



Fintech - understanding the role of patents

When banks say that they are technology companies or heavily investing in Fintech, what's the right performance measure. Many CEOs or CTOs point to the sheer size of their engineering team, others refer to their R&D spend. Both are valid measures, but are only inputs.

In this report we compare banks and established technology companies through a patent lens. This is a tangible measure of how companies protect the output of their investment. All data has been generated using Cipher, our leading analytics software using AI and machine learning to analyse patent information.

Banks do protect their investment in technology

There is a massive difference in the attitude to patenting across the financial services sector. This is a familiar pattern which has been observed in other sectors disrupted by technology. There are always those that see the tech tsunami coming, and others who prefer strategies based on wait and see. The music and retail sectors are both excellent case studies.

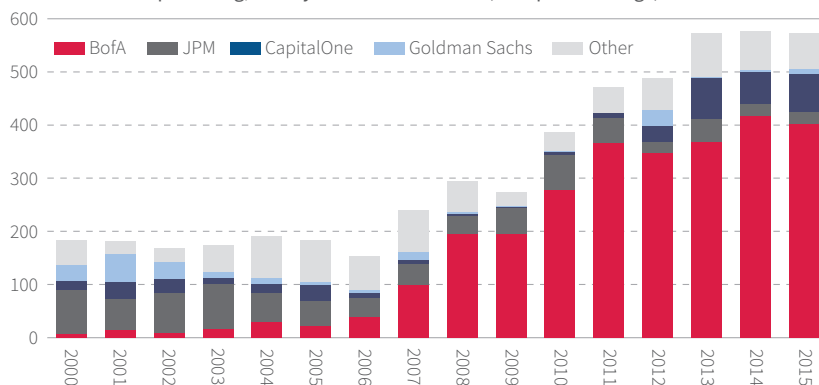
Chart 1 analyses the patent portfolios of banks in the US, Europe and Asia. Bank of America is the stand-out winner using this metric, and has been building its portfolio for over a decade. As a generalisation the US banks (e.g. JP Morgan, Goldman Sachs and Morgan Stanley) are all more patent savvy than the European banks (notable BNP and Deutsche). This type of analysis also helps with an understanding of specific technologies.

Chart 1 Banks - Who protects what? (2017 granted and pending patents)

	Bank of America	Barclays	BNP	Capital One	Citigroup	Deutsche Bank	Goldman Sachs	Japan Post Bank	JP Morgan Chase	Mitsubishi UFJ	Morgan Stanley	RBC	TD Bank	UBS	Wells Fargo
ATMs	63	0	0	7	9	0	0	0	18	1	0	0	0	0	7
Banking IT infrastructure	999	56	0	161	71	0	0	18	207	125	0	19	46	27	48
Call center and support	55	0	0	3	10	0	0	0	11	2	0	0	0	0	4
Cash handling	53	0	0	0	1	0	0	1	2	1	0	0	0	0	0
E-commerce	6	2	0	2	2	0	0	0	3	0	0	0	2	0	3
OCR	86	0	0	2	3	1	0	0	17	2	0	0	3	3	7
Online and mobile banking	517	24	0	33	26	0	13	0	58	9	19	4	21	14	24
Payment Cards	35	1	1	42	22	0	0	1	29	5	0	0	0	1	8
Security and authentication	104	14	0	11	15	0	0	2	26	44	0	1	3	3	11
Social media and services	83	6	0	18	5	0	0	0	18	4	0	1	5	2	3
Transaction and data processing	546	57	0	56	31	2	144	22	126	65	122	6	10	26	26

If you look at the banks as a whole, you see an increase of patenting over time. Chart 2 tracks new filings since 2000, but most of the growth is attributable to just a few organisations, and particularly Bank of America.

Chart 2 - Bank patenting, steady increase over time (new patent filings)



“IBM owns 5x more Fintech patents than all the banks put together”

How do banks compare to technology companies

IBM owns 5x more Fintech patents than all the banks put together. Chart 3 compares the patents owned by the banks with a range of technology companies. The stark difference reflects fundamentally different business strategies. Technology companies understand the role of intellectual property to define and protect markets. This is all relatively new to the financial services sector.

Chart 3 Banks vs. Major Tech Companies (2017 granted and pending patents)

	Banks (TOTAL)	IBM	Oracle	Hitachi	SAP	Google	Microsoft	HPE
ATMs	105	322	135	88	46	148	218	41
Banking IT infrastructure	1,778	9,266	3,053	1,647	2,090	3,728	7,331	1,407
Call center and support	85	321	72	45	36	249	306	57
Cash handling	58	56	16	114	5	19	12	14
E-commerce	20	354	106	77	61	158	429	38
OCR	124	546	141	72	118	247	597	41
Online and mobile banking	762	5,541	1,786	745	926	1,744	4,401	1,011
Payment Cards	146	568	214	200	133	272	422	80
Security and authentication	234	986	298	252	138	533	925	204
Social media and services	145	366	76	59	83	353	458	28
Transaction and data processing	1,240	5,538	1,660	1,072	1,635	2,306	4,571	764
Total	4,697	23,864	7,557	4,371	5,271	9,757	19,670	3,685

Banks have been a target for patent litigation

There has been virtually no IP litigation between banks, which is one of the reasons why it has not historically been necessary for them to build an arsenal of IP assets. Chart 4 is an analysis of the litigation against banks, and specifically the actions brought by Non-Practising Entities (NPEs aka patent trolls). There has been a notable decline in NPE actions since 2012, in part because of US legislative reform, and also because of the excellent work by organisations such as Unified Patents and LotNetwork.

Chart 4 - Patent litigation against banks (new US lawsuits per year)

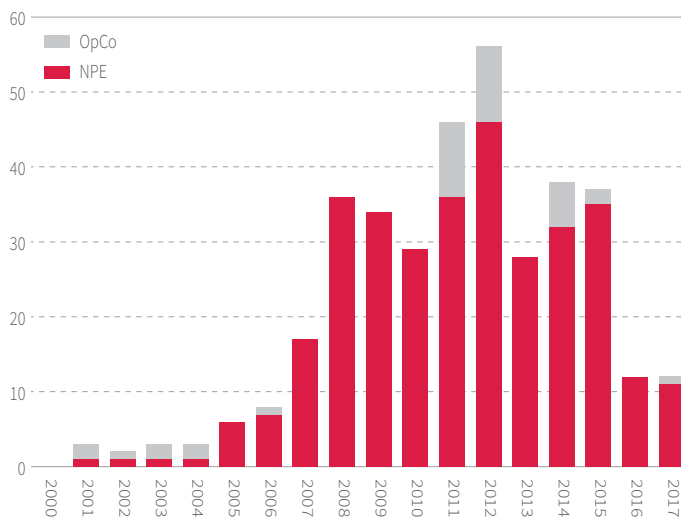


Chart 5 contains a helpful reminder that delivering complex B2C solutions requires many different technologies, the vast majority of which are not developed in-house e.g. mobile banking, location based services and ecommerce.

Chart 5 Analysis of NPE litigation by technology area

	Bank of America	JPMorgan	Citigroup	Wells Fargo	Bank of NY Mellon	TD Bank	Capital One	Barclays	Morgan Stanley	Goldman Sachs	Deutsche Bank
Web and mobile	49%	52%	16%	37%	25%	25%	33%	38%	30%	57%	0%
Software and UI	15%	13%	36%	11%	60%	0%	23%	0%	33%	0%	0%
Financial products and trading	8%	12%	16%	42%	0%	0%	26%	63%	0%	0%	100%
Data transfer	5%	3%	4%	0%	15%	0%	2%	0%	18%	43%	0%
Data analysis	9%	10%	5%	0%	0%	75%	0%	0%	0%	0%	0%
Call center and support	8%	0%	22%	0%	0%	0%	5%	0%	18%	0%	0%
E-commerce	6%	7%	0%	3%	0%	0%	10%	0%	0%	0%	0%
Location based services	0%	3%	0%	8%	0%	0%	1%	0%	0%	0%	0%

Blockchain Patenting

Legend has it that the first blockchain began with Satoshi Nakamoto in 2008, which became the foundational technology for bitcoin. It wasn't until 2013 that companies started patenting blockchain and its many applications, shown in Chart 6.

Chart 6 - Blockchain patenting (new patents filed)

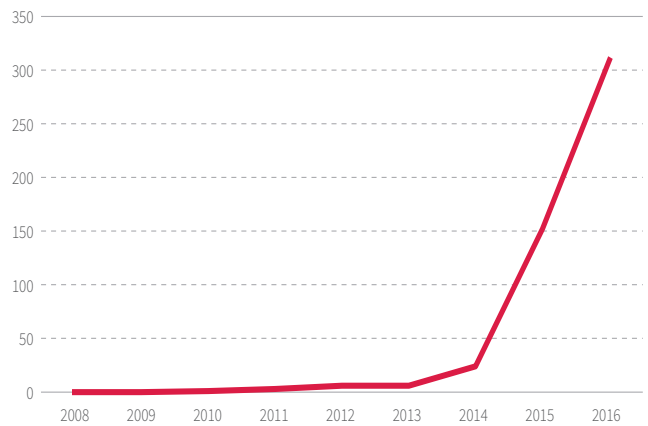


Chart 7 - Who owns blockchain patents?

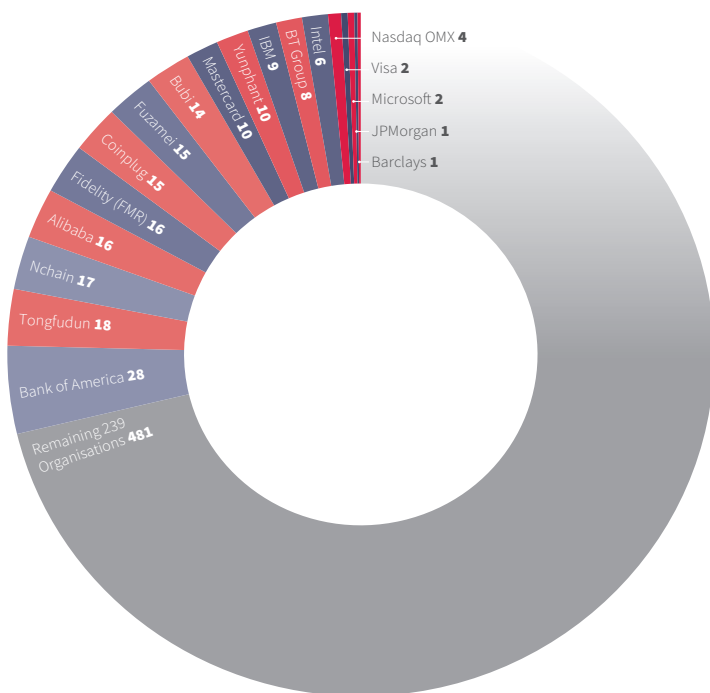


Chart 7 uses a Cipher Classifier to identify the owners of blockchain patents. The main point is that there are over 250 companies owning 676 patent families. Analysis of this sort is an essential source of competitive intelligence e.g. as a way of keeping track of Chinese companies such as Tongfudun, Fuzamei, Bubi and Yunphant.



“Our view is that many banks have significantly underestimated the importance of patents”

What needs to be done?

In a recent interview, Cathy Bessant, Chief Operations and Technology Officer of Bank of America suggested that even if the banks are not Fintech companies, they will have to buy, partner and compete with them. In this reality, Fintech companies are the disruptive new entrants. To this we would stress the importance of the major technology companies such as Microsoft and IBM who have been investing in these technologies for years.

Our view is that many of the banks have significantly underestimated the importance of patents. Patents are no longer merely weapons of war but can play an important role on a number of levels. First, as an essential source of competitive intelligence. As more Fintech patents are filed there is more information to monitor and IP analytics is an effective way to screen quickly and economically. Second, as currency in collaboration and licenses that is the inevitable path to interoperability and standardisation. Thirdly as a way of protecting investment in proprietary technology.

If you think of all great inventions from light bulbs and cars to mobile devices, no one prospered without a decent understanding of patents.

ABOUT CIPHER AND THE AUTHORS

Nigel Swycher, CEO and founder of Aistemos. In 2015, Cipher was launched as the first analytics software to use AI to identify, cluster and compare similar patent portfolios. Nigel has spent many years as an intellectual property lawyer, recognised by IAM 300 as a leader in his field.

Marcus Malek has been instrumental in the success and global roll out of Cipher, as Head of Strategy at Aistemos and has a wealth of knowledge in patents and technology.

Cipher is revolutionising IP analytics, by harnessing the power of artificial intelligence, Cipher is able to aggregate, analyse and visualise technology and innovation trends derived from patent, litigation and licensing data.

Visit www.cipher.ai for more to request a demonstration.