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HEALTHCARE MONITOR

PHARMACEUTICALS

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INTRODUCTION

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Worldcom Public Relations Group, the world's leading partnership of PR agencies, is proud to present the fifth edition of its Health Monitor Pharmaceuticals. Its setup has changed dramatically: whereas previous versions calculated rankings based on a point system, our experts have now decided to take a different approach and take a deep dive into communication enablers and messaging.

This report has been drafted in response to a clear reality: communication is changing fundamentally. Across all sectors, expectations regarding clarity, trust, relevance, and digital findability are increasing. At the same time, the way the public finds and evaluates information is being reshaped by new technologies, new channels, and new habits. In this environment, organizations need stricter standards for effective communication.

The pharmaceutical sector offers a particularly valuable barometer. It is a highly innovative, globally visible, commercially strong, and socially important sector. Moreover, it possesses substantial budgets for marketing and communication. In principle, this should make the pharmaceutical sector a leading example of how modern communication can be deployed in a structured, targeted, and effective manner. However, this report shows that even within such a mature and well-funded sector, communication performance is uneven, and that there are important lessons to be learned from both the strengths and weaknesses.

To achieve this, this study examines ten major pharmaceutical companies: AbbVie, AstraZeneca, Bristol Myers Squibb, GSK, Johnson & Johnson, Merck & Co., Novartis, Pfizer, Roche, and Sanofi. These companies were selected for their size, resources, impact, and relevance. Together, they form a strong foundation for understanding what effective communication looks like in a high-stakes environment. The goal of this report therefore extends beyond the pharmaceutical sector alone: it aims to help communication professionals in all sectors improve the quality, precision, and effectiveness of their own communication.

A central part of this analysis is dedicated to corporate websites. The structure of a website may appear operational, but in practice, it is strategic. It directly influences the findability of information, the user-friendliness of the content, and the level of trust an organization projects. When a corporate website is well-organized, it radiates control, reliability, and professionalism. When this is not the case, it creates friction and undermines credibility and reputation. Website structure is therefore one of the clearest and most useful indicators of communication quality.

This report also looks closely at content: the themes companies emphasize, the audiences they address, and the extent to which their messaging is genuinely aligned with audience needs. Particular attention is paid to Generative Engine Optimization (GEO), a rapidly growing dimension of digital visibility. As AI-driven search and response systems become more influential, success will depend not only on whether content ranks, but also on whether it is selected, cited, and trusted in generative systems. For this reason, this report includes a detailed analysis of the GEO position of the ten pharmaceutical companies covered in the report.

The conclusion is clear: effective communication today is no longer determined solely by the message. It is determined by structure, relevance, target audience focus, and findability. That is the yardstick by which this report assesses the pharmaceutical sector – and the yardstick from which other sectors can learn.

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CHAPTER 1
MANAGEMENT SUMMARY

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Worldcom Public Relations Group has prepared this report to examine how communication is evolving in one of the world's most visible, regulated, and impactful sectors: the pharmaceutical industry. The sector's scale, innovation, and communication budgets make it a strong benchmark for modern communication practices. By analyzing ten major pharmaceutical companies, AbbVie, AstraZeneca, Bristol Myers Squibb, GSK, Johnson & Johnson, Merck & Co., Novartis, Pfizer, Roche, and Sanofi, this report identifies lessons that are relevant not only to the pharmaceutical industry but to any organization operating in a high-stakes communication environment.

The report's main conclusion is that communication is no longer a supporting function. It has become a strategic system that must build trust, support reputation, improve access to information, and perform in a fragmented digital landscape. The shift in the pharmaceutical sector is clear: from disseminating messages to building trust; from channel presence to channel orchestration; and from quantity to relevance. Communication that is generic, overly technical, or poorly targeted loses effectiveness. Stakeholders increasingly expect communication that is fact-based, specific to the target audience, clear, and useful.

1.1 Website structure

A large part of that performance depends on the corporate websites. The report shows that websites are no longer merely publication platforms; they are strategic sources of trust. Their structure influences whether information is findable, whether the customer journey is logical, and whether an organization gives the impression of having things under control. Among the ten companies surveyed, the most common weaknesses are not so much a lack of content, but operational shortcomings: redirects, broken links, complex page structures, weak internal links, inconsistent templates, and inefficient pages. The main implication is practical in nature: many improvements do not require radical redesigns. They require stronger governance, better architecture, clearer hubs, and recurring KPI-based management.

1.2 Content analysis

The content analysis points to a second key priority: connecting with the audience. The strongest communication combines scientific accuracy with human clarity. Evidence is translated into meaning, content is structured around clear editorial formats, and the message is tailored to the needs of various stakeholders. A recurring problem in the sector is that individual pages often attempt to appeal to too many target audiences simultaneously. As a result, relevance diminishes. The report therefore advocates for modular messaging, clearer audience segmentation, and content structures that connect corporate stories with practical and societal impact.

1.3 Generative Engine Optimization

Finally, the report highlights a structural shift in digital visibility through Generative Engine Optimization (GEO). As AI-driven search and response systems become more influential, success depends not only on search performance but also on whether content is selected, cited, and trusted in generative environments.

The analysis shows that Pfizer is currently the leader in terms of brand awareness and market share, AbbVie performs strongly on prominence and sentiment, and Bristol Myers Squibb distinguishes itself through tone. At the same time, the broader citation environment is dominated by institutional and scientific authority, particularly the NIH. The implication is clear: future visibility will depend on both strong proprietary content and a broader ecosystem of earned credibility.

The key lesson for management is clear. Effective communication now rests on four pillars: structure, relevance, alignment with the target audience, and findability in the AI era. Organizations that approach communication as an integrated business activity, rather than a series of disconnected messages, will be better able to build trust, strengthen their reputation, and ensure visibility in the next phase of digital communication

GEO Leaders

- *Pfizer*
- *AbbVie*
- *Bristol Myers Squibb*

CHAPTER 2
COMMUNICATION IN PHARMA

COMMUNICATION IN PHARMA

The discussion surrounding communication in the pharmaceutical sector has shifted significantly according to communication experts in this sector. The prevailing view is no longer that communication serves merely as a support function for marketing, public relations, or investor relations. Instead, it is increasingly viewed as a strategic competency that builds trust, influences access, promotes acceptance, and shapes the company's reputation throughout the entire product lifecycle.[1][2][3]

In this approach, communication is not limited to campaigns or press releases. It also encompasses how companies explain scientific findings, how they deliver messages about pricing and value, how they engage with patients and healthcare professionals, how they respond to regulatory oversight, and how clearly they present information through websites, social media, traditional media, field channels, and educational formats.[1][2][3]

2.1 From campaign to trust-based communication

One of the clearest findings is that the sector is shifting from a campaign-focused approach to a model based on trust. For years, pharmaceutical industry revolved their efforts around marketing goals, such as product visibility, message repetition, and reach across various channels.

While these elements remain important, they are no longer considered sufficient. The new expectation is that communication must be credible, relevant, and useful to the public. This means clearer language, stronger evidence, a more transparent presentation, and a better understanding of what different target groups actually need at different times.

Patients, doctors, policymakers, journalists, and investors do not respond well to generic messages. They expect communication that is tailored to the context, based on facts, and delivered clearly and professionally.[1][2][4]

2.2 Integrated and omnichannel communication

A second key theme is the growing importance of integration. In the pharmaceutical industry, too - and quite rightly so - communication is increasingly viewed as a cohesive system rather than a series of separate activities managed by different teams.

In practice, this means closer alignment between corporate communications, brand teams, medical affairs, market access, digital teams, and commercial functions. The reason is simple: the public does not perceive a company as a collection of separate silos. A patient might see a campaign, search for information on a website, come across discussions on social media, and later speak with a healthcare provider.

A policymaker might read a company statement, review data, and compare it with media coverage. If messages, tone, and evidence vary too much across these touchpoints, credibility suffers. That's why one of today's top communication priorities is orchestration: ensuring that content, language, and evidence are consistent across all channels and stages of the customer journey.[1][5][6]

This has also raised the bar for omnichannel communication. The term itself is no longer new, and in many cases, it is no longer enough to simply claim that a company adopts an omnichannel approach. What matters now is whether companies can effectively implement this approach.

The expectation is it not to be present on many channels simply for the sake of being there, but to intelligently coordinate those channels. Communication must align with how people actually consume information: in snippets, across different devices, through multiple sources, and with varying expectations depending on the channel.

Each channel has specific characteristics that can be leveraged for connection with consumers.

- **Company website**: requires depth and structure
- **Social media**: demand speed, clarity, and accessibility
- **Webinars**: offer space for explanation and interaction
- **Podcasts and digital audio**: create a more personal, less intrusive way to build brand awareness or trust
- **Email and other corporate communication**: remain important, but these too must fit into a larger and more seamless experience.

The range of channels and messaging types implies that successful communication increasingly depends on designing the customer journey, and not just on creating a message.[5][6][7]

2.3 AI as a communication enabler

Another key finding is the emergence of artificial intelligence (AI) as a communication enabler, though not in the simple sense of replacing human judgment with automation. The most relevant discussion focuses on AI as a tool for improving efficiency, personalization, and content management. Companies are exploring the potential of AI to support content generation, tailor messages to different audiences, streamline approval processes, enhance search and navigation capabilities, and determine the next best action in a customer journey. In theory, this can make communication faster, more relevant, and more scalable. Yet this enthusiasm is tempered by caution. In the pharmaceutical industry, poor communication is not only ineffective; it can even be risky. For both patients and stock prices. This means that AI-generated or AI-supported content must still be carefully managed, checked for accuracy, and aligned with medical, legal, and regulatory standards. The consensus is that AI should enhance communication systems, but it must not weaken oversight, evidence, or accountability.[1][5][6]

"In an environment characterized by misinformation, political polarization, growing skepticism, communication cannot rely solely on scientific authority"

CHAPTER 3

WEBSITE PERFORMANCE

WEBSITE PERFORMANCE

Pharmaceutical company websites are no longer just digital brochures. They are sources of credibility: they shape how patients interpret risks, how journalists verify facts, how investors assess transparency, and how potential employees evaluate company culture.

3.1 How corporate websites behave

Across the cohort, website performance is rarely a content problem. It is operational: often it is the accumulation of legacy patterns, inconsistent templates, and navigation that can't keep up with publishing volume. The companies that perform best are not flawless; they have the flaws under control. They limit redirect dependence, keep errors contained, build hubs that function as journeys, and treat template efficiency as a KPI.

Four themes matter in the website performance context because they describe how large corporate websites, or rather web estates or properties, behave at scale. These themes are governance, findability, architecture and efficiency.

Governance is the discipline of managing URL changes, redirects, and outdated content. When this discipline slips, users get stuck (4xx error messages), are pushed through redirect chains, and share outdated links. At the same time, analytics become less clear because "where people end up" no longer matches "what was intended."

Findability indicates whether priority content is supported by hubs and internal links. When findability is weak, important pages become 'orphaned' or content islands. This forces users to rely on external search engines and increases the likelihood that crucial information - from security updates to access paths – is missed.

Architecture indicates how deep content is located relative to key entry points. When priority pages are four, five, or six clicks away, users drop off, crawlers pay less attention to deeper pages, and the message effectively becomes invisible, unless you already know what to search for.

Efficiency measures speed and page weight, including digital carbon proxies. When site efficiency isn't optimized, pages load slowly, especially on mobile devices or in regions with lower bandwidth. This leads to higher bounce rates and frustration, and undermines sustainability narratives when heavy templates increase the site's footprint.

In this chapter, we analyze the website performance of our 10 pharmaceutical companies using a consistent, crawl-based dataset collected in July 2025 from each company's public websites. We utilized page-level signals typically captured by enterprise crawlers:

- HTTP status and redirect behavior (200/3xx/4xx/5xx),
- indexability indicators (noindex/canonical/blocked indicators captured during crawling),
- internal linking and discoverability (unique inbound links, orphan pages),
- information architecture indicators (crawl depth), on-page standards (title and meta description length),
- content characteristics (word count and readability),
- technical efficiency metrics (response time plus CO_2-per-page indicators at the page level).

Together, these metrics not only show whether pages exist, but also whether they are accessible, reliable, understandable, and efficient for an actual audience.

What the crawl metrics mean and why they matter

HTTP status & redirect behavior (200 / 3xx / 4xx / 5xx)
These codes describe what happens when a browser or search crawler requests a URL.

- **200** means the page loads as expected
- **3xx** means the server redirects elsewhere, which is actually common after migrations. Generally speaking a few redirects are normal, but large volumes often signal outdated internal links or over-reliance on redirect rules
- **4xx** errors, like 404, mean the page can't be found
- **5xx** errors mean the server failed to respond properly.

High 4xx/5xx rates create broken journeys for users, waste crawl budget (i.e. the number of pages that search engine bots crawl and index on a website in a given time period), and erode trust, especially when visitors arrive deep from search or shared links.

Indexability proxies (noindex / canonical / blocked)
These signals indicate whether a page is intended to appear in search results.

- A **noindex** directive tells search engines not to index a page. Which might be useful for low-value or duplicate content, but harmful if applied to important pages
- A **canonical** tag declares the 'preferred' version of a page when duplicates exist; excessive 'canonicalised' URLs can indicate duplication, parameter sprawl, or inconsistent URL governance.
- **Blocked** pages, e.g. by robots.txt, prevent crawling entirely. This is sometimes appropriate for private areas, but risky if it unintentionally blocks key content.

Unique inlinks and orphan pages

- **Unique inlinks** count how many distinct internal pages link to a URL. It is a strong indicator of internal support. Pages with more inlinks are easier to discover for users and more likely to be prioritized by crawlers.
- **Orphan pages** have zero internal links. Orphans can still be accessible via search, campaigns, or direct URL entry. However, they are fragile. Without internal links, companies are telling search engines they are not important. Also, they often underperform because they are not integrated into navigational journeys.

Crawl depth
Crawl depth indicates how far a page is from the main entry points, often the homepage or key hubs. Simply put: "how many clicks are needed from the start?" Pages with a crawl depth of 1–3 are typically accessible via the navigation. When many important pages are located at a depth of 4 or higher, users are less likely to reach them naturally, and crawlers may consider them less important. A deep architecture also makes it harder to guide visitors through a narrative, for example, from an overview of a disease to information about accessing safety information.

Title length and meta description length
Page titles and meta descriptions form the foundation for how content is presented in search results and when shared. Titles that are too short can seem vague; titles that are too long may be truncated in search results and social media previews. While meta descriptions are not a direct ranking factor in most cases, they significantly influence click-through rates by conveying relevance and clarity. Consistent, well-structured titles and descriptions also contribute to internal management, making pages easier to understand, manage, and distinguish

Word count and readability

- The **word count** provides an indication of the template's depth of content and structure; an unusually low word count may indicate thin pages or pages dominated by scripts and navigation rather than information.
- **Readability scores**, such as Flesch Reading Ease (FRE), estimate how easy a text is to understand based on sentence length and word complexity.

In the pharmaceutical industry, readability is of great importance because the target audiences are highly diverse. Patients and healthcare providers require immediate and absolute clarity, while scientists and investors may accept a higher level of complexity. When readability does not align with the target audience's expectations, users leave pages or misinterpret important information.

Response time and CO_2 emissions per page

- **Response time** is the time it takes for the server to respond. This criterion is a practical measure of perceived speed and technical efficiency. A slow response time increases the bounce rate, frustrates users, and can reduce crawl efficiency.
- **CO_2-per-page proxies** estimate the environmental impact associated with loading a page. This is typically influenced by page size, image size, file size, and script load.

Although these are estimates, they are useful for benchmarking: heavier pages are generally slower, consume more resources, and are harder to use in low-bandwidth environments. Efficiency is therefore a matter of both user experience and sustainability

3.2 Website performance in detail

Below, we have listed the positive findings, the watch-outs, and the quick-wins for the separate pharmaceutical companies in our research.

Please note that this report is not intended to name and shame companies. We realize no website is perfect; every website can be improved and optimized. Some of the findings may make it seem as a criticism of the communications and digital consultants at the companies in question, that is absolutely not our intention...

What is far more important in this context, however, is the observation that, despite the tips and tricks for improvement, the websites of the companies in question are generally well-thought-out, clear, well-structured, informative, and easy to navigate and search. It is important to remember that speed and accuracy of a company's website impacts the experience with the brand.

All websites but AbbVie have been analyzed by a crawler. AbbVie's web footprint is structurally different from most peers because it is the sum of 10 market sites (Argentina, Brazil, China, .com, France, Germany, India, Japan, Spain, United Kingdom).

That creates two 'performance stories' at once:

1. how strong the global baseline is, expressed in terms of shared templates, governance, technical defaults, and
2. how wide the variance is between markets; to establish that, we have to look at local CMS practices, localization workflows, asset weight, and link hygiene.

In practice, this means that AbbVie may appear 'average' based on a single KPI, even though there are a few markets that are quietly responsible for the majority of redirects/error messages, deep pages, or a high page weight. From an editorial perspective, AbbVie is a good case study that illustrates the reality of global digital operations in the pharmaceutical industry: the brand experience is only as consistent as the weakest local implementation.

Abbvie

- **Positive**: AbbVie's greatest advantage is portfolio leverage: because systems across different markets exhibit the same patterns, improvements in templates and governance can be scaled up quickly when managed centrally.
- **Watch-outs**: The risk lies in market-level discrepancies: redirect chains, hidden priority pages, and inconsistent hub designs that can arise in local implementations.
- **What it means**: AbbVie can achieve significant gains by focusing on the few markets and templates that cause the most friction, rather than trying to optimize everything everywhere at once.

AstraZeneca

- **Positive**: AstraZeneca has strong potential for quick gains, as a small number of impactful changes -particularly to shared navigation elements - can immediately improve large sections of the website.
- **Watch-outs**: The reliance on redirects and a visible stream of errors indicate deterioration due to migrations or the aftermath of migrations, which negatively impacts speed, clarity, and reliability.
- **What this means**: The next gains will come from making existing content more accessible and loading it faster, not from publishing more content.

AstraZeneca reads like a site carrying the cost of URL change over time: redirects are taking over too much of the user experience, and errors remain present enough to be noticed. Combined with indications that some content lacks sufficient internal support. This points to an opportunity to improve governance and information architecture: simplify navigation paths, strengthen topic hubs, and remove friction that offers no added value.

Bristol Myers Squibb

- **Positive**: BMS demonstrates a relatively mature governance profile, with fewer signs of uncontrolled proliferation of redirects and stronger foundational hygiene.
- **Watch-outs**: For higher-performing environments, the greatest risk is regression: templates that gain prominence over time and standards that vary between teams.
- **What this means**: BMS is best advised to view performance as a continuous product metric, not as a periodic cleanup effort.

BMS is a counterexample to the claim that 'pharmaceutical websites are always messy.' The challenge now lies less in solving obvious problems and more in improving quality on a large scale. This goal can be achieved by ensuring consistent template standards, strong user experience design, and an efficiency discipline that prevents incremental improvements from undermining the user experience.

GSK

- **Positive**: GSK's English-language website is rich in content, providing a strong foundation for authoritative customer journeys and long-term engagement.
- **Watch-outs**: Richness can cause friction when content becomes buried or templates become too heavy, increasing page depth, load time, and digital footprint.
- **What it means**: The performance gain lies in converting breadth into reach; streamline topic hubs and simplify templates so that content remains accessible.

GSK's English-language website appears to be a site where the value proposition, i.e. depth of information, can be strengthened through smarter architecture. The focus should be on shortening click paths to priority content and reducing the use of frequently used templates without compromising editorial content.

Johnson & Johnson

- **Positive**: At J&J's scale, resolving issues with shared navigation areas has a significant impact; small changes ripple across thousands of pages.
- **Watch-outs**: A high volume of errors and outdated sections can cause friction, especially when users land on a deeper page via the search function.
- **What this means**: J&J needs systematic management: performance improvement must be managed like inventory management. For example, regarding managed sections, audit frequency, and phase-out plans are needed rather than ad-hoc solutions.

J&J reflects the reality of enterprise web ecosystems: scaling up amplifies everything. Even modest errors can translate into thousands of broken experiences, and deep structures make redirects and errors more damaging because users rely on search queries and quick verification.

Merck Group

- **Positive**: Merck Group can improve discoverability without removing content by making the architecture more efficient: smarter hubs and internal links can unlock the value of already published content.
- **Watch-outs**: An omnipresent, deep structure can hide important content and weaken internal paths, even if the substance of the information is strong.
- **What this means**: Architecture is the performance indicator: shorten navigation paths, strengthen the hubs, and monitor depth as a KPI.

Merck's performance is structurally determined. Deep domains can be easily navigable when the content hubs are excellent, but they become cumbersome when users have to navigate through folders. The best strategy is to shorten click paths for priority content while maintaining the necessary hierarchy for complex information.

Novartis

- **Positive**: The scale of the Novartis website provides enormous leverage. Improvements at the template level can quickly enhance thousands of pages.
- **Watch-outs**: Silent fragmentation can pose a risk to Novartis. Different sections following different rules lead to uneven metadata, inconsistent links, and variable template quality.
- **What it means**: The path to better performance lies in standardization with clear accountability. Creating a template library and content hubs with clear owners and KPIs is needed.

Novartis operates large websites where performance is primarily a matter of consistency. The goal is to reduce variation between sections by integrating standards into templates and designing hubs that guide users through prioritized pathways.

Pfizer

- **Positive**: Pfizer's most visible sections, such as the news section and the pages containing scientific and patient information, immediately boost the company's reputation when their performance improves. After all, speed and reliability can have a significant impact on brand image.
- **Watch-outs**: With a constant publication rate, link shifts and a gradual increase in template size can negatively impact the user experience without being immediately noticeable.
- **What this means**: Treat performance as a trust infrastructure: restore shared interfaces, streamline key templates, and protect essential processes.

Pfizer's web performance is closely tied to public perception. When pages load slowly, contain many redirects, or are difficult to navigate, this affects not only engagement but also credibility. The most valuable work, therefore, is that which ensures the most important customer journeys are fast and reliable.

Roche

- **Positive**: Roche's more compact website can be an advantage, as fewer pages simplify maintaining consistency and management.
- **Watch-outs**: Smaller websites can still develop content silos if hubs and internal links are not intentionally set up.
- **What it means**: Roche can excel in 'navigation quality' by ensuring that every key section offers a clear path.

A more focused website only delivers performance benefits if the navigation and hub design are strong. The challenge is to keep the site coherent, lightweight, and easy to navigate, while preventing hidden content or inconsistent template rules from arising.

Sanofi

- **Positive**: Sanofi is well-positioned to link performance improvements to ESG narratives: reducing page size and weight and improving load speed can credibly contribute to the sustainability message.
- **Watch-outs**: Medium to large websites often struggle with inconsistencies between sections, resulting in a patchwork of redirects and uneven findability.
- **What it means**: Performance improvement lies in the process. There is an opportunity to standardize templates and hubs so that every section has an experience that is easier to follow.

Sanofi is in a zone where governance determines the outcome: enough scale to create complexity, but enough control to maintain the right discipline. Strengthening shared platforms and tightening template standards typically yields quick results.

3.3 Conclusion

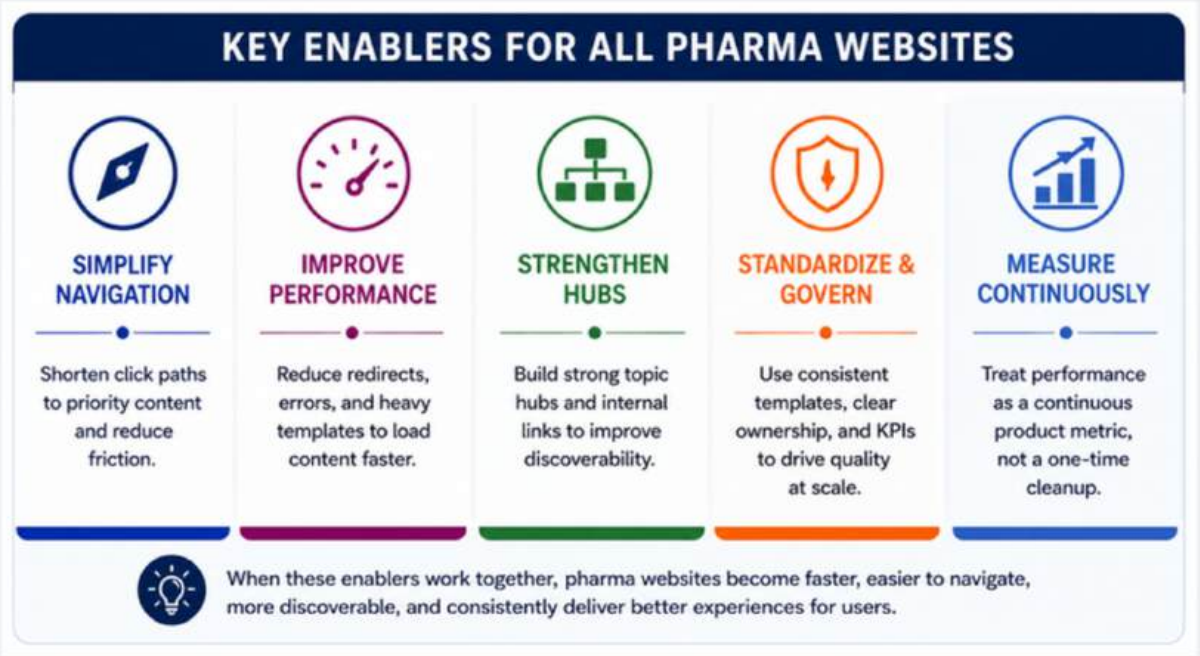
The analysis by company shows that the performance of websites in the pharmaceutical sector rarely hinges on a single heroic redesign. It is usually the cumulative result of daily operational decisions: how consistently teams maintain URLs after migrations, how well the navigation aligns with the way users actually search for information, and how many template elements are incorporated into the website over time.

The same patterns recur across all ten companies: websites with a mature governance structure minimize redirects and errors, ensuring users don't end up on dead ends and journalists don't share outdated links. Websites with a strong discoverability architecture don't rely on search engines to compensate for weak internal links; they use hubs and cross-references to make essential content discoverable.

Websites with an efficient architecture reduce friction by keeping priority pages close to the surface rather than hiding them deep within the structure. And websites that manage efficiency, that is, by taking into account speed, scripts, images, and page size, offer a smoother user experience while simultaneously supporting sustainability narratives through measurable reductions in the digital footprint.

"Websites shape how patients interpret risks, how journalists verify facts, how investors assess transparency, and how potential new employees evaluate the company culture"

That is exactly why the Top 10 tips below are so important: they aren't just 'nice-to-haves', but highly effective methods that deliver consistent improvements. They focus on areas where small adjustments have a disproportionately large impact.



Shared elements such as global navigation, footers, and homepages appear on thousands of pages, so cleaning up redirects and errors there yields immediate results. By linking directly to the final URLs, unnecessary intermediate steps are removed that slow down pages, confuse analytics, and waste crawl resources.

Resolving clusters of errors by section, rather than individual broken URLs, addresses the underlying causes and prevents recurrence. Converting main pages into customer journeys is the solution for isolated pages and content silos, especially on large websites where content would otherwise remain invisible unless users already know where to look.

Several tips also focus on long-term resilience. Establishing a standard of '≤3 clicks to priority pages' is an architectural practice that improves findability and engagement without requiring new content. Optimizing templates that are 'heavy' due to images, scripts, and tags is often the fastest way to achieve significant speed gains and reduce CO_2 costs per page, especially in markets where bandwidth constraints increase user frustration.

Readability segmentation acknowledges the reality of the pharmaceutical industry: not every target audience requires the same level of complexity, and patient-focused clarity is a performance variable because it reduces drop-off and misunderstandings.

Finally, CMS guidelines and monthly reporting ensure that performance improvement is no longer a one-time cleanup effort but becomes a repeatable process, preventing regression as teams publish, reorganize, and localize at scale.

Top 10 tips for quick wins

1

START BY ADDRESSING SHARED PAGES.

Begin with elements that appear throughout the site, such as global navigation, footer links, and key hub pages, because improvements here affect thousands of URLs and deliver the fastest visible results.

2

LINK TO FINAL URLs EVERYWHERE.

Replace internal links pointing to redirected pages with links to the final destination, eliminating redirect chains to improve speed, reduce crawl waste, and keep analytics cleaner.

3

ADDRESS ERROR CLUSTERS BY SECTION, NOT ONE URL AT A TIME.

Group 4xx/5xx issues by folder or content area, eliminate the root causes, and then update all internal links leading to those dead ends so the same issues don't keep resurfacing.

4

MAKE HUBS CUSTOMER JOURNEYS, NOT INDEXES.

Refocus the design of key sections as hubs that revolve around user tasks and intentions. Shift from reflecting internal organization to user experience by adding curated paths, 'most viewed' content, and related content modules that guide people through the information.

5

MAKE '≤3 CLICKS TO PRIORITY PAGES' A STANDARD.

Identify the most important pages and ensure they are reachable within three clicks from the main entry points by adjusting the hub navigation, section menus, and internal linking patterns.

6

REDUCE THE NUMBER OF ORPHAN PAGES BY INTEGRATING SYSTEMATIC LINKS INTO TEMPLATES.

The evolution of ≤3 clicks should surface important content. By using related content blocks, 'next step' modules, and stronger hub structures a site can naturally create internal navigation paths for related and in-depth content.

7

OPTIMIZE THE HEAVIEST TEMPLATES FIRST.

Focus performance improvements on scalable pages by compressing and resizing images, deferring non-critical scripts, and streamlining third-party tags on the most frequently used page templates to improve speed and reduce CO_2 emissions per page.

8

SET READABILITY GOALS BY TARGET AUDIENCE AND ACT ON THEM.

Define clear readability standards for patient-facing content versus pages for healthcare providers, investors, or scientists. With this focus, rewrite and restructure content for the most visible patient pages first to reduce friction and improve comprehension.

9

IMPLEMENT QUALITY ASSURANCE MECHANISMS IN THE CMS.

Make titles, meta descriptions, H1 structure, and canonical behavior less error-prone by building validation and default values into publishing components, so that standards do not depend on manual discipline.

10

REPORT MONTHLY ON A SMALL SET OF PERFORMANCE KPIs.

Track redirects, errors, crawl depth, orphan pages, and template weight on a recurring basis so that teams can detect regressions early and maintain improvements after the initial cleanup.

CHAPTER 4

CONTENT ANALYSIS

CONTENT ANALYSIS

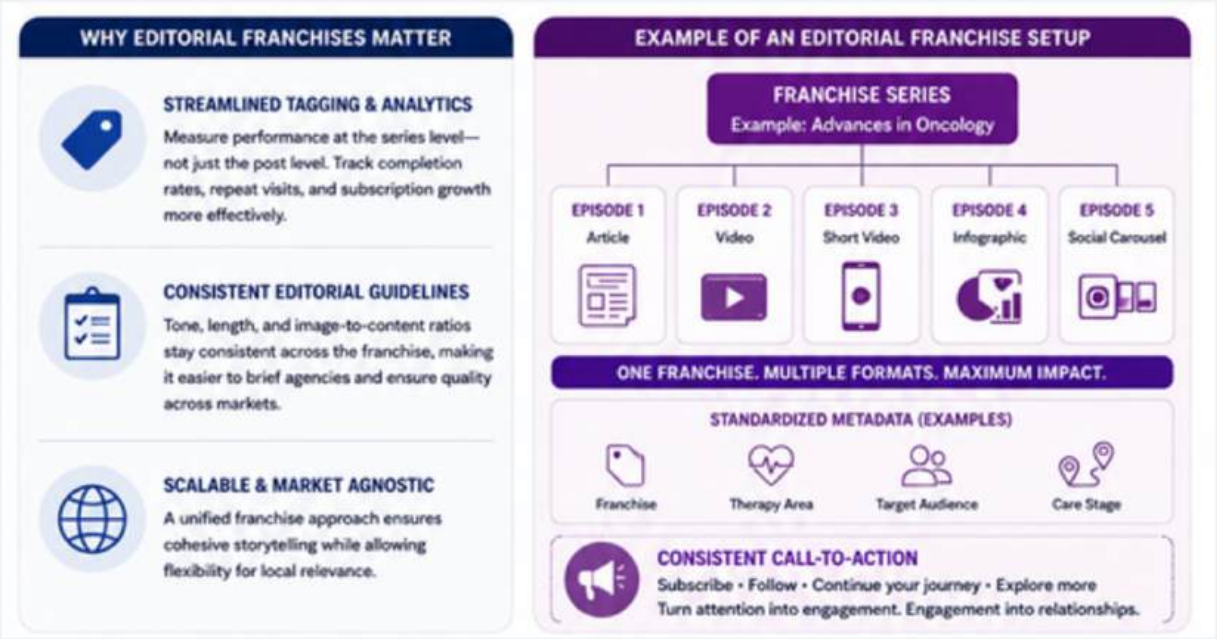
4.1 Content types and editorial franchises

For the 10 pharmaceutical companies, the content mix revolves around a number of essential components:

- press releases and news updates
- educational pages about diseases
- updates on the pipeline and clinical trials
- patient stories
- pages on ESG and social impact
- job openings and careers

These formats are a basic requirement for the company's credibility and regulatory transparency. However, they rarely stand out from one another because they are published by everyone. Differentiation occurs when companies transform these modules into editorial franchises: named, recurring series with a clear promise, consistent visual and/or verbal cues, and their own publication schedule.

Editorial franchises come in two broad forms. First, brand-specific magazines or hubs ('Stories,' 'Magazine,' 'Behind the Science') that function as a 'Newsroom with various themes,' covering topics such as research and development, access to information, and sustainability, each as an ongoing narrative.



Second, hosted or episodic series, such as expert videos or podcast series ('First-Hand Science,' 'Cardio Insights') or thematic miniseries ('The Road to a vaccine'). Franchises enable teams to increase audience engagement: the audience remembers the series name, looks forward to the next episode, and is more likely to subscribe or return. They also increase production efficiency; a single communication platform can host articles, short videos, infographics, and podcast episodes without diluting the brand.

When executed well, franchises transform standard content types into distinctive experiences. A routine press release becomes the foundation for an explanation of the data; an information page about a disease becomes a recurring section on how it works; a pipeline update becomes a glimpse into the research and provides a regular overview with recurring topics, such as phase, endpoint, recruitment, and next steps.

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Patient stories evolve into curated 'journeys,' each with the same narrative arc, such as diagnosis – decision – treatment – outcome – resources. These steps improve understanding, reduce drop-off rates, and create reusable templates for regional teams.

From an operational standpoint, franchises enable steady continuity. A content calendar can stagger the release of series to maintain a constant flow of content focused on priority therapeutic areas. Consider, for example, the monthly release of 'Inside the Trial,' the quarterly publication of 'Access in Action,' or a series of seasonal podcasts.

Franchises also offer marketing analytics teams a more streamlined tagging system. Rather than solely at the individual post level , performance can be measured at the series level, assessing metrics such as completion rates, repeat visits, and subscription growth. Editorial guidelines, such as tone, length, and image-to-content ratios, remain consistent across the franchise, making it easier to brief agencies and ensure quality across different markets.

Our recommendations to other pharmaceutical companies is to consider using the editorial franchise setup found below. Obviously, these tips would also apply to organizations in other sectors that want to improve their communication impact.

In short: editorial franchises transform ubiquitous content types into memorable, repeatable content. They offer a practical way to differentiate yourself without reinventing the wheel for every post.

4.2 Core messages

As expected, the core messages of the ten pharmaceutical companies in our study revolve around innovation, patient impact, scientific accuracy, access, equity, and partnerships. The keywords themselves are familiar; the difference lies in how concretely they are substantiated and how humanly they are presented.

The most powerful statements combine result-oriented claims (e.g., 'improved survival in X,' 'early detection in Y') with verifiable evidence such as clinical trial endpoints, peer-reviewed publications, and regulatory milestones, and then translate these into everyday meaning through stories from patients or doctors.

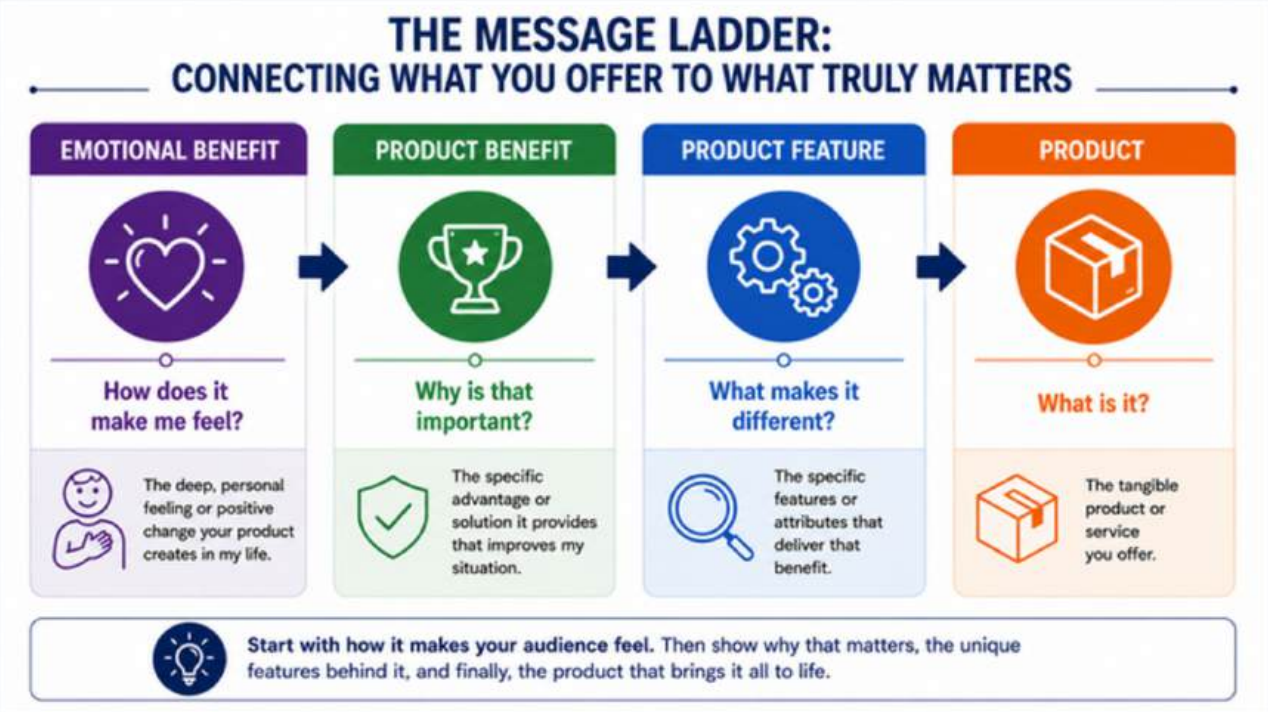
In science-oriented portfolios, such as precision medicine or diagnostics, the most persuasive core messages are based on clarity rather than complexity. Instead of claiming to be 'leading in precision', companies that understand communication demonstrate the mechanism of action, the integration of diagnostics and therapy, and practical utility in plain language.

Visual support helps: short two-minute videos explaining how it works, schematic illustrations of processes, and glossaries reduce cognitive load. For companies focusing on vaccines, the focus on prevention and public health, characterized by terms such as 'coverage,' 'herd immunity,' and 'burden reduction', gains credibility when linked to population-level figures and the policy context, rather than just brand claims.

Where companies sometimes go wrong is trying to stack messages. Pages can devolve into general assertions, such as 'change lives' or 'push boundaries', without an overarching message. A practical solution for this is a message ladder. In addition, there is research from several companies stating that companies that cover a subject thoroughly tend to earn AI citations most frequently [20]. Those assets become reference material that AI engines cite repeatedly.

Message ladder

A message ladder[18] is a planning framework used in marketing to connect what a product offers to what a consumer gets from it. It starts with a specific product characteristic and 'climbs' upward by explaining how that detail becomes a functional advantage, and ultimately why it matters on an emotional level to the customer.



In the pharmaceutical context, for example when talking about an over-the-counter allergy tablet, it could look as follows:

Audience fit

Another distinguishing feature is audience fit, alignment with the target audience. A message that works for investors, such as 'scalable platform', 'diversified risk', or 'late-stage assets', will likely need to be translated for patients or other stakeholders. They want to know "what next year means for people like me." Successful companies create modular text blocks that retain the core message while adapting the vocabulary, examples, and call-to-actions to the target audience. Think of 'one story, many doors.'

An optimal audience fit requires a lot of hard work. In a dynamic sector like the pharmaceutical industry, we understand that it is not easy to diversify your communication and ensure that all content is 100% targeted at all the different stakeholders. Our research shows that many of our target companies encounter problems and struggle with this challenge daily.

To illustrate this, we have listed five concrete gaps in target audience alignment that we observed at the ten companies. These gaps are linked to the patterns in the data we have collected and analyzed (content types, core message, significance, audience, and themes). For each gap, we have indicated why the content is not reaching the target audience and how this can be resolved quite easily, provided you have the necessary manpower or are willing to invest in additional internal or external communication support.

Target audience gaps – 5 examples

1. Roche - Gap: Scientifically complex stories are being repurposed for patients
What our research shows: Many articles rely on diagnostic jargon and research methods, as evidenced by the fact that core messages are often focused on data, while the primary target audience includes both healthcare providers and patients.

Why it's a mismatch: Patients encountering diagrams of mechanisms of action or test terminology without an explanation in plain language are likely to disengage; a text written for healthcare providers will not convey the message correctly to non-healthcare providers.

Possible quick fix: Flip the focus from science to patient benefit by adding an explanation 'For patients: in 90 seconds' to the article pages, explaining, for example, the symptoms treated, the test and treatment steps, the expected experience, the next steps, etc. Offer healthcare providers an option to display links to publications, test parameters, and guideline summaries.

2. Novartis - Gap: Oncology stories aimed at investors, but served to patients
What our research shows: Oncology stories often link survival goals to terms such as 'pipeline', 'asset', and 'portfolio'; the primary target audience consists of investors, but also patients and healthcare providers.

Why it's a mismatch: Terms such as 'asset' and 'portfolio diversification' reassure investors. However, it gives the impressions that the business of healthcare is the priority. It does not help patients understand their condition or determine the right questions to ask their doctor.

Potential quick fix: Split the content into a sidebar for investors, where you discuss milestones, risks, and a timeline, and a sidebar for patients; in the latter section, you can explain—in plain language—who is eligible or how to talk to your oncologist. Maintain the shared core message, but tailor the benefits and calls to action to the target audience

3. GSK - Gap: Vaccination coverage content without concrete follow-up steps
What our research shows: Prevention content emphasizes vaccination coverage, expanding indications, and benefits for the population. This content is excellent for policymakers, but the primary target audience also includes caregivers and patients.

Why it's a mismatch: Population statistics do not tell a caregiver whether their child or parent needs a vaccination, when, or where.

Potential quick fix: Add a standardized checklist asking "Am I eligible?", including, for example, age, risk, and season. Or add a country-specific link asking "Where can I get it?" and a brief instruction for doctors ("If you suffer from X, ask your GP for Y"). You can retain the graph showing the impact on public health, demonstrating your expertise and thoroughness, but emphasize personal action.

4. Johnson & Johnson - Gap: clash between the tone of medical technology and pharmacy

What our research shows: Mixed stories and video series about medical technology and pharmacy converge on the corporate hubs; the primary target audiences are consumers, patients, healthcare providers, and media.

Why it's a mismatch: A single story can switch from a lifestyle tone to a consumer-oriented tone to the language of device specifications (healthcare provider) without changing the context; as a result, neither target audience receives a complete journey.

Potential quick fix: Introduce target audience tabs on the franchise pages, with a menu structure such as 'For patients', 'For healthcare providers', 'For media'. Each tab alternates the opening, the evidence, and the call-to-action. Patients receive care journeys and links to support; healthcare providers receive details about clinical performance and procurement; media receive quotes and other material.

5. Pfizer - Gap: Partnership announcements, written for B2B target audiences, have been made public

What our research shows: Messages about collaborations emphasize scale, platforms, and ecosystem language; however, the target audience includes patients, as well as healthcare providers, investors, and policymakers.

Why it's a mismatch: Partners and investors are interested in platform benefits; patients want to know what changes for them this year.

Potential quick fix: Add a "Why this is important for..." block with three short descriptions per target audience:

- *Patients*: Mention concrete benefits and a timeline (e.g., 'earlier diagnosis for X within Y months').
- *Healthcare providers*: Share the implications for practice ('new guideline submission in Q, expected workflow change').
- *Investors and policymakers*: Mention milestones and an external validator ('Phase 3 results to HTA submission; co-development terms at a glance'). Link each to a relevant call to action.

What do these five examples have in common?

According to our communication experts, these five examples have several things in common. The most important is that a single page attempts to serve two purposes simultaneously for multiple target groups. The core message is correct, but the word choice, examples, and call-to-actions are not specifically tailored to the target group. Furthermore, as is common in pharmaceutical communication, statistics and metrics are presented. However, in these cases, they are not linked to the decision each target group is trying to make. In principle, people seeking care are shown the same messages as people who want to change their practice, draw up a budget, publish an article, or invest in new treatments.

How to prevent or resolve gaps

Assuming you have sufficient manpower or are willing to invest in additional internal or external communication support, the above-mentioned (and similar) mismatches are fairly easy to prevent or resolve. Here are our tips.

- **Modular text blocks:** One approved core message contains separate blocks for patients, healthcare providers, investors, policymakers, and other target groups; these can be swapped without having to reopen the medical or regulatory debate.
- **Template structures:** Set up franchise templates with fixed boxes, for example, 'For patients', 'For healthcare providers', 'Impact dashboard', 'Evidence & resources.' This ensures that no page goes online without aligning with the target audience.
- **One primary call-to-action per target group:** Determine the core message for each target group in advance and set up the corresponding call-to-action.
- **Labeling and testing:** Label pages by target group and franchise; track completion rates and repeat visits per segment. Conduct brief comprehension polls on key pages and adjust the wording every quarter.

These are just minor editorial and layout adjustments, but they quickly have a major impact and transform strong scientific insights into the right story, for the right person, at the right time.

4.3 A deep-dive into the content: significance and impact

When researching the significance of the content produced by pharmaceutical companies, we attempt to answer the question "why all this matters beyond the company." Patterns across various domains highlight improved patient outcomes, addressing unmet needs, increasing health equity, evidence from practice, and system-level value, as reflected in a lower patient burden, earlier diagnoses, and fewer hospital readmissions.

According to experts, the strongest impact stories connect micro-level evidence, such as gains in endpoints for a subpopulation, with macro-level consequences, for example, fewer ICU beds, increased and restored productivity, and budgetary impact. They do this in a way that is understandable to policymakers and health insurers, as well as to patients.

A useful tool for mapping impact is the Impact Pyramid. This framework, primarily used in public health, ranks types of interventions based on their potential impact at the population level, with fundamental changes such as addressing socioeconomic factors or the environment at the broad base and individualized education at the narrow top, suggesting that efforts at lower levels lead to greater health improvements.

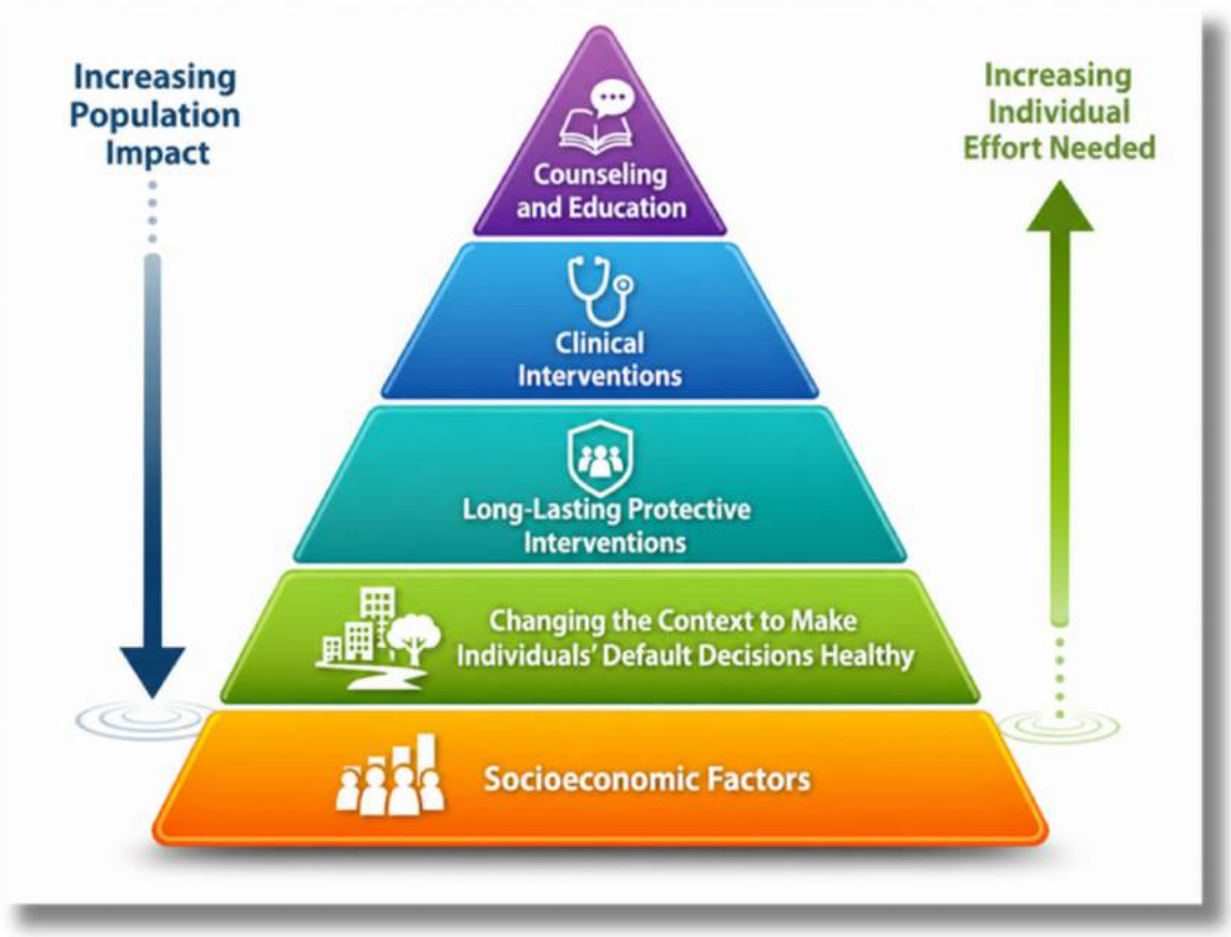
Health Impact Pyramid (HIP)

Sources such as the Centers for Disease Control and Prevention in the US[19], and many others, define the 5 phases of the Impact Pyramid as follows:

1. Counseling and education
2. Clinical interventions
3. Long-lasting protective interventions
4. Changing the context
5. Socioeconomic factors

Health Impact Pyramid

In the Health Impact Pyramid, efforts to address socioeconomic determinants are at the base, followed by public health interventions that change the context for health (e.g., clean water, safe roads), preventive interventions with long-term benefits (e.g., vaccinations), direct clinical care, and, at the top, information and education. Generally, government actions and interventions at the base of the pyramid require less individual effort and have the greatest impact on the population. However, because these actions may relate to the social and economic structures of society, they can be more controversial, especially if the public does not view such interventions as part of government policy.



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How do the core pharmaceuticals communicate along the lines of the HIP?

To demonstrate how pharmaceutical companies communicate along the lines of this pyramid, we have listed five concrete examples in which companies in our dataset substantiate their impact. Each example is linked to the phases of the Public Health Impact Pyramid in the framework described above.

Merck & Co.
Health Impact message: HPV vaccination reduces vaccine-type disease in the real world

- *What this demonstrates*: A systematic literature review of 138 studies reports a decrease in vaccine-type HPV infections and related diseases following the use of GARDASIL in clinical practice. This links an intervention to measurable reductions in disease indicators at the population level.
- *Why this matters*: This content clearly demonstrates the translation of research into practice; not only immunogenicity, but also a decrease in long-term HPV-related outcomes.
- *Phase of the HIP:* Long-term protective interventions; a single vaccination or a series of vaccinations offers sustainable protection and changes the risk profiles of the population.

Pfizer
Health Impact message: Pneumococcal vaccination lowers hospitalizations among older adults

- *What this demonstrates:* Observational data show that Prevnar 13 was associated with a reduced risk of hospitalization due to community-acquired pneumonia caused by vaccines in adults aged 65 and older. This is a concrete, systemically relevant outcome in a priority population.
- *Why this matters:* Practical effectiveness against serious consequences supports decisions by health insurers and policymakers while simultaneously reinforcing the individual benefit.
- *Phase of the impact pyramid:* Long-term protective interventions; this content demonstrates that vaccination in adults reduces the disease burden of serious conditions.

AstraZeneca
Health Impact message: SGLT-2 therapy reduces CV death and heart-failure worsening

- *What this demonstrates:* In the DAPA-HF study (Phase III), dapagliflozine, in addition to standard treatment, significantly reduced both cardiovascular mortality and the worsening of heart failure; clinical analyses (CVD-REAL) involving more than 300,000 patients support the class effect on mortality and hospitalizations due to heart failure.
- *Why this matters:* Clear, patient-centered endpoints (survival; heart failure-related events) and the scale of the evidence go beyond the mechanism of action and lead to results that change practice.
- *Phase of the HIP:* Clinical interventions; the company refers to continuous, intensive medical treatment that yields measurable health gains.

Sanofi

Health Impact message: Structural affordability change for insulin users in the U.S.

- *What this demonstrates:* Sanofi documents a maximum amount of $35 per month for all US patients using the company's insulin and positions the program as a broad affordability mechanism, combined with the training of thousands of community health workers. This represents a structural change at the system level regarding cost barriers and delivery capacity.
- *Why this matters:* Affordability and coverage are key determinants of adherence and outcomes; changing the economic aspects immediately increases effective access.
- *Phase of the HIP:* Socioeconomic factors; the company lowers financial barriers for essential medicines on a large scale.

Roche

Health Impact message: Digital pathology/diagnostics improving detection and workflow

- *What this demonstrates:* Roche demonstrates how digital pathology and the associated diagnostic infrastructure can be deployed in clinical environments, with clinicians reporting improved accuracy, greater precision, and a richer information flow. This means that the standard diagnostic environment offers more support for timely and accurate care.
- *Why this matters:* When the routine care context is improved, better decisions are automatically made, which benefits many patients without them having to adjust their behavior.
- *Phase of the impact pyramid:* Changing the context; the infrastructure and tools are in place that automatically enable the healthy and accurate choice.

Why Health Impact Pyramid Topics Communication is Important

Anchoring your content to the Health Impact Pyramid strengthens communications across audiences, evidence, and outcomes. Here's why it matters.

1 Creates At-A-Glance Clarification of the type of impact

The Health Impact Pyramid gives your audience a mental model. Stakeholders instantly understand whether your work addresses socioeconomic factors, changes the context, delivers protective interventions, advances clinical interventions, or provides counseling & education—and the kind of value you bring.

IMPACT CLARITY

Stakeholders instantly grasp what kind of value you bring and how it fits within the broader spectrum of impact.

2 Alignment of enterprise claims with public-health priorities

The HIP is a widely used framework in population health. Mapping your content to its phases shows you're solving problems at multiple levels—from social determinants of health to point-of-care decisions. It reframes product stories as public-interest stories.

PUBLIC VALUE ALIGNMENT

Your work is seen in the same way as ministries of health and HTA bodies think —at every level.

3 Routing each audience to the decision they're trying to make

The HIP helps you tailor the call-to-action by phase—because different audiences care about different questions.

- **Socioeconomic Factors:** Patients need "Am I eligible?" "How do I enroll?" Policymakers want budget impact and equity outcomes.
- **Changing the Context:** Hospital leaders want workflow and cost-of-ownership; clinicians want performance vs. standard practice.
- **Clinical Interventions:** HCPs want dosing tools and links to full data; patients want plain-language benefit/risk reports and eligibility cues.

4 It strengthens narrative continuity across time

Impact develops gradually. By telling the story in HIP 'chapters', progress becomes clear, rather than isolated successes. Reviewers, media, and opinion leaders can follow your trajectory, from signal to evidence, from implementation to benefits for the population.

A CLEAR STORY OF PROGRESS

Shows how your work builds momentum and leads to meaningful, population-level impact over time.

5 It makes equity measurable—not rhetorical

The HIP requires you to report input and output regarding equality. Don't just announce affordability programs; demonstrate whether target groups are actually participating and being adjusted where necessary.

EQUITY WITH EVIDENCE

You demonstratre real-world reach, participation, and improvement for the people who need it most.

6 It improves internal efficiency and governance

When editors, medical reviewers, and agencies share a phase-based template, discussions become less complex. Everyone knows what evidence, language level, and validators are expected for that phase.

BETTER, FASTER, TOGETHER

Clear expectations reduce back-and-forth, improve quality, and keep everyone aligned.

Bottom line: Drafting content along the lines of the Health Impact Pyramid makes your communications clearer, more credible, and more actionable. It turns scattered stories into a structured portfolio of proof, showing not just what you do, but how it changes lives, practice, systems, and society in ways your audiences intuitively understand.

4.4 Audiences

Our analysis shows that the primary target groups on all websites consistently include patients and caregivers, healthcare professionals and doctors, policymakers and regulators, investors, media, and potential talent.

Most companies segment navigation based on this, but the content of most pages still attempt to appeal to multiple target groups simultaneously, reducing clarity. Although there is a temptation to link to different pages among these groups, the messaging gets diluted and shifts the focus of the user journey.

The most communicatively successful companies, however, are the ones that design target-group-specific paths with clear value propositions and call-to-actions, while simultaneously conveying a uniform corporate message.

An audience-first setup could look like this:

Patients and cargivers

For patients and caregivers, clarity and empathy are central. Effective pages provide explanations of the disease in plain language, information on eligibility (directly or indirectly answering the question "Could this be for me?"), steps for access (discussing coverage, affordability, patient services, and the like), and realistic expectations regarding the treatment experience and outcomes. Patient pathways work best when structured (chrono)logically, for example, according to the phases Diagnosis → Options → Treatment → Support. They work best in combination with short videos and links to credible third-party sources.

Healthcare professionals

For healthcare professionals, usability is important. Information pathways for clinicians should prioritize (visual) representations of the mechanism of action, endpoint summaries, safety profiles, and links to full publications and conference materials.

Consider 'For Healthcare Professionals' overlays on franchise pages that replace text blocks and call-to-actions, e.g., 'read the full poster', 'download the dosage guide'. Authentication for more detailed information is fine, but the value signal must be visible without logging in.

Policymakers and health insurers

Policymakers and health insurers need clarity regarding comparative data and the impact on the budget. To ensure the message reaches the right target audience and has the desired effect, it is crucial to create concise health economic overviews, such as incident reduction, changes in length of stay, and resource utilization, or to develop dashboards with information on coverage size, time to reimbursement, or equity progress, to name just a few.

Investors and media

Investors and media prioritize content regarding pipeline maturity, risk diversification, and operational execution. Therefore, integrate a sidebar titled 'What this means' into key news items to translate trial and progress updates into portfolio impact and milestones. Provide quick access to press materials, executive quotes, and downloadable figures.

Potential talent

Job seekers respond positively to authentic teams and meaningful work. Repurpose franchise resources to tell stories about a typical workday, the organization culture, and the problem-solving mindset behind key programs.

4.5 Positioning themes

The key positioning themes recurring among the companies in our study are R&D leadership, patient centricity, accessibility/affordability, partnerships/collaboration, and sustainability/ESG, with digitalization/AI playing an increasingly important role. It would be interesting to see how much our 10 companies publish on these themes and to compare that with the percentage of publications in trade journals and the amount of attention in daily newspapers.

However, thematic positioning is only one side of the story: to understand what actually attracts attention, we should also introduce a 'theme visibility' perspective, in which we group the most common topics in pharmaceutical discourse into five categories: regulation/approvals, clinical trials/pipeline, efficacy/safety, treatment methods, and AI/innovation. This second perspective clarifies where visibility is concentrated and where companies can distinguish themselves through sharper translations and recurring editorial formats.

Share of Media Coverage by Theme and Channel

Theme	Pharma in general	Selected 10	Trade media	Daily newspapers
R&D / new therapies	35–45%	45–55%	44–50%	22%
ESG	8–12%	12–18%	8–11%	12%
Pricing	4–7%	6–10%	14–18%	21%
AI	2–4%	4–7%	8–11%	20%
Politics / Policy	2–4%	3–6%	21–25%	25%

Note: Percentages may not sum to 100 due to rounding.

How to read this combined benchmarking table:
These numbers are an average mix for large English-language general outlets (e.g., U.S./U.K./EU nationals) based on 2025 news cycles and typical beats. Stories were assigned to the primary theme; so a policy piece about AI regulation counts under Politics/Policy, not under AI.

'Pharma in general' analyses and approximates the owned channels of the pharmaceutical companies, whereas 'Selected 10' takes a closer look at the channels of the pharmaceutical companies in our research. The categories 'Trade media' and 'Daily newspapers' analyze the earned and paid attention in the press

Why this distribution makes sense

As is fitting, given their mission, daily newspapers generally prioritize themes closest to public life, policy decisions, and the domestic economy. That is why politics and pricing, which are naturally closely linked, dominate their coverage of health and medicine. Policy forms the backdrop against which individual stories gain meaning: when legislators negotiate prices, when regulators revise guidelines, or when antitrust investigations reshuffle market power, the consequences are immediate and widespread.

These are the events that shape the national debate and determine who gains timely access to treatments and under what conditions. Pricing is the natural complement to that agenda. It is the financial aspect that answers the questions readers ask most often: "How much will this cost me and my family?" or "How much do I have to pay for insurance?". It encourages shareable coverage of co-payments, changes in coverage, caps, discounts, and lawsuits. Together, policy and pricing provide the appeal that draws health stories to the front page.

Artificial intelligence (AI), although a relatively smaller theme, commands sustained attention because it touches upon technology, ethics, the labor market, and patient safety. Since a couple of years general press coverage has framed AI not as an exotic lab tool but as a system-level question: who is accountable for (approving) decisions made with algorithmic support: who is responsible for (approving) decisions made using algorithms; how will regulators monitor high-risk use; are productivity gains real; and what do error margins look like in clinical practice? The most compelling articles on AI therefore intertwined technical promises with governance and impact, focusing less on model names and more on measurable changes in accuracy, workflow, and time to diagnosis.

Research and development and new therapies remain a fixed part of mainstream reporting, but newspapers select based on broader societal relevance and clear results for patients. Breakthrough approvals, safety signals, and studies that could change standard care are reported; minor phase changes and details regarding the underlying mechanisms usually remain in the specialist press.

This selectivity does not diminish the importance of R&D; it simply means that editors are looking for the moment when a dataset becomes a public news item, or in other words, when a therapy makes the leap from possibility to policy, reimbursement, and practice.

Environmental, Social, and Governance (ESG), finally, makes the news through themes such as supply chain resilience, climate and energy costs, inequality, and shortcomings or improvements in good governance. While present, it is not dominant. These new stories often surface when a corporate action coincides with a current news event: a heatwave putting cold chain logistics under pressure, a report by a regulator on accessibility, or a board decision heralding a cultural change.

For communication planning, the implication is clear: if you want it to become mainstream, you must connect the scientific line with the policy and funding lines. A research result gains momentum when you can demonstrate the clinical benefit, explain how reimbursement works, and clarify who pays when and what the final costs are. The faster you translate endpoints into reimbursements, availability, and concrete results, the easier it is for an editor of a general news website to approve the story.

AI content must follow the same translation rule. Treat it as a system story with governance at its core. Name the problem, show the change in workflow, quantify the improvement in time, accuracy, or budget savings, and describe the safeguards and oversight you have put in place. When you do that, the article shifts from technical curiosity to reporting in the public interest.

ESG requires a similar discipline. Evidence is more important than words, and timing is crucial. Anchor claims regarding sustainability or equality in current events and publish the relevant figures, e.g.acceptance by target groups, emission trends, supplier compliance, so that the story reads as an update on actual progress in practice, rather than a recurring theme regarding corporate social responsibility.

Everywhere it comes down to it, the common approach is to start where a newspaper editor starts: with relevance to the public, clarity regarding the economic, social, and policy implications, and proof that the change is both measurable and demonstrable. When the content makes these connections explicit, it reaches a broader audience than just specialists and deserves a place in the daily news stream.

4.6 Five visibility themes

In addition to the positioning themes described above, or the corporate narrative, it is useful to adopt a second perspective: that of visibility themes. These are the specific thematic groups that most consistently generate mentions and account for a large share of the discourse within the pharmaceutical sector. Using a grouped framework, we divide the most common themes into five categories:

1. Regulatory and approvals,
2. Clinical trials and pipeline,
3. Efficacy and safety,
4. Advanced therapeutics and modalities, and
5. AI and innovation.

This perspective does not replace the positioning themes; it explains which type of evidence and story most reliably attracts attention and how companies currently present themselves in relation to these attention-grabbers.

For the 10 pharmaceutical companies in our study, visibility is primarily based on **regulation and approvals, clinical trials, and the pipeline**. This is the strongest indicator of credibility in the sector: approvals, indication expansions, and crucial results provide externally validated evidence that appeals to a broad audience.

These themes are easy to report to the media, easy for investors to interpret as signs of growth, and (if correctly 'translated') meaningful for patients and physicians deciding which changes are needed in healthcare. Consequently, companies with a steady series of milestones typically score high here and are more often regarded as leaders, regardless of whether their corporate story aligns with that of their competitors

The framework also shows where differentiation begins. **Efficacy and safety** function as a competitive advantage: companies implicitly claim an advantage or meaningful differentiation here, even under strict comparison constraints.

However, this category is also the one where the message most often becomes generic, resulting in statements such as 'high efficacy' or 'favorable safety profile'.

Exceptions to this are cases where the message is linked to clear relevance to the endpoint, benefits for specific subgroups, and concrete results in practice. In practice, this category rewards disciplined communication: precise assertions, consistent evidence, and clear explanations that prevent 'trial fatigue' and maintain trust.

"While most companies may publish the same types of milestones, not all translate them into a distinctive meaning"

Two categories - treatment modalities and AI and innovation - act more as amplifiers than as primary drivers for visibility. Advanced treatment methods, such as gene therapy, cell therapy, Antibody-Drug Conjugates (ADC's), or radiopharmaceuticals, and AI-driven R&D stories create a platform identity that can improve the interpretation of approvals and pipeline progress. Think 'platform leader' versus 'portfolio rapporteur'.

They add forward-looking credibility and can be highly distinctive when communicated specifically and within a fixed framework. Without that specificity, both themes risk appearing ambitious, or worse, as 'innovation branding' detached from patient outcomes.

In summary, the focus on visibility themes highlights an important point: while most companies may publish the same types of milestones, not all translate them into a distinctive meaning. Visibility is earned through evidence; reputation leadership is earned through structured translation, for example in the form of consistent formats, disciplined evidence, and an approach tailored to the target audience. This is where editorial franchises become strategically valuable: they structure and standardize the way complex evidence is explained, allowing the visibility derived from milestones to be built upon rather than having to start from scratch with every new announcement.

Visibility themes by company

As described above, the thematic analysis shows that the visibility of pharmaceutical companies is not evenly distributed across the various topics; it is concentrated around a few clusters of news that consistently attract attention.

At the top of the hierarchy are regulation and approvals, where companies such as Pfizer, Merck & Co, and GlaxoSmithKline generate strong visibility. They do this through clear, authoritative milestones such as FDA approvals, indication expansions, priority reviews, and other regulatory decisions. These events create compelling news moments and provide external validation, making them highly readable for media, investors, and other stakeholders.

Related to this is the second cluster, Clinical trials and pipeline, which extends and sustains attention between approvals. Pfizer, Merck & Co, GlaxoSmithKline, and Bristol Myers Squibb stand out in this cluster due to frequent reporting on Phase 2 and 3 updates, late-stage drug progress, and critical results. This type of reporting indicates momentum and continuity and shows that a company is not only obtaining approvals but is also working on the next generation of medicines that will determine future growth and impact on patients.

A more selective but influential category is Efficacy and Safety. Within this category, Pfizer and Merck & Co. are most strongly associated with performance-based narratives: high efficacy, comparable safety, and positioning based on benchmarks. This message acts as the competitive advantage layer: where approvals prove that a product is authorized, claims regarding efficacy and safety imply why it is clinically relevant and how it compares to other products in practice. Because it touches upon differentiation, it can be particularly powerful, provided it is based on credible endpoints and a clear context.

In addition to the visibility defined by milestones, a distinct prestige narrative is emerging within the advanced therapies sector, focused on platform innovations such as mRNA, gene therapy, bispecific antibodies, enzyme replacement therapy, and other new treatment methods. Pfizer and Merck & Co are most associated with this cluster, reflecting a strong platform-driven identity that can reinforce a company's strategic ambitions. These narratives position organizations not only as product developers but also as builders of technological capabilities capable of generating multiple future therapies.

The fastest-growing visibility cluster is AI and innovation, including AI-driven drug development, digital transformation of R&D, and personalized medicine. Merck & Co, Roche, Eli Lilly, AstraZeneca, and GlaxoSmithKline are most associated with this theme, indicating that technology-driven R&D is increasingly becoming an indicator of leading pharmaceutical leadership. Importantly, AI content often has a multiplier effect: it reinforces broader claims regarding speed, precision, and likelihood of success, especially when coupled with concrete applications and controlled implementation.

Key Narrative Focus Areas by Company

Company	Regulatory & approvals	Clinical trials & pipeline	Efficacy & safety	Advanced therapeutics	AI & innovation	Broader narrative
Pfizer	●	●	●	●		
Merck & Co	●	●	●	●	●	
GlaxoSmithKline	●	●			●	
Bristol Myers Squibb		●				
Roche					●	
Eli Lilly					●	
AstraZeneca					●	
Novartis						●
AbbVie						●

Finally, there are companies that fall outside the dominant categories with a broader or more diversified scientific narrative. Novartis and AbbVie exhibit a more diffuse thematic focus, ranging from partnerships and advancements in therapeutic areas to market access, financing, and operational themes. This breadth can be an advantage when it supports a clear business strategy, but it can also reduce visibility if there is no consistent set of repeated evidence points.

Overall, the pattern is instructive. Regulatory and clinical milestones remain the primary drivers of pharmaceutical company visibility, as they offer the clearest and most verifiable signals of progress. AI and innovation are the fastest-growing narrative and are increasingly shaping the perception of future leadership.

CHAPTER 5

GEO

GEO

5.1 Introduction: from SEO to GEO

AI tools have changed the landscape of search engines. The traditional SEO approach is losing ground and search results are no longer determined solely by blue links and keyword rankings. Users are increasingly asking questions directly in AI environments such as ChatGPT, Gemini, Claude, Perplexity, Microsoft Copilot, and Google's AI-driven search experiences. In fact, ChatGPT and Claude are launching Healthcare specific tools for patients and companies [21] [22].

Recent studies [23] [24] have shown that healthcare is one of the leading topic prompts for AI search. It is also one of the industries most impacted by the shift to AI tools.

In these environments, the user is often first presented with a composite answer with only a limited number of cited sources. This drastically changes the logic of discoverability; after all, the user does not have to assess the value of the content behind the links themselves, but the AI engine determines which content is most important and incorporates it into its response.

Traditional search engine optimization (SEO) remains important, but it is no longer sufficient on its own. Brands must now also optimize for inclusion, citation, and representation within AI-generated answers. That is the domain of Generative Engine Optimization, or GEO. [12]

The difference between SEO and GEO can be understood as a shift from ranking to referral. SEO is primarily aimed at increasing the ranking of web pages in traditional search results so that users click through to a website. GEO, on the other hand, aims to increase the likelihood that a brand, source, expert, or piece of content is cited, mentioned, or used by an AI system when it generates an answer.

What is GEO?

GEO stands for Generative Engine Optimization.
The digital marketing platform Semrush describes GEO as optimizing online presence so that content appears in AI-generated responses.

The GEO platform Brandi describes it as the evolution from ranking in search results to inclusion in generative summaries that build brand awareness and trust. [13]

SEO vs GEO

SEO is not becoming obsolete. In fact, Brandi's own framework explicitly positions SEO, Answer Engine Optimization (AEO), and GEO as interconnected layers. SEO helps content get found and retrieved. AEO helps structure content so it can be extracted and clearly understood. GEO goes a step further by strengthening authority, trust, and citation willingness, making it more likely that an AI system will reuse that content.

In other words: SEO opens the door, AEO improves understanding, and GEO increases the likelihood that the content will be repeatedly included in the answer itself. [14]

Another key difference lies in what is being optimized. SEO traditionally focuses on pages, keywords, backlinks, and click behavior. GEO places greater emphasis on entities, authority signals, expert attribution, structured explanations, original evidence, and the overall clarity with which a topic is presented. In that light, it makes sense that generative systems prefer content that is authoritative, suitable for citations, relevant to the conversation, clearly structured, and supported by trust signals such as cited authors, sources, and publication context.[15] This shift creates a new set of strategic advantages for companies that invest in GEO early.

Five advantages of GEO

1. GEO increases the likelihood that a brand will be present in the earliest stage of the decision-making process. In AI-powered search environments, users often form an impression before they even visit a website. If a company is mentioned positively in an AI-generated response, it enters the buying process earlier and with greater implicit credibility. GEO specialists confirm this idea: AI-generated responses are increasingly becoming the first point of contact, and brands must not only understand whether they are visible, but also how they are presented.[15]

2. GEO improves brand control and narrative consistency. A high ranking in search results does not guarantee that an AI system will accurately describe a brand. GEO helps organizations shape the evidence, structure, and authority signals that models use when compiling answers. This is especially important in healthcare and the pharmaceutical industry, where accuracy, trust, and nuance are crucial. Organizations need to know where they are represented correctly, incorrectly, or not at all in AI responses, and then optimize accordingly.[15]

3. GEO provides a more direct view of competitive share in AI environments. The most advanced platforms therefore focus on monitoring mentions, benchmarking competitors, identifying purchase motivations, and measuring trends such as mention rate, share of online conversation, and the strength of mentions. This is a significant advantage for organizations, as traditional analytics tools are not designed to show how brands appear in user-generated content. Microsoft's launch of AI performance reporting in Bing Webmaster Tools [25] points in the same direction: mention visibility is becoming a measurable performance category in its own right.[16]

4. GEO can create cumulative visibility effects. AI's visibility increases through trust and reuse, rather than through ranking alone. Once a source is repeatedly recognized as authoritative, clearly structured, and reliable, it is more likely to be cited again in related prompts and contexts. This logic is also supported by the original academic GEO literature, which argues that generative engines require a new optimization framework and that tactics such as adding citations, quotes, and statistics can significantly improve visibility in generated responses. [14]

5. GEO is particularly relevant for global and multilingual brands. Worldcom group GEO experts note that AI visibility varies by geographic location, language, idiom, and regional context. For pharmaceutical companies operating in multiple markets, this is important because brand authority is not interpreted the same way everywhere. A GEO strategy must therefore be both globally consistent and locally tailored. [17]

In practice, the rise of GEO means that organizations must look beyond a narrow focus on traffic. The goal is no longer simply to win the click, but to become part of the answer. This requires a strong foundation in SEO, as well as content written by experts, well-structured, backed by evidence, citable, and tailored to the questions users ask in AI environments. For pharmaceutical brands, where trust, scientific credibility, and clarity are decisive factors, GEO is not a marginal addition to SEO. It is becoming an essential layer of modern digital visibility. [14]

"SEO opens the door, AEO improves understanding, and GEO increases the likelihood that the content will be repeatedly included in the answer itself"

5.2 GEO analysis for the pharmaceutical companies

Building on the shift outlined above, the next step is to examine what things look like in practice for our 10 pharmaceutical companies.

The analysis we conducted using the Brandi platform offers this practical perspective by showing how these brands perform on the core dimensions of generative visibility: awareness, share of voice, mention position, sentiment, and top cited domains, top cited URL's, and earned domain citations. In this chapter, we analyze GEO-readiness and reveal which brands are already shaping AI-driven discovery and which still need to gain ground.

Awareness

The GEO Awareness data provides a very comprehensive overview of which pharmaceutical brands appear most frequently in AI-generated conversations. It serves as an initial indicator of visibility: before a brand can influence the response, it must first appear in it. In this dataset, Pfizer clearly ranks first, followed by Novartis, AstraZeneca, Roche, and Merck & Co. The remaining companies form a second and third tier, with a lower but still measurable level of AI awareness.

The pattern shows that the visibility of generative AI results is not evenly distributed. A small number of companies appear significantly more frequently in AI results than others. Pfizer's top ranking is particularly striking, as the company not only leads the competition but has a significant lead. This indicates that Pfizer appears as a brand much more frequently than many of its competitors in the monitored, relevant prompts.

This leadership is likely not solely attributable to the company's size. Rather, it points to a combination of brand awareness, a strong online presence, broad thematic relevance, and an ecosystem of sources that AI systems can easily access and synthesize. In generative environments, brand recognition is determined not only by the amount of available content, but also by how well a brand is semantically connected to key healthcare themes and how clearly those associations are represented online.

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"Absence comes at a cost"

The companies occupying the middle tier also deserve attention. Novartis, AstraZeneca, Roche, and Merck & Co appear to have established a strong presence in the field of AI, indicating that they are consistently associated with a range of search terms relevant to the healthcare and pharmaceutical industries. This may indicate a strong presence in scientific, business, regulatory, or media sources. In contrast, at the bottom of the rankings are brands whose visibility in the field of AI is narrower, less frequent, or less firmly anchored in the monitored topics.

It is important to note that brand awareness should not be viewed as a comprehensive measure of GEO's performance. It answers only one question: "Is a brand is part of the AI conversation?" It does not yet reveal how prominently the brand appears, how positively it is described, or which sources enable that visibility. A company can be widely recognized by generative systems yet still lack control over the narrative or a competitive advantage within individual responses.

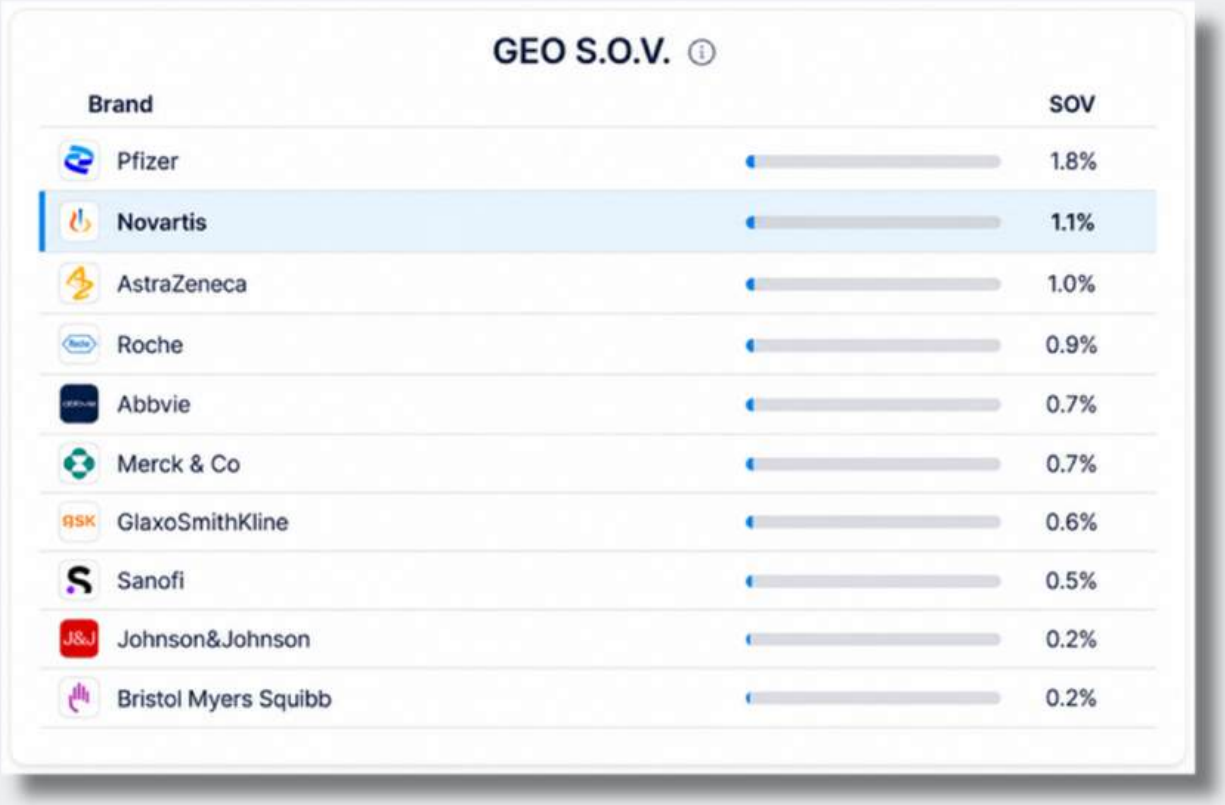
Brand awareness and amplification

Nevertheless, brand awareness remains strategically important. In AI-driven discovery, absence comes at a cost. When users ask broad questions about pharmaceutical innovation, leading treatment policies, market developments, patient access, or healthcare trends, brands that do not appear risk being excluded at an early stage of consideration. This is a significant challenge, as AI-generated answers increasingly combine brand awareness and evaluation in a single moment. The companies that appear first are better positioned to influence perception from the outset.

For brands that currently rank lower, the implication is clear. The challenge is not only to publish more content, but also to amplify the signals that make the brand relevant and useful in generative environments. That means clearer entity associations, more authoritative thematic coverage, stronger, expert-led, and citable content, and a broader supporting ecosystem of external references. Brand awareness is therefore the starting point of GEO maturity. It shows who is currently participating in the conversation and who still needs to establish a more credible position within it.

Share of voice

While GEO awareness indicates whether a brand is present in AI-generated output, GEO share of voice shows how much space the brand occupies in the conversation relative to competitors. This makes it a more competitive metric, as it reflects not only visibility but also proportional influence within the monitored response environment.



Pfizer tops the list, followed by Novartis, AstraZeneca, and Roche. AbbVie and Merck & Co. remain competitive in the upper mid-range, while the other brands account for a smaller share of the total conversation. The spread of the scores suggests that the AI discourse surrounding pharmaceutical products is fragmented but not evenly distributed. A small number of companies capture a larger share of the response space, while other companies appear sporadically or in a more limited context.

This matters because a brand's share of online communication is closely linked to its influence within a category. Brands that appear more frequently in responses are likely to have a greater impact on how users perceive the pharmaceutical sector. In generative systems, this can have significant implications for reputation. An AI-generated response often presents only a concise list of companies, examples, or explanations. As a result, the brands that appear most consistently may come to define the category in the eyes of users, regardless of how nuanced the underlying market reality may be.

Fierce competition

Pfizer's leadership in share of voice confirms that the brand is disproportionately prominent across the monitored prompt set. Novartis, AstraZeneca, and Roche also appear to have established strong competitive positions, while the lower-ranked companies risk being overshadowed in category-level conversations.

The differences within the middle tier are quite interesting, since they suggest that competition within this segment remains fierce. The differences are significant, but not insurmountable. In practice, this means that strong GEO interventions can shift the competitive landscape. Brands that improve the authority, relevance, and discoverability of their content and the associated ecosystem can capture a larger market share over time, particularly if they target search terms where the competitive order has not yet been established.

For pharmaceutical companies, share of voice has both offensive and defensive significance. From an offensive perspective, it helps determine where a brand can build stronger leadership in the field of AI and become a consistent point of reference in the industry. From a defensive perspective, it reveals where competitors are already dominating AI-mediated conversations and may be influencing perceptions in a way that limits the space for alternative narratives.

"GEO interventions can shift the competitive landscape"

The broader implication is that visibility through generative engines is becoming a competitive battleground. It is no longer enough for a brand to make occasional appearances on a topic or standout for a single webpage What is becoming increasingly important is whether it has sufficient influence over the AI conversation to shape perception on a large scale. In this dataset, Pfizer is clearly the strongest in this regard, but the broader rankings also show that the battle for AI influence remains wide open across much of the pharmaceutical sector.

AI citation position

The Citation or Mention Position adds an important qualitative dimension to the analysis, as it measures not only whether a brand appears, but also how early it appears in the AI-generated responses. This is highly significant. In generative interfaces, earlier mentions typically have a greater impact. Users tend to focus more on the first few companies or examples in a response than on those mentioned later.

The data reveals a particularly interesting result: AbbVie performs best on mention position, ahead of Pfizer and GlaxoSmithKline, while several companies that perform strongly on awareness or share of voice rank lower on this measure. This divergence is important because it shows that high visibility does not automatically translate into top placement within answers.

AI Citation Position Impact

AbbVie's performance suggests an effective form of AI presence. The company may not dominate the overall conversation to the same extent as Pfizer, but when it is cited, it tends to be listed earlier. This gives it disproportionately high strategic value. Early mention can strengthen brand recognition, perceived relevance, and reputation. In practice, a company mentioned second or third can exert more influence than a company mentioned later, even if both companies are present.

Pfizer's strong position in this area reinforces its overall leadership. The company not only appears frequently but also relatively early in the responses, which strengthens its authority within the response environment. GlaxoSmithKline and Bristol Myers Squibb also score well on this metric, suggesting that their content offerings or thematic relevance closely align with certain types of prompts.

At the lower end of the spectrum, brands such as Novartis and Sanofi are still included, but later in the response order. This can reduce their practical influence, particularly in scenarios where users scan quickly or are not fully paying attention. In generative search, order matters because the interface limits the choices. The earlier a brand is introduced, the greater the chance that it will be considered central to the response.

This metric therefore highlights an important truth about GEO: prominence and presence are not the same. A company can be visible without standing out. Improving ranking in mentions requires more than broad digital activity. It depends on producing authentic content and authority signals that directly align with the prompt's intent. In many cases, this means clear and structured explanatory content, strong company positioning, robust third-party support, and a precise thematic match between what the brand is known for and what the AI system attempts to address.

These factors are highly relevant for communications teams in the pharmaceutical sector. In a sector where reputation is built on expertise, trust, and commitment to a specific subject, early positioning in AI-generated responses can reinforce perceived leadership. The data suggests that some companies are already more successful at converting relevance into prominence than others. This distinction will become increasingly important as users make greater use of generative interfaces for information and comparisons related to healthcare.

Brand sentiment

Brand sentiment introduces the reputation dimension of GEO performance. While Brand Awareness, Share of Voice, and Citation Position indicate how often and how prominently a brand appears, sentiment helps explain how the brand is presented once it appears in the context of the question. It also impacts how AI engines determine a brand's placement in a prompt response. Over time, brand with low Brand Sentiment may suffer by having citations decline.

The results show that Bristol Myers Squibb achieves the highest sentiment score, followed by AbbVie, AstraZeneca, Pfizer, and Merck & Co. This is noteworthy, as it does not correspond with the visibility ranking. Bristol Myers Squibb does not perform the strongest in terms of Brand Awareness or Share of Voice, but scores highest in terms of positive presentation. This suggests that when the company is mentioned, it is generally described in more favorable terms than some of its more visible competitors.

That distinction is strategically important. It means that a broad presence does not automatically lead to the strongest reputation. A brand can appear frequently and yet be presented in a neutral, cautious, or less distinctive manner. Conversely, a company with more limited visibility can benefit from higher-quality mentions and thereby build a more favorable AI profile.

Positive Sentiment and Prominent Position

AbbVie stands out again by combining strong positive sentiment with a prominent position in search results. This indicates not only that the company tends to appear early, but also that it occurs in a positive context. That combination can be very powerful in dynamic environments, where small differences in framing can strongly influence perception.

Pfizer's relatively strong sentiment score confirms the company's overall resilience. As the most visible company in the dataset, one would expect it to face more divergent framing, yet it performs well. The lower scores for Sanofi and Johnson & Johnson, on the other hand, suggest a relatively more neutral or mixed perception of AI. This does not necessarily indicate negative sentiment in the conventional sense. In an AI context, lower scores can also point to more cautious language, a less distinctive position within the narrative, or a frequent association with complex and controversial topics.

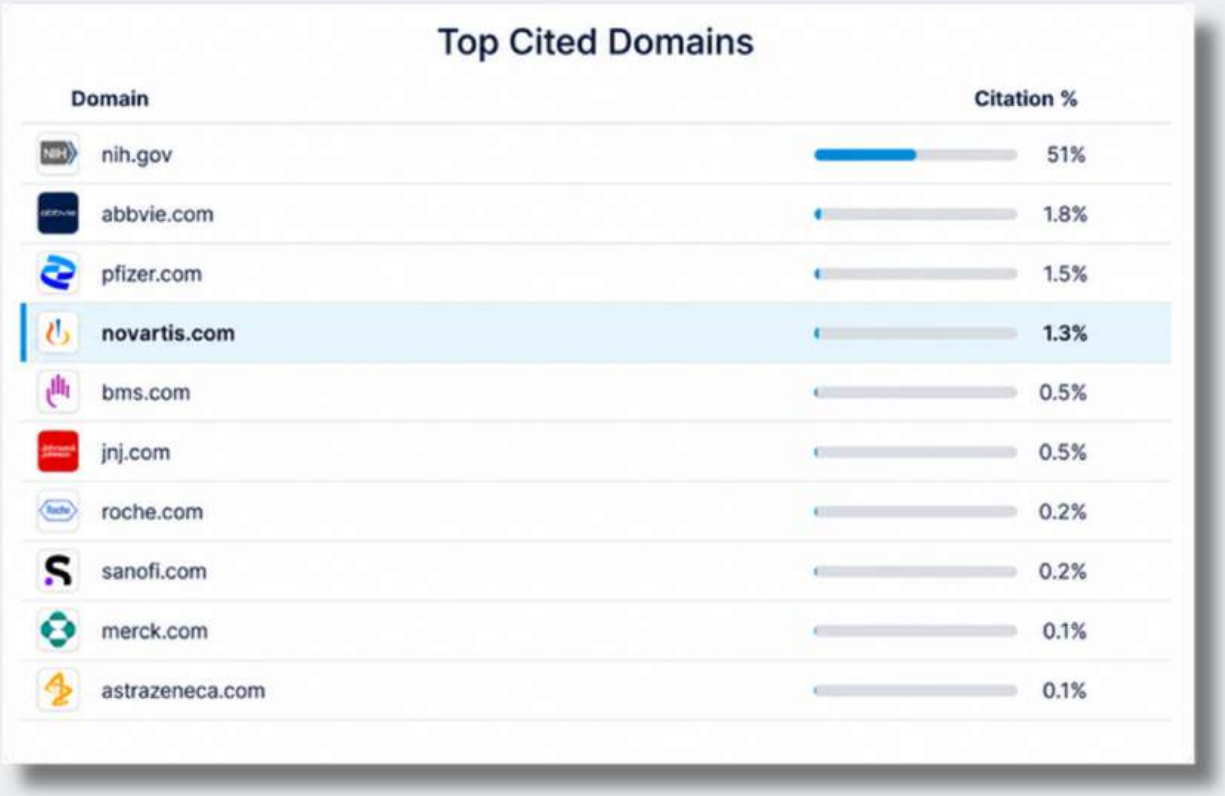
For pharmaceutical companies, this measure is particularly important because AI systems not only collect information but also synthesize it. That synthesis can soften, sharpen, or subtly change the perception of a brand. In a sector where trust is crucial and credibility and accountability are central, the sentiment in the AI output can influence stakeholder impressions faster than traditional search results or even media coverage.

The strategic implication is that GEO is not just about being found. It is also about being presented in a way that supports trust, credibility, and leadership. Brands can improve this by strengthening the quality of the content ecosystem around them: clearer references to experts, stronger evidence, a better explanatory structure, and more consistent support from authoritative external sources. High sentiment is rarely achieved through corporate communication alone. It typically reflects a broader alignment between proprietary content, earned authority, and the themes with which the brand is most associated.

In this dataset, the sentiment results show that different companies lead on different dimensions of GEO. Pfizer leads in scale, AbbVie in efficiency and relevance, and Bristol Myers Squibb in tone. This emphasizes the need for a multidimensional view of performance. Generative visibility is not just about volume. It is also about the quality of presentation.

Top cited domains

The Top Cited Domains category shows which websites AI systems rely on most frequently when generating responses to prompts related to the pharmaceutical sector. This factor is one of the most strategically revealing parts of the analysis, as it highlights the underlying authority structure of the response environment.



The dominant domain is nih.gov, the homepage of the National Institutes of Health in the United States, with a large lead over all others. This is followed by the major corporate domains abbvie.com, pfizer.com, novartis.com, bms.com, and jnj.com, while the remaining pharmaceutical company domains appear much less frequently.

The overwhelming lead of the National Institutes of Health is significant. It shows that generative AI systems in pharmaceutical output rely heavily on institutional, scientific, and societal credibility. This suggests that AI responses regarding healthcare are primarily formed by sources considered neutral, authoritative, and evidence-based. For brands, this creates both a challenge and an opportunity. The challenge is that corporate domains are not the default source of trust. The opportunity lies in the fact that companies with content strong enough to be cited alongside such sources can build their own authority.

AbbVie's leading position among corporate domains is particularly noteworthy, as it aligns with the company's strong performance regarding mentions and sentiment. This suggests that AbbVie's proprietary content can be particularly effective in supporting AI integration. Pfizer and Novartis also perform relatively well here, indicating that proprietary content can still generate significant visibility in citations when it aligns well with the types of questions generative systems attempt to answer.

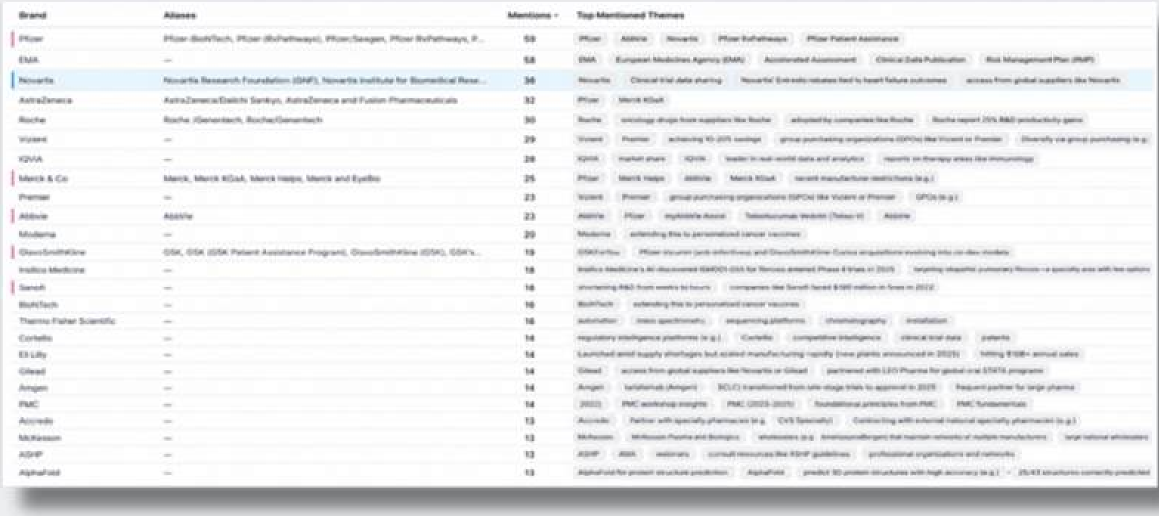
Scientific and Institutional Sources

The broader lesson is that pharmaceutical GEO cannot be considered a purely proprietary media exercise. A strong website is important, but in healthcare, it exists within a hierarchy of authority led by scientific, government, and institutional sources. To be successful, pharmaceutical companies must therefore look beyond mere publication volume. They need content that is not only well-written and technically optimized but also sufficiently useful, substantiated, and reliable to stand alongside the sources that AI systems instinctively prefer.

This also underscores the importance of ecosystem thinking. A company's own domain may only be partially cited directly. In many cases, its influence depends on how well it is represented by external assessors, scientific references, regulatory frameworks, and related knowledge sources. The power of GEO is therefore based not only on what a company says about itself, but also on how well that message is integrated into the broader landscape of authority.

Brand mentions

We have also had Brandi analyze the brands mentioned in AI responses and the top mentioned themes, or: the brands that appear in the answers of AI engines that are related to the prompts that they want to be cited in.



Brand	Aliases	Mentions	Top Mentioned Themes
Pfizer	Pfizer-BioNTech, Pfizer (RxPathways), Pfizer/Seagen, Pfizer RxPathways, P...	59	[illegible]
EMA	—	58	[illegible]
Novartis	Novartis Research Foundation (GNF), Novartis Institute for Biomedical Rese...	36	[illegible]
AstraZeneca	AstraZeneca/Daiichi Sankyo, AstraZeneca and Fusion Pharmaceuticals	32	[illegible]
Roche	Roche /Genentech, Roche/Genentech	30	[illegible]
Vizient	—	29	[illegible]
IQVIA	—	28	[illegible]
Merck & Co	Merck, Merck KGaA, Merck Helps, Merck and EyeBio	25	[illegible]
Premier	—	23	[illegible]
AbbVie	AbbVie	23	[illegible]
Moderna	—	20	[illegible]
GlaxoSmithKline	GSK, GSK (GSK Patient Assistance Program), GlaxoSmithKline (GSK), GSK's...	19	[illegible]
Insilico Medicine	—	18	[illegible]
Sanofi	—	16	[illegible]
BioNTech	—	16	[illegible]
Thermo Fisher Scientific	—	16	[illegible]
Cortellis	—	14	[illegible]
Eli Lilly	—	14	[illegible]
Gilead	—	14	[illegible]
Amgen	—	14	[illegible]
PMC	—	14	[illegible]
Accredo	—	13	[illegible]
McKesson	—	13	[illegible]
ASHP	—	13	[illegible]
AlphaFold	—	13	[illegible]

The analysis of the mentioned brands broadens the scope of the research by demonstrating that AI-generated pharmaceutical discussions are not limited to major drug manufacturers. In addition to Pfizer, Novartis, AstraZeneca, Roche, and AbbVie, EMA (European Medicines Agency), Vizient, IQVIA, Premier, ASHP, McKesson, Accredo, Cortellis, AlphaFold, and Insilico Medicine are among the most frequently mentioned entities.

This metric is a very important finding because it demonstrates that the conversation about AI in the pharmaceutical sector is shaped by a much broader ecosystem than just traditional peers. Regulators, scientific intelligence providers, healthcare intermediaries, distributors, purchasing organizations, and emerging biotech or AI players all contribute to shaping the answers.

Regulatory Content in AI

The strong presence of the EMA suggests that the regulatory context is central to how AI systems frame pharmaceutical topics. This result aligns with the nature of the sector, where approvals, risk management, clinical evidence, and compliance are essential for credibility.

The presence of organizations such as the healthcare improvement companies Vizient and Premier, and the American Society of Health-System Pharmacists (ASHP) indicates that the functioning of the healthcare system, and decisions regarding drug lists, supply, and access are also highly relevant. In other words, the AI-generated pharmaceutical discourse is not just about products and pipelines. It is also about the systems by which medicines are evaluated, distributed, reimbursed, and managed.

Entities such as IQVIA, Cortellis, AlphaFold, and Insilico Medicine add an extra dimension. They demonstrate that data, intelligence, and innovation infrastructure are part of the same knowledge environment. Generative systems appear to connect pharmaceutical brands with broader themes such as analytics, discoveries, AI-driven science, and evidence generation. This makes the GEO landscape more complex, but also strategically richer.

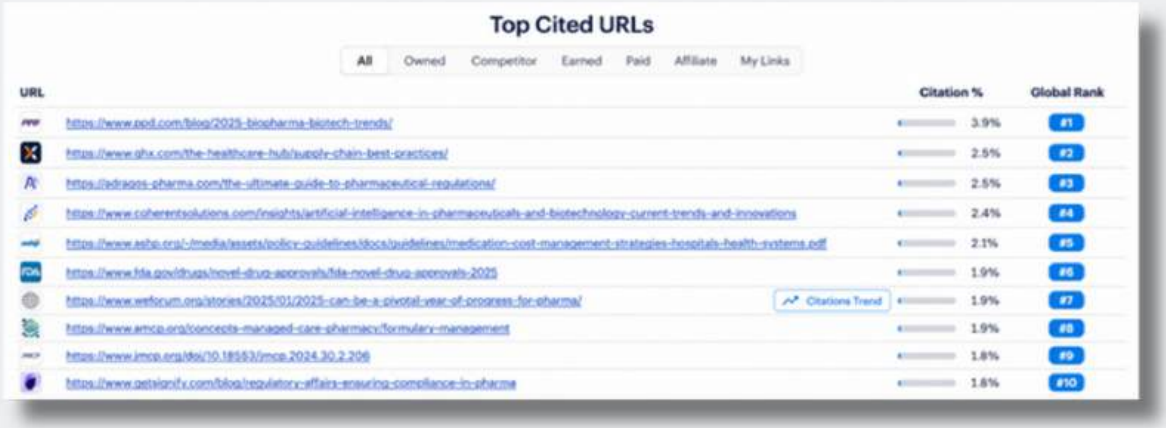
For pharmaceutical companies, the key implication is that AI competition extends far beyond the traditional group of industry peers. Brands compete not only with other manufacturers for visibility, but also with institutions and players in the ecosystem that hold strong authority in specific contexts. Success therefore depends on how well a company is connected to the broader network of themes, programs, entities, and knowledge sources that generative systems already recognize.

"Brands become more visible and meaningful in AI-generated responses when they are consistently associated with the right concepts, authorities, and contexts."

This points to an entity-based understanding of GEO. Brands become more visible and meaningful in AI-generated responses when they are consistently associated with the right concepts, authorities, and contexts. The lesson is not only to increase the number of brand mentions, but also to strengthen the semantic and thematic ecosystem within which those mentions occur.

Top cited URLs

The Top Cited URLs' analysis offers a particularly practical overview of GEO, as it identifies the specific pages used most frequently by AI systems. The most used URLs focus on trends in the biopharmaceutical sector, pharmaceutical regulation, AI in biotechnology, supply chain best practices, drug cost management, drug list management, and new drug approvals.



This tells us two important things. First, generative systems frequently use thematic or issue-led, explanatory content rather than general company pages. Second, the questions being answered are clearly broad and applied in nature. They concern regulation, market developments, AI adoption, the functioning of healthcare systems, and strategic changes in the sector.

Answering concrete questions

For pharmaceutical brands, this is an instructive result. It suggests that visibility in AI environments depends heavily on the availability of content that directly answers concrete questions. A broad reputation is important, but specificity is equally so. Pages that explain regulations, address market trends, clarify accessibility issues, or interpret technological developments appear particularly suitable for reuse by AI.

The mix of sources is also telling. The most cited URLs come from diverse organizations, including service providers, professional associations, regulators, policy bodies, and specialized publishers. This suggests that AI systems prioritize usability and thematic relevance wherever they find them. The implication of this is that smaller or more specialized parties can successfully compete for citations if they offer the clearest and most reusable content on a specific subject.

For the pharmaceutical sector, the lesson is clear. Brands seeking better geographic performance must invest in theme-based content that is structured, authoritative, and directly relevant to the high-intent questions stakeholders ask. The most effective resources are unlikely to be generic corporate pages. Rather, they involve clear explanations, expert analyses, regulatory guidelines pages, evidence summaries, and opinion pieces that address a concrete information need.

Earned domain citations

The earned domain citation data broadens the picture by showing which external domains most frequently support AI-generated answers. The main sources include NIH, ScienceDirect, Reuters, arXiv, YouTube, LinkedIn, Wikipedia, TechTarget, Harvard, Medium, and ResearchGate.

Earned domain citations	Count
https://nih.gov	1157
https://sciencedirect.com	137
https://reuters.com	70
https://arxiv.org	70
https://youtube.com	66
https://linkedin.com	63
https://wikipedia.org	53
https://techtarget.com	20
https://harvard.edu	9
https://medium.com	8
https://researchgate.net	8
https://prnewswire.com	6
https://forbes.com	4
https://businessinsider.com	3
https://marketsandmarkets.com	3
https://businesswire.com	3
https://webmd.com	2
https://time.com	2
https://quora.com	2
https://fortunebusinessinsights.com	2
https://google.com	2
https://investopedia.com	1

This mix is striking because it demonstrates that pharmaceutical GEO is shaped by a truly diverse ecosystem of authorities. Scientific publications, mainstream media, academic institutions, public health sources, professional platforms, social media, and knowledge bases all contribute. AI systems do not rely on a single type of source. They assemble answers from multiple layers of credibility and accessibility.

The dominance of NIH again reinforces the importance of institutional trust in AI output regarding healthcare. ScienceDirect and ResearchGate point to the importance of research visibility. Reuters reflects the role of current and reputable journalism. LinkedIn and YouTube suggest that professional thought leadership and multimedia content aimed at experts can also contribute to the findability of AI answers. The presence of Wikipedia underscores the enduring value of neutral, structured, entity-oriented information.

For pharmaceutical companies, this means that earned visibility is just as important as owned visibility. A brand's visibility in AI is influenced not only by what appears on the website but also by how the brand is presented online: in media reports, academic references, professional discussions, expert commentary, and knowledge summaries. This significantly broadens the strategic framework. Unlike SEO, GEO performance sits at the intersection of communication, content strategy, medical affairs, reputation management, scientific visibility, and digital publications.

The core message is that success in generative environments depends on distributed authority. Companies that are visible through a range of reliable external sources have a greater chance of being effectively cited, summarized, and framed by AI systems. This makes earned presence an essential component of future-oriented pharmaceutical communication.

GEO Performance

GEO performance in the pharmaceutical sector is multidimensional. Of our 10 pharmaceutical companies Pfizer is currently leading the way in terms of broad visibility and share of voice, indicating strong scale in AI-driven discoveries. AbbVie performs particularly well in terms of mentions and also shows strong sentiment, suggesting an efficient and influential presence. Bristol Myers Squibb stands out for the positive way it presents AI, even without having the highest visibility. At the same time, the citation data makes it clear that the broader response environment is dominated by institutional and scientific authority, with the NIH playing a central role in particular.

"Unlike SEO, GEO performance sits at the intersection of communication, content strategy, medical affairs, reputation management, scientific visibility, and digital publications."

The broader conclusion is that pharmaceutical GEO cannot be reduced to a single metric. It is formed at the intersection of familiarity, prominence, sentiment, authority, and the strength of the ecosystem. In generative environments, brands do not win simply by publishing more. They win by becoming relevant, reliable, and reusable on the web of sources that AI systems rely on to generate answers.

For pharmaceutical companies, this increases the strategic stakes. GEO is not just about digital findability. It is about whether the brand is present in the new layer of mediated knowledge that is increasingly shaping how stakeholders understand the sector. Companies that build strong authority signals, structured, explanatory content, and a widely earned ecosystem will be best positioned to create visibility in the next phase of search and discovery.

All the tables and screenshots in this chapter are downloadable in Excel via this link.

CHAPTER 6

COMMUNICATIONS INFLUENCE ON ONLINE PERFORMANCE

COMMUNICATIONS INFLUENCE ON ONLINE PERFORMANCE

This report shows that communication is no longer a supporting function. It has become a strategic discipline that directly influences trust, reputation, access, and visibility. Across the ten companies analyzed, the strongest performers are not necessarily those that publish the most content, but those that communicate with the greatest structure, clarity, and relevance. Website architecture, content design, audience alignment, and AI-era findability all prove to be decisive factors.

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Note: Digital Insights Lab provided support and guidance on the data collected for website support and content analysis sections

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