



oxgox - oxgoxGPC

# TACTICAL PLAYBOOKS FOR GLOBAL PHARMA COMPETITION

Similarities between Global Life Sciences  
and Videogame Simulation

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## EXECUTIVE SUMMARY

Beatriz Evangelista's day begins at dawn, always in the same way. Accompanied by her dog, Fausto, she walks the two miles from her home in the outskirts of Lisbon, to a dialysis clinic in the Amadora neighborhood. Thanks to a unique partnership between the clinic operator and a drug company with a treatment for renal disease, Beatriz can effectively address her condition in a single visit instead of the 3 days it took her each week visiting different doctors and facilities before the program became available. The pharmaceutical company with a weak patent on the drug, struck a three-way agreement with the dialysis clinic operator and the national diabetes association, to provide proactive outcome-based care to patients at risk in Portugal – a nation with the highest incidence of end-stage renal disease (ESRD) among European countries.

Among the most stereotyped expressions in global life sciences and pharmaceutical marketing are, "the days of the blockbuster drug are over", "new gene therapies will extend the lives of human beings", and "the day of generics is here". Some of these notions do actually influence the decisions made by local in-country representatives of global pharma companies – who, despite being informed by vast, oversophisticated, and somewhat over-priced organizations, data, and academic prognosticators, still make their decisions on a very tactical, short-term basis.



*So what's wrong with this picture? Meaningful market segmentation requires much more than geographic assessment.*

## THE BURNING FIELD ISSUES IN LIFE SCIENCES TODAY

Global and regional markets for drugs differ vastly along several dimensions, most of which experience some forms of regulation and competitive dynamics. In fact markets are country-markets or state and regional sub-markets within countries. Therefore even blockbuster branded drugs require judicious tactical deployment within such country-markets, because the stakes are very high in terms of profits, product life cycle of the drug, or dynamics of competition. Market access and in-country field marketing are the typical front line force that engages with all the pharmaceutical stakeholders within each country or region – usually responding to near-term market needs such as tenders, threats of new or generic entrants, or new regulatory or pricing regimes – under guidance from other groups within their enterprises, but usually deciding based on adjustments on the margin from previous decisions. Is this a good thing? It is not, and doesn't have to be so.

Fundamental issues burn at the edge of everyday life for an in-country pharmaceutical marketer.

- What is our expectation for market share loss for our pharma “X” when generics are introduced?
- What are relevant levers by market? Stage and type of patent protection (e.g., compound, medical use, or secondary)? Regulatory conditions? Competitive environment (including imminence of generics)? Other relevant factors?
- For specified countries/regions, what is our expectation for price erosion for branded drugs when generics are introduced?
- Which tactics provide us with the greatest effect in terms of limiting market share losses, price erosion, extending brand life?
- What are identifiable similarities between targeted market segments?

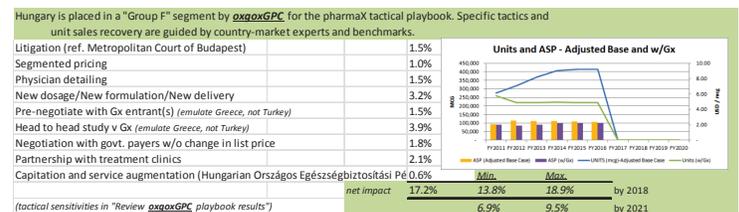


## WHICH STAKEHOLDER GROUPS WITHIN LIFE SCIENCES NEED TO CREATE TACTICAL PLAYBOOKS?

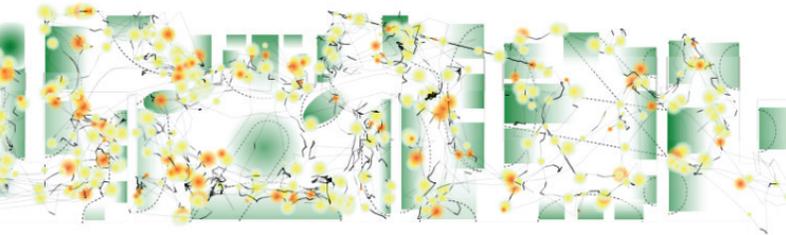
Almost all deep-divers in any functional field do – even drug trial teams and clinical data managers should have a keen interest in how field tactics can impact the marketability of the potential drugs they’re investigating. However most commonly, global pharma decision makers or field staff, such as market access, marketing/sales, pricing, medical affairs, supply chain, and country-market specialists would find it invaluable to correlate tactics to market outcomes. Consulting firms focusing on pharmaceuticals, healthcare payors, medical data providers and information analytics teams would also have a keen interest in this unique field.

## WHAT DOES A TACTICAL PLAYBOOK LOOK LIKE?

oxgoxGPC playbooks articulate if-then responses for specific country-markets, identified pharmaceuticals, and hypothesized competitive positions. If-then responses are articulated in a combination of specified tactics and pictorial representation of unit and dollar sales, similar to the tactical playbooks used by coaches in sports.



## BIRDS AND ART AND THE HEURISTIC GAMING OF PHARMACEUTICAL MARKETING



Believe it or not, the best heuristics for any mass market or highly dynamic situation can be found in nature or the natural behavior of humans in observed settings. **oxgox** has applied a range of learning from controlled observations and simulations, across a number of natural-world experiments. For example, extrapolating from the eBird network, which maps highly dynamic migration patterns, results in specific machine-learned heuristics, which can be applied quite reliably to competitive market situations. Similarly, via eMotion analyses the Kunst Museum in Basel, Switzerland has modeled the complex realm of visitor movement via architectural, visual and audio processes of data collection and presentation (shown above), in compliment with methods in psychology and sociology. **oxgox** has adapted these observations into dynamic heuristics of competitive behavior among enterprises operating across borders. So the results of these trans-disciplinary experiments can be leveraged to predict behavior in controlled pharmaceutical markets.

## MACHINE LEARNING CAN ACCURATELY MODEL COMPETITIVE ENVIRONMENTS

Algorithms – if appropriately configured and guided by heuristics – can therefore accurately simulate interactions between enterprises within markets. For global life sciences firms, the marketing of approved products is typically influenced by a number of stakeholders, such as country and regional drug and pricing regulators, patent regimes, payor/provider organizations, direct and indirect competitors, therapeutic and epidemiologic associations, and perhaps most importantly, the patients themselves. The frequency and rate of interaction between these players is increasing – in some cases dramatically – while global pharmaceutical firms still operate in the mode of replicating or only marginally adjusting marketing tactics from year to year.

Country/market groups	Pharma exclusivity	Regulatory situation	Competitive environment	Market size/growth	Market share	Pricing environment	Payer environment
A	Red	Green	Green	Green	Red	Yellow	Yellow
B	Red	Yellow	Green	Yellow	Yellow	Yellow	Yellow
C	Red	Yellow	Yellow	Red	Yellow	Yellow	Yellow
D	Green	Red	Green	Green	Green	Red	Yellow
E	Green	Red	Red	Yellow	Red	Red	Red
F	Yellow	Red	Red	Yellow	Yellow	Red	Red

How does **oxgoxGPC** go about simulating outcomes from tactics implemented by competitors within pharmaceutical markets?

First, **oxgoxGPC** establishes a baseline foundation or layer of information about regional and country markets, including their specific regulatory, payor and provider environments, and also the relationships that may exist between them, such as the epidemiological situation in neighboring countries, or regional associations for specific diseases, or reference pricing for market baskets of drugs.

Next, **oxgoxGPC** analyzes key country parameters, such as regulatory flexibility, likely number of generic entrants, probable effect on price declines, market size effect, level of market discounts, relative flexibility when multiple branded drugs compete for the same medical instance, and so on. Several methodological options are made available within the **oxgoxGPC** simulation framework.

Finally, selecting from a wide array of tactical options, decision makers can examine the likely top-line and price outcomes relative to a given status quo.

How does **oxgox** stitch such a wide array of dynamic parameters into a meaningful application and measurable outcomes? Go to [oxgox.com](http://oxgox.com) and check out a prototype of **oxgoxGPC**, or contact us at [contact@oxgox.com](mailto:contact@oxgox.com) for a discussion of your situation.



A green graphic of a tablet displaying a soccer field with tactical diagrams, including player positions, movement arrows, and set-piece plays.

## OUTMANEUVER YOUR COMPETITION

**oxgox** develops tactical playbooks  
to attain competitive advantage – visit [oxgox.com](http://oxgox.com)

## ABOUT OXGOX

**oxgox Stratalytics** develops tools and applications to help enterprises compete within specific industries, and provides consulting services to simulate dynamically competitive business situations. For example, global pharmaceutical firms need to estimate market share loss and a pricing response for branded drugs when generics are introduced. Our first application, **oxgoxGPC**, enables global pharma enterprises to simulate competitive situations for their pharmaceuticals in different markets. The app connects innovative analytical and machine-learning methodologies with proprietary technologies, to help pharma decision makers in market access, marketing/sales, pricing, medical affairs, supply chain, and other country-market specialists.

**oxgox** also develops apps and consults to analyze disruptive risk within supply chain networks – for example, to help insurance companies and their counterparties (e.g., global electronics, toy or specialty chemicals manufacturers) to address contingent liabilities in the case of significant disruptions to their supply chains. ([contact@oxgox.com](mailto:contact@oxgox.com))

## THE OXGOX TEAM



**swarnava mitra –  
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Swarnava holds a B.Tech in Electrical Engineering specializing in Signal Processing and Pattern Recognition. His specific focus was in classifying epileptic patients from healthy individuals. His early warning system analyzed wavelet transformed features of patients with certain signs of epilepsy. This classification was done using a multi-layer perceptron network, which segregated the probable epileptic patients from those who were non-epileptic. He has worked at the Indian Institute of Information Technology on TIFAC (*"Technology Information Forecasting and Assessment Council"* – an Indian government scientific organization), where he led the development of a Fault Detection and Identification system for automotive engines.

Swarnava completed his M.Sc in Engineering from Norwegian University of Science and Technology under an Erasmus Mundus Scholarship. Currently he is pursuing a joint PhD at Technical University of Madrid and Royal Institute of Technology Sweden. His area of research focuses on developing a layered trading systems using various machine learning methods and large numbers of exogenous macroeconomic input variables. He is an expert in R, Matlab, and other data science languages.

**vineet kapur – president**

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Vineet specializes in implementing solutions to tough business problems. His previous experience was in corporate and business strategy, finance and IT, where he led embedded cross-functional engagements for Fortune500 clients within industries such as healthcare payer, life sciences, information technology, financial services, media/entertainment, retail, food, and hospitality.

Most recently Vineet was a partner in Cognizant Technology Solutions' Business Consulting practice (CBC). In that role he was responsible for helping clients realize greater value from their IT organizations, technology investments, and IT-enabled business processes. Previously he was the CFO of ValStone Asset Management, a private equity affiliate of Cargill Financial Services, and a corporate development specialist at McKinsey & Company and at Marakon Associates.



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Anna specializes in the design of web and mobile applications. She is known and sought by clients for her third eye in visual design, user experience, and in print and online materials for businesses, brands, and individuals. Clients enjoy how fully Anna gets it and gets them. She enjoys integrating beauty and functionality in all aspects of design

