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Fintech – the hidden champions from patent value perspective

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Description of the basic idea - Methodology

The basic idea of this study is to identify the most interesting companies in the fintech industry by valuating their intellectual property portfolio, namely patents and utility models.

This will be achieved by compiling a comprehensive list of fintech companies, evaluation of their patents and utility models and comparison and benchmarking in their respective sector.

The IPvalue trend is a good indicator to show on one hand the current status of a company (you will need a lot of resources to file, get in force and counter fight your patents) and on the other hand it is a leading indicator, showing possible future products and systems (the average time of patents being found in real products is 5-11 years, depending on the sector).

The chosen sectors are:

- 1) Assets Management
- 2) Authentication Solutions
- 3) Banking
- 4) Insurance
- 5) Investment Software
- 6) Lending
- 7) Payment
- 8) Real Estate
- 9) Risk Management
- 10) Transactions

Explanation of the sectors:

Asset Management

Fintech businesses specializing in asset management provide data warehousing and business intelligence services to their customers, they develop custom information technologies and implement enterprise software packages. Their software is often designed to deliver strategic advisory, customer management services and analytic services. Infrastructure management services, testing and digital assets management technologies are another field of activity of asset management fintech businesses.

Authentication Solutions

Authentication solution fintechs are concerned with cyber security and software security. They develop electronic authentication solutions, signature and identification software and provide fraud detection and prevention services, share fraud intelligence and flag risk factors. They implement their authentication solutions on different devices, from server over desktop to mobile devices and evaluate risks, in order to make ecommerce, online payments and online trading safer. Their technologies are even capable to measure personality traits to recognize potential hazards.

Banking

Fintechs in the banking branch have a stronger focus on hardware and infrastructure than other fintech companies. They develop transaction systems such as ATMs, electronic and physical vaults and currency processing systems. Their software and services are centered on point of sales and include electronic card systems, retail banking hardware, lottery terminals or postal terminals. The service side is comprised of retail cash cycle management, depot services, account processing systems, automated clearing houses (ACH), internet and mobile banking systems, check processing and imaging with additional post trade processing systems and document distribution services.

Insurance

Fintechs in the insurance branch are mostly startups that came up with crowd funding services for insurances, like car or health insurances. There are companies, which provide health care investment management and insurance brokerage services.

Investment Software

Fintechs that develop investment software have specialized on wealth management technologies, such as computer software for financial advisors, investment strategy selection software, asset allocation software or portfolio construction and optimization software. This software has built-in capabilities like proposal generation, model management, fund administration, visualizing capabilities, portfolio performance measurement methods, general analysis and benchmarking. They are specialized on calculation systems for

the management of thematic investment strategies and portfolio accounting and integrate data and workflows across the investment management organizations.

Lending

Fintechs in the lending branch provide technologies for leasing, lending, rentals, venture capital or security brokering by lending applications for example. These applications enable short term credits through peer to peer lending services. They further develop loan origination software, loan processing solutions, online lending, merchant lending and auto dealer services. Their technologies are capable of rate setting and credit decision consulting.

Payment

Fintechs in the payment branch maintain conservative methods of payment and develop alternative technologies like credit cards, payment cards and chip cards, smart transactions, travel-related services, mobile financial services and online money transfers. They develop technologies for payment processing and point of sale payment terminals and modules. Some focus on the development of safer banknotes, checks and securities, and the hardware for printing them.

Real Estate

The fintech companies in the real estate sector collect and distribute real estate collateral information. They provide software which reviews for lender compliance with government regulations, reporting tools for properties, residential price indexes and residential price trends. Their technologies and software deal with investments and business intelligence around mortgages.

Risk Management

In order to properly assess risk in the financial sector, fintechs, specialized in risk management, develop intelligent analytic software and technologies. They provide a vast data collection containing customer intelligence, target marketing offers, visualizations of performance benchmarks, credit ratings, prediction and decision making tools. These are either provided as technologies for example in software, which automate, enhance and connect decisions and can for example even determinate natural hazards or minimize the risk of fraud or these technologies are provided as a service, like data analytics service or consumer credits report based on information gathered by the fintechs with their proprietary technologies.

Transactions

Transaction fintechs enable new and easier ways of trading and money transactions like peer to peer payment services, electronic funds transfers and networking services. They connect financial institutes worldwide and establish safe ways for global trading, trade processing and securities processing. Their technologies contain trading communication platforms, instant deposit services and networking services. Similar to fintechs in the payment sector, they develop their own payment solutions which could also be assigned to the payment branch.

Explanation of the used methodology

The IP value is determined by an innovative approach of InTraCoM which is based on a pattern recognition algorithm on bibliometric data from patents. The methodology is temper proof in over 100 patent valuation projects with commercial clients as well as legal authorities and has a pending patent¹ in Europe and USA.

The result of the valuation is a €-value for the complete patent and utility model portfolio of a holding, including the patent value of their subsidiaries (wherein they have >51% direct ownership). The so calculated value for each year is called **IPvalue**.

The analysis was performed for the years 2010 to 2016.

¹ EP2923296A1, US20160004998A1

Results

In figure 1 the Top 11 fintech companies with highest IP value are shown:

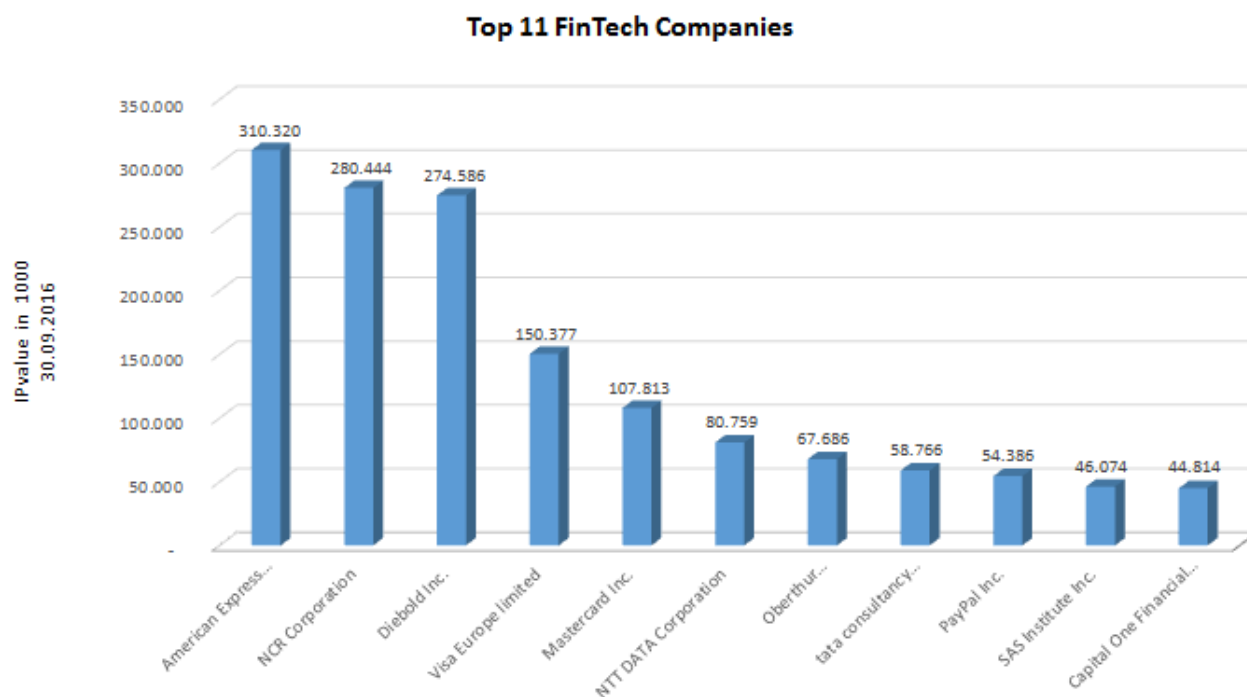


Figure 1: Top 11 Fintech companies by IPvalue, year 2016.

The share of the IP value to the total assets expresses the importance of IPvalue for the business model of the company and is calculated for the TOP 11 fintech companies to:

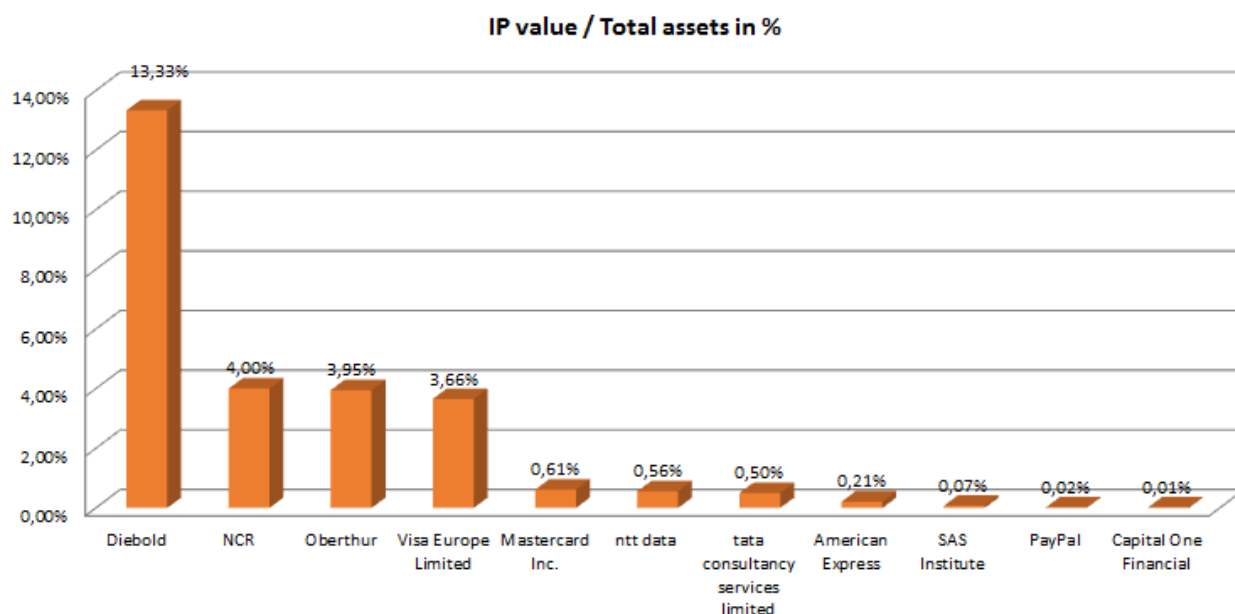


Figure 2: Ratio IPvalue/ Total assets in %, year 2016

When we compare the amount on calculated IP value with the reported fixed intangible assets in the balance sheet of the companies, we identify the following “undervalued” companies in terms of intangible assets:

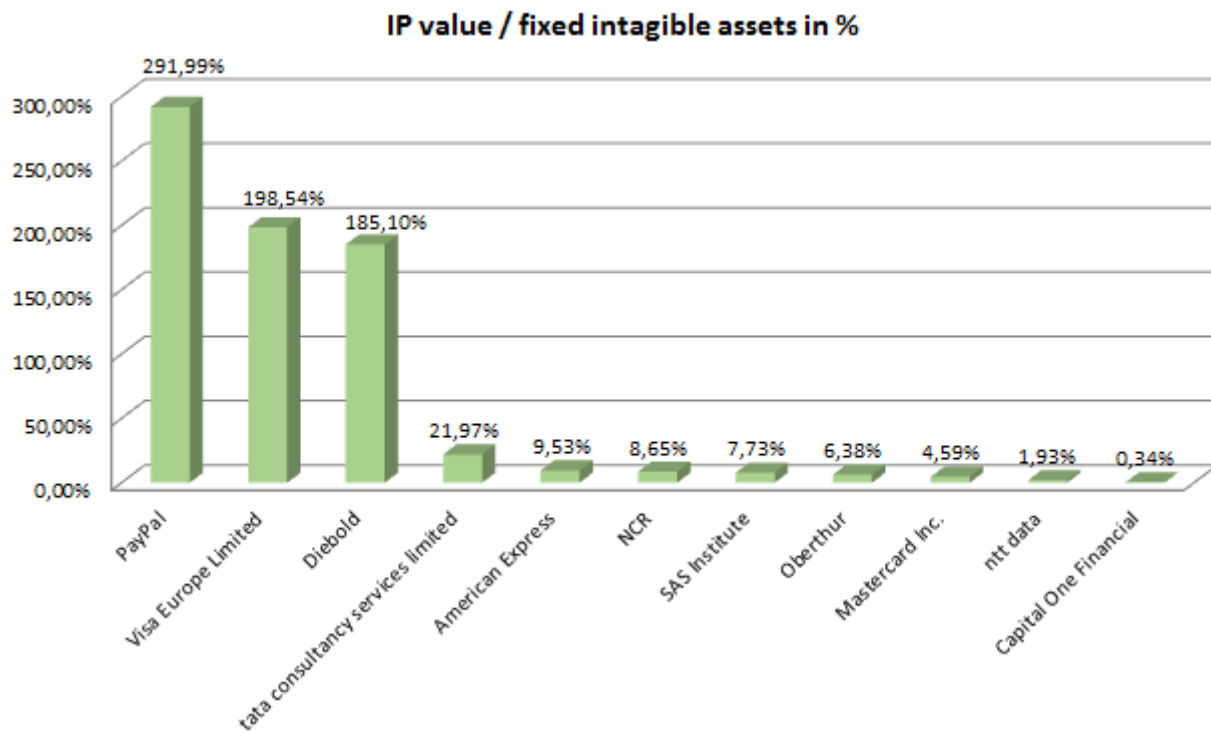


Figure 3: Ratio IP value / fixed intangible assets in %, year 2016

PayPal Inc. for example has up to 3 times more intangible assets only in their patents than claimed in their balance sheet. In the fixed intangible assets there is as well goodwill, trademarks, copyrights etc. which will increase the total amount of intangibles.

When we perform a deeper analysis in the patent portfolio of PayPal, we identify, that the patents with highest average value are in the international patent class [IPC] Go6Q10/10: “Office automation, e.g. computer aided management of electronic mail or groupware; Time management, e.g. calendars, reminders, meetings or time accounting”. The mean value is calculated to 2,248,000€ in contrast to 169,000€ as mean value for all patent families.

The TOP applicants in that technological sector are:

CROSOFT TECHNOLOGY LICENSING LLC
 HITACHI LTD
 FUJITSU LTD
 IBM
 NEC CORP
 GOOGLE INC
 FACEBOOK INC
 BLACKBERRY LTD
 APPLE INC
 SAP SE
 SAMSUNG ELECTRONICS CO LTD

The Top markets for PayPal at that technology sector are beside USA, Australia. The share of the patent values for Australia in that IPC class is 34%:

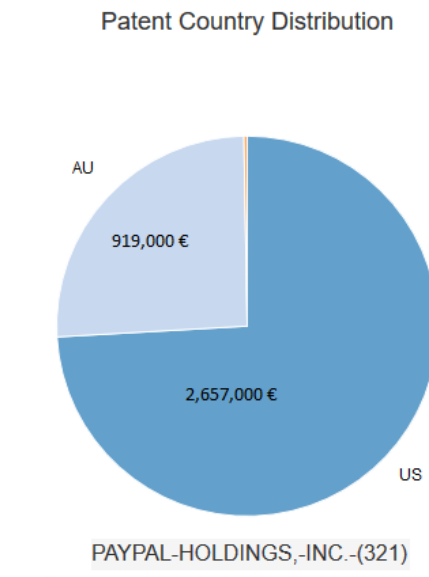


Figure 4: IP value in IPC Go6Q10/10 for certain regions, year 2016

The analysis of the patent portfolio of PayPal Inc. delivers the following figures:

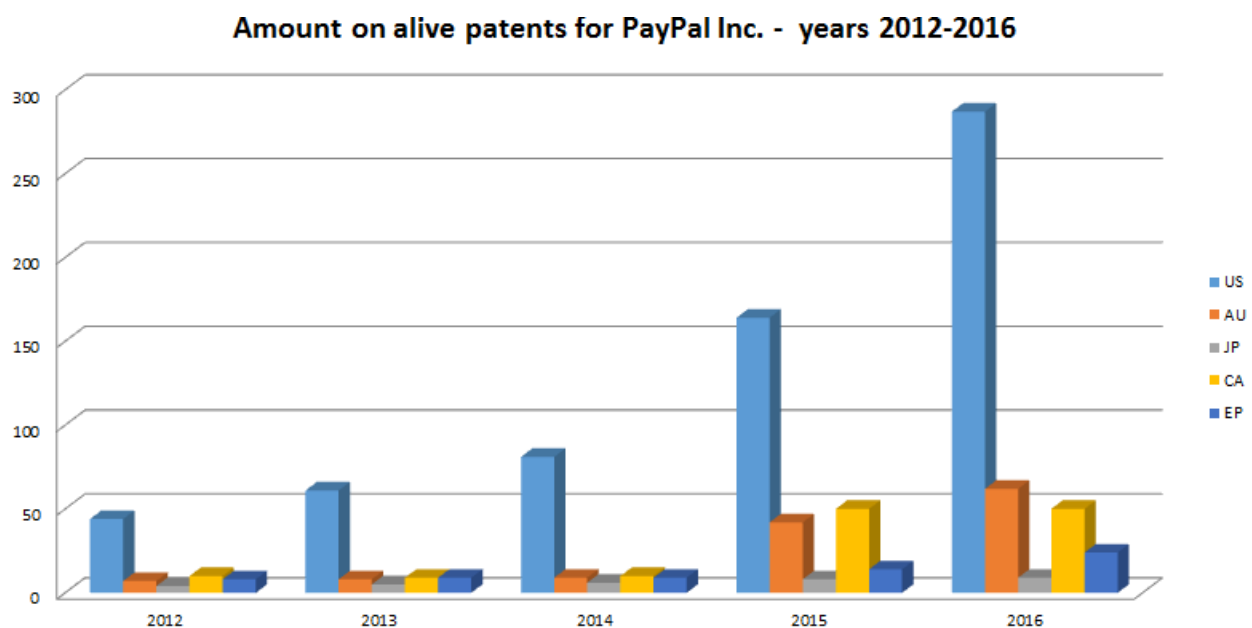


Figure 5: Change of amount of patents in certain regions of PayPal Inc. - years 2012-2016

The highest increase of the amount on patents for PayPal Inc. is for the countries: USA, Australia and Canada.

IP value for PayPal Inc. in certain regions - years 2012-2016

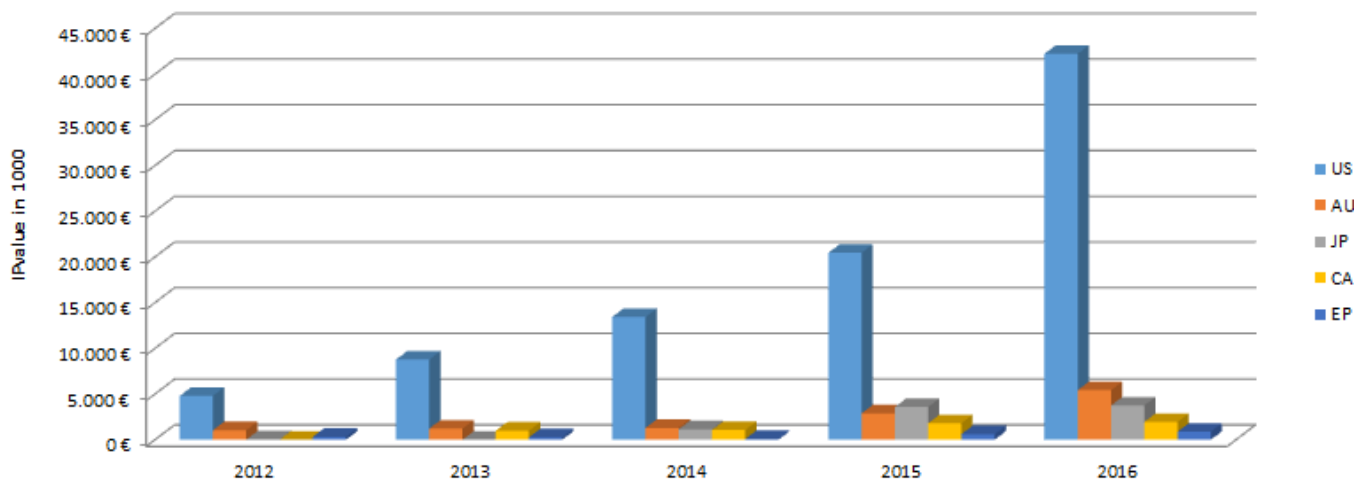


Figure 6: Change of IP value in certain regions of PayPal Inc. - years 2012-2016

The IP value increased as expected in USA and Australia, but disproportionate in Japan. Canada on the other hand disappointed.

Average IP value per patent of PayPal Inc.- years 2012-2016

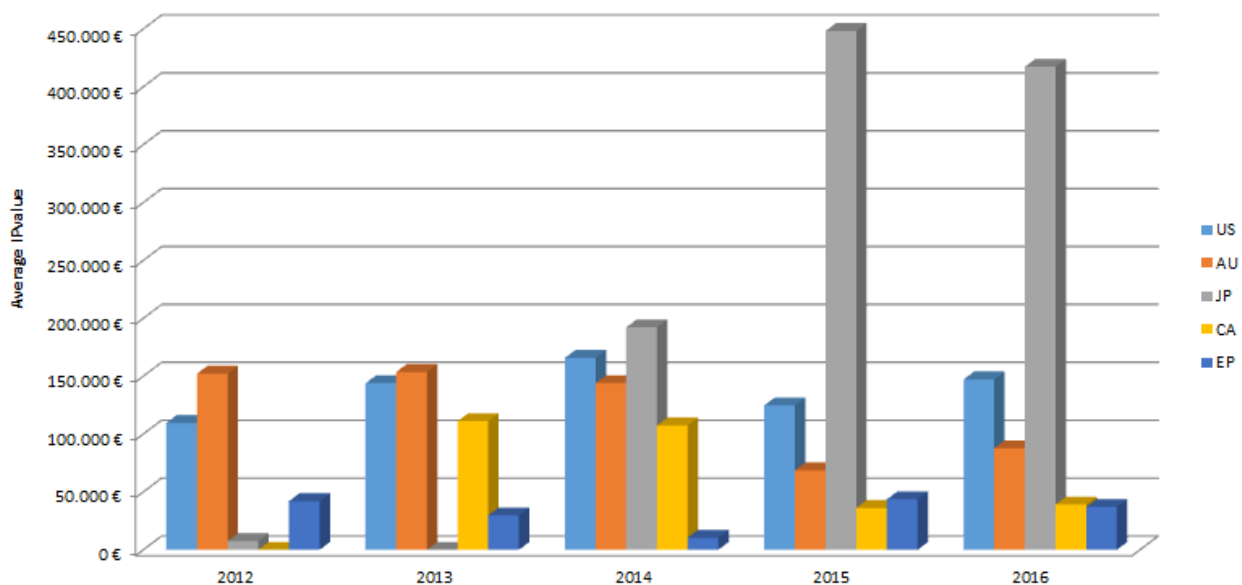


Figure 7: Average IP value per patent in certain regions of PayPal Inc. - years 2012-2016

The mean IP value of a patent strongly increased for Japan while Canada and Australia is underperforming.

For each sector the following companies have the highest IP value:

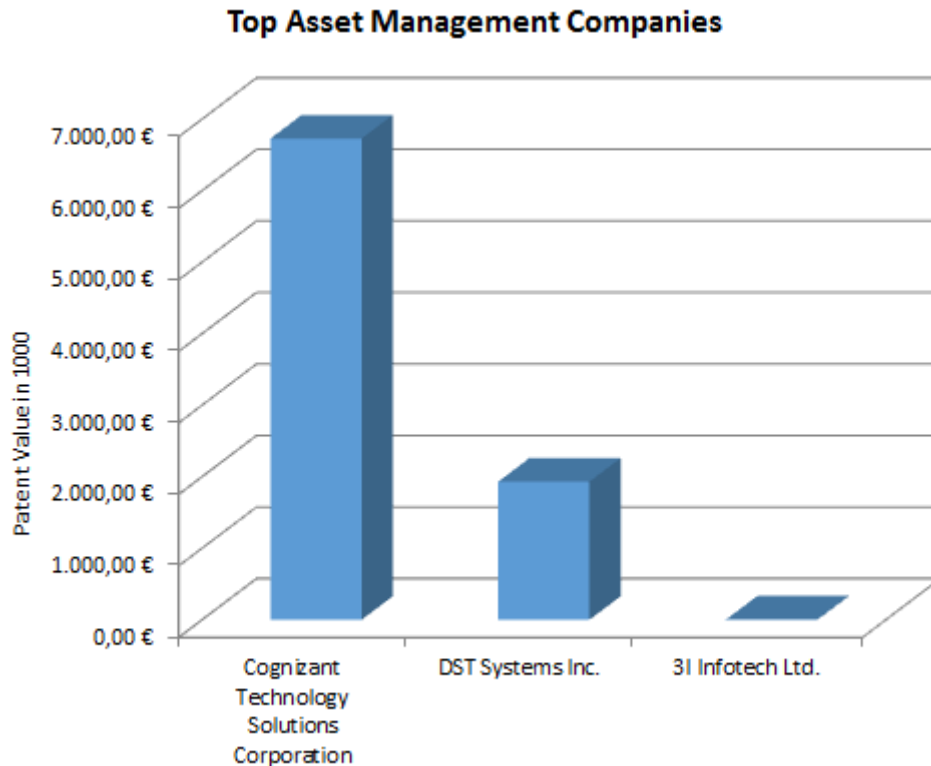


Figure 8: Top Asset Management Companies by IP value, 2016

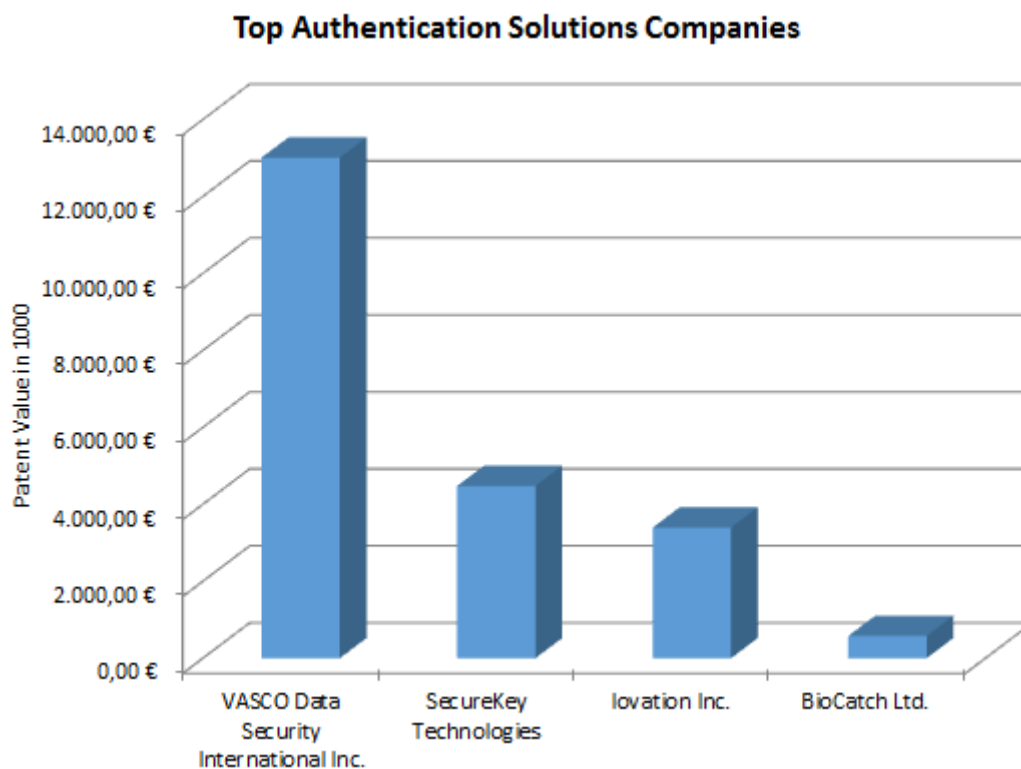


Figure 9: Top Authentication Solutions Companies by IP value, 2016

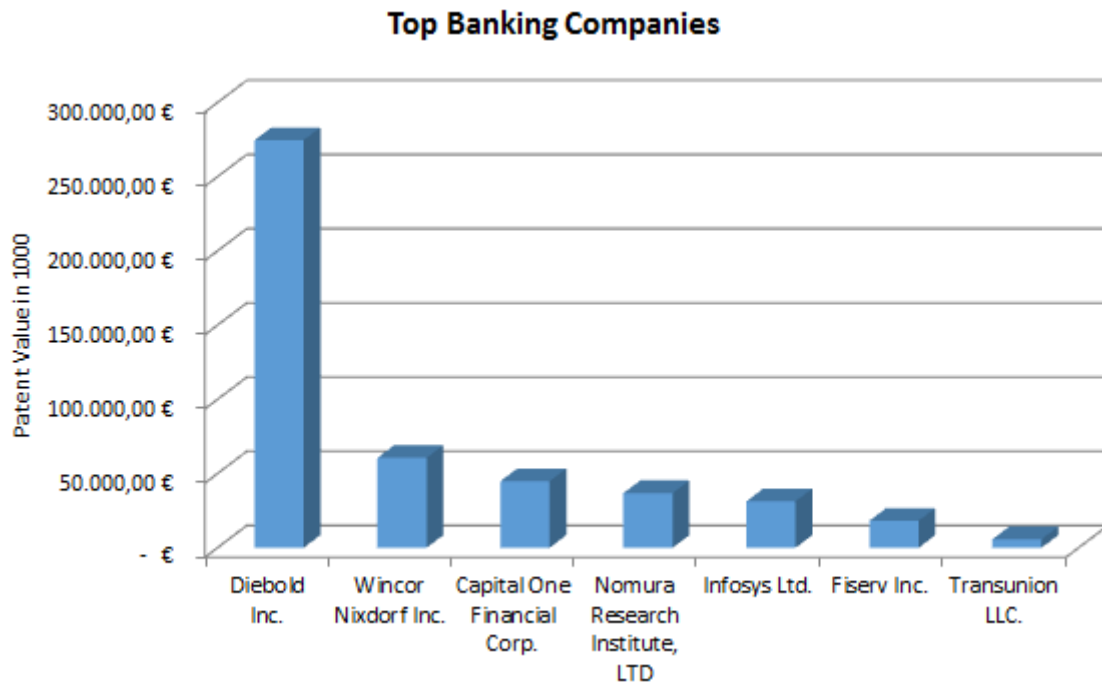


Figure 10: Top Banking Companies by IP value, 2016.

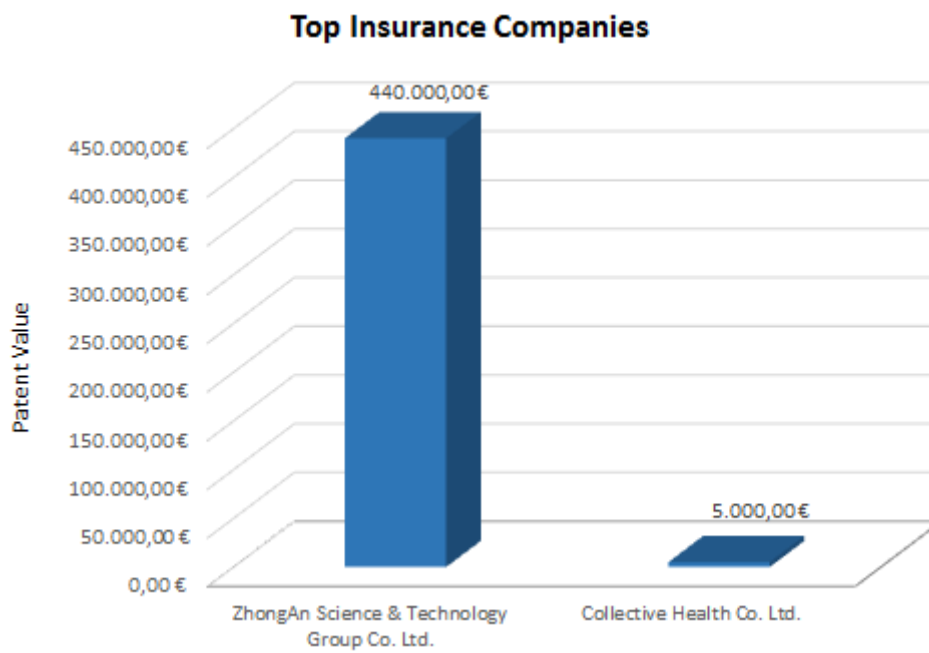


Figure 11: Top Insurance Companies by IP value, 2016.

Top Investment Software Companies

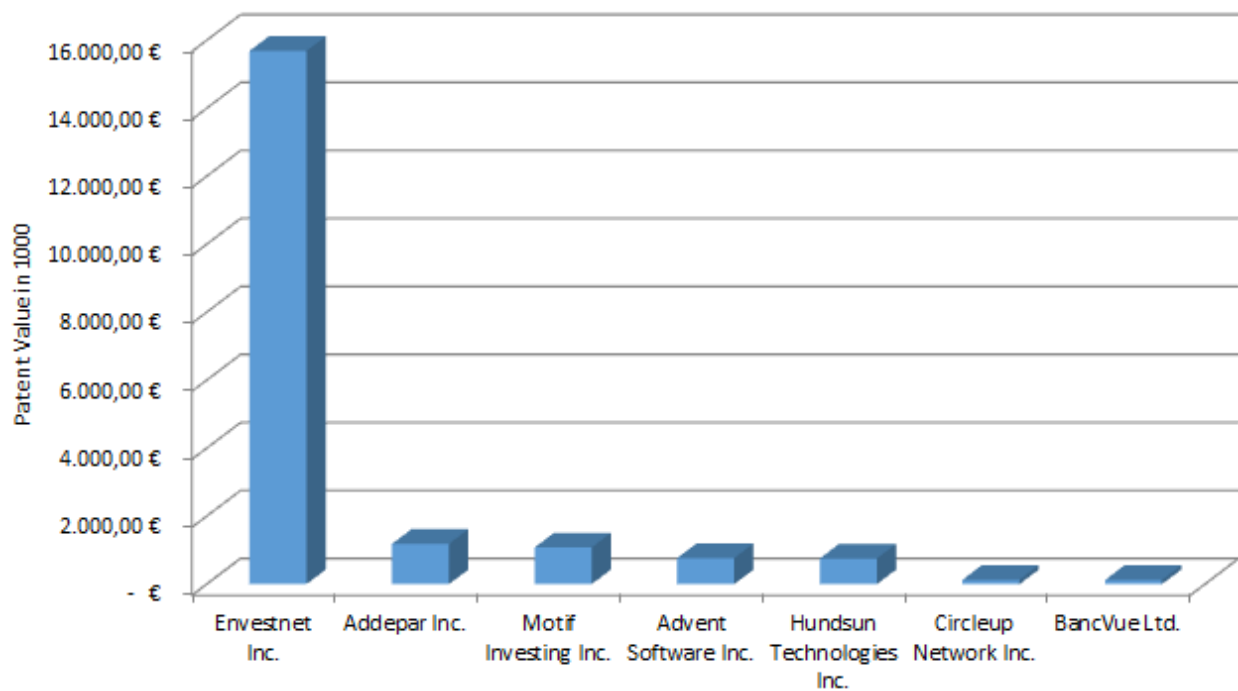


Figure 12: Top Investment Software Companies by IP value, 2016.

Top Lending Companies

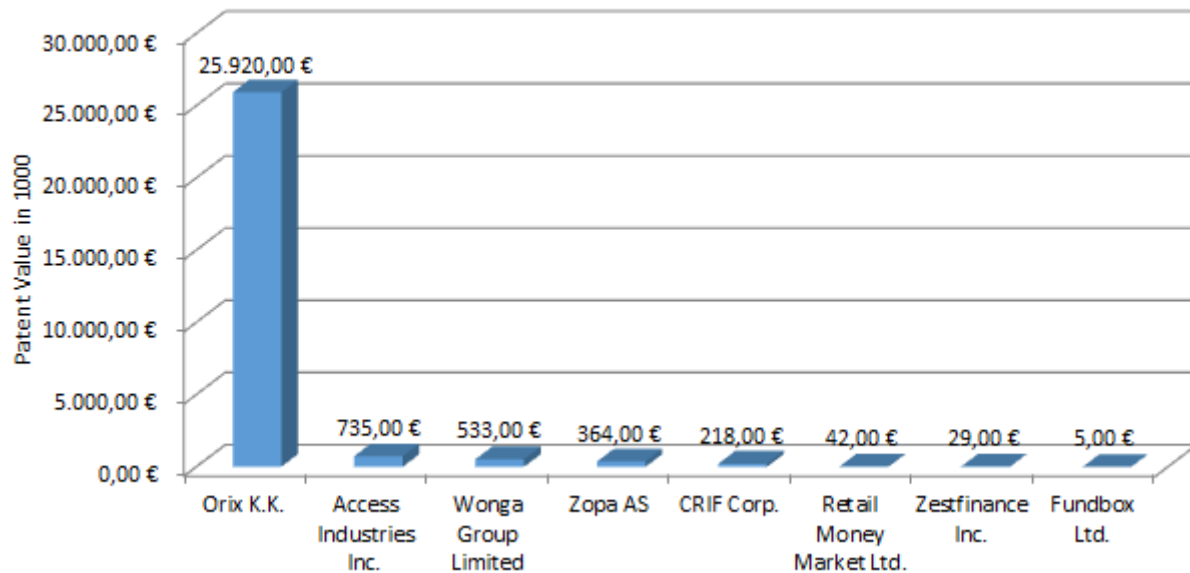


Figure 13: Top Lending Companies by IP value, 2016.

Top Payment Companies

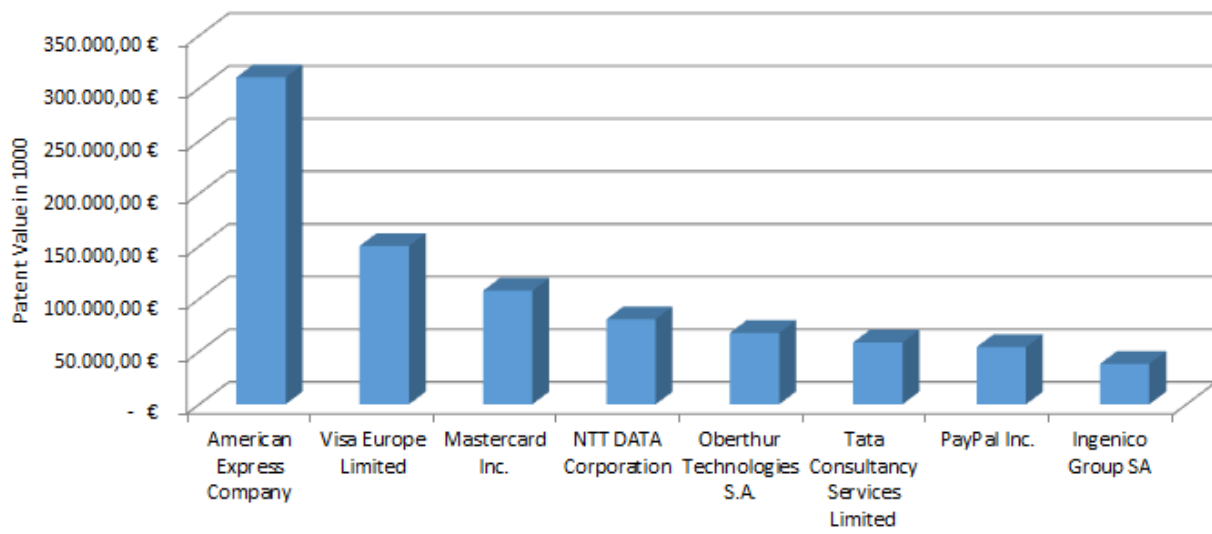


Figure 14: Top Payment Companies by IP value, 2016

Top Real Estate Companies

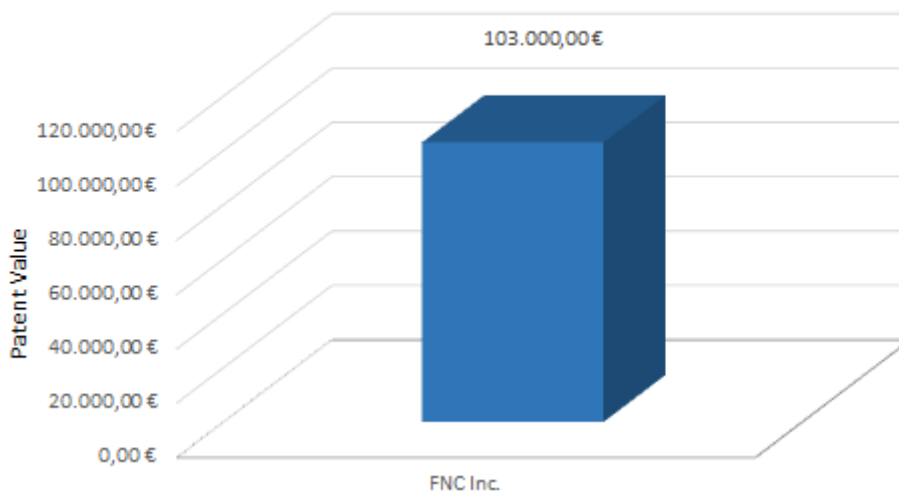


Figure 15: Top Real Estate Companies by IP value, 2016

Top Risk Management Companies

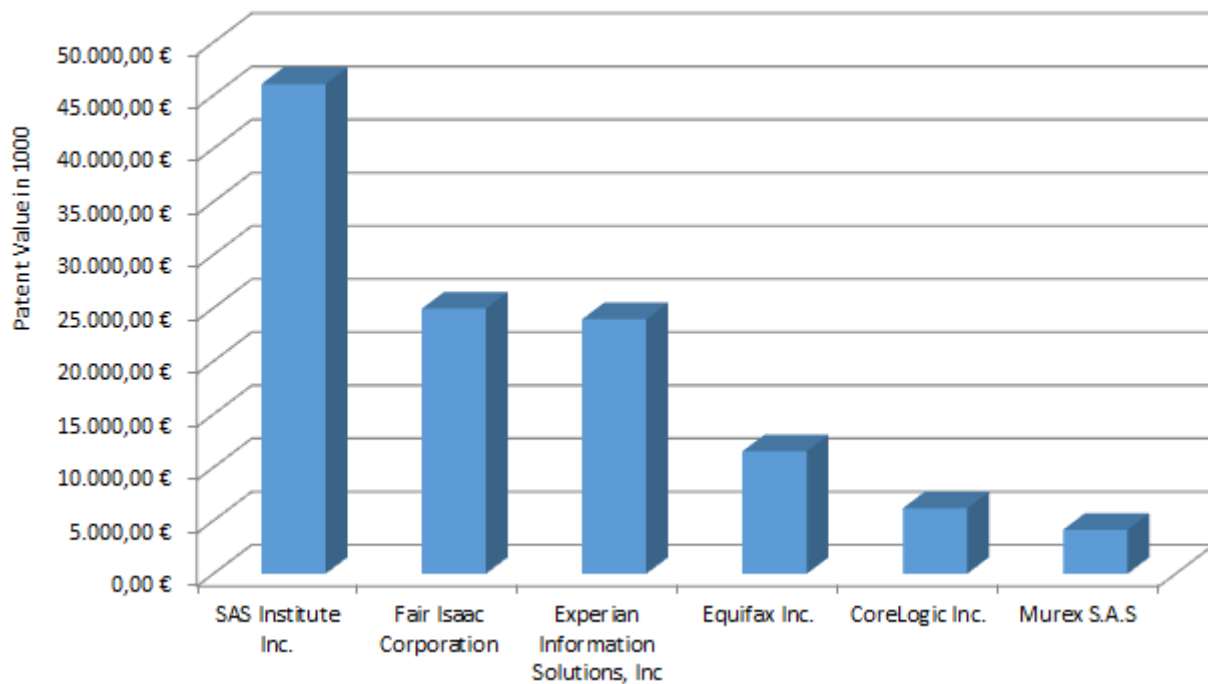


Figure 16: Top Risk Management Companies by IP value, 2016

Top Transactions Companies

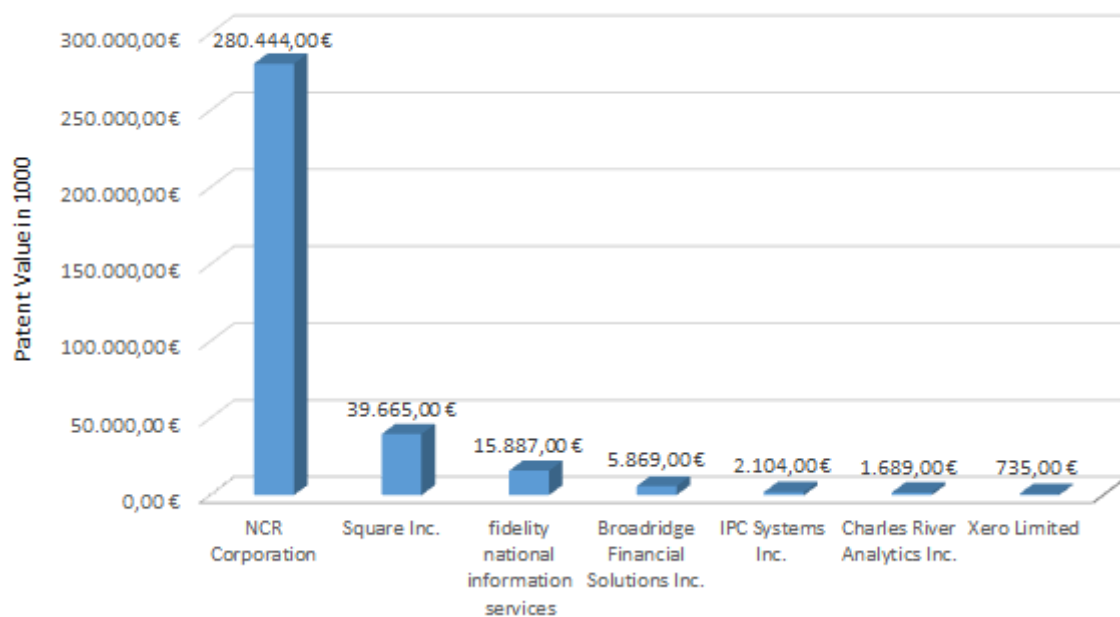


Figure 17: Top Transactions Companies by IP value, 2016

Conclusion

The analysis of Fintech companies shows that actual the most companies have quite low intangible assets in patents and utility models. But some of the analyzed companies are growing very fast in terms of amount on patents and IPvalue and must kept in the watch-list of investors, in order to monitor their future development.

American Express for example increased their IP value to 300% in 5 years (from 2011-2016), the amount on patents increased only for 50%. This means that many patent applications have now the status of being granted by covering the most important markets worldwide. On the other hand this is baleful for small fintech companies who do not have own patents on their technology. The threats are for those small companies is, that although they were growing and generating revenues, one day they may have to pay a big share from their profits on licensing fees for using the IP of a 3rd party.

For investors and fund managers the opportunity is, to identify interesting companies, having high hidden intangible assets. These types of companies are mainly mid caps, like **Square Inc.** They have increased the amount on patents in 3 years (2013 to 2016) to 700% (49 to 359) and the IPvalue increased to 4,000% (993 K€ to 39,665 K€). In the balance sheet of Square Inc. they claim in Dec. 2015 24,5 m€ on fixed intangible assets², but in real they have much more, this means that they are undervalued and a very good long-term trade.

About the Author



Prof. Dipl.-Ing. Andreas Zagos is founder and management Partner of the Stuttgart based InTraCoM GmbH (Germany) and internationally recognized patent valuation expert. He was participating in the first standard for patent valuation and is doing research in patent valuation for more than 16 years. He is guest professor at the Technical University of Cluj-Napoca in the field of innovation management.

InTraCoM GmbH is a patent valuation boutique with a long list of patent valuation customers. InTraCoM GmbH is performing patent valuations for M&A, patent transactions, licensing value determination, internal balancing purposes, sale and lease back, transfer pricing and many more valuation scopes. Their customers are international big blue chip companies, asset management, governmentals, banks, institutionals, SMEs as well as big research organisations.

InTraCoM Group is supported by different international partners offering patent valuation -specific data and business information. Within these partnerships also software and patent valuation-specific data can be offered based on the InTraCoM-patent valuation methodology. With all these approaches, patent values can be determined within unbeatable precision, time and cost.

² Excluding good will, but including patents, utility models, trademarks, designs, copyright etc.

Appendix A – List of all analyzed companies

- | | |
|--|--|
| 1. 21 Inc. \ 21E6 (formerly) | 41. Colu Technologies Ltd. |
| 2. 3I Infotech Ltd. | 42. CommonBond LLC |
| 3. Access Industries Inc. | 43. Computer Services Inc. |
| 4. ACI Worldwide Inc. | 44. CoreLogic Inc. |
| 5. Acorns Grow Incorporated | 45. Coverfox Insurance Broking Pvt. Ltd. |
| 6. Addepar Inc. | 46. CPI Card Group Inc. |
| 7. Advent Software Inc. | 47. Crealogix Holding AG |
| 8. Adyen B.V. | 48. Credit Karma Inc. |
| 9. Affirm Inc. | 49. Credorax Limited |
| 10. Alecto GmbH | 50. CRIF Corp. |
| 11. Algomi Limited | 51. Crowdcube Capital Ltd. |
| 12. Alphasense | 52. Currency One SA |
| 13. American Express | 53. Diebold Inc. |
| 14. AngelList LLC | 54. digital reasoning |
| 15. ArcaTech Systems LLC | 55. Discover Financial Service |
| 16. ARGO Data Resource Corp. | 56. DST Systems Inc. |
| 17. Avant Inc. \ AvantCredit (formerly) | 57. Duedil Limited |
| 18. Avoka Technologies Pty. Ltd. | 58. Ebury Partners Ltd. |
| 19. Backbase B.V. | 59. Elliptic Enterprises Limited |
| 20. BancVue Ltd. | 60. Ensygnia Ltd. |
| 21. Beijing Le Rong Huo Yuan Information Technology Co. Ltd. | 61. Envestnet, Inc |
| 22. Beijing Wecash Wonder Technology Co. Ltd. | 62. Equidate Inc. |
| 23. Betterment LLC | 63. Equifax Inc. |
| 24. Bill.com | 64. Equitise Pty Ltd. |
| 25. BioCatch Ltd. | 65. Estimote Inc. |
| 26. Black Knight Holding Company LLC | 66. eToro Group Ltd. |
| 27. Blockchain Ltd. | 67. Experian |
| 28. Bottomline Technologies DE Inc. | 68. Fair Isaac Corporation |
| 29. braintree | 69. Fastacash Pte. Ltd. |
| 30. broadridge financial solutions Inc. | 70. Fenergo IP Limited |
| 31. Capital One Financial | 71. fidelity national information services |
| 32. Cards Prepaid Limited | 72. Fidessa Group PLC |
| 33. Charles River Analytics Inc. | 73. Fidor Bank AG |
| 34. CinchKey Inc. \ Credithood (formerly) | 74. Finacelt Canada Inc. |
| 35. Cinnober Financial Technology Aktienbolag | 75. Financial Technologies Limitd |
| 36. Circleup Network Inc. | 76. Fiserv Inc. |
| 37. Cognizant Technology Solutions Corporation | 77. Flint Mobile Inc. |
| 38. Coinbase Inc. | 78. FNC Inc. |
| 39. Coinify ApS | 79. fundbox |
| 40. Collective Health Co. Ltd. | 80. Funding Circle Ltd. |
| | 81. Genpact Limited |

- | | |
|---|---|
| 82. GFT Technologies SE | 126. Nutmeg Saving and Investment Limited |
| 83. GoCardless Ltd. | 127. Oberthur Technologies |
| 84. GoHenry Limited | 128. OnDeck Capital Inc. |
| 85. Harland Clarke Corp | 129. Orange Money Ezbob Israel Ltd. |
| 86. hellowallet | 130. Orchard Platform Advisors LLC |
| 87. Hexaware Technologies Ltd. | 131. Orix |
| 88. Hundsun Technologies Inc. | 132. Oscar Insurance Corporation |
| 89. IEX Group Inc. | 133. Osper Ltd. |
| 90. Infosys Ltd. | 134. OurCrowd Ltd. |
| 91. Ingenico Group SA | 135. PayPal |
| 92. Interactive Data Corp. | 136. PayRange Inc. |
| 93. Iovation Inc. | 137. Pegasystems Inc. |
| 94. IPC Systems Inc. | 138. Personal Capital Corporation |
| 95. Ironbark Investment Partners Pty Limited. | 139. Personetics Technologies Ltd. |
| 96. IT Sector Group | 140. Plaid Technologies Inc. |
| 97. Iwoca Ltd. | 141. Polaris Consulting & Services Limited |
| 98. iZettle AB | 142. Policybazaar.com |
| 99. Kabbage Inc. | 143. Pollen Inc. |
| 100. Klarna AB | 144. Powa Technologies Limited |
| 101. Knip GmbH | 145. PromisePay Pty Ltd. |
| 102. Kreditech Holding SSL GmbH | 146. Prospa Group Pty Ltd. |
| 103. Leadfusion Inc. | 147. Prosper Marketplace Inc. |
| 104. LearnVest Inc. | 148. q2 holdings |
| 105. LendingClub Corporation | 149. Qumram AG |
| 106. Lendinvest Limited | 150. Renren Limited |
| 107. London House Exchange Limited | 151. Retail Money Market Ltd. |
| 108. MarketInvoice Limited | 152. Revolut Limited |
| 109. Mastercard Inc. | 153. Ripple Inc. |
| 110. Meniga Ltd. | 154. Robinhood Markets Inc. |
| 111. Metamako Technologies LP | 155. Rong360.com Inc. |
| 112. Misys Ireland Limited | 156. SAS Institute Inc. |
| 113. moody's corporation | 157. SecureKey Technologies |
| 114. Motif Investing Inc. | 158. Seedrs Limited |
| 115. Moula Money Pty Ltd. | 159. Shanghai Lujiazui International Financial
Asset Exchange Co. Ltd. |
| 116. Mozido LLC | 160. Shenzhen FANGDD Internet Technology
Co.,Ltd. |
| 117. Mphasis Limited | 161. Shenzhen Fenqile Network Technology Co.
Ltd. |
| 118. Murex S.A.S | 162. simplexCC |
| 119. MyMicroInvest Finance SA | 163. Simply Wall Street Pty Ltd. |
| 120. Ncino LLC | 164. SlimPay S.A. |
| 121. NCR Corporation | 165. Social Finance Inc. |
| 122. Nomura Research Institute, LTD | 166. Square Inc. |
| 123. ntt data | 167. Stockpile Inc. |
| 124. Number26 GmbH | 168. Stockspot Pty. Ltd. |
| 125. Numoni Pte. Ltd. | |

169. Stripe Inc.
170. SunGard Financial Systems (France)
171. SyndicateRoom Ltd.
172. Syntel Inc.
173. tata consultancy services limited
174. The Currency Cloud Group Limited
175. thomson reuters markets llc
176. Total System Services Inc.
177. TraitPerception Inc.
178. Transcentra Inc.
179. TransferWise Ltd. \ Exchange Solutions Ltd.
(formerly)
180. Transunion
181. TrueAccord Corp.
182. Trulioo Information Services Inc.
183. VASCO Data Security International Inc.
184. VFinance Technologies Ltd.
185. Viewpointe Archive Services LLC
186. Virtusa Corporation
187. Visa (CL Visa Europe Limited)
188. VivaReal Inc.
189. WAUSAU Financial Systems Inc.
190. Wealthfront inc.
191. Web Loans Ltd.
192. Wepay Inc.
193. Wincor Nixdorf Inc.
194. Wolters Kluwer Financial Services
195. Wonga Group Limited
196. WorldRemit Ltd.
197. Xero Limited
198. Xignite Inc.
199. Yoyo Company
200. zestfinance inc
201. ZhongAn Science & Technology Group Co.
Ltd.
202. Zopa AS
203. Zuora Inc.