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THE IP COMPASS: A STRATEGIC GUIDE FOR EU POLICYMAKERS NAVIGATING INNOVATION AND GLOBAL COMPETITION

CASE STUDY

ECIPE

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ABSTRACT

Europe cannot afford to be strong in research but weak in innovation. A **comprehensive intellectual property (IP) reform agenda** focused on harmonisation, legal certainty, frontier technology protection, and global market openness is essential for turning intellectual property into **genuine innovation leadership**. The European Union (EU) remains a global leader in early-stage research but continues to lag behind the United States (U.S.) and China in scaling, commercialising, and deploying frontier technologies. Persistent **fragmentation of markets, regulatory frameworks, and investment channels** undermines Europe's ability to translate IP strength into global innovation leadership.

KEY IP AND INNOVATION CHALLENGES

- **Lagging Technology Development:** Despite strong IP intensity, Europe underperforms in artificial intelligence (AI), semiconductors, biotech, and other frontier sectors, limiting competitiveness in global value chains.
- **Fragmentation across the Single Market:** Divergent national regulations and inconsistent IP enforcement prevent companies from scaling rapidly across borders.
- **Weak Commercialisation and Scale-Up:** (Academic) research excellence does not translate into sufficient high-growth firms, as fragmented venture capital markets and barriers to risk finance persist.

POLICY RECOMMENDATIONS

Europe's innovation system remains constrained by **fragmented IP regimes, lagging technology development, and weak commercialisation pathways**. To reverse this trend and restore global competitiveness, the EU must adopt a more ambitious, integrated IP strategy. The following policy priorities should guide Members of the European Parliament's (MEP) legislative and political work:

1. **Advance Full Legal and Procedural Harmonisation for IP Enforcement**
 - Replace diverging national standards with **a single European enforcement system across all types of IP**.
 - Empower **EU-wide specialist IP courts** and enhance **mutual recognition of judgments**.
 - Establish a **common minimum standard** for evidence, damages, injunctions, and timelines.
 - Thereby **reduce uncertainty and costs** for innovators scaling across EU borders.
2. **Guarantee Legal Certainty and Strong Protection**
 - Make **predictability and strong enforcement** the cornerstone of EU IP policy.
 - Provide **stable, long-term incentives** for high-risk, high-value research & development (R&D) investment.

- **Stop erosion of exclusivity rights** in pharmaceuticals and biotech, and information & communication technologies (ICT) equipment.
3. **Develop a New EU Intellectual Property Strategy**
 - **Only think European:** the goal must be full harmonisation across all types of IP, giving Europe's innovators a consistent, simple, and modern framework for patents, trademarks, designs, copyright, etc.
 - Enable coalitions of willing Member States to **harmonise fully across all types of IP**. **Coalitions of willing Member States should go all in on a fully centralised EU-only IP regime**, while others could remain entirely outside ("all in" vs. "all out").
 - Ensure Europe's innovators operate under **consistent, simple, and modern rules**.
 4. **Reinforce Top-Tier Protection for High-Value Sectors**
 - Preserve robust exclusivity regimes for **pharma, biotech, AI, and advanced manufacturing**.
 - Maintain **strong regulatory data protection (RDP)** to secure incentives for costly clinical trials, including biologics. **Avoid shortening or conditioning RDP terms** that tie protection to market access, pricing and reimbursement, or clinical trial requirements. **Ensure predictability with exclusivity terms** to keep R&D, clinical trials, and manufacturing anchored in Europe.
- Ensure standard-essential patent reforms that **protect incentives to contribute to R&D**.

- Clarify copyright for AI training and licensing while avoiding **overly restrictive rules** that hinder AI development.
 - Allow **market-based solutions** to govern clear cases of IP infringement in AI.
5. **Link IP Policy to Talent Retention and Private-Sector Engagement**
 - Complement IP protection with **talent attraction measures**, including "innovation visas" and strong academia-industry partnerships.
 - Condition IP registration on **private-sector participation in academic research**, ensuring faster commercialisation and fewer unused university patents.
 6. **Safeguard Open Markets for IP-Intensive Goods and Services**
 - Keep **international markets** open through trade agreements with strong IP chapters, free data flow, and digital trade rules.
 - Avoid localisation requirements and protectionist standards that fragment supply chains.
 - Position the EU as a **global hub for research-to-market cooperation**, leveraging World Intellectual Property Organization (WIPO), World Trade Organization (WTO), and Organisation for Economic Cooperation and Development (OECD) platforms.

Keywords: Intellectual Property Reforms, European Innovation Paradox, Market Fragmentation, EU Competitiveness

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INTRODUCTION

Intellectual property rights (IPRs) are a major cornerstone of high value-added production in advanced economies such as the EU, playing a critical role in sustaining innovation cycles.²

The EU has long been a supporter of strong IP standards both within its internal market and internationally. This includes guaranteeing the origin and authenticity of products and prohibiting measures that infringe the rights conferred by IPRs.

The protection and strategic use of IP have long been an important ingredient to the European companies' role in the global economy. European countries started formalising trade relations among themselves in the 19th century, which also led to recognising each other's IP rights. This was strengthened by the Paris and Berne Conventions in the late 1800s, which set international rules for patents and copyright and built the basis for today's global IP system.

European IP law and the IPRs granted within the EU do not exist in a legal vacuum.

They are governed not only by EU legislation in the form of Regulations, Directives, and Recommendations, but also by the broader principles underpinning the grant of exclusive rights to IPR holders, as well as the international legal framework to which the EU is bound³, including the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO)-TRIPS framework, and embedding IP provisions in its trade agreements worldwide. The EU has concluded many Economic Partnership Agreements (EPAs) that align partner countries' practices with the EU *acquis* in key trade-related areas, including IP. There is an underlying rationale for IPRs, as per the WIPO handbook on IP⁴

1.1 . . . Countries have laws to protect intellectual property for two main reasons. One is to give statutory expression to the moral and economic rights of creators in their creations and the rights of the public in access to those creations. The second is to promote, as a deliberate act of government policy, creativity and the dissemination and application of its results and to encourage fair trading which would contribute to economic and social development

2. Both by protecting innovation and by enabling the diffusion of technology, providing access to cutting-edge developments and global market opportunities

3. The Madrid system for the international registration of trademarks, consisting of the Madrid Agreement (1891) and the Madrid Protocol (1989); the Patent Cooperation Treaty (PCT, 1970)

4. WIPO. (2004). WIPO intellectual property handbook: Policy, law and use (2nd ed., pp. 3–4). Available at wipo.int/about-ip/en/iprm

IP AS A DRIVER OF THE INNOVATION AND COMPETITIVENESS CYCLE

A strong IP framework sets in motion a cycle that sustains Europe's innovation capacity and competitiveness. By protecting returns on risky investments, IP creates the financial incentives for highly skilled individuals and companies to commit resources to advanced technical education, research, and development. These activities are often complex, uncertain, and highly costly but without the prospect of securing IP rights, many of the most capable innovators would be discouraged from taking such risks or would choose to move to jurisdictions where IP incentives and protections are stronger.

The existence of robust IP protection channels talent and capital into innovation-intensive sectors, ensuring that breakthroughs in manufacturing, services, pharmaceuticals, and digital technologies are not only generated, but also developed, commercialised, and adapted across markets. **This reinforces the cycle:** investment in R&D leads to new technologies, which are protected by IP, which in turn provides the rewards that make further investment possible, as shown by the accumulation of talent, knowledge, and corresponding investments in R&D and tangible assets, often on a global scale.

In the absence of such incentives, Europe risks losing its leading innovators to regions such as Asia and North America, where policy environments are often more supportive of commercialisation and where economic dynamism has recently been strongest in IP-intensive industries. For the EU – where the single market remains incomplete – IP protection is an even more critical tool for anchoring investment and ensuring that world-class technologies are brought to market within Europe.

This **MEP “EU IP Guide”** explores these dynamics through the lens of industrial IP intensities and corporate performance, drawing on recent IP and R&D metrics. It asks:

1. How does the EU's IPR performance compare to other major economies in terms of R&D intensity, R&D investment, and capital formation? Which sectors matter most for the EU, and how does the bloc compare in patents, trademarks, designs, and technology-specific innovation outputs?
2. What are the structural weaknesses in the EU's IP protection and enforcement framework?
3. How might emerging regulatory initiatives in areas such as ICT, AI, and the biopharmaceutical industry shape Europe's innovation competitiveness?

The guide begins with an introduction and an overview of the different types of intellectual property and their contribution to economic value added, before examining the EU's relative decline in industrial and innovation performance. It then turns to Member State performance, highlighting both strengths and concentrated weaknesses, and reviews the ambitions of the EU IP strategy against the current state of play. Stakeholder perspectives on IP protection and enforcement are presented next, followed by conclusions and a set of policy recommendations. An annex provides supporting data on the top ten IP-intensive sectors by region, covering capital investments, R&D expenditure, and company counts for 2023.

TYPES OF IP AND THEIR CONTRIBUTION TO ECONOMIC VALUE ADDED

IP and the modern economy operate through two main protection methods:⁵ **informal protection**, which does not require registration and relies on business practices such as trade secrets, speed to market, and confidentiality

agreements, and **formal protection**, where IPRs are granted through registration or legal recognition, providing enforceable rights that safeguard innovations, creative works, brands, designs, and other valuable intangible assets.

Table 1: Main types of IPRs

TYPE	DEFINITION	SUBJECT MATTER
PATENT	Exclusive right for a new invention in exchange for public disclosure.	Products, processes, methods that are new, involve an inventive step, and are industrially applicable.
COPYRIGHT	Right over original works of authorship.	Literary works, software, music, films, technical drawings.
RELATED RIGHTS	Rights (i.e. related to copyright) given to performing artists, producers of phonograms, and broadcasting organisations; also known as neighbouring rights.	Performances, sound recordings (phonograms), and broadcasts.
TRADEMARK	Sign distinguishing goods or services.	Words, logos, shapes, colours.
GEOGRAPHICAL INDICATION	Sign showing a product's origin and qualities linked to that origin.	Champagne, Darjeeling Tea.
INDUSTRIAL DESIGN	Aesthetic or ornamental features of a product.	Shape, patterns, colours.
TRADE SECRET	Confidential, commercially valuable information.	Formulas, manufacturing processes, client lists.
PLANT VARIETY RIGHT (PVR)	Exclusive rights granted to breeders of new plant varieties, giving them control over the production, sale, and use of propagating material (e.g., seeds, cuttings, tissue culture) of those varieties.	New plant varieties with novel characteristics, e.g., higher yield, disease resistance, unique colour.

Source: ECIPE analysis based on WIPO.

5. EPO. IPR Performance Study. Available at: link.epo.org/web/publications/studies/en-ipr-performance-study.pdf

CONTRIBUTION OF IPRS TO ECONOMIC VALUE ADDED AND TRADE

Industry evidence confirms that firms owning IPRs significantly outperform those without them.⁶ Across the EU, this is true both in terms of productivity and wages. Across the EU, companies with any form of IPR record on average €182,000 in revenue per employee compared to €147,000 for non-IPR firms, a productivity premium of nearly 24%.

Wages show a similar gap: €31,000 per employee in IPR-holding firms versus €25,000 in non-owners, a 22% difference. The effects are strongest for patent owners, where wages are more than 43% higher than in firms without IPRs, and for design owners, who achieve the highest revenue per employee at about €190,000. Trademark owners also enjoy a notable advantage, with 21% higher wages and 23% higher productivity. These results underline how IPR ownership is closely tied to stronger firm performance, higher skills intensity, and greater competitiveness across the EU economy.⁷

Firms that own IPRs tend to be significantly larger employers than those without. On average, non-IPR firms employ just over 4 employees, while IPR-holding firms employ more than 9 employees – more than double the size. Among IPR holders, patent-owning firms are the largest, with an average workforce of 13 employees, while design owners average almost 12 employees and trademark owners about 9 employees.

This indicates that IPR ownership is not only associated with stronger productivity and wage performance, but also with greater firm size and employment capacity.

LOOKING AT TYPES OF RIGHTS, THE STUDY SHOWS DIFFERENTIATED IMPACTS:

- **Patents** are associated with the strongest wage premium (+43%) and a 29% higher revenue per employee, reflecting their close link to technology-driven innovation.
- **Trademarks** are the most widely held right and correlate with a 21% wage premium and a 23% productivity premium, highlighting their role in branding and market expansion.
- **Design rights** also show a strong effect, with design owners generating 29% higher revenue per employee and paying nearly 25% higher wages, underscoring the economic value of aesthetic and creative features.

Sectoral evidence confirms these dynamics. Industries with the highest share of IPR owners include pharmaceuticals, computer and electronics, telecommunications, chemicals, and transport equipment. These are also sectors where Europe's global competitiveness relies on sustained R&D and high-value exports.

6. EUIPO-EPO (2025). Intellectual property rights and firm performance in the European Union. Firm-level analysis report, January 2025. Available at euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/reports/2025_IPRs_firm_performance_in_the_EU/IPRs_firm_performance_in_the_EU_FullR_en.pdf

7. This productivity gap arises because IPR firms are typically concentrated in innovation-driven sectors (pharmaceuticals, ICT, chemicals, transport equipment) and rely on R&D and branding to sustain competitive advantages.

The World Intangible Investment Highlights - 2025 finds that intangibles such as R&D, software, data, brands, and organisational capital now drive investment growth in Europe, outpacing tangibles more than threefold since 2008. By 2024, intangibles accounted for a larger share of EU GDP than physical assets, helping to sustain overall capital formation despite weak machinery and infrastructure investment.⁸

Within the EU, Sweden, France, and Finland lead in intangible intensity, each above 15% of GDP, while Germany remains strong in R&D. France saw the fastest growth in 2024, while Southern and Eastern economies still lag but are catching up. This divergence reflects structural differences, with advanced economies consolidating their lead and others beginning to close the gap.

Organisational capital and R&D dominate Europe's intangible mix, but software and data are the fastest-growing category, boosted by AI. Yet the EU trails the U.S., which invests almost twice as much as Europe's leading economies combined. Closing this gap will require deeper investment in data, software, and AI capabilities, while supporting lagging member states to scale their intangible intensity.

8. WIPO (2025). World Intangible Investment Highlights - 2025 Better Data for Better Policy. Available at wipo.int/web-publications/world-intangible-investment-highlights-2025/assets/76423/RN2025-8EN_WIIH_WEB.pdf



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RELATIVE DECLINE IN THE EU'S INDUSTRIAL AND INNOVATION PERFORMANCE

Latest patent data shows a clear divergence in where U.S. innovators and EU innovators hold their technological strengths.⁹ U.S. innovators account for more than half of all patents filed in information and communication technologies (ICT) as well as pharmaceuticals and biotech, two of the most R&D-intensive, high-growth, and IPR-dependent sectors in the modern economy. EU innovators, meanwhile, lead decisively in mobility technologies, with roughly half of global patents in that domain, reflecting its deep industrial expertise in automotive, aerospace, and transport engineering.

The challenge is that mobility is becoming a "platform" industry, where future value will rely on embedded ICT, advanced electronics, and biotech-derived materials. Without strong patent positions in these adjacent layers, the EU risks a "middle technology trap": competitive in mature engineering sectors but lagging in emerging domains that set standards and capture the highest profits. In this environment, IPRs are not a legal formality but the backbone of competitiveness where patents are filed, standards follow, and falling behind means importing core technologies instead of exporting them.

Recent WIPO data provide reliable figures mainly for patents, trademarks, and industrial designs, offering a snapshot of where coun-

tries are building their innovation capacity.¹⁰ Patents remain the clearest marker of technological leadership. China dominated with over 1.65 million patent applications, far ahead of the United States (516,000), Japan (418,000), South Korea (290,000), and Germany (132,000). China's filings centred on digital communications, computing, and energy-related machinery, while the U.S. focused on medical technology and digital platforms. Germany, France, and Italy continued to prioritise traditional strengths in transport and mechanical engineering.

The picture in trademarks and industrial designs reinforces these differences. China again led with 7.4 million trademark classes and 880,000 design filings, dwarfing all competitors. The U.S., Germany, Italy, and France ranked highly in designs and trademarks but at a far smaller scale, reflecting strong but more mature consumer and industrial markets. For Europe, this strength in branding and design supports competitiveness in established sectors such as automotive, luxury goods, and machinery, but it does not offset weaker positions in frontier technologies where standards are being set.

Taken together, these patterns underscore a serious and widening competitiveness gap that demands attention. Europe's leading economies are still anchored in industrial and consumer

9. Fuest, C., Gros, D., and Mengel, P.L. (2024). EU Innovation Policy: How to Escape The Middle Technology Trap. Available At: lep.Unibocconi.Eu/Sites/Default/Files/Media/Attach/Report_Eu%20innovation%20policy.Pdf?Versionid=Mskntakhnj2oqom-2vq8bsobohx8e1cwj

10. WIPO (2025). Intellectual Property Fact Sheet 2023. Available at wipo.int/edocs/statistics-country-profile/en/_list/t1.pdf

strengths, while the U.S. and China are consolidating technological leadership in digital, AI, and biotech fields. Patents show where technological standards will emerge; trademarks and designs show where firms seek to capture consumer value. Unless Europe shifts more decisively into software, digital infrastructure, and advanced life sciences, it risks remaining competitive in yesterday's industries but lagging in the technologies that will define tomorrow's.

As concerns the commercialisation of technological innovation, latest EU Industrial R&D Investment Scoreboard confirms the scale of Europe's IP and tech development challenge.¹¹ The world's top 2,000 R&D investors, headquartered across 40 countries, account for more than 85% of global business-funded R&D. In 2023, these companies invested EUR 1,257 billion in R&D, with the U.S. accounting for 42.3% of the total, the EU 18.7%, China 17.1%, Japan 8.3%, and the rest of the world 13.5%.¹² While the EU has posted stronger nominal R&D growth than both the U.S. and China for two consecutive years, its R&D productivity remains lower meaning each euro invested delivers fewer marketable products and breakthrough ideas.

This is not due to a lack of world-class universities, research institutes, or individual companies, but to structural conditions: (1) the EU is not a single market comparable to the U.S. or China, (2) many Member States are high-tax jurisdictions, and (3) R&D-intensive companies face fragmented rules, duplicative compliance burdens, and uneven enforcement across Member States. As a result,

many European firms choose to expand or even relocate their most innovation-intensive activities to more scalable jurisdictions most often the U.S.

Comparative data across the top IP-intensive nevertheless indicate just how entrenched the global rankings have become.¹³ In software and computer services, the fastest-growing global sector – the U.S. commands 83% of accumulated capital investment and 75% of accumulated R&D expenditure, with 57% of all companies in this segment headquartered there. The EU's share is just 2% of capital investment, 6% of R&D, and 7% of company count. In technology hardware and equipment, the U.S. accounts for over half of global R&D expenditure and 41% of capital investment, while China captures 20% and 18% respectively; the EU trails both. Even in pharmaceuticals and biotech, where Europe has a historic industrial base, the U.S. holds 52% of global R&D compared with the EU's 17%. The EU's relative strengths lie mainly in automobiles and parts (30% of global capital, 45% of R&D) and certain manufacturing segments like aerospace and industrial engineering – sectors that are important, but not the primary growth drivers of the coming decades. A full regional comparison of the EU's position in the top 10 IP-intensive industries is provided in Annex I.

When measured directly against its two main competitors, the EU's structural weaknesses become even clearer. Against the U.S., the EU suffers major deficits in the number of companies, capital investment, and R&D spending across

most high-growth sectors. The gaps are most acute in software and computer services (140 fewer companies, EUR 106.9 billion less capital, EUR 165.5 billion less R&D) and technology hardware and equipment (52 fewer companies, EUR 57.9 billion less capital, EUR 91.7 billion less R&D). Even in pharmaceuticals and biotechnology, the

EU lags by 146 companies and EUR 82.3 billion in R&D. This underscores the EU's difficulty in scaling firms to a level that can compete with U.S. leaders, especially in sectors where innovation cycles are fast and IP is leveraged aggressively for market dominance.

Table 2: Comparative Gaps in High-Growth Sectors – EU vs. the U.S. and China, Differences in number of companies, capital investment (EUR million), and R&D expenditure (EUR million). Negative values indicate EU lags; positive values indicate EU leads.

	NUMBER OF COMPANIES IN SECTOR		CAPITAL INVESTMENT		R&D EXPENDITURE	
	EU GAP VS. U.S.	EU GAP VS. CHINA	EU GAP VS. U.S.	EU GAP VS. CHINA	EU GAP VS. U.S.	EU GAP VS. CHINA
PHARMACEUTICALS & BIOTECHNOLOGY	-146	-7	-10,189	+6,075	-82,303	+26,527
SOFTWARE & COMPUTER SERVICES	-140	-41	-106,871	-9,487	-165,483	-16,400
TECHNOLOGY HARDWARE & EQUIPMENT	-52	-29	-57,906	-20,676	-91,682	-15,113
AEROSPACE & DEFENCE	-4	+6	-264	+5,668	-2,040	+6,819
AUTOMOBILES & PARTS	+4	-3	+12,621	+31,592	+50,008	+58,618
ELECTRONIC & ELECTRICAL EQUIPMENT	-23	-60	+1,389	-30,396	+447	-8,739
HEALTH CARE EQUIPMENT & SERVICES	-28	+8	-2,084	+6,251	-7,084	+5,885
CHEMICALS	-3	-8	+5,450	-1,863	+846	+2,160
INDUSTRIAL ENGINEERING	+19	0	+3,549	-6,560	+4,768	+1,200
MEDIA	-4	-2	-289	-117	-1,522	-1,811

Source: 2024 EU R&D scoreboard, ECIPE analysis. Annual data from 2023.

The EU's position against China is more mixed, with strengths concentrated in advanced manufacturing and life sciences but vulnerabilities in electronics and high-tech industrials.

Europe leads in automobiles and parts (EUR 31.6 billion more capital investment, EUR 58.6 billion more R&D than China) and in aerospace, chemicals, and certain health technologies.

11. European Commission (2024). The 2024 EU Industrial R&D Investment Scoreboard. Available at iri.jrc.ec.europa.eu/scoreboard/2024-eu-industrial-rd-investment-scoreboard

12. Despite investing less than the EU combined, both China and Japan continue to deliver high levels of patenting and innovation activity, highlighting that R&D productivity and commercialisation depend on more than just absolute spending levels.

13. It should be noted that the comparative figures that follow are based on the location of a company's headquarters. While widely used, this metric can be misleading. In today's global economy, R&D, innovation, and investment activities are rarely confined to one country. Large firms work through internationally connected research centres, distributed teams, and cross-border innovation networks. As a result, headquarters location may not reflect where the actual innovation happens, since these activities are shaped by global talent flows, integrated supply chains, and multinational investment strategies.

However, China outperforms the EU in electronic and electrical equipment (60 more companies, EUR 30.4 billion more capital) and is closing R&D gaps in other technology-heavy manufacturing areas. This reflects a broader strategic shift: China is no longer just a low-cost

manufacturing hub, but a formidable innovation player in green tech, electronics, and industrial systems directly targeting sectors critical for Europe's green and digital transitions.

CASE STUDY: THE GLOBAL BIOPHARMA-CEUTICAL PIPELINE – EUROPE'S SHRINKING SHARE AND THE NEED FOR STRONG IP PROTECTION

Biopharmaceutical companies have long been a backbone of the EU's high-value industry and a cornerstone of its high-value-added exports. Beyond their economic weight, they deliver substantial healthcare benefits both within Europe and globally. While the EU's sector remains large by international standards, its global share is gradually shrinking. Nevertheless, it continues to play an enormously important role in sustaining local R&D ecosystems, engaging in cross-border research collaborations, anchoring production capacity within Europe, outsourcing specialised manufacturing to global partners, and structuring licensing agreements that underpin trust, knowledge transfer, and cooperation across the worldwide innovation system.¹⁴

Recent pipeline data show that while the global pharmaceutical pipeline has expanded to record levels, the share of EU-based companies is declining in several key therapeutic areas particularly in oncology and advanced biologics – as North America and parts of Asia capture a growing proportion of later-stage assets. This shift is most visible in the composition of Phase III and

pre-registration pipelines, where U.S.-headquartered companies now account for the largest share of late-stage candidates, followed by firms from China, Japan, and other Asian markets.¹⁵

The geography of clinical trial sponsorship further illustrates the shift. In 2023, 2,357 companies worldwide sponsored trial starts – more than double the number in 2008 – yet the average number of trials per sponsor has halved from four to two over the same period. China's rise is the most dramatic change, with its headquarters-based share of trial starts surging from just 1% in 2008 and 3% in 2013 to 28% in 2023. South Korea has also expanded its role, building competitive niches in generics and biosimilars. In contrast, Europe's share has fallen sharply from 38% in 2013 to 23% in 2023. European-headquartered companies now start only about two-thirds as many trials as U.S. counterparts – a reversal from 2013, when Europe led. This shift underscores both the intensifying global competition for biopharmaceutical innovation and the strategic need for an EU policy environment that enables scale, encourages investment, and safeguards IP in cross-border research and commercialisation.

Licensing has emerged as a critical growth strategy for the life sciences sector, enabling companies to access external innovation, diversify portfolios, and expand market reach while keeping risks and costs

under control.¹⁶ In an environment marked by rising R&D expenses, looming patent cliffs, intensifying price pressures, and increasingly complex financing conditions, licensing offers a lower-risk alternative to large-scale in-house development or acquisitions. It allows pharmaceutical firms to replenish pipelines, bridge revenue gaps after patent expirations, and acquire assets at various stages of development from early-stage innovation sourced from academia to late-stage products closer to market. Moreover, Europe remains a significant contributor to early-stage research, yet a growing share of commercialisation rights for EU-origin molecules are being licensed to non-EU firms for final development and global launch. This trend reflects both the attractiveness of non-EU markets for achieving scale and the structural barriers within the EU, including fragmented regulatory pathways and uneven market access conditions for novel medicines. It also underscores the critical importance of strong and enforceable intellectual property rights, which are a prerequisite for cross-border licensing, international co-development, and the trust that underpins global commercialisation partnerships.

The strategic value of licensing is further amplified by shifting global innovation flows, international R&D cooperation, and geopolitical considerations. Leading drug candidates often emerge from cross-border consortia, are tested in multinational trial networks, and rely on global manufacturing and distribution systems. Such interconnected pipelines require robust IP protection and consistent enforcement against infringements to safeguard investments, enable technology transfer, and ensure that commercial returns feed back into further innovation. Weak IP enforcement – particularly in jurisdictions with divergent or slow litigation systems – risks undermining Europe's ability to compete on equal terms in these global innovation networks.

Importantly, licensing dynamics differ between sectors. In biopharma, product cycles are long, often exceeding 20 years as drugs remain valuable treatments under strict regulatory oversight. Here, licensing ensures steady returns over decades and helps share the high costs and risks of development. By contrast, in the technology sector, product cycles are much shorter: software, platforms, and digital tools can become obsolete within a year, with looser regulation allowing faster market entry but also exposing innovators to rapid imitation. These differences make licensing in biopharma a cornerstone of long-term strategy, while in tech it is a critical but more tactical tool for protecting margins and maintaining competitiveness in fast-moving markets.

In this evolving landscape, both in-licensing and out-licensing demand rigorous market analysis, careful partner selection, and precise deal structuring to maximise returns. For companies in the life sciences sector, licensing is no longer merely a supplementary tactic – it is a core strategic tool for sustaining innovation, protecting margins, and achieving long-term growth.

For policymakers seeking to strengthen incentives to innovate and invest in the EU, the strategic message is clear: Europe has the talent, research excellence, and industrial heritage but it often lacks the market conditions that enable R&D-intensive companies to scale seamlessly across borders. Fragmented IP rights and enforcement, combined with high tax taxes on labour and corporate income in many Member States, invite Europe's most innovative firms to grow elsewhere.¹⁷ Closing this gap will require not only higher R&D investment in digital and ICT-driven sectors, but also strong IP protection in high-value industries, harmonised rules across the EU, and a genuinely integrated Single Market for innovation.

14. Citeline Clinical (2024). Pharma R&D Annual Review 2024. Available at citeline.com/rd25?utm_source=google&utm_medium=cp-c&utm_term=pharma%20r%26d%20annual%20review%7C&utm_campaign=-ClinicalPharmaRD24EMEA&gad_source=1&gad_campaignid=21196124329&gbraid=0AAAApYLUd5iE42aQ9N33XYVpIWxOoNrl&gclid=CjoKCOjwzOvEBhDVARIsADHfJJTo1qSCObtVyb-jobV_vf00oQxNgVoz-GzKUf_VoshtCVDd6l-8Hee4aAh-OEALw_wcB#review

15. IQVIA (2024). Global Trends in R&D 2024. Available at tremplin.consortium.mcgill.ca/wp-content/uploads/2024/09/iqvia-institute-randd-trends-2024.pdf?

16. EY (2024). Why licensing deals are a powerful source of growth in life sciences. Available at ey.com/en_gl/insights/life-sciences/why-licensing-deals-are-a-powerful-source-of-growth-in-life-sciences

17. Tax Foundation (2025). Corporate Income Tax Rates in Europe, 2025. Available at taxfoundation.org/data/all/eu/corporate-income-tax-rates-europe/#:~:text=On%20average%2C%20the%20European%20countries,was%2023.5%20percent%20in%202024;also see: Tax Foundation (2025). Tax Burden on Labor in Europe. Available at taxfoundation.org/data/all/eu/tax-burden-on-labor-europe/

EU MEMBER STATE PERFORMANCE – STRENGTHS AND CONCENTRATED WEAKNESSES

The EU has made some measurable progress especially with the Unitary Patent and design reforms but fragmentation, gaps in new technology regulation, and uneven enforcement continue to undermine the long-term ambition of making the Single Market a legally unified innovation space.

The EU’s IP framework sets high-level rules. Yet, performance in generating, protecting, and monetising intellectual property varies widely between Member States. While the legal framework is the common starting point, robust IP performance also depends on the capacity to enforce rights, the ease of monetising IP assets, and the technological readiness of the economy to generate and exploit new ideas.

The protection and enforcement of intellectual property rights is regularly measured by leading international indices, each applying distinct methodologies to capture the multiple dimensions of how countries safeguard and commercialise innovation. The International Property Rights Index (IPRI), published by the Property Rights Alliance, assesses the strength of IP systems across patents, copyrights, trademarks, enforcement practices, and participation in international treaties.¹⁸ The latest rankings presented in The IPRI 2024 (2025 edition) highlight that Europe performs relatively strongly in the protection of IPR, with the U.S., UK, Austria, and Finland among the global leaders. In these countries, patents, trademarks, and copyright

protection are well developed, forming the backbone of their innovation-driven economies. However, the report makes clear that performance is uneven across the EU, with substantial gaps between the frontrunners and the weaker performers. In contrast, we also look at the U.S. Chamber of Commerce International IP Index, which benchmarks 55 global economies against 53 indicators, providing a broader assessment that also includes trade secrets, systemic efficiency, and alignment with global IP standards.¹⁹

A key challenge lies in the enforcement of IP rights. While legislation is generally aligned with international standards, practical enforcement remains inconsistent. In Southern European countries such as Italy, Spain, and Greece, enforcement delays, judicial inefficiency, and bureaucratic hurdles limit the effectiveness of IP protections. In Eastern Europe, including Romania, Slovakia, and Bulgaria, weak rule of law and corruption concerns often translate into inadequate protection against infringement, discouraging both domestic innovators and foreign investors.

Another weakness is the commercialisation gap between research outputs and market uptake. In countries like Poland and Slovakia, innovation is strong in theory but less effectively monetised, reflected in low numbers of patent filings and limited IP-related income. This contrasts with Northern and Western Europe, where universities and firms are better integrated into global innovation ecosystems.

Without stronger mechanisms to turn knowledge into market value, these EU countries risk falling behind in sectors driven by advanced technologies and digital services.

Finally, the report underlines the growing challenge of digital piracy and emerging technologies. Even in high-scoring countries such as France and Spain, digital enforcement struggles to keep pace with new forms of infringement.

This undermines the potential of creative industries and raises broader concerns about Europe’s readiness for an AI-driven economy. Overall, while the EU as a whole benefits from a strong IPR framework, systemic weaknesses in enforcement, commercialisation, and adaptation to digital realities continue to hold back many member states.

Table 3: Comparing strength of IP protection, IPRI and U.S. Chamber IP Index, 2025 editions

COUNTRY	INTERNATIONAL PROPERTY RIGHTS INDEX (IPRI) 2024 (2025 EDITION)	IPRI LP (LEGAL & POLITICAL)	IPRI PPR (PHYSICAL PROPERTY RIGHTS)	IPRI IPR (INTELLECTUAL PROPERTY RIGHTS)	US CHAMBER IP INDEX RANK (2025 EDITION)
LUXEMBOURG (EU, OECD)	8.2	8.1	9.3	7.3	–
AUSTRIA (EU, OECD)	7.7	7.7	7.9	7.6	–
GERMANY (EU, OECD)	7.7	8.0	7.6	7.6	4/55
FRANCE (EU, OECD)	7.6	7.0	8.3	7.5	3/55
IRELAND (EU, OECD)	7.6	8.1	7.3	7.4	8/55
SWEDEN (EU, OECD)	7.6	8.3	6.8	7.6	5/55
FINLAND (EU, OECD)	7.5	8.6	7.0	7.1	–
BELGIUM (EU, OECD)	7.5	7.4	7.7	7.3	–
NETHERLANDS (EU, OECD)	7.4	8.0	6.7	7.5	6/55
SPAIN (EU, OECD)	7.1	6.2	8.3	6.9	9/55
PORTUGAL (EU, OECD)	7.1	6.8	7.8	6.7	–
CZECHIA (EU, OECD)	7.0	7.2	7.0	6.8	–
ITALY (EU, OECD)	7.0	6.4	7.7	6.7	12/55
SLOVENIA (EU, OECD)	6.6	6.6	7.3	6.0	–
LITHUANIA (EU, OECD)	6.6	7.2	6.6	6.0	–
LATVIA (EU, OECD)	6.4	6.9	6.5	5.9	–
CYPRUS (EU, OECD)	6.4	6.4	7.0	5.7	–
MALTA (EU, OECD)	6.3	6.4	6.6	5.9	–
SLOVAKIA (EU, OECD)	6.3	6.2	6.9	5.8	–
CROATIA (EU, OECD)	6.3	5.6	7.6	5.5	–
ROMANIA (EU, OECD)	6.3	5.7	6.7	6.5	–
BULGARIA (EU, OECD)	6.2	5.1	7.8	5.7	–
POLAND (EU, OECD)	6.0	5.9	6.4	5.7	17/55
GREECE (EU, OECD)	5.9	5.5	6.4	5.9	16/55
HUNGARY (EU, OECD)	5.6	5.1	5.2	6.3	14/55

18. Property Rights Alliance (2025). International Property Rights Index 2024. Available at internationalpropertyrightsindex.org
19. US Chamber of Commerce (2025). 2025 International IP Index. Available at uschamber.com/intellectual-property/2025-ip-index

COUNTRY	INTERNATIONAL PROPERTY RIGHTS INDEX (IPRI) 2024 (2025 EDITION)	IPRI LP (LEGAL & POLITICAL)	IPRI PPR (PHYSICAL PROPERTY RIGHTS)	IPRI IPR INTELLECTUAL PROPERTY RIGHTS)	US CHAMBER IP INDEX RANK (2025 EDITION)
ESTONIA (EU, OECD)	–	–	–	–	–
DENMARK (EU, OECD)	7.8	8.7	7.6	7.0	–
NORWAY (OECD)	7.3	8.5	6.6	6.9	–
ICELAND (OECD)	7.5	8.0	8.1	6.4	–
SWITZERLAND (OECD)	8.0	8.3	9.2	6.6	11/55
UNITED KINGDOM (OECD)	7.4	7.5	7.2	7.5	2/55
TURKEY (OECD)	4.1	3.1	3.9	5.2	30/55
UNITED STATES (OECD)	7.7	6.7	8.3	8.0	1/55
CANADA (OECD)	7.8	8.0	8.4	6.9	18/55
MEXICO (OECD)	4.3	3.5	3.6	5.9	23/55
CHILE (OECD)	6.0	6.4	6.2	5.4	32/55
ISRAEL (OECD)	6.6	5.2	7.6	6.9	19/55
JAPAN (OECD)	7.9	7.7	8.9	7.1	7/55
SOUTH KOREA (OECD)	7.2	7.0	8.0	6.6	10/55
AUSTRALIA (OECD)	8.0	8.1	8.6	7.4	15/55
NEW ZEALAND (OECD)	7.7	8.5	7.6	6.9	21/55
CHINA	4.9	4.0	4.3	6.5	24/55

Sources: Property Rights Alliance, IPRI 2025; U.S. Chamber’s International IP Index 2025.

The following analysis draws on country-specific findings of the latest edition of the **U.S. Chamber’s International IP Index**. From this dataset, we focus on a comparative sample that includes the global leaders – the U.S. and the UK, the three best and three weakest performing EU Member States, as well as countries like Switzerland, Japan, South Korea, and China. The purpose is to provide a comparative international perspective that not only highlights where Europe’s strongest performers stand relative to their global peers but also underscores the weaknesses that continue to hold back several EU economies. Detailed country-specific strengths and weaknesses are outlined in Table 4 below.

The leading countries – the U.S., UK, France, Germany, and Sweden – all share **strong legal frameworks, efficient courts, and strong participation in international treaties**.

They also provide well-established incentives for innovation, with the U.S. in particular pioneering commercialisation mechanisms. Japan and South Korea also perform strongly in patents, trademarks, and systemic efficiency, while Switzerland combines high-quality protections with active international leadership. China stands apart; it has made rapid progress in expanding its IP system and increasing filings, but enforcement remains inconsistent and credibility gaps persist.

Across the sample, weaknesses manifest differently. In the U.S. and UK, political debates around **drug pricing, patentability, and digital copyright create uncertainty**. In the top EU performers, the most common weakness lies in the **commercialisation of public research and the affordability of litigation for SMEs** (small and medium enterprises) – structural issues that undermine the translation of innovation into market outcomes.

Among the weaker EU countries – Poland, Greece, and Hungary – **enforcement remains slow and unpredictable, judicial independence or capacity is limited**, and innovation intensity lags behind the EU average. China’s progress is offset by persistent piracy, weak trade secret protection, and policies that discourage global innovators from prioritising its market.

For the EU as a whole, it is important to note that new **European legislation – whether supportive or restrictive – has direct and automatic effects on all Member States**, regardless of their starting point.

While leading economies such as France, Germany, and Sweden may have the institutional capacity to absorb regulatory change, weaker performers like Poland, Greece, and Hungary risk further entrenching their structural disadvantages. This makes the quality and direction of EU-level policymaking particularly critical: reforms to areas such as pharmaceutical incentives, design rights, or standard-essential patents will shape not only the innovation environment of individual Member States, but also the competitiveness of the EU as a whole.





Table 4: Overview of country-specific strengths and weaknesses in the protection and enforcement of IP

COUNTRY	SCORE (%)	RANK	STRENGTHS	WEAKNESSES
UNITED STATES	95.17	1 (global)	- Strongest IP system worldwide; patents, copyrights, trademarks all robust. - Longstanding commercialisation incentives (e.g. Orphan Drug Act). - Strong enforcement capacity and systemic efficiency. - IP-intensive industries = 40%+ GDP, 44% employment.	- Political debate over march-in rights and drug pricing undermines biopharma incentives. - Uncertainty around patentability (esp. software & biotech). - FTC move against non-competes (rolled back) created concerns for trade secret protection.
UNITED KINGDOM	93.98	2 (global)	- Comprehensive IP laws, efficient enforcement, high treaty compliance. - Attractive R&D tax credits and SME incentives. - Predictable legal environment; specialised IP courts.	- Risk of divergence from EU framework creates uncertainty. - Digital copyright enforcement still faces gaps. - Limited reforms in standard essential patents (SEPs).
FRANCE	93.51	Top 3 EU	- Strong patents, trademarks, and copyrights. - National Anti-Counterfeiting Plan (2024–26) focusing on online markets. - Efficient courts and systemic IP governance.	- Weak technology transfer from public research. - Litigation costly, especially for SMEs. - Inconsistent enforcement of small-scale counterfeiting.
GERMANY	92.42	Top 3 EU	- Strong patent ecosystem, especially in engineering and biotech. - Specialised IP courts ensure legal certainty. - High innovation intensity and strong treaty participation.	- Litigation costly and lengthy; deters SMEs. - Weak commercialisation of university research. - Gaps in online copyright enforcement.
SWEDEN	92.09	Top 3 EU	- High systemic efficiency and robust legal protections. - Strong incentives in life sciences innovation. - Fast, predictable courts.	- Persistent commercialisation gap between public R&D and private sector. - SMEs discouraged from litigation due to cost. - Reliance on EU-level protections.
POLAND	71.91	Bottom 3 EU	- EU-aligned IP legislation and treaties. - Functional patent and trademark systems. - Some progress in enforcement.	- Enforcement slow and unpredictable. - Low patent intensity and weak international commercialisation. - SMEs underperform in innovation. - Limited tech transfer from research institutions.

COUNTRY	SCORE (%)	RANK	STRENGTHS	WEAKNESSES
GREECE	72.57	Bottom 3 EU	- Alignment with EU laws; copyright framework updated. - Participation in key treaties ensures minimum protections.	- Weak enforcement: courts slow and under-resourced. - High piracy and counterfeiting tied to informal economy. - Few incentives for commercialisation of innovation.
HUNGARY	77.74	Bottom 3 EU	- EU-aligned IP framework; treaty participation. - Enforcement improving compared to other weaker EU peers.	- Judicial independence concerns reduce predictability. - Low level of licensing and tech transfer. - Over-reliance on EU-level protections, weak domestic enforcement culture.
SWITZERLAND	85.83	11/55 in total ranking	- High-quality patent protection; strong enforcement institutions. - Treaty leadership, active in global IP governance. - Strong R&D-driven economy.	- Limited commercialisation incentives compared to peers. - High litigation costs for SMEs.
JAPAN	90.81	Asia #1	- Robust patents, trademarks, and design rights. - Advanced incentives for rare diseases and high-tech innovation. - Highly efficient and predictable courts.	- Conservative adaptation of copyright to digital platforms. - Limited flexibility in SEPs/ licensing. - Demographic challenges for long-term innovation.
SOUTH KOREA	85.94	Asia #2	- Strong patent and trade secret protections. - Advanced incentives for R&D and rare diseases. - Specialised IP courts and effective enforcement.	Online piracy persists. Patent litigation costly for SMEs. Innovation ecosystem dominated by large chaebols, limiting SME uptake.
CHINA	54.58	Asia #7	- Rapidly growing patent and trademark system. - High registration activity, strong global IP filings. - Expanding treaty participation and legal reforms.	- Enforcement remains inconsistent. - Trade secrets protection weak despite reforms. - Counterfeiting and piracy widespread. - Patent term restoration tied to first launch in China – disincentivises global innovators.

Sources: U.S. Chamber’s International IP Index 2025.

AMBITIONS IN THE EU IP STRATEGY AND WHERE WE STAND NOW

In 2020, the European Commission adopted its **Intellectual Property Action Plan**. The Communication emphasised that IP-intensive industries are central to the European economy not only because they generate high-value goods and services, but also because they anchor substantial investment, innovation, and skilled employment in Member States. The Action Plan, however, warned that the EU's system for protecting and commercialising intellectual property was lagging behind technological change, intensifying global competition, and the practical needs of businesses particularly SMEs to access, safeguard, and monetise innovation across borders.²⁰

A central concern was the **continuing fragmentation of the EU IP system**. **Procedures remain complex and costly**, with pharmaceutical Supplementary Protection Certificates (SPCs), for example, only granted nationally.²¹ Companies must therefore submit separate applications in each Member State, multiplying legal costs and timelines and undermining the efficiencies that the Single Market is supposed to deliver.

Similar **gaps exist in design and geographical indication (GI) protection**. Rather than operating as predictable, user-friendly "one-stop shops", registration processes are often piecemeal, rules unevenly applied, and certain categories – such as non-agricultural GIs – have lacked a unified EU-level regime.

The Action Plan also stressed that **tools for IP access and licensing were underdeveloped**. In fast-moving technology fields such as telecommunications and the Internet of Things, the licensing of Standard-Essential Patents (SEPs) has proved cumbersome and expensive for both rights holders and implementers. Clearer, more predictable frameworks were deemed necessary to encourage good-faith negotiations and reduce the reliance on litigation. Beyond this, the EU faces an uneven global playing field. Policy-makers have argued that Europe should use its regulatory weight to act as a global norm-setter, countering practices such as bad-faith registrations and IP misappropriation while promoting stronger benchmarks in areas such as SEP licensing and data sharing.

Legal uncertainty remains another significant challenge, particularly in emerging fields. Questions have arisen about how to treat intellectual property generated or deployed in contexts ranging from 3D printing²², digital designs²³, and AI-created works²⁴, to gene editing²⁵ or metaverse-based virtual assets²⁶. Each raises fundamental issues: how to balance innovation and accessibility with the risks of uncontrolled replication and piracy, how to adapt established categories such as authorship and inventorship to new technologies, and how to provide harmonised, predictable rules in markets that are global by design.

Since 2020, the EU has taken steps to address these concerns through a series of reforms designed to modernise protection, reduce costs, and adapt IP law to new technologies and competitive pressures. These efforts build on long-running debates about how best to balance the interests of innovators, consumers, and industry, particularly in areas where Europe aspires to strengthen its competitiveness and promote cross-border innovation.

The measures adopted or proposed since then span patents, designs, copyright, geographical indications, and enforcement practices. They include the long-awaited launch of the Unitary Patent and Unified Patent Court, a comprehensive update of design law to capture digital and non-physical products, and a new framework for geographical indications that extends beyond agri-food to industrial goods. Other reforms have clarified the overlap between copyright and design, introduced digital tools for enforcement, and revisited rules on compulsory licences and standard-essential patents. Together, these changes illustrate the EU's attempt to streamline its IP system, but they also raise new questions about cost, legal certainty and the actual strength of IP protection.

20. Thum-Thysen, A., Voigt, P., Bilbao-Osorio, B., Maier, C., & Ognyanova, D. (2017). Unlocking investment in intangible assets, DG ECFIN discussion paper 047. ISSN 2443-8022 (online). Available at: economy-finance.ec.europa.eu/document/download/b7d987bc-2ea1-48ab-ad11-320f7493a359_en?filename=dp047_en.pdf

21. Supplementary Protection Certificates (SPCs) are a form of intellectual property right in the EU that extends the protection of patented medicinal and plant protection products beyond the normal 20-year patent term, compensating for time lost in obtaining regulatory approval.

22. European Commission (2020). The Intellectual Property implications of the development of industrial 3D printing. Available at op.europa.eu/en/publication-detail/-/publication/e193a586-7f8c-11ea-aea8-01aa75ed71a1

23. Bird & Bird (2023). EU design laws: changes on the horizon. Available at designwrites.twobirds.com/post/102j024/eu-design-laws-changes-on-the-horizon

24. Dehdar, F. (2025). Patentability of invention made by AI. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5259145

25. EPRS (2022). Genome editing in humans - A survey of law, regulation and governance principles. Available at [europarl.europa.eu/RegData/etudes/STUD/2022/729506/EPRS_STU\(2022\)729506_EN.pdf](https://europarl.europa.eu/RegData/etudes/STUD/2022/729506/EPRS_STU(2022)729506_EN.pdf)

26. EU IPO (2024). Impact of Technology Deep Dive Report II, Impact of the metaverse on infringement and enforcement of intellectual property. Available at uiipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/reports/2024_Impact_of_the_metaverse_on_IP_infringement_and_enforcement/Impact_of_the_metaverse_on_IP_infringement_and_enforcement_FullR_en.pdf

Table 5: Major EU IP Reforms Since 2020

REFORM AREA	MAIN FEATURES	IMPLICATIONS / CONCERNS
UNITARY PATENT & UNIFIED PATENT COURT (UPC) (OPERATIONAL 2023)	- Single-patent protection in up to 25 Member States. - Centralised litigation at UPC. - Lifetime cost ≈ €10,000 (≈6× cheaper than separate filings). "All or nothing" coverage. 18 Member States participating (DE, FR, IT); ES, PL, HR not joined; UK withdrew.	- Reduces initial costs, esp. for broad coverage. - Potentially less flexible – costly if protection needed only in some markets. - Long-term renewal fees may rise.
DESIGN LAW REFORM (2024)	- Broader scope: GUIs, logos, patterns, spatial arrangements, parts of complex products. - Only visible features protected. - Explicit coverage of 3D printing (requires consent). - Faster, cheaper, SME-friendly registration. - Applications only via EUIPO.	- Increased clarity and legal certainty. - Lower admin burden, esp. for design-intensive SMEs. - Balances IP with consumer interests in repair/aftermarkets. "Repair clause": no protection for "must match" spare parts.
COPYRIGHT-DESIGN OVERLAP (POST-CJEU COFEMEL RULING)	Directive 98/71/EC on the legal protection of designs allows designs that meet originality threshold to enjoy copyright protection.	- Dual protection strengthens rights but risks overreach. - May extend monopoly far beyond 25-year design term (up to 70 yrs p.m.a.). - Potential inconsistencies across Member States.
DIGITAL MARKET ACT (DMA)	The DMA is not an IP law in a narrow sense, but it significantly affects how IP is licensed, accessed, and enforced in digital markets. It regulates large online platforms – designated as "gatekeepers" – such as app stores, search engines, and online marketplaces.	- The DMA creates opportunities for rightsholders but also introduces tensions that may complicate IP enforcement and licensing in practices. - Intended to improve access for SMEs and creators by curbing gatekeeper self-preferencing, ensuring data access, and increasing transparency in digital markets. This can support fairer monetisation and enforcement of IP rights. - Risks of conflict with existing IP frameworks, potential weakening of licensing and trade secrets through data-sharing obligations, and greater legal uncertainty due to overlap between competition law and IP law.
GEOGRAPHICAL INDICATIONS (GIS) (2024)	- Unified EU framework for agri-food, wine, spirits, handicrafts, industrial products. - Streamlined 2-phase registration (national EU). - Stricter rules for homonymous GIs.	- Clearer system, esp. for third-country applicants. - Better consumer protection (less confusion).
TECHNOLOGY & ENFORCEMENT TOOLS	- Promotion of AI and blockchain for IP enforcement. - Applications in licensing fee distribution and anti-counterfeiting.	- Increased transparency and efficiency. - Still experimental; requires adoption by industry and authorities.
COMPULSORY LICENCES (CLS)	- Reaffirmed as last-resort emergency tool. - Fast-track national procedures encouraged. - Emphasis on early coordination and info-sharing (duration, royalties).	- Overuse or vague royalty standards risk undermining R&D incentives. - Disputes over "reasonable royalties" create substantial uncertainty.
STANDARD-ESSENTIAL PATENTS (SEPS)	Planned reform withdrawn after strong opposition.	- Concerns that reform would stifle innovation and complicate licensing. - Debate remains unresolved.

6

STAKEHOLDER PERSPECTIVES ON IP PROTECTION AND ENFORCEMENT IN THE EU

Despite three decades of harmonisation and recent reforms, **the EU's IP system remains fragmented and highly costly to navigate**. While the launch of the Unitary Patent and Unified Patent Court in 2023 marked progress, much of Europe's IP landscape is still characterised by patchwork implementation.

Patents, designs, copyright, and geographical indications operate under varying mixes of EU regulations, directives, and national regimes. This fragmentation keeps driving up innovators' compliance costs, multiplies procedures, and produces legal uncertainty – outcomes that weigh most heavily on SMEs. Business groups have consistently argued that these inefficiencies undermine the EU's ambition for a seamless Single Market in innovation.

Major business associations – including BusinessEurope, SMEunited, the European DIGITAL SME Alliance, and EFPIA have repeatedly called for **more predictable and harmonised enforcement**. An overview of major concerns and responses to reform proposals is provided in Table 6.

Stakeholders highlight **three persistent weaknesses: the high costs of multiple registrations and translations, diverging national interpretations of infringement or validity, and uneven enforcement capacity across Member States**. The stakes are high; in 2023 alone, EU customs authorities detained around 152 million counterfeit items worth €3.4 billion, yet detection rates varied sharply between border points, creating "weak spots" that sophisticated infringement networks exploit.²⁷ For rights holders, this patchwork means slow, expensive, and strategically uncertain litigation across jurisdictions.

Sectoral concerns also diverge but overlap on core themes. **Pharmaceutical companies**, represented by European Federation of Pharmaceutical Industries and Associations (EFPIA), have pressed for stronger incentives and cautioned against proposals to reduce baseline exclusivity or expand compulsory licensing.²⁸ They warn that unpredictability with exclusivity terms could drive clinical trials and manufacturing abroad. An EFPIA study using risk-adjusted net present value (rNPV) modelling found that the Commission's plans would halve investment returns for products relying on data protection, while EFPIA's counterproposals would broadly preserve current incentives.

27. European Commission (2023). EU seizes record 152 million fake items worth 3.4 billion EUR in 2023. Available at axation-customs.ec.europa.eu/news/eu-seizes-record-152-million-fake-items-worth-34-billion-eur-2023-2024-11-13_en.

28. "CLs are a last resort, all attempts at voluntary licensing having failed. CLs undermine IP and prevent the choosing of preferred partners to rapidly bring goods to market. Undue willingness to employ CLs erodes investor confidence in IP, harming innovation pipelines, and impeding voluntary measures speed to bring goods to the public in times of crisis. Little in the proposal, however, limits CLs to measures of last resort." See: EFPIA's Response on the Compulsory Licensing Framework Proposal. (2023). Available at: ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13357-Intellectual-property-revised-framework-for-compulsory-licensing-of-patents/F3433616_en.

The value of one additional year of RDP is estimated at €1.23 billion across the EU27, with Germany, France, Italy and Spain accounting for the lion's share, while the other 23 countries each see an impact of under €40 million.

Further, Pharmaceutical Research and Manufacturers of America (PhRMA) has underlined that fair and transparent protection of patents and regulatory test data is essential to sustain investment in new medicines. It cautioned that weakening regulatory data protection in the EU, whether by shortening terms or tying RDP to market access, pricing and reimbursement, or clinical trial requirements, undermines predictability, diminishes incentives to invest, and threatens to upend global IP norms. Industry representatives stress that data protection is not a secondary issue but a core pillar of biopharmaceutical innovation, alongside patents, and that erosion in Europe risks setting a global precedent for weaker standards.²⁹

Technology implementers and digital SMEs, meanwhile, argue that standard-essential patent (SEP) licensing remains costly and opaque, putting smaller players at a disadvantage; they initially welcomed the Commission's 2023 proposal for EUIPO-managed transparency but were left facing the legal status quo after the proposal's withdrawal in early 2025.

Creative industries and SMEs continue to push for more consistent enforcement of copyright and design rules, particularly in the context of online piracy, 3D printing, and AI-generated content.

EU institutions have acknowledged these tensions but remain constrained by political trade-offs. The EUIPO has scaled up its role, administering SME support funds, mediation services, and new enforcement portals. Still, **legal uncertainty remains in fast-moving fields such as AI, and other emerging technologies**. For instance, copyright preliminary questions persist before the CJEU where it will clarify whether training generative models constitutes reproduction and whether chatbot outputs fall under the press publishers' right.³⁰ These pending cases illustrate how quickly emerging technologies outpace harmonisation efforts.

The broader implication, emphasised by business associations, is that Europe risks locking itself into a **structural disadvantage**: a continent strong in early-stage research but weak in scaling and commercialisation.³¹ **Regulatory fragmentation, combined with policy experiments that generate uncertainty** (e.g. fluctuating exclusivity incentives, withdrawn SEP reforms) reduces the EU's attractiveness for global R&D and investment.

Stakeholders therefore continue to call for a long-term strategy that simplifies rules, harmonises enforcement, and ensures predictable, bank-

able protection periods – essential conditions for Europe to anchor innovation and compete with the U.S. and Asia in frontier technologies.

Table 6: (Longstanding) Stakeholder Concerns and EU Responses on IP (2023–2025)

IP AREA	(LONGSTANDING) BUSINESS STAKEHOLDER CONCERNS	EU POLICY RESPONSES (2023–2025)
PATENTS & SUPPLEMENTARY PROTECTION CERTIFICATES (SPCS)	Fragmentation persists – SPCs still granted nationally; high translation/renewal costs; unpredictability in compulsory licensing; pharma sector fears weakened exclusivity deters EU trials.	Unitary Patent & UPC operational (2023); proposal for Unitary SPC (2023); draft compulsory licensing regulation narrowed after opposition; pharma package under negotiation (Council position June 2025).
COMPULSORY LICENSING	Business groups warn that broad EU-level powers could create policy risk, undermine investment certainty, and deter R&D in Europe; EFPIA highlights risk of reduced incentives for clinical trials and advanced therapies. SMEs express concern about legal uncertainty and potential delays in market access if rules are unclear.	Commission proposed an EU-wide compulsory licensing regulation in April 2023 to streamline cross-border crisis responses; after strong industry pushback, scope was narrowed. Discussions in Council and Parliament continue in 2024–25, with emphasis on limiting triggers to genuine emergencies and ensuring fair compensation.
REGULATORY DATA PROTECTION (RDP)	Erosion of data exclusivity undermines incentives for costly clinical trials, including for biologics; Europe becoming less attractive for launching new medicines; concern about global erosion of IP norms.	Ongoing revision of General Pharmaceutical Legislation proposes reduction of RDP terms with conditional restoration tied to localisation, R&D in Europe, or pricing/reimbursement requirements. Criticised as industrial policy in disguise.
STANDARD-ESSENTIAL PATENTS (SEPS)	Often perceived as opaque by SEP implementers, with concerns that SEP holders enjoy an unfair advantage and that licensing practices are not conducted on a FRAND basis. In practice, disputes are addressed through market solutions and court decisions, which provide mechanisms to enforce FRAND principles.	SEP regulation withdrawn in February 2025; EUIPO continues voluntary databases and ADR promotion; Commission signals targeted measures (transparency, SME guidance).
DESIGN RIGHTS	Outdated scope; costly enforcement; SMEs face hurdles in digital/3D printing contexts.	2023–24 Design Law reform: expanded scope (GUIs, logos, spare parts, 3D printing), faster/cheaper EUIPO registration, stronger SME orientation.

29. The Pharmaceutical Research and Manufacturers of America (PhRMA). 2025 National Trade Estimate Report on Foreign Trade Barriers (NTE). Available at phrma.org/resources/2025-national-trade-estimate-report-on-foreign-trade-barriers-nte. Also see Copenhagen Economics (2023). Regulatory Data Protection for Pharmaceuticals. March 2023. Available at copenhageneconomics.com/wp-content/uploads/2023/03/Regulatory-Data-Protection-for-Pharmaceuticals-in-Brazil_Final.pdf.

30. Stephenson Harwood (2025). 23 Jun 2025. CJEU to rule on AI and copyright in a landmark case against Google. Available at stephensonharwood.com/insights/cjeu-to-rule-on-ai-and-copyright-in-a-landmark-case-against-google

31. CESifo et al. (2024). EU Innovation Policy – How to escape the middle technology gap. Available at jep.unibocconi.eu/sites/default/files/media/attach/Report_EU%20Innovation%20Policy.pdf?VersionId=MskNtaKhNj2OQom2Vq8bsoBOHx8e1CwJ

TRADEMARKS & COUNTERFEITING	Online enforcement weak; border seizures uneven; SMEs lack resources for litigation.	Renewed MoU on online counterfeits (2023); DSA platform obligations; EUIPO Enforcement Portal; customs seizure data integrated, though national disparities remain.
GEOGRAPHICAL INDICATIONS (GIS)	Prior lack of EU-level protection for craft/ industrial products; fragmented national regimes.	Regulation (EU) 2023/2411 creating unified GI regime for craft/industrial products, administered via EUIPO; phased implementation by 2025.
COPYRIGHT & DIGITAL IP	Fragmented rules on online piracy, inconsistent enforcement; uncertainties for AI training and outputs.	2023 Commission Recommendation on piracy of live events; pending CJEU referral (Case C-250/25) on AI training and outputs; SME Fund includes enforcement vouchers.
TRADE SECRETS & UTILITY MODELS	Trade secrets framework underused due to uneven enforcement; no EU-level utility model.	Limited to national law; Commission monitoring effectiveness of Trade Secrets Directive; no new EU instrument proposed.

Sources: Business Europe³², SMEunited³³, EFPIA³⁴, European Digital SME Alliance³⁵.

32. Business Europe (2024). Intellectual Property Priorities. Unlocking the EU's Intangible Asset Potential. Available at [google.com/search?client=safari&rls=en&q=Intellectual+Property+Priorities.+Unlocking+the+EU's+Intangible+Asset+Potential.+Available+at&ie=UTF-8&oe=UTF-8](https://www.google.com/search?client=safari&rls=en&q=Intellectual+Property+Priorities.+Unlocking+the+EU's+Intangible+Asset+Potential.+Available+at&ie=UTF-8&oe=UTF-8); Business Europe (2023). Proposals on Supplementary Protection Certificates – a BusinessEurope position paper. Available at businesseurope.eu/publications/proposals-on-supplementary-protection-certificates-a-businesseurope-position-paper/#:~:text=into%20force%20as%20soon%20as; Business Europe (2024). Joint business statement on the EU Proposal on Compulsory Licensing. Available at eurochambres.eu/wp-content/uploads/2024/05/2024-05-08-Business-Statement-on-Compulsory-Licensing-proposal.pdf#:~:text=products,Compulsory.

33. SMEunited (2025). IPR & Counterfeiting. Available at smeunited.eu/policies/policies/single-market/ipr-counterfeiting.

34. EFPIA (2023). EFPIA response to the European Commission's patent package proposal. Available at efpia.eu/news-events/the-efpia-view/statements-press-releases/efpia-response-to-the-european-commission-s-patent-package-proposal/#:~:text=The%20introduction%20of%20compulsory%20licensing,when%20a%20health%20crisis%20arises; EFPIA (2023). EFPIA response to launch of Unitary Patent System in Europe. Available at efpia.eu/news-events/the-efpia-view/statements-press-releases/efpia-response-to-launch-of-unitary-patent-system-in-europe/#:~:text=Director%20General%2C%20EFPIA%2C%20said%3A.

35. European Digital SME Alliance (2024). The Competitive Advantage of Intellectual Property: A Practical Guide for Digital Small and Medium Enterprises. Available at digitalsme.eu/the-competitive-advantage-of-intellectual-property-a-practical-guide-for-digital-small-and-medium-enterprises/; European Digital SME Alliance (2023). Intellectual Property Awareness to Empower SMEs: Navigating Opportunities for Innovation and Sustainable Growth. Available at digitalsme.eu/intellectual-property-awareness-to-empower-smes-navigating-opportunities-for-innovation-and-sustainable-growth/.

CONCLUSIONS AND POLICY RECOMMENDATIONS

CONCLUSIONS

Europe's IP framework is formally sophisticated, but in practice it remains **fragmented, costly, and operationally uneven**. The principle of national territoriality still dominates much of Europe's IP landscape. Firms seeking protection across the Single Market continue to face duplicative applications, translation obligations, and divergent national litigation practices. These inefficiencies are particularly harmful to SMEs, which lack the resources to pursue parallel strategies in multiple jurisdictions.

New legislative reforms in the EU oftentimes send mixed signals to native EU and global innovators and investors, **undermining the predictability that is essential for long-term R&D commitments**, weakening the creation and diffusion of new technologies, and limiting Europeans' access to the best technologies available worldwide.

The international context magnifies these challenges. While **the EU remains a strong contributor to early-stage research and industrial design**, it is underperforming in frontier digital and biopharmaceutical patenting. Competitors such as the U.S., China, Korea, and Japan combine strong IP enforcement with predictable exclusivity regimes and integrated domestic markets.

On top of a fragmented EU IP regime, **Europe suffers from wider regulatory fragmentation that compounds this weakness**.³⁶ From horizontal policies that affect all businesses such as taxation, labour, and product market rules to sector-specific frameworks in pharmaceuticals, ICT, and digital services, innovators face a patchwork of obligations that raise costs and slow commercialisation. This systemic disadvantage stands in stark contrast to the more "perfect" markets of the U.S. and China, where companies can scale from day one under a single set of rules.

Europe's relative weakness lies not in research capacity but in its ability to scale, commercialise, and retain high-value innovation. As a result, an increasing share of EU-origin technologies are being developed to market maturity elsewhere, reducing Europe's capture of value from its own science base. The overarching risk is that the EU entrenches a structural disadvantage: a continent strong in knowledge creation but weak in monetisation. Without reforms to reduce fragmentation and policy (legal) uncertainty, Europe may lock itself into a position as a net originator of early-stage IP, while the commercial and fiscal benefits of innovation accrue abroad.

36. This has also been highlighted in the Draghi Report as well as the EU Innovation Report 2024. CESifo et al. (2024). (see note: 30)

POLICY RECOMMENDATIONS

To address the structural weaknesses in Europe's intellectual property landscape from substantial regulatory fragmentation to under-performance in technology frontier sectors the EU must adopt a more ambitious, integrated approach that delivers legal certainty, harmonisation, and stronger incentives for technology creation and diffusion.

1. Advance full legal and procedural harmonisation for IP enforcement in the EU

The first priority for policymakers should be to **advance far greater procedural harmonisation for IP enforcement**. The EU needs to **move towards a more unified framework of rights, procedures, and enforcement across all types of intellectual property**. At present, innovators operating across borders face diverging national standards for evidence gathering, damages calculation, injunctions, and procedural timelines. This increases costs and generates uncertainty. Establishing common minimum standards for litigation, enhancing the role of EU-wide specialist IP courts, and strengthening mutual recognition of judgments in IP matters would help.³⁷

While IP remains inherently territorial – meaning that parallel national rights and enforcement mechanisms will continue to exist even under harmonised regimes –

a transition to stronger EU authority could, in principle, overcome these limits if Member States agreed to transfer exclusive competence. In practice, however, the more realistic path may be progressive harmonisation and mutual recognition. Even short of full transfer, closer convergence would still make enforcement more predictable, increase the net present value of R&D investments, and make commercialisation within the EU more attractive.

2. Guarantee legal certainty and strong protection as a core principle

A second priority is to provide legal certainty about strong protection and enforcement as the central objective of European IP policy. For innovators, predictability is as important as the level of protection itself, because long-term R&D commitments depend on stable rules and enforceable rights. Mixed signals ranging from shifting exclusivity regimes to uncoordinated national procedures undermine technology creation, reduce diffusion, and weaken Europeans' access to the best technologies available globally. Recent debates on reforms to Supplementary Protection Certificates and the gradual erosion of pharmaceutical data exclusivity rights are prime examples of how shifting rules can weaken incentives for investment in high-risk, high-value R&D.

Clear and robust protection must therefore be guaranteed as a foundational principle.

Another essential element of legal certainty is the protection of regulatory test data. For biopharmaceutical innovators, the predictability of data protection regimes is as critical as patents, since costly clinical trials and technology transfer depend on stable and enforceable rules. International stakeholders caution that weakening regulatory data protection undermines incentives for R&D, delays patient access to innovative medicines, and deters cross-border investment and trials. In the EU, current legislative proposals that risk shortening data protection terms and condition restoration on localisation, pricing and reimbursement or clinical trial requirements illustrate how shifting standards can erode Europe's attractiveness as a hub for international high-value research. Robust and predictable regulatory data protection must therefore remain a core pillar of Europe's innovation framework.

3. Develop a new EU Intellectual Property Strategy

Closely related, the EU urgently needs a new Intellectual Property Strategy that sets an overarching aim: to harmonise rights, registration, and enforcement at the EU level, rather than leaving these competences fragmented at the Member State level. The current patchwork of directives, partial regulations, and national procedures is no longer sustainable in a global innovation economy. If some countries do not wish to participate, they should be allowed to opt out – but for those who remain, harmonisation must apply across all categories of IP, from patents and trademarks to designs and copyright.

Europe and its innovators cannot afford fragmentation, complexity, and uncertainty any longer. Only think European: the goal must be full harmonisation across all types of IP. This “all in vs. all out” approach would give Europe's innovators a consistent, simple, and modern framework for patents, trademarks, designs, copyright, etc.

4. Reinforce top-tier protection for high-value-added sectors

The EU must also reinforce top-tier protection for high-value-added sectors if it is to remain globally competitive. Europe's regulatory regimes should match the levels of protection and predictability available in leading jurisdictions for biotechnology, advanced manufacturing, artificial intelligence, and data-driven innovation. In practical terms, this requires maintaining robust exclusivity periods in pharmaceuticals and biotech, ensuring that reforms to the regulation of standard-essential patents preserve incentives for R&D contributions, and clarifying the application of copyright rules to AI training and licensing. At the same time, Europe cannot afford overly restrictive copyright rules that hinder AI development and deployment. The EU should allow for market-based solutions to govern cases of clear IP infringement in the context of AI training, use, and deployment, thereby preserving both the incentives for rightsholders and the flexibility innovators need to scale new technologies. These steps would send a strong signal to high-tech investors and innovators that Europe remains committed to protecting the returns on frontier innovation.

37. Currently, cross-border enforcement of IP judgments in the EU is governed by the Brussels I Recast Regulation, which provides for automatic recognition of most civil and commercial rulings. Yet important shortcomings persist. Validity rulings on national rights, such as patents or SPCs, remain confined to the Member State of origin, creating duplicative litigation and inconsistent outcomes. National courts also apply divergent standards for injunctions, damages, and evidence, leading to uneven remedies. Moreover, fragmentation encourages forum shopping and tactical litigation, undermining predictability and legal certainty for innovators. See, e.g., European Parliament's Committee on Legal Affairs (2021). Cross Border Enforcement of Intellectual Property Rights in EU. Available at [europarl.europa.eu/RegData/etudes/STUD/2021/703387/IPOL_STU\(2021\)703387_EN.pdf](https://europarl.europa.eu/RegData/etudes/STUD/2021/703387/IPOL_STU(2021)703387_EN.pdf)



5. Link IP strategy to talent retention and private-sector engagement

IP policy must be linked more directly to skills retention and the attraction of high-skilled labour. Strong IP protection is a precondition for sustaining research-intensive industries, but without the right talent base, the benefits cannot be fully realised. The EU should therefore complement robust IP regimes with targeted measures to retain and attract talent – including generous “innovation” visas and expanded industry-academia partnerships.

A bold and necessarily controversial step would be to link the registration of new IP to the active involvement of private companies in academic research projects. Universities and public research institutions could still retain a minority stake in the resulting IP, but the requirement of private-sector participation would help ensure

that research outputs are more rapidly translated into marketable applications. By tying protection to commercial engagement, Europe would strengthen the pathways from lab to market, reduce the accumulation of underutilised patents in university portfolios, and create stronger incentives for collaboration across the public-private divide. This approach would not diminish the role of academic research in knowledge creation; rather, it would embed market relevance into the innovation process from the outset and keep Europe’s IP ecosystem aligned with global competitive pressures. Experiences such as the University of Wisconsin-Madison’s Badger IP Industry Advantage program – which standardises models for industry-university collaboration to speed up licensing and commercialisation – show that structured engagement with private partners can reduce friction and create win-win outcomes for both sides.³⁸

6. Safeguard open markets for IP-intensive goods and services

Finally, EU policy should safeguard open international markets for IP-intensive goods and services. A strong internal market must be complemented by secure external market access. This means avoiding localisation requirements and protectionist standards that would fragment supply chains and instead using trade agreements to ensure reciprocal high-standard IP protection and enforcement abroad. Integrating IP chapters in trade agreements with provisions on free data flows and non-discriminatory digital trade will be particularly important. Keeping European innovators embedded in global markets is essential to maximising the returns on EU-generated intellectual assets.

EU policy should also promote integration into global research and innovation value chains. Strong IP rules should not be seen as a defensive barrier but as a platform for international cooperation. The EU should position itself as a hub for specific stages of the research-to-market process while benefiting from complementary innovation abroad. This means facilitating cross-border licensing and technology transfer, championing multilateral IP cooperation through organisations such as WIPO, WTO, and the OECD, and aligning sectoral research programmes with international partners. Such policies would strengthen Europe’s role in global research networks and attract international investment into high-tech clusters across the EU.

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Annex I: Top 10 IP-Intensive Sectors by Region – Capital Investments, R&D Expenditure, and Company Counts, 2023 data

REGION	TOP 10 IP-INTENSIVE	AVERAGE R&D INTENSITY	ACCUMULATED CAPITAL INVESTMENTS (EUR MILLION)	IN PERCENT OF TOTAL ACROSS REGIONS	ACCUMULATED R&D EXPENDITURE (EUR MILLION)	IN PERCENT OF TOTAL ACROSS REGIONS	NUMBER OF COMPANIES	IN PERCENT OF TOTAL ACROSS REGIONS
US	Pharmaceuticals & Biotechnology	5,635.1	25,076	39%	120,641	52%	195	54%
US	Software & Computer Services	24.2	109,208	83%	179,940	75%	158	57%
US	Technology Hardware & Equipment	53.1	70,343	41%	112,639	56%	68	36%
US	Aerospace & Defence	3,030.2	6,965	40%	9,713	47%	15	39%
US	Automobiles & Parts	1,420.1	54,558	24%	34,082	18%	33	21%
US	Electronic & Electrical Equipment	23.8	7,430	6%	11,620	13%	41	21%
US	Health Care Equipment & Services	17.0	9,209	46%	14,337	55%	43	56%
US	Chemicals	3.0	13,342	14%	4,813	19%	17	19%
US	Industrial Engineering	7.2	2,889	10%	2,632	12%	13	13%
US	Media	14.7	810	34%	1,948	36%	7	41%
EU	Pharmaceuticals & Biotechnology	365.0	14,887	23%	38,337	17%	49	14%
EU	Software & Computer Services	20.7	2,337	2%	14,457	6%	18	7%
EU	Technology Hardware & Equipment	14.2	12,437	7%	20,957	11%	16	9%
EU	Aerospace & Defence	4.6	6,701	38%	7,673	37%	11	29%
EU	Automobiles & Parts	17.6	67,179	30%	84,090	45%	37	24%
EU	Electronic & Electrical Equipment	9.6	8,819	7%	12,067	14%	18	9%



REGION	TOP 10 IP-INTENSIVE	AVERAGE R&D INTENSITY	ACCUMULATED CAPITAL INVESTMENTS (EUR MILLION)	IN PERCENT OF TOTAL ACROSS REGIONS	ACCUMULATED R&D EXPENDITURE (EUR MILLION)	IN PERCENT OF TOTAL ACROSS REGIONS	NUMBER OF COMPANIES	IN PERCENT OF TOTAL ACROSS REGIONS
EU	Health Care Equipment & Services	8.4	7,125	36%	7,253	28%	15	19%
EU	Chemicals	3.0	18,792	20%	5,659	23%	14	16%
EU	Industrial Engineering	4.1	6,437	22%	7,400	34%	32	31%
EU	Media	5.8	521	22%	427	8%	3	18%
CHINA	Pharmaceuticals & Biotechnology	146.2	8,812	14%	11,810	5%	56	16%
CHINA	Software & Computer Services	21.2	11,823	9%	30,857	13%	59	21%
CHINA	Technology Hardware & Equipment	16.0	33,113	20%	36,071	18%	45	24%
CHINA	Aerospace & Defence	4.8	1,033	6%	854	4%	5	13%
CHINA	Automobiles & Parts	6.2	35,587	16%	25,472	14%	40	26%
CHINA	Electronic & Electrical Equipment	9.5	39,215	31%	20,806	24%	78	40%
CHINA	Health Care Equipment & Services	18.1	873	4%	1,368	5%	7	9%
CHINA	Chemicals	3.7	20,656	22%	3,499	14%	22	24%
CHINA	Industrial Engineering	5.2	12,998	45%	6,200	29%	32	31%
CHINA	Media	18.2	638	27%	2,237	42%	5	29%
ROW	Pharmaceuticals & Biotechnology	3,634.4	11,458	18%	46,391	20%	44	12%
ROW	Software & Computer Services	18.9	2,865	2%	10,973	5%	34	12%
ROW	Technology Hardware & Equipment	11.6	45,511	27%	22,945	12%	43	23%



REGION	TOP 10 IP-INTENSIVE	AVERAGE R&D INTENSITY	ACCUMULATED CAPITAL INVESTMENTS (EUR MILLION)	IN PERCENT OF TOTAL ACROSS REGIONS	ACCUMULATED R&D EXPENDITURE (EUR MILLION)	IN PERCENT OF TOTAL ACROSS REGIONS	NUMBER OF COMPANIES	IN PERCENT OF TOTAL ACROSS REGIONS
ROW	Aerospace & Defence	4.3	2,718	16%	2,462	12%	7	18%
ROW	Automobiles & Parts	290.7	14,582	7%	10,677	6%	18	12%
ROW	Electronic & Electrical Equipment	25.1	55,001	44%	30,947	35%	31	16%
ROW	Health Care Equipment & Services	414.4	1,399	7%	1,886	7%	7	9%
ROW	Chemicals	3.3	30,447	32%	4,430	18%	11	12%
ROW	Industrial Engineering	4.3	3,340	11%	3,092	14%	15	14%
ROW	Media	4.9	35	1%	518	10%	1	6%
JAPAN	Pharmaceuticals & Biotechnology	15.1	3,609	6%	14,612	6%	16	4%
JAPAN	Software & Computer Services	9.6	5,695	4%	5,123	2%	6	2%
JAPAN	Technology Hardware & Equipment	8.1	8,229	5%	6,858	3%	15	8%
JAPAN	Aerospace & Defence	n/a	-	0%	-	0%	-	0%
JAPAN	Automobiles & Parts	3.6	50,817	23%	30,981	17%	26	17%
JAPAN	Electronic & Electrical Equipment	5.0	14,485	12%	12,399	14%	27	14%
JAPAN	Health Care Equipment & Services	7.8	1,442	7%	1,448	6%	5	6%
JAPAN	Chemicals	4.6	12,811	13%	6,492	26%	26	29%
JAPAN	Industrial Engineering	3.5	3,428	12%	2,223	10%	12	12%
JAPAN	Media	2.5	363	15%	215	4%	1	6%





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