Harnessing AI to create economic and patient value

FROM LUCID CONSULTING

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LUCID CONSULTING 2023

HARNESSING AI TO CREATE **ECONOMIC** AND **PATIENT VALUE**

Across biopharma, many companies are jumping on the AI bandwagon in an effort to drive innovation and increase productivity. In a nascent, fast-moving market we see senior executives challenged to place the right bets with confidence.

Combining our extensive experience across the health and life sciences value chain with insights from the leading edge of AI deployments, we help senior executives pick winners and maximize project value across the development and commercialization lifecycle.

What we mean by AI

Many of our clients are concerned that AI vendors are over-hyping and muddying the waters by giving new names to established technologies and introducing unproven data science and engineering methods. Our pragmatic categorization of the main genuine AI modalities, which are often used in combination, is as follows:

1. **Natural language processing:** analyzes human language with machine learning and deep learning models which enable computers to 'understand' meaning. This includes the associated process of computer vision which enables computers to detect and classify objects in images.

2. **Predictive AI:** uses statistical algorithms to analyze data and make predictions about future events.

3. **Generative AI:** generates a range of media using probabilistic algorithms on large language models.

Mapping AI opportunities in development and commercialization

There is a broad swathe of opportunities to deploy these AI modalities across complex biopharma processes. We've created a simplified

Figure 1. Indicative mapping of AI opportunities for selected development and commercialization capabilities.

Our favorite 5 opportunities

We've selected five generally applicable opportunities to exploit in development and commercialization which we think have a high potential return with a balance of feasibility and cost.

1. Target value proposition development	NLP of patient insights from social listening, competitive intelligence and KOL fora, augmented by conversational gAI with diverse international stakeholders, enabling pAI modelling of alternative positioning and pricing scenarios as inputs to Ad Boards and senior executive review sessions. Generative AI as an adjunct to option development.
2. Evidence generation planning	NLP of patient insights and scientific publications with KOL insights and competitive intelligence enabling pAI optimization of evidence generation planning, including KOL, clinical site selection and recruitment tactics.
3. Scientific content generation & medical education	NLP to enable incorporation of insights and pAI to forecast impact including behavioral change, patient outcomes and health economic benefits. gAI for campaign development, scientific publications, plain language and other stakeholder communications.
4. Pharmacovigilance & medical information	NLP for adverse event monitoring including anonymization, social media and literature review. pAI for triage, signal detection and benefit-risk evaluation, augmenting human expert review. Future potential for conversational gAI in real-time case handling and med info responses.
5. Patient solution development and deployment	NLP for social listening, care pathway insights, patient/KOL identification. pAI for solution design including modelling of diagnostic and biomarker utilization, interventions and response, concordance and health economic outcomes. gAI for solution content including plain language and graphic media, chatbots and other personalized content.

Each of these, and other selected opportunities, warrant detailed analysis of the value creation potential as well as assessment of resource requirements and attendant risks. This will inform individual investment decisions and the overall balance of the AI investment portfolio, as illustrated in the figure below.
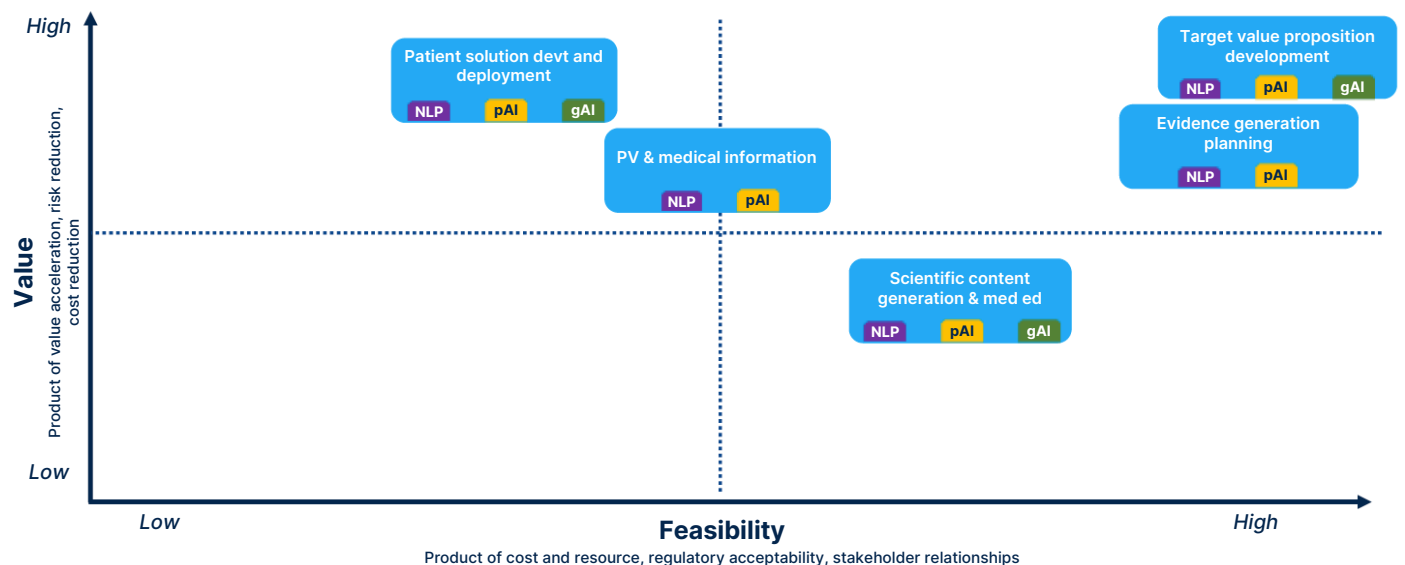

Figure 2. Indicative value and feasibility assessment of our 'Favorite 5' opportunities.

How we help our clients select and deploy AI

Our team at Lucid Consulting has worked with almost every major biopharma company over the last 20 years. We bring a unique depth of experience and insight in development and commercialization operating strategies and possess distinctive asset strategy, medical communications, creative and digital capabilities through Lucid Group. We have practical experience in the application of AI over the past 10 years unfettered by specific product or proprietary technologies. For implementation of AI capability builds, we partner with expert AI engineers and data scientists in our own or our clients' networks.
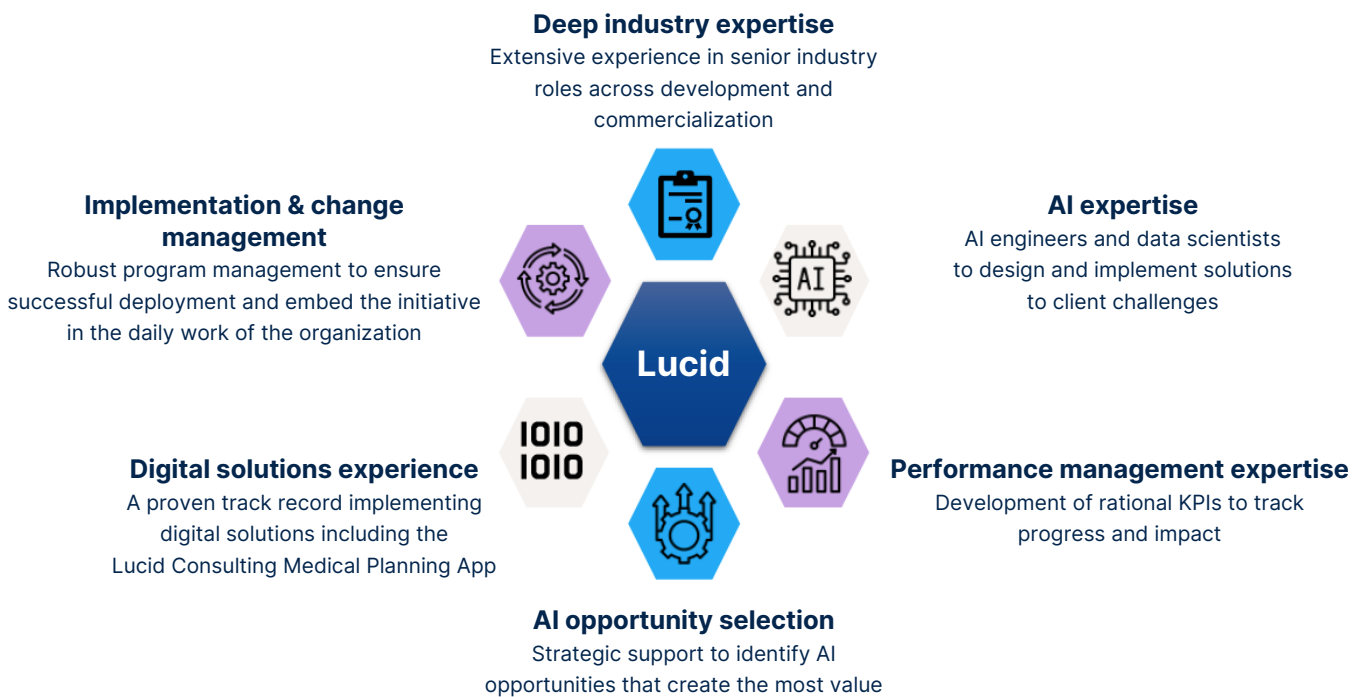

Deep industry expertise
Extensive experience in senior industry roles across development and commercialization

AI expertise
AI engineers and data scientists to design and implement solutions to client challenges

Performance management expertise
Development of rational KPIs to track progress and impact

AI opportunity selection
Strategic support to identify AI opportunities that create the most value

Digital solutions experience
A proven track record implementing digital solutions including the Lucid Consulting Medical Planning App

Implementation & change management
Robust program management to ensure successful deployment and embed the initiative in the daily work of the organization

Figure 3. Lucid Consulting brings deep subject matter and change management expertise to help our clients realize the opportunities of AI.

As a first step in exploring how Lucid Consulting can enable your company's AI portfolio we would be pleased to arrange a senior executive working session building on the concepts in this document.

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About Lucid Consulting

Lucid Consulting is the consulting division in Lucid Group focused solely on the life sciences industry. We bring a combination of deep health & life sciences expertise with the capabilities, discipline and resources of a leading management consulting firm. Our consulting teams have worked extensively in R&D and Medical Affairs. We continue to focus on emerging trends, needs and best practices across the industry.