

CAS MARKET STUDY

OPPORTUNITIES FOR ACCELERATING INNOVATION AND MITIGATING RISK AT THE NEXUS OF INTELLECTUAL PROPERTY AND R&D

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American Chemical Society

Executive summary

The transformation of intellectual property (IP) management within commercial companies is driving the adoption of new practices and technologies to more closely align IP objectives with growth strategies, unlock greater portfolio value, and support strategic decision-making across enterprises. Nowhere is that more critical than at the nexus of IP and Research and Development (R&D), where organizations are applying IP insights to accelerate scientific breakthroughs and identify potential risks to commercialization earlier in the product life cycle.

CAS, a leader in scientific information solutions, surveyed more than 80 business leaders in commercial

organizations globally about their IP information management goals and challenges. Sixty-five percent of respondents held director-level titles and higher.

The survey also addressed changes within these companies relating to finding and analyzing information relevant to intellectual property, including patents and scientific literature. Included in the survey were quantitative and open-response qualitative questions. Based on answers to qualitative questions, key themes were extracted from verbatims and categorized for reporting purposes.

Key topics

The CAS survey explored the following critical topics:

- Top IP management goals over the next 12 months
- Role and use of IP information across organizations
- Challenges in using IP information
- State of IP information access and investments
- Resolving IP information gaps and solutions

Findings show that R&D has become a significant stakeholder for IP information within innovation-driven companies. As product and patent landscapes grow in size and complexity, business leaders are applying IP insights to inform better decision-making across the product life cycle and across the enterprise. This information allows them to gain an earlier understanding of their technology

landscape, evaluate Freedom to Operate for targeted inventions, avoid potential patent entanglements, and assess licensing opportunities before they make significant R&D investments.

While IP information has become a strategic resource for shaping R&D and business development, companies face significant constraints in their ability to access, share, and use it. Survey respondents report that demand for IP information searches will grow in response to the growing needs of R&D, business development, and other areas of their companies. However, they cite growing gaps in staffing and subject matter expertise as limiting factors to meeting the rising demand for this business-critical information.

Key findings

- The top priority for IP management over the next 12 months is to more effectively use IP information in R&D to accelerate innovation and commercialization.
- A close second priority is to more effectively use IP resources to strengthen competitive analysis, as companies seek to better understand their technology landscape, avoid potential litigation risks, and identify potential partners for commercialization.
- The role of IP information searches supporting these two priorities is growing in strategic importance, and search volumes and related budgets are expected to increase over the next 12 months.
- Companies are challenged by gaps in existing technology, internal staffing capacity, and subject matter expertise in their efforts to more effectively deploy IP information in R&D.
- To overcome these gaps, companies are reorganizing how they manage IP information to improve access and efficiency by:
 - Deploying new technologies and training resources that enable a growing number of corporate users to perform their own searches and analyses
 - Outsourcing information searches to qualified service providers with available capacity and subject matter expertise.



Key respondent recommendations

In light of IP information becoming increasingly valuable to their companies, survey participants made strategic recommendations to improve collaboration across functional groups needing IP insights. These include:

- Building new collaborative processes to improve access to IP information and analyses across the enterprise
- Adopting new, highly efficient information technology platforms to support access
- Outsourcing searches to reduce gaps in expertise and manpower as businesses change and new opportunities arise
- More closely aligning IP objectives and corporate strategies as part of business transformation, so IP-related information can be more fully utilized for revenue-generating R&D breakthroughs and new business opportunities

“With research expanding, it is critical for us to ensure that our IP is solid, since this is what will drive the value of our company.”

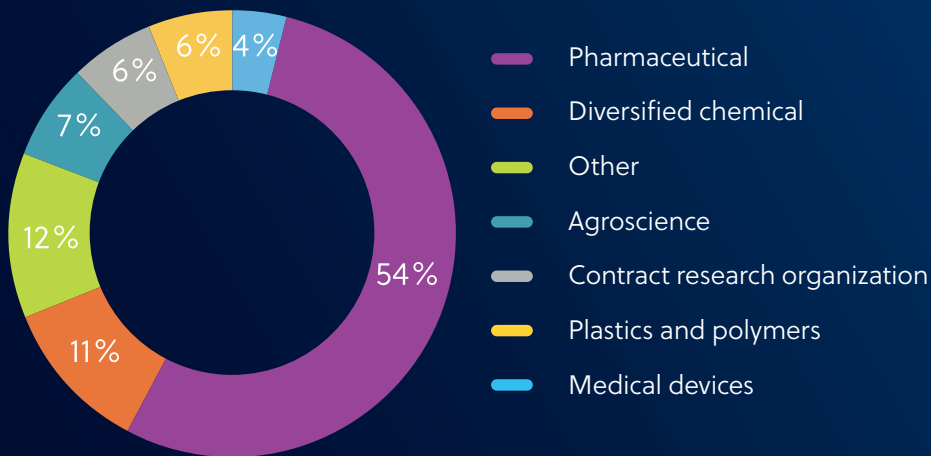
Senior R&D manager, small U.S. pharmaceutical company



Respondent firmographics

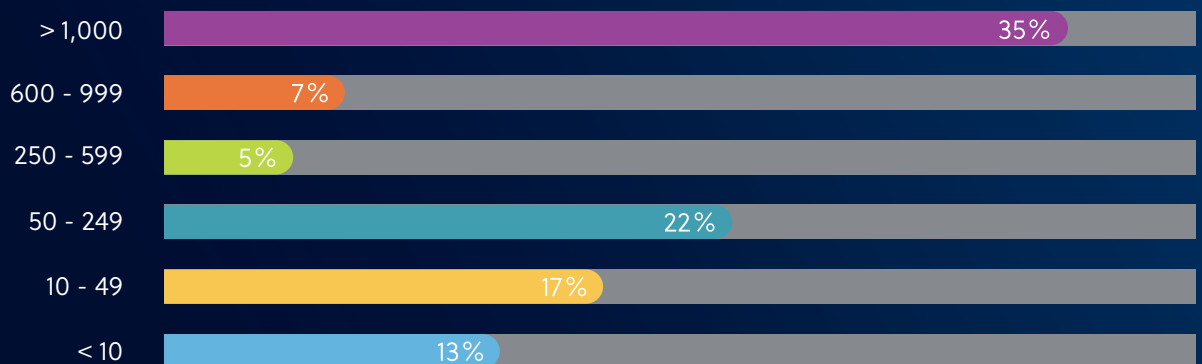
- A total of 82 individuals from commercial companies are represented in this report
- 35% were from companies with over 1000 employees
- 65% of respondents held director or C-level positions
- Nearly 90% held roles in R&D or IP management

CHART 1. Primary industries



Question details: "Indicate your company's primary industry." Respondent base includes all respondents (n=82). Percentages are based on # of respondents.

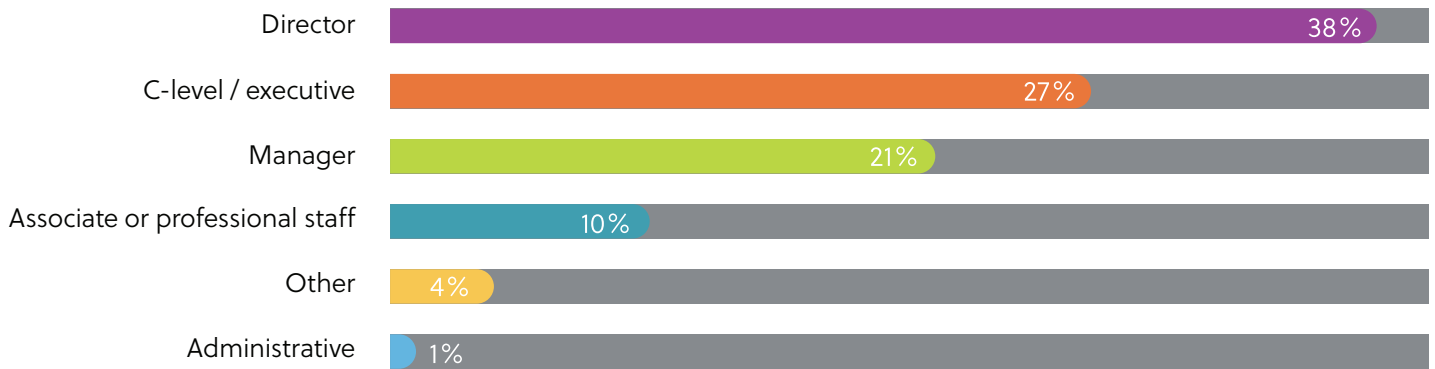
CHART 2. Number of employees at respondent companies



Question details: "To the best of your knowledge estimate the number of employees in your company (n=82)." Percentages are based on # of respondents.

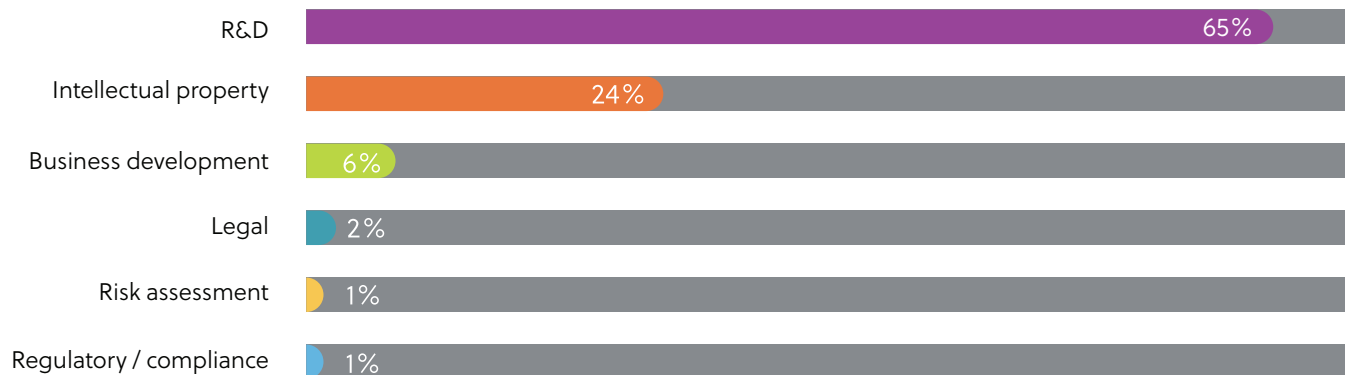


CHART 3. Respondent job levels

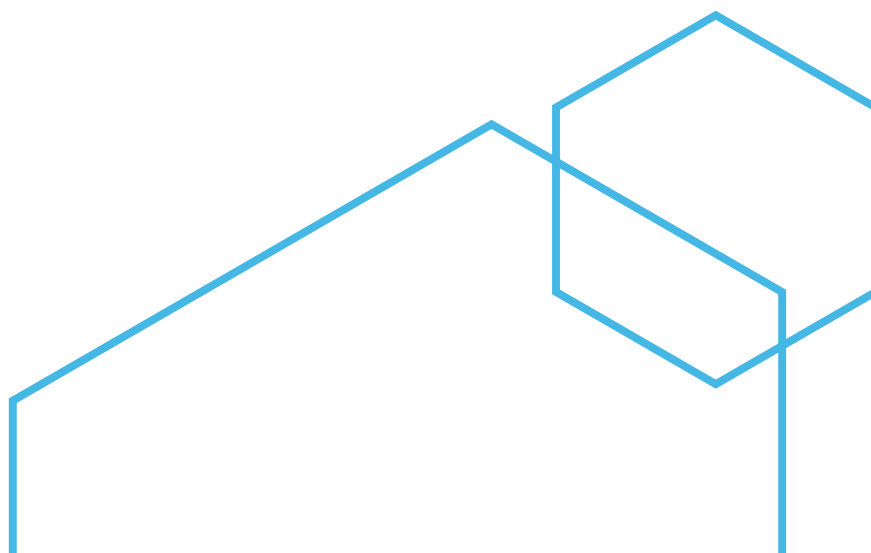


Question details: "Select the primary organizational area in which you work (n=82)." Percentages are based on # of respondents.

CHART 4. Respondent organizational area



Question details: "Select the primary organizational area in which you work (n=82)." Percentages are based on # of respondents.



Key findings

1. Utilizing IP resources by R&D has become the most important goal of IP managers

Companies are seeking ways to better align IP management strategies and resources with the growing needs of R&D and business development (chart 5):

- 60% of IP managers said their top priority over the next 12 months is to more effectively utilize IP insights for R&D and business discovery
- 45% said their next highest priority is to utilize IP information to strengthen competitive analysis

Business managers responsible for IP and R&D reported that they want to utilize IP insights earlier in the R&D process to more quickly identify potential inventions with the best prospects for commercialization and the lowest risks for future patent entanglements.

Managers also want to analyze IP information to understand their increasingly competitive business landscapes, discover whitespace opportunities, and evaluate potential licensing partners who can help them speed time to market and avoid litigation.

These priorities differ slightly between large and small companies. Smaller companies (under 1,000 employees) make utilizing IP information in R&D their top priority (63%), with their second priority being to increase the operational efficiency of IP management (44%). Larger companies (over 1,000 employees) place slightly more emphasis on utilizing IP to strengthen competitive analysis (60%) and then seek to more effectively utilize IP within R&D as their second highest goal (53%).

CHART 5. Top 5 IP manager goals over next 12 months



Question details: "What are your most important IP management goals over the next 12 months to your company? (n=47, representing individuals responsible for managing company IP strategies)." Percentages are based on # of respondents.

"Aligning on research and business goals would enable greater focus on more valuable IP."

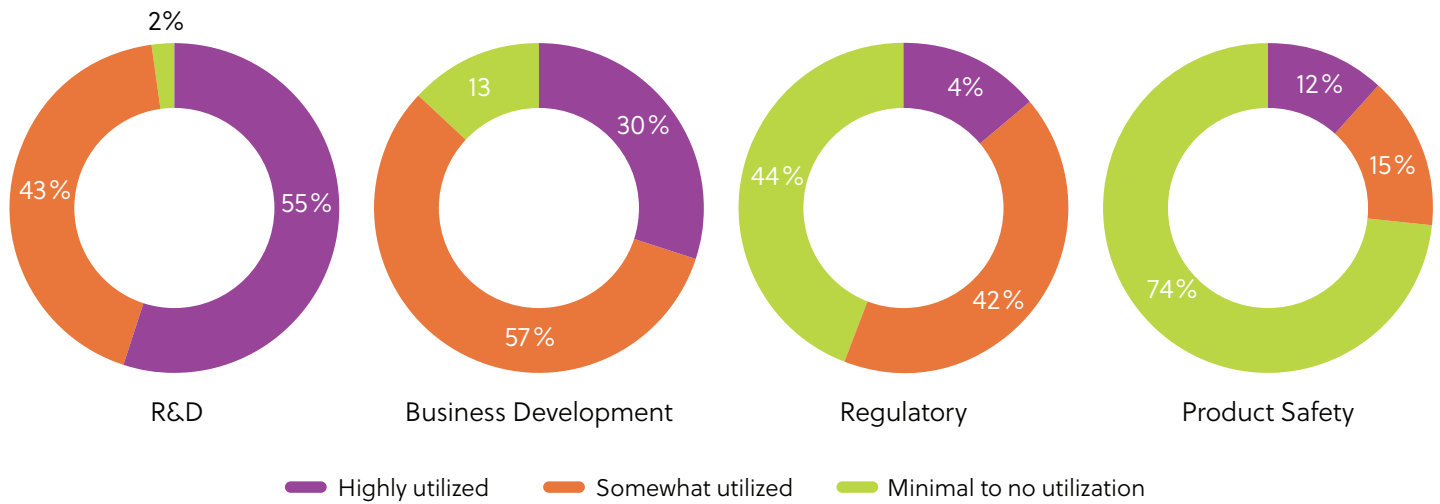
Corporate patent attorney, small North American pharmaceutical company



2. Managers express a growing need for greater collaboration between IP and R&D

While nearly all companies are utilizing IP insights to some extent in R&D, only 55% of managers say they are fully utilizing it (chart 6) and only 30% say they are fully utilizing IP information for business development.

CHART 6. IP resource utilization across the enterprise



Question details: "How well are your available IP portfolio and management resources utilized within the following departments (n=47, representing individuals responsible for managing company IP strategies)." Percentages are based on # of respondents.

Greater collaboration between those responsible for R&D and IP strategies can speed discovery of new innovations and reduce downstream litigation and competitive risks, according to respondents. Companies are implementing new business practices and new information technologies to improve access to IP information and increase the productivity of people using it.

Survey respondents point out that better aligning IP and R&D objectives will require companies to develop processes that drive greater awareness about the value of IP information and its many roles in innovation, discovery, and risk mitigation. Better alignment up and down the organization would benefit R&D and business development, participants said, and ideally the company's IP goals would be linked to the annual strategic planning

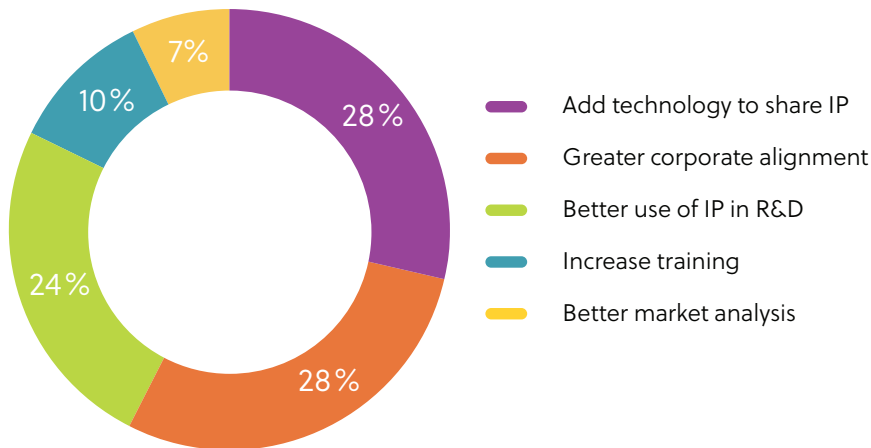
process and fully encompass corporate-wide strategies for new business development.

Several participants recommended creating formal teams from R&D and IP to collaborate regularly on research program goals and to identify where IP insights can be most effectively used. In this way, IP analysis could become more entrenched in day-to-day R&D processes. For instance, they pointed out that the use of traditional IP analysis for Freedom to Operate and patent and technology landscapes should be used early on as inventions are being considered to identify the existence of similar or competitive products and to find potentially invalidating prior art before significant research investments are made.

2.1 Technology and training can facilitate more effective usage of IP insights

Survey respondents offered a number of suggestions for better utilizing technology to support greater collaboration. These include deploying more robust software platforms and data sources to enable enterprise-wide access to IP information and to enhance training for using those resources.

CHART 7. How companies can make better use of IP insights



Question details: "How might your company make better use of its IP portfolio across the entire organization (verbatim responses)."

"If we had better tools to share IP information, the company could improve management of existing and future patents and applications."

Senior R&D director, small U.S. pharmaceutical company

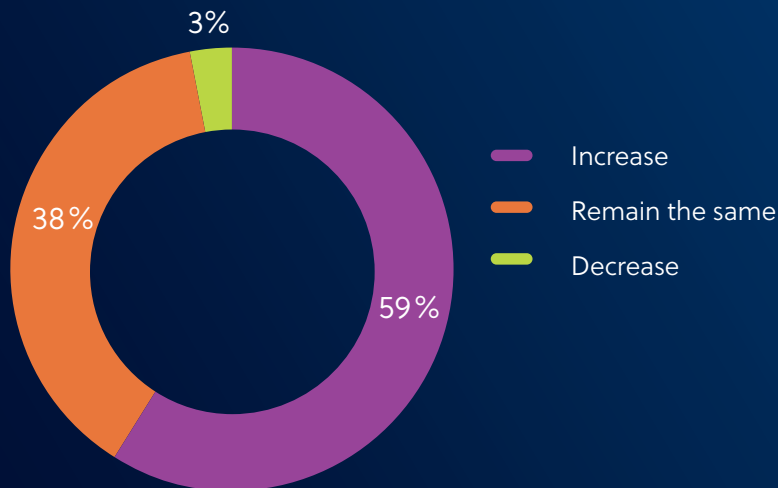
3. IP information grows in strategic importance to support R&D growth and business development

Analyzing IP information to help find new routes for innovation is making IP searches more important across organizations. Traditionally concentrated in a single department, certain types of IP searches have been decentralized to R&D, business development, and other users across the enterprise.

Nearly 60% of survey respondents believe IP search capabilities will grow in strategic importance over the next 12 months (chart 8).



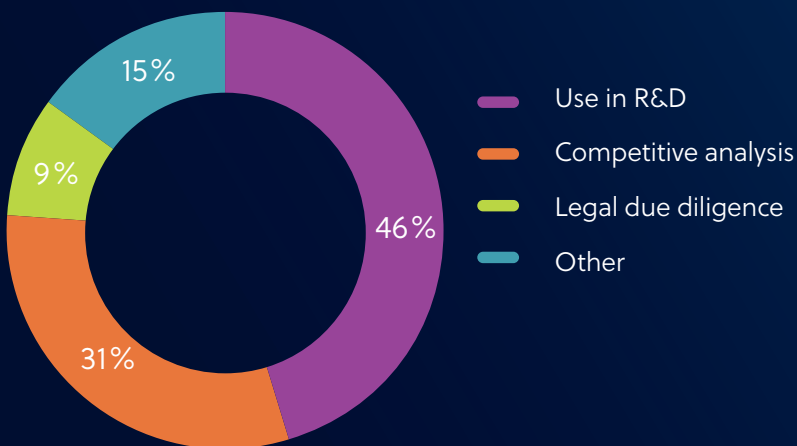
CHART 8. Change in the strategic importance of IP information searches over the next 12 months



Question details: "Do you expect the strategic importance of IP search to increase, decrease, or remain the same in the next 12 months (n=82)?" Percentages are based on # of respondents.

In addition to growing demand for IP information from R&D, respondents said they are seeing growth in the importance of IP searches due to increased needs for competitive analysis, legal due diligence, and for growth in IP-focused business activities. (Chart 9 and Chart 10)

CHART 9. Factors driving strategic importance of IP searches

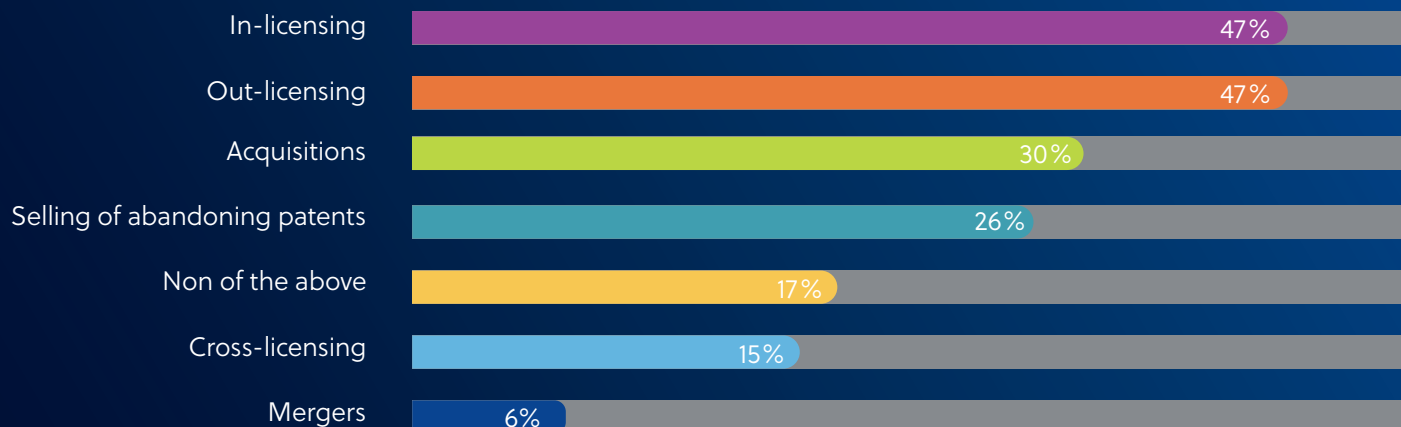


Question details: "What do you think is the most significant factor driving this change in the strategic importance of IP search (n=38 verbatim responses)?" Percentages are based on # of respondents.

"IP search is becoming more important for ensuring we have a viable commercial pathway for a product that may emerge from an R&D program. It does us no good to spend time and money on a program whose product cannot be commercialized."

Senior patent information scientist, large US pharmaceutical company

CHART 10. Respondents expecting growth in IP-focused business activities over the next 12 months



Question detail: "Do you expect any of the below activities to increase within your industry in the next 12 months (n=47)?" Percentages are based on # of respondents.

4. Insufficient expertise is the top obstacle to fulfilling growing IP information demands, and companies are investing in technologies and training to overcome it.

While IP information is growing in strategic value, three gaps stand in the way of effectively utilizing it (chart 11):

- Scientific and IP subject matter expertise
- Insufficient knowledge of new business technologies
- Limited staffing capacity

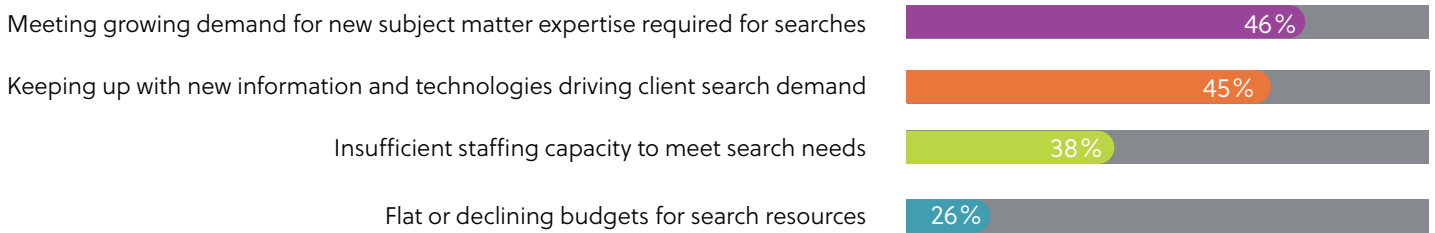
To overcome these gaps, companies over the next 12 months will increase investments in IP search resources, training, and outsourcing:

- 46% will invest in new technologies
- 46% will increase outsourcing
- 37% will increase staff training

To support these investments, 38% of respondents said IP search budgets are expected to grow, while only 9% said they expect them to decrease.



CHART 11. Top search obstacles over the next 12 months



Question detail: "What obstacles will most impact your ability to meet your IP search needs in the next 12 months? Select top 3 (n=82)." Percentages are based on # of respondents.

Companies intend to rely heavily on adding IP information platforms and data sources and exploring how emerging technologies, such as artificial intelligence, can be used to improve search and analysis. Managers noted that distributing these solutions throughout their organizations is especially important for areas less familiar with using and analyzing IP information, including R&D, managers said. For larger companies with internal search staff, streamlining organizational workflows, and improving how workloads are prioritized will improve efficiency.

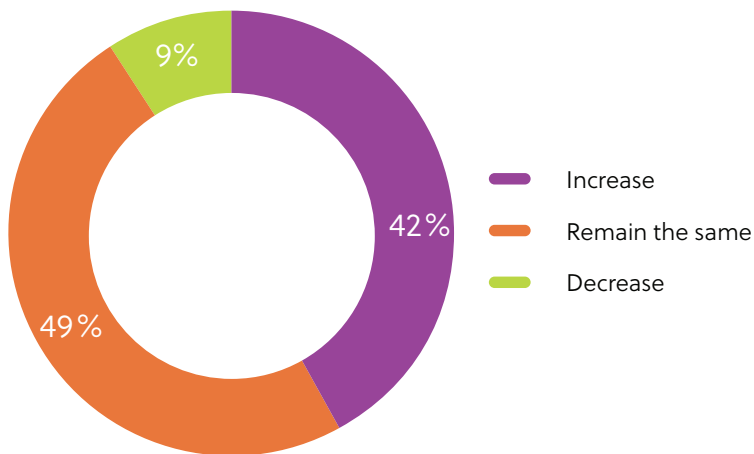
"We are updating our strategy as a team to support the growth aspirations of the company. This includes a look at how we resource our searching capabilities."

Information manager, large US agrosocieties company

5. Outsourcing will increase to offset gaps in expertise and capacity

Pressured by growing demands for IP information, more than 40% of respondents say they will increase outsourcing over the next 12 months, as more R&D programs come online and others advance through commercialization (chart 12). Only 9% of respondents expect outsourcing volumes to decline.

CHART 12. Volume of outsourced search over next 12 months



Question detail: "In the next 12 months, do you expect the volume of outsourced search requests to increase, decrease or remain the same (n=82)?" Percentages are based on # of respondents.

Increasing business opportunities and visibility of my company drive the need for more expertise and increased manpower.

President, European contract research organization



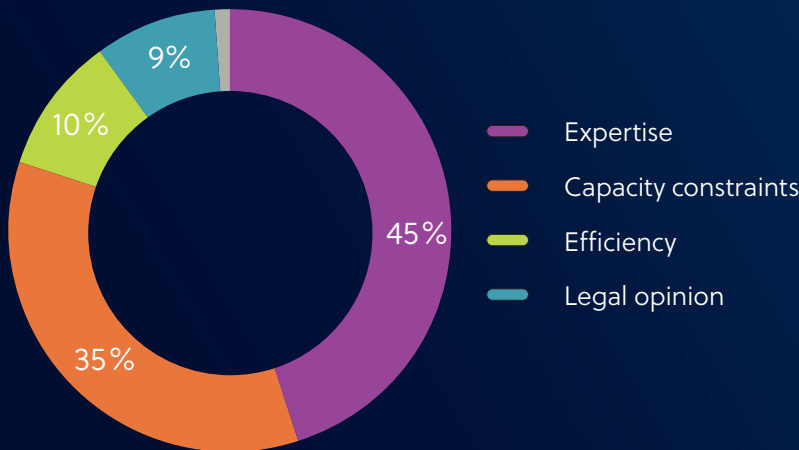
By far, the most common reason for outsourcing is to tap into a flexible pool of expertise not found internally (chart 13). The growth in patent volumes and complexity, expansion of scientific literature, and changing regulatory requirements, drives R&D and IP managers to turn to outsourced partners with dedicated IP search expertise. For instance, growing collaboration between companies for the joint development of medicines adds complexity to IP information searches and requires companies to look outside for people with new expertise, respondents said.

Additionally, some managers without deep IP experience said they like the greater certainty of knowing they are not missing information that using

a highly experienced outside expert provides. They will sometimes perform initial “look-see” searches using internal technology and resources and then rely on outside partners to provide more complete and in-depth findings.

At times, respondents noted, it is faster and even more cost-effective to have an external vendor or law firm conduct searches. Also, some managers cited policies requiring that results generated internally for certain types of searches be validated by outside legal counsel.

CHART 13. Reasons for outsourcing IP searches



Question detail: “What is the single most important reason you outsource IP search requests (n=71 verbatim responses)?” Percentages are based on # of respondents.

Conclusion

The use of IP insights has become critical for guiding R&D and business development within companies. As competitive landscapes become more complex and companies strive to make R&D more efficient, organizations that integrate and use IP information earlier and more effectively can gain a competitive advantage.

The ability to quickly discover and apply IP insights to R&D improves efficiency and the likelihood of successful commercialization, while helping to avoid competitive roadblocks and patent entanglements downstream. IP search has become more strategically important in making critical business decisions and supporting revenue-generating growth.

R&D and IP managers recommend building new collaborative processes to improve access to IP information and analyses across the enterprise. They also intend to increase adoption of new, highly efficient information technology platforms and

data resources to improve access to IP information. These actions, coupled with outsourcing, will reduce gaps in expertise and manpower even as businesses change and new opportunities arise. Managers also recommend, as part of business transformation, that IP objectives and corporate strategies be more closely aligned from top to bottom. IP information can then be more fully utilized across organizations for revenue-generating breakthroughs and new business opportunities.

New technologies are available to deliver the right information to individuals responsible for making business-critical decisions. A flexible business partner like CAS, with unique data, technology, and expertise, can help accelerate the transformation of organizations seeking to utilize IP insights to optimize productivity, streamline processes, and improve decision-making for discovering new opportunities.



CAS Connects R&D and IP

A clearer view of intellectual property saves time and money for R&D and business development, accelerating scientific breakthroughs, revealing market opportunities, and mitigating commercialization risks early in the product lifecycle. CAS solutions combine unparalleled content, specialized technology, and unmatched human expertise to inform and accelerate the innovation process end-to-end.

Scientists and researchers

CAS SciFinder Discovery Platform™ and CAS Scientific Patent Explorer™ let you take advantage of up-to-date IP information and analysis from the most complete collection of scientific and patent resources.

IP and legal professionals

STN IP Protection Suite™ is the premier platform for IP information and the preferred choice of patent experts. Powerful search and analysis is designed to help you more easily navigate the biosequence and chemical spaces.

Outside expertise

CAS IP ServicesSM team has deep expertise in science, technology, and intellectual property and can help you resolve information challenges across your organization. These information scientists average more than 25 years of experience managing scientific information and executing comprehensive search strategies for the world's largest R&D organizations.

See how CAS can help you optimize the use of IP insights across your organization and improve the effectiveness of R&D and business development

[Learn more at cas.org](https://cas.org)



CAS is a leader in scientific information solutions, partnering with innovators around the world to accelerate scientific breakthroughs. CAS employs over 1,400 experts who curate, connect, and analyze scientific knowledge to reveal unseen connections. For over 100 years, scientists, patent professionals, and business leaders have relied on CAS solutions and expertise to provide the hindsight, insight, and foresight they need so they can build upon the learnings of the past to discover a better future. CAS is a division of the American Chemical Society.

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