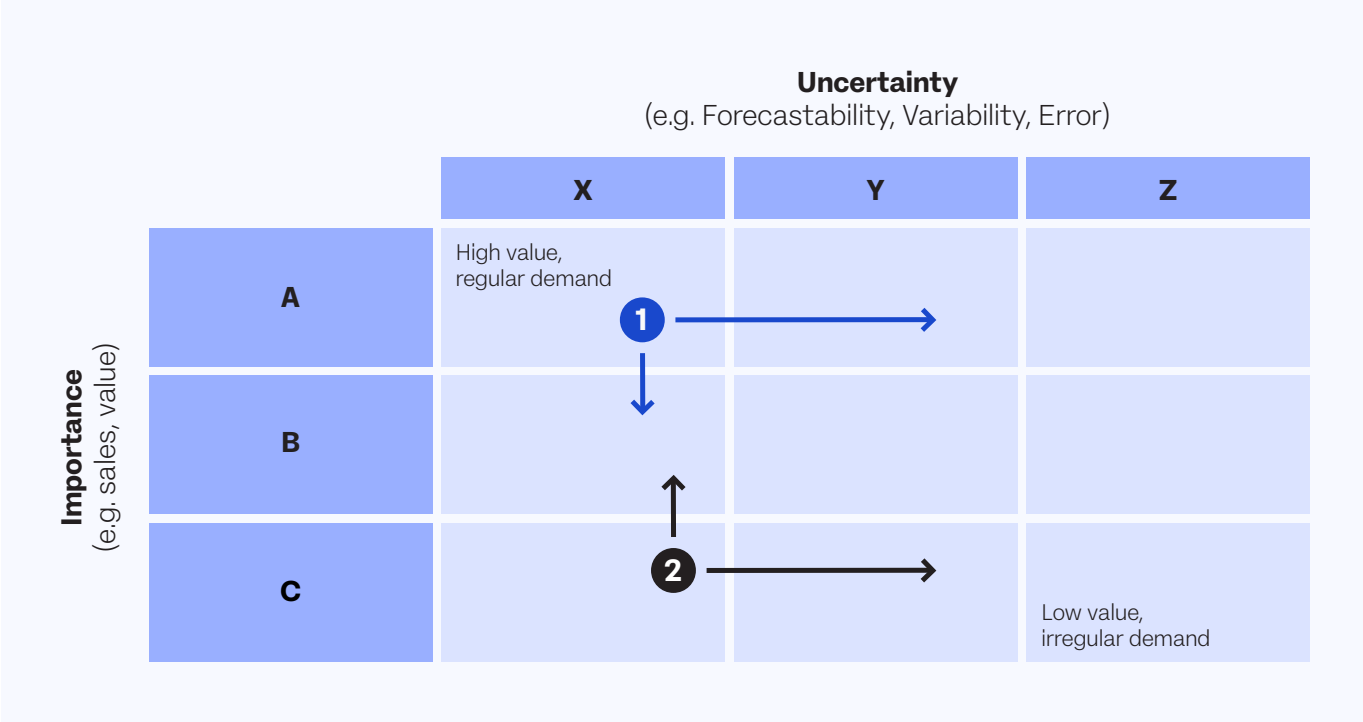

Figure 5: Two paths to touchless planning:
Path 1: creates biggest visibility among planners and, if implemented successfully, creates highest level of trust in touchless, since planners are most familiar with these combinations. Path 2: starting with CX typically yields highest efficiency amongst planners, since there are few AX combinations (which are very important) and a high number of CX combinations. Starting with CX will provide a high share of touchless intersections from the start and hence reduce planner's effort.

Plan rollout strategically

Companies should initiate the touchless planning journey with a portfolio of low-risk decisions and gradually build confidence in the system's capabilities. By starting small, companies can illustrate the system's effectiveness through real-world successes, such as managing items with high forecasting accuracy, lower volatility, or limited value risk. Companies can follow different paths based on their maturity and risk attitude (see Figure 5). Organizations that aim to carefully understand the benefits of going touchless can start with AX items (indicating low volatility and high sales) that are well known to planners who can accompany the transition. Organizations that are less hands-on can observe results for less critical CX items before moving to either more volatile or more business critical products.

Ensure leadership commitment

Finally, securing leadership sponsorship is essential for the successful implementation of touchless planning, ideally with the chief supply chain officer (CSCO) getting involved personally. A top-down approach, where leaders understand the key concepts, are data-driven and are actively involved and supportive, sets a positive precedent. It's important to follow a blueprint that prioritizes process, people, and technology, in that order. Establishing a core team and an extended team, including commercial leaders, ensures comprehensive support across the organization.

Conclusion

The potential for touchless planning within companies is immense, offering both benefits of enhanced forecast accuracy through advanced AI engines and improved planner efficiency by avoiding unnecessary interventions and overrides. However, planners must adapt to the new process that values input and reduce manual output adjustments at the moment of truth. In touchless planning, planners need to trust the system to make decisions on their behalf. This requires embracing a loss of direct control and decision-making power as part of a more efficient and accurate data-driven forecasting process.

"You want a system that makes the decisions on the planner's behalf"

—SENIOR DIRECTOR PLANNING TRANSFORMATION, GLOBAL FOOTWEAR COMPANY

Having this in mind, it is crucial to create a clear vision for planners' future roles, emphasizing a shift from routine overriding to richer activities that involve more scenario planning and interactions with other functions such as marketing and commercial teams.

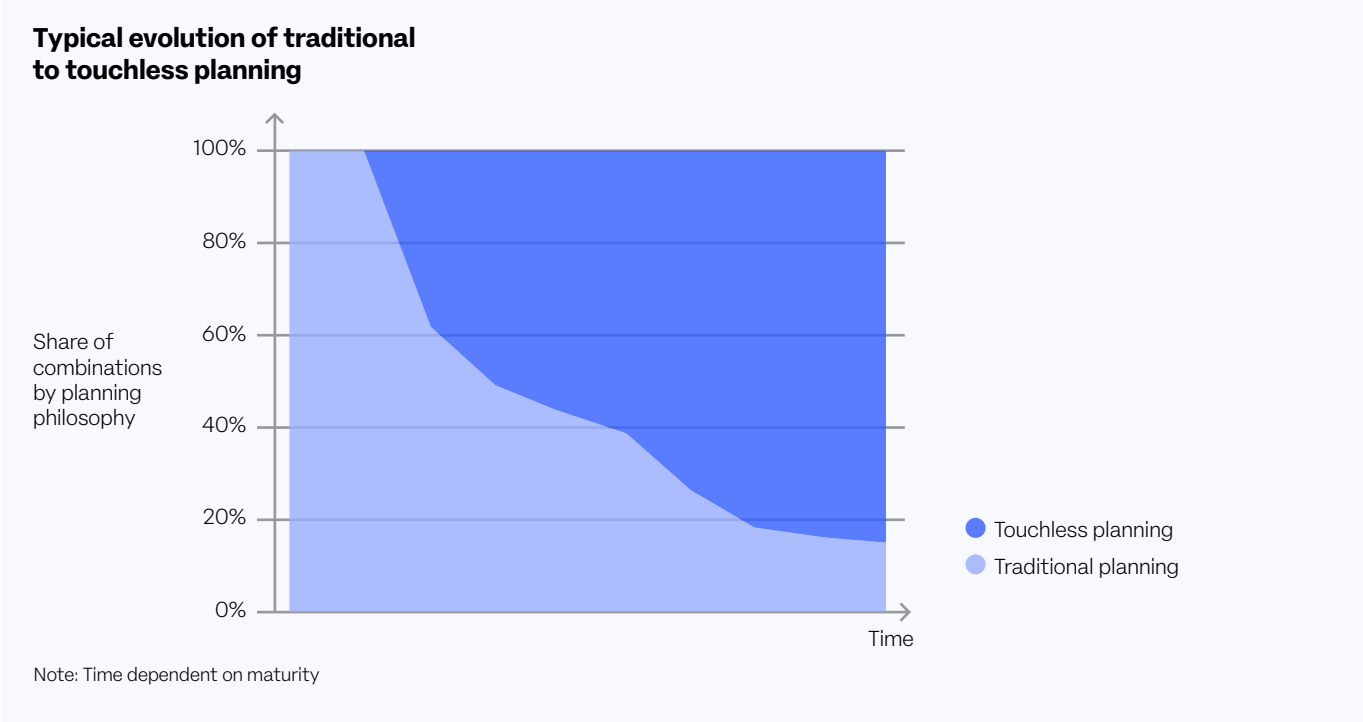

Figure 6: Transition to touchless planning over time

Consequently, planners' roles will evolve to more value-adding tasks such as understanding larger market trends, promotional levers, customer behavior insights and curating the data fed into the system. Despite the shift towards automation, the need for human judgment remains as not all decisions can be handled in touchless processes (see Figure 6). Ultimately, this ensures a promising outlook for the planners' future with no redundancies but richer job profiles.

This journey towards touchless, though complex, is undoubtedly promising significant rewards to boost forecasting and planning as a whole.

Key terms in touchless planning

AI engine	Core technology within a planning system that uses artificial intelligence and machine learning algorithms to analyze data, identify patterns, and generate forecasts.
Confidence level	Statistical measure that quantifies the degree of certainty or trust in a forecast. It expresses the likelihood that the true value falls inside the estimated confidence interval.
Data curation	Process of collecting, organizing, and managing data to ensure its quality, relevance, and accessibility for analysis purposes. This involves selecting, cleaning, and consolidating data to be used by the AI engine for demand forecasting.
Demand drivers	Factors that influence the demand for products or services, such as seasonal trends, economic conditions, promotions, marketing campaigns and price changes. Understanding demand drivers (both internal and external) is essential for creating accurate forecasts.
Enrichment	Process of enhancing data by adding relevant context or information from other sources (e.g. weather data, economic indicators, or social media trends) to improve forecast accuracy.
Explainability	Ability of an AI system to provide understandable explanations for how it reached a particular decision or forecast, (e.g. due high demand due to significant planned price reduction and high marketing or social media spend).
Forecasting accuracy	Degree to which forecasted values match actual outcomes, often measured to evaluate the performance of planning based on metrics such as mean absolute percentage error (MAPE), root mean squared error (RSME) or forecast bias.

Forecast Value Add (FVA)	Metric used to assess the incremental benefit or value that the planners' modification of the original forecast contributes to forecasting accuracy. It helps in determining whether an adjustment is improving its accuracy or not.
Granularity	Level of detail or specificity of the data used in forecasting; finer granularity refers to more detailed data (e.g., daily vs. monthly sales data or store-level vs. retailer).
Predictive analytics	Use of data, statistical algorithms, and machine learning techniques to identify the likelihood of future outcomes based on historical data.
Product life cycle data	Encompasses master data which records essential details regarding a product's introduction to the market, its eventual discontinuation, and the transition to other products that are used for understanding the evolution of other products.
Tribal Knowledge	Collective wisdom and expertise that is available in an organization, e.g. on customers, effects of actions or but aren't formally documented or easily accessible.
Unconstrained demand	Total market demand for a product or service without any limitations or restrictions due to supply issues, budget constraints, or capacity limitations.

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Design

o9 Design Lab