Data Science

Our study of leading banks in the US suggests the Fintech revolution - a dramatic upheaval

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"Banks need FinTech and FinTech need banks" Hugues Delcourt

Fintech has been reshaped in recent years with a value of over US$100 billion from 2010. Fintech has seen as a key driver of growth with a powerful blend of many technological minds in the business. With the growth of investment in fintech technologies, traditional banking has shaken up and banking sectors are finding ways to implement fintech into the existing ecosystem to provide a seamless digital platform. Driving towards fiintech's will help banks implement innovative technologies at reduced cost and strengthening the customer base.

The documentation of this report unleashes the potential of fintech by observing the job posting giving the bigger picture of the latest hiring trends of the leading banking companies in the USA.
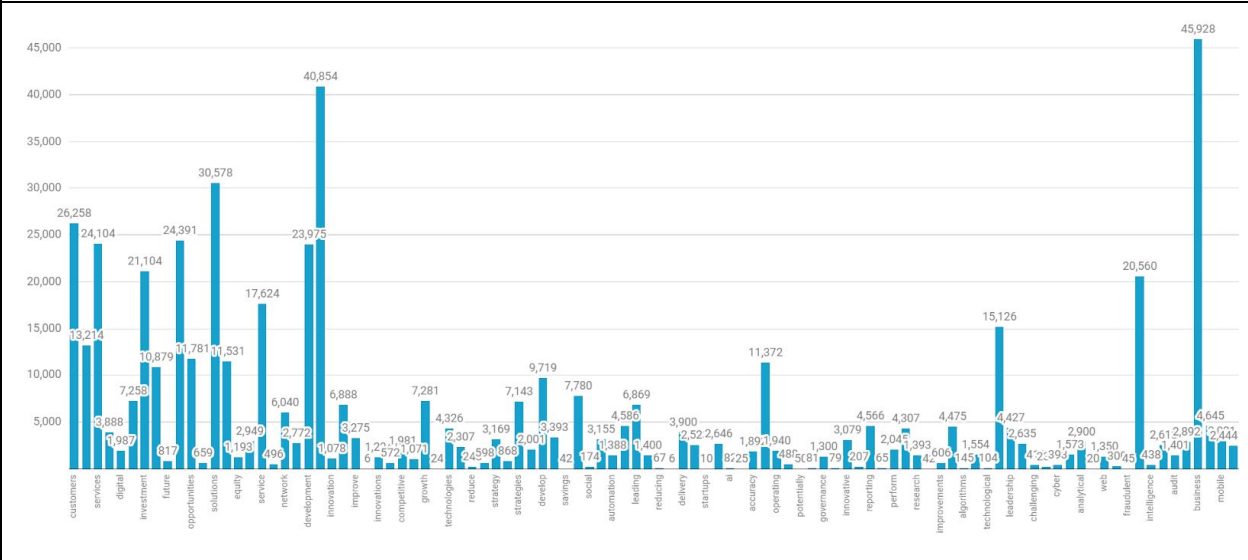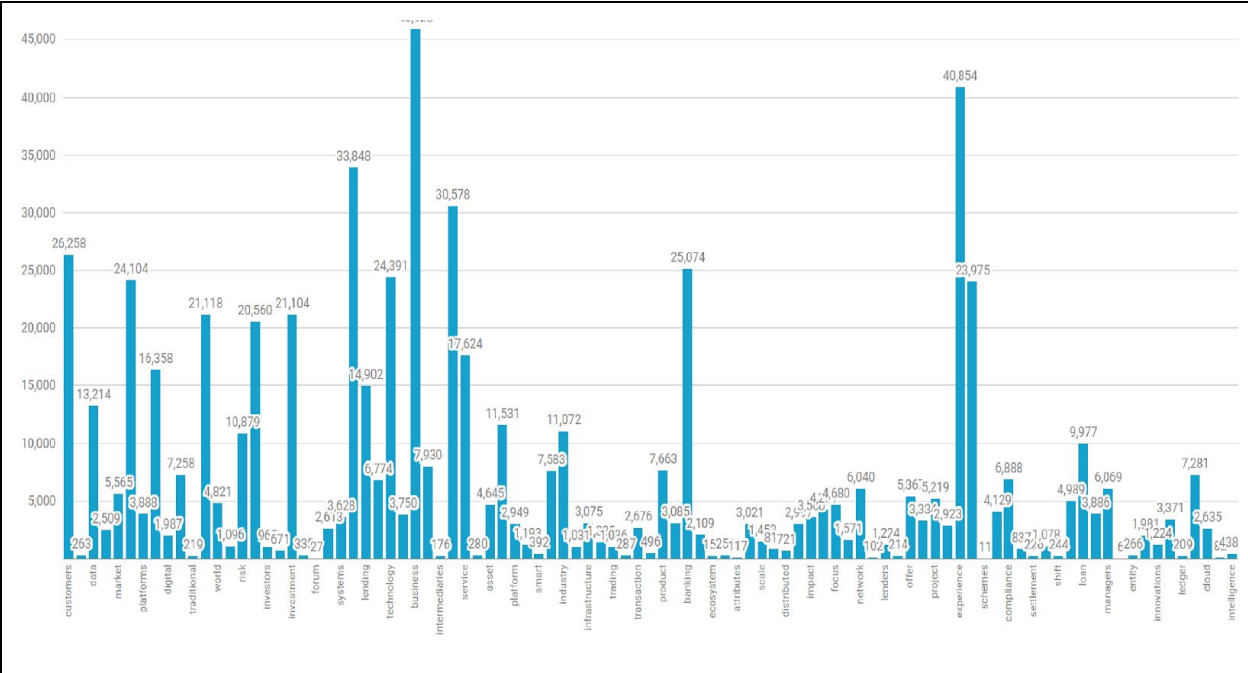
Shift Towards Fintech

In this report, we explore the trends and pattern in fintech which financial companies are using to perish the business. The below parameters were taken into consideration:
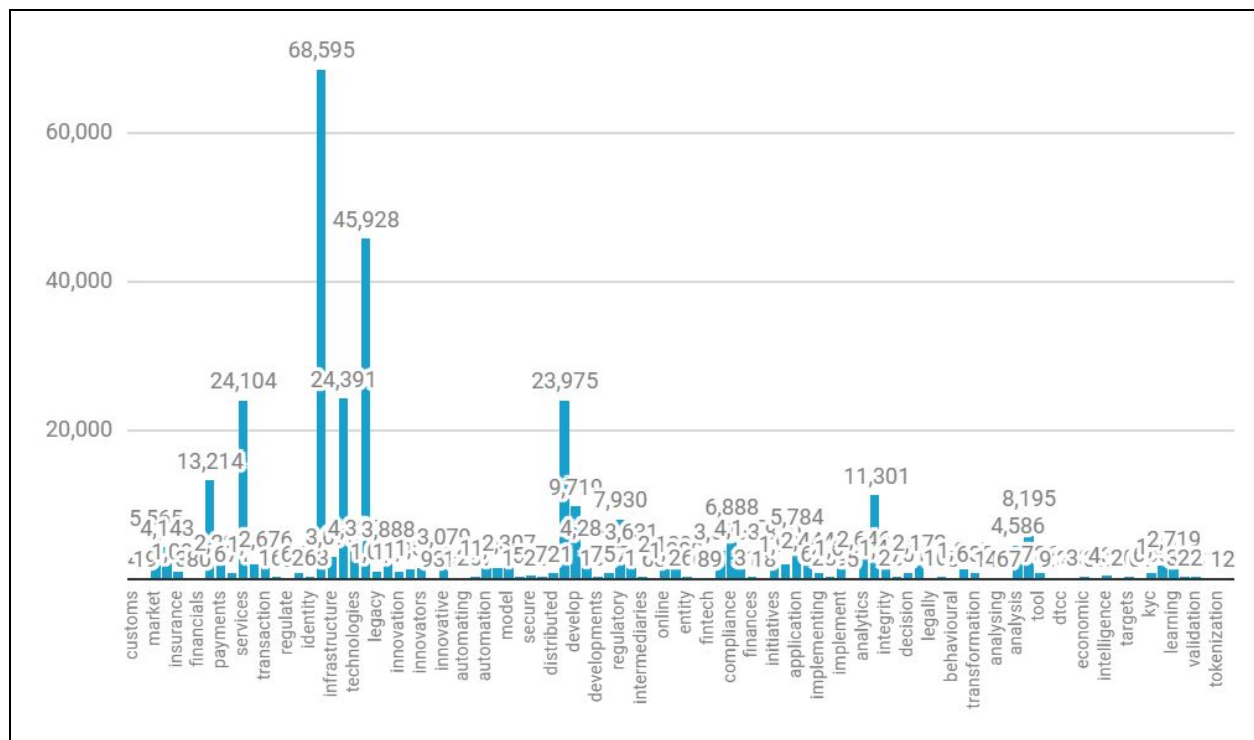
- Analyzed four research paper on 'Future in financial services and digital industry' to get the keywords in fintech
- Scraped a total of 13,598 jobs posting in JP Morgan Chase and Bank of America from the company's career site to compare with keywords in fintech research paper

There has been a drawback in the approach as the primary data of job posting considered were dated from 6 months.

The research paper keyword extraction was done using the below rules and algorithm considering word count, TF/IDF and Text rank, an insight to which are below.

- Wordcount: The occurrence of words in the fintech research papers giving a glance of the most repeated technological/business buzzwords in fintech.
- TF/IDF: A frequency-inverse document frequency and a text mining algorithm. It weighs the statistical measure, in turn, evaluating the importance of a word in a collection or corpus
- Text Rank: A process of generating a concise and meaningful summary of text from multiple text resources. Here we have research papers as the primary source of text.

Chart 1 (word frequencies):

customers 26,258; data 13,214; 263; market 2,509; 5,565; platforms 24,104; digital 3,888; 16,358; 1,987; traditional 7,258; 219; world 21,118; risk 4,821; 1,096; 10,879; investors 20,560; 965; 671; investment 21,104; 335; 27; forum 2,613; systems 33,848; lending 3,628; 14,902; technology 6,774; 24,391; 3,750; business 7,930; 46,... ; intermediaries 176; 30,578; service 17,624; 280; asset 4,645; platform 11,531; smart 2,949; 1,193; 392; industry 7,583; infrastructure 11,072; 1,031; 1,236; trading 3,075; transaction 287; 2,676; 496; product 7,663; banking 3,085; 25,074; ecosystem 2,109; attributes 152; 5; 117; scale 3,021; distributed 1,452; impact 2,9..; 81; 721; focus 3,4..; 2,300; network 4,680; 6,040; lenders 1,570; 102; offer 1,224; 214; project 5,365; 5,219; experience 3,333; 2,923; 40,854; schemes 23,975; compliance 11; 6,888; settlement 4,129; 832; 1,078; shift 220; 244; loan 4,989; 9,977; managers 3,886; 6,069; entity 6; 266; innovations 1,981; 1,224; ledger 209; 3,371; cloud 7,281; 2,635; intelligence 8; 438

Chart 2 (word frequencies):

customers 26,258; 13,214; services 24,104; 3,888; digital 1,987; 7,258; investment 21,104; 10,879; future 817; opportunities 24,391; 11,781; solutions 30,578; 11,531; 659; equity 2,949; 1,193; service 17,624; 496; network 6,040; 2,772; development 23,975; 1,078; innovation 40,854; 6,888; improve 3,275; 6..; innovations 1,22..; 572; competitive 1,981; 1,071; growth 7,281; 24; technologies 4,326; 2,307; reduce 245; 598; strategy 3,169; 868; strategies 7,143; 2,001; develop 9,719; 3,393; savings 7,780; 42; social 3,155; 174; automation 4,586; 1,388; leading 6,869; 1,400; reducing 67; delivery 3,900; 6; 2,52; startups 2,646; ai 10; 8,725; accuracy 11,372; operating 1,89; 1,940; 485; potentially 81; governance 1,300; 79; innovative 3,079; 207; reporting 4,566; 65; perform 2,045; 4,307; research 1,393; 42; improvements 4,475; 606; algorithms 1,554; 145; technological 15,126; 104; leadership 4,427; 2,635; challenging 42; 393; cyber 4; analytical 2,900; 1,573; web 20; 1,350; fraudulent 20,560; 30; 45; intelligence 2,61; 438; audit 2,892; 1,401; business 45,928; 4,645; mobile 2,... ; 2,444
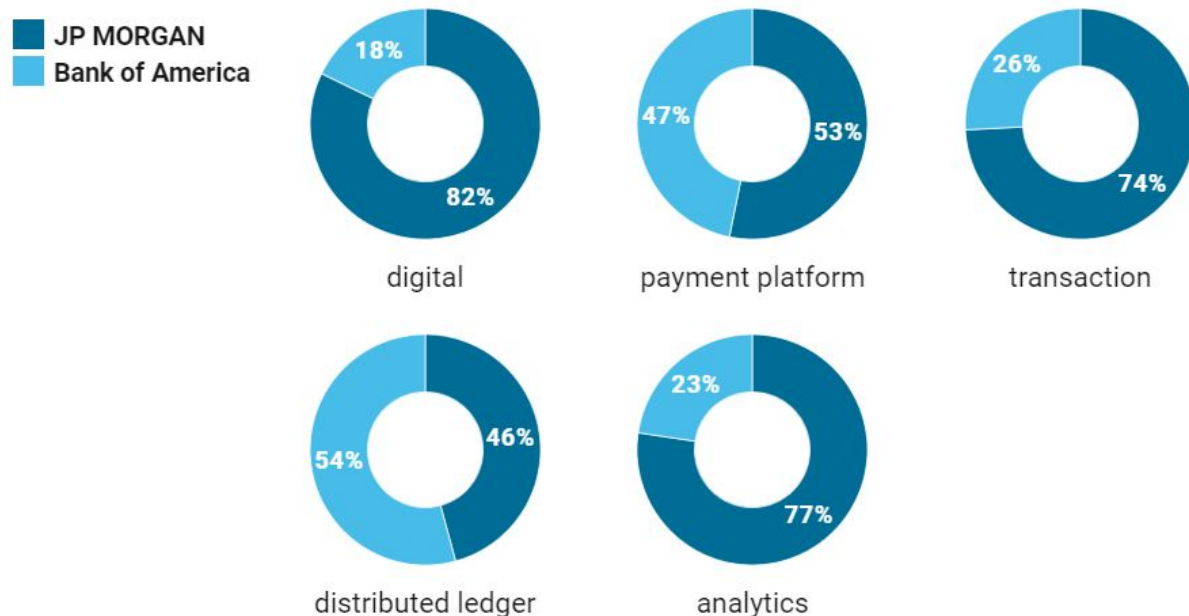
Through this analysis, we found interesting observations of how fintech verticals are being blended with the financial companies to provide a perfect mix of technological advancement and customer satisfaction.

The keyword extraction was categorized majorly into fields of Data analytics, Artificial intelligence, the blockchain, digital. The companies are also collaborating with the start-ups in fintech to accommodate the latest development replacing traditional methods of banking.

Fintech Functionalities In Banking Ecosystem

Studying the data, we were able to draw insights on various fintech functionalities that has been repeatedly used in the hiring trends of JP Morgan and Bank of America. We found that JP Morgan is working more on digital platforms and analytics, whereas Bank of America is inclined towards Payment Platforms and distributed ledger.

Fintech Functionalities In Banking Ecosystem

JP MORGAN
Bank of America

digital — JP Morgan 82%, Bank of America 18%

payment platform — JP Morgan 53%, Bank of America 47%

transaction — JP Morgan 74%, Bank of America 26%

distributed ledger — JP Morgan 46%, Bank of America 54%

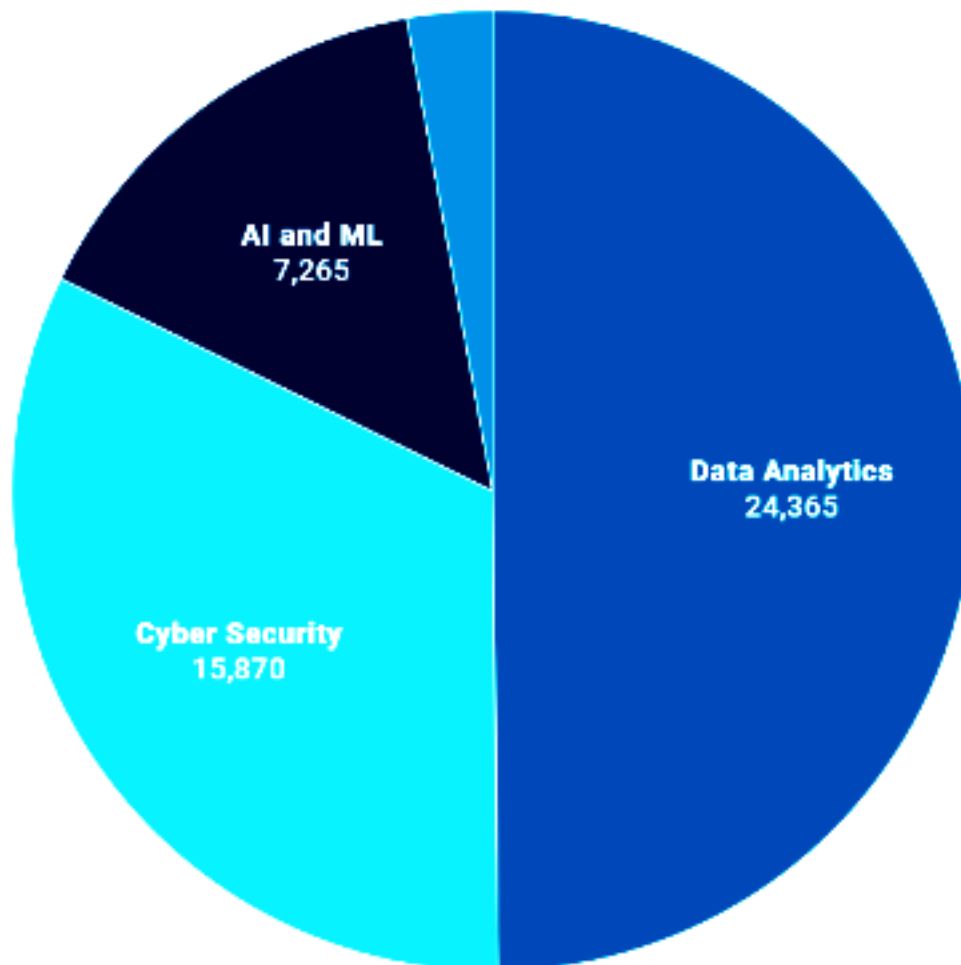analytics — JP Morgan 77%, Bank of America 23%

Fintech Technology Trends

Companies are investing in technology and innovation to accelerate Fintech growth. With a wider resource pool of technical and financial services expertise, we found hiring trends in these major areas of cybersecurity, the blockchain, AI and ML, Data analytics. The companies are prepared to hire experienced personnel in the various domain with the concentration on fintech.

The occurrence of keywords in job postings in JPMorgan and BOA

■ Data Analytics   ■ Cyber Security   ■ AI and ML   ■ Blockchain

AI and ML
7,265

Data Analytics
24,365

Cyber Security
15,870

Fintech Concentration Worldwide

The analysis shows that the fintech opportunities are significantly higher in Europe but countries like USA and India are leading the pack. The analysis is depicted in terms of job postings available in various countries.

Insights Drawn

- Our analysis provides an inclination towards hiring in the field of Data analysis, Artificial Intelligence and CyberSecurity. But there is less hiring in the field of Blockchain.
- Banks are working on improving customer experience by providing secured payment platforms, using ledger distribution to securely record transactions across the globe.
- Our study shows that job requirement in field of FinTech is most in USA, followed by India.

References

TextRank implementation for Python 3. https://pypi.org/project/summa/

TF-IDF implementation for Python. https://github.com/mayank408/TFIDF/