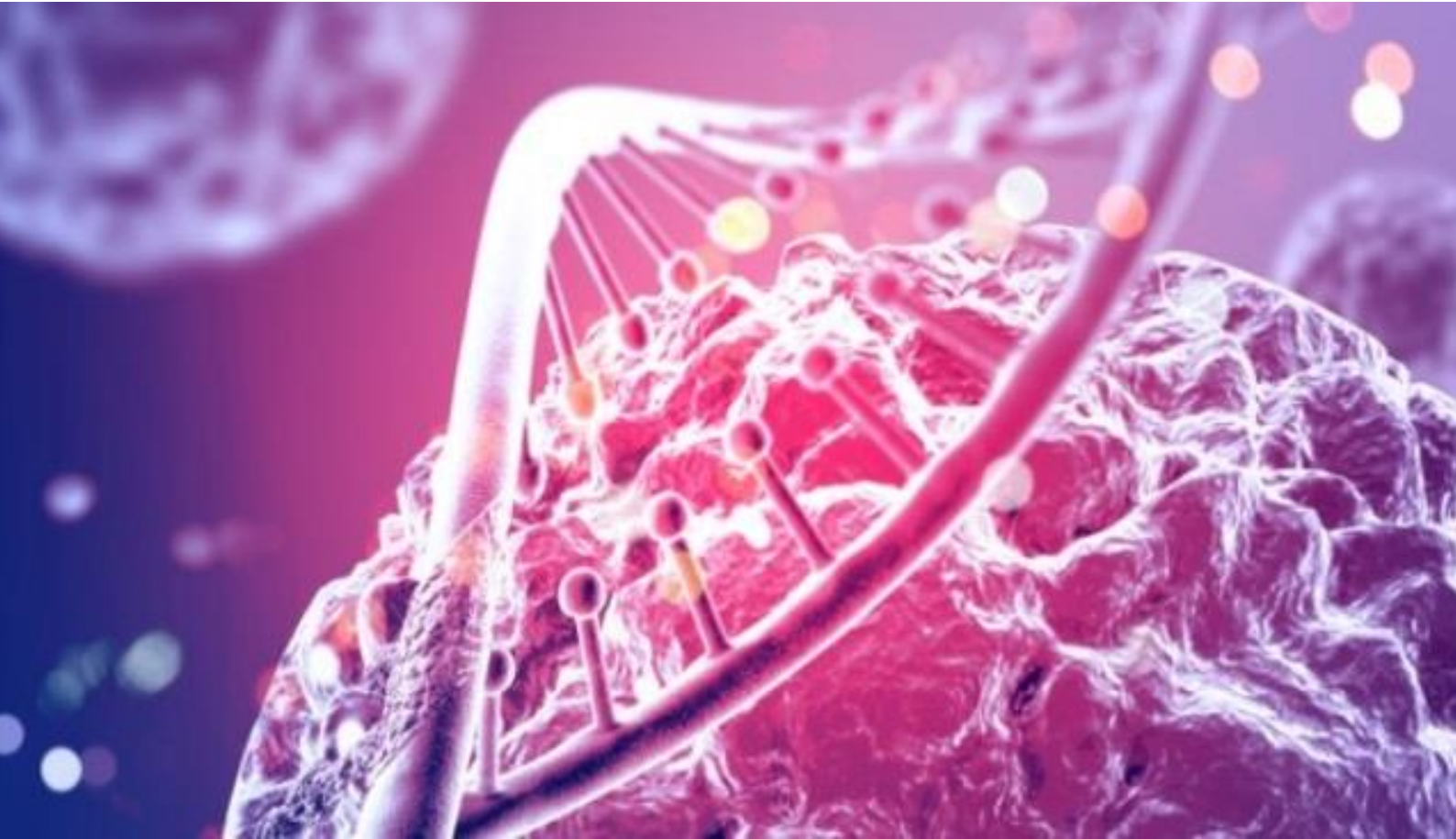

Oncology Services

Making business decisions clear...



Black  **wan**
Analysis™



Intelligent Decision Making in Oncology



Our advanced modelling and analysis techniques are commercially focused to determine potential values of your assets. Our team can help to provide detailed market characterisations collating information from various sources and tailoring deliverables to provide models and analyses that truly suit your needs. We are here to provide clear oncology forecasting in complex and dynamic environments.

Accurate and predictive

Where possible forecasts are calibrated against real world historical performance of drugs to ensure that the modelled dynamics are truly reflecting the market. These models have been used to calibrate against known sales data and found to be highly predictive. Events are modelled in context of the total market and not just one segment, allowing disruptive events to cascade through the model.

Robust and defensible

Professional analysts review internal databases, perform extensive literature reviews and collate market research findings to:

- Build clinically representative patient flow algorithms tested with clinicians
- Identify key patient characteristics which act as differentiators to treatment selection
- Understand and quantify impact of new diagnostics optimising patient treatment selection
- Present likely clinical outcomes of different treatments and regimens
- Create dosage assumptions around national guidelines
- Anticipate how new product launches and market changes can shape and change the future market

All methodology, sources and assumptions are documented with accompanying commentary.



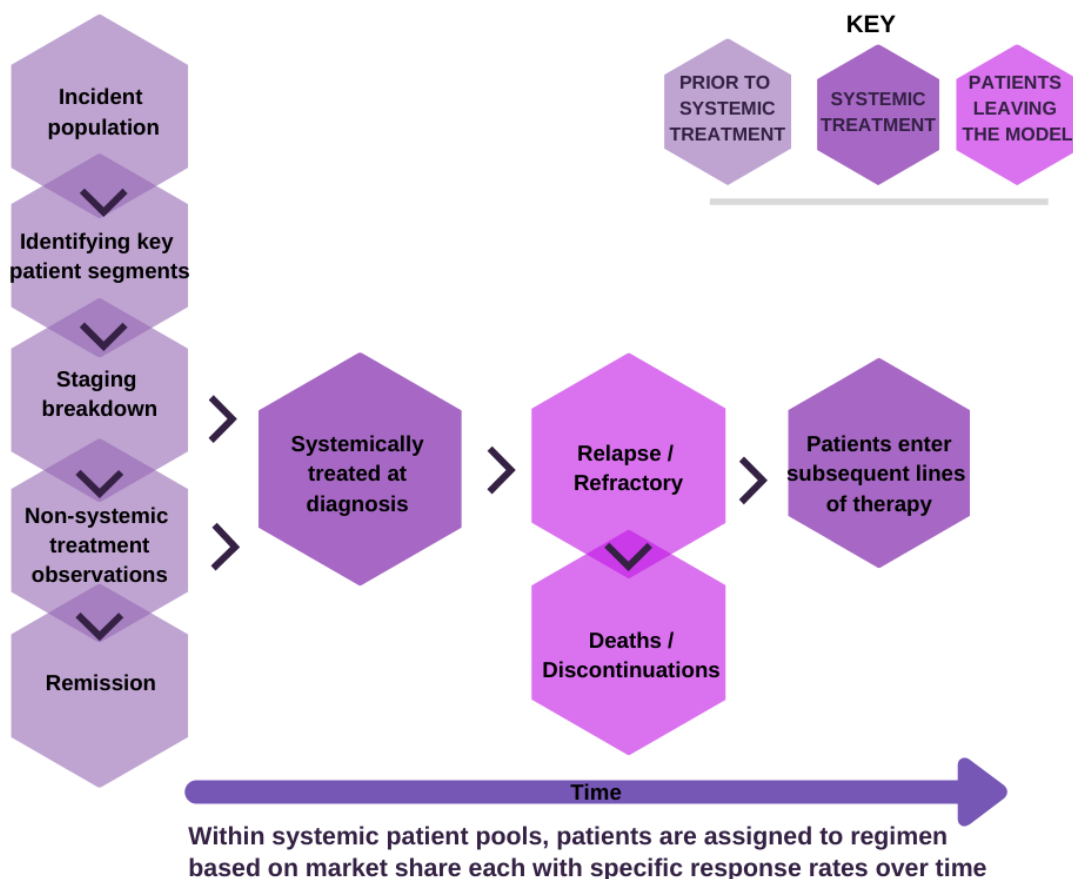
Clinical Patient Management Methodology

Oncology markets have become fast-moving environments where rapid **improvements in patient outcomes** is common. Couple this with highly technical terminology along with lack of traditional forecasting data, and oncology markets become challenging to model using traditional pharmaceutical forecasting techniques.

At Black Swan Analysis we use **dynamic patient flow modelling** to capture essential market drivers and leverage the data **unique** to this field. By aligning the model architecture with how patients move from diagnosis to discontinuation, we are able to follow patient cohorts through therapy, modify key market drivers in real time and visualise the impact of those changes on **financial outputs**.

Model architecture design is based on analyst interpretation of NCCN and ESMO guidelines.

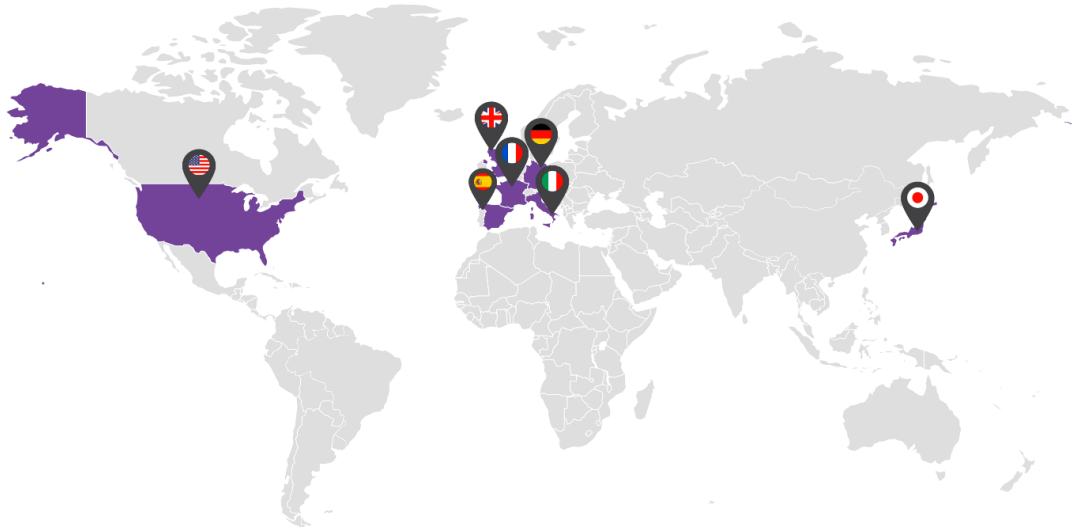
Clinical Patient Methodology process chart:





Data Coverage

We offer a coverage of 7 major markets including Europe, USA and Japan, with capability to customise for other countries on request.



Majority of cancers & histopathologies are covered with customisation on request. Here is the coverage of different disease categories we offer.

11 Therapeutic categories

31 Disease areas

51 Key market segments



Skin



Breast



Brain



Genitourinary



Gynecological



Gastrointestinal



Head and Neck



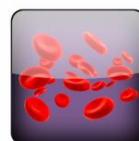
Leukaemias



Lymphomas



Lung



Multiple Myeloma

Coverage as of March 2020. Please check online for latest updates



Core Components of Our Oncology Forecasts

Market segmentation

Markets can be segmented in different ways to visualize patient populations critical to physician prescribing decisions.

Future events

Analysts and forecasters painstakingly research and assess the impact of disruptive events that could significantly alter the market during your forecast horizon. Analyst notes explain the process behind events included - from product launch to exclusivity to changes in prices and clinical guidelines.

Long range forecast horizon

Forecasts can be generated according to user specifications. Short-term, tactical forecasts can be produced with 18 months to 4 -year timeframes on a monthly forecast level, while strategic forecasts range from 10 to 25 years at an annual forecast level.

Transparency

All sources and treatment flow algorithms are provided alongside in-depth analyst notes, providing clarity to the forecast output. Analysts are on hand to walk you through our process and methodology to ensure that it is clear and transparent.

Ease of use

All data is presented in easy to understand tables and graphs, allowing clients to quickly visualise data and draw insights. All models are provided in Excel for ease of distribution to key stakeholders, while platform data is downloadable to Excel for further analysis, to be used in presentations or to link into other business systems.

Powerful outputs

Standard outputs provided include:

- Patients initiating treatment
- Patient months of treatment
- Patient share
- Product volumes (mg/IU)
- Revenue

Relevant outputs can be viewed at the molecule, regimen or market segment level.



Unlocking the Value in Your Business

Area	Question	Our Oncology Solutions
Competitive Landscape	What does my market of interest look like currently? Will this change during the lifetime of my asset?	Our analysts review vast numbers of clinical trials to determine which products we believe will be likely to launch during the forecast horizon and provide analyst notes to highlight our reasons for inclusion and exclusion. These are segmented by clinically relevant patient characteristics to give you a clearer view of what will happen in your market.
Market Size	Without prevalence data how can I determine an accurate market size? What about the effects of new entrants outside of my niche?	Using a dynamic model allows us to convert incidence to prevalence by assigning patients to given treatment options with modelled clinical outcomes. This allows us to model how market size will change as more effective therapies enter the market.
Market Valuation	How much is my market of interest worth? Would an asset in class X be viable?	Patient-based demand can be converted into volumetric outputs using national dosing guidelines combined with pricing data from RXPriceIndex™ to give a predicted revenue for assets in the market, this can be used to view individual molecules/regimen or value the market as a whole.
R&D Portfolio Development	Which assets should we invest in for future development?	Our analysts are oncology market experts who identify new product launches (NPLs) for drug classes (and mechanisms) as well as individual drugs, that are expected to launch within and across multiple disease areas. This information can be used to identify high value assets to be considered for R&D portfolios.

Increased range of market segments covered - We will be adding a number of new diseases and key market segments to the platform.

Increased predictive outputs - As well as increasing the quantity of data on the platform we are looking to improve our algorithms to allow us to model oncology markets to an even higher standard.

Increased transparency - We are providing detailed annotation of assumptions and methodology to all of our disease area models to make them utterly transparent.

Customisable future market - We hope to provide users with the ability to launch their own future market events and explore how an alternative narrative could impact the forecast revenue. Changeable events will allow users to generate forecasts tailored to their needs at the click of a button.



The Onco-Strat™ Platform

Onco-Strat™ allows fast identification and valuation of niche oncology markets

Imagine being able to forecast any oncology product at the touch of a button. The Onco-Strat™ online forecasting platform provides detailed market forecasts across significant disease areas within oncology. By breaking the market down into relevant biomarker or treatment populations we provide a detailed view of your market of interest.

Utilising proprietary dynamic patient flow algorithms, we develop a stronger picture of the market and predictions of how populations are likely to change over time.

Pan-Tumour Forecasting Platform

Oncology sits at the beginning of a new era – the launch of products spanning multiple tumour locations & histopathology's, disrupting the traditional paradigms of treatment. These vast and heterogeneous indications present a novel challenge to teams trying to forecast these products.

Forecasting within Oncology has always proven to be a challenge, now we need to consider the whole spectrum of diseases within Oncology in one forecast. With such diverse patient groups how can we manage the assumptions and data requirements necessary to produce a solid market valuation?

Black Swan Analysis has noted the shift in development of oncology products and seeks to provide a simple and effective solution. With extensive clinical algorithm, product approval, pricing, standard of care, clinical outcomes and epidemiology data as well as in strong in-house knowledge of patient-based flow modelling we believe we are well placed to address the problem.

Through an intuitive UI system supplemented with analyst-built assumption libraries (including unmet need and share uptake quantification), Black Swan aims to provide an environment where even people with little to no forecasting experience can forecast in this new era.



Flexibility of Commissioning

We understand that you have specific requirements and need flexibility in the partners that you work with, especially during the early phases of product development. Hence, we offer flexible options to best suit your needs.

	Online Subscription	Custom Projects	Custom Reports
Sources & Methodology	✓	✓	✓
Analyst Support	✓	✓	✓
Access to the Online platform	✓		
Unlimited users	✓		
Custom deliverables		✓	✓
Fast turnaround of custom requests		✓	

Online subscription

Annual online subscription allows easy access to diseases on both platforms, continuous analyst support and option to request scenario tests. Requests can be made to add disease areas or treatment populations to the platform as part of the continuous development of the service.

Custom Projects

Our in-house experts can answer specific questions and build forecast models to support your specific business cases. Our analyses utilise our proprietary flow forecasting algorithm which incorporates clinical management pathways to provide an accurate and easy to understand view of patient segments and market drivers relevant to your product.

Reports

Reports are published using our databases, which provide in-depth breakdowns of disease areas. Key drivers affecting the market such as epidemiology, treatment algorithm and guideline changes, new product launches and patient outcomes are included in the report. These are essential starting points for anyone looking to identify a market or asset of interest within a disease area.

We also provide various oncology forecasting services outside this platform. Custom reports and forecast models can be prepared quickly and effectively to suit your specific needs.

Unlock the value in your business and contact us to:

- *Make more use of your oncology patient record data by scaling it to a national level*
- *Get a better understanding of what your market truly looks like at the time of launch*
- *Understand how your product could fit into the physician management algorithm*
- *Understand impact of new competitors, diagnostic or change in treatment guidelines*
- *Understand future market value and risk for asset development*



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