

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,

Petitioner,

v.

PROXENSE, LLC

Patent Owner

IPR2024-00232 (Patent 8,352,730 B2)

IPR2024-00233 (Patent 8,886,954 B1)

DECLARATION OF TROY CARROTHERS

I. QUALIFICATIONS

1. I'm a financial services and retail leader with approximately thirty years of experience working in a variety of leadership roles in retail payments. These responsibilities have spanned operational leadership positions with responsibility for functions with small teams such as Risk Management or Financial Planning & Analysis in payment issuance and acceptance to leading multi-billion dollar retail credit and debit portfolios with thousands of employees. The retail payment portfolios I've worked with have ranged in size from a few hundred thousand accounts to tens of millions of accounts. I currently provide strategic advisory and consulting services specializing in payments, credit, and financial operations for a variety of clients including retailers, payment processors, start-ups, non-profits, and others in the FinTech and payments industries.
2. My early experience with retail payments was spent in a variety of roles working for Citibank in the United States and Latin America. With the resources to purchase and manage retail credit card portfolios all around the world, Citibank provided an excellent foundation for me to gain exposure to bank-branded credit cards as well as co-brand and retail private-label credit cards while working hands-on in operational functions including accounting, transaction processing, underwriting, fraud prevention, and dispute management of Visa, MasterCard, and Diner's Club credit card transactions. Because of the co-brand and private-label credit card functional expertise I developed at Citibank, I was asked to participate in many operational and risk management portfolio reviews on Citibank's portfolios throughout North America, Central America, and the Caribbean. This exposure to many varied programs supporting multiple retail verticals later proved to be invaluable in understanding the foundational aspects of the payments ecosystem and best practices in risk management, specifically underwriting, collections, fraud mitigation, and dispute management across each of the primary payment networks.
3. I left Citibank in 2002 to work with Kohl's, where I initially assumed responsibility for the operational and risk management aspects of Kohl's small private-label credit card portfolio. Within a few years I was promoted to Senior Vice President with full operational and profit & loss (P&L) responsibility for all aspects of payment issuance and acceptance in stores and online. This responsibility included all aspects of the

issuance of Kohl's private-label credit card portfolio, credit and debit card acceptance in-store and online, as well as all financial risk management functions for the company. Part of this responsibility included negotiating with and designing payment processing enhancements with our acquirers as well as working with issuing banks and card networks, such as Visa and MasterCard. I held this role for fourteen years. During this timeframe, Kohl's expanded nationally to become the nation's single largest department store with stores in forty-nine (49) states, online sales approaching \$5 billion annually, and total company sales of approximately \$20 billion annually.

4. In addition to the experience identified above, I served on the board of the Merchant Advisory Group ("MAG")¹ for six (6) years helping build greater collaboration, education, and advocacy across the retail payments ecosystem, including representing the MAG's retail members in best practice discussions and industry forums with issuers, networks, and payment processors of all kinds. More than half of my tenure with the MAG included serving as Vice-Chair or Chair of this organization representing nearly two-hundred retailers whose sales total approximately \$5.0 trillion annually and represent approximately 60% of the total U.S. card transaction volume.
5. I've spent the last four years consulting on a variety of payments topics including risk management, process design, contract negotiation, operational excellence, and regulatory compliance for retailers, start-ups, FinTech companies, industry analysts, and others. My combined experience of working directly for the financial institution and the retailer (brick & mortar and online) gives me unique knowledge of and insight into the flow and risks of retail payments, as well as a thorough understanding of many of the formal and informal nuances of credit card operations and network transaction processing requirements that comprise the payments ecosystem.
6. A copy of my CV detailing my experience, professional affiliations, and education is attached as **Appendix A**.
7. I relied on U.S. Patent No. 7,188,110 to Ludtke ("Ludtke"), which I understand was attached as Exhibit 1005 and the public documents linked herein.

¹ <https://www.merchantadvisorygroup.org/>

II. SCOPE OF WORK AND COMPENSATION

8. I have been asked by counsel for Proxense to provide an expert analysis of U.S. Patent No. 7,188,100. Specifically, I will review the functions and purpose of the Transaction Processing Clearing House (“TPCH”) and its applications within that patent.
9. The specifics of the possible digital technologies that can be used for each step of the transaction processs are beyond the scope of this declaration.
10. If called upon to do so, I intend to testify in this case regarding the matters discussed in this declaration.
11. The documents that I relied upon in drafting this report are linked directly therein.
12. For my work in researching this matter and preparing the expert report, my hourly rate is \$450. This rate applies to all work performed in assembling this report.

III. FACTUAL BACKGROUND

A. United States Patent 7,188,110

13. U.S. Patent 7,188,110 by Ludtke et al. (“Ludtke”) is described as “[a] method of identifying an authorized user with a biometric device and enabling the authorized user to access private information over a voice network...”² However, throughout Ludtke’s detailed descriptions of various scenarios that are applicable, Ludtke provides further clarification regarding the responsibilities and actions of many of the parties involved in those transactions. This report will focus on the functions performed by the TPCH discussed in Ludtke in the context of a purchase transaction.

14. First, I will define the relevant terms.

B. Payment Authorization

15. A “payment authorization” is a commonly used term in transaction processing. For a merchant, the payment authorization is an electronic message that “marks the point at which the sale is confirmed and funds are secured.”³ The merchant interprets the

² US Patent No. 7,188,110 Abstract March 6, 2007

³ <https://primer.io/blog/what-is-payment-authorization-and-how-does-it-work#:~:text=Payment%20authorization%20is%20when%20an,prioritize%20certain%20transactions%20over%20othe>rs.

authorization as a virtual commitment or promise to pay for the transaction. This authorization is traditionally delivered from a card acquirer or a clearing house and provides the merchant the guarantee that it will be compensated for the sale of the goods or services to the purchaser. Therefore, in a traditional transaction, the card issuer provides the authorization to the acquirer or clearing house on behalf of its cardholder or accountholder and the acquirer or clearing house sends the authorization to the merchant.

16. In alternate scenarios, the acquirer or clearing house may issue and deliver the authorization to the merchant on the card issuer and cardholder's behalf. These scenarios are most frequently found in subscription and recurring payments as part of a prior commitment made by the cardholder. This scenario is not discussed in Ludtke.

C. Settlement

17. Settlement is the function of transaction funding and clearing between the parties. In transactions that include payment acceptance or payment processing fees, the fees will be netted out of settlement before funding the merchant account. According to Kount, "transaction settlement is the process of moving funds from the cardholder's account to the merchant's account..."⁴. Since the merchant does not interact directly with the payment card issuers, the acquirer or clearing house serves the function of funding the merchant's account on behalf of the cardholder and the issuer of the payment card.
18. Traditionally, an acquirer or clearing house will only fulfill the authorization function of an issuer on rare occasions. On these occasions, the acquirer or clearing house will either step in for the card issuer when connectivity has been compromised, provide authorizations for payments issued on the acquirer's own private network, or will provide authorizations for card on file transactions for card issuers or its own private network.

D. Card on File / Account on File

19. A card on file ("CoF") or account on file is a common process that permits businesses and digital wallets to maintain a customer's payment credentials to be used for future

⁴ <https://kount.com/glossary/transaction-settlement>

purchases such as recurring payments or subscription services.⁵ Also referred to as an account on file⁶, a CoF can include a broad range of payments. A CoF transaction is commonly a credit card, debit card, ACH, or even a pre-paid balance, such as pre-loaded gift card or digital wallet.

IV. INTERPRETATION OF UNITED STATES PATENT 7,188,110

A. Introduction to the Transaction Processing Clearing House

20. Ludtke first mentions the Transaction Processing Clearing House (“TPCH”) in 3:41-43, referring to the TPCH throughout the detailed description of his patent and the many embodiments. In his description, he mentions the functions performed by the TPCH. The first of these functions is to “authorize transactions” requested by a user.⁷ He adds to his description of the function of the TPCH by stating that it may also “authorize and perform the transaction”.⁸ This second detail is important because it clarifies the expectation that the TPCH performs multiple roles, further explaining that a TPCH is responsible for the functions of authentication, authorization, and settlement of transactions.
21. In a standard credit card or debit card transaction, be it card present or CoF, settlement occurs after the transaction between the cardholder and the merchant is completed. However, the transaction between the cardholder and the merchant is completed when the merchant accepts an authorization as payment. Ludtke does not teach a change to this ordering of steps. First, Ludtke teaches that a transaction confirmation message (i.e., an authorization) delivered from the TPCH is accepted by the merchant as payment.

- i. “The *TPCH*, at step 1520, *confirms the transaction and provides the confirmation to the vendor* and the user. At step 1525 *the vendor completes the transaction* without knowledge of the identity of the user.”
Ludtke, 27:13-16 (emphasis added).

⁵ <https://stripe.com/resources/more/how-do-credit-cards-on-file-work-a-quick-guide-for-businesses>

⁶ [https://www.lawinsider.com/dictionary/account-on-file#:~:text=Account%20on%20File%20means%20a,\(s\)%20as%20defined%20above.](https://www.lawinsider.com/dictionary/account-on-file#:~:text=Account%20on%20File%20means%20a,(s)%20as%20defined%20above.)

⁷ US Patent No. 7,188,110 3:43

⁸ US Patent No. 7,188,110 8:47-50

- ii. “Assuming that the transaction is successful, *the TPCH returns a confirmation message to the retail POS terminal*, step 1616, which in turn may display an appropriate message to the clerk, step 1617. The clerk may then return the transaction device and perhaps *a paper receipt of the transaction to the user*, step 1618.” Ludtke, 27:60-65 (emphasis added).
- iii. “After validating that the transaction device is in good standing and that the selected account has sufficient funds for the transaction, *the TPCH issues a transaction confirmation back to the personal POS terminal*. The personal POS terminal reflects the transaction confirmation back to the web browser and the transaction device. The transaction device may display a transaction confirmation to the user and may additionally record the transaction in its local storage. The personal POS terminal may also record the transaction in its local storage. In addition, in alternate embodiments, *the personal POS terminal may enter the transaction directly into the user's personal finance program* (e.g., Quicken) which may be executing on the user's PC or on the personal POS terminal.” Ludtke, 29:15-28 (emphasis added).
- iv. “*Secure distribution of physical (or electronic) content to the user is performed once the transaction is authorized*. Subsequently, *the TPCH receives confirmation that the content was successfully shipped* to the user and the user has acknowledged receipt of the content. Once the confirmation is received, *the TPCH processes the settlement of funds*.” Ludtke, 29:29-34 (emphasis added)

22. In all four of the foregoing cases, confirmation is provided from the TPCH to the merchant, which merchant accepts as a promise to pay or a payment guarantee. That the merchant accepts the confirmation issued by the TPCH as a guarantee is clearly shown by the “vendor completing the transaction” upon receipt of the confirmation, providing “a paper receipt of the transaction to the user” upon receipt of the confirmation, “entering the transaction directly into the user's personal finance program (e.g., Quicken)” upon receipt of the confirmation, and “secure distribution of physical (or electronic) content to the user once the transaction is authorized” by the TPCH.

Accordingly, the TPCCH is accessed to provide a payment to the merchant via a confirmation message (i.e., authorization), which completes the transaction.

23. The actual transfer of funds (which is referred to as settlement) occurs subsequent to the issuance of the confirmation by the TPCCH and, as such, subsequent to the transaction having been completed. As recognized by Ludtke, “[t]he settlement of funds involves the transfer of the appropriate financial credit into the vendor's account.” Ludtke, 29:35-36
24. Ludtke discloses four ways in which the TPCCH performs settlement when accessed by the user. One settlement method disclosed by Ludtke is one in which “the account is managed completely by the TPCCH, and thus the funds transfer is handled completely inside of the TPCCH.” Ludtke, 29:37-39. With this method of settlement, the TPCCH simply directs the transfer of funds from an account held by the TPCCH to the vendor’s account.
25. In the next settlement method disclosed, “the TPCCH 110 interfaces to at least one financial processing system 140 to perform associated financial transactions, such as confirming sufficient funds to perform the transaction, and transfers to the vendor 125 the fees required to complete the transaction.” Ludtke, 6:51-55 (emphasis added). In this method the TPCCH issues credits to the user based on the availability of funds in an account registered with the TPCCH, and then directs the transfer of funds from an account held by the TPCCH to the vendor’s account.
26. The third settlement process disclosed is one in which “the TPCCH may issue a funds settlement request to a third-party financial institution on behalf of the user, causing the necessary funds to be transferred to the vendor from the user’s account.” Ludtke, 29:43-46 (emphasis added). This is no different than if the TPCCH was charging a CoF or account on file directly, such that the TPCCH is accessed to charge a stored account of the user directly. When a card or account on file transaction is processed, a settlement request is issued to the financial institution issuing the stored card or account. Normally, the settlement request would be issued by ACH, in the case of an account on file, or the credit card issuer, in the case of CoF, after the financial institution issuing the stored card or account provided an authorization to the merchant as payment via the acquirer or clearing house. In this method of Ludtke, however, the

settlement request is issued by the TPCCH after the TPCCH has provided the confirmation message as payment and the TPCCH “caus[es] the necessary funds to be transferred.” These settlement requests direct the transfer of funds from an account of the user to the vendor’s account following the authorization of the transaction.

27. In the final scenario, the TPCCH directly charges an account registered with the TPCCH. “[T]he FP140 is contacted by the TPCCH requesting a generic credit approval of a particular account... The TPCCH 110 can request the credit using a dummy charge ID that can be listed in the monthly credit statement sent to the user, so that the user can reconcile his credit statement.”⁹ The dummy charge would cause the TPCCH to “act as a proxy for the user, whereby the TPCCH takes the funds from the user’s account as managed by a third party financial institution, and then issues a funds transfer from the TPCCH account to the vendor’s account.”¹⁰ In the above, the design is based on a CoF or an account on file where the TPCCH has the relevant information it needs in order to provide an authorization of the transaction. Here, TPCCH has an account for the user and transfers the funds. For privacy reasons, this method focuses on the fact that the TPCCH does not provide the financial institution with any information about the purchase during the settlement process. Nevertheless, the settlement process described here occurs after the TPCCH authorizes and completes the transaction. The resulting action is the TPCCH issuing a funds settlement request to the card issuer and not an authorization request.
28. Each of the settlement methods taught by Ludtke occurs after the merchant has accepted the confirmation message (i.e., authorization) issued by the TPCCH as payment, thereby completing the transaction between the user and the merchant. Additionally, each settlement method involves accessing the TPCCH to make use of an account at the TPCCH. In some instances, it is an account on file. In other instances, it is an account operated by the TPCCH. However, in all cases, the TPCCH is performing the established function of an acquirer or clearing house to settle the transaction by causing the appropriate amount of funds to be transferred from the user’s account registered with the TPCCH to the vendor’s account.

⁹ US Patent No. 7,188,110 7:17-20

¹⁰ US Patent No. 7,188,110 29:47-51

B. Significance of the TPCCH's Roles

29. In Ludtke's design, the TPCCH performs the roles of authenticating and authorizing transactions for merchants/vendors based on user data already on file, providing them with a promise to pay. The TPCCH then settles with the merchant. Finally, at some point after the transaction between merchant and user has completed, the TPCCH delivers a settlement request to the card issuer for settlement of the transaction.¹¹ As such, the TPCCH does not look to the card issuer or any other entity for an authorization, as the TPCCH already has the required information to make an informed decision regarding the transaction.
30. The TPCCH is performing multiple roles. It is authenticating and authorizing the transaction without the assistance of a third-party card issuer, because of the availability of data within the CoF. It's also settling with the merchant and sending a settlement request to the card issuer. The steps are as follows:
- a) The user is authenticated by the TPCCH
 - b) The transaction is authorized by the TPCCH
 - c) The TPCCH settles with the merchant
 - d) The TPCCH sends settlement request to card issuer

C. Interpretation of Ludtke's Patent

31. In my opinion, Ludtke's explanations of the various embodiments and transaction flows may be unnecessarily complicated and difficult for a layperson to interpret their meaning. As a result of Ludtke's writing style and the technical processes he explains in detail, it would be understandable if a person who was not well-versed in payment flows and payment technology may be confused by the parties and their respective roles. Specifically, I believe a clear understanding of Ludtke's writings requires payments professionals with extensive experience in the complexities of payment transaction flows for various tender types, hands-on experience with digital payments, and an understanding of the differences between CoF and card present transactions. Acquiring this level of payments knowledge would require many years of experience working in

¹¹ US Patent No. 7,188,110 29:43-45

payments, specifically time spent working for or with merchants/vendors, payment processors, acquirers, and card issuers or card networks.

V. CONCLUSION

32. As mentioned previously, each of the settlement methods taught by Ludtke occurs after the merchant has accepted the transaction confirmation message (i.e., authorization) issued by the TPCCH as payment and tendered the goods and service, thereby completing the transaction between the user and the merchant. These settlement methods include accessing an account on file (CoF) or an account operated by the TPCCH. In each scenario, the TPCCH fulfills the function of an acquirer or clearing house settling the transaction by debiting the user's account and crediting the vendor's account.

VI. RESERVATION OF RIGHTS

33. I understand that expert discovery in this case is ongoing. I may amend or supplement my opinions to take into account facts developed in that discovery process.

I, Troy Carrothers, do hereby declare and state, that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, under Section 1001 of Title 18 of the United States Code.

Dated: October 15, 2024

Respectfully submitted:



Troy Carrothers

APPENDIX A: CURRICULUM VITAE OF TROY CARROTHERS, MBA

TROY CARROTHERS

262.327.1565 | troy.carrothers@gmail.com | <https://www.linkedin.com/in/troy-carrothers>

SENIOR FINANCIAL SERVICES AND PAYMENTS EXECUTIVE

CHANGE MANAGEMENT | TEAM LEADERSHIP | SCALING BUSINESSES | P&L GROWTH | OPERATIONAL EXCELLENCE

Financial Services and Retail leader with a stellar reputation for building world-class organizations and high-performance teams; possessing expertise in creating operational efficiencies and blending the right products, people, technologies, and best practices to scale complex businesses to exceed profitability expectations.

- **Strategy & Transformation.** Demonstrated ability to quickly identify business opportunities, negotiate contracts, design payment solutions, market, transform, and build businesses in a profitable and responsible manner.
- **Executive Leadership.** Confident and deeply skilled at cultivating followership and winning buy-in from cross-functional business teams on initiatives that benefit individual business units and the organization.
- **Industry Expertise.** Trendsetter in consumer payments, credit cards, customer service, marketing, risk management, and relationship management for the financial service industry. Built one of the largest retail credit card portfolios in the world.
- **Talent Development.** Built topflight and engaged teams through training, inspiring a customer-first mindset, and rewarding strong performance. Groomed multiple executives to become C-suite leaders in prominent companies, across many industries.
- **P&L Management.** Proven and repeated ability to scale start-ups and turnaround mature businesses leveraging data analytics, financial acumen, and deep understanding of profit drivers.
- **Technology & Innovation.** Champion of harnessing the power of technology and automation, delivering digital solutions to better serve customers, drive profitability, ensure regulatory compliance, and decrease operational overhead.

PROFESSIONAL EXPERIENCE

TAC CONSULTING, Remote
President & CEO

07/2020 – Present

Providing strategic advisory services specializing in payments, credit servicing, and operational excellence for retailers, FinTech, payment processors, start-ups, law firms (expert witness), and non-profits.

- Guide and facilitate companies in best practice techniques to negotiate contracts, manage risk, and grow profitability.
- Partner with and lead merchants in designing efficient digital payment platforms to increase consumer engagement.
- Assist payments organizations in designing long-term strategic plans to seize future opportunities.
- Evaluate FinTech and digital payment Go-To-Market plans, commercial viability, and profitability potential.

BUY IT MOBILITY NETWORKS INC. (BIM), Remote
President

09/2020 – 04/2023

Built and led remote operations, sales, relationship management, risk management, finance, and customer service teams for a white-label digital payments FinTech innovator across multiple retail verticals and enterprise scale companies.

- Assembled strategic plans and pricing models by retail vertical and risk level for greater efficiency and profitability.
- Designed and delivered bespoke digital wallet-based end to end white-label payment solutions for major merchants.
- Negotiated and secured multi-year contracts with business partners and major new Fortune 100 companies.
- Scaled transaction volume 10x from 2020 to 2023 through new customer acquisition, loyalty, and engagement strategies.

KOHL'S INC., Menomonee Falls, WI

06/2006 – 06/2020

Senior Vice President and General Manager of Credit, Payments, & Customer Service

Led P&L, strategy, credit & fraud risk management, marketing, finance, technology, and operations, including customer service and collections team of 5K+ personnel. Developed and led all payment acceptance, issuance, and bank partnership strategies.

- Led the strategic design and turnaround of Kohl's credit portfolio to consistently deliver more than \$1B in annual profits.
- Built Kohl's private-label retail credit card portfolio into the largest in the US, with 35M accounts and \$6B in receivables.
- Led Kohl's eCommerce financial risk management, customer service, international outsourcing, and payments initiatives.
- Transformed customer service culture, earning the Customer Service Organization of the Year award twice from the ABA.

PROFESSIONAL EXPERIENCE (CONT'D.)**KOHL'S INC.**, Menomonee Falls, WI**12/2002 – 06/2006****Vice President, Customer Service, Credit Operations and Risk Management**

Charged with designing and building credit infrastructure to support retail operation with \$20B in annual sales.

- Negotiated initial sale of credit card portfolio to provide \$1.6B to fund long-term growth of new stores and website.
- Early adopter of digital technology championing new solutions for credit card application processing at point-of-sale (POS).
- Cross-trained personnel and consolidated operations centers saving more than \$30M in expenses over 3-year period.
- Founding member of the Digital, Hispanic, and Customer Loyalty committees to drive innovation, diversity, and profitability.

EARLY CAREER**CITIGROUP**, San Juan, PR and Houston, TX

- **Operations Vice President, Risk Management**, Houston, TX
- **Vice President, Director of Financial Planning & Analysis**, Houston, TX
- **Director and General Manager, CitiGold**, San Juan, PR
- **Assistant Vice President, Risk Management**, San Juan, PR
- **Management Associate**, San Juan, PR

INDUSTRY BOARD, ADVISORY, AND SPEAKING POSITIONS**FirstData (Fiserv), Merchant Advisory Group, Splitt, Money20/20 (U.S. & Europe)**, Industry Speaker at internal and industry events**PayLift**, Chair, Board of Directors (2023 – Present)**Openpay**, Commercial Advisor (2020 – 2022)**Merchant Advisory Group**, Chair (2018 – 2020), Vice Chair (2016 – 2018), Board Member (2014 – 2020)**[24]7.ai**, Advisory Board Member (2011 – 2015)**Experian's Customer Acquisition Council**, Founding Member (2008 – 2012)**Discover's Merchant Advisory Council**, Founding Member (2006 – 2013)**Credit Association of S.E. Wisconsin**, Board Member (2003 – 2007)**PROFESSIONAL RECOGNITION**

- Established and led Kohl's Hispanic Professionals Business Resource Group (2015 – 2020)
- Officially recognized by the President of Guatemala for developing "green" jobs (2010)
- Selected by the *Milwaukee Business Journal* as one of the distinguished "Forty Under 40" (2009)
- Winner, "Customer Service Executive of the Year," by the American Business Awards (2008); Finalist (2007)
- **CitiGroup**, President's Association Award for unprecedented leadership (2000)

COMMUNITY LEADERSHIP AND INVOLVEMENT**Junior Achievement of Wisconsin**, Classroom Volunteer (2003 – present), Board Member (2008 – present), Executive Committee Member (2017 – Present), Interim President & CEO (Aug. 2023 – Dec. 2023), Chair (2021 – 2023), Vice Chair (2019 – 2021), Chair, Team Achieve (2015 – 2018), Recipient - Milestone Award (2012 – 2018), Chair, Advisory Council (2007 – 2015)**Financial Literacy Forums**, Guest Speaker in WI, IL, and TX (2005 – present)**University of Phoenix**, Adjunct Business School Faculty (2001 – 2005)**Junior Achievement of Southeast Texas**, Board Member (2000 – 2002)**EDUCATION****Tuck School of Business at Dartmouth**, Hanover, NH ■ Strategic Financial Leadership Program**Thunderbird School of Global Management**, Glendale, AZ ■ Master of Business Administration in International Management, Major: International Management and Finance**University of Texas at Arlington**, Arlington, TX ■ Bachelor of Business Administration, Major: Management**Languages** ■ English: Native ■ Spanish: Proficient