White Paper

Data-Driven Decision Making Through Synthetic Advisory Boards: Accelerating Access to Insights

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Executive summary

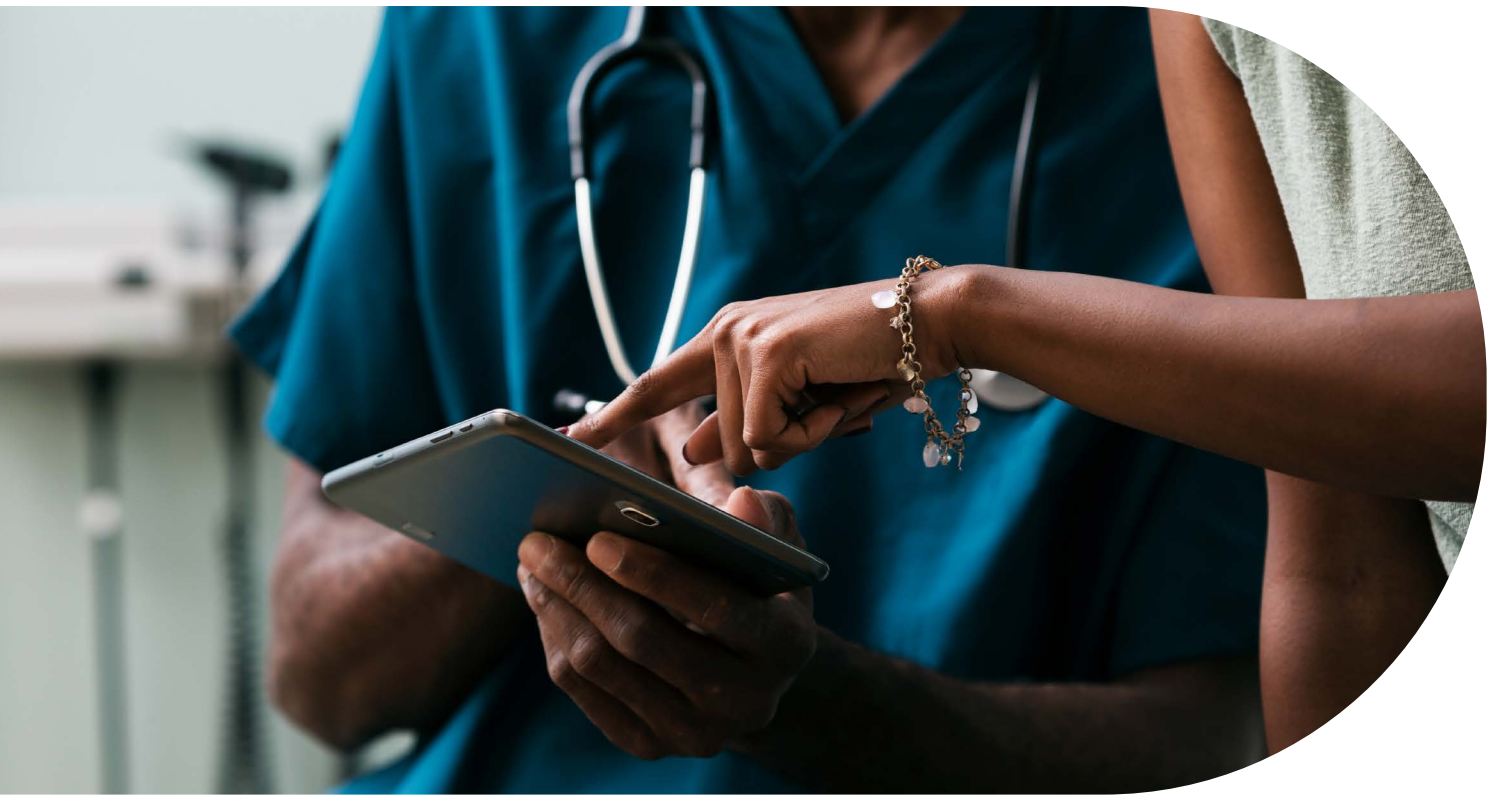
As pharma teams navigate unprecedented levels of complexity, access to high-quality, timely insights has become critical to success. Advisory boards are the gold standard of expert advice; however, their episodic nature and operational complexity create a need for a complementary, more dynamic source of insights.

Launch planning, evidence strategy, and access readiness can be impaired when critical decisions must wait weeks or months for advisory board outputs. Furthermore, each advisory board typically explores only a narrow set of scenarios, constraining the ability to test alternatives or rapidly respond to emerging data.

Advances in AI and the expansion of high-quality healthcare data now make it possible to create synthetic advisory boards (S-ABs), which consist of virtual, AI-enabled digital twins that respond to evidence, messages, and scenarios with realism and consistency, under human medical and behavioral-science oversight.[1,2] Applied appropriately, S-ABs complement live advisory boards, enabling teams to rapidly pressure test hypotheses, explore multiple strategic paths, and refine thinking instead of or before leveraging scarce expert time.

The result is faster iteration, sharper decision inputs, and when coupled with live ad boards, these can be more focused on high-value topics that reflect the participants' level of expertise and get to the really nuanced discussions sooner.

Realizing this value depends on three critical success factors: (1) deep, healthcare-grade data to ground AI-enabled digital twins; (2) advanced, domain-tuned AI agents built for medical decision making; and (3) thoughtful integration into real medical and access workflows so outputs are decision-ready, not experimental. When these elements are brought together, S-ABs represent a credible, scalable capability to accelerate insight generation, lower the cost per hypothesis tested, and enable reusable learning across brands and markets.



What are S-ABs (and what are they not)?

S-ABs are a simulated advisory environment in which AI-enabled digital twins are configured to reflect distinct stakeholder types and personalities and respond to evidence, value messages, and strategic scenarios in a consistent, repeatable way.

Rather than convening a single, fixed discussion, S-ABs allow teams to pressure test multiple hypotheses quickly: What beliefs are driving decisions? Which objections are most likely? How will HTA panels interpret an evidence package? What breaks if assumptions change? In practice, S-ABs act as a structured "thought partner" that helps teams explore strategic branches before committing scarce time, budget, and stakeholder bandwidth.

Crucially, S-ABs are not positioned as a replacement for conventional advisory boards. Live engagement remains uniquely valuable for human nuance, real-time relationship building, and informing business-critical judgments. The distinction is that S-ABs offer speed and coverage: they can iterate across more scenarios and more stakeholder configurations than a conventional board can reasonably accommodate. Used together, S-ABs improve the quality of live advisory boards by ensuring teams arrive with sharper questions, tighter stimuli, and fewer blind spots (Table 1).

Conventional advisory boards	Synthetic advisory boards (S-ABs)
Grounded in experience and perspectives of experts, offering nuanced views	Grounded in robust healthcare data to generate and iterate insights quickly
Offer insights into psychological barriers/enablers of key decision makers	Enable rapid testing of multiple scenarios and hypotheses
Enable relationship building between pharma and HCPs	Test assumptions ahead of live ad boards to increase value, specificity, and quality of discussions
Are time consuming and expensive to run, and take up valuable HCP time	Offer rapid, cost-effective insights
Present logistical challenges to execute, which can result in delayed insights	Enable multiple perspectives to be tested in parallel in a controlled space
Gold standard validation of assumptions ahead of critical lifecycle inflection points	Can inform strategies and pressure test assumptions across multiple audiences

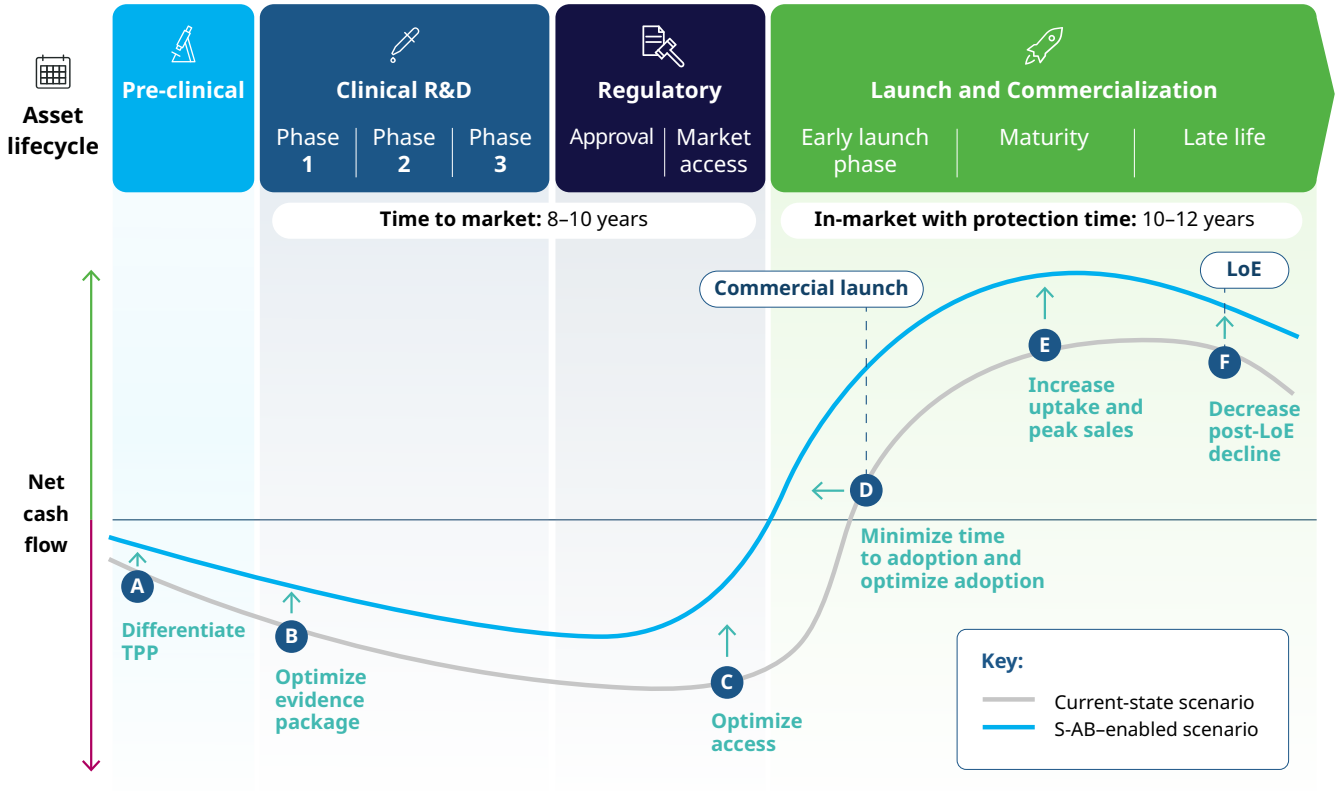
Table 1: Conventional vs. synthetic advisory boards – complementary roles and why both matter

How and when S-ABs are used should be clearly stipulated. We position them as decision-support and hypothesis-generation tools, not a substitute for clinician judgment, real-world validation, or formal evidence appraisal. Their reliability comes from design choices that prevent "black-box" insights: outputs are grounded in robust and reliable knowledge sources and trusted behavioral science models, the rationale behind AI-enabled digital twin stances is made explicit, and uncertainty is flagged rather than hidden. Human medical oversight remains central – particularly at critical decision points – so teams can challenge

assumptions, steer the discussion, and translate findings into actionable, defensible recommendations.

S-ABs can be applied across the full product lifecycle, giving teams a fast, repeatable way to pressure test the many upstream decisions that build towards the truly business-critical moments – where conventional advisory boards may still be the gold standard for live validation and relationship-driven nuance (Figure 1). In practical terms, S-ABs help teams arrive better prepared for those moments: Medical Affairs teams can use S-ABs to stress test the scientific narrative, stakeholder beliefs, unmet needs, and message resonance as data shifts; Pricing & Market Access teams can use them to explore payer archetypes and access scenarios, identify evidence gaps, and evaluate value-message trade-offs across markets; and, most importantly, S-ABs can enable cross-functional alignment by harmonizing medical and access assumptions early, reducing downstream rework, and improving consistency of decisions across functions and geographies.

Figure 1: S-ABs' utility across the product lifecycle



ACTIVITIES THAT CAN BE SUPPORTED BY S-ABs

A
- Generate unmet need
- Diagnose early belief and barriers
- Scenario-plan differentiation vs. plausible competitive narratives and evolving SoC

B
- Prioritize endpoints and evidence preferences
- Pre-empt pivotal objections before trial readouts/pre-launch decisions
- Pressure test clinical value from multiple angles

C
- Assess anticipated value of evidence package
- Run payer/access scenario tests
- Pressure test value messages by market

D
- Sense real-world adoption barriers early
- Pressure test field/medical materials
- Rehearse reactions to competitor moves

E
- Re-run payer scenarios as the access environment shifts
- Pressure test messages on real-world trends
- Testing scenarios for future competitors
- Simulate benefit-risk trade-off in practice

F
- Simulate stakeholder reactions to generic/biosimilars entry
- Test late-life positioning messages
- Rehearse access/tender scenarios

Abbreviations: **LoE**, loss of exclusivity; **PRA**, Pricing, Reimbursement, and Access; **R&D**, Research & Development; **SoC**, standard of care; **TPP**, target product profile.

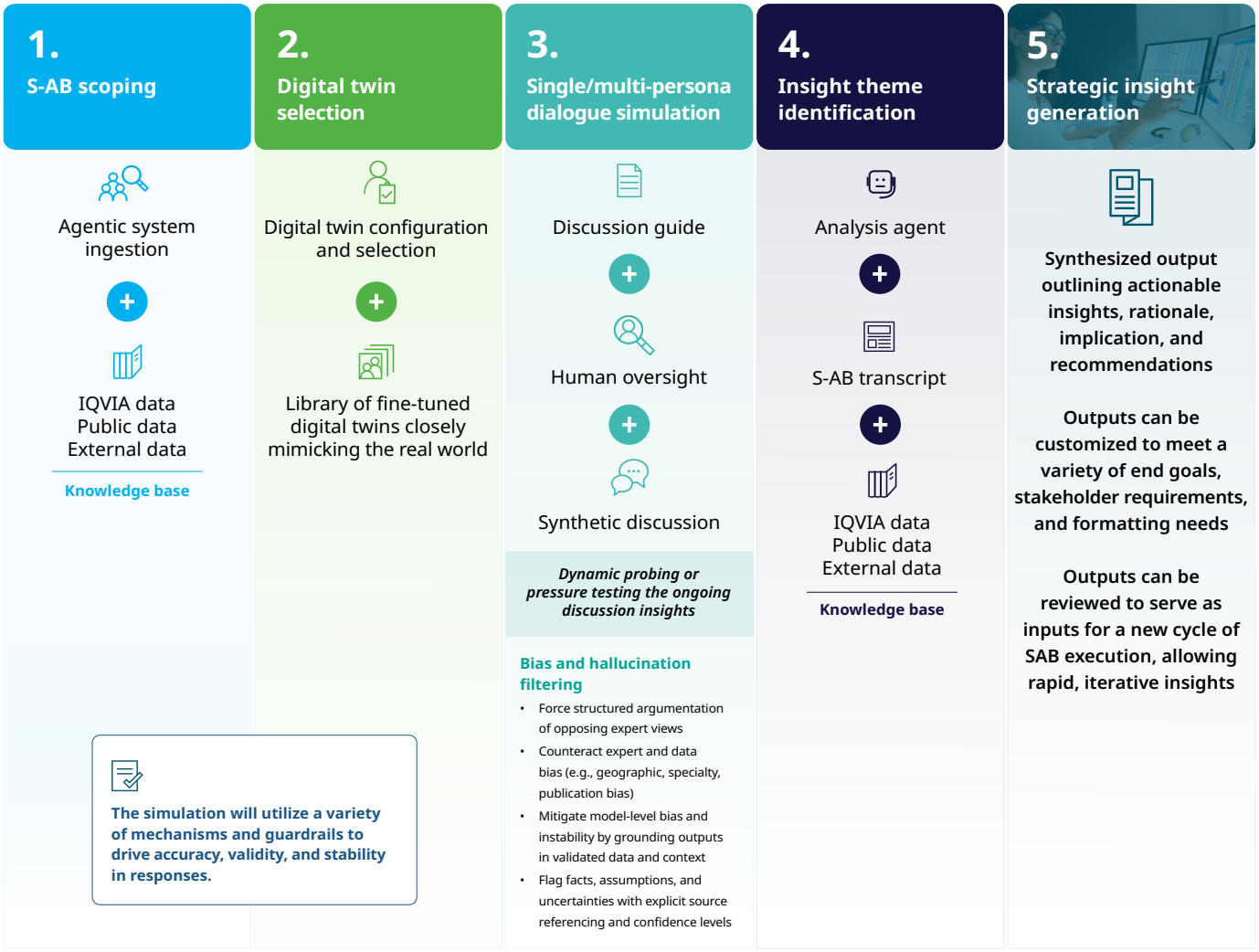
How S-ABs work

S-ABs follow a structured workflow designed to convert complex questions into decision-ready insights.

The process starts with building and tailoring the AI-enabled digital twins as the quality of the output is dependent on the data and behavioral logic used to configure them. AI-enabled digital twins are grounded in a rich, healthcare-grade knowledge base that can draw on multiple domains as needed for the question at hand – such as scientific evidence (e.g., publications and congress insights), clinical/practice signals (e.g., treatment patterns and journeys), policy and system context (e.g., HTA outputs and guidelines), and tacit insights that capture real beliefs and perspectives (e.g., insights reflected in market research and verbatims), with behavioral-science frameworks (e.g., COM-B and related approaches)[3-5] used to shape motivations and decision drivers. AI-enabled digital twins can then be further configured to reflect the reality of different advisory settings – by geography, specialty, role (e.g., payer vs. clinician), and behavioral segment – so they can mimic distinct preferences, evidence thresholds, and decision styles relevant to the scenario being tested.

Once AI-enabled digital twins are defined, the S-AB runs much like a conventional advisory board: a discussion guide is prepared to align to the business decision being supported, and stimuli (evidence, value messages, scenarios) are presented for reaction. The critical differentiation is speed and repeatability with which teams can run the ad board in short succession, adjusting AI-enabled digital twins, introducing new stimuli, and iterating conclusions rapidly as questions evolve. Outputs are then synthesized into decision-ready deliverables that convert simulated dialogue into clear themes, implications, and recommended actions (Figure 2).

Figure 2: Illustrative S-AB workflow/overview



Because S-ABs are intended to inform real decisions, trust and stability are engineered into the workflow through reliability guardrails. These include mechanisms such as forced disagreements (to avoid false consensus), representative controls (to reduce geographic or academic bias), assumption- versus fact-tagging (to separate grounded claims from inferred viewpoints), and uncertainty flags (to highlight where evidence is weak or conflicting). These guardrails combined with expert oversight help ensure outputs are transparent, appropriate, and defensible.[6]

Conclusion

The IQVIA perspective on applying S-ABs in practice

S-ABs are designed to generate confidence and transparency alongside insights. Outputs are traceable to defined data sources and AI-enabled digital-twin logic, supported by built-in consistency checks, explicit uncertainty flags, and escalation triggers that signal when live validation or deeper expert review is required. This level of transparency enables teams to understand not only what the insight is, but why it emerged and how much confidence to place in it, an essential requirement for use in regulated, high-stakes healthcare environments.[6] In practice, this requires applying S-ABs within a structured, healthcare-grade framework, with strong human oversight throughout the design, interpretation, and translation of outputs to ensure insights reflect real-world decision logic.

When positioned appropriately, S-ABs offer a compelling and complementary value proposition to conventional advisory boards. They enable rapid hypothesis testing, broader scenario coverage, and faster iteration, supporting more informed decision making across a wide range of strategic questions. In addition, S-ABs help to ensure the most targeted, relevant, and valuable conversations during conventional advisory boards, as teams arrive with clearer priorities and shaper focus areas that make the best use of expert time. Used together, S-ABs and conventional advisory boards reinforce one another: S-ABs improve the quality and efficiency of live engagement, while human advisory boards remain the gold standard for nuance, validation, and relationship building. Embedding S-ABs within established medical, access, and governance workflows, supported by auditable outputs and compliance-ready processes, ensures innovation is applied in a way that is fit for real-world decision-making.

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