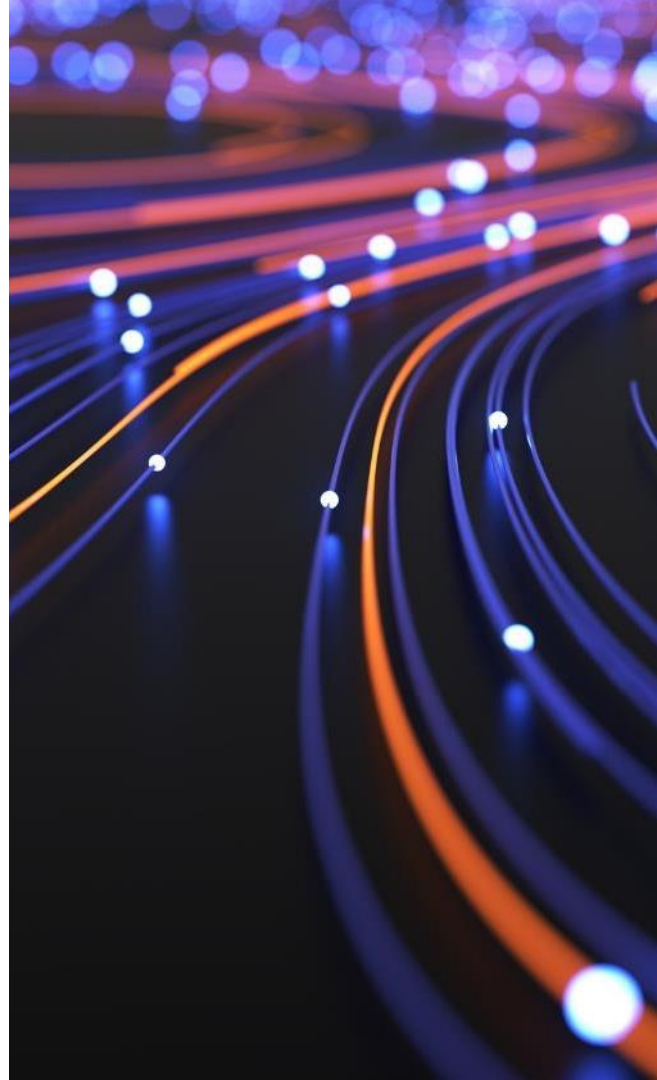




Patent Pruning Reimagined – Data-Driven Insights for Smarter IP Decisions

Insights from Millions of Patents on Quality, Cost Efficiency, and the
Power of Early Decision-Making



What IP leaders wrestle with every quarter on Portfolio Management

- **Budget vs timing**

Back-loaded annuities, limited runway, trim at the bottom, focus investment into what matters

- **Volume vs focus**

Many assets, little review capacity

- **Alignment vs opinion**

Few shared facts, multi-stakeholder, even emotional decisions

- **Direction vs comparables**

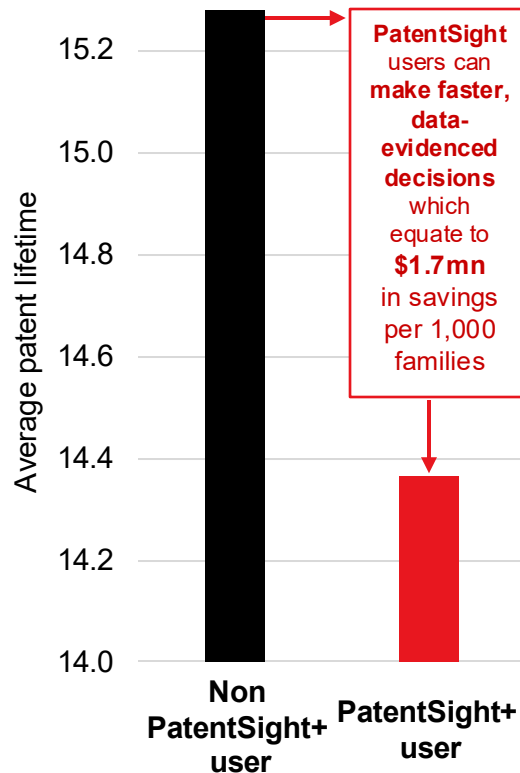
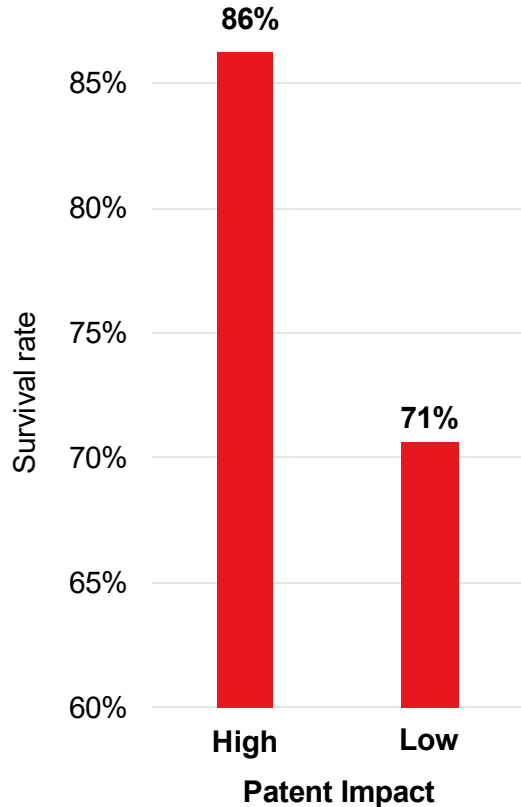
Where to start, lack of peer benchmarks, how to justify decisions internally

Pruning Is Gold





Over
2,400,000
patents analyzed

From **133** global players
across **11** industries





























































Analysis reveals up to
\$8,000,000,000
savings potential



Who's in the benchmark - 1 of 2

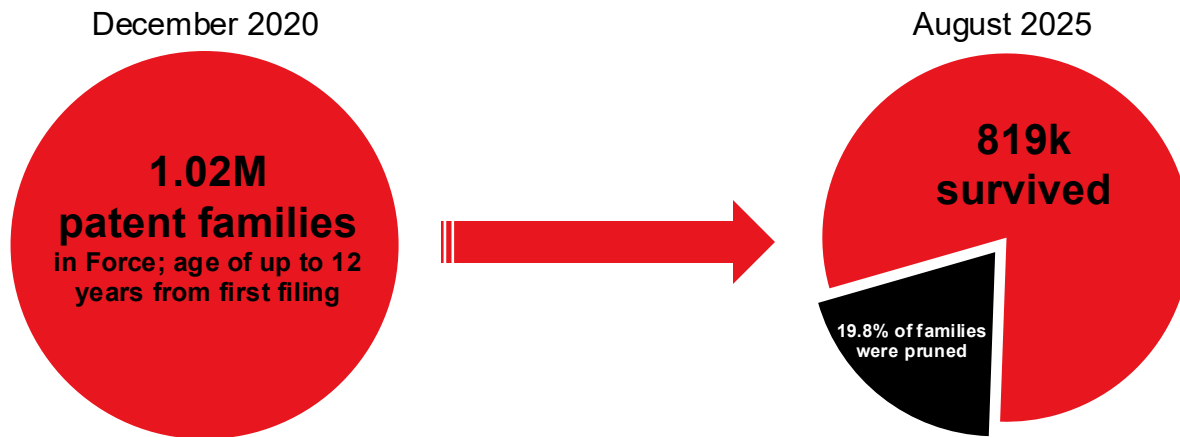
Aerospace & Defense	Automotive OEMs	Automotive Suppliers	Chemicals & Materials	Electronics & Consumer Congl.	Imaging, Optics & Sensing
AVIC 	BMW 	Aisin 	3M 	Dell 	Canon 
Airbus Group 	Ford Group 	Aptiv 	BASF 	Fujitsu 	Carl Zeiss 
BAE Systems 	General Motors 	Bosch 	Covestro 	HP Inc. 	Epson 
Boeing 	Honda Motor 	Continental 	Dow Inc. 	LG Electronics 	Fujifilm 
GE Aerospace 	Hyundai Motor 	DENSO 	DuPont 	Lenovo 	Hamamatsu Photon. 
Leonardo S.p.A. 	Mercedes Benz 	Forvia 	Evonik 	NEC 	Hoya 
Lockheed Martin 	Nissan Motor 	Hyundai Mobis 	LG Chem 	Panasonic 	Leica Micro. 
Northrop Grumman 	Renault 	Magna 	Mitsubishi Chem. 	Philips 	LG Innotek 
Rolls-Royce 	SAIC Group 	Marelli 	SABIC 	Samsung 	Nikon 
RTX Group 	Stellantis 	Schaeffler 	Saint-Gobain 	Sharp 	Olympus 
Safran 	VW Group 	Valeo 	Solvay 	Toshiba 	Sony 
Thales 	Zhejiang Geely 	ZF 	Toray 	Xiaomi 	Sunny Optical Tech. 

Who's in the benchmark - 2 of 2

Industrial Autom. & Electrification	Pharma, Diagn. & Life Sci.	Semiconductors	Techplatforms & Software	Telecommunications
ABB 	Abbott Labs 	Applied Materials 	Alibaba 	AT&T 
Eaton 	AstraZeneca 	ASML 	Alphabet 	China Mobile 
Emerson Electric 	Bayer 	Infineon 	Amazon 	China Telecom 
Fuji Electric 	GSK 	Intel 	Apple 	Deutsche Telekom 
Honeywell 	Johnson & Johnson 	MediaTek 	Baidu 	Ericsson 
Keyence Corporation 	Medtronic 	Micron 	Bytedance 	Huawei 
Mitsubishi Electric 	Merck KGaA 	NVIDIA 	IBM 	Nokia 
Omron Corporation 	Novartis 	NXP 	Meta 	NTT Group 
Rockwell Automation 	Pfizer 	Qualcomm 	Microsoft 	Orange 
Schneider Electric 	Roche 	SK hynix 	Oracle 	SK Telecom 
Siemens 	Sanofi 	ST Micro. 	SAP 	Verizon 
Yokogawa Electric 	Takeda Pharma 	TSMC 	Tencent 	ZTE 

Pruning is Gold: Goal & Approach

Goal: Identify how pruning strategies and what savings/quality gains companies unlock

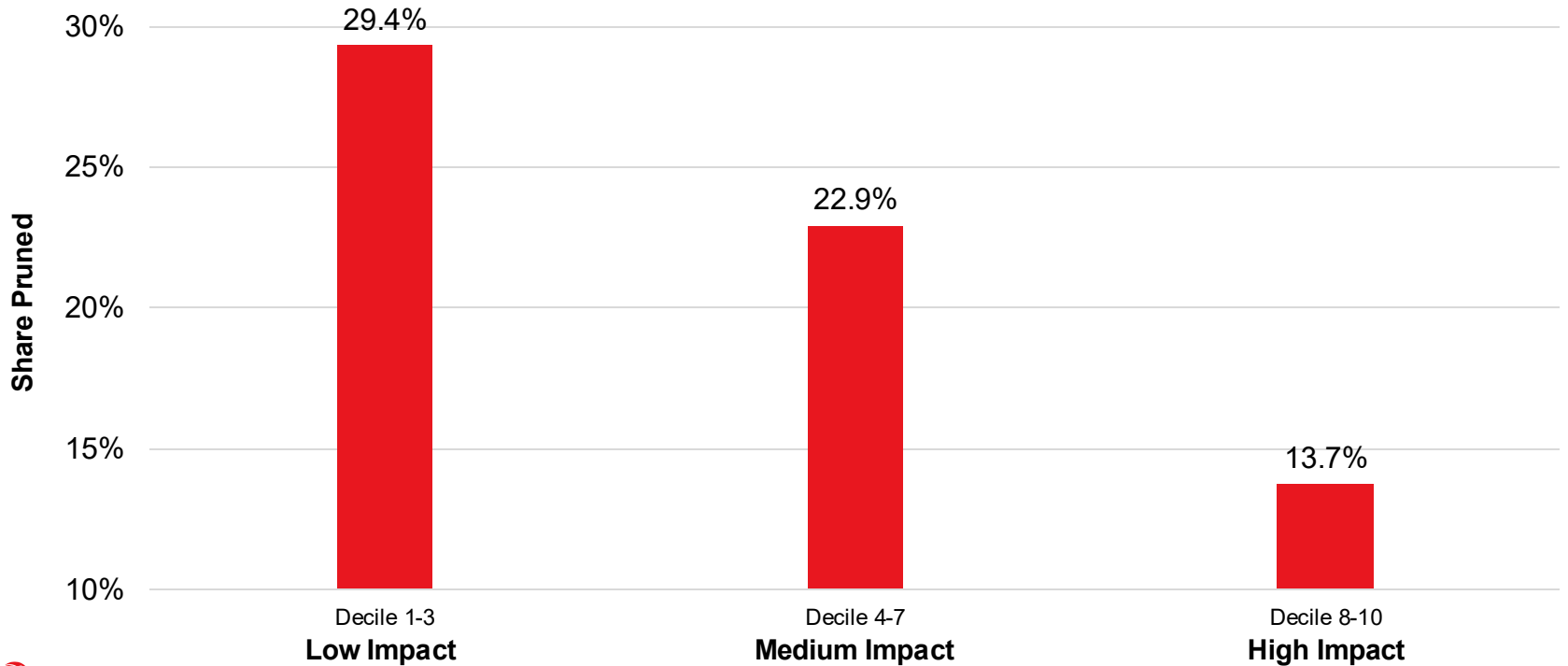


- 133 companies across 11 industries
- Selected patents could still be alive today, patent owners have full control to maintain these
- Worldwide selection of companies across all regions

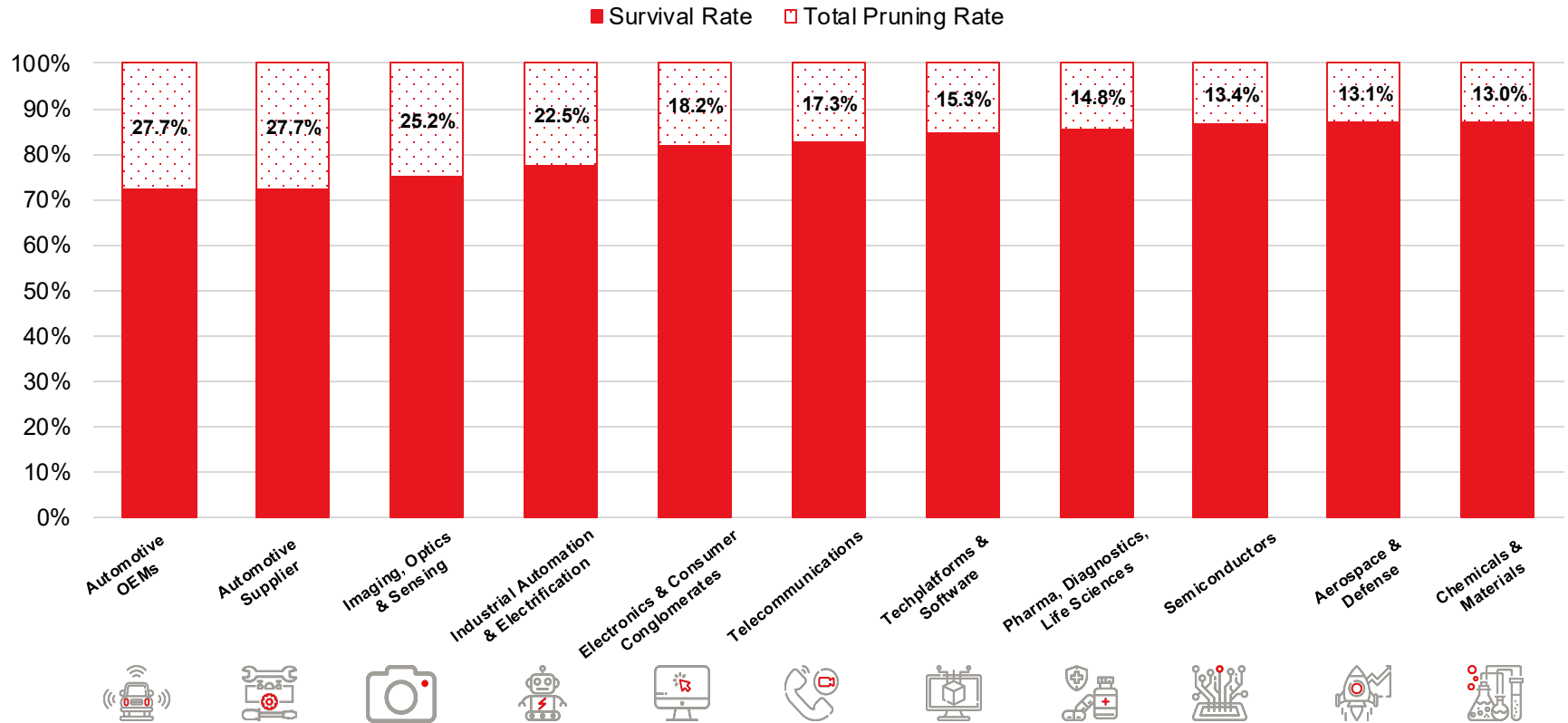
Analysis conducted & insights driven:

- Where are patents pruned? (impact/region/company/industry)
- Savings potential (\$) from pruning
- Understanding how your industry / competitors approach portfolio management

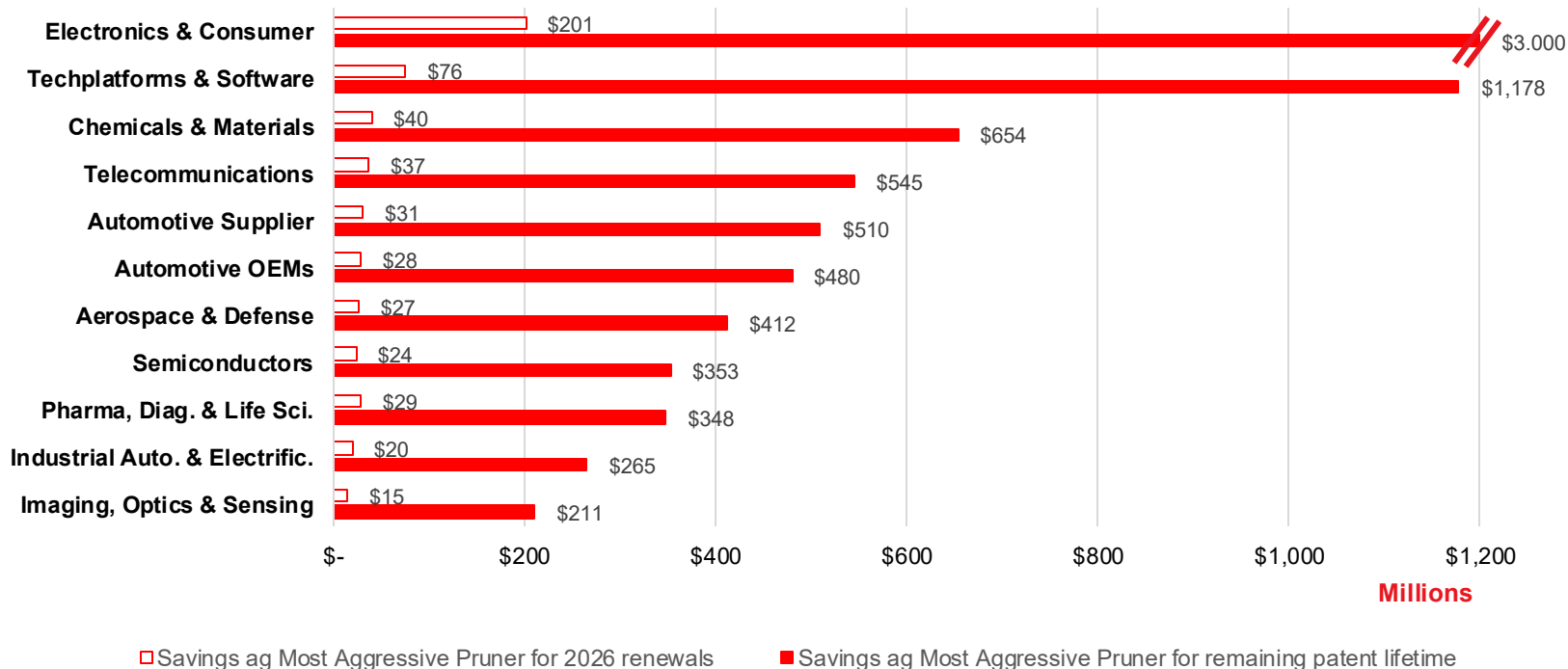
Where Technology Pruning happens: bottom-heavy, minimal at the top



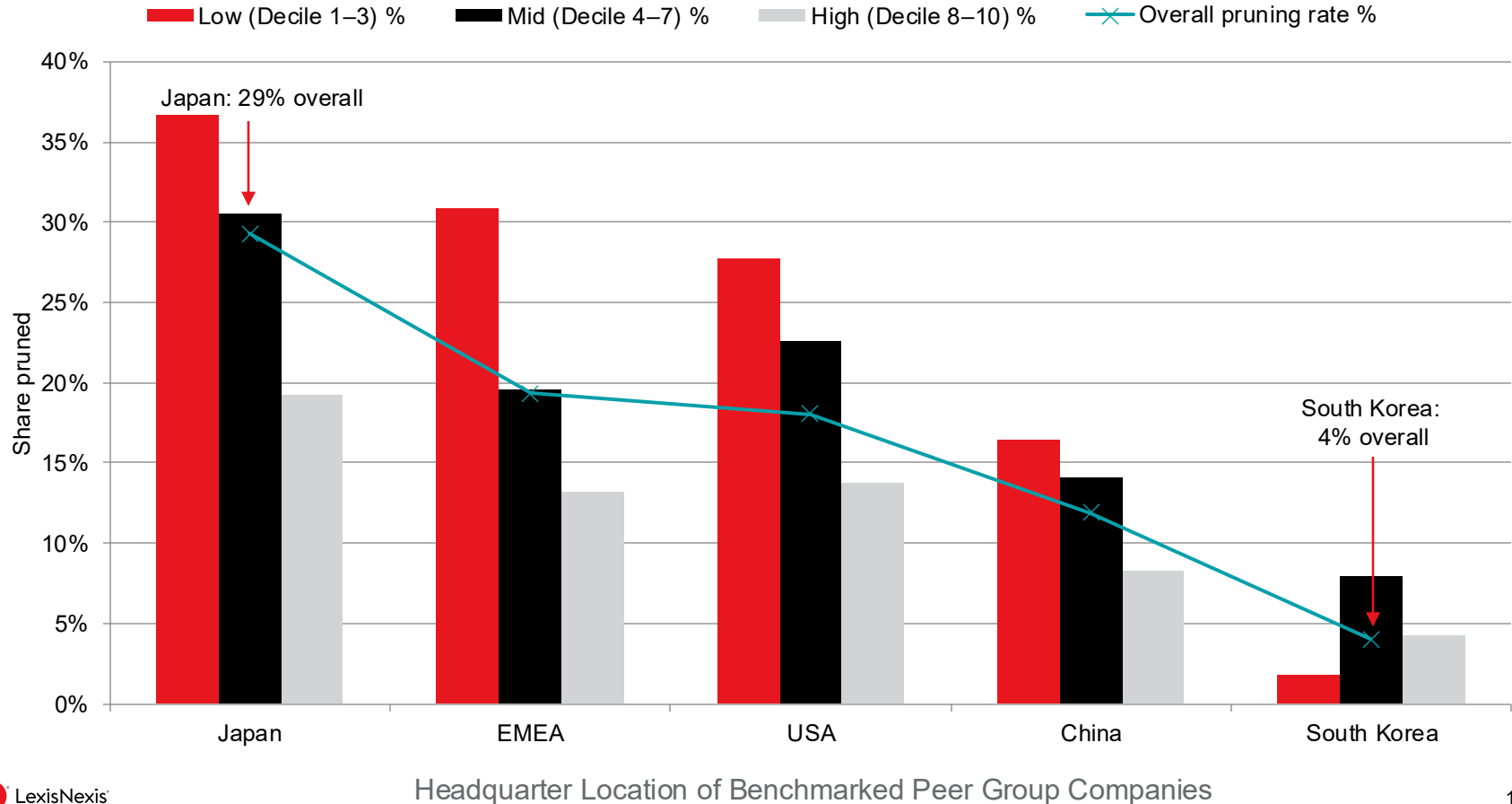
How Industries Behave: Pruning and Survival Rates compared



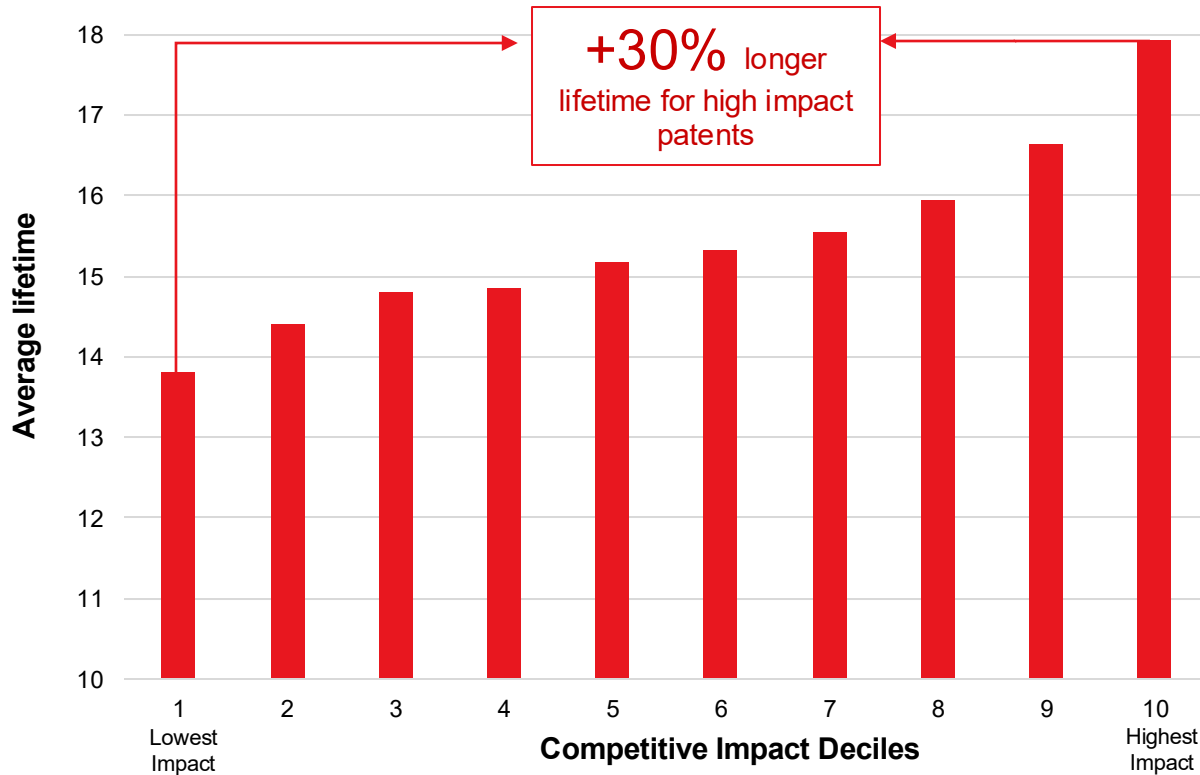
Saving Potential by Industry against most Aggressive Pruning Rates



Pruning by Region: similar patterns across regions at different scales



Paying for What Matters: Companies invest Longer in High-Impact Patents



Patent maintenance is a strategic decision, not an administrative one.

This raises two critical questions for portfolio managers:

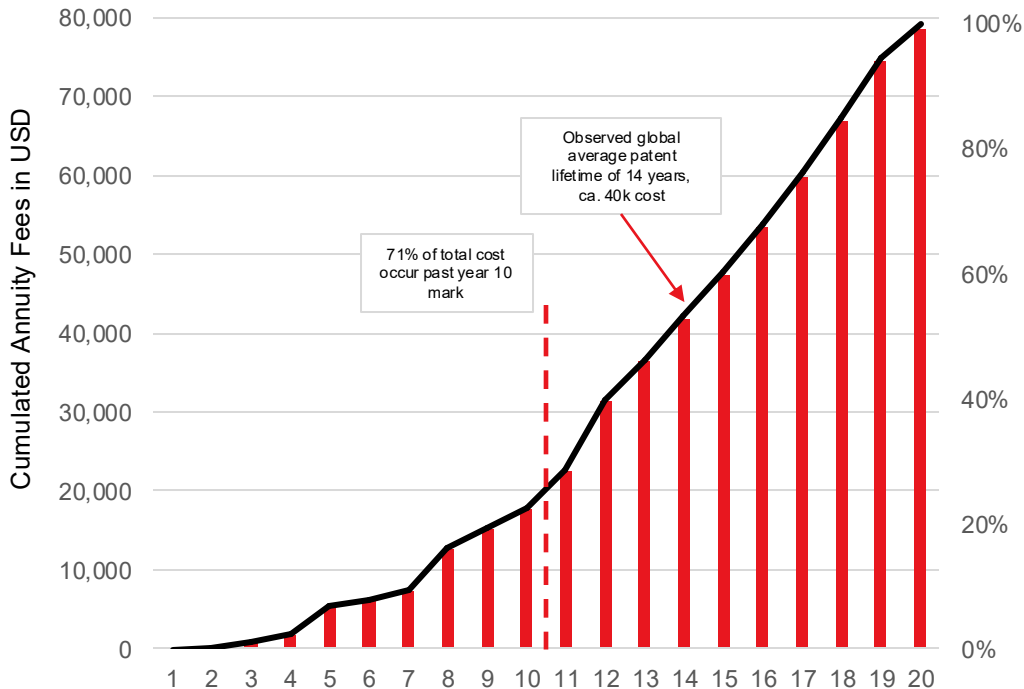
- Why do organizations **wait more than 13 years on average** before pruning low-impact patents?
- Why are some **high-impact patents discontinued early**, were alternative strategies considered?

Reliable indicators help organizations make smarter renewal choices.

Most Patent Costs Occur After Year 10: Accelerate Data-Driven Reviews

Global Cumulative Patent Maintenance Cost Over Time

Illustrative Example: Patent family granted in EP (three countries**), US, CN, KR*, JP*



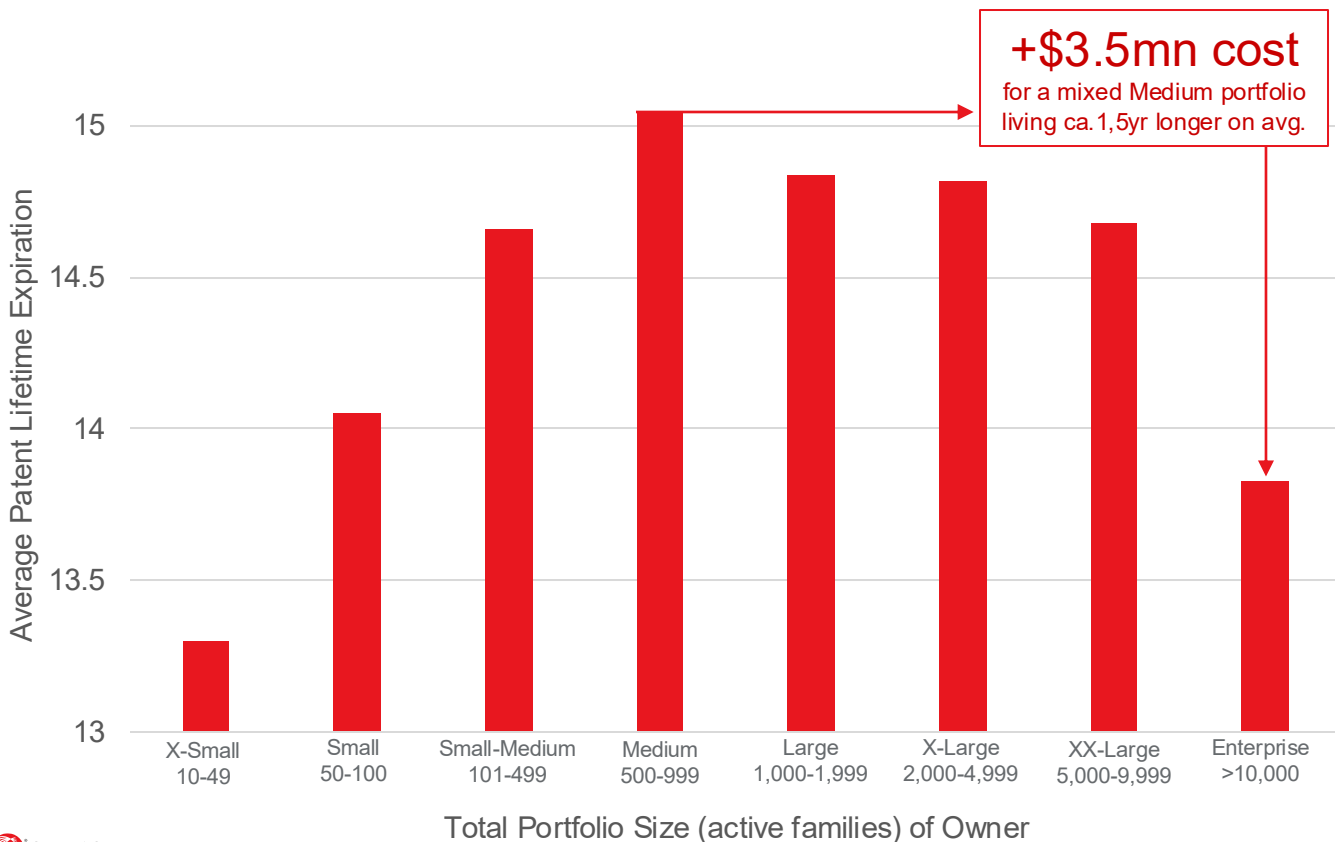
Distribution of 20-Year Annuity Fees by Patent Office

Office	Years 1-10 (USD)	Years 11-20 (USD)	20-Year total (USD)	% in 1st Half	% in 2nd Half
EP**	6,691	28,120	34,811	19%	81%
DE	1,870	13,991	15,861	12%	88%
US	6,190	8,280	14,470	43%	57%
CN	2,266	9,166	11,432	20%	80%
JP*	2,092	7,030	9,122	23%	77%
KR*	1,539	7,296	8,835	17%	83%

*KR and JP, claim based fees: assuming a 10-claim average

**EP 3-country bundle: DE+FR+DK

Timing Drives Efficiency, Medium-Sized Portfolios Delay Decisions Most



+\$3.5mn cost

for a mixed Medium portfolio living ca. 1.5yr longer on avg.

Smaller portfolios (10–100 patents) are easier to manage. IP teams can identify and prune unpromising assets early, keeping lifetimes shorter as cost pressure is more immediate.

Medium-sized portfolios (500–999 patents) live the longest. At this stage, complexity grows faster than management capacity. Limited resources and processes mean reviews happen less frequently, and patents often stay alive longer than needed.

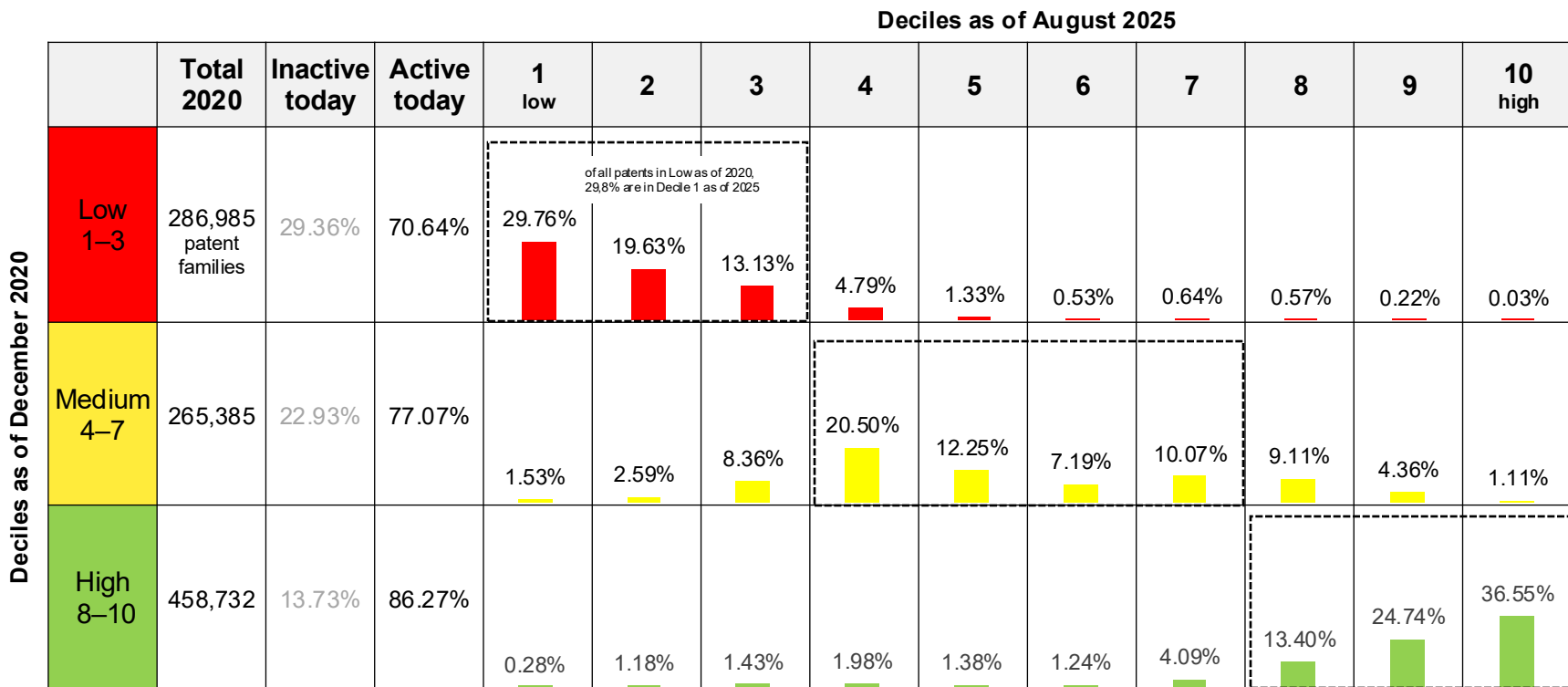
As portfolios expand beyond 10,000 families, the trend reverses.

Large organizations typically have dedicated IP management and analytics functions, enabling more systematic pruning and tighter cost control.

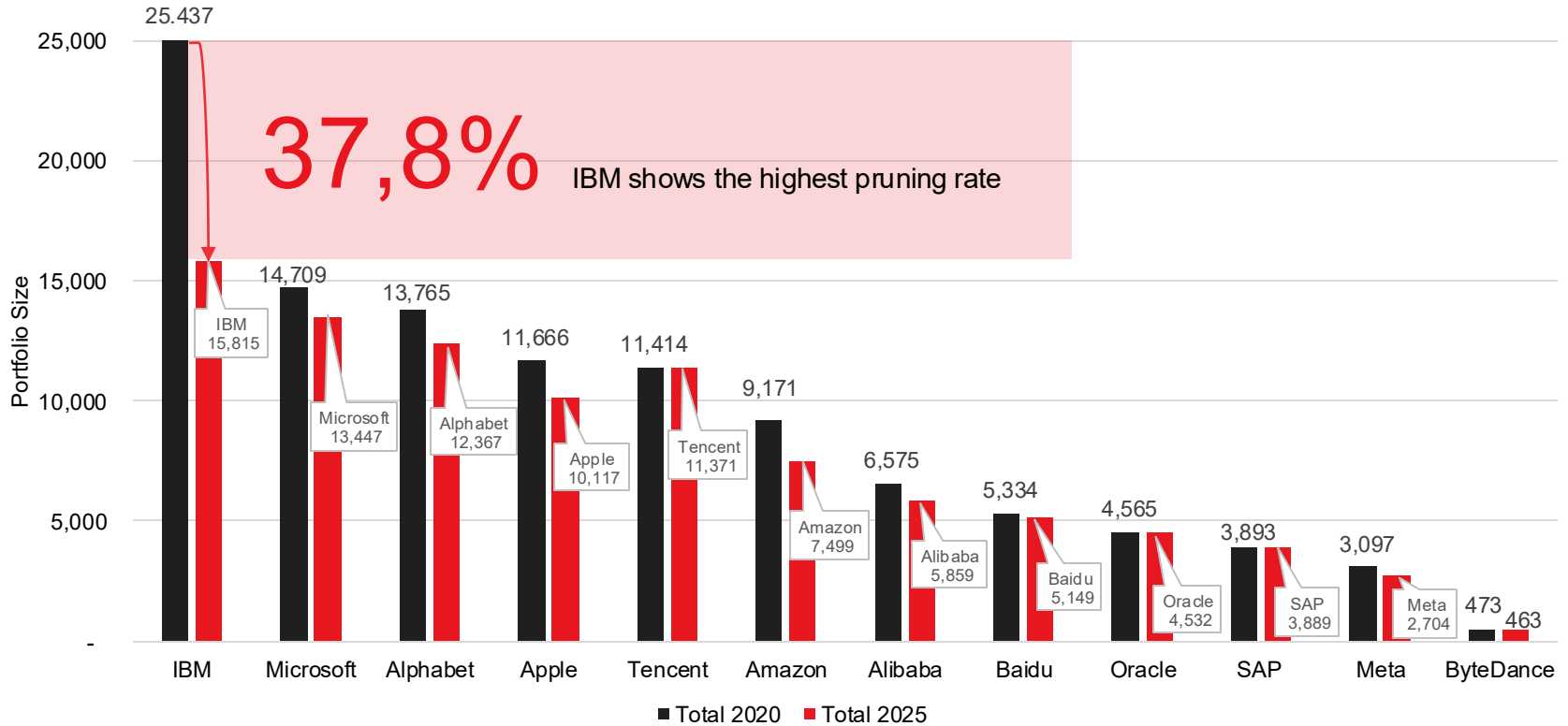
In cost terms:

Keeping a mid-sized portfolio (750 families), alive **1.5 years longer than necessary** corresponds to ca. **USD 3.5 million** in extra renewal fees over lifetime; this is a 16% premium.

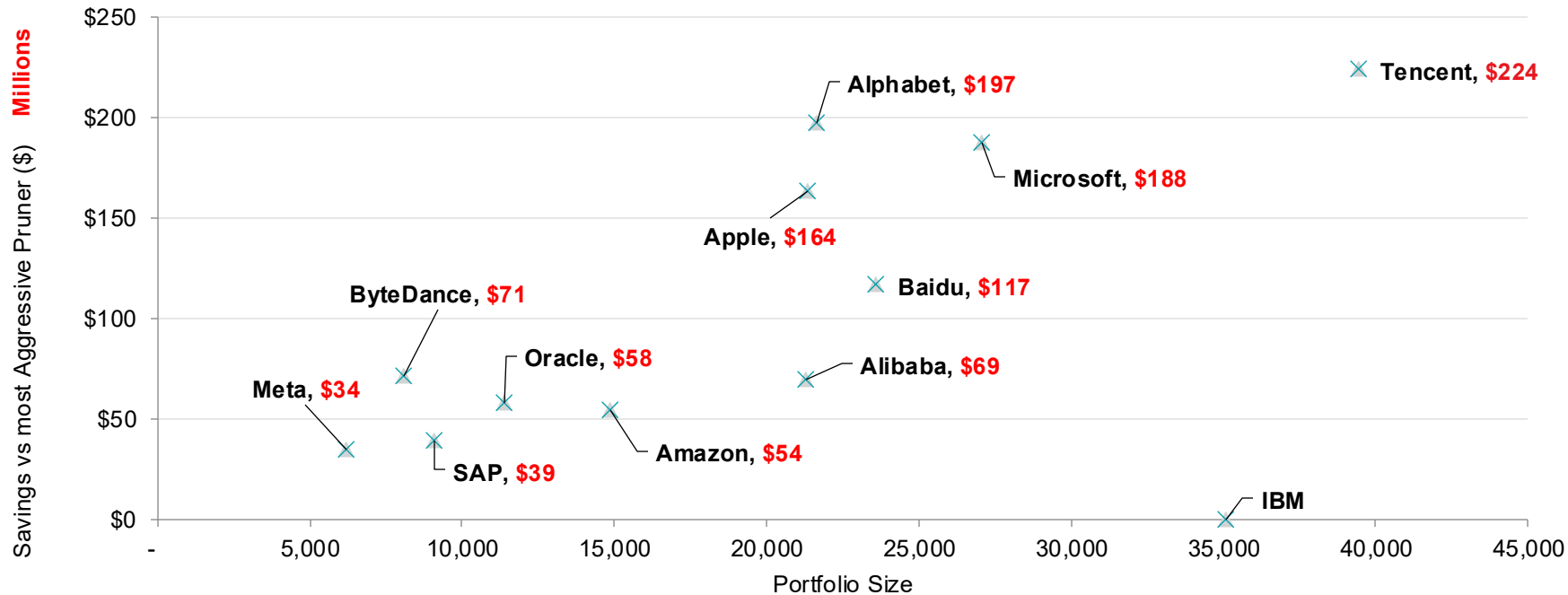
How patent impact shifted from 2020 to Aug 2025



Techplatforms & Software: Pruning analysis reveals clear differences in behavior



Saving Potential in Tech Platforms & Software against most Aggressive Pruning Rate (IBM: 37,8%)



Company-level profile: pruning by Decile in Techplatforms & Software

Techplatforms & Software	Total Pruning rate	Pruning rate Decile 1-3	Pruning rate Decile 4-7	Pruning rate Decile 8-10
IBM	37,83%	46,63%	41,13%	27,75%
Amazon	18,23%	29,29%	25,38%	13,77%
Apple	13,28%	20,99%	18,61%	10,35%
Meta	12,69%	19,55%	14,95%	10,24%
Alibaba	10,89%	20,43%	11,19%	8,46%
Alphabet	10,16%	14,59%	12,83%	7,96%
Microsoft	8,58%	13,37%	10,99%	6,81%
Baidu	3,47%	3,16%	4,78%	2,85%
ByteDance	1,90%	2,04%	1,59%	2,01%
Oracle	0,72%	1,27%	0,76%	0,48%
Tencent	0,38%	0,50%	0,37%	0,36%
SAP	0,10%	0,11%	0,06%	0,16%

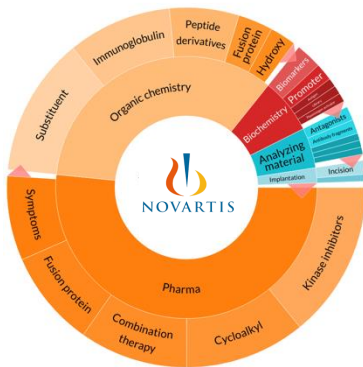
Competitive Impact Deciles explained:

All worldwide patents are ranked by their Competitive Impact scores. Then we divide all worldwide patents into 10 equal size buckets (the deciles).

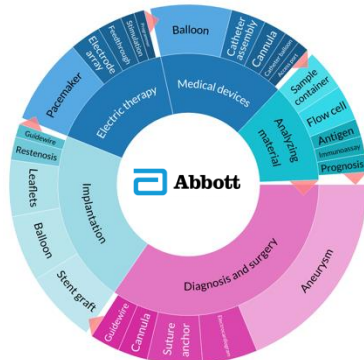
Those patents that belong to the highest scoring 10% of all patents worldwide can be found in Decile 10. Those with the lowest scores can be found in Decile 1.

Signals from Pruning: what big Pharma stopped betting on

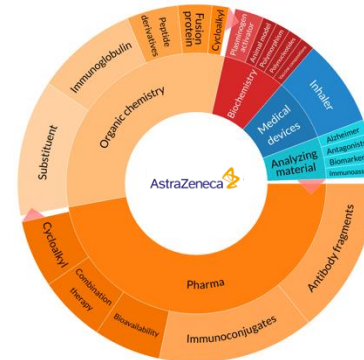
Novartis:
171 total patents pruned



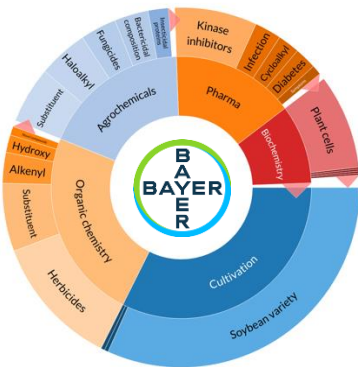
Abbott Laboratories:
539 total patents pruned



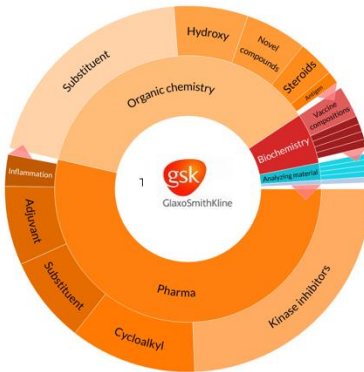
AstraZeneca:
81 total patents pruned



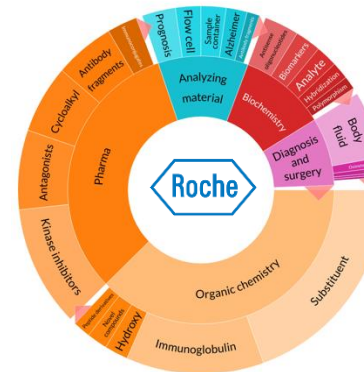
Bayer:
654 total patents pruned



GlaxoSmithKline:
198 total patents pruned



Roche:
475 total patents pruned



Key Learnings & Takeaways

- **Peer gap:** Where is your headroom versus aggressive industry and regional peers? Headroom ranges into double digit pruning potential – unlocking Millions of potential re-investments
- **Portfolio focus:** Are we pruning where a patent's impact is lowest? Pruning at the bottom end is close to 30%, at the top end of patents closer to 10%
- **Timing:** Are we deciding before the expensive years? 71% of lifetime cost occur after year 10. Build strict renewal thresholds around 8–10-year mark
- **Evidence to act:** Do we utilize data signals enough to pull decisions forward? The data shows that low impact patents will be pruned eventually, however significant headroom for faster decision making exists

Maximize Your IP Budget with Data-Evidenced Decisions — Partner with LexisNexis IP



Custom Pruning Project: Get a tailored benchmark against your peers or tech field to identify savings potential and redirect spend toward high-impact innovation



PatentSight+ platform access: Leverage our analytics platform and dedicated success team to run your own pruning analysis and drive ongoing portfolio optimization



Strategic Consulting Engagement: Work with our experts to design smarter pruning strategies, streamline processes, and capture maximum value from your IP investments



Thank You

Marco Richter

Senior Director IP Analytics & Strategy,
Managing Director EMEA & SA, Global
Consulting & Solutions

marco.richter@lexisnexis.com

LexisNexis IP – A Trusted Source for Patent Valuation Data

About LexisNexis Intellectual Property

- Global leader in patent analytics, serving regulators, courts, corporations, and research institutions
- Provides **high-quality, global patent data**, accurate legal status, family relations, and **Ultimate Owner** across jurisdictions
- Operates **LexisNexis PatentSight**, a globally adopted analytics platform used in high-stakes IP decision-making
- Developer of the **Patent Asset Index** and related patent valuation metrics, frequently used in investor communication

Recognized by Public Institutions

- **U.S. District Courts** accepted the Patent Asset Index under the **Daubert standard in patent litigation**
- **U.S. Tax Court** relied on the Patent Asset Index in the Amazon transfer pricing case
- **UK, Japanese and Swiss patent offices** use the Patent Asset Index for national technology benchmarking
- **European Commission** used the Patent Asset Index in merger reviews of Dow/DuPont and Bayer/Monsanto
- **UK Competition & Market Authority** relied on the Patent Asset Index in the Illumina and Pacific Biosciences merger

Trusted by Industry Leaders

- Used by companies like DuPont, IBM, Interdigital, Ocean Tomo, BCG, Siemens, and Canon to guide patent strategy, patent transactions and investor reporting
- Regularly integrated into M&A due diligence, licensing, and Standard Essential Patent valuation

LexisNexis PatentSight's Metrics Objectively Quantify a Patent's Impact

Technology Relevance



Global citations received from later patents, adjusted for patent office practices, age and technology field

Average value: 1



Market Coverage



Market size protected by in force patents and pending patent applications on a certain invention

Value of granted US patent: 1.0



Competitive Impact

Individual strength of a patent family



Patent Asset Index



Total strength of a patent portfolio

Patented under US10380147.B1, Computer implemented method for quantifying the relevance of documents; first filed 7 October 2010.
Ernst, H., Omland, N. (2011): The Patent Asset Index – A New Approach to Benchmark Patent Portfolios. World Patent Information 33, pp. 34-41.

Our metrics successfully assess a patent's commercial potential

Patent Asset Index of **5.5** for **litigated patents**

Based on 5.3k active patents that have been litigated in US courts

Patent Asset Index of **8.1** for **patents with FDA approval**

Based on 2.8k active patents that are issued in the Orange, Purple or Green book

Patent Asset Index of **3.1** for **SEPs**

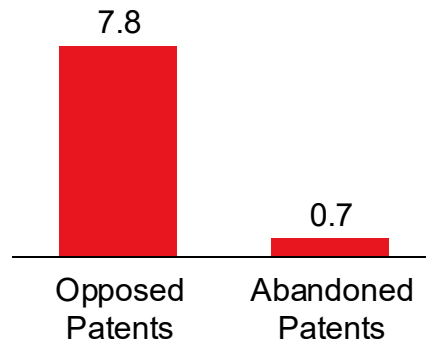
Based on 119.4k active Standard Essential Patents that are declared (e.g. 5G)



European Commission

In the Dow/DuPont case the EU Commission's DG Competition found that **the top 10% of patents were related to blockbuster products**, the most successful products in terms of sales.

Patent Asset Index for
Opposed vs. Abandoned Patents



Sample: 74,732 patent families. Source: Ernst, H., Orntland, N. (2011): The Patent Asset Index - A New Approach to Benchmark Patent Portfolios. World Patent Information 33(1), 34-41.

InterDigital utilizes the Patent Asset Index to communicate the true strength of their patent portfolio to Investors and Licensees

Recognized Global Innovation Leader

For the **third year in a row**, LexisNexis recognized InterDigital amongst the **World's 100 Most Innovative Businesses**.

Innovation Momentum 2024: The Global Top 100, "represents the world's leading patent owners with the highest innovation momentum."

2022:

The 2022 Global Top 100

2023:

The 2023 Global Top 100

2024:

The 2024 Global Top 100

interdigital
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InterDigital Ranks Among the Highest in Patent Quality for 5G and Video Codec Patents

LexisNexis® Average Competitive Impact

5G Patent Holders

Company	Score (Approx.)
InterDigital	14.5
Company #2	10.5
Company #3	10.0
Company #4	9.5
Company #5	8.5
Company #6	8.0
Company #7	7.5
Company #8	7.0
Company #9	6.5
Company #10	6.0

Video Codec Patent Holders

Company	Score (Approx.)
Company #1	6.5
Company #2	5.5
InterDigital	5.5
Company #4	5.0
Company #5	4.5
Company #6	4.0
Company #7	3.5
Company #8	3.0
Company #9	2.5
Company #10	2.0

interdigital
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9/10/2024
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Source: InterDigital 10-09-2024 Investor Day

The Data and Methodology are Transparent, Auditable, Validated

Scientifically Proven and Peer-Reviewed

- Patented under US10380147.B1 (*Computer implemented method for quantifying the relevance of documents*)
- Methodology published and peer reviewed in *World Patent Information* (2011)
- Used in regulatory, corporate and academic contexts globally

Data Integrity and Transparency

- Built on **publicly available patent data**, normalized and corrected for time, jurisdiction, and technology
- Patent family-level scoring enables **clear audit trails and reproducible results**
- Each metric component (e.g., citations, protected markets) can be individually reviewed
- All metrics are calculated with **point in time data** and can be **transparently tracked** to calculate value **changes over time**

Defensibility and Reliability

- Admitted under the **Daubert standard** in U.S. federal court cases
- Used in high-value litigation, M&A, and tax proceedings, including IRS vs Amazon
- Designed to be **technology-agnostic and ownership-neutral**

Operational Readiness

- Continuously updated dataset covering **granted patents and applications globally**
- Includes **Ultimate Owner tracking** for accurate benchmarking and tracking