

NOTE

Fintech — Stake a Patent Claim?

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OVERVIEW

Similar to other traditional industries, a digital revolution for financial services is underway. Financial technology, or “FinTech,” is an accelerating technical sector gaining in popularity with both traditional financial institutions and new market entrants.

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Competitors are forming constructive partnerships to collaborate, efficiently develop, and deploy new FinTech products and services. Patents for core technology provide a mechanism to exclude others from making, using or selling patented technology. A company may also permit use of patented technology by third parties or contribute to a patent pool using various licensing arrangements while still maintaining control of its intellectual property rights. However, recent case law and patent office guidelines make obtaining global patent protection for FinTech an increasingly complex matter.

FINTECH PRIMER

FinTech is transforming the financial sector by supplementing or replacing traditional services, business models and providers. FinTech may create brand new market opportunities or give a competitive edge in relation to traditional offerings. This may have broad ranging implications for diverse stakeholders, including major financial institutions, insurance companies, hedge funds, institutional investors, ratings agencies, audit and accounting firms, regulators, technology companies, consortiums, not-for-profits and start-ups. Indeed, large institutions may be making significant investments upgrading or replacing legacy technology systems with new FinTech products.

PAYMENTS

Digital wallet technology is currently already in public use and will likely be employed on a widespread scale in the future. Digital cards include credit cards, debit cards, public transportation cards and other value cards offered by different companies. Mobile technology companies and retailers are entering the payment space with smartphone payment tokens, networks and applications.

Digital payment accounts like PayPal[®] are also widely accepted on e-commerce platforms and by the public at large, with intra-member payment exchanges often not involving traditional financial institutions. Shopify[®], for example, is an online and brick-and-mortar transaction platform provider based in Ottawa, and raised \$131 million in its initial public offering. Another payment company, Adyen[®], is now valued at \$2.3 billion that enables Web companies such as Facebook[®] and Yelp[®] to accept and process payments, and provides mobile-payment tools for

clients such as Uber[®] and Airbnb[®]. Finally, Nanopay[®], a Toronto-based provider of a payment and loyalty mobile application that combines identity, loyalty and payment into a single-use transaction token for contactless payment, recently acquired the Mintchip[®] digital payment platform from Royal Canadian Mint.¹

BLOCK CHAIN

A block chain is a decentralized peer-to-peer network of nodes recording authenticated, encrypted transactions as a distributed public ledger, thereby providing a trust and verification system² by using programmed rules to govern the replication of the ledger across the computing nodes of the networks. Initially invented as a solution to the weaknesses of a trust-based model,³ the increased use and development of block chain infrastructure is changing payment and secure transaction ledgering services by providing increased security, integrity and verifiability of transactions. Currently, public block chain technology may be used under open license with transparency to help third parties understand the technology offering and associated security levels to build interoperable, trusted solutions. Private and hybrid block chain networks are also being developed by companies individually and working together through consortiums.

While block chains are well known as the technology underlying the transaction database for digital currency,⁴ block chains can also be utilized in other types of applications. These include verifying proof-of-existence, smart contracts that automatically execute when certain conditions are met, verifying origin and delivery of products, and peer-to-peer exchanges. For example, Slock[®]

¹ There are several other examples: Adyen also provides point of sale technology for retailers, and Braintree (acquired by PayPal[®]) provides an online and mobile payment application that aggregates different payment options and currencies, and offers an API for developers.

² The Standing Senate Committee on Banking, Trade and Commerce, Digital Currency <<http://www.parl.gc.ca/Content/SEN/Committee/412/banc/rms/12jun15/home-e.htm>> .

³ S. Nakamoto, Bitcoin: A Peer-to-Peer Electronic Cash System (2008).

⁴ A digital currency secured with encryption is a cryptocurrency. A prime example is Bitcoin[®], which is the most widely used cryptocurrency-issuing system built on a block chain framework. Cryptography greatly decreases the vulnerability of the block chain to unauthorized or malicious changes.

develops technology that combines block chain and the Internet for peers to rent, share or sell “things” such as parking spots and apartments.

LENDING

New lending, investing, and fundraising models are emerging. Indeed, crowdfunding platforms like Kickstarter[™] enable an organization or individual to reach out directly to a community to raise capital for a business, product or creative endeavour. SeedsUp[™], another example, is a Canadian equity crowdfunding platform for limited private placement offerings for early stage businesses.

FinTech also generates financial inclusion and opens new markets through the provision of microfinance solutions, which offers small amounts of financing to new customers that may not have been qualified for traditional funding sources.⁵ A prime example of this is M-Pesa[™], a mobile-phone microfinancing service that launched in 2007 by Vodafone[™] for the largest mobile network operators in Kenya and Tanzania — Safaricom[™] and Vodacom[™].

New personal investment solutions are also emerging. Toronto start-up Borrowell[™] offers online lending technology to provide low-interest personal and business loans, and the low-fee automatic rebalancing system by another fellow Toronto start-up, Wealthsimple[™], recently raised \$10 million in Series A funding from Power Financial Corporation.⁶

REGULATORY COMPLIANCE AND AUDIT

Establishing fairness and trustworthiness of financial transactions becomes increasingly complex as different types of financial transactions emerge. Organizations expend significant resources to adhere with evolving regulatory requirements.⁷ The rise of FinTech provides innovative tools that may help alleviate the burdens of such compliance, validation and verification.

⁵ Many people worldwide, for example, do not have access to traditional banks.

⁶ *Financial Post*, online: <<http://business.financialpost.com/entrepreneur/fp-startups/wealthsimple-aims-to-turn-financial-services-industry-on-its-head-with-new-low-coast-approach-to-investing>> .

⁷ *Dodd-Frank Wall Street Reform and Consumer Protection Act* (Pub. L. 111-203, H.R. 4173), *Sarbanes-Oxley Act of 2002* (Pub. L. 107-204, 116 Stat. 745).

Companies can leverage technology such as distributed ledgers, block chains, encryption, automation, and others to perform tasks which otherwise would have been impractical or impossible with traditional methods.

While these technologies are starting to gain in capability and acceptance, it is a challenge to understand how evolving jurisprudence and regulatory activities apply to FinTech innovation. Legal requirements may develop out of step with technology, and compliance may be uncertain where regulation is drafted around outdated or obsolete technologies.

INTELLECTUAL PROPERTY PROTECTION FOR FINTECH

Traditional financial institutions and start-ups are both competing and constructively working together to develop and deploy FinTech products and services. Companies therefore should clearly define and protect their intellectual property, especially when working with multiple third parties. A company may then control the use of its IP rights, including permitted use under licensing and collaborative arrangements.

COPYRIGHT

Copyright automatically extends to computer code,⁸ visual interface features, audio, video guides, application programming interface (API) structure and other works. As such, they are oftentimes an important intellectual property asset for a FinTech company, particularly if the program design provides computational and usability efficiencies.

FinTech companies may also benefit from placing digital locks on copies of their works to provide additional security. Circumvention of digital locks is an offence in some jurisdictions and may provide relief against unauthorized parties. Additionally, FinTech companies should be vigilant not to infringe on the copyrights of other software, even if inadvertently, as it may impact ownership of the technology. Employees or a contracted developer, for example, may incorporate third-party source code without authorization which may resultantly impact ownership.

⁸ Computer code itself may cover particulars such as source code, pseudo code, machine code and purpose-built hardware or firmware.

BRAND

Brands may include a word mark, logo or icon protected as registered or unregistered trade-marks, the latter of which can prevent competitors from unlawfully passing off on or diluting the goodwill of a brand. FinTech companies develop their brands with quality customer service and trust to establish goodwill in their brand with customers and the general public. A strong brand helps FinTech companies differentiate their products and services from competitors. Given that FinTech companies are often stewards of important financial assets and documentation, a reputable brand may be of paramount importance to customers.

TRADE SECRETS

Trade secrets are common law rights that provide protection over secret business information, and may protect material such as confidential backend server processes, code and “secret sauce.” Trade secrets require no formal registration, but companies must also take reasonable steps to keep it secret. In turn, the protected information may be protected for an unlimited period of time as long as it is kept secret and has commercial value.

Misappropriation (*e.g.*, unauthorized use) of trade secrets is regarded as unfair business practice. For example, departing employees may carry forth trade secrets that may be utilized for unfair competitive advantage. These trade secrets may take various forms such as customer lists, source code and technical documentation, among others. In Canada, the protection of trade secrets is provided by the common law, and, in the United States, trade secrets are currently protected by state law through state adoption of the *Uniform Trade Secrets Act* (UTSA).⁹

Nonetheless, trade secret protection has several limitations, particularly if relied on as protection for vital company assets. To begin with, trade secret rights may be difficult to establish or enforce, and enforcement may be practically ineffective against third parties who obtain the invention indirectly from an unauthorized discloser. Trade secret protection also does not protect FinTech companies that may collaborate and integrate with

⁹ Congress has passed recent federal trade legislation under the *Defend Trade Secrets Act* of 2016, approved on April 27, 2016 with support noted from President Obama.

other entities in developing FinTech products and services and that may require disclosure of their technology (even confidentially). Finally, trade secrets do not protect against independent development of the secret innovation by third parties.

PATENTS

Patents provide a mechanism to exclude others from making, using or selling the patented technology, which may help companies obtain or maintain market share, and protect research and development investments. Patents can provide a competitive advantage, and may also be used defensively as a negotiation tool. For example, an organization may protect core innovation in response to assertions of patents by third parties by cross-licensing with another organization.¹⁰ Patent publications can also be cited against subsequently filed applications to prevent grant. Unsurprisingly, any technology development strategy should consider if patent protection is available for core technology innovation. Companies should also be aware of other publications and litigations, as competitors and other players may have their own patents or pending applications. In contrast with trade secrets, granted patents may be enforced against third parties that make, use or sell the claimed invention, despite independent development.

Obtaining patent protection, however, may be a costly and lengthy endeavour in comparison to other IP rights. Nonetheless, international treaty systems are available to help delay expenses, while still providing the ability to leverage an earlier priority date to protect rights over important innovations. Given the quickly evolving FinTech market, obtaining early priority dates is of the utmost importance in view of the “first to file” nature of the patent system.

INDUSTRIAL DESIGNS

Industrial designs in Canada, or design patents in the United States, can be used to protect the “look and feel” of physical

¹⁰ As an example, rather than undergoing the expense of engaging in litigation against one another, parties may choose to enter a cross-licensing agreement whereby two or more parties grant rights to their intellectual property to one another, often for negotiated fees or conditions. It should be noted, however, that parties engaging in cross-licensing should be mindful of potential antitrust issues.

articles such as electronic cards, transaction machines, as well as computer interfaces and icons. Design protection can be a valuable asset, especially if a given feature helps promote the distinctiveness of the brand, products and services, or increases the usability of a product.

PATENT ELIGIBILITY

Generally, patents are granted worldwide for new, useful, and non-obvious inventions of patentable subject matter. Computer-implemented inventions are under a greater level of scrutiny and not all financial technology-related innovations are *per se* patentable. The jurisprudence determining whether financial technology is indeed patentable subject matter is constantly evolving. Patent offices, along with the courts, have struggled with establishing clear delineations of what is patentable and what is not patentable.

In Canada, the Federal Court of Appeal held in 2011 that the Amazon.com “one-click” buy interface feature to be patentable subject matter.¹¹ Significantly, the Federal Court of Appeal maintained that business methods software patents remain patentable while referencing the prohibition on the granting of a patent for a mere scientific principle or abstract theorem.¹² The Patent Appeal Board in Canada has considered several patent applications and found several investor software tools to be patent ineligible.

Subsequent to the Federal Court of Appeal’s Amazon.com decision, the Canadian patent office issued guidance documents to attempt to clarify office practice. As several experienced practitioners have noted, the office guidelines have created further uncertainty and deviates from the doctrines established by the Canadian courts.¹³ This has led to inconsistencies in approach and outcomes during patent prosecution. A recent Patent Appeal

¹¹ *Amazon.com, Inc. v. Canada (Attorney General)*, 2011 FCA 328.

¹² Federal Court Decision: *Amazon.com Inc. v. Canada (Commissioner of Patents)*, 2010 FC 1011; *Patent Act*, R.S.C. 1985, c. P-4, s. 27(8).

¹³ See for example, Isi E. Caulder & Nicholas Aitken, “Pulling Out All the Stops — Patenting Computer Implemented Inventions in Canada Despite Unprecedented Obstacles,” Bereskin & Parr (January 2016), and Stephen Ferance, “Purposeful Claim Construction and Computer-Implemented Inventions: a Detailed Analysis of CIPO’s New Guidelines,” (2013) 29(2) C.I.P.R.

Board decision applied these guidelines and found that a system and method for optimizing an investment portfolio was not patent eligible subject matter.¹⁴ The Patent Appeal Board construed the claims to not include any of the claimed computer components and asserted that the nature of the operations were financial calculations and transactions, which were abstract and not considered to provide any “discernible change” or “effect to the user.”

In the United States, several Supreme Court and Federal Circuit decisions provide guidance to the United States Patent and Trademark Office (USPTO).

In *Alice Corp v. CLS Bank*,¹⁵ the United States Supreme Court held invalid claims reciting a computer-implemented, electronic escrow service for facilitating financial transactions as being an abstract idea and ineligible for patent protection.¹⁶ The court held that escrow arrangement to reduce settlement risk do not “do more than simply instruct the practitioner to implement the abstract idea of intermediated settlement on a generic computer.” However, while the Supreme Court found such claims to be abstract, the Supreme Court warned that “all inventions embody, use, reflect, rest upon, or apply ... abstract ideas,” and, therefore, the Office should “tread carefully in construing this exclusionary principle lest it swallow all of patent law.”

In response to this decision, patent examiners now utilize a two-step test to evaluate patent eligibility. The first step determines whether the claim is directed to one of the statutory categories of invention (Step 1). The second step considers whether the claim is directed to an abstract idea (Step 2A), and, if so, assesses if the claim is directed to “significantly more” than an abstract idea (Step 2B). While appearing to be simple in operation, the two-step test is not clear in application to different types of subject matter. The steps of the test are highly subjective, and interpretation and analysis has varied widely between individual patent examiners, art units and adjudicators.

In response to post-*Alice* Federal Circuit and Supreme Court decisions, the USPTO continues to issue written guidance on Patent

¹⁴ CD 1373, *Financial Engines, Inc., Patent Application No 2,312,726*, 2014 LNCPAT 16.

¹⁵ 573 U.S. ___, 134 S.Ct. 2347 (2014).

¹⁶ *Ibid.*

Subject Matter Eligibility to clarify office practice. While these updates have provided several helpful examples that attempt to clarify the framework for review, determining whether an invention is patent-eligible or patent ineligible remains a difficult exercise. Examiners can make subjective determinations and analogies between different types of subject matter are not always clear.

In general, the first step of the post-*Alice* guidance can be met by claims clearly directed to one of the statutory categories of invention, such as a machine or process. The second step analysis requires an assessment of whether an invention is directed to an abstract idea and a determination of what is “significantly more” than an abstract idea.

Both subparts of the second step have been challenging in application. The meaning of an “abstract idea” is evolving and unclear. The performance of fundamental economic and conventional business practices are often found to be abstract ideas, even if performed on a computer. The courts have considered abstract ideas to also include “fundamental building blocks of human ingenuity,” and “methods of organizing human behaviour.” As emphasized by the Supreme Court, a concern that drives the assessment of patent eligible subject matter is a disproportionate risk of pre-emption of innovation.¹⁷

An applicant can refer to unconventional steps, specific technical solutions to technical problems, and features that only make sense in the context of a computing environment, such as improvements to computer functionality. As several cases relate to financial innovations, FinTech companies should be aware of the evolving standards and examples of abstract ideas. The determination of what constitutes an abstract idea remains controversial, as indicated in a recent United States Federal Circuit decision relating to self-referential database technology.¹⁸ The Federal Circuit found that the United States District Court of the Central District of California had “oversimplified the self-referential component of the claims and downplayed the invention’s benefits.” The Federal Circuit warned that “describing the claims at such a high level of abstraction and untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule.”

¹⁷ *Ibid.* at 2354 (2014); see, e.g., *Bilski v. Kappos*, 561 U.S. 593 at 611-612 (2010).

¹⁸ *Enfish, LLC v. Microsoft Corp.*, 2015-1244.

The USPTO provides examples of patent eligible and ineligible subjects in the wake of the case law developments. One example is a patent-eligible stock quote alert subscription application where subscribers receive customizable stock quotes on their local computers from a remote data source using a client application that opens when the device is online.¹⁹ At the time of the invention, stock quote subscription services over the Internet were known in the art. However, existing services experienced challenges when attempting to notify a subscriber whose computer was offline (not connected to the Internet) at the time of the alert, and many stock quotes are time sensitive.

The USPTO guidance includes a first hypothetical claim and recites a method of distributing stock quotes over a network by transmitting a formatted stock quote to a computer of a remote subscriber based on a destination address and a transmission schedule. A second hypothetical claim also recites a method of distributing stock quotes over a network, but further recites the claimed feature “wherein the alert activates the stock viewer application to cause the stock quote alert to display on the remote subscriber computer and to enable connection via the URL to the data source over the Internet when the wireless device is locally connected to the remote subscriber computer and the remote subscriber computer comes online.” The United States Patent and Trademark Office suggests that “some of the limitations when viewed individually do not amount to significantly more than the abstract idea” (such as storing subscriber preferences or transmitting an alert). The features were meaningful limitations that add more than generally linking the use of the abstract idea to the Internet to solve an Internet-centric problem.

As the race for patents is intensifying, FinTech companies should be cognizant of the challenges and uncertainty facing examination and validity of patents. Granted patents or patent applications drafted prior to the *Alice* Supreme Court decision should be reviewed carefully, as these patents or patent applications may not meet the current threshold for patent eligible subject matter. Where FinTech companies are preparing patent applications covering their latest innovations, a detailed review of

¹⁹ Federal Register Notice July 2015 Update on Subject Matter Eligibility <<http://www.uspto.gov/patent/laws-and-regulations/examination-policy/2014-interim-guidance-subject-matter-eligibility-0>>.

the guidance and jurisprudence is required to determine how best to tailor the applications. This can increase the chances that the patent office or a court will find that the innovation can be directed to patent eligible subject matter. Highlighting salient technical features such as technical advantages and practical implementation details can increase the likelihood of success during patent examination.