Ocrolus

Future of Lending:
Automation & Document Digitization

Ocrolus helps financial services companies make **high-quality decisions** with **trusted data** and **unparalleled efficiency**.

Quick Facts

- Founded in 2014
- Headquartered in NYC
- Millions of data points validated daily
- 1000+ employees globally
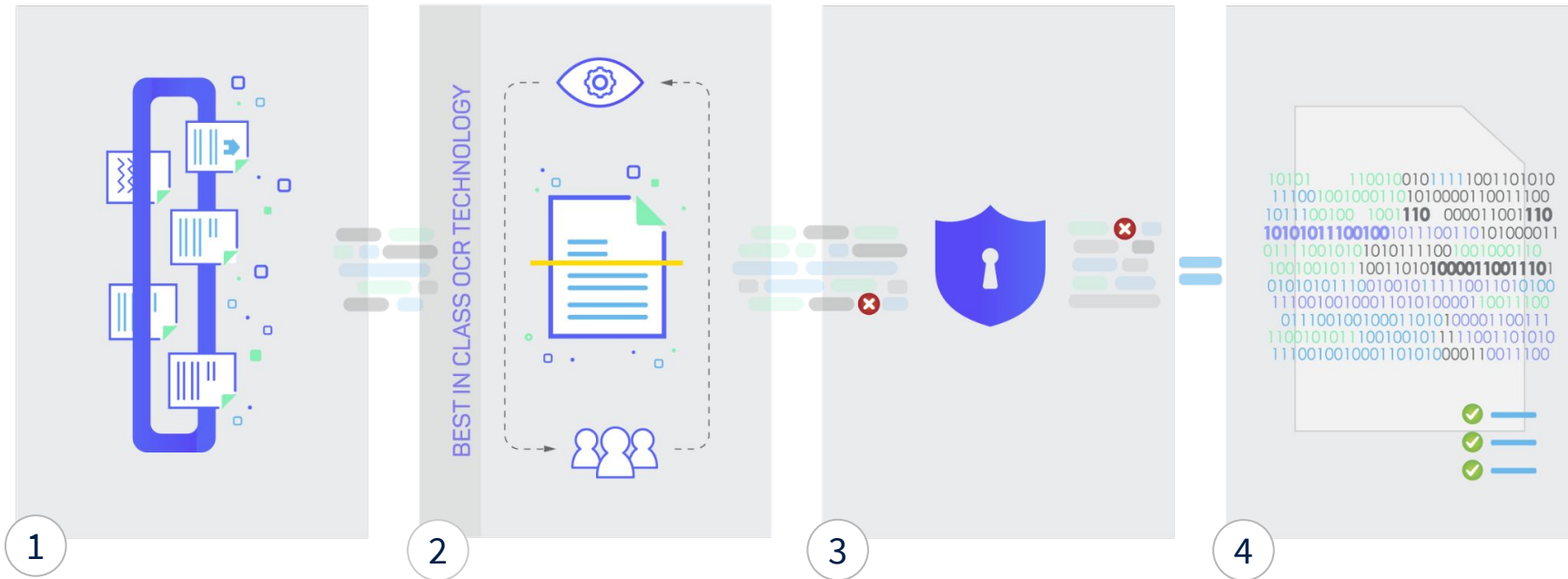- Raised over $100M in venture funding

Who We Work With

BlueVine
Brex
cross river
enova
PLAID
Funding Circle
Sprout Mortgage
SoFi
Square
ICE Mortgage Technology
Reliant Bank
LendingClub

Investors

OAK HC/FT
BULLPEN CAPITAL
FINTECH COLLECTIVE
QED INVESTORS

BEST IN CLASS OCR TECHNOLOGY

1

Classify

Machine learning is employed to auto-classify documents with near-perfect accuracy, with human QC for support and precision.

2

Capture

Ocrolus intelligently selects the extraction/OCR tool which results in the highest raw accuracy. Data is contextualized by models that continuously get smarter, thanks to our human-in-the-loop workflows.

3

Detect

Data is corroborated against other documents and digital data sources. Suspicious and fraudulent activities are flagged.

4

Analyze

Clean, standardized datasets are generated, including analytical insights on cash flows. Ocrolus performs calculations such as income/revenue while enabling lenders to benchmark their data against peers.

1% of Loans Made Online

> *"less than 1% of all loans in the world are made online"* – Ribbit Capital*

Share of the population using the Internet, 1990 to 2018

All individuals who have used the Internet in the last 3 months are counted as Internet users. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc.

Our World in Data

United States

80%

60%

40%

20%

0%

1990   1995   2000   2005   2010   2015   2018
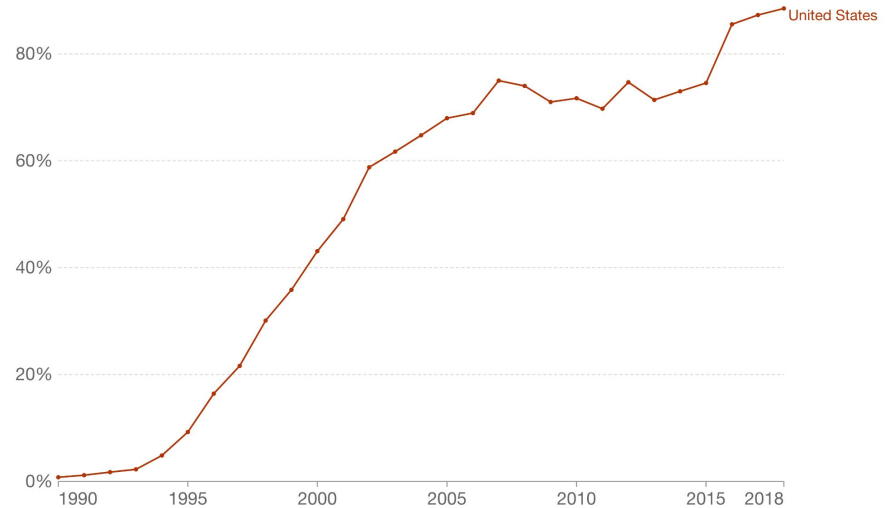
Source: International Telecommunication Union (via World Bank)   OurWorldInData.org/technology-adoption/ • CC BY

- Given how many people spend so much time online, it's surprising that such a small percentage of lending is done online

*https://ribbitcap.com/our-mantra/, pre-pandemic statistic

Plenty of good improvements

- Generally nicer application experience for some loan types (e.g. personal unsecured)

- Mobile accessibility

- New lending products (e.g. BNPL)

- More new entrants = more competition = more choice
  - ➢ More power in the hands of borrowers
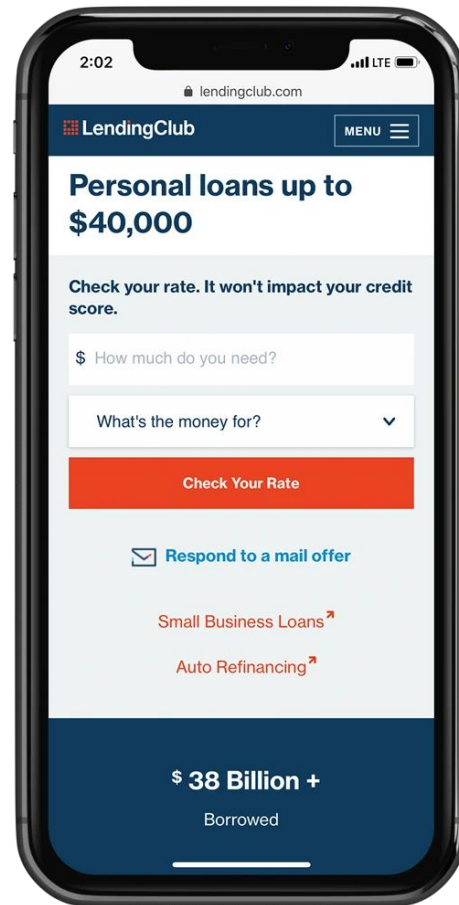
But a long way to go…

- Credit assessment is still too one-size-fits-all

- Larger or secured loans still slow and cumbersome

- Lenders spend tons of time on manual, back-office work

- Scaling volume up/down is operationally painful

% of Mortgage Originations by Credit Score
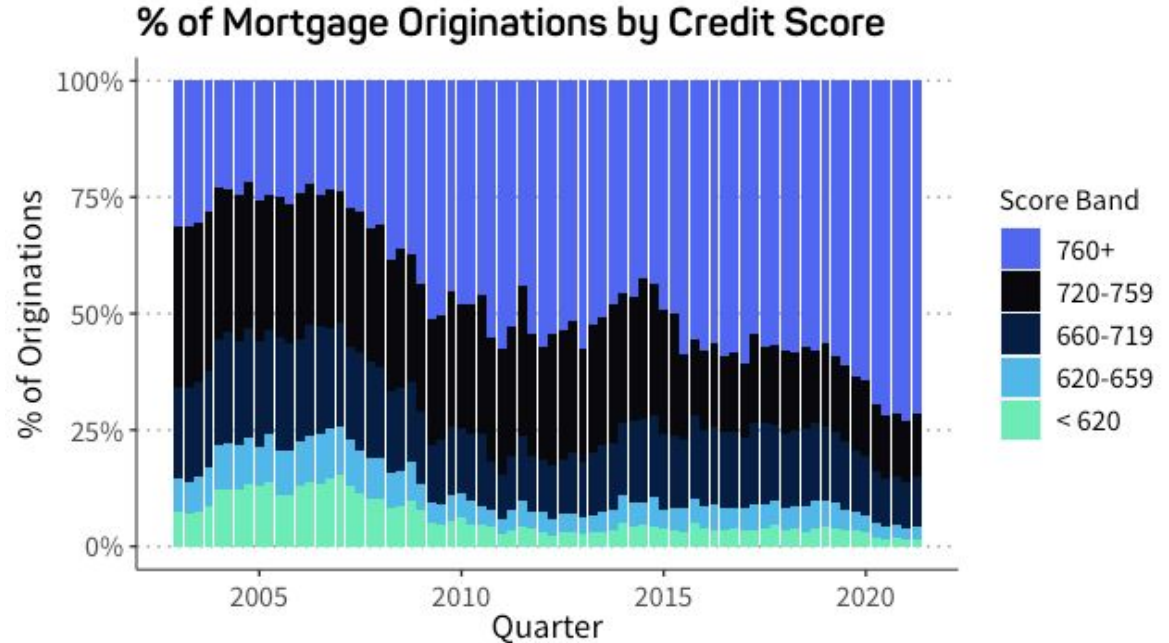
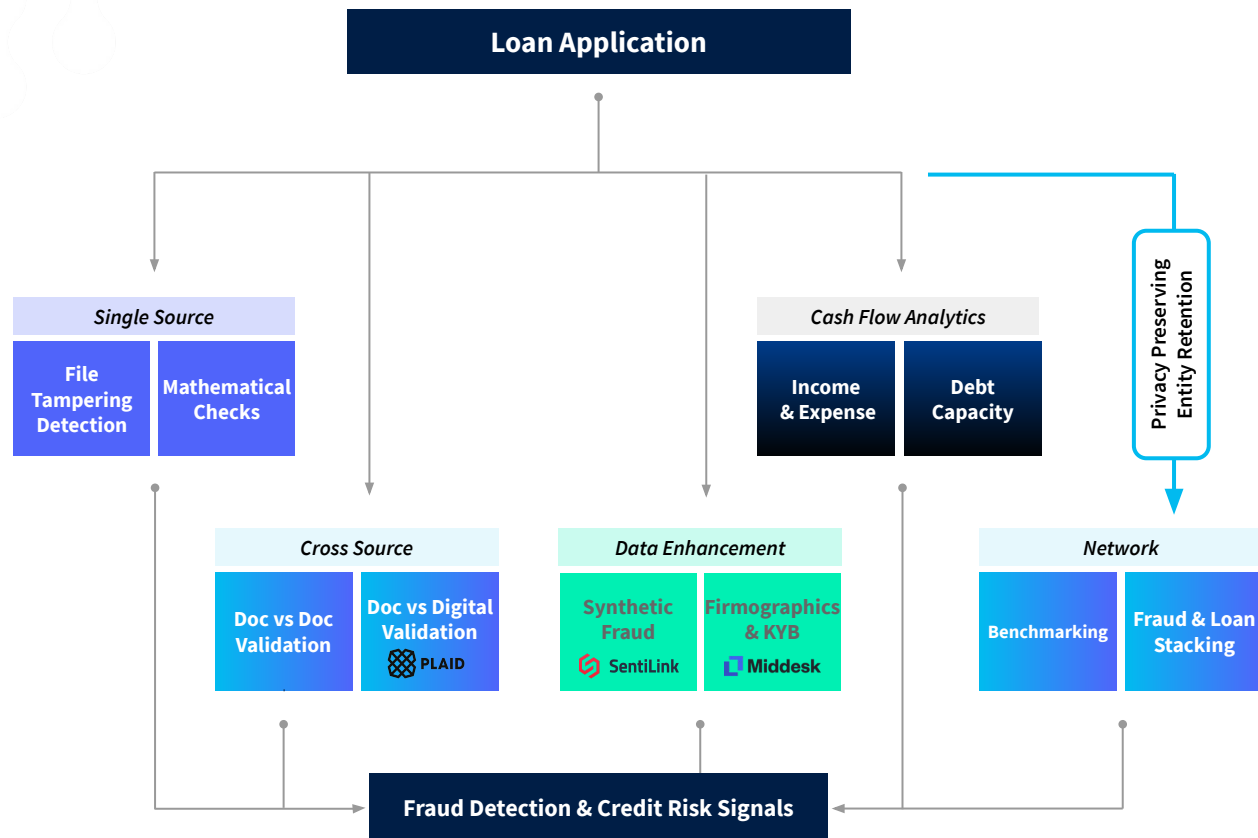Source: New York Fed Consumer Credit Panel/Equifax

Can AI change this?

- Depends what "AI" means....

- Certain approaches to AI can have a major impact
  - Personalized underwriting using cash flow data
  - Blending digital + documents data for unified analysis and smoother customer experience
  - Back-office automation for financial institutions
  - Use of automation to scale up and down rapidly

Credit: Robert Munro, "Human In the Loop ML", Manning pre-publication
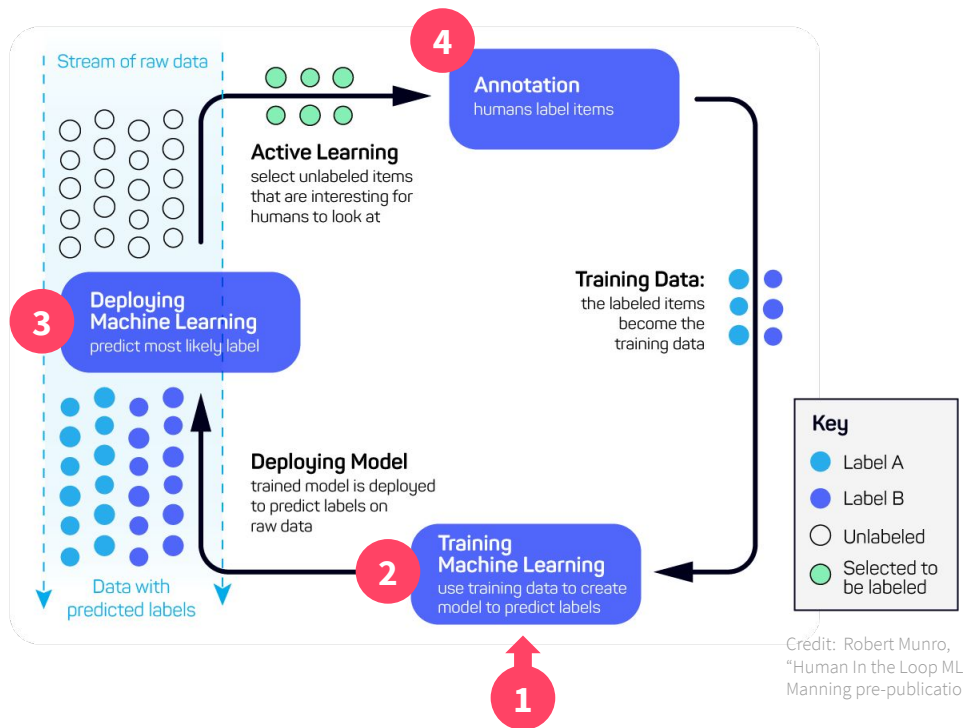
Network Effects

Lenders rely on Ocrolus to precisely understand the financial dynamics that impact loan performance, **driving more accurate risk prediction, better pricing, and higher loan profitability.** Using our data to enhance existing underwriting models, we've demonstrated a 20% lift in predicting default and a 3.5x improvement in ability to detect fraudulent applications.

Loan Application

Single Source
- File Tampering Detection
- Mathematical Checks

Cash Flow Analytics
- Income & Expense
- Debt Capacity

Privacy Preserving Entity Retention

Cross Source
- Doc vs Doc Validation
- Doc vs Digital Validation — PLAID

Data Enhancement
- Synthetic Fraud — SentiLink
- Firmographics & KYB — Middesk

Network
- Benchmarking
- Fraud & Loan Stacking

Fraud Detection & Credit Risk Signals

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10

Completeness

PayPal

PayPal's small business lending division works with Ocrolus to **analyze bank statements and digital banking data with our industry leading cash flow metrics**. Providing a one-stop-shop for all formats of data enables lenders to standardize and enhance their approach to underwriting.
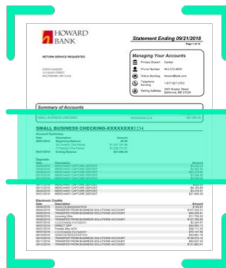
✓ **Bank Statements**

✓ **Bank Data Feeds**

✓ Cash Balance Trends & Ratios

✓ Competition & Debt Capacity

✓ Overdrafts/Non-Sufficient Funds

✓ Suspicious Activity

✓ Cash Flow/Revenue/Income/Expenses

✓ Enriched Transaction Data

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Accuracy

 PLAID

Plaid set out to identify a technology partner to process financial documents of any format or quality with perfect accuracy, and chose **Ocrolus to power document analysis for Plaid Income**. Ocrolus extracts income data from consumer supplied document images, and Plaid verifies the income by identifying matching transactions in digital bank account data.
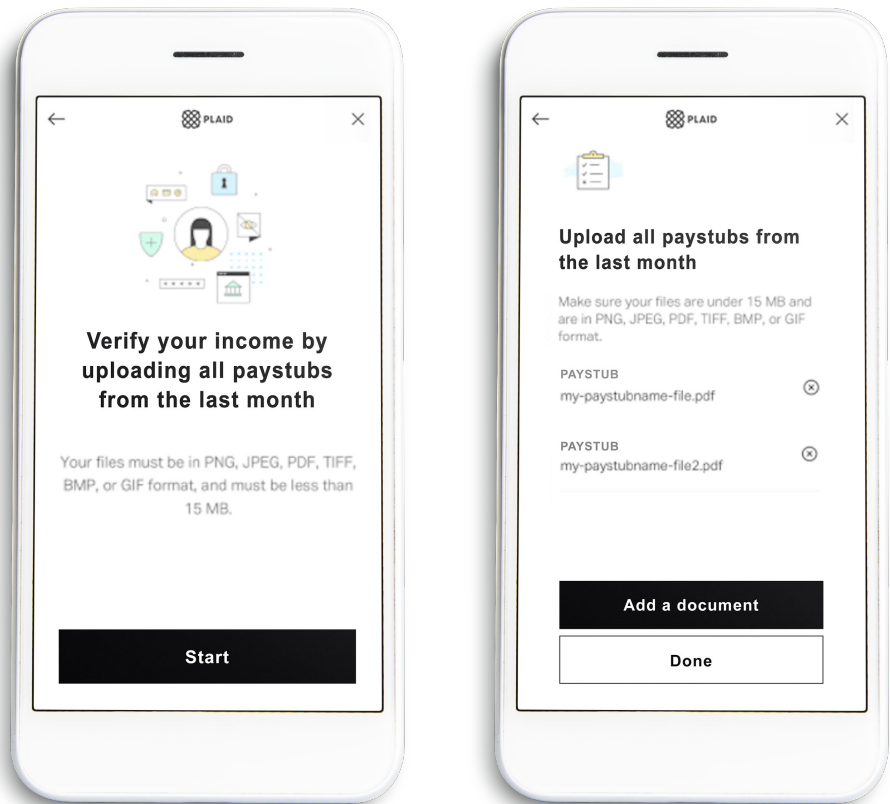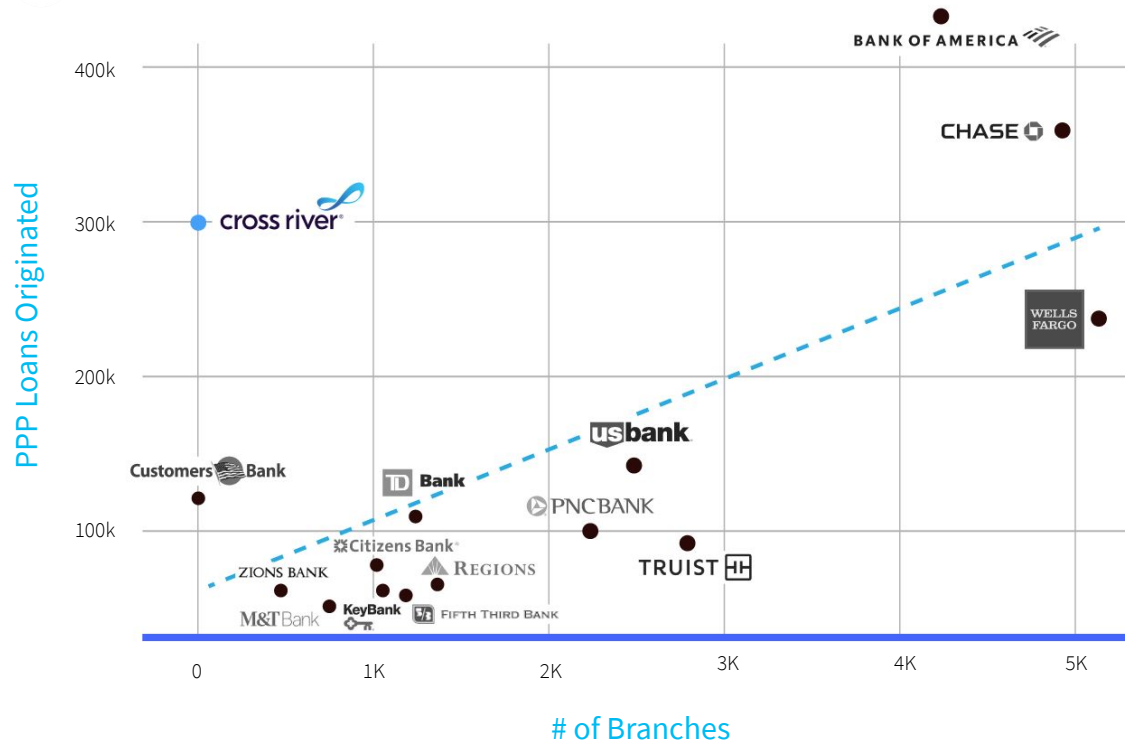

The new Plaid Link enables customers to submit pay data in any format, including documents and cell phone images.

Scalability

cross river®

With Ocrolus technology powering its back-office, **Cross River Bank was able to become a top three PPP lender nationally**, funding more loans than massive banks like TD, Citizens, US Bank, PNC, and Wells Fargo. While big banks tried to manually dig out of insurmountable application backlogs, Cross River Bank was able to process many of its loans within 8 to 12 minutes.

Sources

PPP Loans Originated: https://data.sba.gov/dataset/ppp-foia

# of Branches: https://www.federalreserve.gov/releases/lbr/current/default.htm

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Since 2014:

- Over **1.3 Billion** transactions analyzed
- Over **85 Million** pages of financial documents analyzed
- Over **4.5 Million** business applications processed

Supporting Small Business Recovery

- Over **2.5 Million** small businesses received PPP loans provided by Ocrolus lenders
- More than **12.8 Million** supporting financial documents processed by Ocrolus
- Over **20%** of PPP loans funded digitized by Ocrolus

cross river   Square

BlueVine   womply

AI-driven efficiencies are critical to remain competitive

1. Greater data availability drives more personalized underwriting

2. Automation helps lenders to serve customers better and scale efficiently

3. Customers will flock to lenders who can reduce decisioning times, provide an excellent customer experience across all channels, and offer the right product, on the right terms, at the right time.

Lenders who can make high-quality decisions while ensuring a great customer experience and personalized product will win share and experience the best results.

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