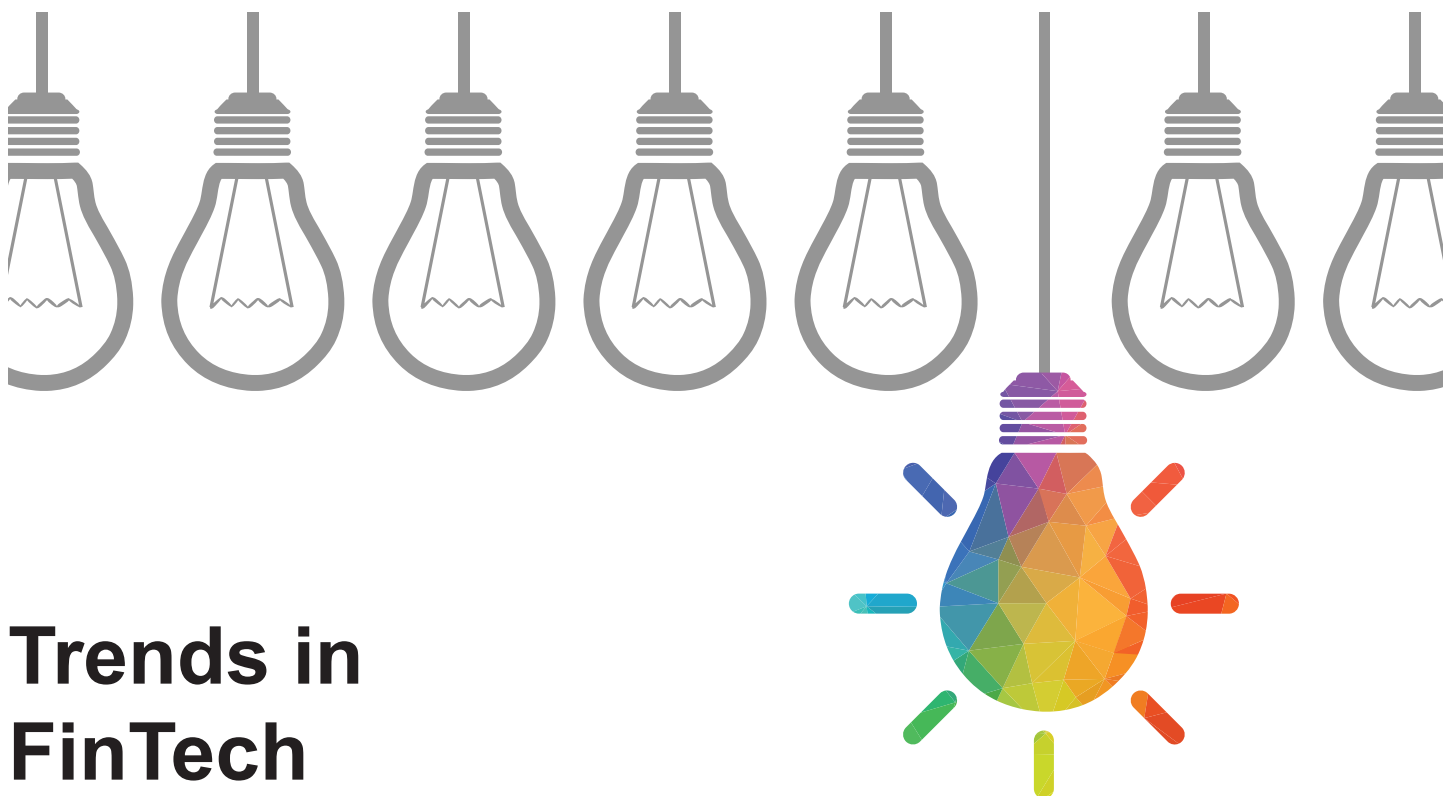




Trends in FinTech

The low allowance rate on software-related and business-method innovations is likely responsible for the sharp drop-off in the number of applications filed in the FinTech industry. There are, however, some indications that the USPTO may revise its practice and once again allow valuable FinTech innovations to be protected by patent rights.

FinTech, the technology that powers the financial services industry, is closely tied to developments in software and business methods. Thus, when recent changes in patent law and the USPTO's implementation of these changes substantially impacted the prospects of patenting business-method innovations, FinTech patenting was bound to be affected by the unfavorable Supreme Court decision in *Alice*.

To better understand the trends of patenting FinTech innovation, we have defined the following technology clusters within the general FinTech area:

Taxonomies and expanded definitions of these clusters are included in appendix A.

FinTech Technology Clusters

Core Banking System/Process

Capital Markets & Investing

Cryptocurrency

Electronic/Mobile Payments

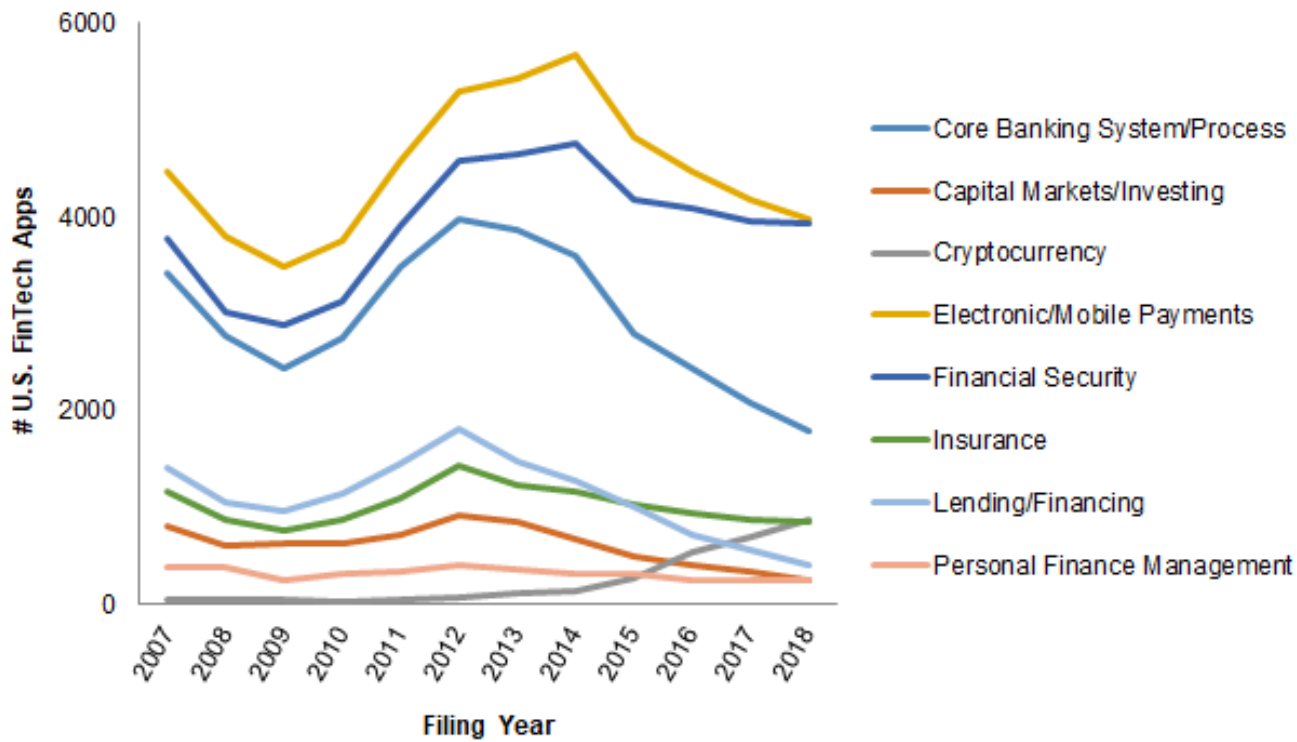
Financial Security

Insurance

Lending/Financing & Crowdfunding

Personal Finance Management

FinTech patent application numbers reflect a turbulent recent history



FinTech has been experiencing an innovation boom in the past decade, fueled by several technology trends, including the rise in mobile banking, growing interest in cryptocurrency and blockchain, developments in RegTech to address the complexity of the financial regulatory environment, growing need for greater accuracy for real-time risk decisions, and adoption of alternative lending practices. With all this innovation, one might expect that patenting activity in this industry would keep to a steady upward trajectory. Several events, however, conspired to put a damper on FinTech patenting.

First came the liquidity crunch and the credit crunch of 2007-2008, both of which hit financial institutions hard.⁵⁵ FinTech patenting activity declined dramatically in the aftermath of the credit crunch, but it rebounded as soon as more liquidity was injected into the economy and continued its rising trend through 2012. Then, beginning in 2012, the legal environment became highly unfavorable for software-related and business-method patents – the very types of patents that are most common for FinTech innovation.⁵⁶

The Leahy-Smith America Invents Act (“AIA”) was passed by Congress in 2011, but its impact began to be felt only in 2012, when three new administrative proceedings became available to challenge the validity of business-method patents.⁵⁷ These proceedings were meant to be a shortcut to the lengthy and costly ordeal faced by defendants in a patent infringement lawsuit.⁵⁸

⁵⁵ <https://www.bostonfed.org/news-and-events/speeches/implications-of-a-credit-crunch.aspx>

⁵⁶ <https://www.forbes.com/sites/danielfisher/2015/10/30/courts-are-drawing-the-line-on-business-method-patents/#3eb25a592b03>

⁵⁷ <https://www.gao.gov/assets/700/690595.pdf>

⁵⁸ Id.

Continuing the turmoil, in 2014, the Supreme Court (in its *Alice* decision) invalidated a set of business-method patents. This decision was interpreted as setting forth a two-part test to assess whether patent claims were eligible for patent protection: is a patent claim (1) directed to an abstract idea, and if so, (2) not significantly more than the abstract idea.⁵⁹ If the answer to either question is “no,” the claim is eligible for patent protection; else, it is not.

In response to the AIA and the *Alice* decision, the USPTO changed its examination guidelines and Examiner training. These changes were particularly consequential to software-related and business-method patent applications, resulting in very high rejection rates.⁶⁰

Unfortunately for FinTech applicants, the vast majority of FinTech patent applications are classified as business methods applications and are assigned to business-method Art Units in the otherwise-reasonable 3600 Technology Center.

USING MI6 DATA:	# Apps Filed in this Year assigned to Art Unit w:		
	Most Industry Apps Art Unit	2nd Most Industry Apps Art Unit	3rd Most Industry Apps Art Unit
FinTech	3635	3691	3697
Core Banking System Processes	3685	3896	3697
Capital Markets & Investing	3685	3897	3691
Cryptocurrency	3685	2122	3697
Electronic/Mobile Payments	3685	3687	3627
Financial Security	3685	2376	2887
Insurance	3697	3696	3695
Lending/Financing & Crowdfunding	3696	3691	3697
Personal Finance Management	3697	2876	3691

The continuing low allowance rates on software-related and business-method innovations is likely responsible for the sharp overall drop-off in the number of applications filed in the FinTech industry as innovators choose not to file applications that have a low chance of being granted allowance.

There are, however, some indications that the USPTO may revise its practice and once again allow valuable FinTech innovations to be protected by patent rights. Specifically, other studies of ours have indicated that patenting prospects for business-method innovations are now approaching pre-*Alice* levels⁶¹ due in large part to patent office guidelines to the examination corps in the last year.

⁵⁹ *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014).

⁶⁰ Kate Gaudry & Samuel Hayim, Bioinformatics Innovations Thrive Despite 101 Chaos, IP Watchdog, February 6, 2019, <https://www.ipwatchdog.com/2019/02/06/bioinformatics-innovations-thrive-despite-101-chaos/id=106020/>.

⁶¹ Kate Gaudry & Samuel Hayim, Bioinformatics Innovations Thrive Despite 101 Chaos, IP Watchdog, February 6, 2019, <https://www.ipwatchdog.com/2019/02/06/bioinformatics-innovations-thrive-despite-101-chaos/id=106020/>.

Tech and banking stalwarts lead the patenting rankings in FinTech

Top Patent Holders (in alphabetical order)	USING 2016 DATA:	
Bank of America		Most Families Filed by (Applicants In alphabetical order)
Google	FinTech	Bank Of America, IBM, Mastercard, PayPal, Walmart
IBM	Core banking System/ Processes	American Express Travel Related Services Co., Bank Of America, IBM, Mastercard, NCR Corp., American Express
Intuit	Capital Markets & Investing	Axioma, Chicago Mercantile Exchange., Mastercard, The Stevens Institute Of Technology
Mastercard	Cryptocurrency	Bank Of America, Cognitive Scale, IBM, Intel, Mastercard
Microsoft	Electronic/Mobile Payments	IBM, Mastercard, PayPal, Toshiba Corporation and affiliates, Walmart
NCR Corporation	Financial Security	Bank Of America, IBM, Mastercard, PayPal, Samsung, VISA
PayPal	Insurance	Allstate Insurance Co., IBM, State Farm Mutual Automobile Insurance Co., Swiss Reinsurance Co., The Hartford
Toshiba Corporation and Affiliates	Lending/Financing & Crowdfunding	American Express Travel Related Services Co., Bank Of America, IBM Intuit, Mastercard
Visa	Personal Finance Management	AT&T, IBM, Intuit Mastercard, PayPal

The patenting strength of tech companies in FinTech suggests that the future of the financial sector is likely to be impacted by technological advances that will also impact other industries. IBM, for example, a leading player in the majority of FinTech technology clusters, has had a long-standing interest in blockchain, cloud computing, and artificial intelligence, all of which are at the forefront of innovation not only in FinTech but also in other industries, such as healthcare.⁶²

Of the financial companies leading in FinTech patenting, both Bank of America and Mastercard are signaling their intent to compete in the blockchain and cryptocurrency space. Each has received a number of patents – and has filed additional applications – that indicate it foresees the wide adoption of cryptocurrency in banking and finance, including as a means for simplifying business-to-business transactions.⁶³

Mobile Banking

As our data show, the biggest surge in FinTech patenting relates to Electronic/Mobile payments, and this patenting trend has predicted the increasing adoption of mobile technology as a means of transacting banking activity on the Internet. Over the past decade, the share of total Internet browsing conducted on smartphones has increased steadily,⁶⁴ and this trend also holds true for mobile banking.⁶⁵ The share of banking transactions conducted on mobile phones has grown steadily since 2012, and by 2017, nearly half of U.S. adults with a bank account were using their mobile phones to access their bank accounts.⁶⁶

⁶² <http://research.ibm.com/>

⁶³ <http://fortune.com/2018/06/20/bank-of-america-blockchain-patent-why/>

⁶⁴ <https://www.statista.com/statistics/241462/global-mobile-phone-website-traffic-share/>

⁶⁵ <https://www.federalreserve.gov/econres/notes/feds-notes/mobile-banking-a-closer-look-at-survey-measures-20180327.htm>

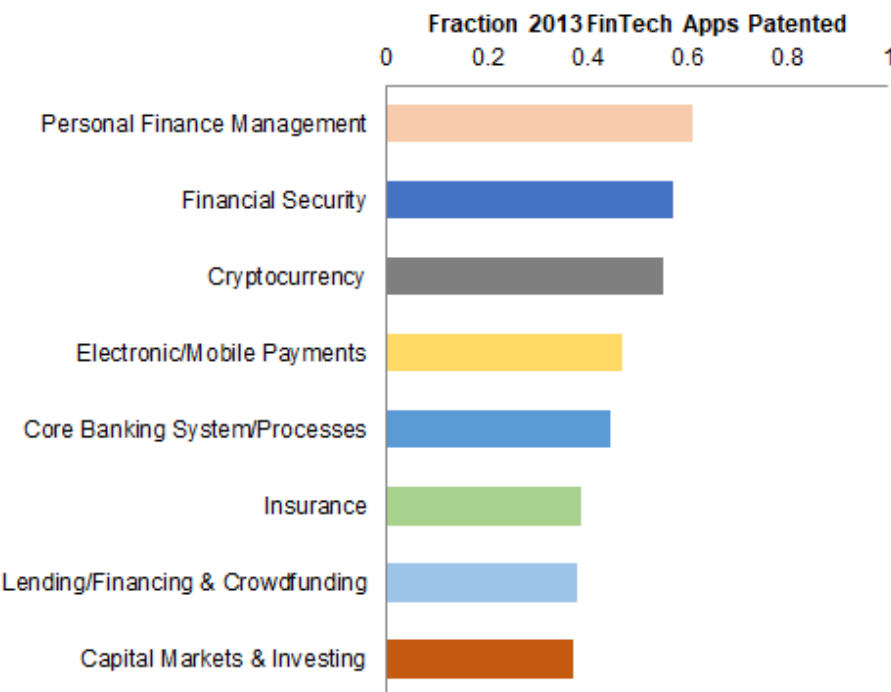
⁶⁶ Id.

Cryptocurrency patents are on the rise since 2014

Cryptocurrency holds the promise to both increase the security of financial transactions, reduce transaction costs and speed them up. Therefore, it is a significant area of innovation, and many FinTech entities are investing in protecting their patenting rights in this space. Despite attempts at creating a cryptocurrency defensive patent license to discourage patent wars,⁶⁷ the race for patenting supremacy is strong, and patent filings have increased year over year since 2014. This trend shows no sign of slowing, indicating that the number of patents and applications will grow significantly in the coming years.

There is a significant difference in allowance rates between Art Units

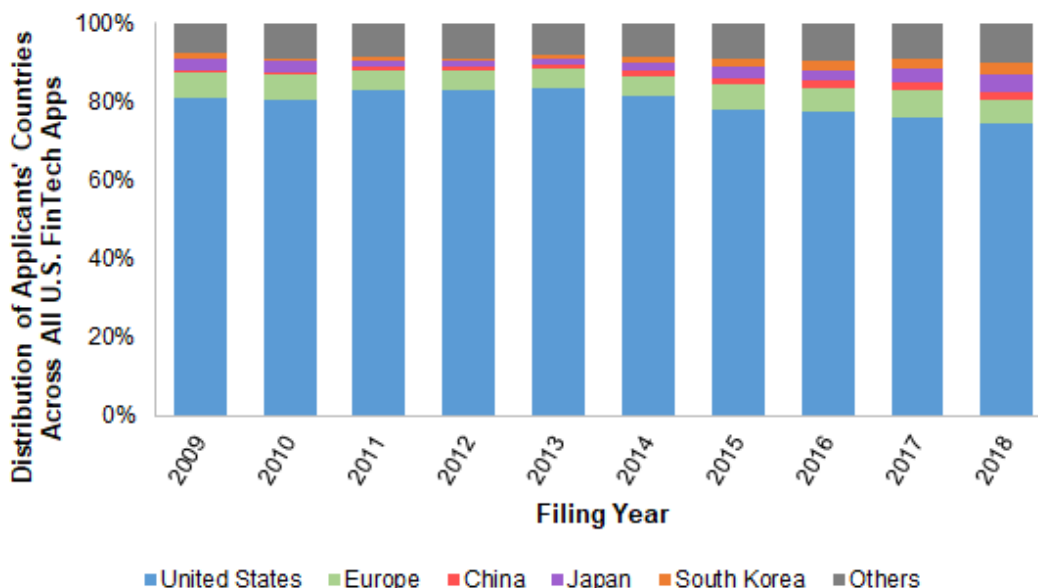
Our data indicate that FinTech patent applications examined by business-method Art Units have only an approximately 40% chance of being allowed. On the other hand, FinTech patent applications examined by non-business-method Art Units have a better than 80% chance of being approved. This discrepancy is further evident in the overall chances of allowance for the different technology clusters of FinTech: technology clusters more tightly aligned with non-business-method art-unit assignments (e.g., Cryptocurrency, Financial Security, and Personal Finance Management) have higher chances of being allowed as compared to other FinTech technology clusters (e.g., involving Capital Markets & Investing, Insurance, and Lending/Financing & Crowdfunding).



⁶⁷ <https://bitcoinmagazine.com/articles/there-bitcoin-patent-war-going-initiative-could-end-it/>

Part of the art of writing patent applications is identifying, describing and claiming the inventions in them in a way that maximizes their chances of allowance. Our data show that it is important to describe and claim FinTech inventions so that they are examined by the appropriate Art Unit at the USPTO if they are to stand a good chance of being allowed.

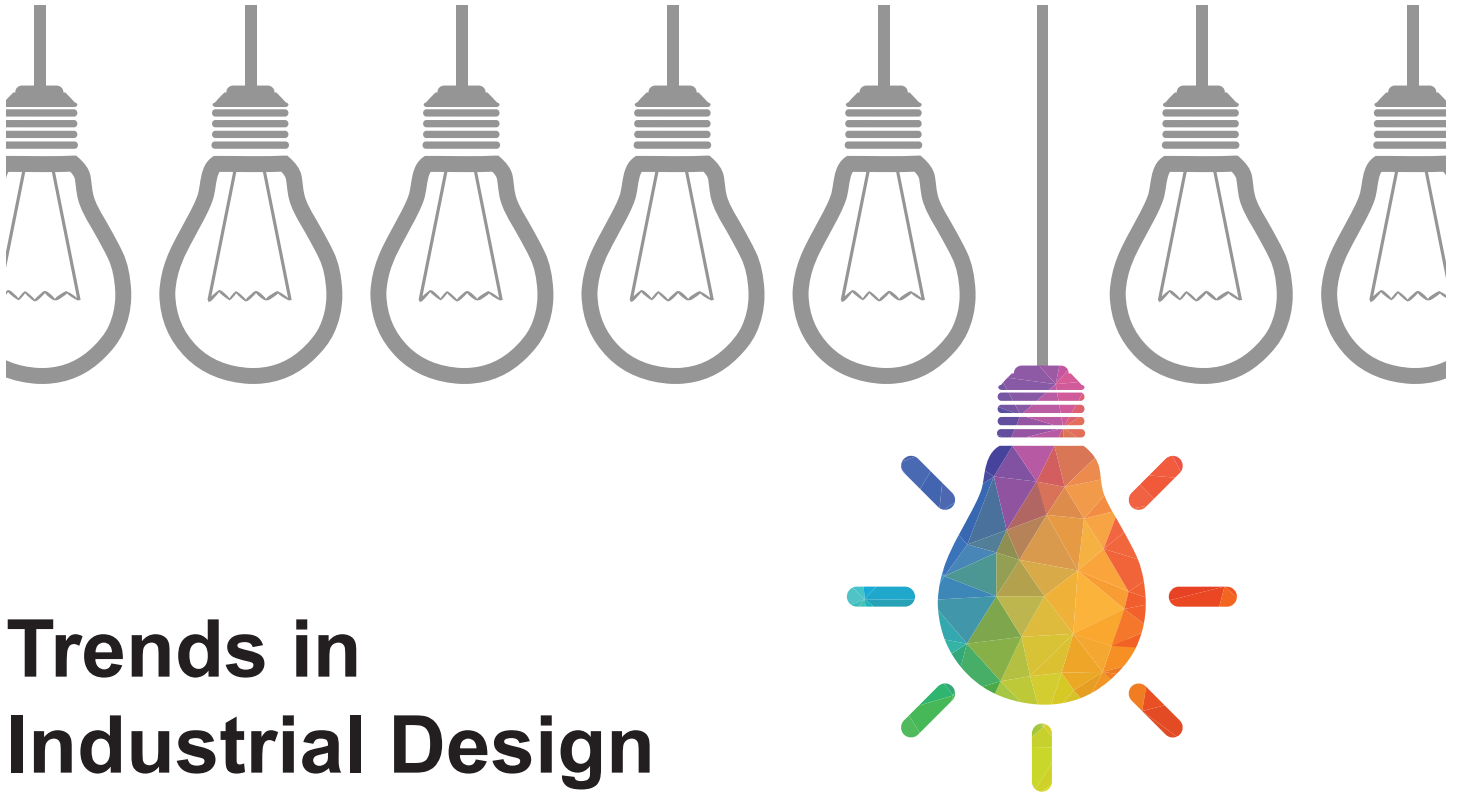
The percentage of U.S.-based filings is decreasing



There is a notable downward trend in the percentage of U.S.-based applications. The beginning of this trend coincides with the *Allice* decision, further indicating that a significant portion of FinTech applications are for software-based inventions that are likely to be examined by business-method Art Units. The fall in patent filings also suggests that filers may be reluctant to file patent applications that do not have a high chance of being granted allowance.

In contrast to the falling percentage of U.S.-based patent applications, patent filings from Japan have been growing. Japan has been an early adopter of cryptocurrency and Bitcoin was recognized as legal currency in Japan in April 2017.⁶⁸ Since then, its regulators granted licenses to multiple companies to run cryptocurrency exchanges. Japanese enthusiasm for cryptocurrency may be the reason for the increasing number of Japanese patent filings in the USPTO.

⁶⁸ <https://www.techinasia.com/japan-financial-blockchain-adoption>



Trends in Industrial Design

Graphical User Interface (“GUI”) design patents offered a new approach to protecting software-related innovation just as the USPTO was changing its examination practices to make software-related utility patents harder to obtain. GUI design patents are especially attractive because these applications are granted almost 100% of the time.

Trends in Industrial Design

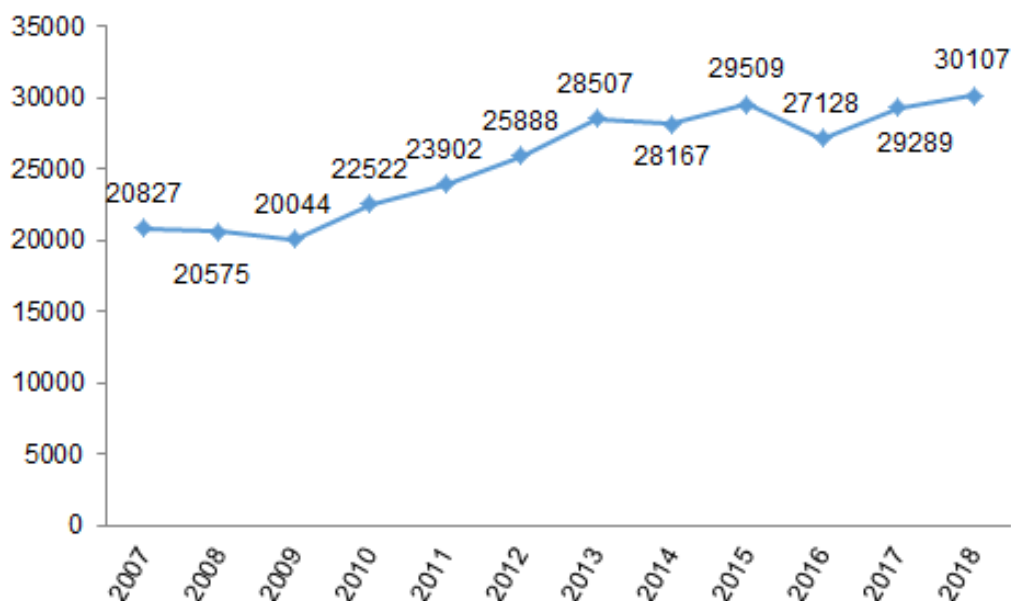
As consumers become ever more discerning and global competition continues to rise, the role of industrial design is increasingly vital for providing a positive customer experience and for product differentiation in all economic sectors. Industrial Design is focused on design patent protection of the ornamental features of a functional product. The term of a design patent is 15 years from issuance and typically less than a utility patent term of 20 years from filing. To delve deeper into the trends of patenting industrial design innovation, we have defined the following technology clusters within the general Industrial Design industry:

Level I Clusters	Level II Clusters
Graphical user II-terrace	-
Industrial Design	Automobile & Transportation
	Building & Architecture
	Computer &. Accessories
	Consumer Electronics
	Cosmetics & Personal Accessories
	Home Furnishing
	Machinery
	Medical/Laboratory Equipment
	Office Equipment
	Pet Products
	Power Generation & Distribution
	Sports Apparel
	Sports Equipment
	Textile & Clothing
	Tools/Hardware
	Toys
	Weapons

Taxonomies and expanded definitions of these clusters are included in appendix A.



Patent filings are on the rise in the Industrial Design industry



Our data was limited to design patents - the most prevalent type of patent being sought in the Industrial Design industry. Design patents have traditionally had several advantages over utility patents. First, there is a significantly higher allowance rate than for utility patents. Second, design patents are issued in 12-18 months, unlike utility patents, which typically take over three years or even longer in hot areas where finding qualified examiners would be difficult. Third, statutory law provides damages in the sum of total profits on an article of manufacture that infringes a protected design whereas infringement damages for utility patents are parsed to the smallest saleable unit or part that embodies the invention (making damages calculations highly complex).⁶⁹ The predictability of both the prosecution process for design patents and of the damages for infringement has created a favorable climate for design patent filings. And indeed, we see a rising number of design patent filings in the past decade.

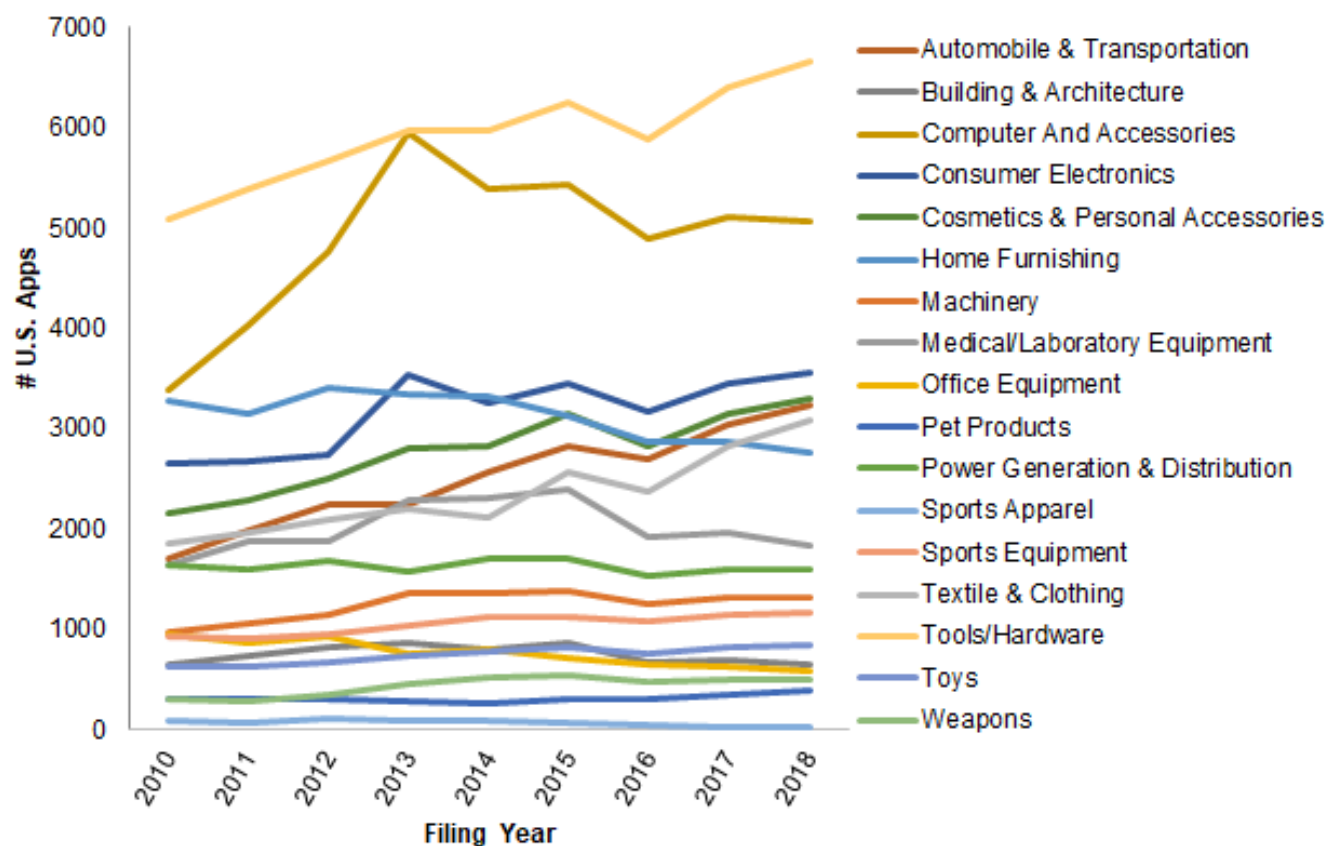
While there has been considerable growth in patent filings in the Industrial Design industry in the past decade, there have also been a couple of dips. The first dip in patent filings occurred during the Great Recession of 2008, when many economic sectors experienced a difficult climate that led to reduced patenting activity. The second dip, in 2016, was likely created by an atmosphere of uncertainty in the wake of the Supreme Court's *Samsung v. Apple* decision, in which the Court held that an "article of manufacture" could refer to the finished product or a component of the finished product. This decision upended the long-held view that design patentees were always entitled to total profits from an infringing product.

Recent court decisions have adopted a four-factor test advocated by the Solicitor General in an amicus brief in *Samsung v. Apple*. The test considers the scope, design prominence, conceptual distinctness, and severability of the patented design and the infringing finished product. Under this test, it is still possible to obtain damages in the sum of total profits on the finished product, and at least one jury has awarded such damages since the *Samsung v. Apple* case.

The recent case law appears to have assuaged applicants' concerns regarding the value of design patents, and this renewed optimism is reflected in the number of patent filings that keeps increasing year over year.

⁶⁹ <https://www.jdsupra.com/legalnews/recent-developments-determining-design-36881/>

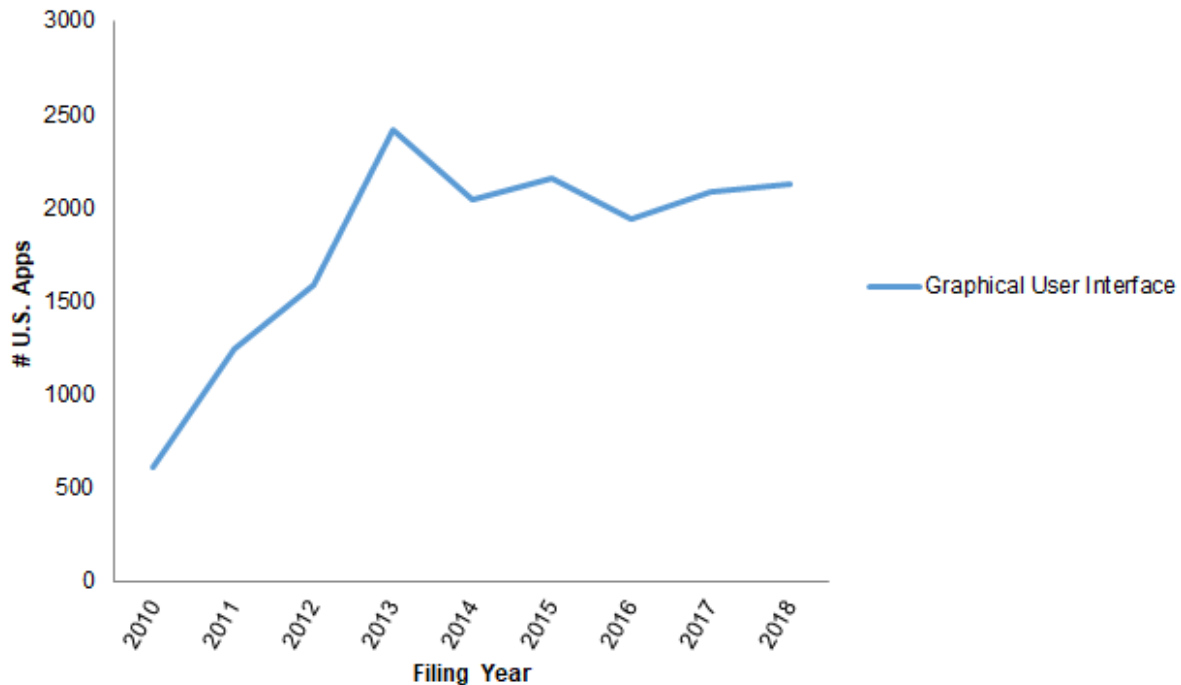
Patent filings are increasing across multiple technology clusters in the Industrial Design industry



Our study shows that there is a marked upward trend in a number of technology clusters within the Industrial Design industry. Automobile & Transportation, Computer And Accessories, Cosmetics & Personal Accessories, and Textile & Clothing are some of the clusters in which patent filings are growing most steeply.

In technology clusters where design patents are declining (such as Pet Products, Sports Equipment, and Medical/Laboratory Equipment), it is possible that innovators are choosing other methods of protecting their designs (such as trademark or trade dress protection) on products that are likely to be rapidly replaced by newer design versions. Further, innovators may alternatively or additionally only seek patents on breakthrough design innovations or on designs for less iterative product versions.

High tech innovators are protecting software innovations with design patents on graphical user interfaces (“GUIs”)

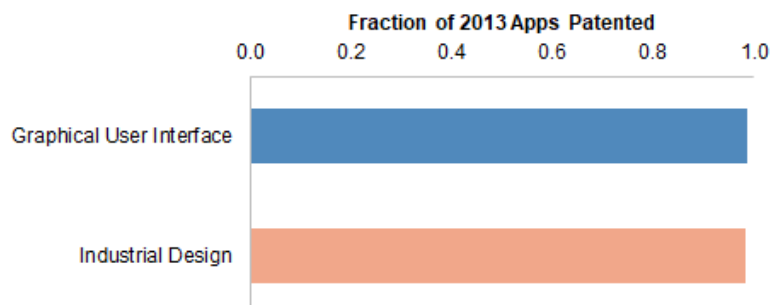


GUIs are visual elements through which users can interact with electronic devices (e.g., apps on smart devices or websites on computers). GUIs include icons, fonts, layout, logos, colors, animation/movement and framing/ placement. GUIs are eligible for design patent protection on their ornamental features, so long as their design is not dictated solely by its function.

Between 2010 and 2013, a series of high-publicity lawsuits involving claims of infringement of GUI design patents, brought GUI design patents to the forefront of intellectual property trends. The appeal of these patents was enhanced by the high damages awards sought (and sometimes awarded) for the infringement of even a single GUI design patent.

In addition, GUI design patents offered a new approach to protecting software-related innovation just as the AIA was being implemented and the USPTO was changing its examination practices to make software-related utility patents harder to obtain. GUI design patents were especially attractive because these applications are granted almost 100% of the time.

Even though the rise in GUI design patent filings has not been as steep in recent years as it had been between 2010 and 2013, the uptrend in these filings continues.

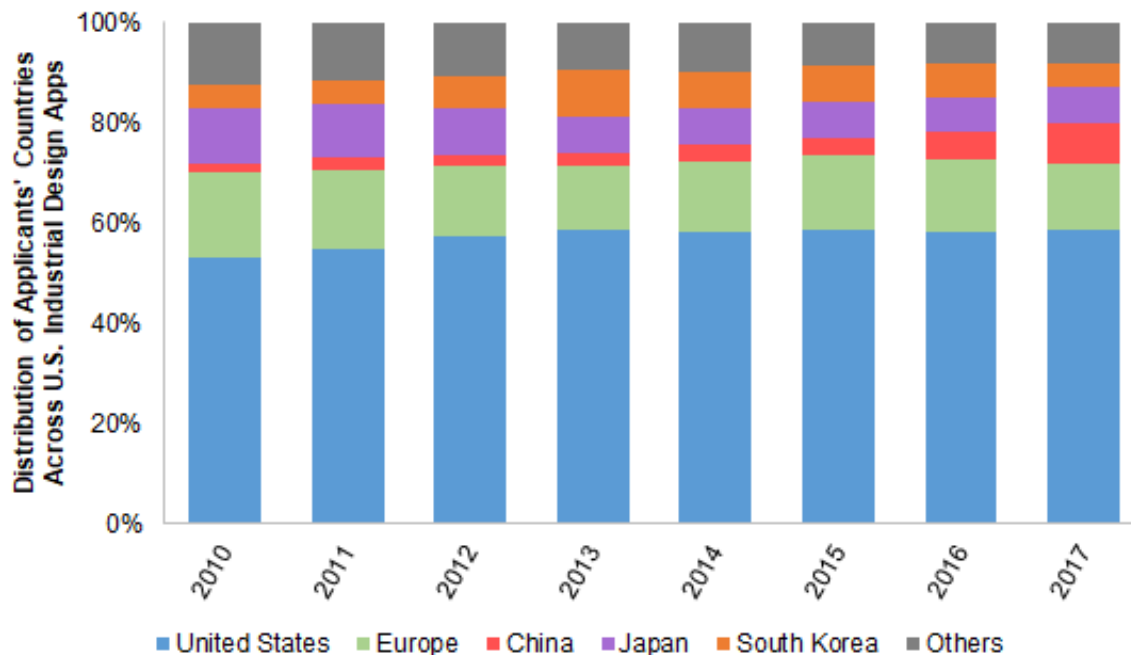


Numerous industry leaders are top filers in specific technology clusters within the Industrial Design industry

USING 2016 DATA:		
		Most Families Flied by
		(Applicants in alphabetical cinder)
Industrial Design		Delta Faucet Co, General Motors, LG, Nike, Samsung
Level I		
Graphical User Interface		Apple, Google, Jpp, Microsoft, Samsung
Industrial Design		Delta Faucet Co., General Motors, LG, Nike, Samsung
Level I	Level II	
Graphical User interface	-	
Industrial Design	Automobile & Transportation	Bridgestone Corp., Ford, General Motors, Goodyear, Honda
	Building & Architecture	Biotekt USA, Cambria Co., Chelsea Building Products, Clarkwestern Dietrich Building Systems, LG, Matthews International Corp., Clarkwestern Dietrich Building Systems
	Computer & Accessories	Apple, Google, LG, Microsoft, Samsung
	Consumer Electronics	
	Cosmetics & Personal Accessories	Air Cool Industrial Co., Cartier International, Citizen Watch Co, Hunter Fan Co., Youngo
	Home Furnishing	Bridgestone Corp., Mortarless Technologies, Okamura Corp., Philips, Steelcase
	Machinery	Caterpillar, Deka Products, Holley Performance Products, Mitsubishi, Samsung, Sintokogio
	Medics /Laboratory Equipment	3M, Beckton Dickinson And Co., Karl Storz, Siemens, Water Pik
	Office Equipment	Amsterdam Printing & Litho, Brother Industries, Hewlett-Packard, RPG Holdings, Seiko Epson Corp.
	Pet Products	Classic Brands, Daskocil Manufacturing Co., Hyper Pet, Petsmart Home Office, Shenzhen Xingrisheng Industrial Col
	Power Generation & Distribution	Guangdong Bestek E-Commerce Co., Japan Aviation Electronics Industry, LG, Molex, Wago Verwaltungsgesellschaft
	Sports Apparel	Acushnet Co., Brutus Park Creations,, Game Changer Goods, Plus Meditech Co., Sport Maska
	Sports Equipment	Acushnet Cp., Callaway Goff Co., Dunlop Sports Co., Karsten Manufacturing Corp., Microsoft, Nike
	Textile &Clothing	Cambria Co. Cole Haan, Converse, Nike, Under Armour, Sketchers U.S.A.
	Tools/Hardware	Den Faucet Co., Hansgrohe SE, Hunter Fan Co., LG, Spectrum Brands
	Toys	Anki, BMW, Daimler AG, Porsche, Sanrio Co., Tomy Co.
	Weapons	3M, Crimson Trace Corp., Ncstar, Vista Outdoor Operations, Whg Properties

As discussed, industrial design has been growing in importance for businesses in a growing number of industries. The broad applicability of industry design innovation is reflected in the wide variety of companies that are top filers in specific technology clusters and subclusters in our study.

U.S.-based patent filings related to the Industrial Design industry are holding steady near 60%



The number of U.S.-based patent filings in the Industrial Design industry is growing. Even though the percentage of U.S.-based applications is holding steady, the overall number of patent filings is increasing, thereby increasing the number of U.S.-based applications, too. This trend is likely to continue as more and more businesses recognize the value of adding design patents to their intellectual property portfolios.

Also of note is the rapid rise in Chinese patent filings in the Industrial Design area. The rise in Chinese Applications corresponds with the adoption of the Hague Agreement Concerning the International Registration of Industrial Designs, which took effect in 2015. The Hague Agreement is an international registration system, which offers the possibility of obtaining protection for up to 100 industrial designs in member countries by filing a single international application in a single language.⁷⁰ The Hague Agreement has simplified international filing in a number of countries, and is likely to help grow the number of design patent filings even further by both U.S.-based and foreign entities.

⁷⁰ <https://www.uspto.gov/patent/initiatives/hague-agreement-concerning-international-registration-industrial-designs>



About KT

We help leaders create, expand, and protect the value of their businesses and most prized assets. Our attorneys bring a balance of business savvy, technical skills, and creative thinking to the opportunities and issues our clients face daily. From the most complex challenges to the routine, we work together to make businesses better, smarter, more protected, and more successful.



GREYB SERVICES

About GreyB Services

GreyB is global consulting firm committed to improving decisions. We are a community of researchers, who are combining technology with human intelligence to read patent data patterns. From helping attorneys win high stake patent litigations to advancing the use of patent data for business decisions, GreyB sources information (prior art, evidence of use, clustering etc.) about technology through research. In our work, we saved millions of dollars in licensing fees by killing troublesome patents for fast growing companies.