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Intellectual Property Protection of a Fintech Company

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A financial intelligence provider in the USA & EU

WSB_analytics

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1. Fintechs in the financial intelligence provider market

In recent years, the term Fintech (Financial Technology) has shown growing popularity among startup enthusiasts, venture capitalists, and incumbents of the financial services industry. Estimates value the global Fintech market to be \$ 112.5bn with a projected Compounded Annual Growth Rate of 19.8% until 2028, equaling a threefold of its current size over the next six years.¹

Although the term Fintech is commonly referred to as the utilization of highly innovative technologies to provide novel business services, its broader and more accurate definition describes the application of digital technology for financial service offerings.² Thus, the combination of existing technologies and existing financial processes to improve efficiency or access to new markets and segments qualifies as Fintech. Moreover, this definition also reflects the character of novelty according to the general definition of innovation scholars.³ One of the most prominent emerging fields in business and innovation research is disruptive innovation. It is not limited to the potential impact of cutting-edge technology but also focuses on how technical adaptations and innovations enable access to previously closed or unattractive low-end markets.⁴ Accordingly, the highest risk for incumbents and equally the highest potential for startups exist in conservative and consolidated markets, which commonly focus on wealthy upper-end customers.⁵ One of the most prominent examples of such a market in the financial industry is the financial intelligence provider market for business and financial data on publicly traded securities, derivatives, commodities, or currencies, among others.

Therefore, this essay will propose the novel business model of WSB_analytics, an open-source alternative to the current market offering of professional financial intelligence providers, and discusses its business and legal prospects in accordance with the current market situation and regulations of intellectual property protection in the USA and EU.

¹ Vantage Market Research, May 2022. <https://www.vantagemarketresearch.com/industry-report/fintech-market-1543>.

² OECD (2018). *Digitalisation and Finance*. Financial Markets, Insurance, and Pensions (4/18), 3.

³ Pisano, G. P. (2019). *Creative construction: The DNA of sustained innovation*. PublicAffairs.

⁴ Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is Disruptive Innovation? *Harvard Business Review*, 93(12), 44–53.

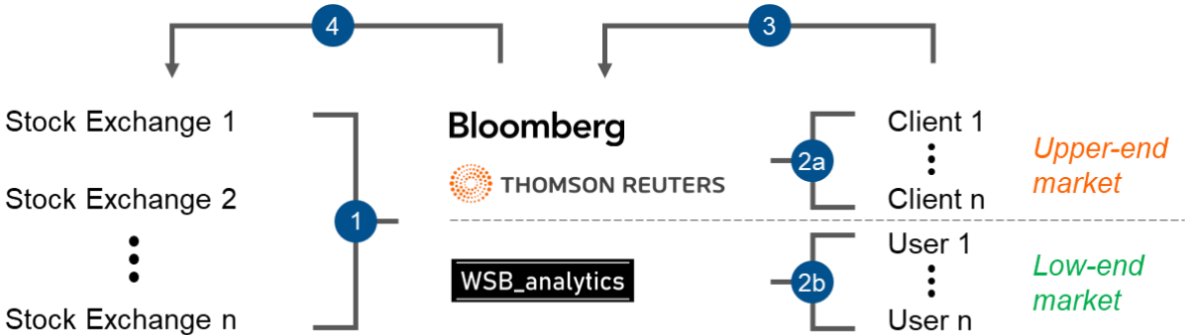
⁵ Giustiziero, G., Somaya, D., & Wu, B. (2021). A Resource-Based Theory of Hyperspecialization and Hyperscaling. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3531111>.

2. Current market situation

The market for financial intelligence providers is split into a duopoly led by Bloomberg L.P. and Thomson Reuters. Both players offer a wide range of information and analytics services to institutional and professional clients in the financial industry. The combined revenue of both companies from their core business of providing terminals that enable access to the desired information amounts to approximately \$14 billion in 2021, with an estimated historical CAGR of 5.1% from 2018 to 2021 that is expected to further increase in the years to come (estimates based on Thomson Reuters annual reports for approximation, as Bloomberg L.P. is non-public).⁶ Furthermore, in 2021, Thomson Reuters achieved an operating profit of approximately 19.5% or \$1.2bn. The underlying reason for their high profitability is their high service prices. For example, a basic Bloomberg Terminal subscription costs \$ 24,000 to 27,6000 per year, raising to \$ 30,000 in 2023. Overall, this validates that this specific market promises high margins, stable growth, solid size, and high market consolidation, which are the ideal conditions for the introduction of a disruptive business model.⁷

To explain the advantages of WSB_analytics, the business model of the established incumbents is first explained in simplified schematic form in the following diagram.

Figure 1 – Structure and processes of the financial intelligence provider market



Note: Includes visualization of WSB_analytics unique market positioning

First, the financial intelligence providers agree on terms to collect their financial data with stock exchanges. A stock exchange is a marketplace for buying and selling stocks, bonds, and securities, among other financial products. Thus, it is the primary source of quality data. Since more than over 60 stock exchanges exist worldwide and customers generally want to access all

⁶ Thomson Reuters (2020). *Annual Report*; IfM (2022). 28. *Bloomberg L.P.* mediadb.eu.
⁷ Pisano, G. P. (2019). *Creative construction: The DNA of sustained innovation.* PublicAffairs.

information available, the original core value of financial intelligence providers is the aggregation of data from these different sources.⁸ With the growing technological progression of computer systems and tools over the last decades, their portfolios nowadays also include advanced analytical services.

Second, financial intelligence providers enable access to their databases and tools for a monthly subscription fee, as mentioned before. When Bloomberg was founded in 1981, the establishment of information technology was still in its early stages. Thus, only upper-end market customers with a high purchasing power, such as institutional or professional investors who trade in large volumes, could afford their services.

Third and Fourth, customers pay their monthly subscription fees to financial intelligence providers, who in turn pay for access to the stock exchanges databases.

3. Trends that enable potential for disruption

This market has been strongly sheltered since its origin, yet five trends create an opening for its disruptive innovation.

- Access to financial data has become cheaper and openly available. Platforms such as Alpha Advantage, Yahoo Finance, or Google Finance, among other open-API platforms, offer data of sufficient quality for casual private investors who focus less on data-intensive short-term investment strategies.
- Information technology and digitalization have progressed tremendously over the past decades in the general population. Especially western countries show above average penetration levels, deeming them as an ideal market entry region complemented by the following trend.⁹
- Although the U.S. and the EU are two distinct jurisdictions, both legal systems provide similar IP protection mechanisms. Many of the requirements for IP protection and procedures for registering the invention are similar. Therefore, it makes sense to establish WSB_analytics in these jurisdictions in order to have the most similar scope of IP protection.

⁸ Statista (2022). *Largest stock exchange operators worldwide as of October 2022 by market capitalization of listed companies*.

⁹ European Investment Bank (2020). *Who is prepared for the new digital age?*

- More and more casual private investors, especially from younger generations, begin investing their money in financial markets.¹⁰ In 2020, 60% of new investors in the U.S. were users of casual investment apps such as Robinhood.¹¹ This confirms the emergence of a large new customer base with an existing understanding of financial products and increasing involvement in equity markets.
- Incumbents are unlikely to engage in competition for low-end markets.¹² Due to the high market consolidation so far, incumbents are unlikely to experience any price pressure, although the cost of information technology has decreased drastically. Therefore, it is unreasonable to expand into a less profitable segment. In addition, they would get into conflict with their current customers, as it is highly difficult to justify inconsistent pricing.

4. Introducing WSB_analytics

Given the current market situation, in combination with the highlighted trends enabling the potential for disruption, WSB_analytics is introduced as a sustainable financial intelligence provider solution for low-end market casual private investors.

By creating an open-source platform based on the programming language Python, customers of WSB_analytics can access and modify aggregated databases to fit their personal needs aside from customizing standard analytics tools or implementing their own. The product portfolio includes different tiers granting access to different amounts and levels of detail of data, following a basic freemium strategy. A vast range of financial data will be available without any extra cost to the user. Therefore, a high adoption rate of casual private investors can be expected. It is also required to achieve the required minimum scale before incumbents begin to notice WSB_analytics in its vulnerable early stages. Beginners will be able to learn about financial products and analytics tools in the freemium version and convert to premium subscriptions as their interest and knowledge advance. They will be willing to increase their spending, as they are already familiar with the platform, leading to high retention, as well.

¹⁰ Statista (2022). *Share of adults investing money in the stock market in the United States from 1999 to 2022*.

¹¹ Andrews M. (2021). *What The Rise Of The Millennial Investor Means For A Sustainable World*. Forbes Online.

¹² Pisano, G. P. (2019). *Creative construction: The DNA of sustained innovation*. PublicAffairs.

On average, a premium subscription will be priced at \$50 per month to adhere to private users' actual willingness to pay. Part of the subscription revenues will be paid to the financial data providers, similar to the explanation given in figure 1. Expenses for WSB_analytics are expected to be relatively low at a total of \$ 350k during the initial 12 months. The main costs are expected to be \$ 240k for software development for 9 months with 4 FTE, \$ 60k as the initial marketing budget, and \$ 50k for other cost. Assuming a simplified linear growth of users, WSB_analytics would need to sell ca. 1.116 premium subscriptions to break even. This goal is considered to be reasonable, and thus the business model is pursued further. Given the threats of disruptive innovation for startups from incumbents and competitors, the legal regulations that could support WSB_analytics' success are discussed.

5. IP protection of WSB_analytics in the US and EU

To shield WSB_analytics from competition using IP protection, we evaluate which IP protection applies to the business model in the following and give an indicative rating of the level of protection in the table below.

Table 1 – Overview of WSB_analytics IP protection level

Intellectual property protection	USA	EU	Level of protection
Copyright	Yes	Yes	Low
Trademark	Yes	Yes	Medium
Trade secrets	Yes	Yes	Medium
Patent	No	No	Non

Note: Level of protection rating is only indicative. Full evaluation in the following texts

5.1 Copyrights

EU – In European Union countries, copyright protects original literary, scientific, and artistic work, and also software. The intellectual property is protected until 70 years after the creator’s death.¹³ Copyright protection grants exclusive economic rights and moral rights, which means the creator has control over the work for its use through selling or licensing and can also claim authorship.¹⁴ Regarding software, the protection provided for in this directive applies to the expression of a computer program in any form, but not ideas and principles which underlie a computer program or any elements of it and a computer program which is original in the sense that it is the author’s own intellectual creation.¹⁵ If an employee creates a computer program in the course of his duties or follows the instructions given by his employer, the employer exclusively has the economic rights relating to that computer program.¹⁶ WSB_analytics software is developed by in-house developers. Thus, WSB_analytics is the owner of the intellectual creation and can be protected under copyright according to European law.

Copyright protection starts from the moment of the creation of the work – in this case, the programming of the software and there is no need for a formal application process.¹⁷ However, by registering the copyright of the software, its date and content are proven and thus provide legal protection for it in case of dispute by another person or infringement.¹⁸ A certificate by the EU is admissible in at least 179 countries since the Bern Convention and is recognized by the courts.¹⁹ This is why registered copyright protection in the European Union should be pursued to protect both the business and the software under IP protection.

U.S. – In the U.S., original creations are protected under the Copyright Act of 1976. It also protects software as copyright-eligible creations, and the copyright owner can be acquired through “works made for hire”, just as in the EU.²⁰ For works made for hire, copyright protection is 95 years from publication or 120 years from creation, depending on which one is shorter.²¹ Also, in the U.S., copyright exists automatically in an original work once it is created.

¹³ European Union: Europa.eu, https://europa.eu/youreurope/business/running-business/intellectual-property/copyright/index_en.htm.

¹⁴ European Union: Europa.eu, https://europa.eu/youreurope/business/running-business/intellectual-property/copyright/index_en.htm.

¹⁵ European Union: eur-lex.europa.eu, <https://eur-lex.europa.eu/EN/legal-content/summary/computer-programs-legal-protection.html>

¹⁶ European Union: eur-lex.europa.eu, <https://eur-lex.europa.eu/EN/legal-content/summary/computer-programs-legal-protection.html>

¹⁷ European Union: Europa.eu, https://europa.eu/youreurope/business/running-business/intellectual-property/copyright/index_en.htm.

¹⁸ European Copyright Office, <https://www.copyright.eu>.

¹⁹ European Copyright Office, <https://www.copyright.eu>.

²⁰ U.S. Copyright Office, <https://www.copyright.gov/what-is-copyright/>.

²¹ U.S. Copyright Office, <https://www.copyright.gov/what-is-copyright/>.

However, even though registering a work is not mandatory in the U.S., it is necessary for U.S. works to enforce the exclusive rights for copyright through legislation.²² Since WSB_analytics' software is developed in the U.S., this is another reason to register it for copyright protection. Moreover, the registration allows potential competitors to find WSB_analytics' copyright ownership information and its claim for copyright protection.²³

For these reasons, WSB_analytics will register copyright in both the EU and the U.S.

Overall, it can be concluded that obtaining copyright protection is likely in the EU as well as in the U.S. However, the protection for software against verbatim reproduction of object code is not an effective protection for the essence of WSB_analytics' business model.

5.2 Trademark

A Trademark is a brand or logo which shields words and symbols from unauthorized use by third parties. Trademarks help to make the associated product unique from other products by competitors available in the market. They play a fundamental role in the way customers identify businesses.²⁴

As there are few competitors in the financial intelligence provider market, it is especially important to build a trademark that potential customers will remember and which can be distinguished from other companies. This is especially important because the target audience mainly consists of consumers. Recently, as Fintech addresses more and more consumers, having a recognizable logo has become crucial. Especially in a B2C business setting, a logo that is simple yet reflects the product's main benefit on the first look is important. In light of common vocabulary, fintech businesses are unusually vulnerable to consumer confusion with respect to the source of services. The importance of registration of trademarks in a B2C business can be seen in the rapid rise of USPTO filings for Blockchain/ DLT-Related Trademarks.²⁵ WSB_analytics' logo reflects its close and modern association with Wallstreet, amplified by its high recognition value.

EU – Applications for registration can be filed with the EUIPO. Only after the publication of the registration the European Union trademark enjoys full protection. The only condition

²² U.S. Copyright Office, <https://www.copyright.gov/what-is-copyright/>.

²³ U.S. Copyright Office, <https://www.copyright.gov/what-is-copyright/>.

²⁴ European Union Intellectual Property Office, <https://euipo.europa.eu/ohimportal/en/web/guest/trade-marks-basics>.

²⁵ Odofile, *The Intersection of Fintechs and Trademark Law* (2020).

imposed on a registered trademark is that it must be clearly defined. The goods or services sold to customers with that trademark must also be stated.²⁶ A trademark in the EU can consist of any signs or designs, letters, numerals, colors, the shape of goods, or their packaging.²⁷ WSB_analytics trademark is very likely to be eligible for registration in the EU for the above stated reasons.

U.S. – The conditions for registering a trademark in the U.S. are the same as in Europe: it needs a word/phrase/ symbol etc., and connect it to the specific good or service sold to customers.²⁸ Even though unregistered marks get common-law protection, it is in WSB_analytics' best interest to give its trademark stronger nationwide protection. Therefore, WSB_analytics will register it with the U.S. Patent and Trademark Office (USPTO) as Current Use in Commerce (LA 1 (a)), as services are provided in all of the U.S.

5.3 Trade Secret

EU & U.S. – A trade secret is confidential information that has either actual or potential independent economic value by virtue of not being generally known, has value to others who cannot legitimately obtain the information and is subject to reasonable efforts to maintain its secrecy.²⁹

All three elements are required; if any element ceases to exist, then the trade secret will also cease to exist. Otherwise, there is no limit on the amount of time a trade secret is protected, and it does not need to be registered.³⁰

The legal protection of trade secrets forms part of the general concept of protection against unfair competition or is based on specific provisions or case law on the protection of confidential information.³¹ In general, unfair practices in respect of secret information include breach of contract, breach of confidence, and industrial or commercial espionage, and can thus be legally prosecuted.³² Since WSB_analytics pursues a freemium open-source strategy, only its core platform can be protected under trade secrets. Parts of the platform that allow users to

²⁶ European Union Intellectual Property Office, <https://euipo.europa.eu/ohimportal/en/web/guest/trade-mark-definition>.

²⁷ European Union Intellectual Property Office, <https://euipo.europa.eu/ohimportal/en/web/guest/trade-mark-definition>; European Union: Europa.eu, https://europa.eu/youreurope/business/running-business/intellectual-property/copyright/index_en.htm.

²⁸ United States Patent and Trademark Office, <https://www.uspto.gov/trademarks/basics/scope-protection>.

²⁹ United States Patent and Trademark Office, <https://www.uspto.gov/ip-policy/trade-secret-policy>.

³⁰ United States Patent and Trademark Office, <https://www.uspto.gov/ip-policy/trade-secret-policy>.

³¹ World Intellectual Property Organization, https://www.wipo.int/tradesecrets/en/tradesecrets_faqs.html.

³² World Intellectual Property Organization, https://www.wipo.int/tradesecrets/en/tradesecrets_faqs.html.

customize and implement code are not eligible for protection. However, the core functionalities, such as data aggregation and analytics, can be protected.

- First of all, the information must have been secret initially. The company must make reasonable measures to keep it secret. This includes keeping WSB_analytics core software away from the public, having employees sign non-disclosure and non-compete agreements, and so on.
- Second, given our assessment of the current market situation and ongoing trends, we can assume that the core software contains commercially valuable information for our competitors.
- Third, for the DTSA, the secret must be related to a product used in interstate or foreign commerce. As stated above, WSB_analytics will be launched in all states of the U.S. and is thus used in interstate commerce.

The way WSB_analytics protects and undisclosed its corporate information makes them trade secrets. However, trade secrets can be regarded as a complement to patent protection. Unlike trade secrets, patents may protect against independent discovery.³³ A trade secret, however, cannot stop others from using the same technical or commercial information if they acquired such information independently through their own R&D, reverse engineering, or marketing analysis.³⁴

5.4 Patents

Patents are exclusive rights granted for an invention. The patent owner has the exclusive right to prevent or stop others from commercially exploiting the patented invention.³⁵ They are one of the strongest forms of IP Protection, which is why WSB_analytics should desire to protect its business with them. A business idea in itself cannot be patented. Therefore, WSB_analytics should seek to patent as much of its software as possible.

In general, the exclusive rights are only applicable in the country or region in which a patent has been filed and granted in accordance with the law of that country or region.³⁶

There are five general hurdles to overcome to receive a patent for the jurisdictions in the EU, and the U.S. One has to have an eligible subject matter, prove utility, give disclosure, the

³³ United States Patent and Trademark Office, <https://www.uspto.gov/ip-policy/trade-secret-policy>.

³⁴ World Intellectual Property Organization, https://www.wipo.int/tradesecrets/en/tradesecrets_faqs.html.

³⁵ World Intellectual Property Organization, <https://www.wipo.int/patents/en/>.

³⁶ World Intellectual Property Organization, <https://www.wipo.int/patents/en/>.

product must be a novelty, and there has to be an inventive step (in the EU) or a non-obviousness (in the U.S.).

EU – Even though the European Patent Convention from 1973 excluded software from patentability, the European Patents Office (EPO) grants software patents by declaring them as "computer-implemented inventions".³⁷ Also, the newly developed unitary patents would make it possible to get patent protection in up to 25 Member States.³⁸ As stated above, in general, a product needs to be an eligible subject matter and have an inventive step to be patentable, among other criteria. The subject matter must have a technical character because a technical problem is solved by using technical means, or a technical effect is achieved, technical interactions occur, or technical adaptations are affected.³⁹ WSB_analytics does not solve a technical problem, but a technical effect is achieved by the software on the end-consumer's device. However, the problem lies in the inventive step requirement. Although WSB_analytics' business strategy is new, its software will not solve a problem in computer technology or in an unconventional way since the idea of gathering stock information in itself is not new. It is therefore unlikely to receive patent protection in the EU.

U.S. – Even though WSB_analytics is a novel business model, it will be difficult to obtain a patent for its software and business idea in the U.S. Since the 2014 Supreme Court's ruling in *Alice*, being granted a patent became more difficult because the software fails to transform an abstract idea into a patent-eligible invention. The Supreme Court provided little information about what an abstract idea is and how it can be transformed into a patentable invention. Especially the non-obviousness requirement is not explained further. Mathematical algorithms, including those executed on a generic computer, and some fundamental economic and conventional business practices are abstract ideas.⁴⁰ WSB_analytics' software is based on mathematical calculations with different factors and thus an abstract idea. The software may become patent eligible if it solves a problem that is "necessarily rooted" in computer technology or solves the problem in an unconventional way (or with unconventional components).⁴¹ As stated above, the software does not solve a problem rooted in computer technology, and the

³⁷ Free Software Foundation Europe, <https://fsfe.org/activities/swpat/swpat.en.html>.

³⁸ European Patent Office, <https://www.epo.org/applying/european/unitary/unitary-patent.html>.

³⁹ Steinbrenner S., *Case law of the EPO boards of appeal: a review by internal and external experts, The patentability of computer-implemented inventions, Part 1: The legal basis for patentability - Article 52 EPC*. European Patent Office.

⁴⁰ Shah IP Law, <https://www.shahiplaw.com/software-patents/>.

⁴¹ Shah IP Law, <https://www.shahiplaw.com/software-patents/>.

software also does not solve a problem in an unconventional way. This is why WSB_analytics' software is probably not recognized as an eligible subject matter, and patent protection cannot be counted on.

Therefore, it must be concluded that the strong protection of a patent is not available for WSB_analytics' business model and software.

6. Conclusion and Outlook

In this essay, the fintech industry was screened for potentially disruptive business model opportunities, leading to the identification of an opening in the untapped low-end customer segment consisting of casual private investors in the financial intelligence provider market. Based on initial cost estimates, the business model of WSB_analytics appears profitable and realistically feasible but requires extended legal protection due to the extremely high market power of its competitors. It can be concluded that, overall, only low IP protection is available for WSB_analytics. Trademarks, along with trade secrets and copyrights, only offer limited protection. This means the business strategy should pursue an aggressive expansion in order to reach the required scale to challenge established incumbents.

In the next steps, both the technological design and the business model should be further detailed. Early stage investments and exit strategies are yet out of scope. However, financing WSB_analytics' initial development and operations need to be prioritized. Especially increased spending on marketing and branding should be focused on to achieve strong customer recognition and hyper-scale growth early on, as WSB_analytics' intellectual property protection appears to be its strongest leverage aside from its commercial first-mover advantage.