



Efficient IP Strategies to Drive Enormous Startup Exits

CONNECTS Presentation
Swartz Center For Entrepreneurship
Carnegie Mellon University
February 2025

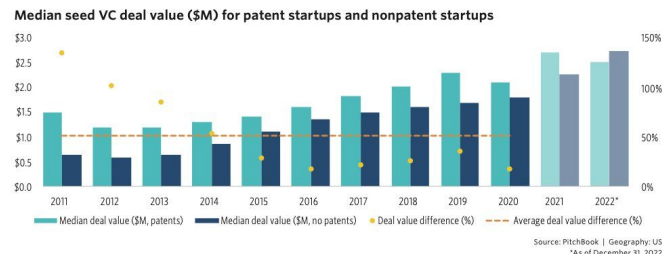
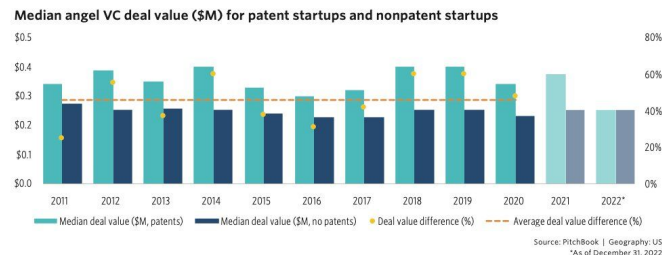
Jason Somma
Sree Gadde

Why does this matter to my
early stage startup?

Patent Backed Early Stage Startups Raise More Money, a trend that is increasing at Seed

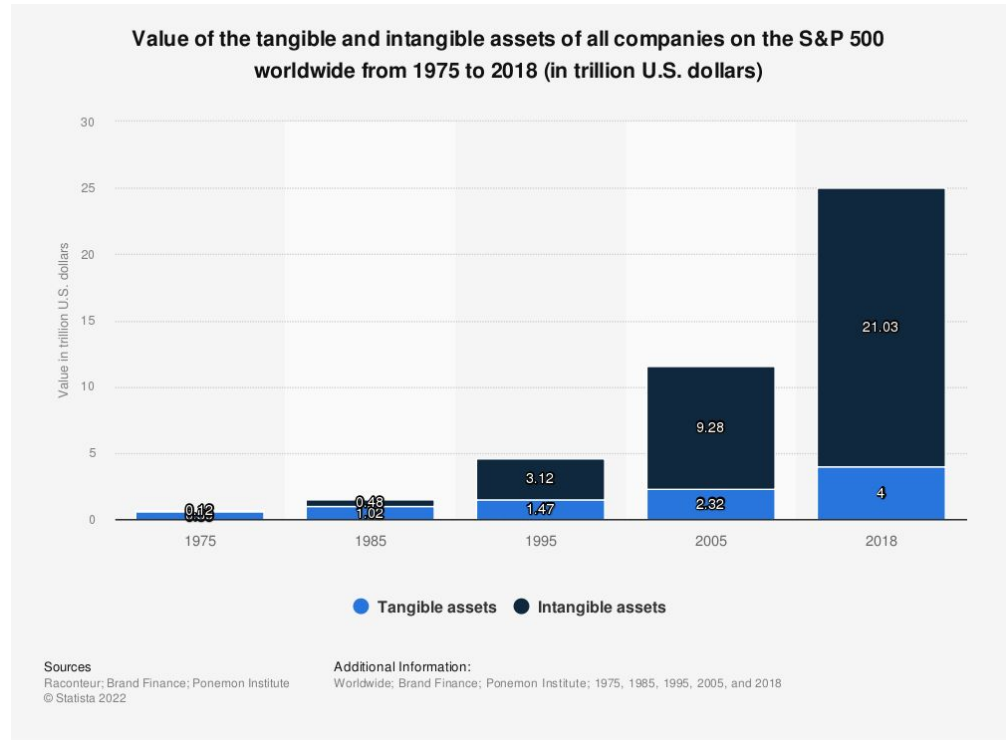
The annual median is 93.2% larger on average for angel deals in pre-money valuations, and late-stage deals clock the second-highest with an annual media of 51.2% larger on average.

While there is some bias between industries, it points to the importance of IP at a company's earliest stages.



Intangible Assets
comprise the vast
majority of the
value of major
companies today.

How do you
exploit that?

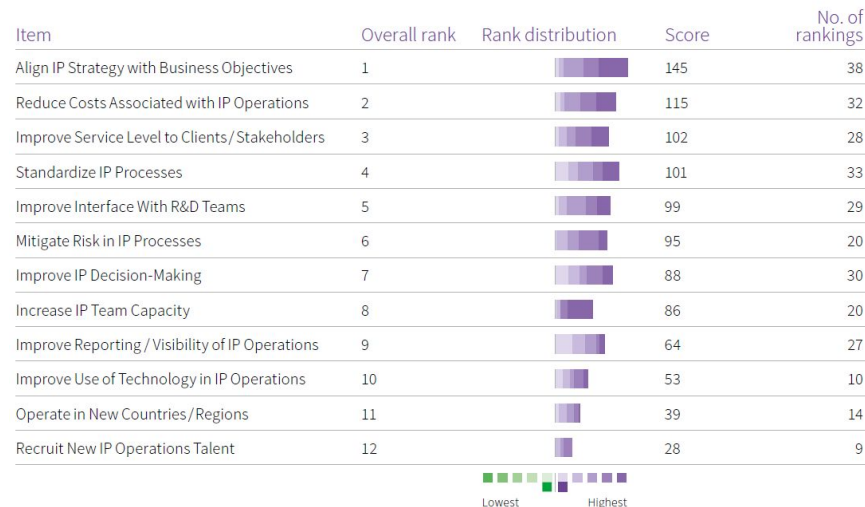


Business Objectives Drive IP Strategy in Large Companies

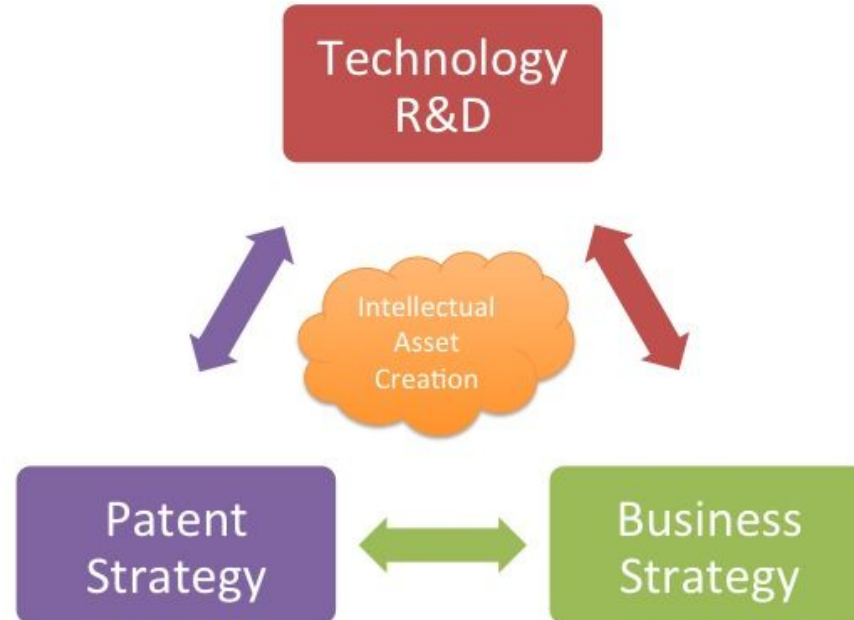
And should drive IP strategy in
small emerging companies.

Consider how IP Assets can drive
ROI for your firm

Chart 8: Select up to five items that most
closely describe your organization's
highest priorities regarding IP Operations.



Business Objectives Should Drive IP Strategy

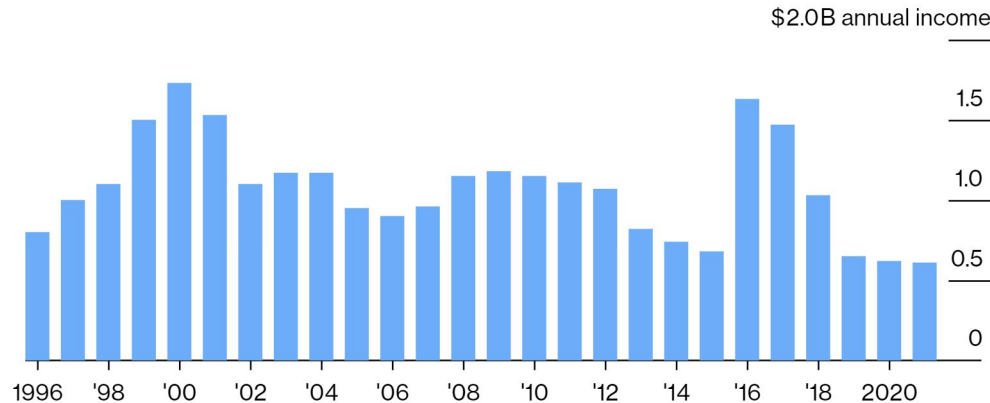


IP Value Doesn't Come From Just Filing Patents

Patent Godfather

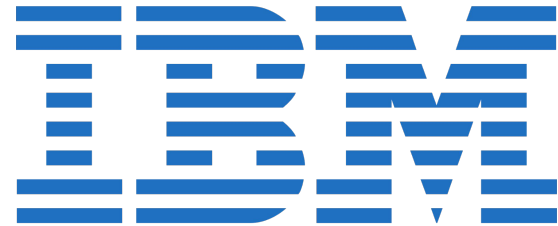
IBM has made over \$27 billion in IP income since 1996

■ IP Licensing, Sales, and Custom Development



Source: IBM

<https://www.bloomberg.com/news/articles/2023-01-06/ibm-loses-top-patent-spot-after-decades-as-ip-leader>



75%

of Organizations Worldwide View Patents as a Business Driver

The majority (75%) say the primary purpose of their patent strategy is to enable further innovation, with patent strategies driven mainly by a desire to enable further R&D, licensing and monetizing innovation and establishing a dominant market position

https://clarivate.com/wp-content/uploads/dlm_uploads/2022/01/2022_Patent_Trend_Report.pdf

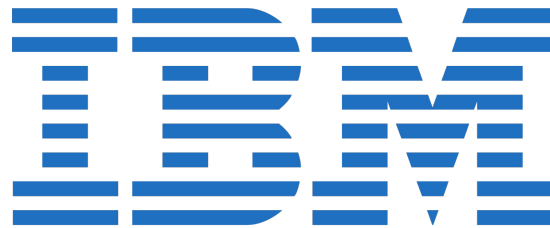
IP Value Doesn't Come From Just Filing Patents...

"Innovation is a combination of talent, resources, and how the talent applies those resources. That might involve obtaining a patent, contributing to open source, or creating entirely new markets... . And while you can't quantify it in terms of patent numbers or even R&D dollars, progress will become obvious as the life-changing applications of these exciting new technologies continue to tick up."

"That's why we're betting that you should account for the real-world impact of a given technology—not just how many patents were issued while building it."

Darío Gil, Ph.D., SVP and director of IBM Research

<https://www.fortune.com/2023/01/06/ibm-patent-record-how-to-measure-innovation-open-source-quantum-computing-tech>



IBM was the top holder of US Patents from 1993-2021 until changing its strategy.

<https://www.bloomberg.com/news/articles/2023-01-06/ibm-loses-top-patent-spot-after-decade-as-ip-leader>

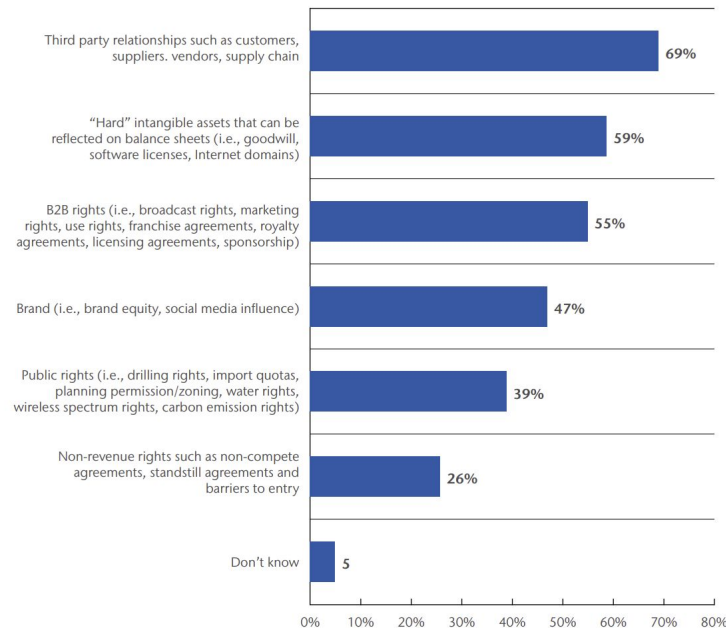
... and the world of IP than more just registrations

Aon asked its respondents, outside of IP and information assets, what 3 categories of intangibles were most to them.

The answers had a fairly wide distribution.

Figure 5. What are the top three subclasses of intangible assets that are most important to your company?

Three responses permitted





Agenda

- Why IP ends up being Concrete Shoes?
- When IP Can Be a Lifeline?
- How do IP Decisions Affect Exits?
- Making Informed Decisions About Your IP



IP as Concrete Shoes

Poor IP Strategy Can Sink Your Business

Getting IP can Burn Valuable Capital

Useless IP Assets waste valuable resources

- Patents cost time to prepare and money negotiate with the Patent Office
- Branding and Trademarks require effort by different members of your team
- Trade Secrets require vigilance and policing to make sure policies are followed
- Knowhow that leaves requires time to recover



Protecting Poor IP Drains Additional Resources

Ill-designed IP Assets waste valuable resources

- Poor drafting limits protection
- Patents can expose Trade Secrets
- IP Protections are geographically limited
- Litigation can cost companies money while also destroying their IP



Poor IP Strategy Can Destroy Your Business

Poor Management Shrinks Business Value

- Joint Ownership without Single Voice?
- Failure to Assign Patents to Company
- Possible Exposure of Trade Secrets
- Showcasing Competitive Advantage



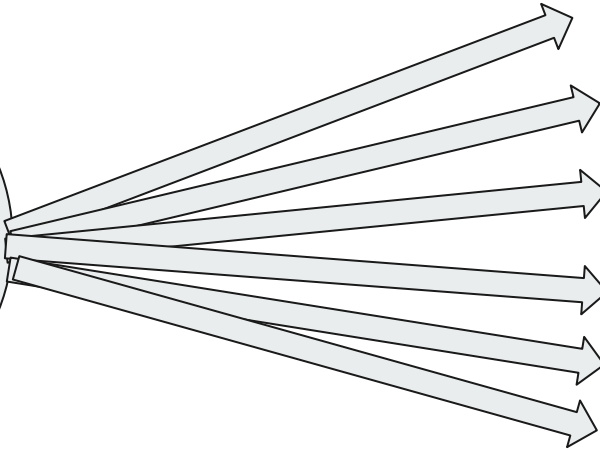


IP Strategy as a Lifeline

*IP Assets Can Help Your Firm Obtain Capital and
Encourage Business Relationships*

An IP Strategy turns costs into investments

**Comprehensive,
Cohesive IP Strategy**



Funding
Joint Ventures
Cross-Licensing
PR
Negotiating Power
Acquisition Pricing Power



IP Can Drive Funding and Relationships

Fundraising

- Venture Capital
- Litigation Finance
- Loan Collateral



Patents and Venture Capital

- VC funds can view patents as de-risking an investment
- Related to Venture-backed Exits, a “positive effect of patents on firm success for life science firms but not for information technology firms. Within the sample of life science firms, the effect of having any patent is substantially larger than the effect of having” multiple patents. That is, “the first patent is considerably more important than subsequent ones” on evaluating exit valuations in life sciences firms.¹
- It is important to know what venture capitalists in your industry/geography look for from a company’s IP portfolio.

1. Patrick Gaulé, *Patents and the Success of Venture-Capital Backed Startups: Using Examiner Assignment to Estimate Causal Effects* (July 2015) (available online at <https://www.cerge-ei.cz/pdf/wp/Wp546.pdf>)

2. <https://www.euipo.europa.eu/en/publications/2023-startup-finance>



IP filings are correlated with successful exits

The filing of patents and trade marks at the seed or early growth stage is associated with a higher likelihood of subsequent venture capital (VC) funding. This effect is particularly important at the early stage, with a 4.3 times higher likelihood of funding for start-ups that filed trade marks, and a 6.4 times higher likelihood of funding for start-ups that filed patents. Start-ups that filed both trade marks and patents show the highest likelihood of funding at both the seed and early stages.

The filing of European patents and trade marks is associated with an even higher likelihood of subsequent VC funding for start-ups.

The filing of patents and/or trade marks is associated with a more than twice higher likelihood of successful exit for investors. The highest likelihood of Initial Public Offering or acquisition is observed for start-ups that filed both patents and trade marks.

59%

Increase in probability of raising VC funding for startups
after approval of their first patent.

“Patents are particularly beneficial to **early-stage startups, those founded by inexperienced entrepreneurs,** those located in states with a large startup population, and those operating in the IT sector.”

“This evidence suggests that patents help **mitigate information frictions between startups and investors**, acting as catalysts that help set startups on a path to success and **more than doubling their unconditional IPO probability.**”



Patents Are A Key Criteria for SBIR Funding

SBIR Phase I - Feasibility

- Average awards between \$150k-\$225k (depending on agency)

SBIR Phase II - Commercialization Plan

- Patents are an enumerated consideration for SBIR Phase II funding for NIH reviewers.

\$1 Million

Max Value of SBIR Phase II Grant from NSF

* <https://seedfund.nsf.gov/resources/awardees/phase-2/apply/> (Jan. 2023)

\$1.9 Million

Max Value of SBIR Phase II Grant from NIH

* <https://seed.nih.gov/small-business-funding/small-business-program-basics/understanding-sbir-sttr> (Jan. 2023)



Patents Can Serve As Loan Collateral

- Patents Have the Attributes of Property
- Strong Bankruptcy Protection Lessens the Risk of Lending to Patenting Companies
 - More Attractive Borrowing Interest Rates
 - Studies of show a correlation between patents pledged as collateral and increases in firms' R&D Expenditures



Example - Mimosa Networks

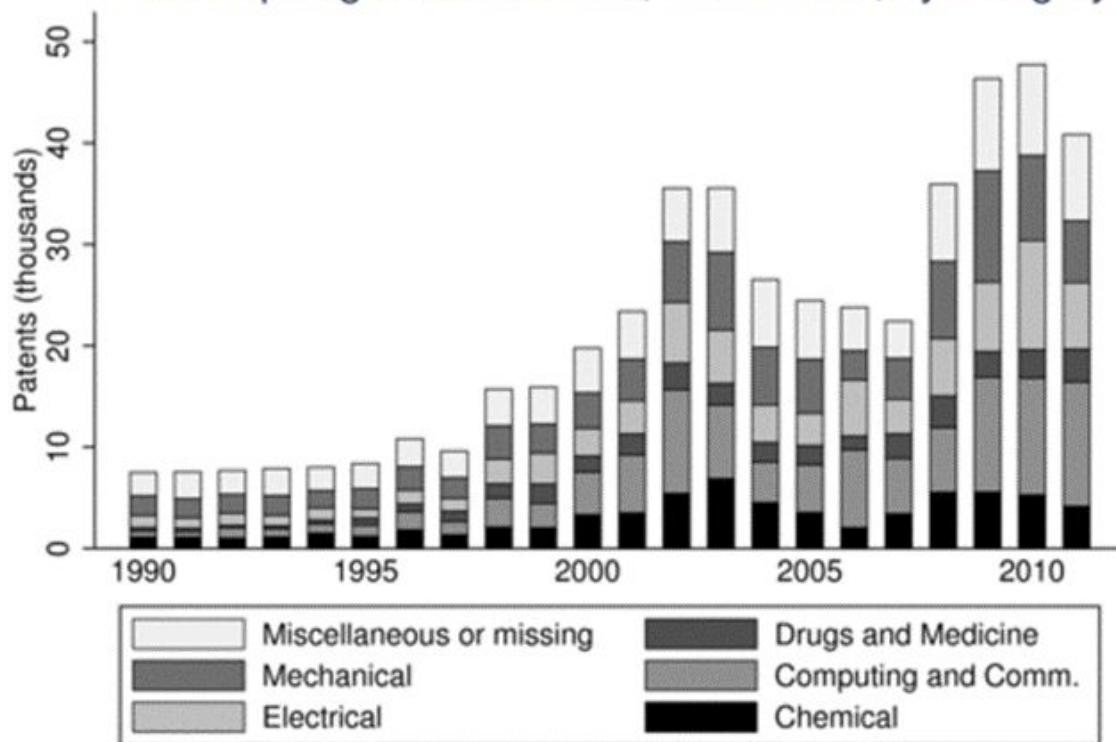
2014 - Raised \$20M (on \$126M valuation) from New Enterprise Associates, and Oak Investment Partners.

2017 - Assigned Security Interest to Ally Bank

2018 - Acquired by Airspan Networks for undisclosed sum

Date	Code	Title	Description
2014-03-19	AS	Assignment	Owner name: MIMOSA NETWORKS, INC., CALIFORNIA Free format text: ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNORS:HINMAN, BRIAN;GUREVICH, DAVID;KESKINEN, MIKA;AND OTHERS;SIGNING DATES FROM 20131031 TO 20140124;REEL/FRAME:032478/0364
2015-03-18	STCF	Information on status: patent grant	Free format text: PATENTED CASE
2016-04-14	AS	Assignment	Owner name: MIMOSA NETWORKS, INC., CALIFORNIA Free format text: CHANGE OF ADDRESS;ASSIGNOR:MIMOSA NETWORKS, INC.;REEL/FRAME:038428/0666 Effective date: 20160328
2017-11-13	AS	Assignment	Owner name: ALLY BANK, NEW YORK Free format text: SECURITY INTEREST;ASSIGNOR:MIMOSA NETWORKS, INC.;REEL/FRAME:044102/0979 Effective date: 20171026
2018-08-29	MAFP	Maintenance fee payment	Free format text: PAYMENT OF MAINTENANCE FEE, 4TH YR, SMALL ENTITY (ORIGINAL EVENT CODE: M2551); ENTITY STATUS OF PATENT OWNER: SMALL ENTITY Year of fee payment: 4
2018-11-21	AS	Assignment	Owner name: PACIFIC WESTERN BANK, AS AGENT, NORTH CAROLINA Free format text: ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNOR:ALLY BANK;REEL/FRAME:047564/0630 Effective date: 20181120 Owner name: PACIFIC WESTERN BANK, AS AGENT, NORTH CAROLINA Free format text: SECURITY INTEREST;ASSIGNOR:MIMOSA NETWORKS, INC.;REEL/FRAME:047564/0485 Effective date: 20181120

Patents pledged as collateral, 1990–2011, by category



~400,000

Number of Patents with a Pledged Security
Interest from 2016-2019

**double the amount with a pledged security interest from 2012-2015*



Joint Ventures

- Typically the each company contributes something of value to a newly formed entity, one designed to oversee the new business endeavor.
- Each company has access to capital, technical, management and intellectual property (IP) resources. To expand their respective business capabilities
- Allows the parties to **attain otherwise unavailable rights** to if either acts alone.
- **Patent Rights can be a key asset driving consideration when engaging in a joint venture.**
- Care should be taken in forming these relationships as to ensure each party has access to, and receives value from the relationship.



Cross-Licensing

- Two (or More) parties **grant each other access to patent rights** that the other needs
- Examples:
 - **Google and Samsung** have a broad cross-licensing agreement for patents related to the Android OS
 - **Patent Pools** - Multiparty portfolios of patents, often standard essential patents
- Key benefits include:
 - Bundling complementary technologies
 - Enhancing interoperability
 - Access to new markets and Monetization of unused or underused assets
 - Lower development/production costs.
- Cross-licensing schemes may create extra administrative headaches
- Can also be a **barrier to entry** for startups and may receive **regulatory scrutiny**.

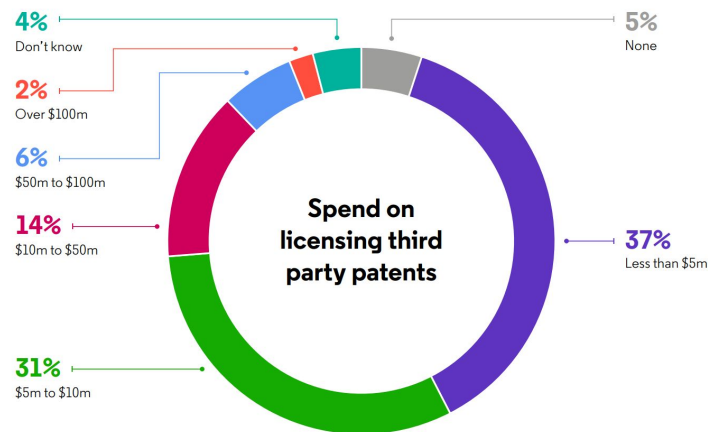


Field-of-Use Licensing to Other Markets

- Patents Have the Attributes of Property
- Allows for alternative revenue streams for companies, particularly in adjacent or non-core markets while pursuing core market strategies:
 - Example: MRI companies licensing MR technologies for Oil & Gas Exploration

IP Licenses Drive Substantial Revenue

Of the 275 professionals who responded to the Clarivate 2022 Patent Trends Study, more than half spent greater than \$5M in patent license revenues.





Patents Can Encourage Customers to Purchase

- Patents can be a **key indicator of quality** in product marketing
- Can provide assurance that your product will not become obsolete due to a competitor
- Can reduce customer **risk of patent infringement**
 - Particularly important in patent-centric industries such as pharmaceuticals.⁴
 - Patent Indemnification from the Uniform Commercial Code



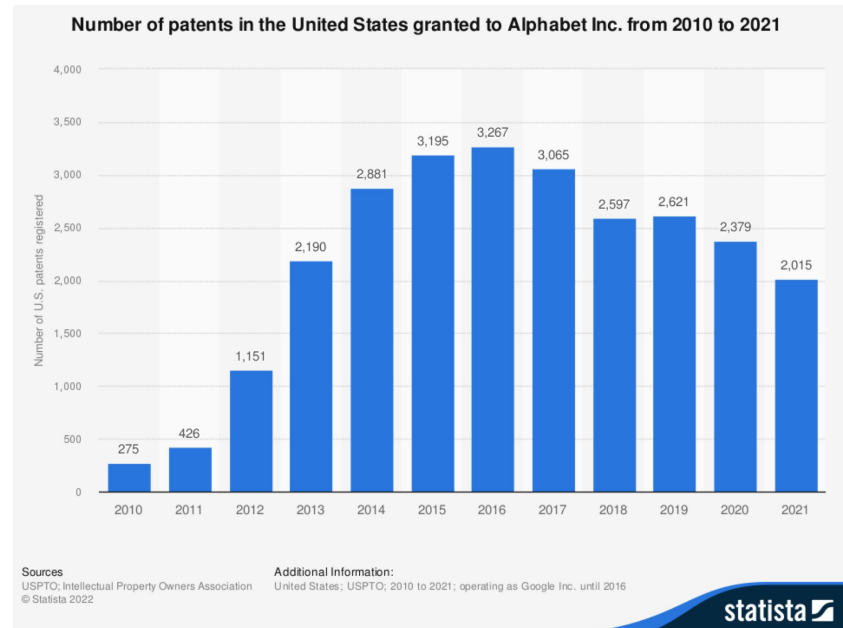
Defensive Portfolios/Strategies Can Be Key Bargaining Chips In Negotiations

- Bargaining Chip if Threatened with Patent Infringement
- May Lead to Better Settlement Terms
- Opportunity to Cross-License Technology from Competitor that Would Not Otherwise be Available
- Also may be available as counterclaims if competitor initiates litigation.
- May also prevent a competitor from obtaining exclusivity for their developments.

Major Tech Companies Are Active in IP Acquisition

Google/Alphabet is still receiving over 2,000 patents per year, even after judicial cases had taken the teeth out of software patents.

The IP positions of the companies they acquire become key points in their acquisition strategies.





Exits

Looking at Recent M&A Data and 2024 Tech IPOs



Recent Exit Data Shows that IP is a Serious Consideration for Companies that Exit

Darktrace Acquired by Thoma Bravo in 2024

2024 IPOs

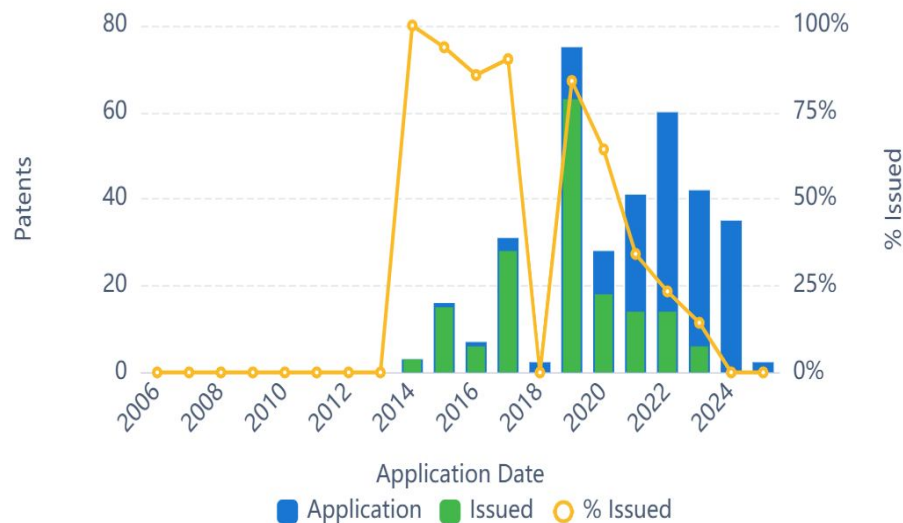
- Rubrik
- Service Titan
- Pony AI
- Reddit

Darktrace Filed Substantially More Patent Applications Leading Up to Its Acquisition by Thoma Bravo

Founded in 2013, Darktrace is a cybersecurity company that uses machine learning techniques to detect potential threats.

It went public in 2021 on the London Stock Exchange, and in 2024 it was acquired by Thoma Bravo.

Notice the spike in applications in 2019, and the subsequent spike in 2022.





Service Titan changed its filing strategy in advance of preparing to go public in 2022

ServiceTitan is a cloud-based CRM company, founded in 2007. They didn't start filing patent applications in mass until they looked to go public initially in 2022, but with a sour IPO market, they waited until 2024.

In their S-1, they specifically called out their portfolio including 14 issued U.S. patents, 4 issued foreign patents, 9 U.S. patent applications, 7 patent applications ex-U.S., and 14 US registered trademarks in the U.S., 19 registered trademarks in ex-U.S



Patents filed by, and issued to, ServiceTitan. Data from PatSnap



Pony.AI ramped up its portfolio in advance of intending to go public in 2021 and again in 2023.

Pony.AI is a autonomous vehicle based in China and Silicon Valley.

In February 2020, Toyota invested \$400 million in the company as part of a larger round. The company intended to go public on the NYSE via a SPAC, but suspended this plan in 2021.

In November 2024, Pony.ai went public on the Nasdaq, raising \$260 million.



Patents filed by, and issued to, Pony.AI. Data from PatSnap



Reddit mostly focuses on Copyright, Trademark and Trade Secret Laws because its proprietary value comes from its data.

From Reddit's S-1 (March 2024)

"We believe that intellectual property is an important part of our industry and business. We rely primarily on a combination of copyright, trademark, and trade secret laws, as well as internal security controls, confidentiality procedures, invention assignment and license agreements, and contractual provisions, to establish and protect our intellectual property rights in the United States and abroad"

\$200M

Reddit made over \$200m in licensing its data to AI players leading up to its IPO. With the surge of interest in LLMs and AI, this has likely gone up substantially.

<https://techcrunch.com/2024/02/22/reddit-says-its-made-203m-so-far-licensing-its-data/>



Patents became a headline issue prior to the IPO

Reddit doesn't have any publicly available patent applications as of Feb. 3.

Nokia complaint for patent infringement in advance of IPO, which caught the attention of potential investors

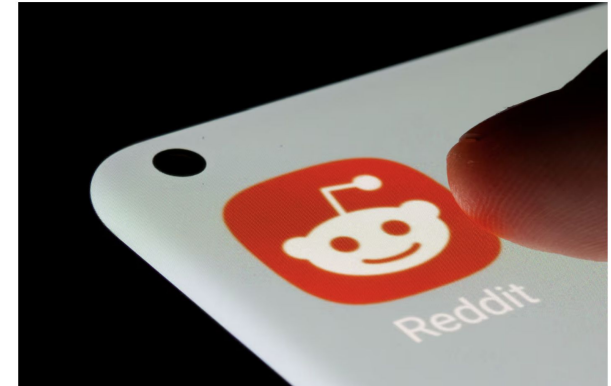


World ▾ Business ▾ Markets ▾ Sustainability ▾ Legal ▾ Breakingviews ▾ Technology ▾ Investigations ▾ More ▾

IPO-bound Reddit discloses patent infringement complaint from Nokia

By Niket Nishant

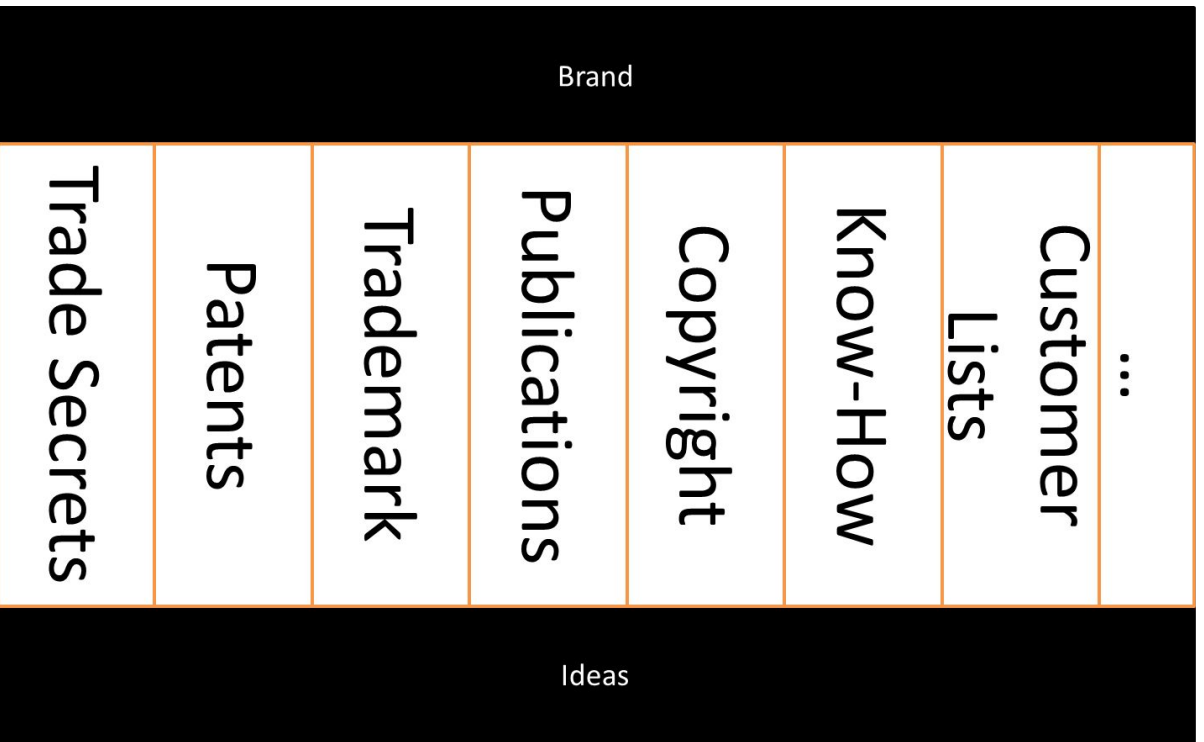
March 19, 2024 2:06 PM EDT · Updated a year ago



Reddit app is seen on a smartphone in this illustration taken, July 13, 2021. REUTERS/Dado Ruvic/Illustration/File Photo [Purchase Licensing Rights](#)



Making Informed IP Decisions



IP Canvas



Example: Understand How VCs Value IP

- Who are the Most Active Investors for Companies Like Yours?
- How Often Do Portfolio Companies of these Investors File Patent Applications?
- Do Valuations Differ Based on Patent Portfolio Size?³
 - Data shows that California companies patent on average more than in other states
 - Venture-backed Companies patent more than others
 - Startups with patent assets tend to have their first application filed before even receiving any reported funding.
 - Data shows a significant positive relationship between patent assets and both
 - receiving investment **and**
 - being acquired.

It is critical to know how those funding your business view IP, and there is **no single best strategy**.

When Aligned with Business Strategy, Patents can **Drive** Additional **Business Value** and Lead to Successful Business Outcomes.



Contact us

Jason Somma

Shareholder, Saxton & Stump, LLC

jsomma@saxtonstump.com

+ 1 (412) 430-0502

@JasonSomma



Sree Gadde

Managing Partner, BlueTreeVC

gaddesr@bluetreecapital.com

+ 1.443.415.3800





Appendix



Companies that Invest in Intangibles Grow Faster than those that don't, regardless of industry

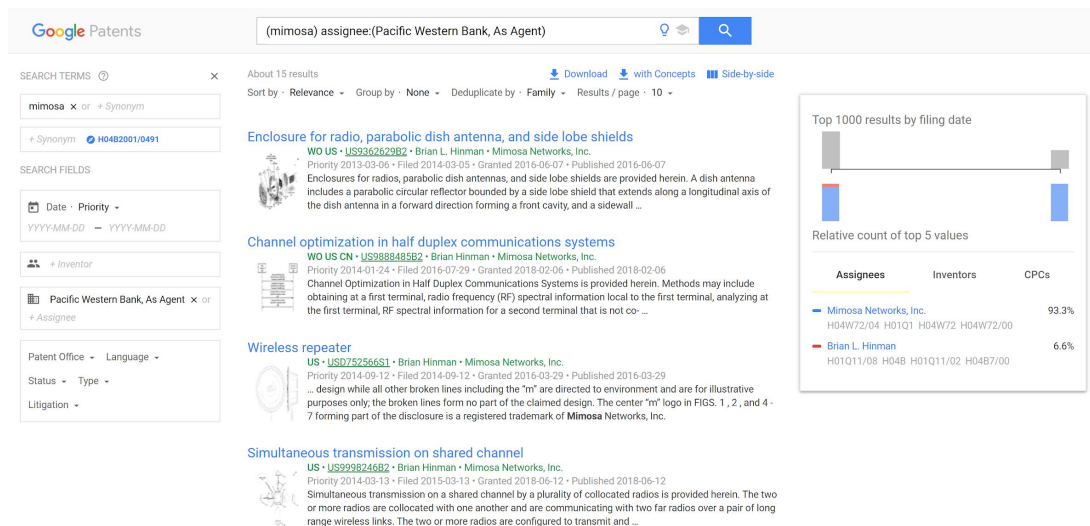
<https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/getting-tangible-about-intangibles-the-future-of-growth-and-productivity>

Example - Mimosa Networks

2014 - Raised \$20M (on \$126M valuation) from New Enterprise Associates, and Oak Investment Partners.

2017 - Assigned Security Interest to Ally Bank

2018 - Acquired by Airspan Networks for undisclosed sum



70%

Of US respondents to Clarivate's 2021 Survey are Enforcing Patents through Litigation at least Monthly.

- About half of respondents worldwide are enforcing once a month
- About a third are being sued monthly.
- Your largest competitors are seasoned, and experience in enforcing and defending intellectual property claims.

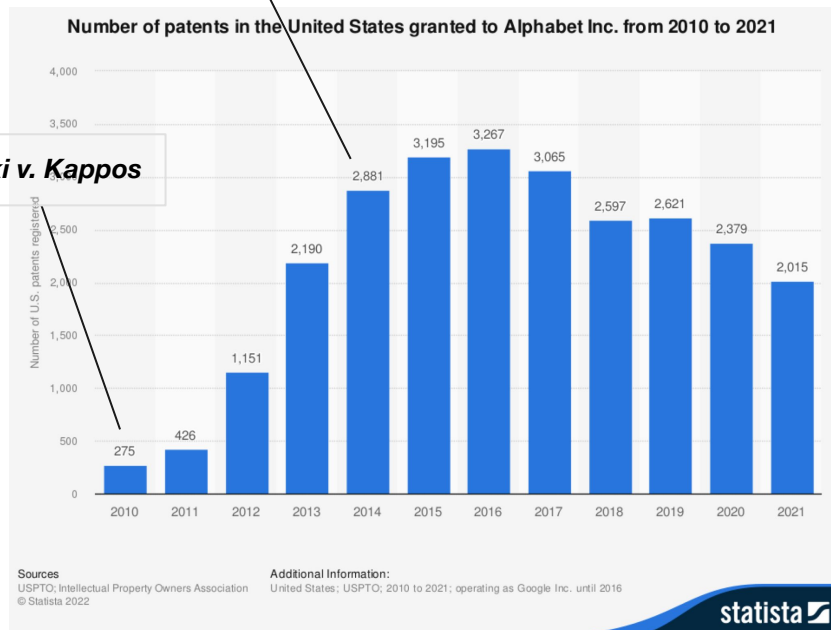
https://clarivate.com/wp-content/uploads/dlm_uploads/2022/01/2022_Patent_Trend_Report.pdf

Even After Major Judicial Decisions Made it Less Attractive

Major judicial decisions have taken the teeth out of many older patents, and in some case have reduced the value of obtaining software patents, but major tech companies are still very much availing themselves to the patent system.

Alice Corp. v. CLS Bank

Bilski v. Kappos





IP Can Drive Value as a Result of Tax Treatment

Add information from here:

<https://marinercapitaladvisors.com/resources/asset-sale-vs-stock-sale-whats-the-difference/>



References

1. Joan Farre-Mensa, et al., *Do Patents Facilitate Entrepreneurs' Access to Venture Capital?* (available at <http://www.research.mbs.ac.uk/accounting-finance/Portals/0/Users/002/02/2/Do%20Patent%20Facilitate%20Entrepreneurs%20Access%20to%20Venture%20Capital%202016.pdf>)
2. Patrick Gaulé, *Patents and the Success of Venture-Capital Backed Startups: Using Examiner Assignment to Estimate Causal Effects* (available at <https://www.cerge-ei.cz/pdf/wp/Wp546.pdf>)
3. Celia Lerman, *Patent Strategies of Technology Startups: An Empirical Study* (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2610433)
4. Chandra Mohan, et al., *Patents - An Important Tool for Pharmaceutical Industry* (<http://www.rroij.com/open-access/patents--an-important-tool-for-pharmaceutical-industry-.php?aid=34351>)



IP Strategy Becomes Evident Closer to Exit

Figma - Acquired by Adobe in September 2022 for \$20B

- Filings accelerated with funding and grew toward exit

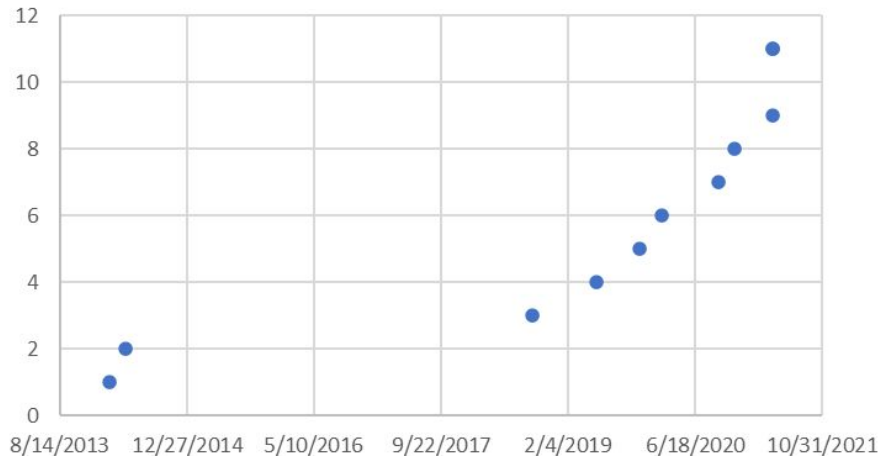
Spark Therapeutics - Acquired by Roche in March 2019 for \$4.8B

- Same... filed 4 patents in Feb. 2019, right before acquisition. Also built its portfolio faster before the acquisition, and then the pace slowed down.

Also, look at exhibit 21 SEC filings to find subsidiaries/related companies to see totality of patents

IP Strategy Becomes Evident Closer to Exit

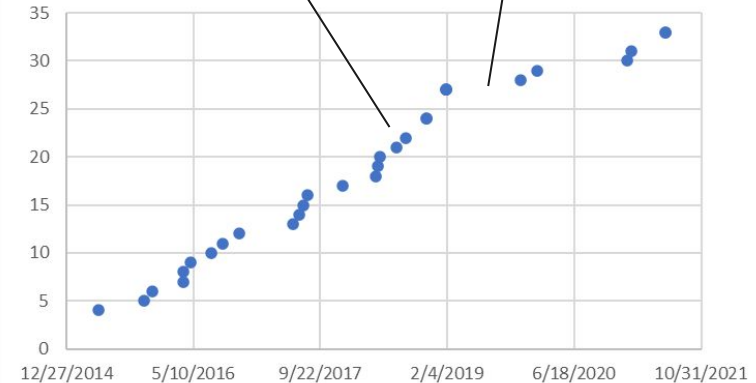
Figma Cumulative Filings



Prep for
acquisition

acquisition

Spark Therapeutics Cumulative Filings

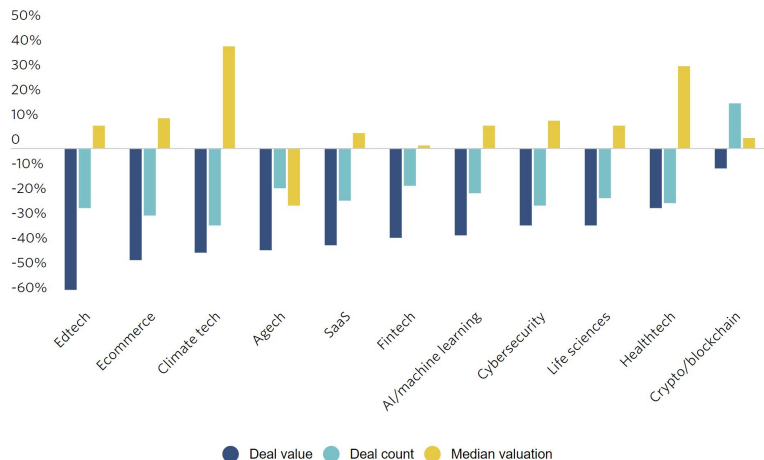


We are not in the same funding environment anymore

Valuations are steady to up, but deal count and value are down.

Emerging tech leaders and laggards

2021 to 2022* percentage change in deal activity, deal count and median valuation

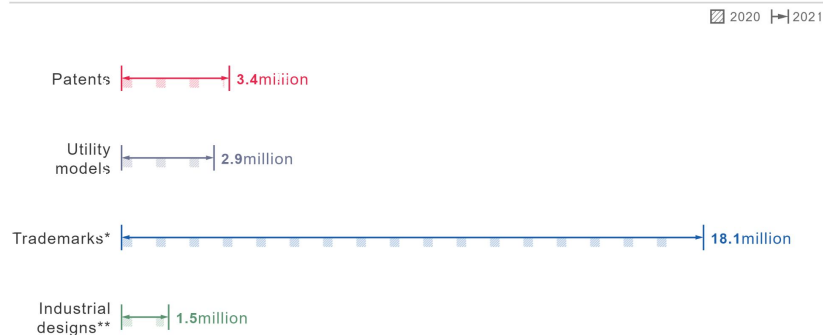


Source: Pitchbook (<https://pitchbook.com/news/articles/vc-valuation-winners-losers-verticals-sectors>)

Global IP Filings Are Up Since the Pandemic Started

Companies have been investing heavily in their IP assets.

Global IP filing activity in 2021



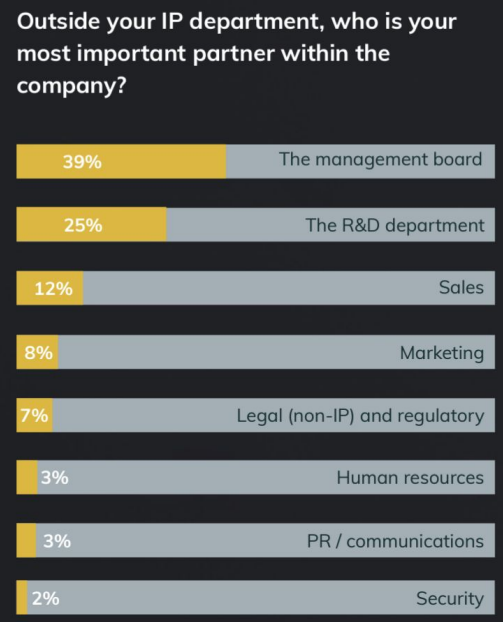
Patent filings worldwide grew by 3.6% in 2021. Trademark and industrial design filing activity grew by 5.5% and 9.2%, respectively. Patent filings around the world exceeded 3.4 million, trademark filing activity totaled 18.1 million and industrial design filing activity amounted to 1.5 million. Applications for utility models – a special form of patent right – dropped by 2.5% to 2.9 million applications.

Note: * refers to class count – the total number of goods and services classes specified in trademark applications.
** refers to design count – the total number of designs contained in industrial design applications.

Source: WIPO Statistics Database, November 2022

IP is important across your business

In-house IP attorneys view management, R&D, and sales as their most important partners, but partnerships run deep across organizations.



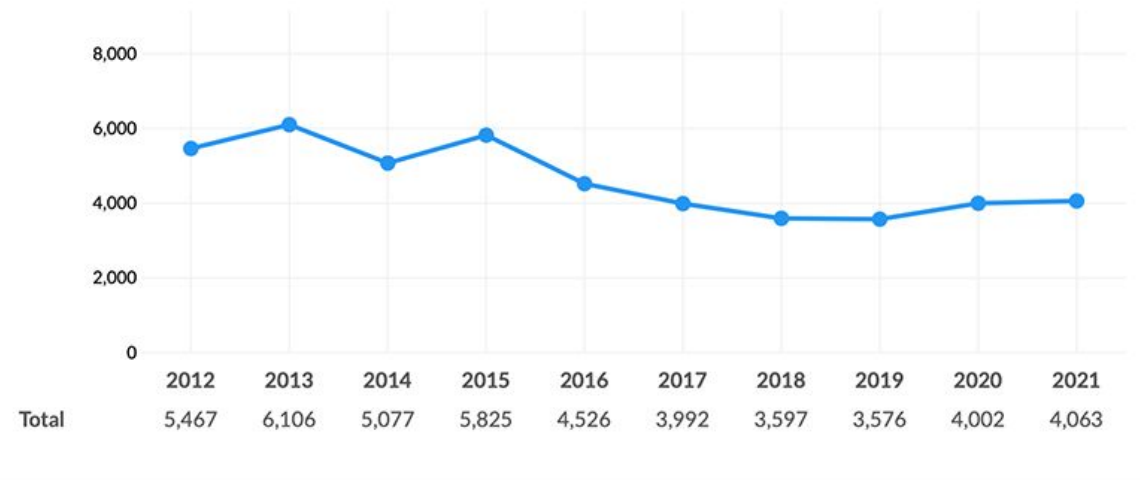


Patent Litigation

4,000+ Patent Suits Are Filed Annually in the United States

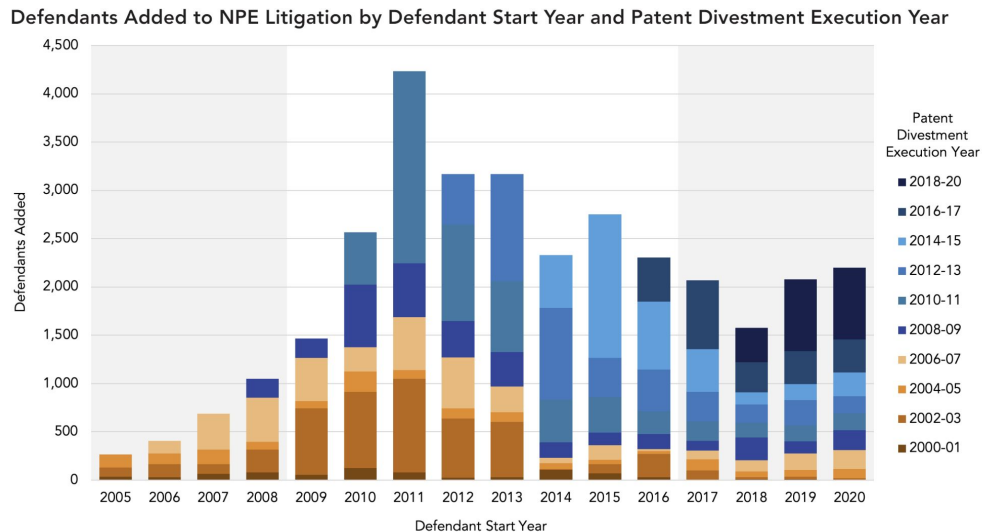
While off the highs of the early 2010s due to changes in the legal landscape, patents are still regularly enforced through the courts.

Figure 1: Patent Case Filings from 2012 to 2021



Non-practicing Entities are still enforcing patents

Colloquially called patent trolls, these entities, while not as prolific as a decade ago, are still active, and their activity is ticking up.



Note: Graph shows patents that were divested from an operating company and later litigated by an NPE. The grey box beneath the bars on the right indicates that defendants added are expected to grow for more recently divested patents, and the grey box on the left indicates that patents divested before 2000 are not shown.