CU*ANSWERS Imaging Solutions
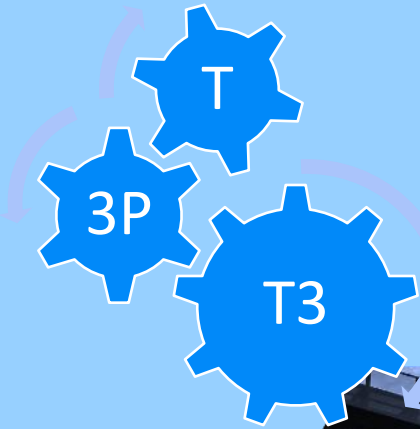## CU*ANSWERS Management Services

Teller 3P: Taking a New Teller Approach to the Future

T

3P

T3

Teller Automation Research

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SPECIAL PROJECT UPDATE

PREPARED FOR

2019
CEO Strategies Week

November 11-14, 2019

The Original Research Project

Executive Summary

The CU*Answers "Teller 3P" (three teller platforms) project is actually a set of projects for which design work will be completed in 2019 to create the next generation of teller platforms, designed for the new and varied teller workflows and environments of today's teller line. Specifically, they are as follows:

- Platform T1 – The comprehensive teller line, all services in a single set. The Swiss army knife of member services and over-the-counter responses. Also referred to as the soup-to-nuts teller solution.
- Platform T2 – The teller line with a modern approach to a KISS (keep it simple stupid) design. A new expectation for over-the-counter services, augmented by today's member service designs.
- Platform T3 – The teller line unanchored (tellers on a tablet or via another interface). What are the realistic expectations for a different physical approach?

This document shares the research performed to date by Imaging Solutions on what's needed and what the cuasterisk.com network is seeking in the third of these platforms (T3). That platform addresses **teller automation hardware** as well as a tablet **interface to CU*BASE** for unanchored tellers.

With this in mind, the purpose and approach of this project is to create a set of APIs (Application Programming Interfaces) that interface between CU*BASE and a tablet as well as various teller automation hardware in use today by our network credit unions, such as hybrid ATMs, Interactive Teller Machines (ITMs), and kiosk-type equipment. Beyond what's in use, we wish to learn what capabilities the market wishes were available to support their visions for teller automation and unanchored tellers.

The Research

Imaging Solutions reached out to the network to inquire about any current or pending investments in teller automation hardware. They asked about visions for a non-traditional teller line and how credit unions wished to interact with the member of tomorrow. What follows is the results of that discovery effort.

Six credit unions responded, most of which had some level of hardware investment to date. All had some vision about a non-traditional teller experience for their members. Following is a summary of the credit unions that responded, what investments they made and what their vision is.

The Credit Unions

The following credit unions responded:
- RVA Financial Credit Union
- Horizon Utah Federal Credit Union
- Frankenmuth Credit Union
- Northern Colorado Credit Union
- Calcoe Federal Credit Union
- United Advantage NW Federal Credit Union
- Michigan Legacy Credit Union

Equipment Investments Made

To date, these credit unions have invested in the following equipment:

RVA Financial Credit Union
Hyosung 7800D Hybrid ATMs – Purchased three to date. This platform is a hybrid ATM riding ATM rails for non-member and non-core-integrated transactions. With core integration, supported transactions would be accomplished by directly interfacing to CU*BASE via our APIs.

Horizon UT Federal Credit Union
NCR Interactive Teller Machines (ITMs) – Purchased 13; on track to purchase 3 more for a total of 16. Models are as follows: 4 ea. of Model 6638, 4 ea. of Model 6691, and 5 ea. of Model 6634.

The NCR ITM can function as an ATM riding ATM rails for non-member and off-hours transactions. During business hours it again operates as an ATM riding ATM rails, with an optional video interface available to a teller who can engage with the member and perform for the member most teller transactions. This expands beyond the capability of an ATM and does not leverage ATM rails.

Frankenmuth Credit Union

NCR Interactive Teller Machines (ITMs) – Purchased 5; on track to purchase 6 more for a total of 11. Models are as follows: 8 ea. of Model 6688, 2 ea. of Model 6634 and 1 ea. of Model 80 series.

The NCR ITM can function as an ATM riding ATM rails for non-member and off-hours transactions. During business hours it again operates as an ATM riding ATM rails, with an optional video interface available to a teller who can engage with the member and perform for the member most teller transactions. This expands beyond the capability of an ATM and does not leverage ATM rails.

Northern Colorado Credit Union

No investment to date, but interested in interfacing with the Glory TellerInfinity solution.

Calcoe Federal Credit Union

No investments to date but would like a tablet-based solution and this would be their investment of choice.

United Advantage NW Federal Credit Union

Invested in **Microsoft Surface** devices for the teller line in preparation for operating on a tablet-based solution. Demoing a contact center solution for POV (presence over video) chatting with members via video.

Michigan Legacy Credit Union

No investments to date but would like a Hyosung ITM solution as their investment of choice.

Their Visions for Unanchored Tellers and Automated Solutions

The following is what these respondents shared about their vision for unanchored tellers.

RVA Financial Credit Union

RVA Financial is looking for a kiosk-type solution that lets members perform most typical teller transactions. The goal is to free up tellers so they can get out from behind the traditional teller line and be available in the lobby to speak about credit union products and conduct sales type activities. They are not interested in shared branching members; rather, their interest lies in serving their own members. They do not favor the ITM model (teller assisted) but prefer more of a self-service model to free up staff.

Horizon UT Federal Credit Union

Horizon UT has gone all in with the teller-assisted ITM model, which has allowed them to eliminate teller lines in several of their branches already. Their stated goal is to eliminate all traditional teller lines and move to a 100% ITM-based lobby in the next few years. Through this model they can have a teller servicing any member in any branch, making tellers more efficient.

Frankenmuth Credit Union

Frankenmuth has leveraged ITMs to allow them to be more efficient with teller resources by allowing a few tellers to service multiple physical locations. They still have in-branch teller pods and staffed drive-throughs at most branches. They have, however, been increasingly leveraging the ITMs out-of-branch at various locations in a kiosk-type scenario. Without the requirement of a traditional branch, it allows them to service areas that otherwise not have been feasible.

Northern Colorado Credit Union

The vision at Northern Colorado is to create "micro-branches" through a teller-assisted solution. They want machines that allow members to perform most transactions, with a physical teller nearby to assist if needed. These micro-branches staffed with 1-2 employees would rely on these machines to contain the cash, improving security for the staff in these rural unserved areas within the field of membership, and making it practical for the credit union to serve these areas. As for tactics, CEO Russ shared the following:

> *"I guess my support would be in favor of finding an agile foundation that we can start with, but is flexible enough to phase in additional features and interfaces. I would certainly like to authenticate through the host system, but whatever foundation you choose I think it should also have the ability to allow multiple APIs (mortgage servicers, third party card processors, etc.) all available with a single sign on."*

Calcoe Federal Credit Union

Calcoe has not invested in any hardware yet. For the next few years as least they'll be working out of drawers. They've talked about recyclers but don't plan on making the transition any time soon. Their lending department is utilizing electronic documents today via ProDOC and signature pads.

They are looking to have a tablet-based solution for teller functions but also for lending and member services. This solution would let the member see and sign receipts and most ideally work with forms through ProDOC. ProDOC is problematic today since the screen from which the tellers work doesn't fit tablet dimensions well and may not be member-intuitive. For forms, they'd like members to be able to review, change/add information, sign and potentially decide to send the form to themselves via email or something similar.

United Advantage NW Federal Credit Union

They have invested in Microsoft Surface devices for their teller line in preparation for going to tablets in the branch. They are demoing a contact center solution that supports chat, video etc. as well. They are aggressively using eSign for loan and member forms, so their vision here is to have a tablet-based solution that allows staff to have members fill out and sign documents on the tablet when they come into the branch.

Further, they wish to utilize POV with the member remotely to walk them through products and transactions. (See the Kellogg video from leadership 2016 here for the vision: https://www.cuanswers.com/events/lc/2016-
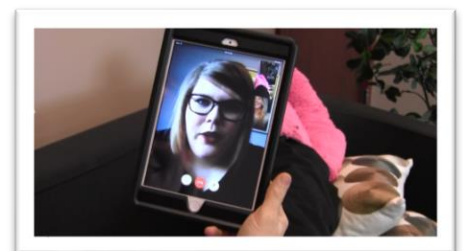
redefine-everything-credit-union/.) While they considered ITMs, this video speaks to their vision. They understand that the fingerprint signing in the video is not technology that is available today in the network, but it's the concept they are after. When asked for input specifically on a tablet-based teller platform they shared, the idea is for them to work out primarily out of a cash handling machine, although they'd need the capability to do either. Sarah McNeil shared:

For the tablet-based lobby interactions we would love to see it do all the functions you listed below, without the Member login options which are probably more ITM/self-service kiosk centered. Since they are controlled primarily by a teller (member experience rep we call them) we'd want them to also be able to post to a GL via Misc. Receipts and Misc. Advances, as well as being able to transfer funds between member accounts.

We do want to have the ability to create a form/post a transaction and turn the tablet to the member to review and sign.

For our contact center the idea is for the member to be able to use their device/tablet to engage with us from their home (or wherever) and our staff would be using a standard PC/desktop setting. For that we are looking for video presence, forms capabilities, and web chat. We want it to authenticate the individual at the beginning of the interaction and then allow us to handle the rest of the transaction (which may include them signing a form) from there.

Michigan Legacy Credit Union
Michigan Legacy CU is discussing reallocating a $2.5 million-dollar investment to ITMS. The credit union has seen demos and prefers the Hyosung models. The credit union is looking to do a several things with the ITMS, one replace outdated ATMs at current branches and possibly sell two branches and add ITMs to the locations to replace the branch and service the existing membership. Given the sale of the two branches this would add more money to this project which would allow us to add additional "ITM" Community Development Branches to our existing geographic foot print.

Their Desired Features for our APIs

The respondents also shared the features they wish our APIs should support:

Feature	Horizon	Frankenmuth	RVA	Northern Colorado	Michigan Legacy
API					
Funds Deposit					
Cash	Y	Y	Y	y	Y
Checks	Y	Y	Y	y	Y
Coin	N	N	N	N	N
Cash Withdraw					
Cash Dispense	Y	Y	Y	Y	Y
Coin Dispense	Y	N	N	Y	N
Cash Check	Y	Y	Y	Y	Y
Advance a line of Credit (ALT to an account?)	Y	Y	Y	Y	Y
Account payments / On Us Loans					
Auto	Y	Y	Y	Y	Y
Mortgage	Y	Y	Y	Y	Y
LOC	Y	Y	Y	Y	Y
HELOC	Y	Y	Y	Y	Y
Credit Card	Y	Y	Y	Y	Y
Printing					
Print Receipt	Y	Y	Y	Y	Y
Print Statement	N	N	N	N	Y
Print Cashier's check	Y	N	N	N	Y
Starter Checks	Y	N	N	N	Y
Money Orders	Y	N	N	N	Y
Member login					
Biometrics	N	N	N	N	Y
Card / Pin	Y	Y	Y	Y	Y
DL	N	N	N	N	Y
Teller Confirmation	Y	Y	N	N	Y
User/Pwd only	-	-	-	-	Y
Other					
Balance Transfer	Y	Y	Y	Y	Y
Scan ID	N	N	N	N	Y
View account history	N	N	N	N	N
Make Change	N	N	N	N	N
Can do a prestaged Transaction	N	N	N	N	Y

Capabilities of Chosen Equipment

This table contains a list of supported features on the equipment models the respondents chose.

Feature	NCR ITM	Glory Teller Infinity	CFM NEXT	Hyosung
API		Y	Y	y
Funds Deposit				
Cash	Y	Y	Y	Y
Checks	Y	Y	Y	Y
Coin	N	Y	Y	N
Cash Withdraw				
Cash Dispense	Y	Y	Y	Y
Coin Dispense	N	Y	Y	N
Cash Check	Y	Y	Y	Y
Advance a line of Credit (ALT to an account?)	Y	N	N	Y
Account payments / On Us Loans				
Auto	Y	Y	Y	Y
Mortgage	Y	Y	Y	Y
LOC	Y	Y	Y	Y
HELOC	Y	Y	Y	Y
Credit Card	Y	Y	Y	Y
Printing				
Print Receipt	Y	Y	Y	Y
Print Statement	N	Y	N	Y
Print Cashier's check	N	Y	Y	N
Starter Checks	N	N	N	N
Money Orders	N	N	N	N
Member login				
Biometrics	N	N	Y	Limited
Card / Pin	Y	Y	Y	Y
DL	N	N	Y	N
Teller Confirmation	Y	N	N	N
User/Pwd only	N	N	N	Y
Other				
Balance Transfer	Y	Y	Y	Y
Scan ID	Y	N	N	N
View account history	N	Y	Y	Y
Make Change	N	Y	Y	Y
Can do a prestaged Transaction	N	N	N	Y

Feature
API
Funds Deposit
Cash
Checks
Coin
Cash Withdraw
Cash Dispense
Coin Dispense
Cash Check
Advance a line of Credit (ALT to an account?)
Account payments / On Us
Loans
Auto
Mortgage
LOC
HELOC
Credit Card
Printing
Print Receipt
Print Statement
Print Cashier's check
Starter Checks
Money Orders
Member login
Biometrics
Card / Pin
DL
Teller Confirmation
User/Pwd only
Other
Balance Transfer
Scan ID
View account history
Make Change
Can do a prestaged Transaction

The Top Features that Align with Equipment Capabilities

This table shows a cross reference of desired features that align with equipment capability. For each highlighted peach-colored cell, all chosen equipment supports it and all credit unions that bought the equipment indicated they want support for that feature.

It may be a good starting point for our APIs to support these features. To write APIs for features that equipment can't support would probably be a misguided use of resources.

Conclusion

With only three respondents that have purchased equipment to give them a more specific vision or set of requested features, our survey is a bit limited on the scale of the network.

Nonetheless, at some level tellering is tellering, and certain features were universally requested regardless of chosen solution.

I believe we need to collect as much data as we can, settling more on a method of providing features and a basic feature set, leaving room for adding additional features in the future.

The sure thing is that equipment will change, as will vision, so a malleable API set will be key.
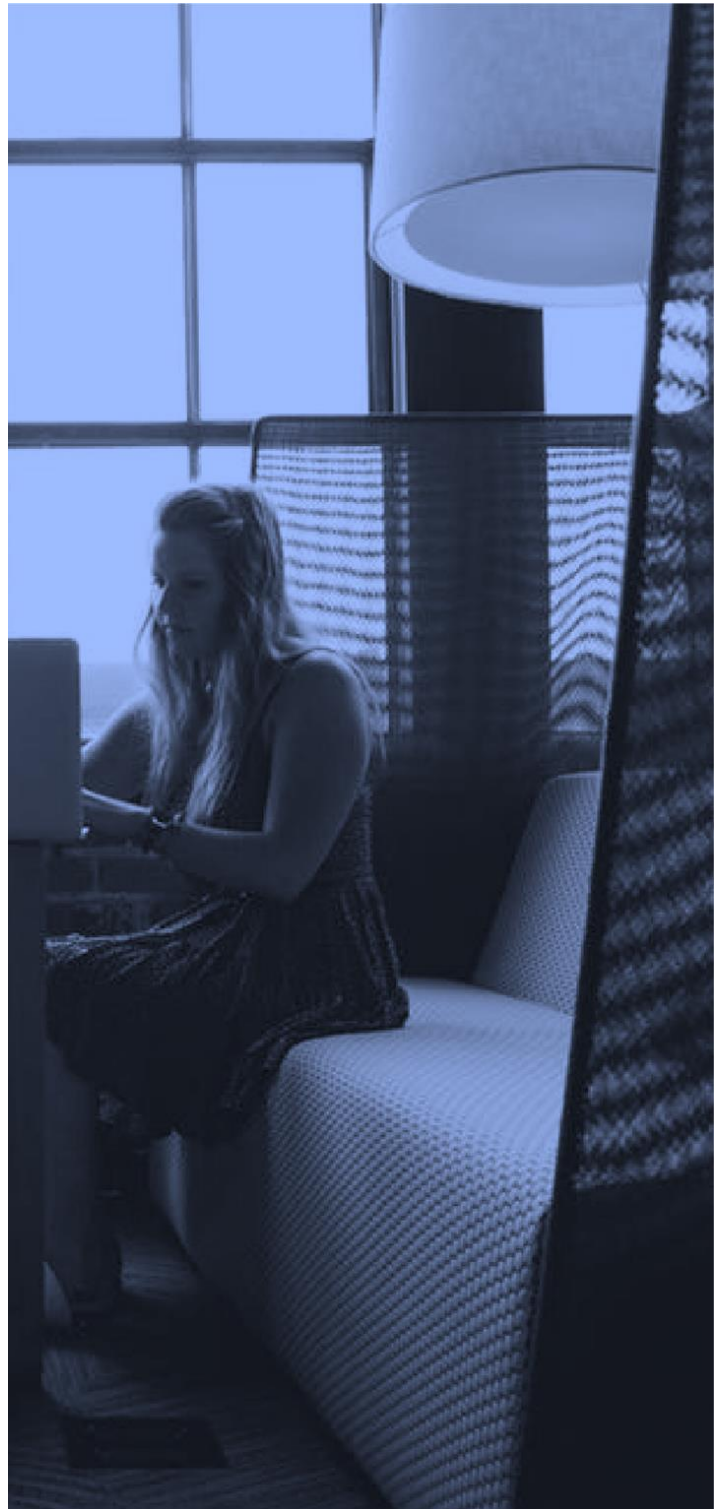
Project Update as of October 2019

Recap of Activity From Last Year

1. Reached out to the network, asking what teller automation equipment do you own, or imminently will own, that you'd like to hook up to CU*BASE.

2. Complied the list of who had what, and learned their vision for the businesses of it all. Compiled a list of what transactions they wanted to support through integration, and what can their equipment could support.

3. Created a matrix of common transactions that their equipment could support, and that the credit unions wanted.

4. RVA Financial was the only CU that stepped up with an actual DHD project to connect their equipment to CU*BASE.

5. We learned a lot! Which led me to write my article for CUSO Magazine...

Tips from the Imaging Solutions Team

An article was recently published in CUSO Magazine as a helpful guide on things to think about if tackling such a project. It was obvious to me folks needed some help to navigate the maze so they could avoid the walls.

Ten things to think about for your teller automation project:

1. Know your strategy
2. Define what type of integration you may (or may *not*) need
3. Be realistic on timing
4. Understand your role
5. Costs
6. NDAs
7. Develop a rollout strategy
8. Don't over engineer!
9. Do your members want it?
10. Keep your eye on the prize

Status of Current Projects

There are 3 projects we are currently working on with vendors and champion credit unions. Below is a recap of each as well as a progress reports and targeted timelines.

Project name	Hyosung Phase 1			
Champion	RVA Financial			
Type	Kiosk model			
Business Strategy	To leverage an evolving teller role to do sales; no routine transactions, but rather to push those transactions to the kiosk in the lobby *See Page 16 for a list of transactions included in this phase.*			

Status as of October 2019	Task	Responsible	Target	% Complete
	NDAs	CU*Answers/Hyosung	1 month Complete 11/20/2018	100%
	Design & spec	CU*Answers/RVA Financial/Hyosung	4 months Complete 4/1/2019	100%
	Funding & agreements	CU*Answers/RVA Financial/Hyosung	Complete	100%
	Coding	CU*Answers – PROJECT #49221	11/1/2019	95%
	Coding	Hyosung	6 months (?) Target start - 11/1/2019	0%
	Testing & QC	CU*Answers/Hyosung	1 month Target start- 5/1/2020	0%
	Beta	CU*Answers/RVA Financial/Hyosung	1 month Target start– 6/30/2020	0%
	Production & support	CU*Answers/RVA Financial/Hyosung	Target completion - 7/30/2020	0%

Project name	Diebold			
Champion	Cumberland County			
Type	Kiosk model			
Business Strategy	To eliminate teller positions and push routine transactions to the machines			
Status as of October 2019	**Task**	**Responsible**	**Target**	**% Complete**
	NDAs	CU*Answers/Diebold	2 months Start 9/26/2019	10% (in legal review now)
	Design & spec	CU*Answers/Cumberland /Diebold	1-2 months depending on how much of the Hyosung project we can reuse	0%
	Funding & agreements	CU*Answers/Cumberland /Diebold	1 month	0%
	Coding	CU*Answers	Depends on spec and how much of the Hyosung project we can reuse	0%
	Coding	Diebold	TBD	0%
	Testing & QC	CU*Answers/Diebold	1 month	0%
	Beta	CU*Answers/Cumberland /Diebold	1 month	0%
	Production & support	CU*Answers/Cumberland /Diebold	TBD	0%

Project name	**NCR Phase 1**			
Champions	Frankenmuth, Horizon UT, Notre Dame, South Bay, Day Air & others			
Type	Vertical receipts			
Business Strategy	With this project the champions are hoping to provide the members with receipts from CU*BASE that contain the available balance and some other information that is on CU*BASE receipts but not ITM receipts today. For that to happen the receipts need to be a vertical format to integrate with NCR ITM's.			
Status as of October 2019	**Task**	**Responsible**	**Target**	**% Complete**
	Design & spec	CU*Answers (draft spec done 9/30/2019)	7 months, estimated completion 12/31/2019	80%
	Coding	CU*Answers (project #51951)	6 months, target completion 6/30/2019	0%
	Configurations	NCR	1 month	0%
	Beta	Horizon UT	1 month	0%
	Production & support	CU*Answers/NCR /Horizon UT	TBD (2020 4th quarter)	0%

Future Projects Planned

There are 2 additional projects in the queue, to begin as we get further along with our current slate of projects.

Project name	**Hyosung Phase 2**
Champion	Peninsula FCU
Description	Video teller / kiosk model
Business Strategy	Direct-to-core transaction set from phase 1 kiosk model, plus new video teller integration to eliminate dual entry
Status as of October 2019	To begin after Phase 1 kiosk-only model is coded. Will need to start with a spec, funding and agreements.

Project name	NCR Phase 2
Champions	Frankenmuth, Horizon UT, Notre Dame, South Bay, Day Air
Description	Video teller / kiosk model
Business Strategy	Want to eliminate dual entry, hope to build on the transaction set from Hyosung projects, vision is essentially same as phase 2 of that project
Status as of October 2019	Struggled with participation from NCR. Recently gained traction, and we held a kickoff meeting on October 29, 2019 to discuss the project. Awaiting NDA agreement. Look for more on this as we continue to investigate and better understand this project.

The Hyosung Feature Set

This is not just a feature set for the Hyosung integration, but also a foundational project that we hope to leverage for NCR, Diebold and even our tablet-based teller platform (T3).

General Functionality

- ☑ **Authentication –** Card/PIN will be used to authenticate members to the kiosk and to CU*BASE, leveraging the ATM network for this purpose.
- ☑ **Account summary –** Provides a list of accounts so the ITM knows what accounts are available for performing any of the supported functions.
- ☑ **Web token exchange –** Manages session information between CU*BASE and the ITM.
- ☑ **Receipts –** Prints a receipt for the member. *This will be accomplished by the ITM based on the transactions completed, then creating/printing the receipt. ITM has an electronic journal for balancing.*

Deposit Functions

- ☑ **Deposits of cash –** Cash is deposited directly to CU*BASE with instant credit to the member. *Uses CU*BASE limits.*
- ☑ **Deposits of checks –** Checks will flow via existing ATM process for clearing images being forwarded to item processor for forward collection, including checks drawn on the credit union. *Subject to CU*BASE ATM holds for funds availability.*
- ☑ **Mixed deposits –** Cash and checks can be deposited at the same time. *Behind the scenes, the ITM splits them into two transactions, one cash deposit and one check deposit.*

Cash Withdraw Functions

- ☑ **Cash dispenses –** Subject to CU*BASE ATM limits.
- ☑ **Check cashing –** Allows member to cash a check. This is performed as a two-step process: first a check deposit is completed, then a cash withdrawal. *Subject to check holds and CU*BASE ATM limits based on member relationship configured in CU*BASE. We do have ability to send message(s) to members if needed regarding their transaction.*
- ☑ **Advance cash from a line of credit –** This feature allows members to take an advance on their line of credit, such as a HELOC, online credit card account, LOC, etc. and then dispenses cash. *They can take an advance and deposit it to one of their accounts versus dispensing cash, but this would essentially just be a transfer from their LOC to one of their other accounts. See account transfers.*
- ☑ **Account transfers –** This feature allows transfers between CU*BASE accounts for these supported account types (does NOT include OTB accounts):
  - ✓ Share
  - ✓ Checking
  - ✓ HSA *(transfers permitted INTO the HSA savings/checking account, not OUT of the account)*
  - ✓ IRA *(transfers permitted INTO the IRA account, not OUT of the account)*
  - ✓ Loans
  - ✓ Credit Card
  - ✓ HELOC
  - ✓ LOC
- ☑ **Payments on loans –** Allows the member to make payments on their loans that are not OTB. Essentially this feature performs a "transfer" between CU*BASE accounts. Supported accounts are:
  - ✓ Auto
  - ✓ Mortgage
  - ✓ LOC
  - ✓ HELOC
  - ✓ Credit Card
  - ✓ Personal Loan

Future Initiatives

T3 2021: Bringing It All Together

The goal of this project will be to create a tablet-based app for CU*BASE that builds upon the work we've done for teller automation equipment integration, Photo ID integration, Native Receipts, and our Forms on Demand projects.

With this platform we envision a tablet app that would allow unanchored tellers to perform basic transactions. Perhaps, it would start with viewing the members ID and displaying vertical receipts upon completion of the transaction right on the tablet, allowing members to sign them with their finger and sending them on to strongboxes only – no printing. Those tellers could hit a button for a pre-approved loan, and the member would be presented with a loan form to sign right on the tablet. Dispensing cash and cashing checks could potentially be handled with a drawer or perhaps through integration with hardware depending upon the solution.
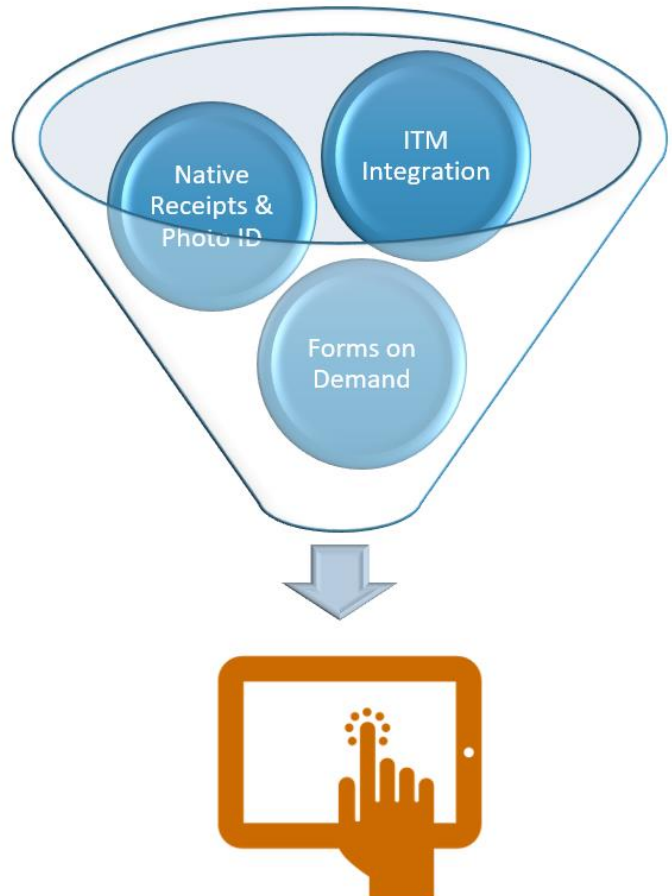
The Projects

Project:	Project #:	Track 'em:
Forms on Demand	50748	
Native Receipts	50747 & 51951	Owner's VIEW
Photo ID in Express Teller (T2)	51948	
Hyosung Kiosk Integration	49221	ownersview.cuanswers.com