

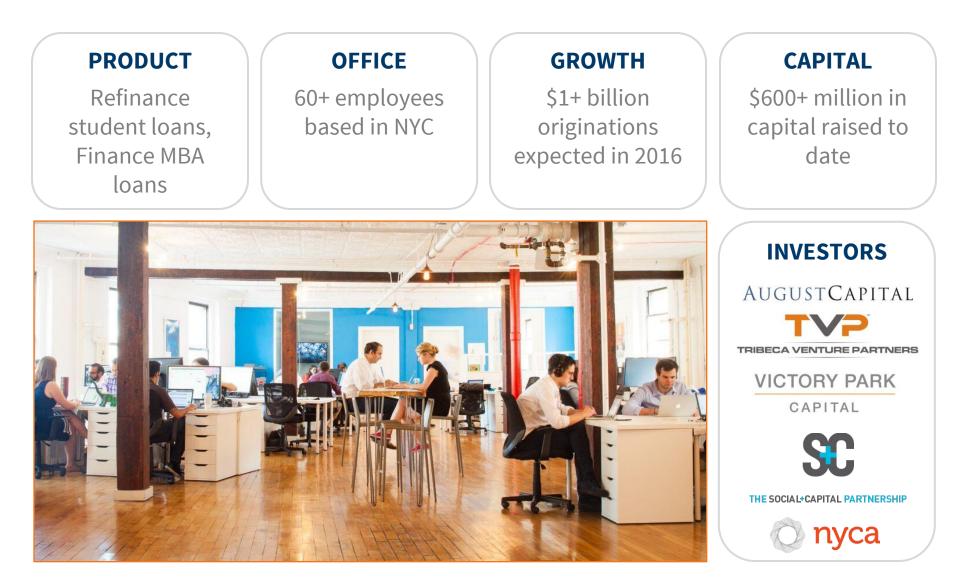
Engineering

Matt Jacobs



VP of Engineering

CommonBond Overview





How we do it?

SAVINGS

Borrowers save **over \$14,000**, on average, over the life of their loan when they refinance

SIMPLICITY

Complete an application online and get your rate in **5 minutes**





SERVICE

Exceptional customer care based in NYC offices at the constant ready via chat, phone and email

SOCIAL GOOD

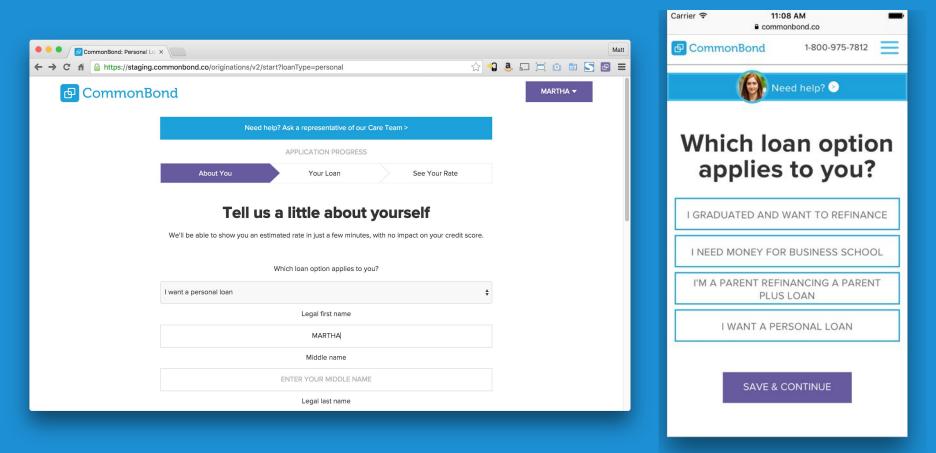
The first "1-for-1" model in finance, in partnership with **Pencils of Promise**



Savings calculation of \$14,581 is based on loan amounts and terms selected by CommonBond borrowers who refinanced their student loans between 5/15/15 and 6/30/15. Savings is calculated as the difference between borrowers' estimated future payments for a sample of previously held loans and their future expected payments after refinancing with CommonBond. The calculation is a weighted average dollar savings across loan terms and assumes no change in interest rates, on-time payments, enrollment in ACH, and no pre-payment of loans.



CREDIT REQUIREMENTS								
Product	Approval	CB Score	FCF	Max Borrow Amount	APR (with ACH/1MLibor)	Monthly Payment		
Personal 2 Year Fixed		21.3786	\$4,662	\$50,000	6.54%	\$2,233.87		
Personal 2 Year Float		21.495	\$4,687.39	\$50,000	5.34%	\$2,206.8		
Personal 3 Year Fixed		24.5377	\$5,350.92	\$50,000	6.58%	\$1,539.97		
Personal 3 Year Float		24.6554	\$5,376.57	\$50,000	5.37%	\$1,512.5		
Personal 4 Year Fixed		26.0718	\$5,685.45	\$50,000	7.00%	\$1,203.12		
Personal 4 Year Float		26.2143	\$5,716.52	\$50,000	5.61%	\$1,171.04		
Personal 5 Year Fixed		26.9644	\$5,880.09	\$50,000	7.46%	\$1,006.89		
Personal 5 Year Float		27.1344	\$5,917.18	\$50,000	5.90%	\$970.13		



Technology Stack

- App Server
 - Java 8
 - Jersey
 - MYSQL
 - Protocol Buffers
 - Elasticsearch
 - Redis
- Web
 - Legacy PHP
 - Backbone application for the internal team
 - SPA application for our originations flow (Rivets, featurejs, webpack, gulp).
- AWS
 - RDS, ElastiCache, ElasticSearch, S3

How it all comes together.

 Headless Frontend - multiple applications consuming same APIs
 REST API

 Authentication, execution, response
 All calls made internally or externally communicate over same calls
 Inputs match outputs based on our protocol

 Inputs match outputs based on our protocol buffer schemas.

How do Protocol Buffers fit in?

Benefits

- It's all in the code.
- JSON can be automatically constructed from the Protobuf
- Inputs match outputs
- Rules and business control can be defined in one place
- No need to update SQL columns over and over
- Easy to understand, Easy to code review
- Forces searches to route to our elasticsearch instance
- No more search queries run on prod.
 - Separates indexing from storage.
- Onboarding developers into our data model takes far less time.
- Added new annotations to support our own business logic

Search

SEARCH CRITERIA			Modify Filters
Users			
First Name:	Last Name:	Primary Email:	
			4
Application			
Application Stage Id:	Loan Approval Status:	Loan Type:	
Form 1 completed Form 2 completed	CONDITIONALLY_APPROVED COSIGNER_SOLICIT	INSCHOOL REFINANCE	
Student Type:	Version:	Date Added:	
	THREE_O TWO_TWO		©
Borrow Amount:			
_			
Search Clear Inputs Reset Fields			

Examples

message LoanApplication {

required co.commonbond.originations.dao.model.beans.document.base.Uuid uuid = 1;

// @Internal

optional co.commonbond.originations.dao.model.beans.document.base.Date credit_pulled = 2;

// @Min(value=1)

optional int32 borrow_amount = 3;

// @Internal

optional co.commonbond.originations.dao.model.beans.document.base.Date soft_credit_pulled = 4;

enum LoanApprovalStatus {

DENIED = 1; APPROVED = 2; STARTED=3;

} // @Internal optional LoanApprovalStatus loan_approval_status = 5 [default=STARTED];

// @Internal

optional co.commonbond.originations.dao.model.beans.document.base.Date credit_pulled = 6;

optional LoanProduct.LoanType loan_type = 7 [default=REFINANCE];

// @Private
// @Internal
optional bool flagged_for_fraud= 8;

Questions?