



Pharma Business Forecasting

Best Practice Sharing

*“Success in business is achieving objectives,
either set or imposed”*

The 4 Ws approach, developed by Smart Pharma Consulting, strengthens the robustness of the situation analysis on which the sales forecasts will be estimated

The 4 Ws approach



The setting of the performance objective (sales and profits) is an essential step in the business planning, either at the brand¹, portfolio, affiliate² or corporate level

Business planning – At brand level¹



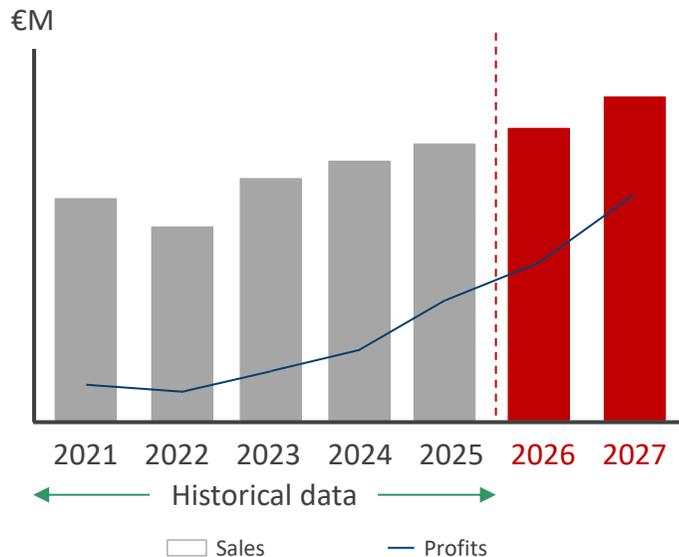
Sources: Smart Pharma Consulting

¹ See the position paper: [Best-in-class Pharma Brand Plans](#) – ² See the position paper: [Pharma Affiliate Performance Optimization](#) – ³ Including payers, healthcare professionals, buyers, patients, patient advocacy groups – ⁴ Accounts for clinical efficacy, acceptability, convenience, etc. – ⁵ Stands for distribution

Sales and profits objectives (forecasts) should be set based on historical trends (projection), adjusted according to the likely occurrence of market and brand major events

Key Performance Objective (Sales & Profits)

Sales & Profits Forecasts



In the absence of market data and/or for new brands to be launched, a patient-based model can be considered to forecast sales and profits

Such a model is based on epidemiological data (prevalence and incidence), diagnosis, treatment and adherence rates

Our recommendations

- The robustness of Key Performance Objective will rely on:
 - Market definition
 - Historical assessment of the brand and its market
 - Anticipation of future market and brand events...
 - ... as summarized in the Advanced SWOT analysis
- To do so, relevant and reliable market and brand data should be gathered to:
 1. Calculate sales and profits projections based on historical trends through regression analysis¹
 2. Calculate sales and profits forecasts by adjusting trends based on market and brand scenarios building through different methods²
- The final setting of the Key Performance Objective should consider the impact of key tactics (access, medico-marketing and sales investments) that will be implemented

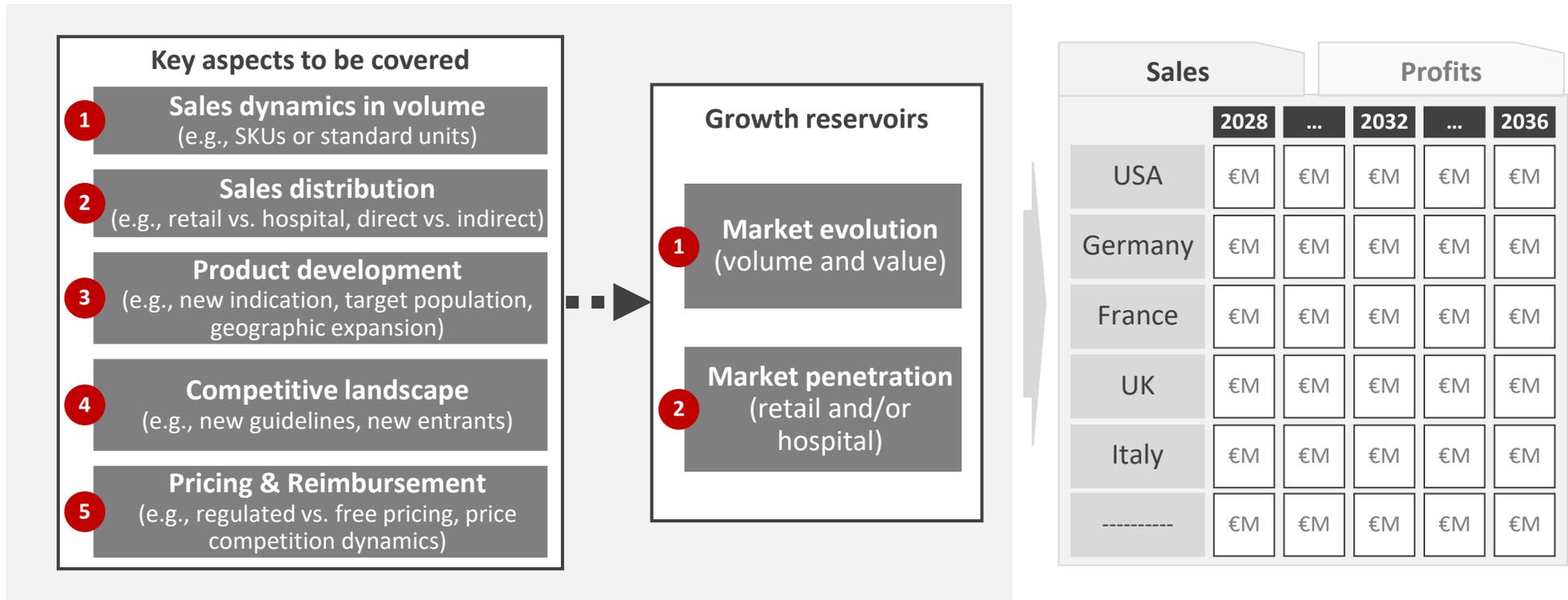
“I always hesitate to make predictions, especially when it involves the future” – Niels Bohr

Sales and profits forecasts consist in an in-depth and rigorous analysis of the current and future market and product drivers and barriers

Methodology – Principle

Situation analysis (historical)
and market potential (prospective)

Forecasting



Five main sources of information can be considered to document the critical aspects to assess sales and profits potential at an international level on the pharma market

Methodology – Data gathering

Key aspects covered ▶	Sales dynamics in volume	Sales distribution	Product development	Competitive landscape	Pricing
1 IQVIA database (e.g., MIDAS)	✓	✓		✓	✓
2 Desk research on the Internet ¹	✓		✓	✓	✓
3 Interviews with country experts	✓	✓			✓
4 Interviews with product experts	✓	✓	✓	✓	✓
5 Interviews with payers					✓



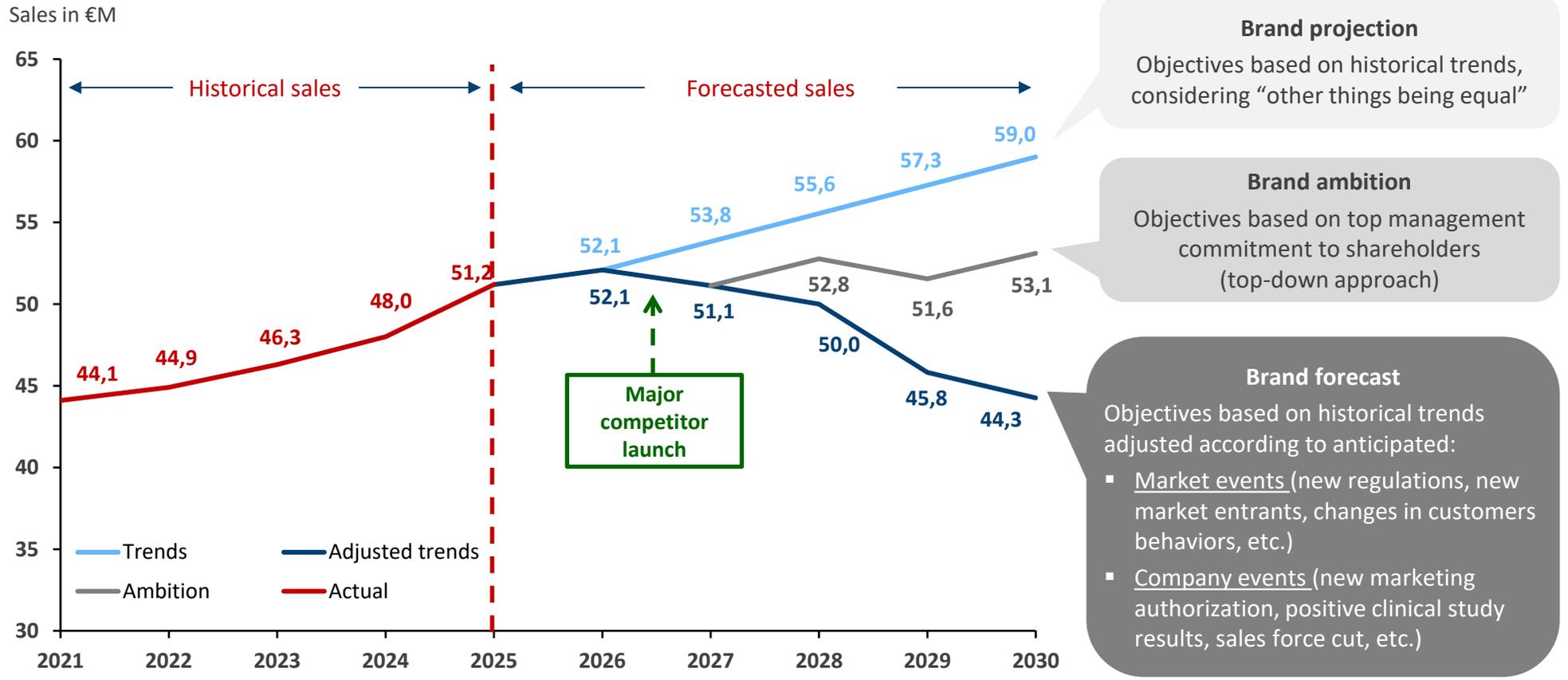
Sales & Profits Forecasts

Sources: Smart Pharma Consulting

¹ E.g., pharma companies' annual reports and press releases, FDA, EMA, WHO, IQVIA reports, Fierce Pharma, clinical trials databases, medical guidelines, national institutes of health, generic drugs national associations, PharmaCompass

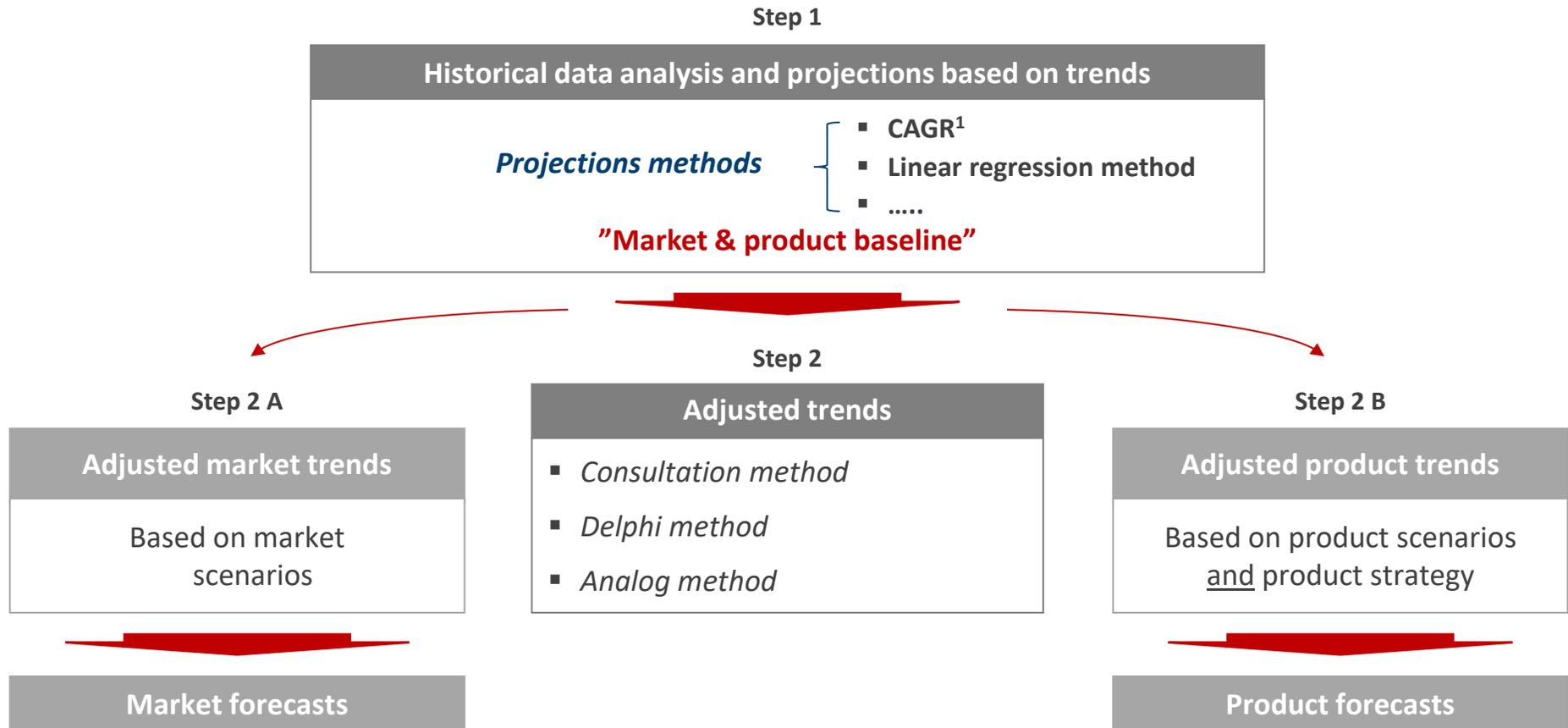
Brand performance objectives can be determined based on historical trends (projection), on adjusted historical trends (forecast) or on companies' ambition

Process to set sales objectives



None of the forecasting methods being satisfactory,
it is necessary to combine them in a logical and realistic way

Sales forecasting steps

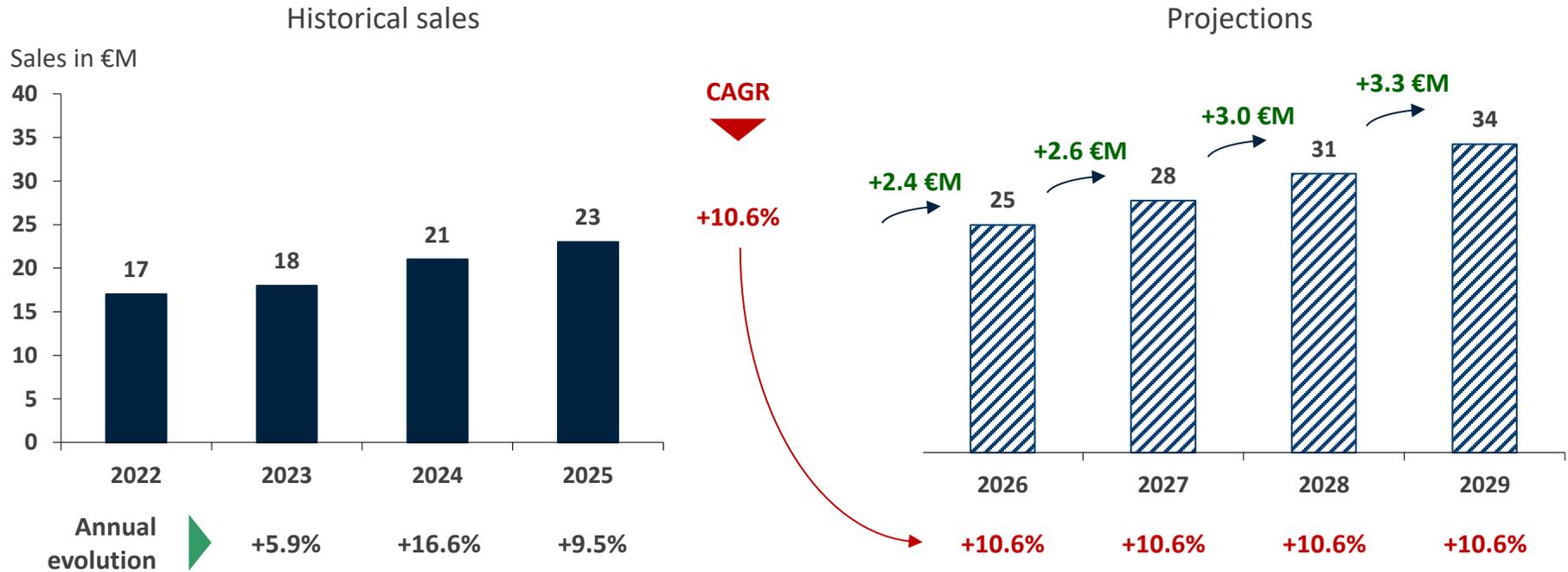


Sources: Smart Pharma Consulting

¹ Compound annual growth rate

The CAGR¹ method smooths future progression estimations by prolonging the historical trend in annual growth rate

Brand sales projections: CAGR method



- The CAGR measures the average annual growth between the starting and the ending years of the period analyzed (i.e., 2022 and 2025 in the illustrative example)

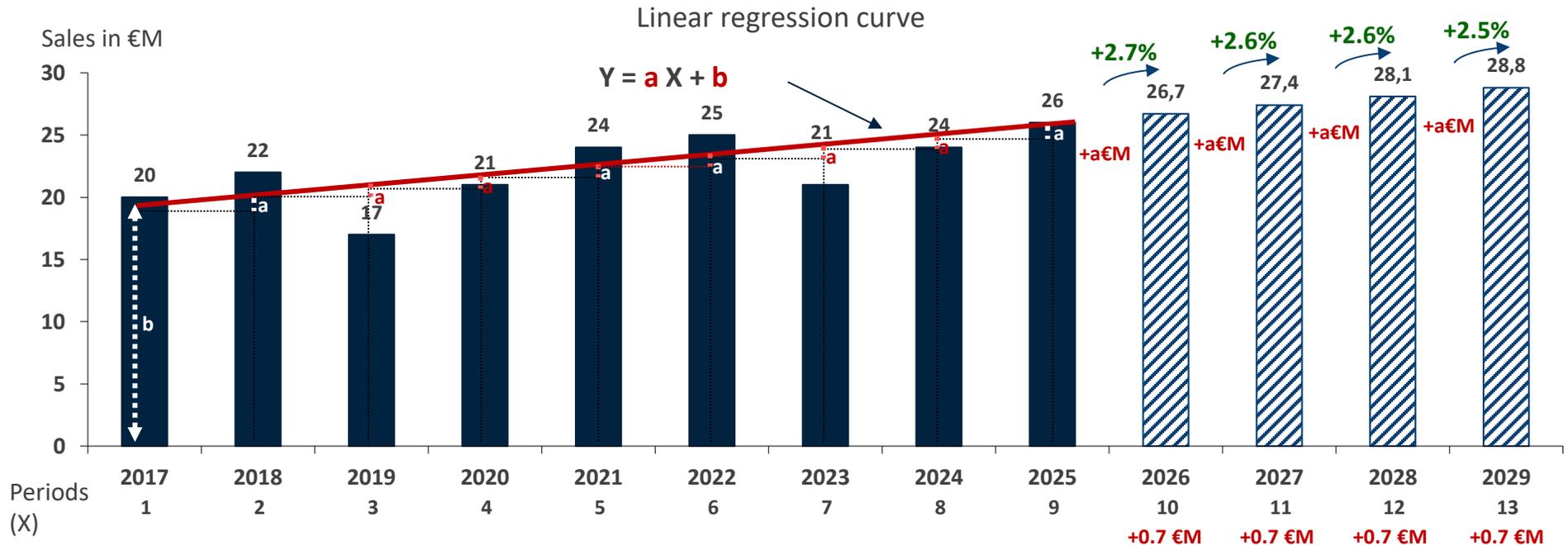
Excel formula: $CAGR = (sales\ 2025 / sales\ 2022)^{(1 / (2025 - 2022))} - 1$



- The fixed growth rate being applied to an increasing reference value, the nominal value growth becomes higher, year after year

The linear regression curve smooths future progression estimations by prolonging the historical trend expressed in absolute terms

Brand sales projections: Linear regression method¹



- "a" defines the additional sales for each future time-period
- "b" is a constant which equal the value of Y for X = 0

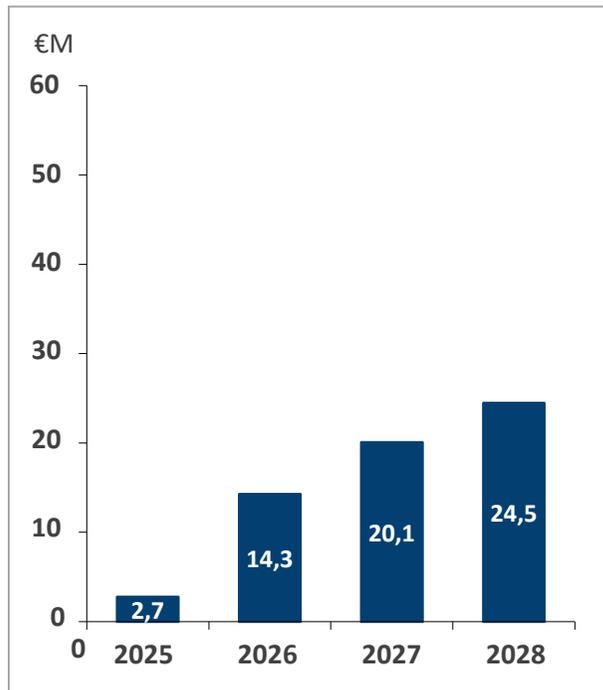


- The future growth rate of sales is constant in nominal terms (same absolute value) from one period (year) to another one, but the corresponding growth rate (in %) decreases
- Similar importance is granted to recent and older historical data

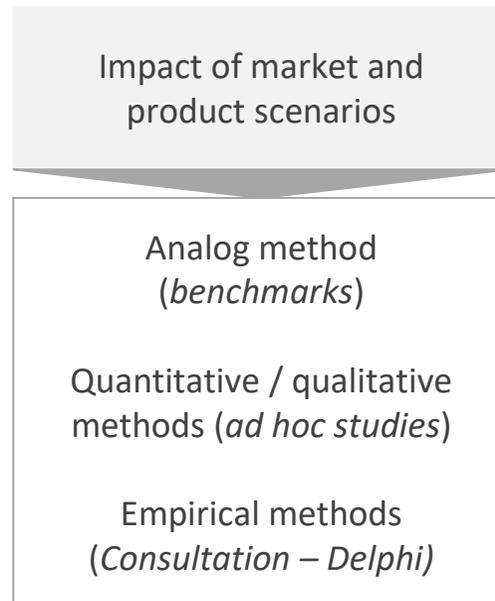
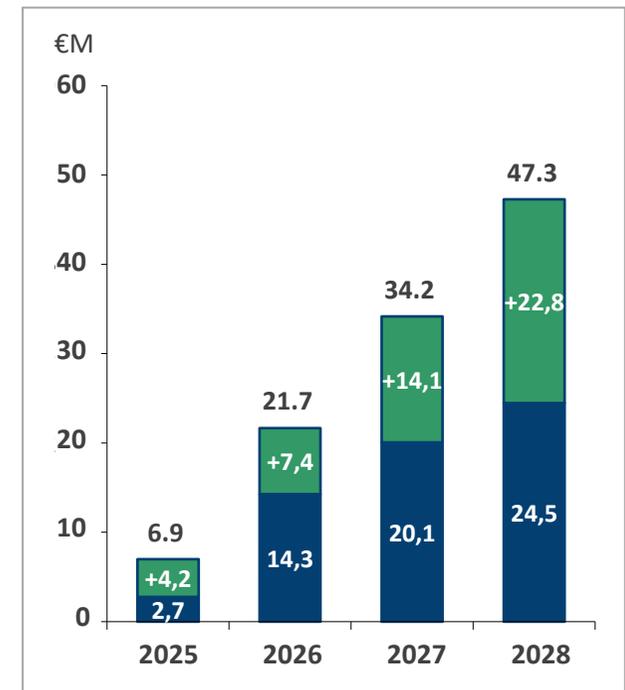
The projection assuming the environment will not change in the future, it is therefore necessary to identify the key future events and their impact by different forecasting methods

Brand sales forecasts: From projections to forecasts

From projections (trends) ...

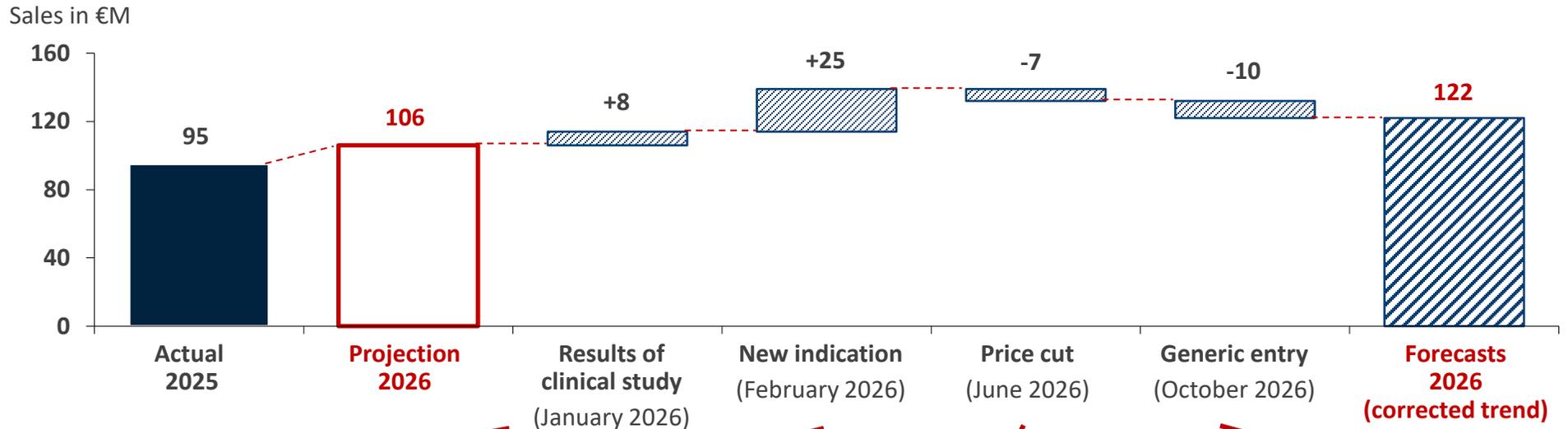


... to forecasts



The projection reflecting historical trends can be “corrected” by considering key events relative to the market and the brand, identified during the competitive environment analysis

Brand sales forecasts: Adjusted projections



- Increased brand sales in an existing indication
- Increased duration of treatment
- Increased dose regimen

- Conquest of new market segments
- Positive impact on existing indication: “halo effect”

- Price decrease as a defense strategy against generic entry

- Sales decrease in value as a result of prescription switches in favor of generic products

Factors determining the quantitative impact of the events

Projections obtained continuing the past trends are then adjusted according to market and product events expected during the period of forecasts

Brand sales forecasts: Adjustment of market and product trends

Identification of future events and their probability of occurrence

- Competitive intelligence
- Internal / external consultations

Estimate of the impact of the future events on market / product

- *Ad hoc studies*
- Benchmark (customers, competitors)

Adjustment of the market and product projections (trends)

- Correction of trends
- Structuration of the rationale

Estimated future market trends should consider key changes involving authorities, competitors and customers over the projected period

Brand sales forecasts: Market and product drivers & constraints

Health Authorities	Competitors	Customers
<ul style="list-style-type: none"> ■ Registration policies <ul style="list-style-type: none"> – Indications extensions – Generics authorizations – New entrant authorizations ■ Pricing / reimbursement <ul style="list-style-type: none"> – Price increase / reduction – Class discounts – Regional reimbursement policy ■ Medical guidelines <ul style="list-style-type: none"> – Therapeutic recommendations – Patient referral pathways ■ Trade regulation <ul style="list-style-type: none"> – Distribution channels – Advertising ■ Public health initiatives <ul style="list-style-type: none"> – Patient screening campaigns – Educational programs 	<ul style="list-style-type: none"> ■ Product features <ul style="list-style-type: none"> – Formulation / dosages / device ■ SmPC¹ modifications <ul style="list-style-type: none"> – Indications / side-effects – Dose regimen ■ Product status <ul style="list-style-type: none"> – Patent protection – Use restrictions (e.g., hospital only) ■ Distribution <ul style="list-style-type: none"> – Channels, stocks, shortage – Direct sales / parallel imports ■ Marketing strategy <ul style="list-style-type: none"> – Product positioning – Promotional investment ■ Substitutes <ul style="list-style-type: none"> – Surgery, diet, physical activity, etc. 	<ul style="list-style-type: none"> ■ Patients <ul style="list-style-type: none"> – Prevalence / incidence – Diagnosis / treatment – Compliance – Commitment in pathology (patient advocacy groups) – Unmet needs ■ Prescribers <ul style="list-style-type: none"> – Segmentation – Knowledge of / role in pathology diagnosis and treatment – Prescription habits (guidelines) – Unmet needs ■ Distributors <ul style="list-style-type: none"> – Wholesalers, short liners, agents, etc. – Parallel importers – Pharmacists, pharmacist groups, mail-order companies, etc.

To adjust the projections, future events must be identified, their probability of occurrence evaluated, as well as the level of their impact, either positive or negative

Brand sales forecasts: Probability of occurrence of market and product events

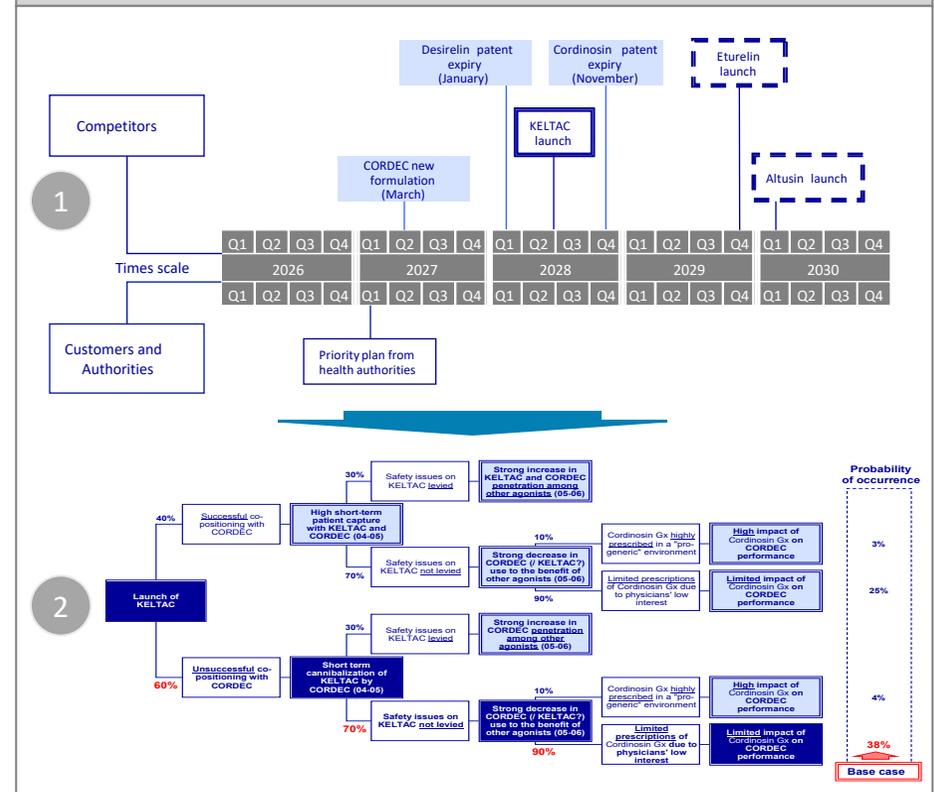
Principles

- The key events likely to have an impact on the product and its market (authorities, competitors and customers) during the projection period are positioned on a time scale
- Then, the probability of occurrence of these events must be evaluated to determine the most realistic scenario

Probability of occurrence	Degree of certainty	Probability of non-occurrence
95%-100%	Certainty ↑	0%-5%
75%		25%
50%	Uncertainty	50%

- For each event, the magnitude of its impact must be evaluated, either negative or positive
- It is recommended to consider 3 scenarios:
 - A “base case” scenario, which is the most likely one and the one the product strategy will be crafted on
 - A “pessimistic” scenario to build a contingency plan
 - An “optimistic” scenario to craft a voluntary strategy

Tools (illustrative)



The analog method enables to structure sales forecasts, in a rigorous way, provided endogenous (product related) and exogenous (market related) criteria are carefully selected

Brand sales forecasts: Analog method

- Analysis of the performance of other products called analogs or improperly “benchmarks” is a means to estimate the sensitivity of the brand to key parameters, such as:
 - Generics penetration
 - Sensitivity to promotional investment
 - Sensitivity to price
 - Etc.
- This approach is based on correlation analyses

- Can be used to forecast sales for new products or new market segments
- Enables to test the consistency of projections in case of available historical data

- Market specificities may require to use a combination of several models to estimate the impact of a single event (e.g., generics penetration, entry of an innovative game changer)

Endogenous criteria (product related)

- **Therapeutic / product similarity:**
 - Therapeutic area or class
 - Status (e.g., generics vs. biosimilars)
 - Indications, warnings, risk management plan
 - Types and/or number of target patients
- **Commercial similarity:**
 - Volume of customers (e.g., prescribers, pharmacists)
- Distribution channels (e.g., direct vs. indirect sales)
- Constraints (e.g., cold chain conservation, secure medical prescription)
- **Strategic similarity:**
 - Selection of customer targets
 - Media mix
- **Statistical similarity:**
 - Seasonality of sales

Exogenous criteria (market related)

- **Competitive background:**
 - Number and type of competitors (e.g., single vs. fixed-dose combinations)
 - Time to market entry and/or the order of entry on the market
 - Type and level of promotional investments
- **Economic and regulatory background:**
 - Reimbursement / dereimbursement
- Public health initiatives (screening)
- Control of payors re. prescriptions (e.g., label vs. off-label, indications, original vs. generic products)
- **Customer behavior:**
 - Prescribers’ criteria
 - Retail pharmacists’ behavior (e.g., substitution)
 - Attitude vis-a-vis economic and regulatory pressures

Qualitative methods such as consultations and Delphi methods are not sufficient on their own, but may contribute to set robust market and product forecasts

Brand sales forecasts: Consultations & Delphi methods

Consultations

- Intuitive approach, based on experience, knowledge and competence of collaborators, especially from access, medico-marketing and sales departments
- Consultations can be individual or during specific workshops, according to a more or less formalized process
- The objective is to review all the variables (events) impacting the product sales (“factor listing”)

- Simple and unifying process, facilitating the “buy-in” and the experience sharing across and within the brand teams
- Enables a collective analysis and review of the impact of actions having been carried out and of those considered for the brand
- Convenient for products for which quantitative data do not exist or for which the environment changes quickly

- The thinking process may be disturbed by interpersonal conflicts or by emotional attachment of participants to the brand
- The split of sales over time (by month), by dosage, by form, by type of customers or by territory can be very complex in the absence of mathematical rules

Delphi

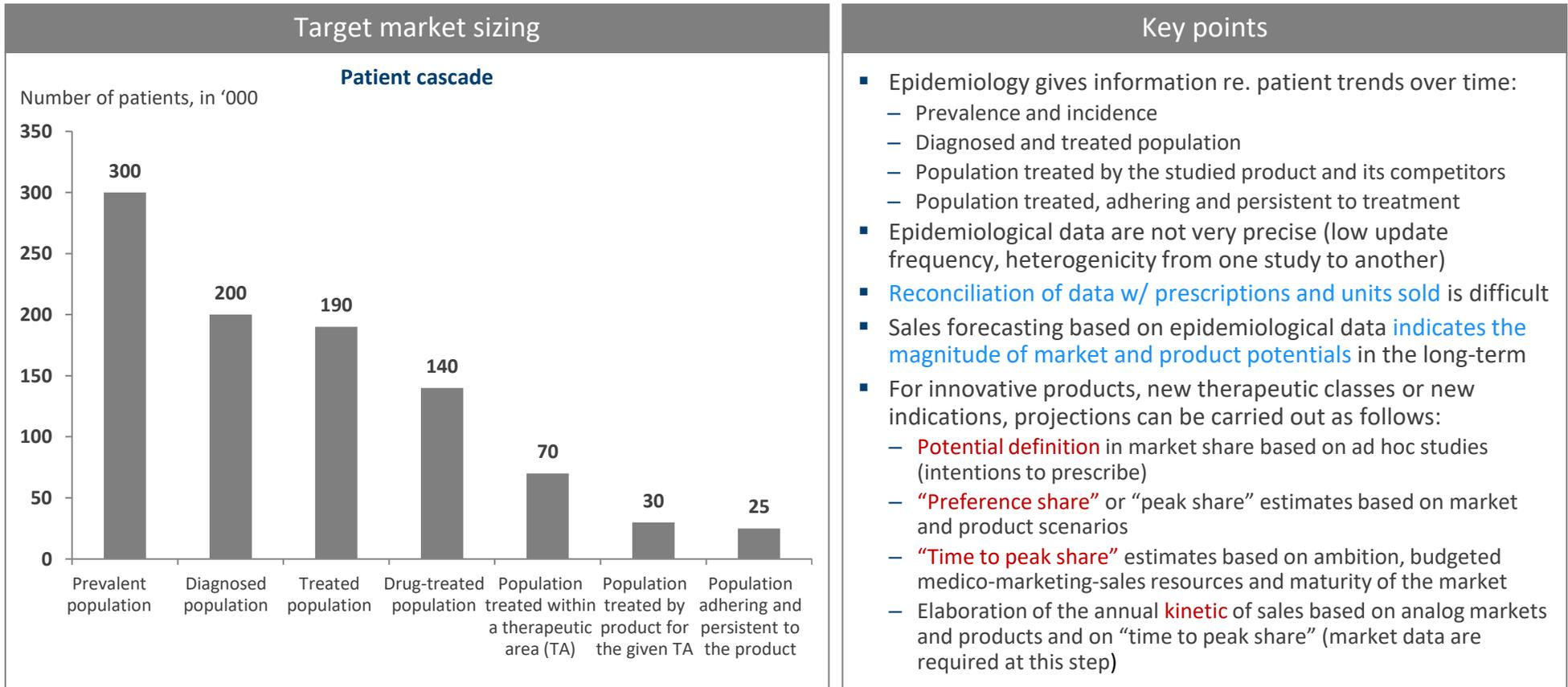
- The method which consists in asking KOLs, individually, their analysis of current and future market situation (including the brand) represents a complement of internal consultations
- KOLs may be asked to propose prescription / sales forecasts, anonymously, that are then consolidated and shared with other consulted KOLs, who propose a new estimate of sales
- The process will continue until a consensus is obtained

- Avoids the pitfall due to the pressure of the group
- Has shown to be effective when associated with historical analyses of product sales and for long-term forecasts (5 years or more)

- The process of average-based iterations may lead to too optimistic forecasts or too pessimistic ones
- The process may be long and costly
- The split of sales over time (by month), by dosage, by form, by type of customers or by territory can be very complex in the absence of mathematical rules

The patient-based approach can be used to size new markets or forecast new product sales, in the absence of any market data, coming from panels

Patient-based model – Introduction



Sources: Smart Pharma Consulting

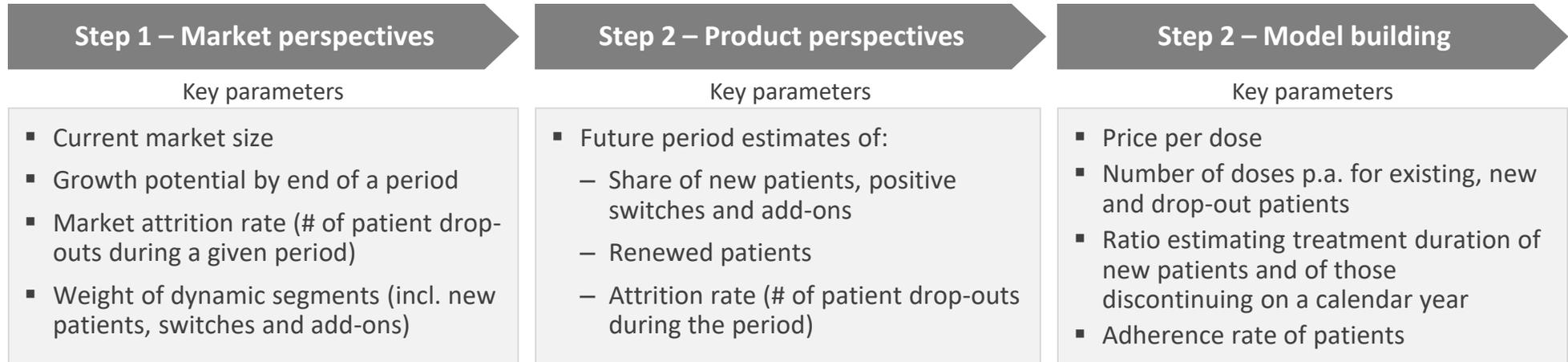
The trend transfer method is frequently used to limit the gap between patient- and market-based sales because it focuses thoughts on the most determinant variables driving products evolution

Patient-based sales – Reconciliation with market-based sales

Trend transfer	Multiplier coefficient	Buffering agent	Exhaustive management
<ul style="list-style-type: none"> Forecasting in units based on epidemiological data (patients) Identifying the annual growth rate observed Applying these annual growth rates to the sales in units coming from market data (panels) 	<ul style="list-style-type: none"> Measure in percentage the gap between patient- and market-based models Apply this percentage to the patient-based sales... ... to obtain adjusted patient-based sales in units 	<ul style="list-style-type: none"> Consists in creating a unique variable to explain the gap (e.g., parallel trade) Variable is often “hidden” in: <ul style="list-style-type: none"> – “Other indications” – “Off-label” which is convenient when the forecasted indications do not consider 100% of potential patients for the product 	<ul style="list-style-type: none"> Consists in managing possible parameters explaining the gap: <ul style="list-style-type: none"> – Patient adherence and persistence – Stock variation effect – Parallel trade – Waste Historical analysis is required to validate the relevance and the value of these parameters
<ul style="list-style-type: none"> Focus thoughts on market and product evolutions and not on patients-to-sales reconciliation 	<ul style="list-style-type: none"> Reproducibility checked by the consistency of the gap Mathematical rules can be found on stable markets 	<ul style="list-style-type: none"> Convenient solution 	<ul style="list-style-type: none"> NA
<ul style="list-style-type: none"> Does not consider the type of gaps and its historical evolution 	<ul style="list-style-type: none"> Does not explain the gap 	<ul style="list-style-type: none"> Explaining the gap with a single variable is unrealistic Hiding the gap in “other indications” does not help to manage / explain the gap 	<ul style="list-style-type: none"> In practice, it is impossible to be exhaustive In general, when reconciliation is obtained; it is by chance

Dynamic patient-based models are useful to structure the growth drivers of a product on its market, but difficult to manage

Dynamic patient-based model



Pros

- Analyzes the growth drivers of a product on its market
- Offers an in-depth understanding of the growth drivers
- Enables to “quantify the strategy”
- Useful to ensure the sales objective of the product is realistic
- Particularly useful for new products to be launched

Cons

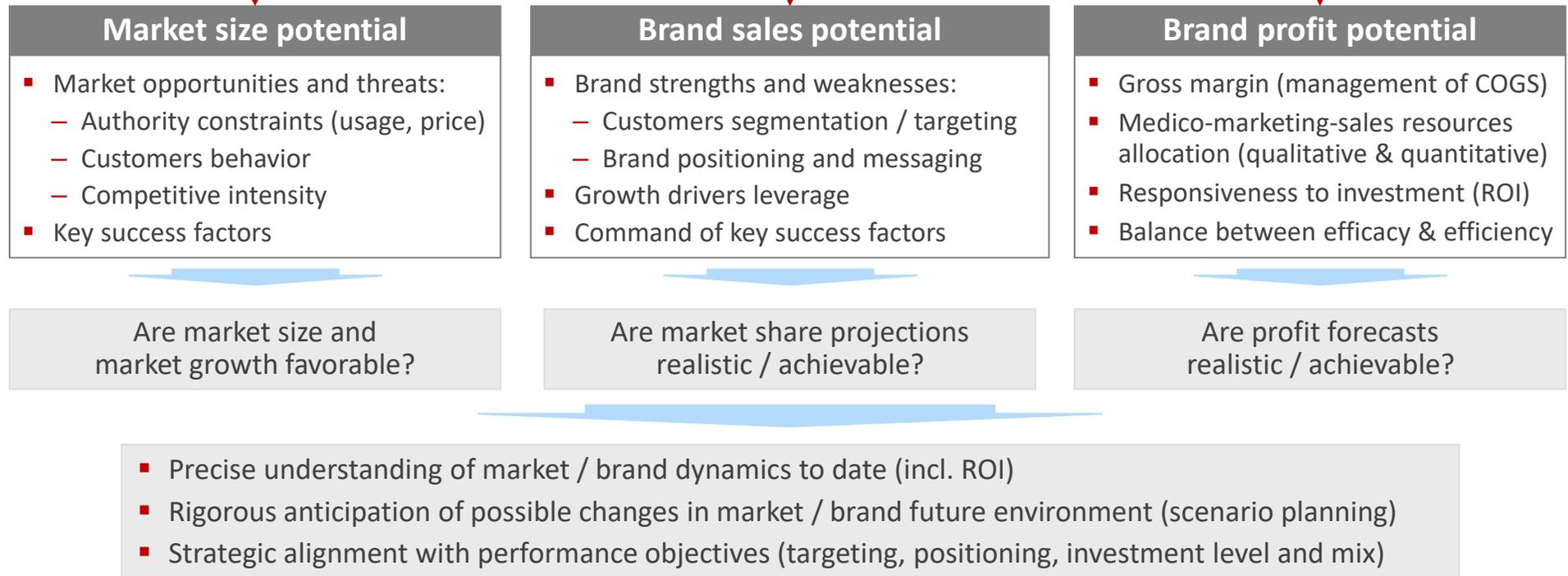
- Requires the use of many variables for which data are rare and/or difficult to evaluate (e.g., attrition rate)
- The combination of variables which is required leads to an important risk of errors compared to the static model
- Dynamic models are time-consuming
- In general, less appropriate for established products

The resources allocated have a strong impact on the sales and profits potential that can be generated from a brand over a forecasted period

Impact of allocated resources – Paradigm

Are the brand's expected sales and profits worth the money spent by the company?

Current performance vs. future perspectives



Two different approaches can be considered to measure out the benefit / risk of investments on a brand

Impact of allocated resources – Brand sensitivity

Approach n°1

Anticipate expected impact in view of:

Experience

Analogs (benchmarks)

Ambitions

Propose best guess evaluation
(e.g., expected sales and/or market share variations)
+/- pilot test / monitoring method

Approach n°2

Evaluation of required impact to:

Cover investment

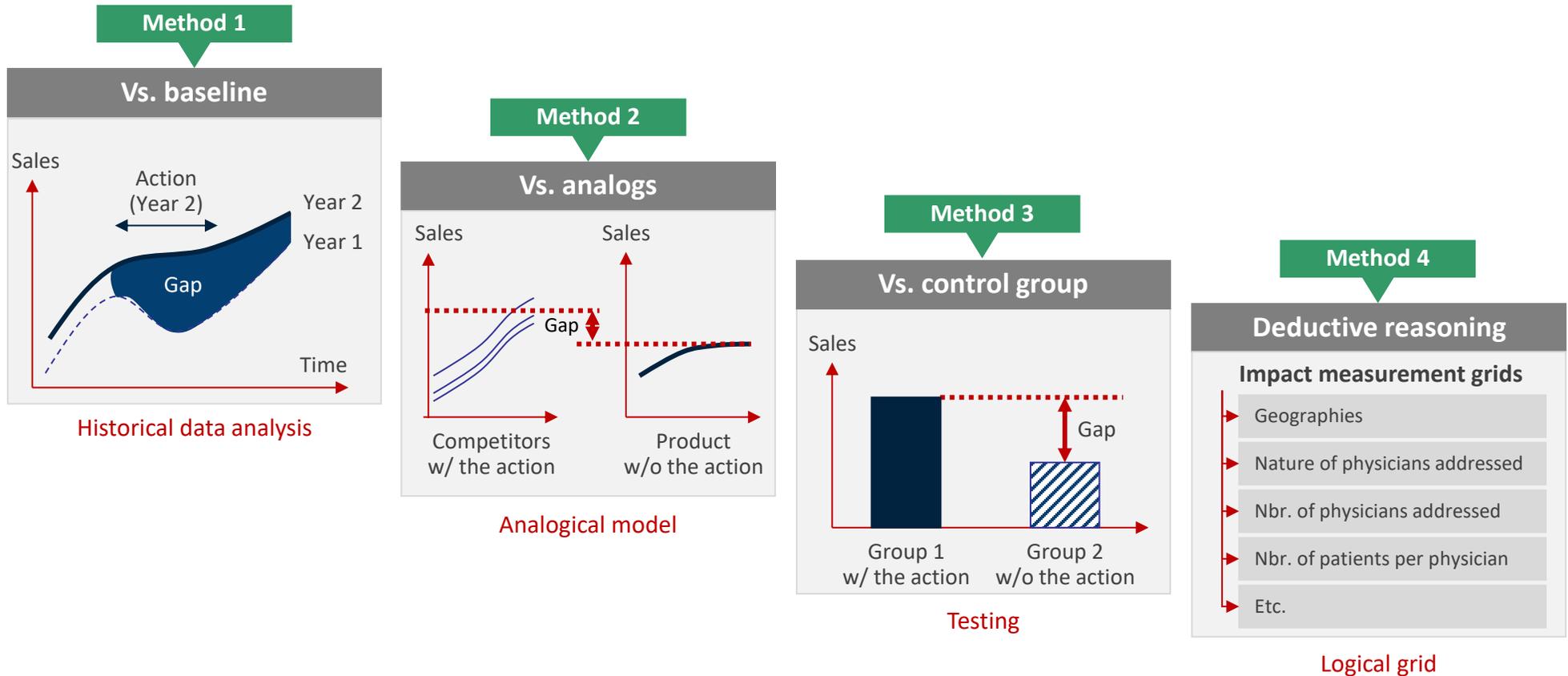
Maintain sales levels

Maintain profit levels / ratio

Determine minimal impact
(e.g., required sales and/or market share variations)
to break even

Measuring the impact of medico-marketing-sales resources and estimating ROI typically involves comparisons versus baselines, analogs, control groups, or through deductive reasoning

Impact of allocated resources – Measuring sensitivity



Sources: Smart Pharma Consulting

Sales and profits forecasting should be considered as the art of setting an achievable objective considering the soundness of the assumptions made and the relevance of the model built

Key Takeaways

- The robustness of sales and profits forecasts, from brand to corporate level, will strongly depend on:
 - The quality of insights regarding the served market(s), including...
 - ... company and brands assessment
- To do so, it is essential to gather and analyze reliable market data:
 - Health authorities that set the rules of the game
 - Competitors from whom to differentiate
 - Customers to influence to get preferred
- The collected market data related to the current and anticipated situation will feed the forecasting model which is built as follows:
 1. Projection of historical trends through CAGR, linear regression, or other methods
 2. Adjustment of these projections based on market and brand scenarios building
- The assessment of market and brand sensitivity to medico-market and sales investment...
- ... is a key component of pharma business sales and profits forecasting

“Accurate forecasting is 60% of thought, 20% of techniques, and 20% of inspiration and storytelling”

Smart Pharma Service Offering

Consulting Services

- Smart Pharma Consulting has a long and strong **experience in helping pharma companies** make forecasts:
 - **In various market environments** (e.g., reimbursed, non-reimbursed, Rx-bound, non-Rx-bound, hospital-only)
 - **For products** belonging to **20 therapeutic areas**
 - **At different stages** of products **lifecycle** (development, launch, maturity or decline)
- Thus, we are used to bringing our **support** to:
 - **Collect and analyze reliable market insights**
 - **Make projections** by using different tools, selected according to the specific situations
 - **Build** market and product **scenarios** based on **insights**
 - **Develop forecasting models** by using different methods
 - **Set business performance objectives**
 - Estimate the likely **impact** of **medico-marketing** and **sales investment** options on performance

Training Program

Example of a Two-Day Program¹

Day 1: Market Situation Analysis

- Part 1:** Review of basic and advanced methods and tools to gather and analyze pharma market situation and trends
- Part 2:** **Exercises:** Which method to gather robust market insights?
- Part 3:** **Case Study #1:** Market attractiveness assessment
- Part 4:** **Case Study #2:** Brand competitiveness assessment
- Part 5:** **Case Study #3:** Market & Brand sensitivity to promotion

Day 2: Forecasting

- Part 1:** Review of basic and advanced forecasting methods and tools
- Part 2:** **Exercises:** Which forecasting methods to use?
- Part 3:** **Case Study #1:** Sales projection methods
- Part 4:** **Case Study #2:** Scenario building and market-based forecast
- Part 5:** **Case Study #3:** Patient-based forecast (static and dynamic)

Target Audience

- Collaborators from strategy, BD&L, marketing, market research, and business intelligence departments, whatever their seniority

Consulting firm dedicated to the pharmaceutical sector operating
in the complementary domains of strategy, management and organization

Best-in-class Series

- This series intends to provide practical tools and recommendations to enhance the efficacy and efficiency of the most important activities or processes in place within pharma companies
- Our tools and recommendations are based on both:
 - Our consulting experience in the pharma sector
 - Our research for innovative, pragmatic and useful solutions
- Each issue of this series is designed to be read in 20 minutes

Pharma Business Forecasting

Best Practice Sharing

- This document shares essential recommendations regarding forecasting, based on academic methods and tools adapted by Smart Pharma Consulting to the pharma industry, including:
 - Methodology
 - Projection (trends)
 - Forecasts (adjusted trends):
 - Market-based model
 - Static and dynamic patient-based models
 - Sensitivity to allocated resources

“In forecasting, the future is always uncertain. The goal is not to eliminate uncertainty but to manage it” – Gerd Gigerenzer

Smart Pharma Consulting Editions



- Besides our consulting activities which take 85% of our time, we are strongly engaged in sharing our knowledge and thoughts through:
 - Our teaching activities in advanced masters
 - Training activities for pharma executives
 - The publication of articles, booklets, books and expert reports

- Our publications can be downloaded from our website:
 - 43 articles
 - 82 position papers covering the following topics:
 1. Market Insights
 2. Strategy
 3. Market Access
 4. Medical Affairs
 5. Marketing
 6. Sales Force Effectiveness
 7. Management & Trainings
- Our research activities in pharma business management and our consulting activities have shown to be highly synergistic
- We remain at your disposal to carry out consulting projects or training seminars to help you improve your operations

Best regards

Jean-Michel Peny