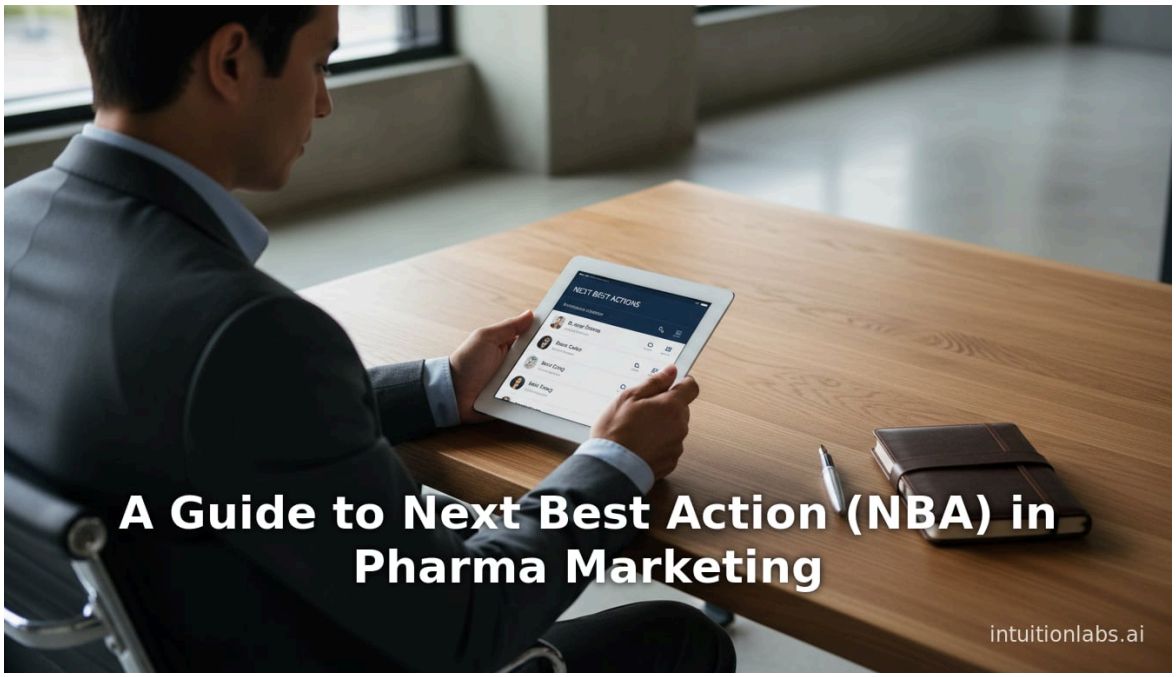
A Guide to Next Best Action (NBA) in Pharma Marketing

By InuitionLabs.ai • 9/29/2025 • 20 min read

next best action | pharmaceutical marketing | hcp engagement | artificial intelligence | machine learning | predictive analytics | omnichannel marketing | sales force effectiveness



Next Best Action (NBA) in Pharma: A Complete Guide

Next Best Action (NBA) is an AI-driven, customer-centric marketing strategy for deciding the *most relevant next step* to engage each healthcare professional (HCP). In practical terms, NBA uses data and machine learning to tell a pharma sales rep *which doctor to contact*, *when*, *via which channel* (email, call, in-person, etc.), and *with what content*, in order to maximize effective engagements. As Pega summarizes, NBA "utilizes a combination of artificial intelligence and real-time interaction data to create hyper-relevant customer experiences," analyzing each doctor's unique needs, preferences and context to pick "the most relevant and meaningful action" for that individual (www.pega.com). In pharmaceutical marketing, NBA acts like a **recommendation engine**: it ingests dozens of data points about each physician (specialty, patient demographics, past communication responses, content preferences, etc.) and then recommends the best drug or message to promote, the optimal channel to use, and the best content format (e.g. case study, clinical data) to share with that physician (www.griddynamics.com).

Pharma's ultimate business goal is to increase prescriptions by educating providers. This means sales reps "need guidance to streamline [their] process and ensure that relevant and targeted information is shared with specific HCPs at the right time via the best channels" (www.griddynamics.com). NBA systems are designed to give that guidance. Rather than generic mass marketing, they customize each doctor's journey. Grid Dynamics notes that implementing an NBA "significantly transforms the marketing paradigm from product/drug-centric to HCP-centric," turning static campaign plans into a dynamic, prescriptive approach where the system *suggests* and *optimizes* actions in real time (www.griddynamics.com). In short, NBA is about delivering **the right message to the right doctor at the right time via the right channel**, using data-driven AI to make each outreach moment count.

Why NBA Matters in Pharma

Pharmaceutical sales reps face a crowded, fast-paced environment. Physicians today are inundated with information: one industry analysis points out that in the 15 minutes a doctor used to give a rep, that same doctor now *consumes over ten promotional emails* (www.griddynamics.com). With so many competing promotions, a one-size-fits-all strategy quickly leads to fatigue. Many pharma companies still default to blasting broad email campaigns to thousands of doctors, but this often backfires – doctors unsubscribe or ignore these generic messages (www.griddynamics.com). In fact, Grid Dynamics observes that with "an endless array of communication channels and content types, HCPs are more selective regarding what

they pay attention to," and sending the same content to all doctors regardless of their interest typically ends up driving disengagement (www.griddynamics.com).

This information overload makes **personalization** essential. As one blog bluntly states, HCPs are "overwhelmed with an immense amount of information" from pharma companies across digital and personal touchpoints, so cutting through the noise with highly-tailored messages has never been more critical (www.customerinsights.ai). Merely broadcasting a campaign on a fixed schedule wastes resources and attention. Instead, NBA steers marketing toward *customer-centricity*: figuring out *which* practitioners *right now* are most likely to benefit from a given message and then delivering it when and how they prefer.

Modern data and analytics trends have made NBA feasible. Ever-more granular physician data (CRM logs, digital listening, syndicated Rx data, call notes, etc.) allows AI models to learn each doctor's behavior and pivot instantly. In fact, industry experts note that physicians today expect personalized engagement "similar to [their] everyday consumer experiences." Billion-dollar pharma firms are "adopting technology that mirrors what is already ubiquitous in the consumer marketplace," using AI-powered clustering of customer data to deliver Netflix- or Amazon-style recommendations (www.aktana.com). According to Deloitte's Mark Miller, "NBA is the dominant initiative across every single client" in life sciences – reflecting the reality that HCPs *want* more nuanced, one-to-one messaging, and achieving this requires aligning data, analytics and sales/marketing teams (www.aktana.com). In short, with pressure on budgets and a push toward omnichannel engagement, pharma companies see NBA as a key way to make each rep-doctor interaction count.

How NBA Works in Pharma

An NBA system is essentially a decision engine that links HCP data, predictive models, and business objectives to prescriptive recommendations. In a typical pipeline:

- **Data Integration & HCP Profiling:** The system first builds a *360° profile* for each HCP by consolidating data from all available sources. This can include CRM entries (specialty, practice setting, location), past engagement history (emails opened, calls logged, meetings, webinar attendance), content metadata (which scientific materials or case studies the HCP has seen), and even third-party data (claims/EHR signals, prescription trends). For example, one NBA prototype lists dozens of features: physician specialty and practice type, location, previous channels used (e.g. HQ *vs.* approved email, calls, or face-to-face), the specific content categories they engaged with (efficacy data, case studies, pricing information, KOL messages, etc.), and engagement metrics like email open and link-click rates (www.griddynamics.com) (www.griddynamics.com). All of this is aggregated to understand each doctor's preferences and behaviors.

- **Segmentation and Targeting:** Before making recommendations, NBA often segments the physician universe into cohorts for each product or campaign. One approach is to filter HCPs by objective relevance (e.g. identify oncologists if promoting a cancer drug) and prioritize doctors who are both eligible and likely to engage. By narrowing the field to a high-potential group, the models can focus on predicting fine-grained actions. Grid Dynamics notes that their NBA starter kit "segments HCPs for campaigns" by matching each campaign's goals with HCP demographics and past behavior – for instance, targeting gynecologists for an ovarian cancer treatment and filtering for those with a history of reading research papers (www.griddynamics.com). This helps ensure modeling resources focus on the most promising doctors.

- **Predictive Modeling (Who, How, What, When):** At the core are machine learning models that score each possible action. Typically, one set of models predicts *which doctors to engage*, another predicts *which channel* (email, call, etc.) will work best for each doctor, a third predicts *which content type* (whitepaper, video, slide deck, etc.) they will prefer, and sometimes a fourth predicts *when* (time of day or week) to reach them. For example, Grid Dynamics describes using separate XGBoost models: one computes each HCP's *channel engagement likelihood* from past email, call and F2F history (www.griddynamics.com), and another computes *content affinity* for cases and papers (www.griddynamics.com). In parallel, an NBA system might look at scheduling to time outreach when the HCP is most available. These models turn raw data into probabilities – e.g. Dr. Jones has a 70% chance to open an email but only 20% to answer a cold call – which form the basis of recommendations.

- **Deciding the "Best" Action:** The NBA engine then combines all model scores along with business rules and campaign objectives to pick the top action. Practically, this often means ranking potential actions by estimated value (e.g. expected prescriptions or engagement score) and observing any constraints (such as contact frequency limits or territory alignment). In effect, NBA is *prescriptive analytics*: it chooses the action expected to yield the best outcome. Grid Dynamics explains that NBA models are a fusion of *suggestion* and *optimization*, using business constraints to juggle multiple recommendations. For instance, a doctor might appear in several parallel journeys (multiple products), so the system uses its objective function and rules to decide which single outreach to prioritize (www.griddynamics.com). The result is a filtered list (often just one action) per HCP: for each target doctor, "the best channel, the best time, and the best type of content," optimized for business goals (www.griddynamics.com).

- **Delivery in the Rep Workflow:** Finally, NBA recommendations must reach the field force in an actionable way. This usually means integrating with the CRM or a sales dashboard. A typical NBA interface lets a rep pick a product or campaign and then shows a ranked list of likely-engageable doctors (with explanatory data). For example, a demo NBA dashboard might display 50 pulmonologists sorted by predicted interest. Each row lists the physician's specialty, practice setting, history of engagement channels, and recommended next action (www.griddynamics.com). The rep can click an individual doctor to see detailed advice: "Email Dr. Smith at 3pm today with this case study, because her historical email open rate is high" – with a text explanation of why right now is chosen (www.griddynamics.com) (www.griddynamics.com). This *explainability* is common: NBA tools often highlight the reason (past behavior or score) behind each suggestion, which increases users' trust and transparency.

In summary, NBA in pharma leverages AI/ML on rich HCP data to continuously score and select the next optimal marketing action for each doctor. It moves reps from intuition-based planning to

a data-driven, one-to-one engagement strategy with clear justifications for every recommendation (www.griddynamics.com) (www.griddynamics.com).

Benefits of NBA in Pharma

When effectively implemented, NBA can dramatically boost the efficiency and impact of commercial operations. Because it personalizes outreach, physicians receive messages most relevant to them, which increases engagement. One report notes that tailored messaging "increases the relevance of interactions, fostering trust and stronger relationships" with doctors (www.customerinsights.ai). At the same time, NBA frees reps from guessing where to focus: it equips them with **actionable insights**, so they "focus on the most impactful opportunities rather than spreading efforts thin" (www.customerinsights.ai). In practice, this means quicker wins and higher conversion from sales calls or emails.

Grid Dynamics observes specifically that meddling machine learning "magnifies the power of HCP marketing campaigns," resulting in "dramatically improved effectiveness of HCP interactions." Their NBA solution can be deployed much faster than a custom build (campaign-targeted recommendations built in days rather than months) (www.griddynamics.com). From day one, reps get relevant, prioritized next actions (channel, timing, content) with explanations (www.griddynamics.com). This streamlines operations: instead of planning hundreds of generic emails, a rep can launch a targeted campaign in days and immediately start using AI-provided recommendations.

The practical payoff includes *higher ROI* on marketing spend. By aligning every touch with a doctor's preferences, NBA reduces wasted efforts and increases response rates. According to one industry blog, companies that used NBA saw up to a **25% increase in HCP engagement** and a 15% lift in digital campaign follow-up rates after implementation (with corresponding gains in prescription metrics) (www.customerinsights.ai) (www.customerinsights.ai). In short, organizations report that focused outreach generates more prescriptions per rep-hour than scattershot campaigns.

Key advantages of NBA include (with evidence from pharma use cases):

- **Enhanced HCP Engagement:** Outreach becomes highly relevant to each physician's interests. Studies show that personalized content makes doctors more attentive and trustful (www.customerinsights.ai). Over time, this deepens relationships, which can translate into loyalty and preference for one's products.

- **Greater Sales Efficiency:** Reps spend less time planning and more time engaging the right doctors. By avoiding low-value calls or emails, teams work smarter. NBA "equips sales reps with actionable insights," enabling them to prioritize *influential* HCPs (www.customerinsights.ai). As a result, field forces can cover accounts more profitably.

- **Higher ROI and Conversions:** MVP outreach drives higher conversion rates. One blog notes that NBA "reduces resource spillover and maximizes the return on all engagement initiatives" by targeting efforts where they'll matter (www.customerinsights.ai). In other words, marketing and medical budgets yield better results because each interaction is data-driven.

- **Data-Driven Decision-Making:** NBA makes strategy more objective. It continuously analyzes historical and incoming data (calls, script patterns, prescribing trends, etc.) and turns it into predictive guidance (www.customerinsights.ai). This replaces gut-feel planning with quantifiable modeling. Over time, the system learns which tactics work best, leading to smarter playbooks.

- **Omnichannel Coordination:** By design, NBA ties together all engagement channels. A modern solution ensures that email touches, social media messaging, rep calls, even paid ads *all* feed into one coordinated plan for each HCP (www.customerinsights.ai). This prevents channel conflicts (e.g. emailing a doctor who just received a call) and ensures consistency of messaging.

- **Regulatory Compliance & Consistency:** In pharma, messaging must be carefully controlled. NBA systems help here by using pre-approved content libraries and audit trails. They can be configured to only suggest FDA-approved materials and to enforce contact rules (frequency limits, approved sender lists, etc.), ensuring communications are "consistent and compliant" with regulations (www.customerinsights.ai).

In practice, many early adopters of NBA report tangible uplift. For example, one pharma team saw a 25% rise in engagement in key markets and improved campaign follow-up rates after rolling out an NBA app (www.customerinsights.ai). In summary, NBA turns a scattergun marketing approach into a precision-guided strategy, boosting performance and ultimately supporting business goals (prescriptions and patient outcomes).

Implementing NBA: Ingredients and Best Practices

Building an NBA program requires careful preparation. From our research and vendor best practices, key steps include:

- **Integrate All Relevant Data:** Consolidate HCP information from CRM systems, call logs, digital analytics, claims/EHR data, and third-party data feeds. This "robust data integration" is foundational (www.customerinsights.ai). For example, tie in both personal promotion (rep calls, emails) and non-personal promotion (digital ads, events) data so each doctor's profile is truly 360°. Without unified data, NBA models don't have the full picture.

- **Ensure True Omnichannel Coordination:** NBA's recommendations only shine when all channels are coordinated. Treat each doctor's journey holistically – the email sent by marketing should align with the rep's call plan, the online ads, the medical liaison's outreach, etc. Platforms should be built to synchronize these "touchpoints" so the HCP sees one coherent experience (www.customerinsights.ai).

- **Break Down Silos:** Foster cross-team collaboration. Sales, marketing, medical affairs, data science — everyone must share the NBA vision. Formal governance is often needed: set up an NBA steering committee to define priorities, rules, and objectives. Vendors warn that NBA projects flop without clear governance of business rules (www.pega.com). Similarly, train or hire the right talent: a Pega study notes you *must* have a skilled NBA execution team (analysts, data engineers, etc.) to manage and act on the insights (www.pega.com).

- **Leverage Advanced Analytics/ML:** Invest in capable AI models. Develop and refine machine-learning algorithms to predict engagement by channel, content, and timing. Many teams start with relatively simple models (decision trees, gradient boosting) and iterate. Continuously feed back actual outcomes (did the doctor respond? did it lead to a script?) to retrain and improve the models. Modern solutions often provide “no-code” or “low-code” tools to design NBA rules alongside ML predictions.

- **Use Explainability & Feedback Loops:** Make recommendations transparent to users. Show the rationale (e.g. “you are contacting Dr. X by UI because his email open rate was historically 70%”) so reps trust the system. Also track which recommendations reps accept or dismiss. This feedback loop of “actioned vs. ignored” data should feed back into model tuning (www.customerinsights.ai). Continuously monitor key metrics (engagement rate, email opens, time to prescription) and adjust both AI models and business rules accordingly.

- **Embed Compliance from the Start:** Design NBA around regulated content and privacy rules. For example, use only approved promotional materials in the content library, and set rules (e.g. cannot contact an HCP outside of approved hours). If patient data is involved (for patient-centric NBA), ensure it’s de-identified or HIPAA-compliant. Some vendors explicitly mention that NBA must align with healthcare privacy guidelines while delivering consistent messaging (www.customerinsights.ai).

Following these best practices helps realize NBA’s benefits while avoiding pitfalls. As with any AI initiative, it’s a journey: start with a pilot on one product or geography, learn lessons, then scale NBA across the portfolio.

Challenges and Considerations

Despite its promise, NBA is not without hurdles. One common challenge is **overload of recommendations**. A naively implemented NBA model can spit out dozens of possible actions at once, paralyzing reps. As Aktana’s CEO warns, an NBA engine might initially “generate possibly 55 things for a sales rep to do in the next hour” — obviously impossible to act on (www.aktana.com). In practice, you need an orchestration layer that **prioritizes** and filters signals so the rep sees the *one truly optimal next action*. Otherwise, too many choices lead to inaction.

Timing and context are also critical. A recommendation is worthless if delivered too late or without context. One whitepaper points out how often NBA outputs arrive after the fact (e.g., an email suggestion coming *two days after* the rep already met the doctor) (www.aktana.com). To avoid this, NBA platforms must integrate in real time with rep calendars and campaign events so

recommendations are timely. They should also enrich suggestions with context (recent meetings, relevant patient events, etc.) so the action intuitively makes sense.

Data issues can trip up NBA. As Pega notes, organizations frequently struggle with "integrating various data sources" (www.pega.com). Pharmaceutical data tends to be siloed (separate CRM, marketing automation, medical info, etc.), so building the clean unified dataset NBA needs can be a big project in itself. Poor data quality or outdated info will degrade NBA accuracy. Beyond integration, governance is a risk: without strong oversight, NBA rules can conflict or degrade. Pega advises establishing an NBA governance board to set priorities and resolve conflicts (www.pega.com).

Another consideration is **user acceptance**. Sales reps must trust and use the system for NBA to work. Black-box AI suggestions can meet skepticism. To address this, many NBA tools include *explainability*: for each recommended action they display the underlying signals ("We suggest calling Dr. Lee because she has a high patient load and low recent rep contact rate (www.griddynamics.com)"). This transparency helps reps understand and buy into the next steps.

Finally, legal and regulatory constraints loom large in pharma. HCP targeting and patient data use are heavily regulated (HIPAA, GDPR, pharma marketing codes). Any NBA algorithm must respect these rules, which often means working with de-identified patient insights and only approved promotional content. Teams must carefully design the NBA decision logic so it never proposes an unapproved promotion or breaches privacy standards.

In sum, the main challenges are ensuring clean integrated data, deciding and prioritizing the *right* action among many, timing it correctly, and aligning the organization and workflows to the new technology. Overcoming these issues is essential to avoid the "last-mile" trap where great AI insights never translate to field results (www.aktana.com).

Future Directions

The concept of Next Best Action continues to evolve. In pharma, the edges of NBA are expanding toward **patient-centric and omnichannel orchestration**. Some experts talk about shifting from NBA to *"Next Best Experience"* across the entire customer journey. For instance, an industry paper argues that true personalization means orchestrating recommendations across *all* touchpoints in real time (including sales, medical, and digital channels) rather than making isolated suggestions (insights.axtria.com). This "Next Best Experience" view imagines a future where each physician's sequence of interactions – rep visits, webinars, digital content – forms one continuous narrative powered by AI.

Another frontier is **patient-based NBA**. Rather than only using physician history, companies are starting to use de-identified patient data to time HCP outreach. For example, by analyzing claims or EHR data, a system might detect that a patient with a specific condition is about to see their

doctor, then alert the rep to discuss the relevant therapy. As one blog explains, brands can "identify pivotal disease milestones" and know when patients will be visiting their physicians, allowing marketers to "deliver timely, targeted information to HCPs when they are treating a brand-eligible patient" (www.optimizerx.com) (www.optimizerx.com). This direction aligns with a more patient-first philosophy and shows how NBA can link field actions directly to patient needs.

On the technology side, advanced AI is reshaping NBA. Pega foresees the rise of "agentic AI" – autonomous systems that don't just predict the next step but **plan and execute** complex engagement strategies on their own (www.pega.com). In this vision, the system could dynamically test new ideas, coordinate campaigns across departments, and continuously self-optimize without human prompts. Meanwhile, vendors like Axtria are building fully integrated lifescience AI platforms that combine CRM, marketing analytics, and field intelligence to create the "super rep": a rep armed with real-time algorithms that personalize every HCP encounter (insights.axtria.com) (insights.axtria.com).

Generative AI may also play a future role. It could help NBA by creating custom messaging or summarizing large data for reps, although concrete pharma use cases are just emerging.

In summary, NBA's future lies in deeper personalization and orchestration: going beyond static scorecards to fully automated, real-time HCP engagement engines. As the industry moves toward these integrated approaches, the core principle remains: use data and AI to make every HCP interaction the best possible one.

Conclusion

Next Best Action represents a powerful shift in pharma marketing—from broad campaigns to individualized engagement. By harnessing data and AI, NBA enables companies to continually ask "What should we do next with *this* doctor?" rather than push one-size-fits-all messages. Studies and case reports show that NBA can *"dramatically improve [the] effectiveness of HCP interactions"* (www.griddynamics.com), driving higher engagement and ROI. It delivers *"personalized and meaningful"* experiences (www.customerinsights.ai), so that field teams spend time on the most promising opportunities.

At the same time, NBA is no silver bullet; it demands quality data, sophisticated models, and intelligent orchestration to be successful. When properly implemented, however, NBA helps pharma reps and marketers act like smart advisors rather than generic advertisers. As one industry blog concludes, in a world where personalization is paramount, NBA offers pharmaceutical companies "the edge they need to thrive" by leveraging data-driven insights to empower reps and optimize every outreach (www.customerinsights.ai).

In essence, Next Best Action is the future of pharma commercial strategy: a complete data-driven guide that tells each rep exactly *who*, *how*, *when* and *what* to communicate – ensuring

every patient stands the best chance at receiving the right medication.

Sources: Industry blogs and publications on Next Best Action in pharmaceutical marketing (www.pega.com) (www.griddynamics.com) (www.griddynamics.com) (www.aktana.com) (www.griddynamics.com) (www.griddynamics.com) (www.customerinsights.ai), among others. These references provide detailed examples and findings on NBA use cases, implementation, and outcomes in the life sciences sector.

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