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Orchestrating Omnichannel Measurement Approaches to Enable Outcomes-Driven, Personalized Campaigns

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Orchestrating Omnichannel Measurement Approaches to Enable Outcomes-Driven, Personalized Campaigns

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Introduction

The relationship between pharma and its customers has shifted dramatically in the last few years. Their journeys have become very complex, fueled by the proliferation of digital channels and evolving customer preferences. Patients and providers now have a multitude of choices in how and when to interact with your brand and these shifts have rendered the traditional way of measuring success ineffective. A holistic approach is needed.

Axtria's omnichannel thought leaders, Vandana Singh and Ritu Kohli, recently tackled this issue head-on. Their detailed discussion laid out how to orchestrate several analytical approaches, including marketing mix modeling (MMx), attribution modeling, and campaign analytics. They also discussed how to perform these in tandem at varying cadences to enable outcomes-driven omnichannel campaigns and shared why MMx outputs must evolve to inform downstream next best action (NBA) recommendations.

We present this paper to help guide life sciences companies in successful and repeatable omnichannel measurement efforts.

There Are No Half-Measures

You may think this sounds familiar. Every company is seemingly pushing "omnichannel" as the only way forward. They're right. You've heard this before, but how do you generate NBA suggestions or build a system that can provide dynamic target lists? That's only half the battle. What's the point of building these modern approaches if you can't measure their impact?

The Evolution of Analytics

Now that we have that brief "why" and "how" out of the way, let's get to **what** you should measure. Even the nature of omnichannel analytics has evolved in recent years. Previously, we had traditional promotional channel measurement and minimal digital channel measurement. Then came some standalone digital analytics teams that looked at metrics like click-through or email open rates. After that came the multichannel world, with more ways to connect to customers, but not necessarily in a coordinated manner. Now, we're in the omnichannel era, which weaves those avenues of communication together seamlessly in the context of the customer. We've begun looking at the customer holistically and focusing on outcomes-driven metrics.

That means answering questions like, "How can I make sure that my omnichannel program is running well?" "How are my customers doing?" "Where do I invest more versus less?" Most companies are moving toward that, but the real goal is to do it at-scale with automation. No one is there yet.

The Right Cadence for the Right Analyses

In the past, some analyses were performed only once a year. Customer segmentation, MMx, and message testing helped you craft your brand plan. These were rather strategic in nature. Then, you had other analyses that you performed

more frequently for campaigns already running, like A / B testing, creating holdout groups, and providing dynamic target lists. With these, the time frames shrank to one-to-three months.

Nowadays, we perform certain analyses daily or weekly to provide real-time recommendations. For example, automated NBA suggestions and insights for the field force and using dashboards to monitor key performance indicators (KPIs) are real-time analyses.

How do we ensure that the guidance we provide across these different periods is consistent and performed at-scale? What is the right frequency for performing these analyses in the omnichannel era?

To answer those questions, we will focus on three topics: more frequent marketing mix modeling, attribution modeling for digital campaign optimizations, and a measurement framework that accounts for leading and lagging indicators, along with customer-centric impact metrics.

The Three Use-Case Approaches

1. Omnichannel Planning Through Marketing Mix Modeling

First, a refresher on MMx. This technique helps us quantify the impact of the different promotional channels we invest in across our brands. Using historical results, we can optimize and improve future brand performance.

With that definition in mind, consider Figure 1 below. It shows some current limitations with MMx, while the right side shows Axtria's recommended approaches for those challenges. These recommendations come from our extensive experience working with top pharma companies facing similar hurdles.

MMx must be scaled to support omnichannel planning. That requires a transformation from an annual look at just a few brands to a well-oiled machine churning out analyses across all brands and geographies every quarter. There is a trio of approaches to accomplish that.

Figure 1: Recommended Approaches for MMx Challenges

Current challenges	Recommended approach
Channel effectiveness and budgetary recommendations at national, sub-national level	Granular, microsegment / HCP-level differentiated recommendations
ROI / Impact at channel-type level, e.g., digital or paid search	ROI / Impact at granular tactic / publisher-level
Limited channel sequencing / interactions impact assessment	Assess true impact of channel through pathways analysis
Annual exercise, performed for few key strategic brands, geographies	Bi-annual / quarterly exercise, performed at scale across brands, geographies

Source: Axtria Inc.

MMx Approach: Differentiated MMx

Typically, MMx has been leveraged to provide recommendations at a national, sub-national, or segment level. Segment-level MMx usually takes into account the brand-writing potential of the customers. In addition to their writing behavior, we recommend looking at various other HCP attributes, ranging from their demographics to their treatment and channel preferences. This can be done by leveraging key driving factors of brand performance to create behavioral micro-segments using clustering algorithms. These microsegments define the HCP's overall behavior and potential very well.

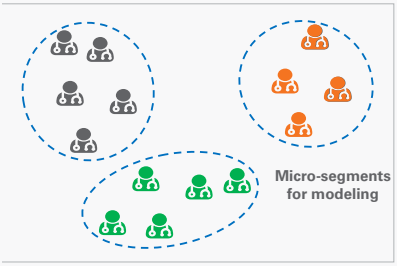
Once that is done, the next step is to leverage these microsegments as part of our response modeling exercise. One such approach is hierarchical modeling, which helps tease out the "fixed effect" of the channel impact and the "random effect" that the microsegment or cluster has on the channel. We can tease out differentiated responses at a microsegment level using this approach.

With those curves at a granular level, the last step is to develop a resource allocation plan for the HCPs across the different channels. This can feed into your dynamic call planning or the target lists you typically give to omnichannel vendors.

Figure 2: How to Differentiate HCP-Level Promotional Guidance

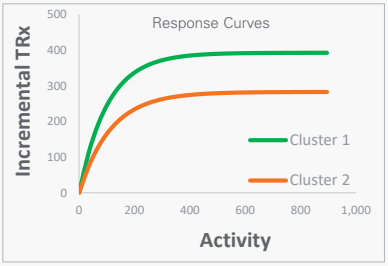
Microsegmentation of HCP Universe

- Identify HCP attributes based on key driver analysis.
- Create behavioral microsegments using clustering.



Granular Response Modeling

- Hierarchical modeling is used to generate response curves at a granular microsegment and/or HCP level.



HCP-level Resource Allocation

- Differentiated resource allocation is used at the microsegment / HCP level.

	Dr. Wood	Dr. Lee	Dr. Shah
F2F calls	$160	$400	0
Virtual calls	$90	$90	$200
Emails	$20	$20	$40

Inform Dynamic Target Lists and Call Plan

We have leveraged hierarchical modeling to create differentiated microsegment / HCP-level response curves.

Source: Axtria Inc.

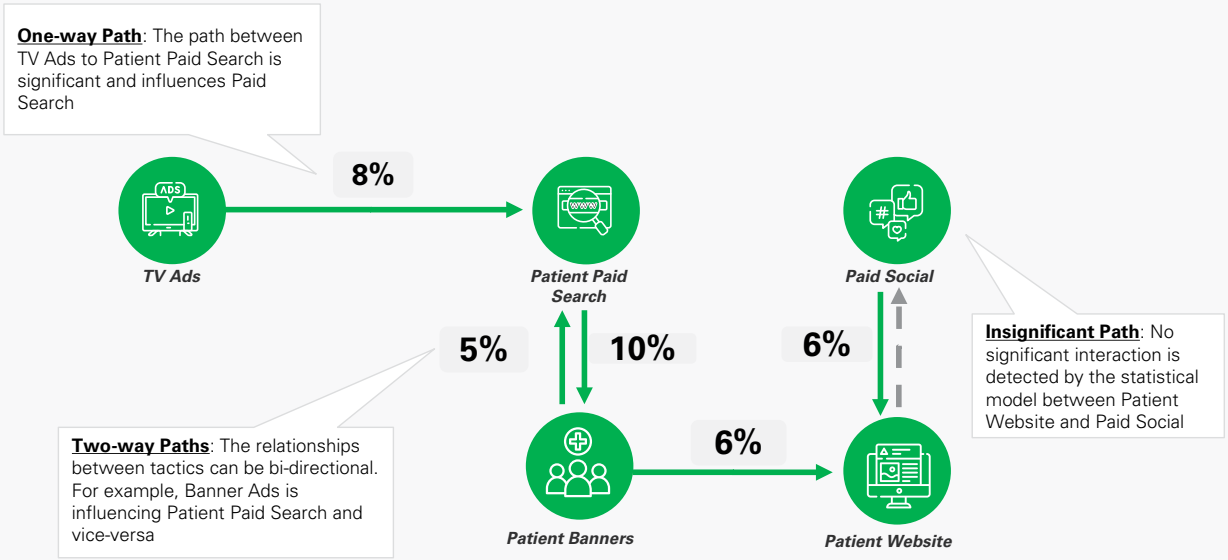
MMx Approach: Pathways Analysis

At any point in time, customers are typically on a journey, moving across different channels and different stages of brand adoption. It is vital to understand the relationships and synergies between different channels to design better pathways and experiences for our customers.

For example, television advertisements create brand awareness, leading to customers searching online for more information, which is usually followed by the customer seeing a banner ad for the product while browsing another website. The reverse is also possible, where the person may see a banner ad first and then search for it later. Similarly, a paid social ad can lead to a product website. Many such paths exist in the real world between channels: some are one-way, others bi-directional, while others may not be possible.

As you can see in Figure 3, there is a way to model this from a marketing standpoint. When we run our base MMx model, we get the contribution for each channel type. This must then be followed by another modeling technique called the pathways analysis. Pathways analysis helps us break out the channel contribution from the base MMx model into (1) *direct impact from the channel* and (2) *indirect impact from other channels* leading up to it. In the illustration below, the "Paid Search" contribution is modeled against its own transformed activity and the activity of patient banner ads and TV ads leading up to it. This helps us estimate the impact that should be applied to these originating channels and allows for better budgeting. This methodology has produced robust results for our clients.

Figure 3: The Pathways Diagram and Equation (percentages are illustrative)



Modeling Equation: Patient Paid Search Contribution ~ *fn(**Patient Paid Search**) + fn(**Patient Banners**) + fn(**TV Ads**) + Intercept*

Source: Axtria Inc.

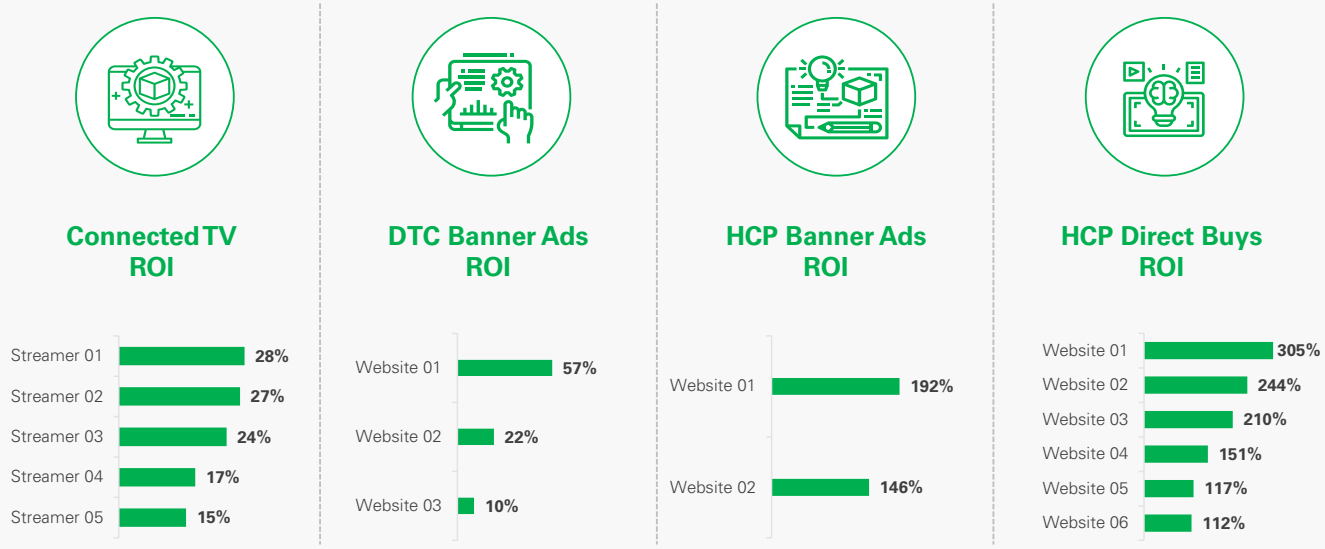
MMx Approach: Breakout Modeling

The final approach from an MMx standpoint is to implement a breakout modeling approach. When running a base MMx model for a brand, it's tough to tease out the impact at the most granular level, i.e., the publisher level, where the actual spending takes place. Breakout modeling is a way to calculate that impact. For example, within a "Connected TV" category, we'd look at the individual streaming services; for banner ads, we'd look at the specific sites displaying the ad. We'd then run a breakout regression model to compare the channel contribution from the base MMx model against the transformed "impressions" from each publisher or vendor. This analysis gives us an accurate return-on-investment (ROI) figure for each vendor or publisher and becomes important in the context of channel proliferation.

Figure 4: Breakout Modeling (percentages are illustrative)

A **breakout model** is used to estimate the sales driven at publisher levels. Linear regression model equation:

$$Channel\ Contribution \sim fn(Publisher_1) + fn(Publisher_2) + ... + fn(Publisher_n) + Intercept$$



Source: Axtria Inc.

2. Omnichannel Measurement Through an Insights-to-Action Framework

From here, we move on to the second of our three use-case approaches. In this section, we'll discuss how to drive impactful omnichannel measurements on an **ongoing basis.** To do that, you need a framework for measuring the efficacy of omnichannel programs in a timely, outcomes-driven manner, providing actionable insights to inform tactic-changing decisions across different stakeholder groups. We'll start as we did with section one: outlining the challenges and our recommendations, in this case, for an insights-to-action framework. Figure 5 below visualizes these points.

The first hurdle is that traditional KPI-driven approaches focus primarily on generating operational insights. Instead, Axtria believes actionable recommendations should come from assessing the actual business impacts of the omnichannel campaigns.

The next roadblock is that KPIs can often be overly technical for non-technical audiences. Here, the recommendation is to shift to role-based measurement approaches to support the goals of different stakeholders. When setting this up, you can drop everyone into one of three buckets: (1) those who support the brand marketing goals, (2) those who support omnichannel delivery or operations, and (3) those who support commercial excellence. Each one of those groups will be able to answer the questions:

- What did we do?
- Are we driving engagement?
- What was the impact?
- What should we do?

Figure 5: The Challenges and Recommendations in an Omnichannel Measurement Framework

Current challenges	Recommended approach
KPI-driven operational insights	**Actionable recommendations** through business impact assessment
Overly technical KPIs for non-technical audiences	**Role-based measurement** approach that supports the goals of different stakeholders
Dependence on lagging indicators (e.g., Rx) for campaign optimization	**In-campaign analytics** by examining leading indicators of performance
Siloed channel-centric performance tracking and optimization	**Cross-channel performance** tracking along the adoption funnel

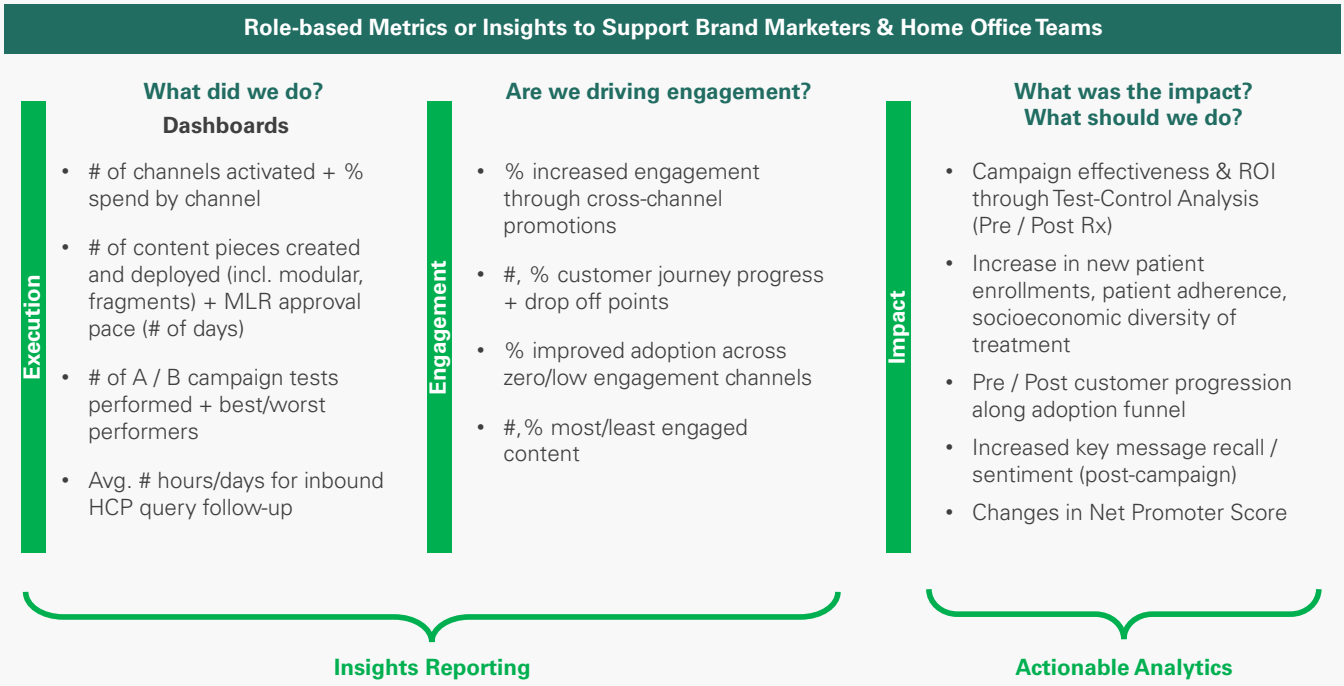
Source: Axtria Inc.

The third struggle is a dependence on lagging indicators. For example, there may be a focus on test control analysis after the campaign has run, creating a significant time delay between prescriptions written and when you find out about them. Here, Axtria recommends performing in-campaign analyses of the leading performance indicators. We will discuss more about how we can identify leading indicators and drive in-campaign optimization in the next section.

The last struggle we see before implementing an insights framework is that a lot of KPI-based tracking is siloed. It creates a very channel-centric measurement view, which is not an accurate real-world representation of how multiple channels work in tandem to move the customer along their journey. We recommend tracking the cross-channel performance along the customer's adoption funnel, using a customer engagement scoring approach to get an accurate view of omnichannel performance.

With these recommendations in play, here's what an insights-to-action framework may look like for brand marketers and home office teams:

Figure 6: Example of an Insights-to-Actions Framework



Source: Axtria Inc.

Many metrics in the above KPI framework can be built into automated dashboards, generating real-time insights. These allow you to do your operations faster, for instance, measuring how quickly you responded to an inbound HCP. With a framework example like the one seen in Figure 6, you can find where people are leaving the customer journey or which content pieces generate the most engagement. The middle column provides early engagement indicators before you get the end results of the channel campaign. The metrics on the right can reveal ROI, number of patients treated, brand recall and sentiment or a customer's progress from awareness to consideration to the trial phase.

Some of these metrics were impossible in the past. They become very relevant now as we do more digital promotions, including the customer progression on the adoption ladder and net promoter score.

3. In-campaign Optimization Through Attribution Modeling

We move now to the third use-case approach: attribution modeling. This element fits very nicely into the second and third buckets we outlined above. Attribution modeling is a mathematical technique that we use to assign credit to various touchpoints on the customers' journey as they progress toward conversion. This process helps marketers understand the effectiveness of the individual channels or campaigns they are investing in by using a concept that borrows from the e-commerce industry. Axtria proposes that this technique can be leveraged successfully in the pharma and life sciences industry.

Traditionally, MMx has been used to understand channel-level effectiveness to drive budget optimization. However, MMx is an integrated, top-down model approach that gives us a macro view of how all channels, online and offline, perform together. In contrast, attribution modeling is a bottom-up approach, where we look at the individual customer-level journeys to estimate the channel-level impact in real time. This approach becomes especially well-suited in the digital marketing era, giving us access to granular and timely customer-level data. It opens up the possibility of optimizing omnichannel campaigns on the fly. We can use these customer-level channel attributions to make the necessary course corrections while the campaign is running. Furthermore, we discussed pathways in MMx, but attribution modeling takes the impact of pathways or channel sequencing into account by default.

Figure 7: Recommended Approaches Using Attribution Modeling

Current challenges	Recommended approach
MMx typically used for attribution; top-down, macro-level approach	**Bottom-up approach** which considers individual-level customer journeys
Used across **personal, non-personal, digital** channels	Recommended primarily for **digital channels, campaigns**
Performed on an annual / bi-annual basis	Suited for **inflight campaign optimization** by analyzing impact vs. spend effectiveness
Limited channel sequencing / interactions impact assessment	Assess impact of **channel sequencing** through customer journey analysis

Source: Axtria Inc.

Let's look at how to implement this in the context of pharma and life sciences. A prescription is usually written in the office during a consultation between an HCP and a patient. What if that patient had been exposed to a digital campaign (paid social ads, display ads, videos, etc.) before visiting the doctor? It would help if you knew how to tie those promotions to the offline prescription impact.

Our first step would be to create a "key driver analysis" that links activities to influence. With the example above, we would create a website key driver analysis; website, in this case, because most digital campaigns have goals like driving disease or brand awareness or improving disease management. These ultimately lead to patient- or HCP-oriented websites where the customer can learn more. A website key driver analysis will identify the specific actions happening on the website – links clicked, sections read, videos watched, etc. – that correlate well with brand prescriptions.

We do that through a machine learning model approach. Typically, we perform modeling monthly, with data rolled up to a designated market area (DMA) level. We may have more granular prescription level data, but the event activity data from tools like Google Analytics or Adobe Analytics tend to come at geographic levels like ZIP-code or DMA.

The idea is not only to calculate the ROI or impact for each website event but also to understand the relative impact of each event on sales or prescribing. Simply put, this step reveals the activities that spark the greatest influence and helps us identify leading drivers of brand performance, improve engagement metrics, and optimize website user experiences based on what we see from actual customer activity.

The second step is the multi-touch attribution model, which links the impact of those engagements back to each step in the customer's journey. We calculate an engagement score for each customer to estimate the indicative customer-level impact in real-time. We do this by mapping their activities on the website to various stages of the adoption funnel. For example, a customer will be mapped to a part of the adoption funnel based on whether they just looked at the home page or clicked on the product info page. We assign a score to them based on their activity.

Figure 8: Website Key Driver Analysis

Hypothesis

- Companies spend heavily on digital campaigns to drive patient awareness, considerations and adoption.
- Many of the targeted patients and HCPs are driven by different promotional channels **to patient and HCP websites** to learn about different products.

Website Key Driver Analysis

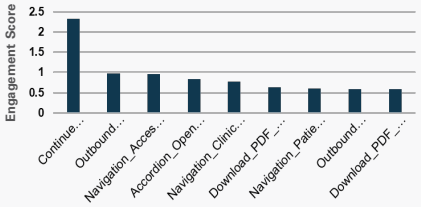
- Technique used to understand **website activities** that have the **greatest influence** on the customer's purchase decision or a physician's prescribing decision
- E.g., Patient prescriber information, copay support programs.

Key Outcomes

- Identify **leading drivers**, activities steering customer conversion, for brand websites
- **Patient and HCP website engagement metrics** that help monitor conversions and digital channel performance.

Modeling at DMA-Month Level

Digital Impact Contribution = (ß1 X Event1) + (ß2 X Event2) + …. + (ßn X Eventn) + Intercept



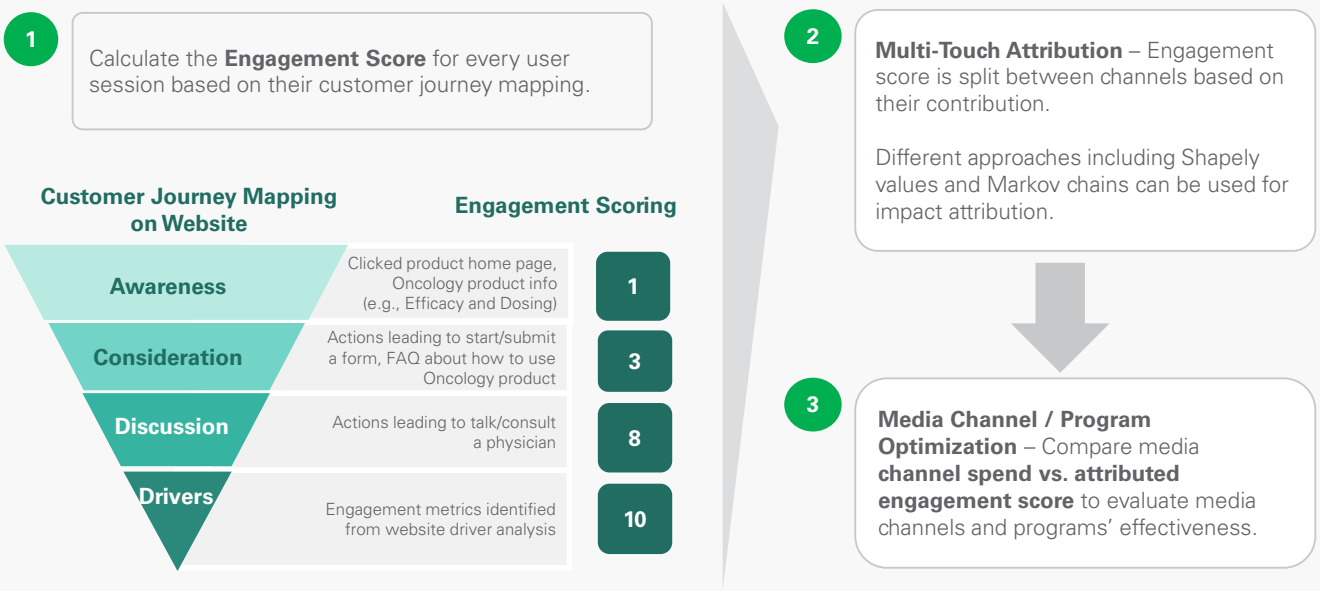
Source: Axtria Inc.

The score would be much higher for an activity that, as we saw in the previous step, is tied more toward conversion (e.g., downloading a brochure or watching a video about the drug). We come up with the scoring criteria (e.g., 10 out of 10 for requesting the brochure or watching the video) after a discussion with clients.

Once that's done, we move on to the next phase of the attribution model, where we allocate that score to each step or channel on the customer's conversion journey. Here, we typically use a Shapely value algorithm. It's a way to calculate each channel's marginal contribution to the whole using a cooperative game theory approach. We may also use a Markov chain analysis. Several other heuristic techniques, including "last-touch" and "time decay," are widely used in the industry. However, we prefer to use more robust algorithms like Shapely or Markov if the underlying data supports it.

Once we have distributed the engagement scores, we compare them with the resources spent on those channels. Based on the performance, we can reallocate spending where we see better conversion or impact. Figure 9 illustrates this process.

Figure 9: A Multi-Touch Attribution Modeling Process Flow



Source: Axtria Inc.

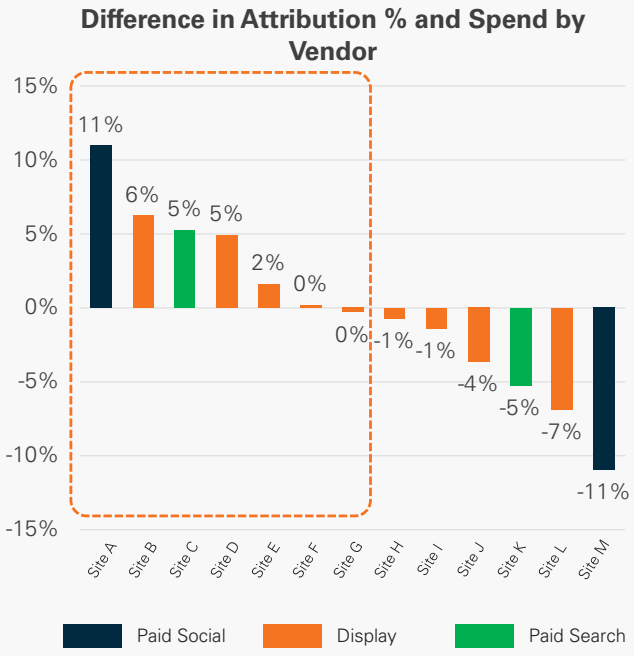
The output of this analysis is the difference between the percent-attributable-impact versus the channel spend within each channel grouping (e.g., Paid Search). It is then organized in a sorted table or chart for easy consumption of insights. It gives us a quick look at what's working and what's not. Figure 10 shows what this would look like using illustrative numbers.

The chart on the right side of Figure 10 tells the story. In this example, you can see Instagram has the highest positive change, or delta, and is driving a high impact even though there's not much spending on it. Facebook has the lowest delta. This analysis makes it straightforward to see that a rebalance is necessary: increase the expenditure on Instagram while reducing it on Facebook.

While this is not strictly an ROI exercise, it gives you an excellent assessment of how to change your spending allocation while a campaign is in progress.

Figure 10: Illustrative Results of an Attribution Modeling Analysis

Default Channel Grouping	Vendor	% Spend within Channel Grouping	% Engagement Scoring within Channel Grouping	Difference in percentage points
Paid Search	Site A	91%	86%	-5%
	Site B	9%	14%	5%
Paid Social	Site C	63%	53%	-11%
	Site D	37%	47%	11%
Display	Site E	52%	45%	-7%
	Site F	18%	25%	6%
	Site G	4%	9%	5%
	Site H	3%	5%	2%
	Site I	8%	5%	-4%
	Site J	7%	5%	-1%
	Site K	3%	2%	-1%
	Site L	2%	2%	0%
	Site M	2%	2%	0%



Source: Axtria Inc.

Conclusion

Different trends in the omnichannel analytics landscape require life sciences companies to evolve to keep up with business needs. It is also evident that it will take a variety of analytics at different cadences to support real-time decision-making. In this report, we've covered three separate use cases for various purposes.

We've given you a deep dive into omnichannel planning and decision-making through marketing mix modeling, identifying three specific solution areas: enhancing differentiated MMx, pathways analysis, and breakout modeling. We've also shown you how to set up an omnichannel measurement framework, which, once set up, will turn insights into action. And we've laid out the case for attribution modeling to drive campaign optimization, especially for digital-based promotional efforts.

All three will give you a solid foundation for extracting meaningful changes amid a complex customer journey. There is no denying that the pharma-customer relationship has become more complex. But with this holistic footing in place, you can easily handle the changing preferences, seemingly endless choices, and guide meaningful and rewarding interactions with your brand, both for you and your customers.

About the Authors:

Vandana Singh leads the omnichannel practice at Axtria. She has been a powerhouse in the industry for 25 years across a variety of roles.

Ritu Kohli has nearly two decades of experience in the life sciences, focused on pharma data and analytics consulting. She has successfully led clients in marketing, analytics, and omnichannel transformations.

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