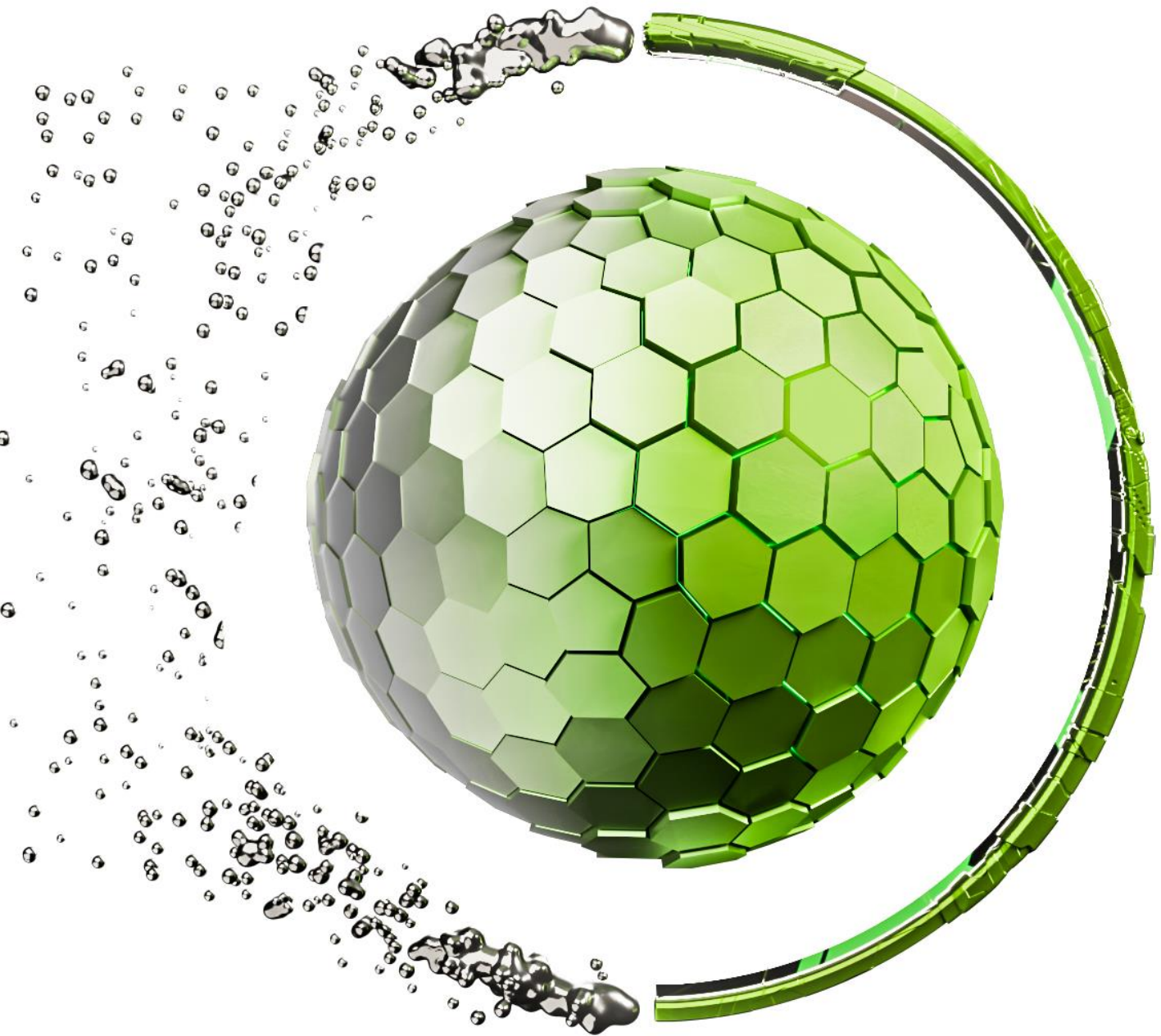


Deloitte.



The Intersection of Generative AI
and Intellectual Property
A New Epoch of Innovation and Business

Introduction

In an era marked by the rapid evolution of many aspects of life, it is interesting to consider how creativity and invention are also evolving and are driving innovation and the business activities associated with it. Figure 1 illustrates the way AI can be used in an R&D context to enhance focus, creativity and speed of the innovation process.

Innovation and AI

Improva and the innovation value-chain

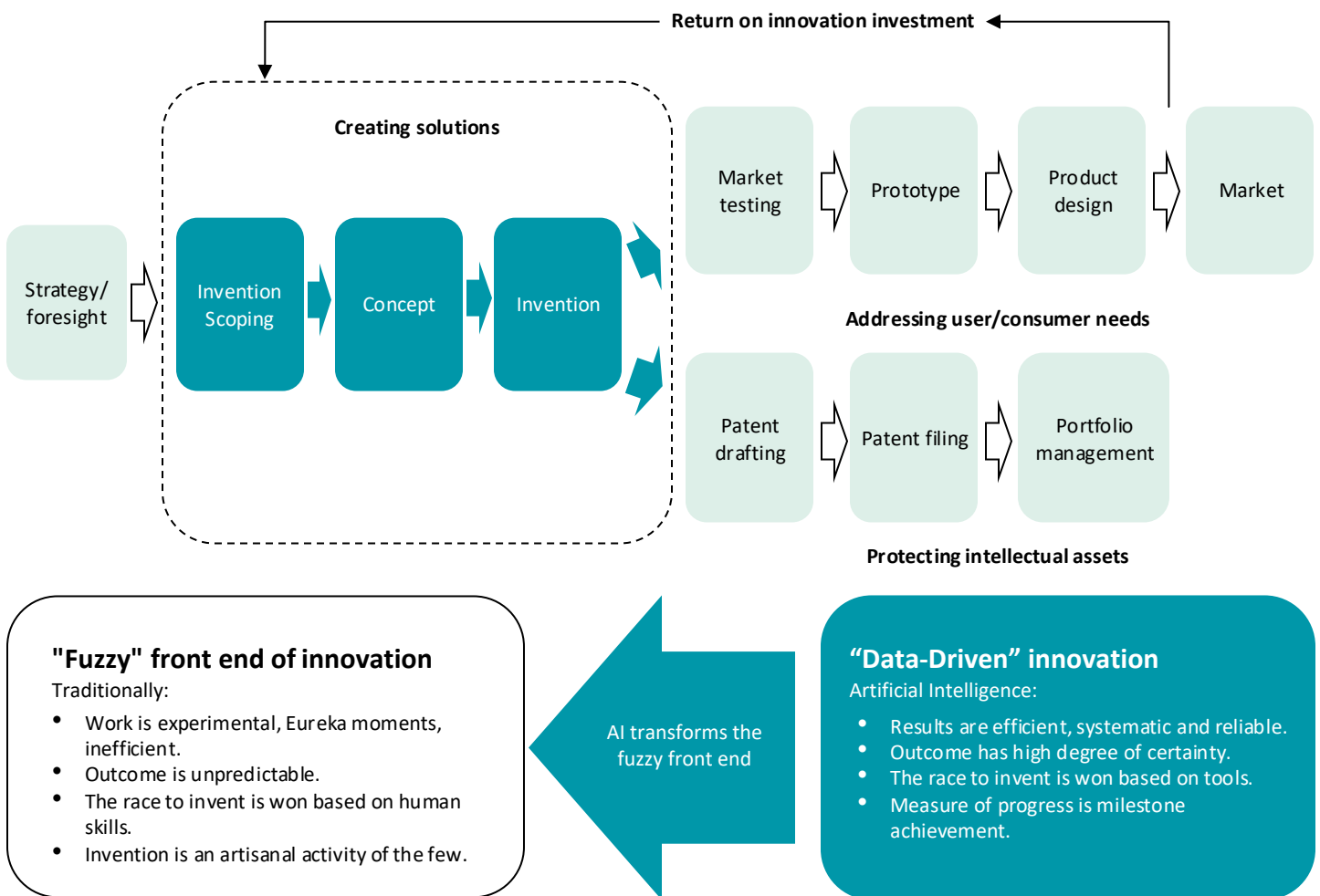


Figure 1: AI is impacting every stage of the innovation process, from strategy/foresight through to IP portfolio management, through to product design and market testing and ultimately marketing. One of the areas it is impacting most however is in the very act of innovation—the creation of the inventions which will go on to be the basis of tomorrow’s hit products and foundational patent portfolios.

AI, Innovation and IP

While AI is a useful addition for driving innovation, the business value of innovation is usually embodied in the value of the resulting intangibles, such as intellectual property rights. Rights like patents are granted after a thorough examination process which may be influenced by AI technologies. Furthermore the legal context of innovation through AI usage is created by regulations on re-use of data, privacy laws, ownership clauses in contracts and regulations like copyright law. Thus, the influence of AI on innovation and intellectual property (IP) is a multidimensional web, with societal, technical, economic, environmental and political threads weaving together to create a complex tapestry. Therefore we have dealt with each of these separately below.

Societal Impact: Balancing Benefits and Threats

AI presents both opportunities and challenges for Chief Intellectual Property Officers (CIPOs) and General Counsels (GCs). While it boosts innovation and addresses complex issues like climate change and health, it also raises concerns over job security, privacy, and ethical use of data. The evolving EU legislation, including the AI Act, DSA, and DMA, focuses on responsible data use and sets the stage for IP rights associated with AI-generated outputs. CIPOs must navigate these regulations together with the GC and legal team to safeguard IP while leveraging AI's transformative potential responsibly. This overlay of roles across CTO/CIPO and GC has already been initiated but requires acceleration and strong team-up to address AI appropriately in a company.

Technical Advancements: The Democratization of AI

The widespread application of AI stimulates both innovation and the need for responsible usage to prevent misuse. The surge in AI-generated inventions could overwhelm patent examination processes with questionable prior art and numerous auto-generated publications. Stakeholders in the patent system must determine how to approach AI contributions during patent evaluations, ensuring that quality and thoroughness are maintained. The CIPO and CTO are responsible for including this aspect in their policies and provide guidance to the innovation and IP teams on AI-generated prior art. Economic Considerations: A Catalyst for Efficiency and Quality from innovation to patent.

From an economic standpoint, AI holds promising potential for streamlining processes, eliminating redundancy and accelerating the pace of innovation. It promises a move away from the traditional, more cumbersome 'trial and error' approach towards a more streamlined, directed innovation pathway. This has the potential to create increased efficiency and productivity, with reduced costs and faster time to market, reducing dependency on a brilliant thought from an inventor.

The integration of AI in the patent process may elevate standards for granting patents, assuming widespread AI access, which isn't yet universal. Relying on a 'skilled person' to have AI may be presumptive but can enhance options exploration. Patent offices like the EPO are enhancing quality in search and examination, as seen in the quality action plan 2024. AI could bolster drafting and prosecution quality for both IP professionals and examiners. AI-tools are likely to lead to a reduction in drafting and prosecution cost, albeit for the less complex inventions and domains. Also in this context there is a parallel between the developments at the general legal department and the IP team where tools for supporting contract drafting and patent application drafting are rapidly making their way into the market.

Environmental and Political Factors: The Complex Web of Implications

AI's political implications involve data privacy and national security, with national laws complicating its governance. Countries differ in regulating AI, balancing innovation against control, while grappling with data privacy and surveillance issues. The European AI Act aims to ensure safety and rights compliance, stimulating innovation. Globally, the race for AI dominance raises concerns about arms races and technological disparities, necessitating a nuanced approach to AI's ethical, legal, and geopolitical challenges for equitable deployment.

Perspectives on AI, Innovation and IP

We will now touch on various perspectives in a non-exhaustive description of perspectives on innovation and IP that can trigger the CIPD, CTO and GC to adapt new ways of working

Perspective 1: From Ownership to Risk Management

In the mid-term, the focus is likely to concentrate on ownership issues related to AI-generated IP. Discussions around patent inventorship and copyright for new creative works generated by AI are likely to dominate legal and policy debates for some time to come.^{1,2}

While ownership considerations are important, we see attention increasing for the risk perspective. This is because the use of data and other input, such as pictures, for learning and training AI systems will be a significant consideration.

CIPDs are ideally positioned in the middle of the technical and legal point of view to work with CTO and GC to address both the opportunity part and ownership questions around results and data access and the risk part with the GC. Managing the opportunity and the risk requires technical and legal understanding which is exactly what IP professionals are trained for.

Perspective 2: creating inventions at lower cost

In the long-term, we can expect a paradigm shift in the pace and nature of innovation. The ability to create inventions at a lower marginal cost through AI may trigger a reconsideration of patent strategy. The focus might shift from merely protecting inventions through patents to a more open strategy of publishing, lead-time through inventiveness, and pre-empting competition. For a CIPD it is important to understand the impact of this change in innovation approach on the value of the IP portfolio. Some parts of the portfolio could be more valuable while others might be of lower value because the effectiveness of patent enforcement is reduced through the speed factor. Lower invention cost and enhanced speed might also put more emphasis and value on the brand and design specifically in the area of consumer goods. Luckily most CIPDs nowadays guard all types of IP for those who do not it is highly recommended to align with the trademark and design team.

Perspective 3: there are many considerations if AI is to generate useful results

Data is crucial for AI training and evaluation, with its quality, quantity, and diversity affecting AI performance. Despite the importance of data, accessing it involves navigating privacy concerns, regulatory hurdles, and ethical issues.

Bias in AI, often introduced by unrepresentative training data, is a vital concern that can result in discrimination. Yet, AI can also combat bias by focusing on relevant inputs and correcting skewed datasets, though this demands careful system design and testing.

AI systems risk becoming too specialized if trained on limited data types, reducing their usefulness. Broad and diverse data training is necessary for versatility. Data retention regulations further complicate AI's ability to reproduce outcomes, as original training data may become inaccessible for verification or updates due to storage limits and removal requests. For the CIPD this means having a broad network across CTO, CFO and GC in the organization to ensure that all relevant aspects of AI are appropriately addressed.



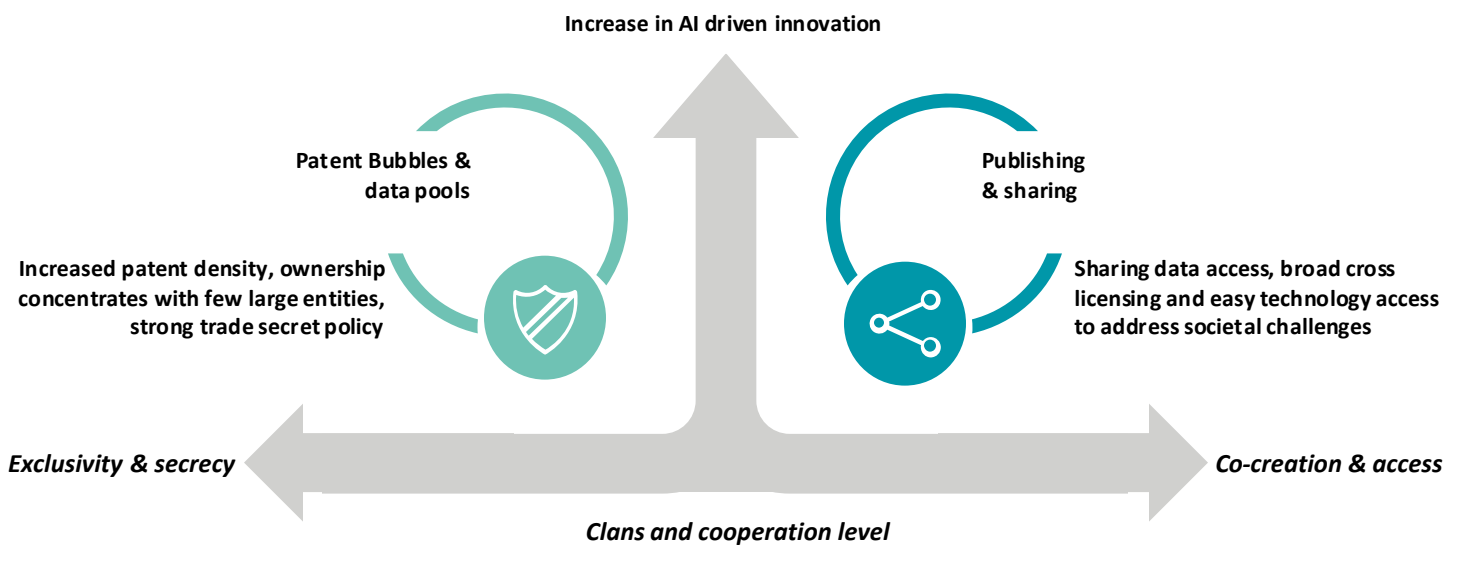
¹IAM magazine, July 20 2023, Joff Wild; AI's patent challenges are too big to leave to tomorrow

²Harvard Business Review, April 7 2023, Gil Appel. Juliana Neelbauer, David A. Schweidel; Generative AI has an Intellectual Property problem. [Generative AI Has an Intellectual Property Problem \(hbr.org\)](https://hbr.org)

Scenarios: Imagining the Extremes

Considering all above aspects and perspectives we imagine two extreme scenarios for the long term future. On one end of the spectrum, there is the possibility of a world where invention creation is simplified and its speed of generation is enhanced, leading to an explosion of patents protecting these innovations. At the other end, we might see a world where the process of inventing is democratized and creations are primarily published rather than patented—a scenario that could radically transform the current understanding and practice of IP rights and protection.

We envision these two scenarios as being either “the world of patent bubbles and data pools” or, at the other extreme, “the world of publishing and sharing”. Below we have shown some characteristics of these two worlds.



- Increased innovation speed and efficiency
- Shortened examination
- Increased quality & raising of the bar
- Difficulty in navigating the landscape
- Risk of large entities with deep pockets filing IP endlessly and blocking others from obtaining IP rights and from entering the market
- Exclusive data pools preventing broad access to data—leading to bias and tunnel vision
- Risk of ownership and wealth/control ending up with a few (large) entities

- Increased level of relevant innovation
- Clarity on publications and patents through AI
- Only high-quality patents being granted—raising the bar
- Data access shared in order to get the least bias and the best quality innovations
- Broad cross-licensing arrangements and free/low fee access to technologies that benefit society
- A move towards more sharing than exclusivity—big challenges, such as climate change, require cooperation and data and tech sharing rather than exclusive pooling
- Even distribution of ownership and wealth

Conclusion: Navigating the Future with Foresight and Responsibility

As we stand with one foot over the threshold of an AI-driven future, the roles and responsibilities of various stakeholders are becoming increasingly important. Companies, patent offices, users, policy makers and educational institutions must prepare to navigate this new landscape. This includes grappling with questions around the use of input data, adapting to an evolving job market, integrating AI training into education and anticipating shifts in societal norms and regulations.

The CIPO and IP teams can prepare for these scenarios by defining policies on IP generation and whether a more open approach to data and IP or a more closed one is suitable for their businesses' goals. We must also consider what we would suggest the European Patent Office or other patent granting agencies, policy makers and educational institutions to do in this changing landscape. The actions we expect from stakeholders include driving efficiency, adapting regulations in patent offices to accommodate AI, integrating AI into education in universities and managing potential HR disruptions within organizations and more specifically R&D and IP teams.

It is also clear that the patent system is becoming more integrated and intertwined with other regulations eg on AI act, data privacy etc. This means that CIPOs will need to look into how acts like DSA, DMA, AI act, GDPR, DORA and many others are aligned with well-known IP regulations. Obligations arising from one act may impact the results of another e.g. related to publication and transparency requirements in the AI act and confidentiality before patent filing or until an application is published.

We are at the beginning of a new era where AI may not change the act of invention making but will undoubtedly transform how we use tech and tools to create and innovate and how we distribute ownership and access to innovation in fair, sustainable business models. With thoughtful consideration, strategic planning and responsible execution, the era of AI-assisted invention promises to usher in exciting possibilities for creativity and innovation to address the huge challenges our society is facing.

Authors



Julian Nolan
CEO and Founder Iprova



jnolan@iprova.com



Maaïke van Velzen
Partner | Intangibles, data & tech law | Deloitte Legal



mvanvelzen@deloitte.nl



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

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