

IP TREND MONITOR

THE IP EXPERT PANEL



IP TrendMonitor

ANNUAL
SURVEY

2019

How will AI transform the management
of Intellectual Property?



ANNUAL SURVEY 2019

Publisher:
The Dennemeyer Group
November 2019

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IP Trend Monitor is an annual survey established by the **Dennemeyer Group** to investigate current topics in IP management. There are more than 400 members of the IP Trend Monitor panel, representing the full range of IP practitioners – lawyers, attorneys, consultants, IP counsel, inventors and scientists – from all areas of the industry – large corporations, small and medium-sized enterprises, law firms, IP service providers and IP offices.

More than 100 participants responded to this year's IP Trend Monitor questions. Of these, roughly one-quarter were from large corporations, one-quarter from law firms, 20% from patent / trademark firms, 15% from IP service providers, 10% from SMEs and 3% from IP offices. Asked about their "primary responsibility," 48% of participants said "management level," while 31% described themselves as "legal experts;" 11% said "administration of IPRs" and 10% said "C-suite." There are interesting differences in the responses from various groups to some of the questions, and these are analyzed further in the text.

Participants were also asked which geographical area(s) they are responsible for. Their responses suggest that participants remain focused on the key developed markets, with China also important, but other emerging markets are yet to make an impact. More than half of respondents (51%) said Europe – EU, by far the most popular answer. Second was North America (39%) followed by Asia – Greater China region (28%) and South / Central America (27%). The other regions (covering Africa, Australasia, Europe outside the EU and the rest of Asia) all polled between 18% and 24%.

Most of this year's survey focused on questions around the impact of AI on IP, which is identified as the single biggest issue facing practitioners in this area. However, the survey also revealed insights into trends in work and growing markets.

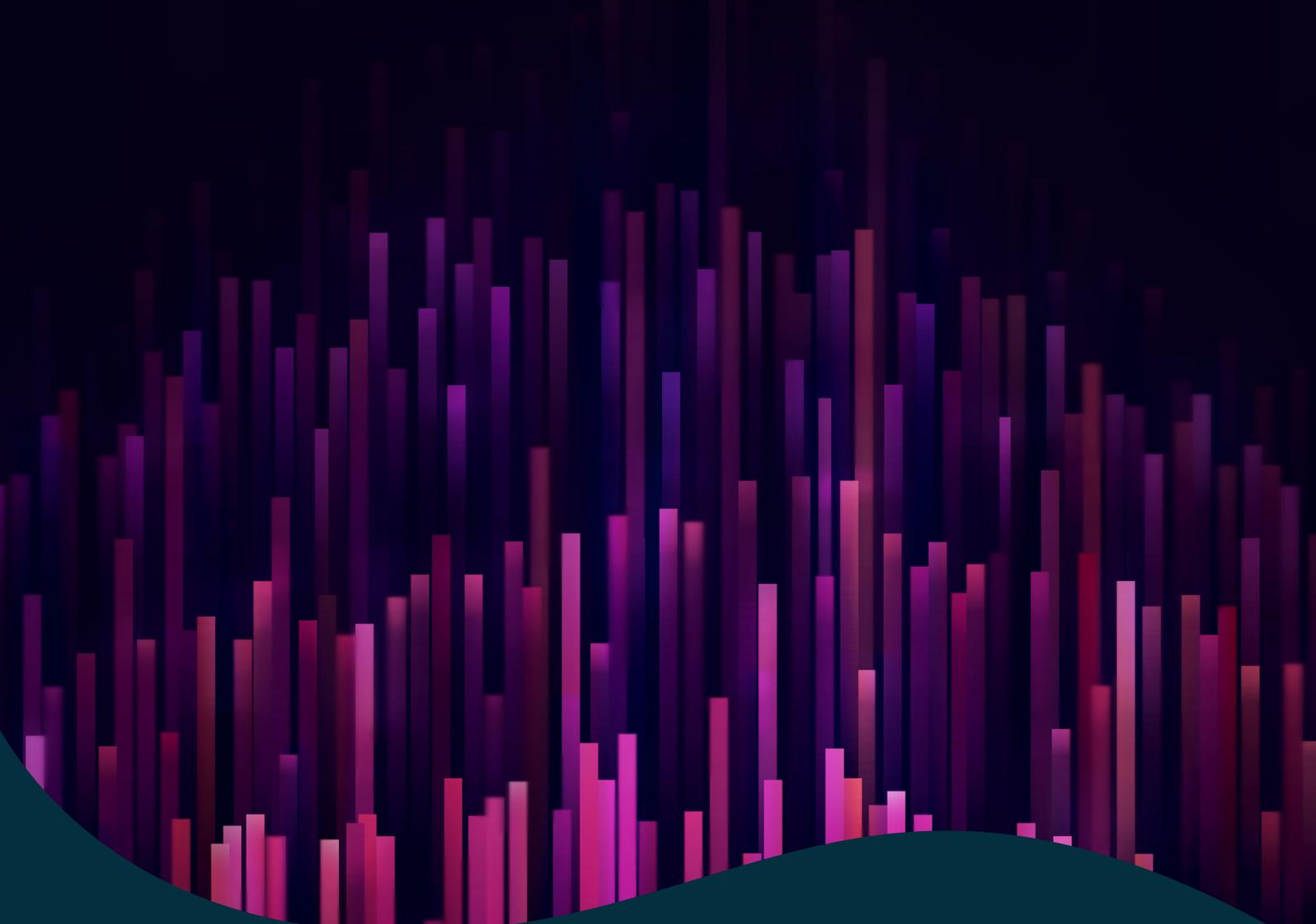


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Key findings in the IP Trend Monitor report

AI is expected to cause significant changes to your work within the next five years, but what those changes will be and how you can best prepare for them is highly uncertain, according to participants in this year's IP Trend Monitor report. Remarkably, more than two-thirds of participants say they have heard about AI and would like to learn more, while just one in five say they already use AI in their daily work. Respondents who identified themselves as management level were both more likely than legal experts to say they use AI daily (28% compared to 15%) and less likely to claim they know all about AI (6% compared to 15%), while patent specialists were slightly more likely than trademark specialists to use AI in their daily work (24% versus 19%).

Among the other interesting findings in the report are:

- IP work can be divided into three categories, according to whether it is very likely, somewhat likely or unlikely to be affected by automation and AI (see section "Three categories of work").
- Two-thirds of respondents expect AI to have a significant impact on IP, putting it ahead of other trends (see section "AI and other animals").
- 83% of participants say that "Automation and AI will improve the efficiency of IP services." Among representatives of companies rather than law firms, that proportion is 89% (see section "Will AI make life better or worse?").
- AI is not widely expected to require changes to laws and procedures (see section "Changes to laws and procedures").
- Jobs are safe: just 43% of participants say "AI and automation will replace some jobs in IP," and just 31% say "Automation and AI will improve the quality of IP services." Only 5% say "AI and automation will have a negative impact on IP services" (see section "Impact on jobs").
- Asked whether there is currently enough useful information available about the impact of AI on IP, the majority of participants (52%) say they are not sure (see section "Be prepared for the future").

The rest of this report will look at the responses of participants in more detail, focusing on the types of work likely to be affected, what adjustments will be required, the impact on jobs, and how we can prepare for an AI future. But before looking at the results in detail, it is helpful to provide more context on what AI is and is not.

How familiar are you with artificial intelligence (AI)?



I know all about AI



I use AI in my daily work



I've heard about it and would like to learn more

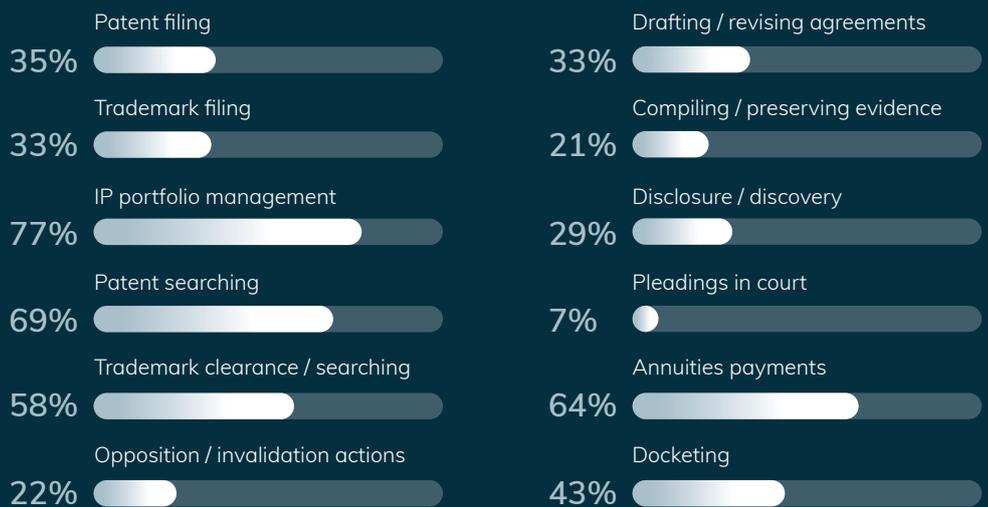


Never heard of it

How will AI impact IP?

Artificial intelligence is set to have a big impact on Intellectual Property and IP practitioners, according to participants in this year's IP Trend Monitor survey. Two-thirds of respondents put AI ahead of all other issues in terms of its likely effect on IP work in the next five years.

What types of IP work related to IPR do you think will be affected by automation and AI tools?



When it comes to the types of IP work that will be affected by automation and AI tools, participants highlighted tasks such as IP portfolio management, patent searching, annuities payments and trademark clearance (see section “Types of work affected by AI”). These are all seen as routine jobs that can be at least partially automated, yet they are also areas where accuracy and timeliness are critical. And they are tasks which today employ many thousands of hours of practitioners’ time.

As participants in the survey recognize, there is considerable scope for AI tools to improve efficiency, accountability and transparency in areas such as these. Yet there also remains much uncertainty and even concern about how AI will affect IP work, which jobs will change, how much training will be required and how laws and procedures will have to adapt. Amid these concerns, this year’s IP Trend Monitor focuses on the impact AI will have on IP work and practitioners. More information about how the research was conducted, and who participated, is shown on the previous page.

Why should we care about AI?

Artificial intelligence is a term used widely and diversely. For the purposes of this report, it refers to computer systems that use algorithms to perform tasks normally associated with humans, such as recognizing images and speech, understanding language and making decisions based on experience. There has been a huge investment in AI in recent years, driven by the enormous growth in data and the computing power needed to process it, as well as real breakthroughs in developing algorithms tailored to specific needs. The impact of AI has already been felt in fields such as internet searching, marketing, speech recognition and translation, and will soon be evident in our daily lives in areas such as transport, energy and healthcare.

In the extensive commentary on the development of AI, several writers have pointed to the likely impact on the law and legal services. For example, Hannah Fry, in her bestselling book “Hello World: How to Be Human in the Age of the Machine,” devotes a chapter to justice and in particular, the role that algorithms can play in assisting judges in making correct decisions. Other writers have warned that AI could both enhance and replace professionals such as lawyers: Martin Ford’s award-winning book “The Rise of The Robots: Technology and the Threat of Mass Unemployment” highlights the risk to “white-collar jobs” or what Ford calls “knowledge-based employment.” This includes legal professionals: the author says that e-discovery has already led to “the evaporation of large numbers of jobs for lawyers and paralegals.” In his provocative book, “The End of Lawyers?”, Richard Susskind contends that “for some lawyers, there are existing and emerging technologies whose widespread adoption will effectively render them redundant.”

Many professionals recognize that IP will be among the legal disciplines where AI’s impact will be most strongly felt, given the large volumes of data, the complex legal tests and the need to make predictions to minimize legal risk. Some also question whether AI represents a more profound challenge to IP concepts of creativity, ownership and infringement, questions that were highlighted in 2019 with the filing of patents with an AI (called DABUS) named as an inventor. Offices including WIPO, the EPO and EUIPO have held conferences and consultations on how to respond to AI, and what changes might be needed, and in August 2019, the USPTO invited responses to 12 questions on patenting AI inventions. Analysis of the comments received is likely to be published in 2020.



Types of work affected by AI

While philosophical questions about the impact of AI on IP systems are interesting and important, for most practitioners, the more pressing issue is how tools based on AI will affect their day-to-day practice, and that is the focus of this report. For some of the questions, we have combined automation and AI as two related trends that will have a complementary impact.

Legal work involves many different tasks. Some are important but routine while others are viewed as requiring considerable skill, experience and sensitivity. As Professor Daryl Lim has argued in a recent article, “AI and IP: Innovation and Creativity in an Age of Accelerated Change,” AI is good news for lawyers who can move beyond drudge work, passing cost savings on to consumers who can access cheaper legal services. “The future of legal practice lies in reskilling, not in chasing after skills that technology will soon make redundant,” he writes. What do our IP Trend Monitor participants think this means in practice?

Three categories of work

The responses suggest that IP work can be broadly divided into three categories, based on how likely they are to be affected by automation and AI tools.

The first group includes those tasks that a majority of participants think will be affected by automation and AI. These are IP portfolio management (checked by 77% of participants), patent searching (69%), annuities payments (64%) and trademark clearance (58%). What these types of work have in common is that they have to be performed at high frequency, which often involve relatively simple procedures and can make use of data analytics.

The second group includes tasks identified by more than a quarter, but less than half of participants. These are: docketing (43%), patent filing (35%) trademark filing (33%), drafting / revising agreements (33%) and disclosure / discovery (29%). All these tasks incorporate elements of routine work but also aspects of judgment and skill.

It is perhaps surprising that more than a third of respondents believe patent and trademark filing will be affected, though this, of course, is not the same as saying that AI will replace humans in this work. It is also revealing that patent and trademark specialists are more likely to think their area of work is susceptible to AI involvement: 39% of patent specialists identified patent filing compared to 33% of trademark specialists, while 38% of trademark specialists identified trademark filing, compared to just 28% of patent specialists.

The third group of tasks comprises those that only a small number of participants believe will be affected by automation and AI tools: opposition / invalidation actions (22%), compiling / preserving evidence (21%) and pleadings in court (7%). These are all tasks that require bespoke, often complex solutions, generally comprising a large amount of specialist work and often involving face-to-face contact with other professionals (clients, opposing counsel or judges / examiners).

AI and other animals

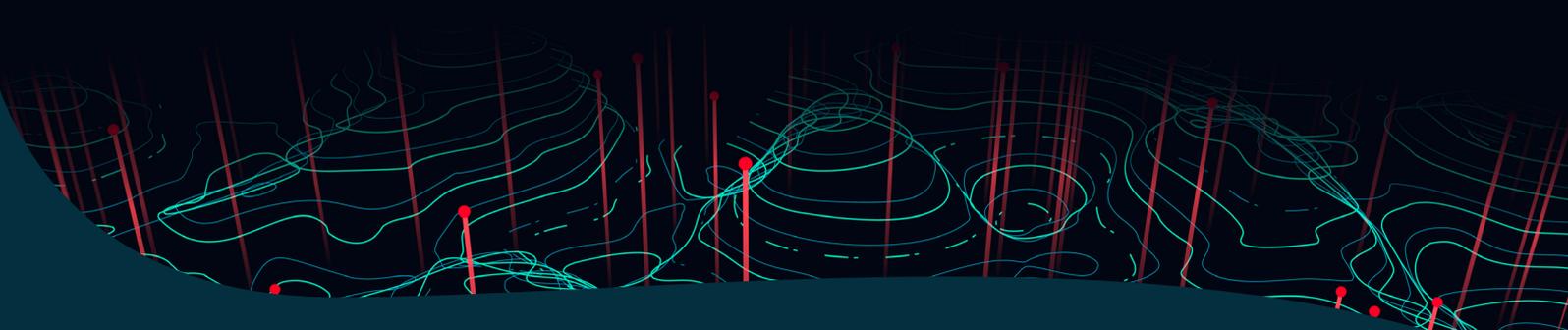
AI tops the list of topics that participants expect to have a significant impact on IP work in the next five years, being named by 66% of respondents. That puts it well ahead of other important trends such as harmonization of laws / practices (43%), globalization (38%) and new & emerging markets (33%).

The other trends that participants rate as likely to have an impact are mainly other disruptive technologies such as automation (52%), digitization (47%), new business models (44%) and blockchain (43%). Topics ranked relatively low by respondents are outsourcing (27%), political change (21%), trade secrets (16%), Unitary Patent and UPC (16%).

However, there are some interesting differences in responses to this question based on region. For example, participants who handle work in Europe are more likely to select harmonization and UPC (which reflects the greater relevance of these issues in the EU) but less likely to select political change and blockchain: this may reflect the relative political stability in the EU and the lack of penetration so far of blockchain products. By contrast, those who work in Greater China and Northeast Asia are more likely to select economic change (compared to Europe and the US): this likely reflects the fact that economic change is expected to be more rapid and disruptive in those regions than elsewhere.

Which of the following do you expect to have a significant impact on IP work in the next five years?





What impact will AI have and when?

Changes to laws and procedures

One question that is exercising many commentators is the extent to which existing laws and procedures may have to be changed to accommodate developments in AI. At the extreme is speculation that AI could be the “creator” of a copyrighted work or the inventor of a patent, something that is not envisioned by current legal systems. But there are many less dramatic ways in which legal systems might have to change as automation and AI tools become more common, just as they adapted when electronic filing and email replaced post and fax.

Participants in this year’s IP Trend Monitor report, who come from many different jurisdictions, were generally skeptical about the need for change, with 31% saying they were not sure, and 16% saying automation and AI would not require changes in their jurisdiction. However, 25% believed there would need to be changes to laws / treaties, while slightly more (27%) expected changes to procedures before IP offices. Just 1% expected changes to rules in court.

These results are broadly consistent across all regions. However, participants who cover Northeast Asia (i.e., Japan and Korea) are notably more likely to expect changes to procedures before IP offices, with 42% of them checking this. They are though less likely to expect changes to laws / treaties (just 5% checking this). Participants covering North America are generally the most skeptical regarding the need for changes, with 18% saying no changes are required, and just 13% predicting changes to laws / treaties.

Who will lead the change?

When it comes to identifying who will invest in developing these new tools, participants indicate a strong preference for specialist IP service providers and legal tech companies over law firms. Just 1% expect law firms to develop tools and license them to other firms and clients, and none at all think law firms will invest in developing tools for clients’ benefit. This suggests that participants believe law firms may miss some of the opportunities arising from AI, namely earning revenue from products or services they have developed. If this proves correct, then the likelihood is that they will be losing money to other players in the IP ecosphere.

There are some significant differences in the responses to this question between those in management roles and legal experts. For example, 49% of the former expect IP service providers to lead the way, and just 26% say legal tech companies. However, among legal experts, the trend is reversed: 61% checked legal tech companies and just 16% checked IP service providers, perhaps reflecting that they see tech companies as providers rather than competitors. There was also a discrepancy based on region: for example, 56% of participants focused on Greater China and 55% of those on Northeast Asia checked IP service providers, compared to just 38% in Europe.

Will AI make life better or worse?

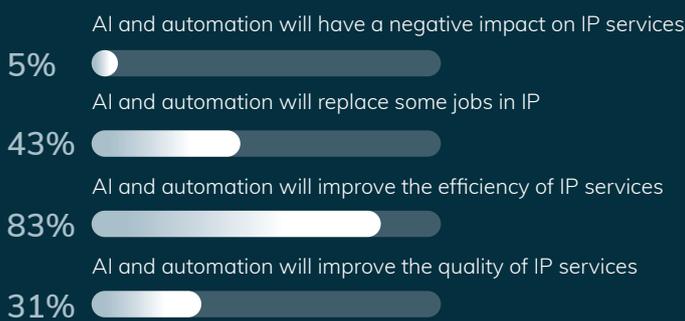
How will automation and AI affect IP? There was a clear message from our participants: 83% believe they will improve the efficiency of IP services, while just 31% believe they will improve the quality. However, there are some notable divergences on this question when the responses from different groups are analyzed. Most strikingly, 44% of participants in corporations think automation and AI will improve quality, compared to just 15% of those in law firms. Does this suggest that corporations have unrealistic expectations of the benefits that new tools can bring? Or, rather, does it indicate that clients will be demanding more from their law firms and that those firms so far underestimate the impact AI will have on their work?

There is also a divide between patent and trademark specialists on this point: one-third of the former expect automation and AI to improve quality, compared to just one-quarter of the latter (though the numbers regarding efficiency are very similar).

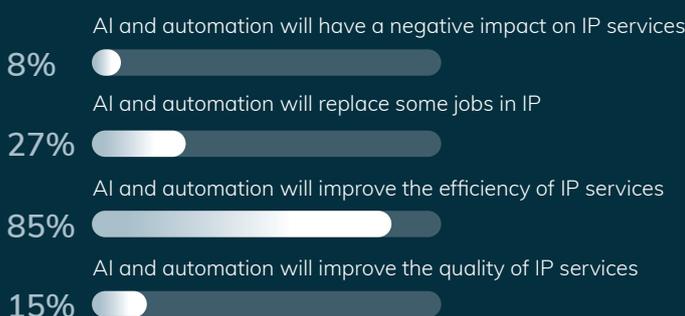
Which of the following statements are correct?



Overall survey responses



Law firm specialists

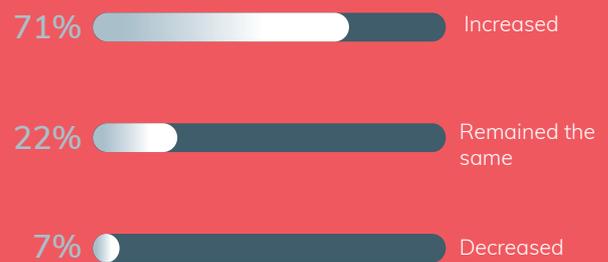


Business trends

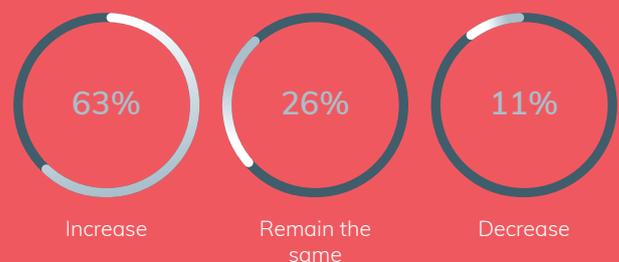
Participants in this year's research were asked to comment on trends in IP work and their budget expectations for the next five years. On the former point, the vast majority (71%) say that work has increased in the past year, while just 7% say it had decreased and 22% say it has remained the same.

Participants struck a positive note when it came to expenditure, with 63% expecting spending on budgets for IP matters to increase in the next five years, 26% expecting it to remain the same and just 11% expecting a decrease. This represents a slightly more bullish view compared to the 2018 edition of the report, where respondents were asked about expenditure "during the next 12 months" and just 52% expected an increase, while 9% expected a slight decrease or a decrease and 32% said that it would "remain the same."

In your experience, the amount of IP work in the past year has:



Do you expect the spending on budgets for IP matters in the next five years to:



Impact on jobs

For many IP practitioners, the most immediate questions posed by automation are about the practical impact AI tools will have on their day-to-day work: will AI be able to do tasks that until now have required human expertise? Will fewer IP specialists be needed or will they have to retrain? Will people with new skill sets, such as data scientists, be required? And how quickly will any changes happen?

Will my job change?

For this year's report, we asked participants whether they expect AI to change their jobs within the next five years: 39% said "yes – somewhat," and 27% said "yes – substantially" while just 5% said "no – not at all." A significant number of participants – 28% – answered: "maybe – time will tell." Participants working at management level are more likely to expect their jobs to change compared to legal experts, with 75% of the former answering "yes" (either somewhat or substantially) compared to 65% of the latter. Patent specialists responded slightly differently to trademark specialists: just 35% of the latter expect jobs to change "somewhat" compared to 41% of patent specialists, with trademark specialists also marginally more likely to answer "no" or "maybe." Perhaps this reveals that, as people working with new technologies every day, patent experts are more alive to the possibilities of AI and have given more thought to how it could affect their work. However, it could also be that people working in trademarks have already felt the impact of new technologies in tasks such as search and classification, and feel their jobs have changed considerably already.

Do you expect AI to change your job within the next five years?

MULTIPLE CHOICE QUESTION



Will my business change?

The IP Trend Monitor participants expect AI to have a significant impact in many respects. A remarkable 70% say “firms will invest more in technology,” while 66% believe “lawyers / attorneys will need to develop new or different skills.” Nearly half (47%) say “firms will hire more IT specialists / automation specialists,” while 44% believe “interactions with IP offices and courts will change,” and 39% say “client interactions will change.”

However, just 20% expect that “firms will hire or retain fewer lawyers / attorneys,” and perhaps most surprisingly, just 23% expect that firms will dedicate more time to training. If the above expectations about requiring no new skills, using more technology and changing interactions prove correct, then some education or training will surely be required, which begs the question: if firms do not do it, who will?

As we have seen in several other responses, there are divergences between the views of participants at the management level and those who are legal experts. Notably, those at management level are more likely to expect firms to invest in technology and hire new people, and significantly more likely to expect client interactions to change. Similarly, we see differences when we compare responses from corporations (large and SME) with those from law firms: notably, the former are much more likely to expect firms to hire more IT / automation specialists and fewer lawyers / attorneys, while the latter are slightly more likely to believe lawyers / attorneys will develop new skills. This suggests that participants in law firms are more confident that they can adapt their practice to new technologies without having to recruit people with different skill sets.

What do you expect to be the impact of AI in business?



Overall, these findings suggest that business are ahead of law firms in their expectations about the impact of AI, and perhaps those in law firms need to pay more attention to what their clients are saying and what their plans are to get a better understanding of what they can expect in the future.

Be prepared for the future

Technological change is coming quickly, and its impact will be felt soon. Many IP offices and service providers are already investing heavily in AI systems in areas such as trademark search and portfolio management, and such tools will likely become essential within a few years. Asked when they expect automation and AI to have an impact on their day-to-day work, just over half of the participants said within the next five years, while a further one-fifth within the next year. Less than a quarter expect that the impact will not be felt until 5 to 10 years, and none at all answered “never.” Among those at the management level, the expectations are even greater than the average: 65% expect an impact within five years, and 23% within one year. Moreover, asked to predict where AI is headed in the next 10 years, participants used words and phrases such as “transformation change,” “AI will be everywhere,” and “massive changes are expected.” A selection of the comments submitted is included in the margins of this report.

■ When do you expect automation and AI to have an impact on your day-to-day work?





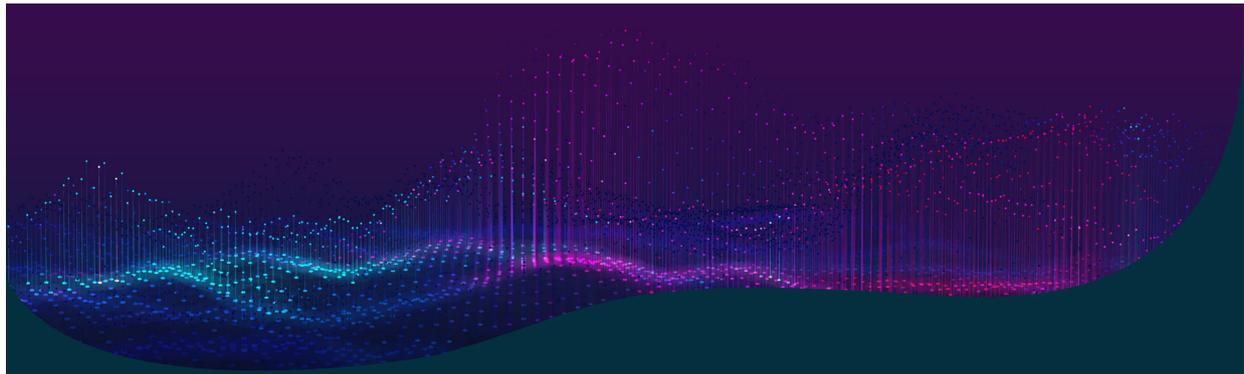
Get ready now

The question is how do you prepare for this radically different future? Perhaps worryingly, participants overall feel there is not enough useful information about the impact of AI (something that this report hopefully will improve). 27% either disagree or strongly disagree with the statement “There is currently enough useful information about the impact of AI on IP” while just 22% agree or strongly agree with it, and more than half (52%) are not sure.

These findings are reasonably consistent across all the groups of participants although, perhaps surprisingly in the light of the other findings in the report, those in law firms are almost twice as likely to agree or strongly agree that there is enough useful information compared to those in corporations (29% versus 14%) and much less likely to answer “not sure” (44% compared to 63%).

Asked to identify what they find most useful when reading about AI, participants expressed a preference for practical, focused information. One says “concrete applications and impact measures; working tools that fulfill the promises given,” while another says “how to implement it / use cases,” and another provided more detail: “tools, trends, players in the field and offers in the market, litigation-related, contracts, types of licensing, use of big data for training AI in IP.” Several participants also highlight the challenge of combining AI tools with traditional legal skills. For example, one commented: “Balancing rote tasks that might be readily automated with novel issues that require human consideration,” and another said they wanted information on “tailored solutions for IPR management.”

The potential of AI for IP was clear from one comment in response to this question: “AI is the new buzzword! The faster we develop and start using it the better! For those of us in developing and under-developing countries, it is like magic. Problems resolve more quickly with fewer efforts! Knowledge at your fingertips!” This encapsulates the potential of AI for IP. However, as this report has revealed, these benefits will come at the cost of disruption – and that will pose many challenges for IP professionals and the firms in which they work.



AI: in the words of our respondents

"It will take over calculative acumen in business and management, especially when combined with robotics."

"AI will do all the work that people have done routinely and daily. Thus, people will have to think about doing different and new things."

"AI will lead to new tools that practitioners will have to master."

"The research activity will ease, and the collection of data will improve. Assessment will require some human intervention. The liability will have to be checked while using else it may lead to more litigation-related issues."

"AI will be a tool to support the attorney with mundane daily tasks."

"AI will be the main factor in all IP discussions."

"Greater efficiency requires that the system itself eliminate paradigms that are outdated or serve no legitimate purpose. The evolution of the private sector will follow quickly."

"Some processes will benefit from the use of AI, and it will replace tasks done by staff working in law firms/companies. It will reduce costs to the end-user but will have a negative impact on the business of small and medium law firms and agencies."

"AI will take away much paralegal work, and to some degree, novelty searches and freedom-to-operate analysis."

"AI will streamline and speed-up all IP transactions and enable ownership verification to be accurate."

"Slowly increasing people's confidence in the results for mundane tasks that are routine."

"AI will help to improve the effectiveness of searches and be supportive in relevance assessments."

"I believe that AI automation is headed toward automated docketing and repetitive tasks to be possible to be done in an automated way, without input from (administrative) staff."

"AI will do searching and screening tasks."

"AI will take a more prominent role in IP and it will make previously laborious processes a lot more efficient."

"AI not only will optimize and allow improvement of efficiency of bureaucratic and repetitive tasks but will also affect tasks that require knowledge and experience such as developing an invention."

"While I do not believe that AI will ever replace lawyers, the way lawyers deliver their services to clients will undoubtedly be changed by AI."

"With the availability of cutting-edge AI technology, corporations may not pay expensive retainer fees to law firms to do routine tasks."

"AI will streamline and speed-up all IP transactions and enable ownership verification to be accurate."

"Handling documents and interpreting the data will have a dramatic impact on IP."



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