



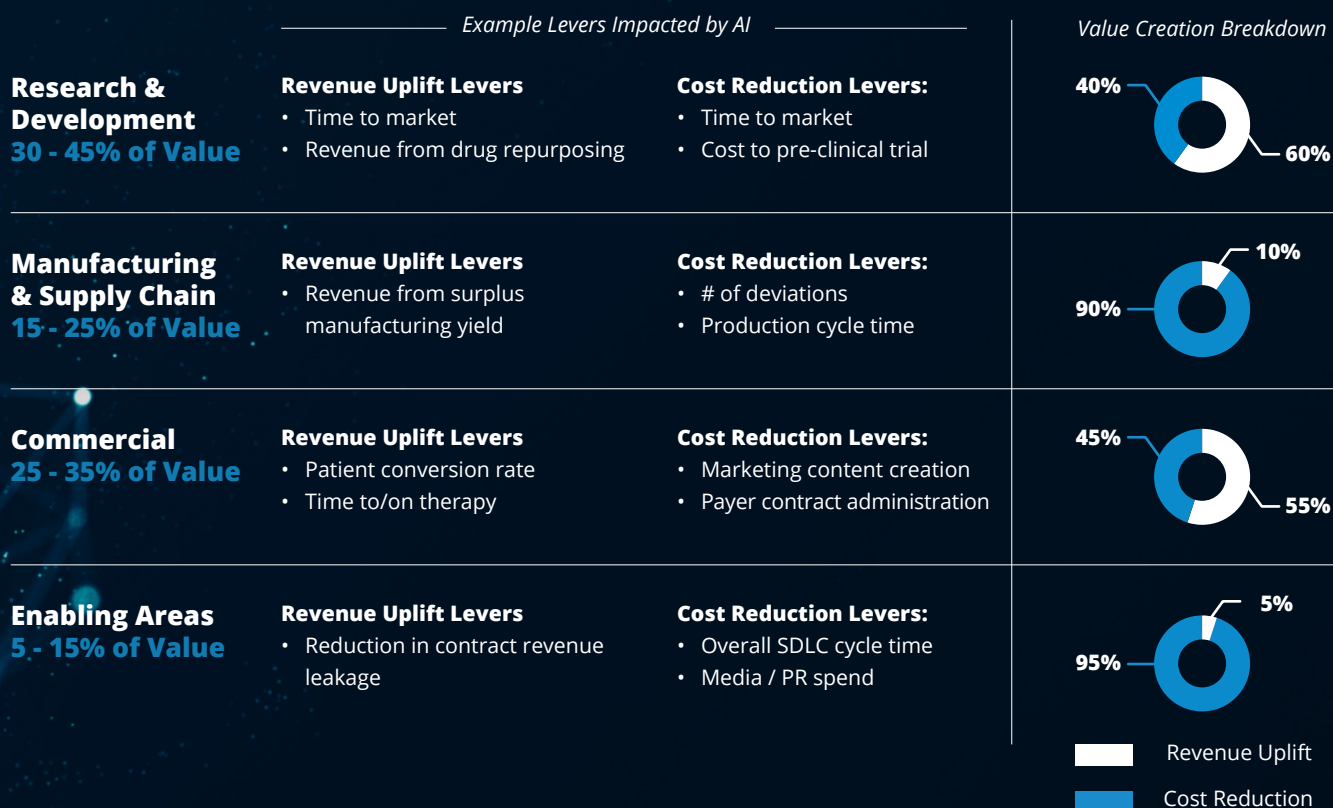
Realizing Transformative Value from AI & Generative AI in Life Sciences

Life Sciences companies have an opportunity to unlock \$5-7 billion (Bn) dollars in value from the use of artificial intelligence (AI). We estimate that nearly 90% of value will be derived from three functional areas: research and development (R&D), manufacturing and supply chain, and commercial.

Over the past 18 months, Generative AI (GenAI) has broadened the breadth of value that AI could deliver. Deloitte conducted a study of 20, end-to-end AI use cases, which when linked together like ‘pearls on a string’ can transform value streams (e.g., product launch, clinical development) across functional areas. Supported by specialist interviews, benchmarking surveys, and pro forma forecasts, the objective was to assess the total enterprise value opportunity of AI from cost reduction, cost avoidance, and revenue generation.

We estimate a top 10 biopharma company with average revenue of \$65-75 Bn could capture between \$5-7 Bn of peak value by scaling the use of AI over 5 years. This varies based on organization size (e.g., \$35 Bn in revenue could achieve \$2.5-3.5 Bn in peak value).

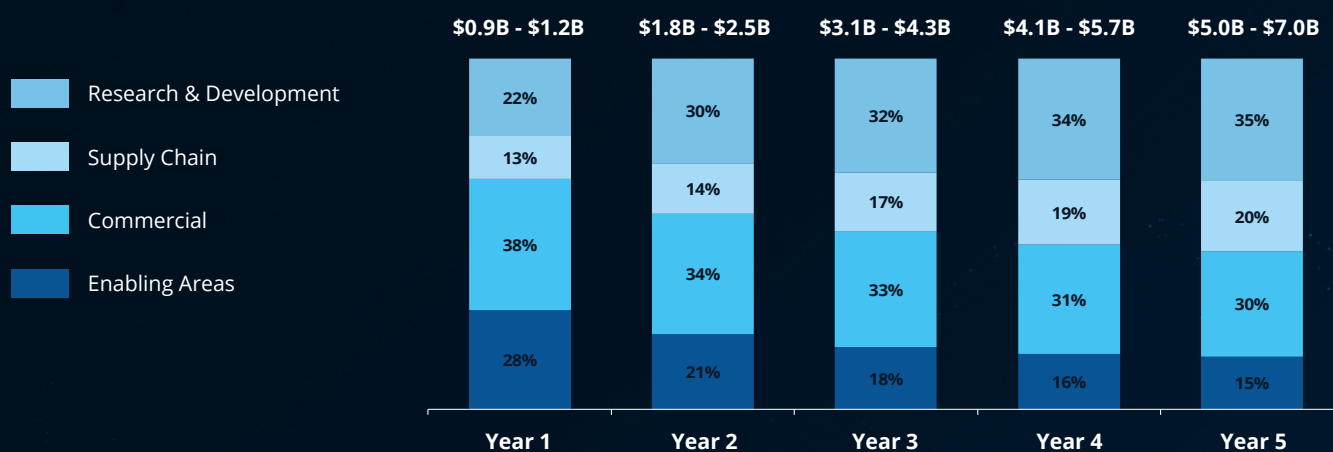
FIGURE 1. VALUE CREATION BREAKDOWN BY FUNCTION



R&D represents the top value opportunity at 30-40%. AI applied to novel drug identification and accelerating drug development could provide both cost savings and revenue uplift. This is followed by commercial at 25-35%, where marketing costs could be optimized and activities such as script utilization could be enhanced by AI. Manufacturing, supply chain, and enabling areas (including IT, HR, and Finance) are primarily candidates for cost transformation through efficiency realization and vendor cost reductions using AI.

We estimate a 5-year timeline for an enterprise to capture peak value from use of AI. The value accretion schedule also differs by functional area due to each area's inherent characteristics. Typically, enabling areas (including IT, HR, and Finance) have the most opportunities for cost savings and avoidance, which results in faster time to value realization. In contrast, R&D and supply chain have long-term capital requirements that are difficult to amend, thus extending the timeline to reaching peak value.

FIGURE 2. AVERAGE 5-YEAR VALUE ACCRETION SCHEDULE OF AI IMPACT (PERCENTAGE OF PEAK VALUE REALIZED)



ASSUMPTIONS

¹Foundational data and infrastructure are in place to enable transformational use case development

²Each function implements the full portfolio of transformational AI use cases (e.g., AI clinical trials, AI manufacturing, AI marketing)

METHODOLOGY

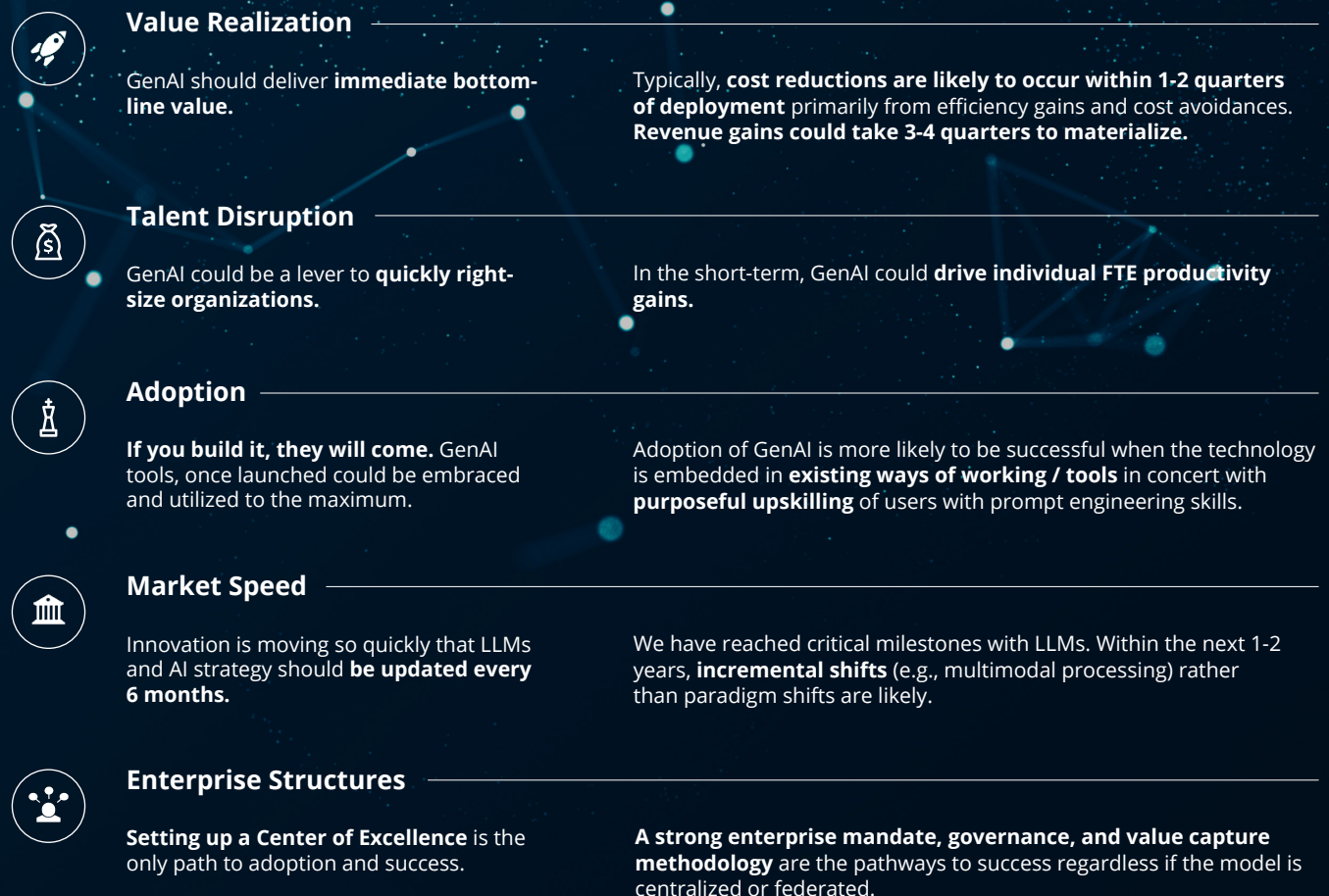
- Each bar represents the value a top 10 biopharma company could capture from AI over a 5-year time frame
- A top-down (% of revenue) and bottom-up (% of operating margin) approach was applied to evaluate value potential based on an individual organization's growth potential and operational efficiency
- The peak value range is a blended average using the two evaluation approaches
- For the top 10 biopharma companies average total revenue were \$65Bn to \$75Bn and average operating margin of \$20Bn to \$25Bn in 2022

Can GenAI live up to its predicted value potential?

Anecdotal success stories and endless media attention have generated hype around the utility of GenAI. Deloitte has spent the last year not only thinking critically about the value of GenAI, but also implementing the technology, driving its adoption, and monitoring its value. This includes scaling dozens of AI and GenAI use cases for our life sciences clients and launching our own GenAI platform for our internal colleagues.

Our experience suggests that there is realizable value from GenAI. But, it's critical for companies to separate hype from reality to best understand the true impact GenAI could deliver.

FIGURE 3. DEBUNKING MYTHS AROUND GEN AI



What are the GenAI 'no regret bets'?

To de-risk investments and accelerate progress, organizations should kickstart their GenAI programs with 'no regrets bets' that can deliver value in a relatively short timeframe. This not only serves as a proof point to catalyze enterprise adoption, but it also creates opportunities to fund additional investments with realized gains.

There isn't a one-size-fits-all approach when it comes to 'no regrets bets.' However, based on our recent work in implementing GenAI programs, we have learned that the following 'bets' are likely to reflect a low complexity, high value profile for most organizations.

FIGURE 4. POTENTIAL VALUE FOR KEY 'NO REGRETS BETS'

| | DESCRIPTION | VALUE TO THE BUSINESS UNIT | VALUE TO THE ENTERPRISE | WHY THIS IS NO REGRETS |
|--|---|--|--------------------------------------|---|
| Research & Development  | Scientific Literature Summarization Generate easy-to-consume summaries of scientific literature | Greater productivity from faster hypotheses testing | + Cost reduction + Revenue Uplift | GenAI can cut through research noise and go straight to insights with minimal resource investment |
| | Intelligent Study Deliverable Authoring Automate the drafting of clinical study report (CSR) deliverables | Greater speed from less rework and automated drafting | + Cost reduction + Cost avoidance | Companies have a massive treasure trove of past documents that can be tapped into to automate creation |
| Supply Chain & Manufacturing  | SOP Management AI Assistant Automate updating all relevant SOPs with simple prompts | Greater productivity from automated and cascaded updates to SOPs | + Cost reduction + Cost avoidance | GenAI can help avoid costly quality control issues by improving how employees perform their job |
| | Amplified Quality Events Mgmt. Identify, investigate, and remediate quality events using AI | Enhanced compliance from faster identification and remediation of quality events | + Cost avoidance | Misclassifications can result in huge penalties that can be mitigated using GenAI |

FIGURE 4B. POTENTIAL VALUE FOR KEY NO REGRETS BETS

| | DESCRIPTION | VALUE TO THE BUSINESS UNIT | VALUE TO THE ENTERPRISE | WHY THIS IS NO REGRETS |
|--|--|---|--------------------------------------|--|
| Commercial  | AI-Generated Content | | | |
| | Generate ideas and design artifacts using AI | Improved outcomes from more personalized content and faster adaptation to customer needs | + Cost reduction + Revenue uplift | Small productivity gain in this large cost bucket can result in outsized bottom-line impact |
| Enabling Areas  | Contract Performance Advisor | | | |
| | Intelligent investigation of payer contracts to identify discrepancies | Minimized leakage of revenues through better monitoring | + Cost reduction + Revenue uplift | Pharma companies spend billions in rebates, GenAI can identify deviations which could result in large payoffs |
| | MLR Optimization | | | |
| | Identify high-risk claims in marketing materials for review and automated adjustment | Streamlined process of incident management from preemptive risk remediation | + Cost reduction + Cost avoidance | Marketing pieces can be quickly reviewed resulting in faster time to market |
| | Competitive Intelligence | | | |
| | Generate competitive insights through market/industry data | Improved insights from faster and more accurate data synthesis | + Cost reduction + Revenue uplift | GenAI can tap into market data that is currently underused to facilitate more informed decisions |

In future articles, we will dive deeper into how organizations should approach 'no regrets bets' identification and execution.






The time to act is now

The life sciences industry is at an inflection point – and harnessing AI and GenAI as a catalyst for transformation is vital. Winning tomorrow requires organizations to take the right steps toward embracing this technology *today*.

Here are top 5 actions that you could take in order to initiate momentum on your AI and GenAI value journey:

- 1 Establish a Leadership Mandate**
Empower a leader(s) with a mandate to own and drive an enterprise AI + GenAI agenda
- 2 Align on a Strategic Blueprint**
Prioritize 2 – 3 strategic opportunity areas to serve as enterprise north stars
- 3 Identify No Regrets Bets**
Activate business units and IT/Digital to identify initial **“no regrets bets”** that align to priority areas
- 4 Create Minimum Viable Governance**
Establish a governance function that can **manage AI + GenAI risks, investments, ethical use, and progress** while encouraging innovation
- 5 Launch Pilot Solutions**
Deliver solutions that can **demonstrate tangible value and prove out adoption**

However, successfully driving large-scale AI transformation programs requires organizational evolution. We list 4 major changes required as companies move forward on their AI value journey...

- | | | | | |
|---|---|---|---|---|
|  |  |  |  |  |
| Mindset Evolution | Leadership Evolution | Investment Evolution | Cultural Evolution | Execution Evolution |
| Move beyond the endless cycle of near term proof of concepts, and place long term bets on AI in key areas | Goal leaders against measurable AI targets and value goals in order to drive AI evangelism and accountability | Treat AI investments as core enablers of enterprise business strategies and not as experimental investments | AI should not be looked at like a tool, but as a skill that all employees will need to possess to maximize efficiency | Evolve beyond front and back office methods and adopt a “two in the box” approach where business & IT are goaled together |

Authors

Aditya Kudumala

Deloitte Consulting LLP
akudumala@deloitte.fr

Adam Israel

Deloitte Consulting LLP
adisrael@deloitte.com

Sai Lella

Deloitte Consulting LLP
slella@deloitte.com

Jonathan Fan

Deloitte Consulting LLP
jonafan@deloitte.com

Wendell Miranda

Deloitte Services LLP
wmiranda@deloitte.com

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. In the United States, Deloitte refers to one or more of the US member firms of DTTL, their related entities that operate using the "Deloitte" name in the United States and their respective affiliates. Certain services may not be available to attest clients under the rules and regulations of public accounting. Please see www.deloitte.com/about to learn more about our global network of member firms.

This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.

Copyright © 2024 Deloitte Development LLC. All rights reserved.