



# Efficient IP Strategies to Drive Enormous Startup Exits

CONNECTS Presentation  
Swartz Center For Entrepreneurship  
Carnegie Mellon University  
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Jason Somma  
Sree Gadde



# Validation - Market sees value in IP

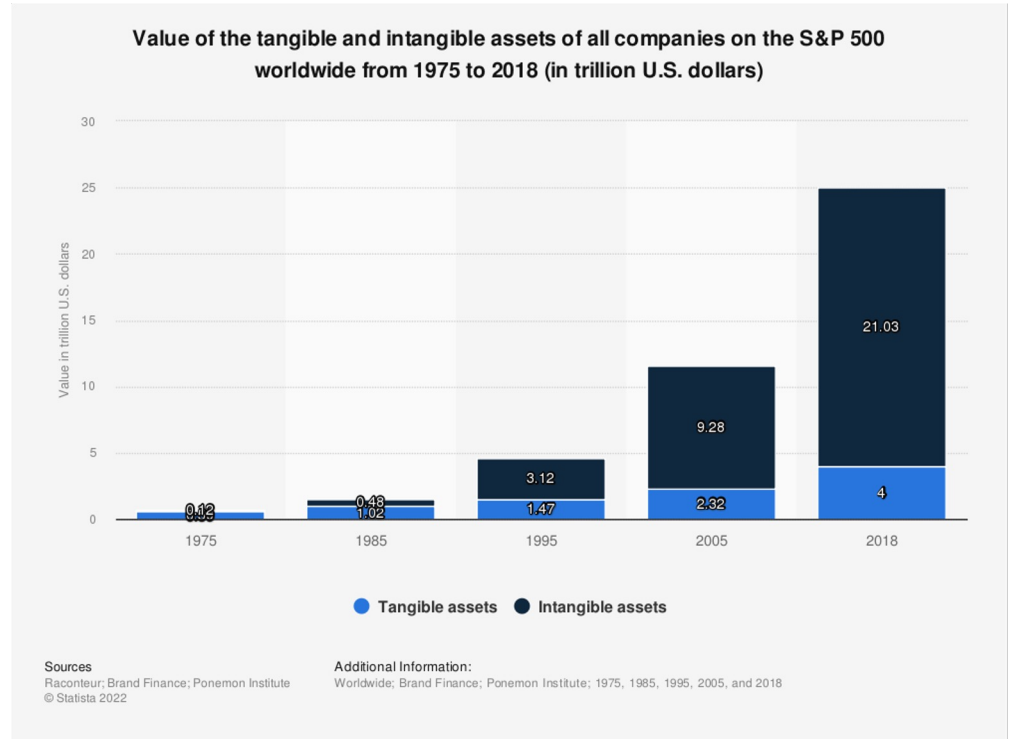
<https://techcrunch.com/2023/08/20/ip-for-startups-patents/>

<https://techcrunch.com/2023/07/10/ip-for-startups-strategy/>

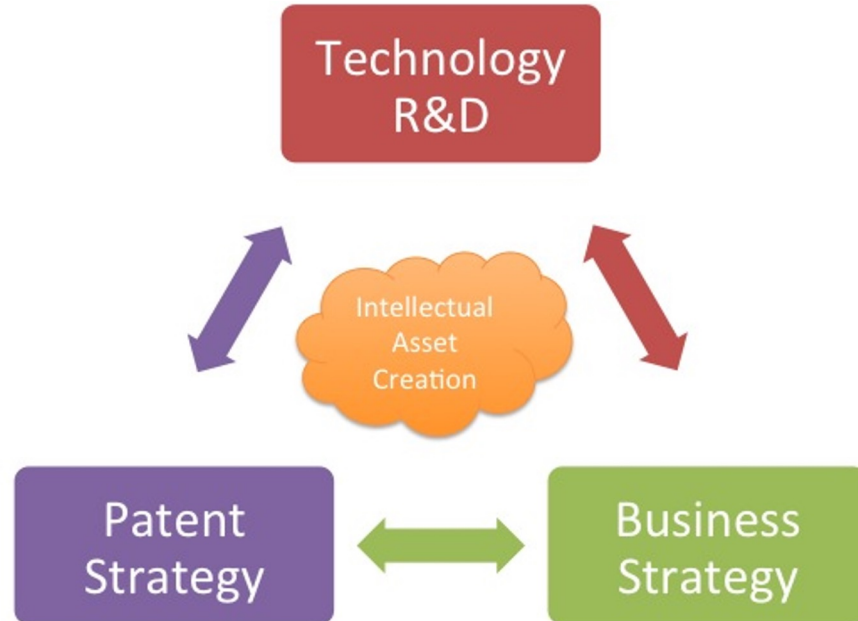
<https://techcrunch.com/2023/01/17/cost-effective-ip-strategies-can-lead-to-massive-exit-valuations/>

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

How do you  
exploit that?



# Business Objectives Should Drive IP Strategy

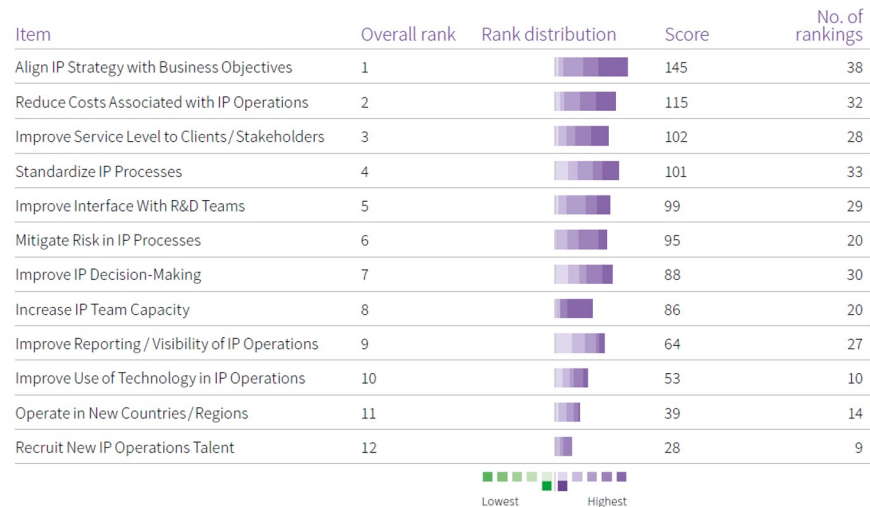


# Business Objectives Drive IP Strategy in Large Companies

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.

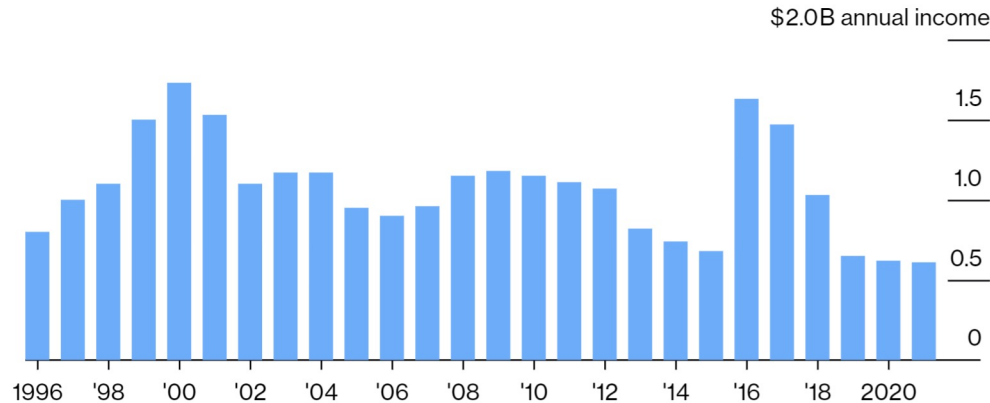


# IP Value Doesn't Come From Just Filing

## 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>



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# 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-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

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[https://clarivate.com/wp-content/uploads/dlm\\_uploads/2022/01/2022\\_Patent\\_Trend\\_Report.pdf](https://clarivate.com/wp-content/uploads/dlm_uploads/2022/01/2022_Patent_Trend_Report.pdf)





# Agenda

- Why IP ends up being Concrete Shoes?
- When IP Can Be a Lifeline?
- How to Make Informed Decisions



# IP as Concrete Shoes

*Poor IP Strategy Can Sink Your Business*

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# Getting IP can Burn Valuable Capital

## Useless IP Assets waste valuable resources

- Patents cost time to prepare and money to 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



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# 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



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# 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





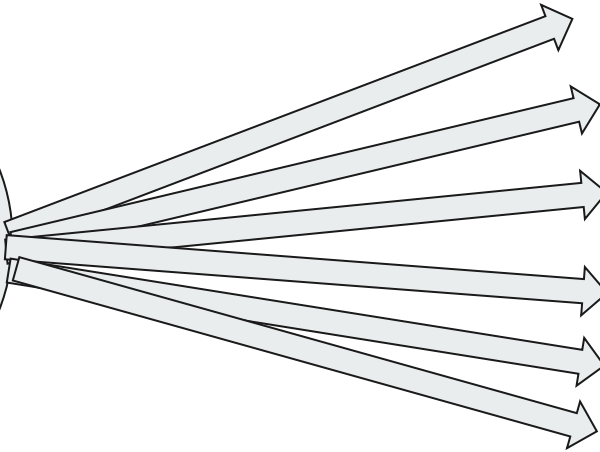
# IP Strategy as a Lifeline

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

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# 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.<sup>1</sup>
- 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.**

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“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.”

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“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.**”

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# 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

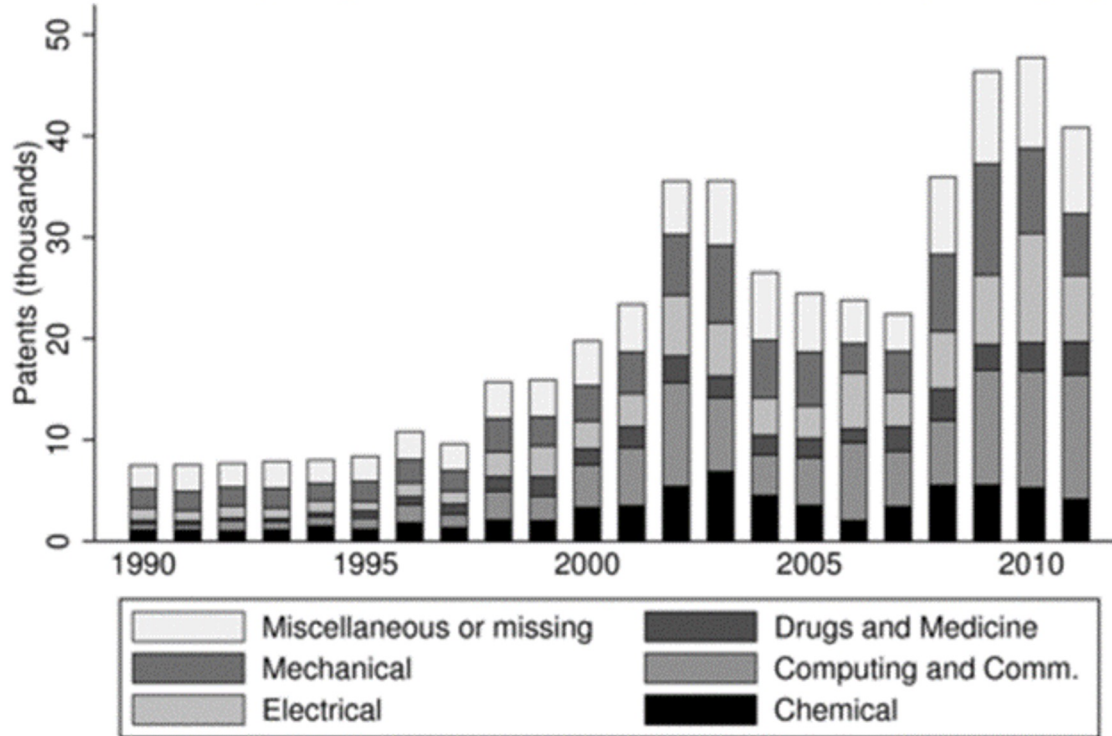
**2014** - Raised \$20M (on \$126M valuation) from New Enterprise Associates, and Oak Investment Partners.

**2017** - Assigned Security Interest to Ally Bank

**2018** - Acquired by Airspan Networks for undisclosed sum

Date	Code	Title	Description
2014-03-19	AS	Assignment	<b>Owner name:</b> MIMOSA NETWORKS, INC., CALIFORNIA <b>Free format text:</b> 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	<b>Free format text:</b> PATENTED CASE
2016-04-14	AS	Assignment	<b>Owner name:</b> MIMOSA NETWORKS, INC., CALIFORNIA <b>Free format text:</b> CHANGE OF ADDRESS;ASSIGNOR:MIMOSA NETWORKS, INC.;REEL/FRAME:038428/0666 <b>Effective date:</b> 20160328
2017-11-13	AS	Assignment	<b>Owner name:</b> ALLY BANK, NEW YORK <b>Free format text:</b> SECURITY INTEREST;ASSIGNOR:MIMOSA NETWORKS, INC.;REEL/FRAME:044102/0979 <b>Effective date:</b> 20171026
2018-08-29	MAFP	Maintenance fee payment	<b>Free format text:</b> PAYMENT OF MAINTENANCE FEE, 4TH YR, SMALL ENTITY (ORIGINAL EVENT CODE: M2551); ENTITY STATUS OF PATENT OWNER: SMALL ENTITY <b>Year of fee payment:</b> 4
2018-11-21	AS	Assignment	<b>Owner name:</b> PACIFIC WESTERN BANK, AS AGENT, NORTH CAROLINA <b>Free format text:</b> ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNOR:ALLY BANK;REEL/FRAME:047564/0630 <b>Effective date:</b> 20181120 <b>Owner name:</b> PACIFIC WESTERN BANK, AS AGENT, NORTH CAROLINA <b>Free format text:</b> SECURITY INTEREST;ASSIGNOR:MIMOSA NETWORKS, INC.;REEL/FRAME:047564/0485 <b>Effective date:</b> 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**.

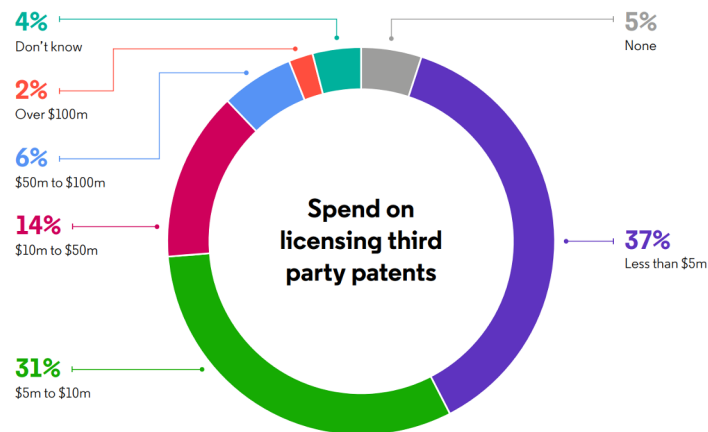


## Field-of-Use Licensing to Other Markets

- 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.<sup>4</sup>
  - Patent Indemnification from the Uniform Commercial Code

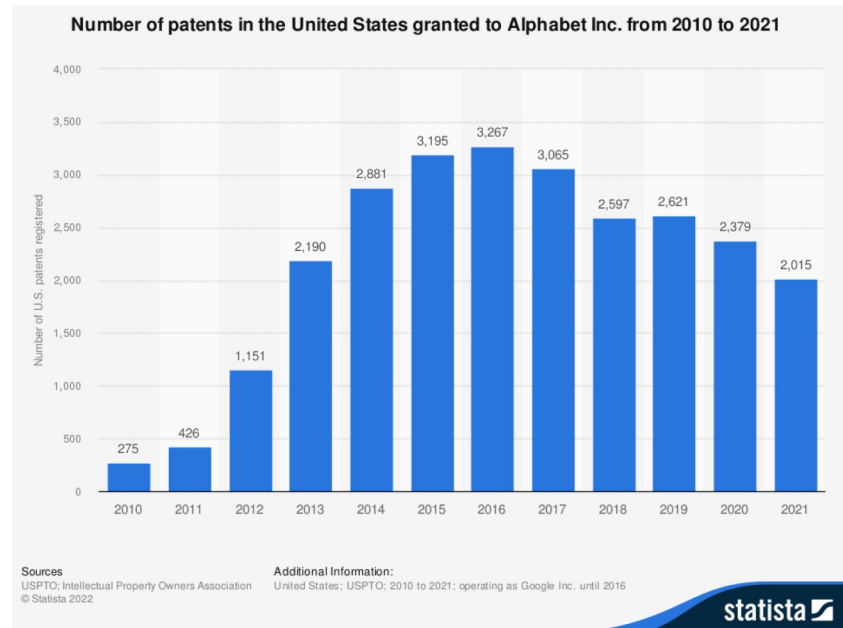


# Defensive Portfolios/Strategies Can Be Key Bargaining Chips In Negotiations

- 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

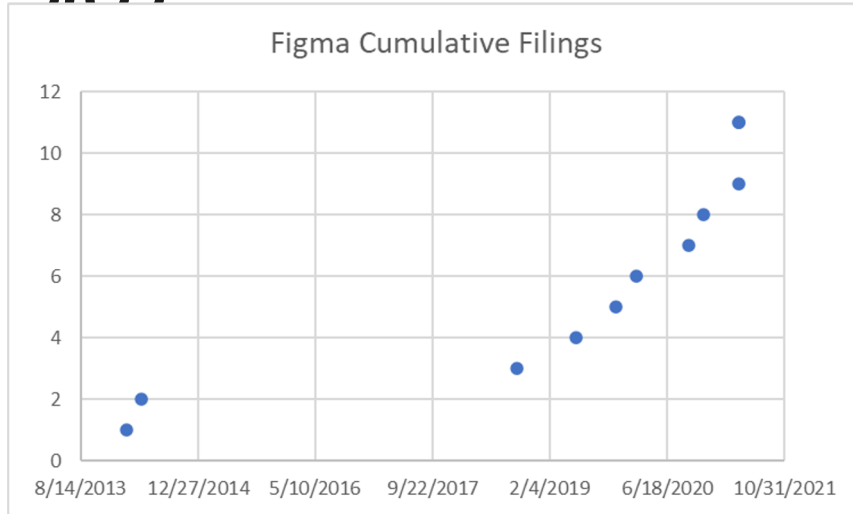
Google/Alphabet is still receiving over 2,000 patents per year, even after judicial cases had taken the teeth out of software patents.





# Exits

# Figma Started Filing Applications in Advance of Being Acquired by Adobe for \$20 Billion in Sept. 2022



Source: Google Patents. No data was obtained from Figma or Adobe

[View all news](#)

## Adobe to Acquire Figma

Thursday, September 15, 2022 08:01 AM

[Adobe to Acquire Figma](#) [Figma Fast Facts](#) [Figma FAQs](#)



Combination of Adobe and Figma Will Usher in New Era of Collaborative Creativity

# Patents Strategy Can Play a Role in Exits



Last week, Evoqua was purchased by Xylem.

A look at Evoqua's patent filings reveals a common trend when preparing for an acquisition - patent issuances tick up.



**Evoqua, Downtown Pittsburgh-based water treatment company, agrees to be acquired for \$7.5 billion**

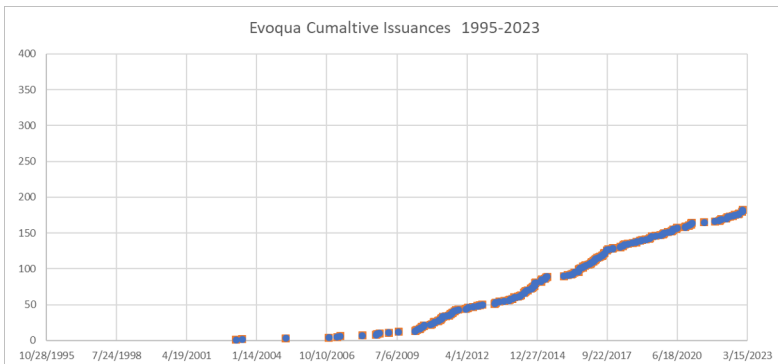
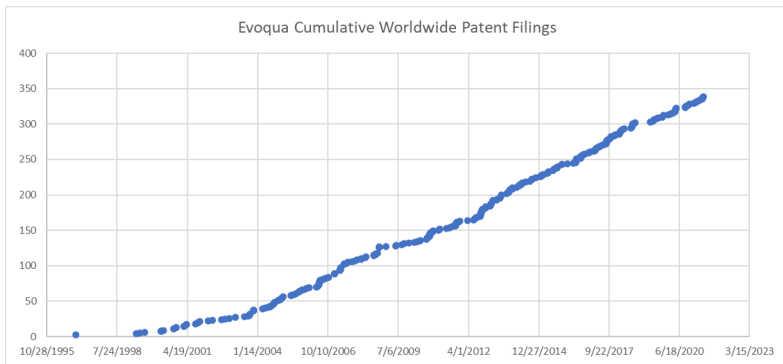


ANYA LITVAK   
Pittsburgh Post-Gazette  
alltvak@post-gazette.com 

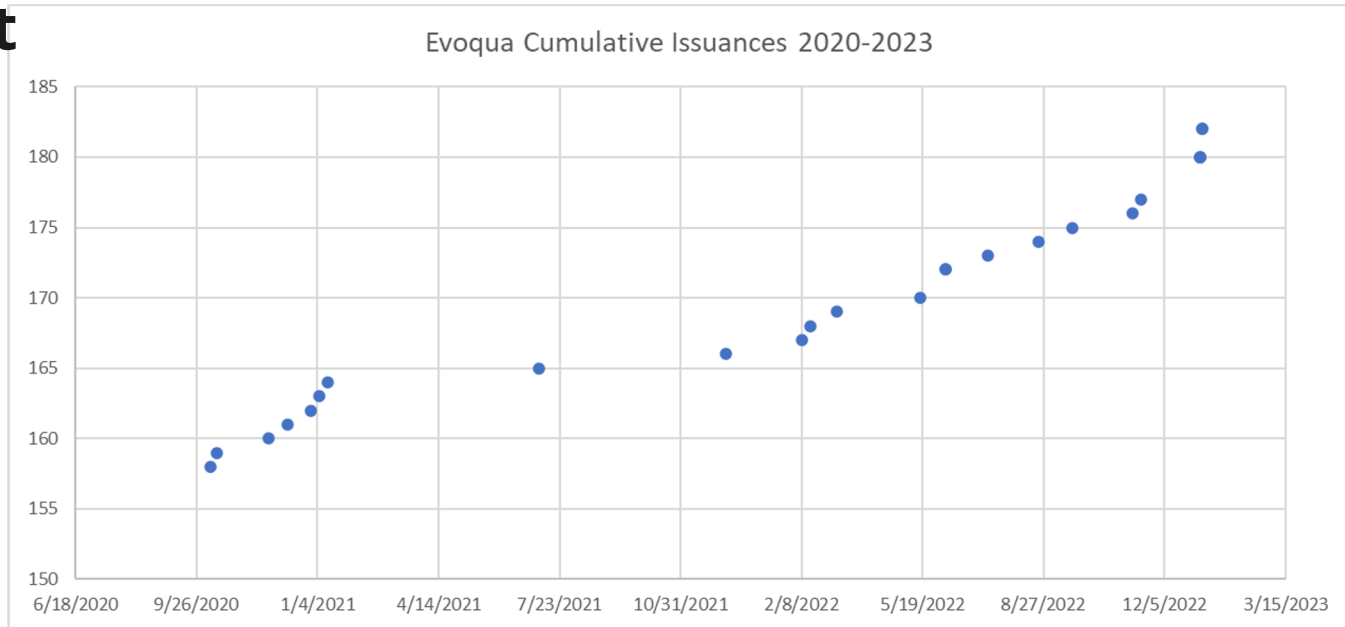
JAN 24, 2023

6:09 AM

# Evoqua's Strategy appeared to change before its exit.



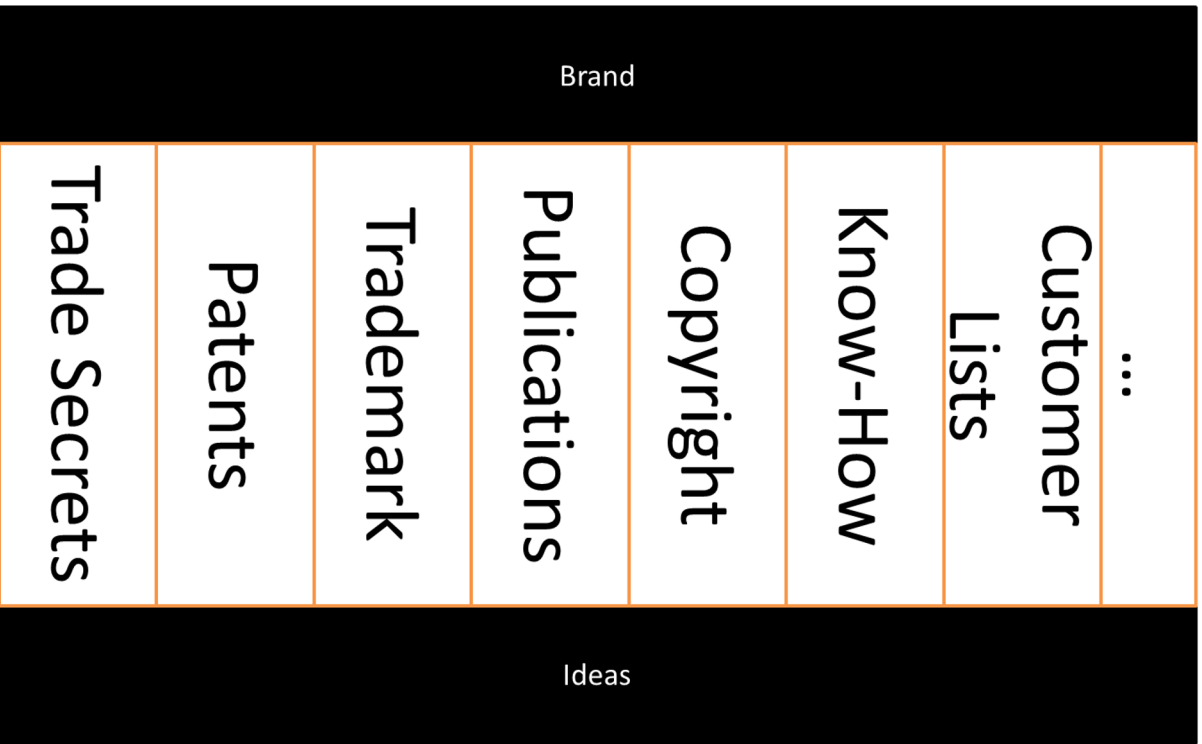
# Evoqua's Strategy appeared to change before its exit







# 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?<sup>3</sup>
  - 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**





# Contact us

## **Jason Somma**

Shareholder, Saxton & Stump, LLC

[jsomma@saxtonstump.com](mailto:jsomma@saxtonstump.com)

+ 1 (412) 430-0502

@JasonSomma

## **Sree Gadde**

Managing Partner, BlueTreeVC

[gaddesr@bluetreecapital.com](mailto: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

The screenshot shows a Google Patents search interface. The search query is "(mimosa) assignee:(Pacific Western Bank, As Agent)". The results are sorted by Relevance. The top results are:

- Enclosure for radio, parabolic dish antenna, and side lobe shields**  
WO US • US9362629B2 • Brian L. Hinman • Mimosa Networks, Inc.  
Priority 2013-03-06 • Filed 2014-03-05 • Granted 2016-06-07 • Published 2016-06-07  
Enclosures for radios, parabolic dish antennas, and side lobe shields are provided herein. A dish antenna includes a parabolic circular reflector bounded by a side lobe shield that extends along a longitudinal axis of the dish antenna in a forward direction forming a front cavity, and a sidewall...
- Channel optimization in half duplex communications systems**  
WO US CN • US9889485B2 • Brian Hinman • Mimosa Networks, Inc.  
Priority 2014-01-24 • Filed 2016-07-29 • Granted 2018-02-06 • Published 2018-02-06  
Channel Optimization in Half Duplex Communications Systems is provided herein. Methods may include obtaining at a first terminal, radio frequency (RF) spectral information local to the first terminal, analyzing at the first terminal, RF spectral information for a second terminal that is not co-...
- Wireless repeater**  
US • USD752566S1 • Brian Hinman • Mimosa Networks, Inc.  
Priority 2014-09-12 • Filed 2014-09-12 • Granted 2016-03-29 • Published 2016-03-29  
design while all other broken lines including the "m" are directed to environment and are for illustrative purposes only; the broken lines form no part of the claimed design. The center "m" logo in FIGS. 1, 2, and 4-7 forming part of the disclosure is a registered trademark of Mimosa Networks, Inc.
- Simultaneous transmission on shared channel**  
US • US9998246B2 • Brian Hinman • Mimosa Networks, Inc.  
Priority 2014-03-13 • Filed 2015-03-13 • Granted 2018-06-12 • Published 2018-06-12  
Simultaneous transmission on a shared channel by a plurality of collocated radios is provided herein. The two or more radios are collocated with one another and are communicating with two far radios over a pair of long range wireless links. The two or more radios are configured to transmit and ...

On the right side of the search results, there is a bar chart titled "Top 1000 results by filing date" and a table titled "Relative count of top 5 values".

**Top 1000 results by filing date**

**Relative count of top 5 values**

Assignees	Inventors	CPCs
Mimosa Networks, Inc. H04W72/04 H01Q1 H04W72 H04W72/00		93.3%
Brian L. Hinman H01Q11/08 H04B H01Q11/02 H04B7/00		6.6%

# 70%

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

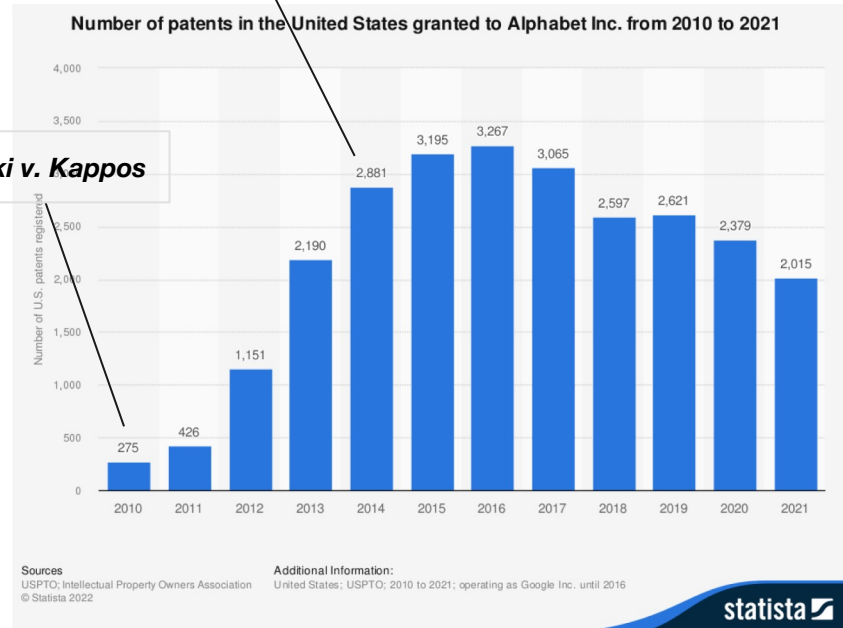
- About half of respondents worldwide are enforcing once a month
- About a third are being sued monthly.
- Your largest competitors are seasoned, and experience in enforcing and defending intellectual property claims.

# 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%20Patents%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](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2610433))
4. Chandra Mohan, et al., *Patents - An Important Tool for Pharmaceutical Industry* (<http://www.rroj.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

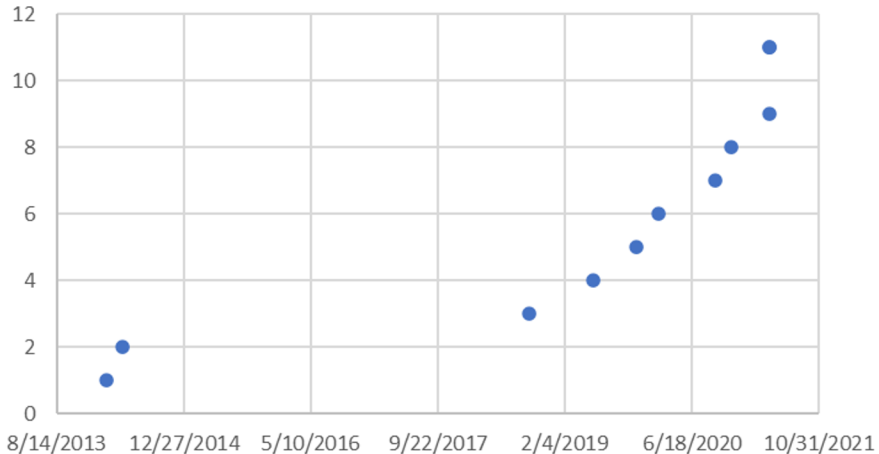
**Spark Therapeutics** - Acquired by Roche in March 2019 for \$4.8B

- 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

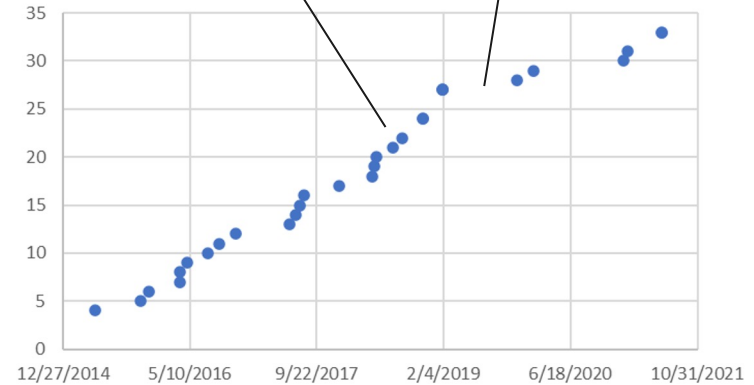
Figma Cumulative Filings



Prep for acquisition

acquisition

Spark Therapeutics Cumulative Filings

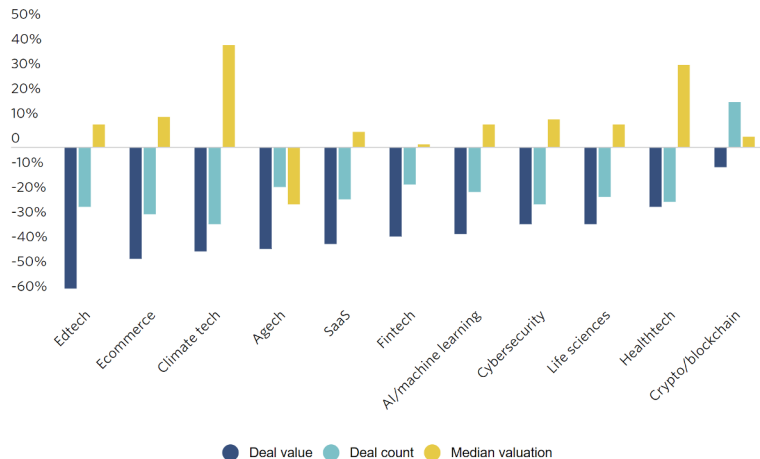


# We are not in the same funding environment anymore

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



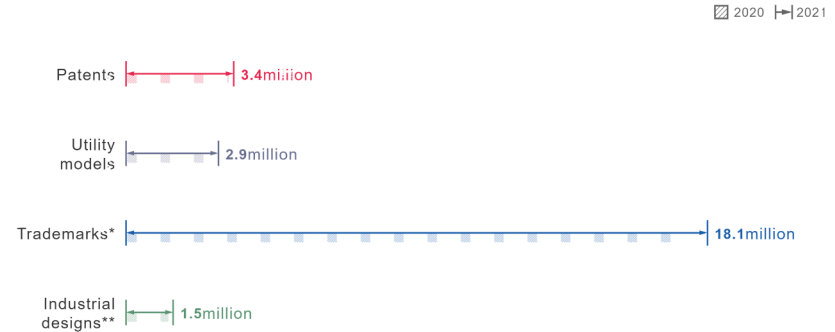
Source: Pitchbook (<https://pitchbook.com/news/articles/vc-valuation-winners-losers-verticals-sectors>)



# Global IP Filings Are Up Since the Pandemic Started

Companies have been investing heavily in their IP assets.

Global IP filing activity in 2021



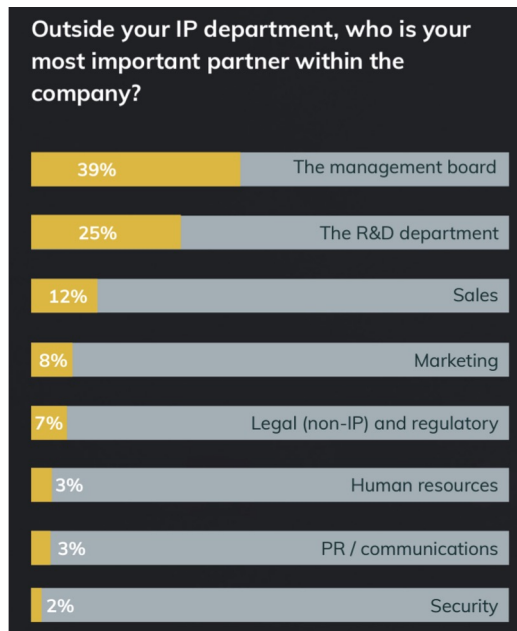
Patent filings worldwide grew by 3.6% in 2021. Trademark and industrial design filing activity grew by 5.5% and 9.2%, respectively. Patent filings around the world exceeded 3.4 million, trademark filing activity totaled 18.1 million and industrial design filing activity amounted to 1.5 million. Applications 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.



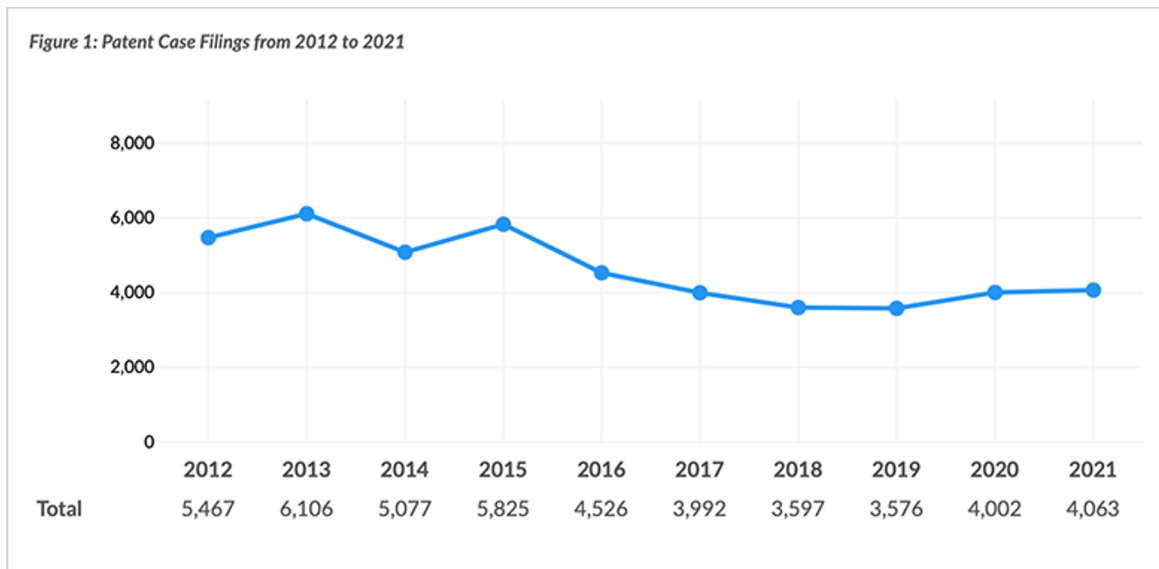


# Patent Litigation

# 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.

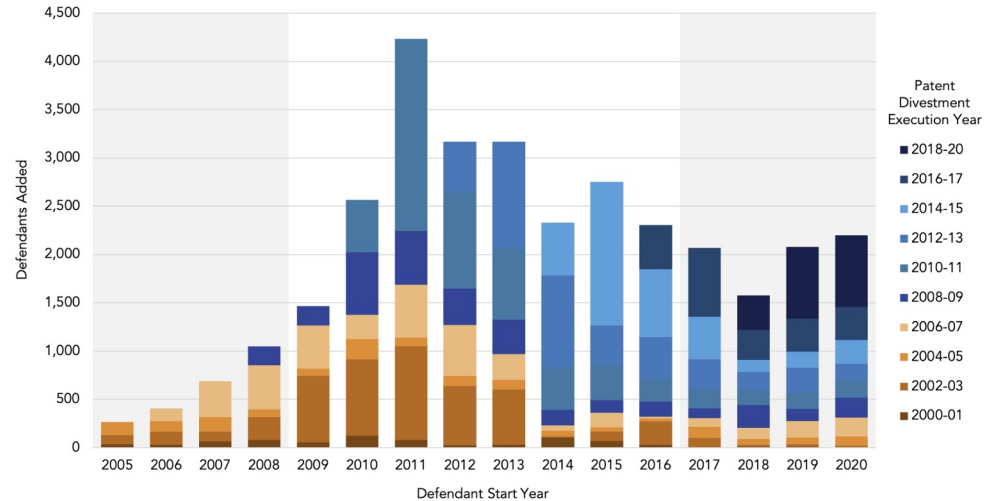
Figure 1: Patent Case Filings from 2012 to 2021



# 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.

Defendants Added to NPE Litigation by Defendant Start Year and Patent Divestment Execution Year



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.



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.

<https://twitter.com/pitchbook/status/1624032946771329024?s=46&t=vMps5zZHA4yNIhP-TmQQcA>