

Digital Banking Platform: Alerts Engine

Financial Institution Pilot: SAFE Credit Union ("SAFE")

Purpose of the Alerts Engine:

- Brand Consistency and Familiarity: To enable members to receive all transaction and sales related communications from their trusted SAFE Mobile Banking Apps.
- User Financial Management: To allow the end users to stay on top of their finances with real-time transaction alerts.
- User Engagement: To extend end user engagement across both online and mobile channels via email, text messages and push notifications.
- Back End Management: To drive operational efficiency and a better member service experience by enabling staff to go to a centralized repository for communication history.

First Alert Offering: Visa Alerts

- Financial Institution ("FI")/ Visa Mandate / Fraud Prevention: To enhance payment security and reduce fraud, U.S. issuers must provide consumer cardholders with an option to enroll in transaction alerts.

Solution Description:

This application allows users to set up and maintain preferences for several different Visa Card alert conditions. When the alert condition is detected by Visa, the user is messaged in real-time via email, SMS or push notifications in the Digital Insight ("DI") mobile application.

It consolidates alerts from a third-party vendor into the Digital Insight messaging service so all messages can be delivered via email, text or push notification, and viewed in the new Display Notifications in the Global Navigation. This solution enables the back-end integration i.e. view, but does not provide the functionality to allow users to manage or edit preferences. An FI may want to combine this solution with a Create Your Own ("CYO") alerts preferences page, depending on the use case.

Alert types supported

- Gasoline Purchase
- International Transaction
- Declined Transaction
- Card Not Present Transaction
- Purchase Alert
- ATM Withdrawal

NOTE: SMS alerts are subject to TCPA regulation. Push notifications are subject to Google and Apple guidelines.

DI Platform Solutions Leveraged: CYO Applications for Online and Mobile Banking + Application Programming Interfaces ("APIs").

- CYO: Allows FIs and vendors to create pages in Online and Mobile Banking. These pages can be branded and built to mirror the look and feel of the rest of FI's Digital Banking experience.
- APIs: Allows FIs to augment their Digital Banking experience by connecting data and/or features across applications/vendors.

Third Party Vendor Leveraged: Two Visa DPS APIs

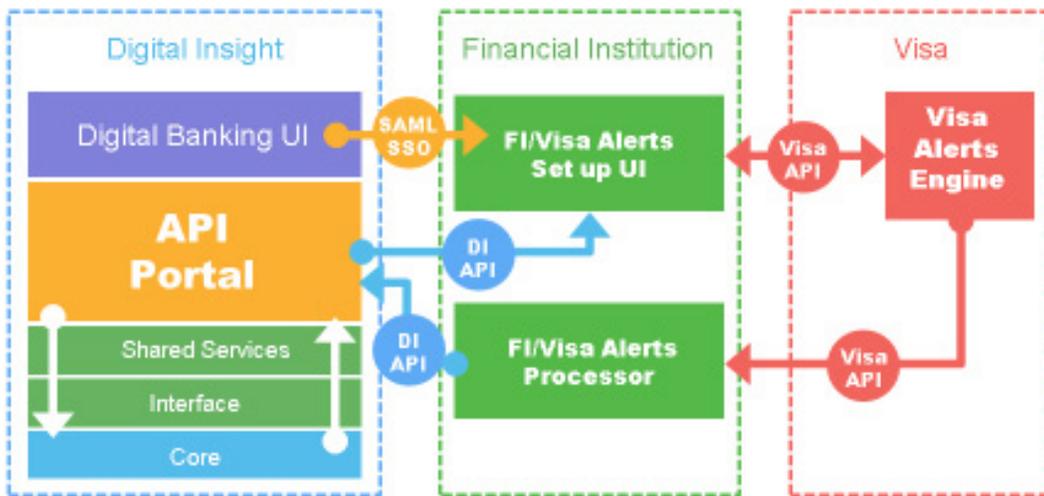
1. Visa Transaction Alerts – Web Services: This was for enrolling with Visa.
2. Visa Transaction Alerts – Third Party Notification APIs: This was to receive notifications from Visa.

Financial Institution Solutions Built

- CYO Applications: The user experience to manage Visa Alert preferences.
- Alerts Connector Program: The program that routes alerts from Visa to users via DI's alerts API.

Architecture & Description

API integration project: Visa alerts



Two components have to be built:

1. An end user facing user interface (“UI”) (see User Experience section later in this document for screen shots) to allow Online Banking end users of the FI to enroll in the Alerts Engine and maintain their Visa Alerts. On this UI, users can choose what type of alerts they want to receive and to which destination (email, push, SMS, online) they want alerts to be sent.
2. A back-end service (Alerts Processor) that listens for alerts from Visa and forwards the alert to the destination selected by the user.

Alert Maintenance Component

This component is a SAML SSO CYO page that users can select off the navigation menu. The UI presents a list of available Visa alerts (fraud alert, high balance transaction, payment due, statement available etc.) and also shows the list of notification/alert destinations the user has already defined in Online Banking. The UI allows the user to pick an alert type and assign it to a destination. To support this function, the component uses the following Digital Insight’s APIs:

- getDestinations – To retrieve all the notification destinations that the user has set up.
- getSubscriptions – To read all the subscriptions a user has already set up. A subscription is the combination of an event type (each of the Visa alerts managed by the UI are a separate event type) and a destination. The UI shows all the Visa alert subscriptions that the user has already set up.
- createSubscription – Whenever the user updates a subscription on the UI (changes a destination, selects a new event etc.), the createSubscription API is used to update the subscription at DI.
- getAccounts – This is necessary to link up DI’s unique account number to the PAN, since DI requires a user’s unique Account Number when creating a subscription.
- getCustomer – To get a default email address to auto-create a destination if one doesn’t exist yet, which then would use “CreateDestination”.

In addition to using the DI APIs, the Alert Maintenance page also uses selected Visa APIs to update the alert preferences for the card at Visa.

Alerts Processor Component

This component does not present a UI, but is only a backend service that uses Visa APIs to “listen” for alerts as they occur. When an alert is received from Visa, the component looks up the user’s subscription information and sends the alert/notification to the selected destination. To support this function, the following DI APIs are used:

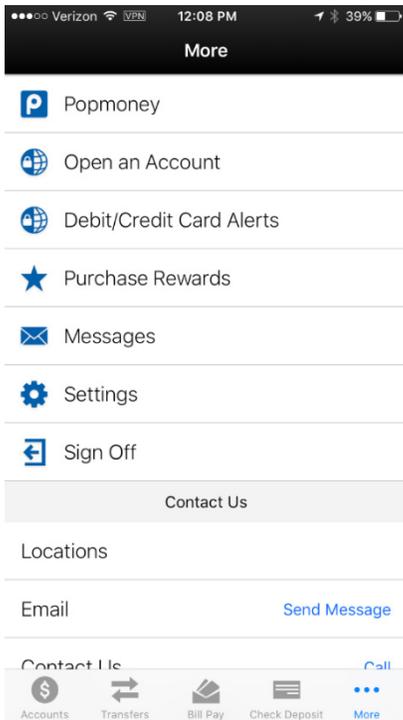
1. `getSubscriptions` – Reads all the subscriptions set up by the user for Visa alerts. It is important to note that Visa does not send any information back to the FI about DI’s subscription. They send back a full PAN and an `alertType` that is Visa’s representation of an Alert. SAFE had to save a copy of DI’s Subscription ID to Visa’s PAN. Since SAFE already had the `subscriptionId` in its database, they did not call “`getSubscriptions`.”
2. `sendEvent` – Used to send notifications/alerts to Digital Banking for an end user and provides the messaging infrastructure needed to deliver the notification (email, SMS, push, online etc.).

User Experience

Main Web Navigation – Additional Services, Card Services, Debit/Credit Card Alerts (Responsive UI)

The screenshot displays the SAFE Credit Union website interface. At the top left is the SAFE Credit Union logo. A navigation bar contains links for My Accounts, Bill Pay, Move Money, Manage Money, Additional Services, Open an Account, and My TurboTax. A dropdown menu for 'Additional Services' is open, showing categories like eStatements, Mortgage Servicing, Member Business Lending, and Share access with others. Another dropdown for 'Card Services' is also open, listing options like Debit/Credit Card Alerts, Activate Your Debit/Credit Card, Choose Debit Card Courtesy Pay, and Credit Card Balance Transfer. The main content area shows account balances for 'FREEDOM CHECKING 05' and 'MISC OFFICE BUS CKG 09'. A 'Schedule Payment' form is visible, including fields for 'Pay to', 'Pay from', 'Deliver by', and 'Amount', along with a calendar widget showing the date 13 selected.

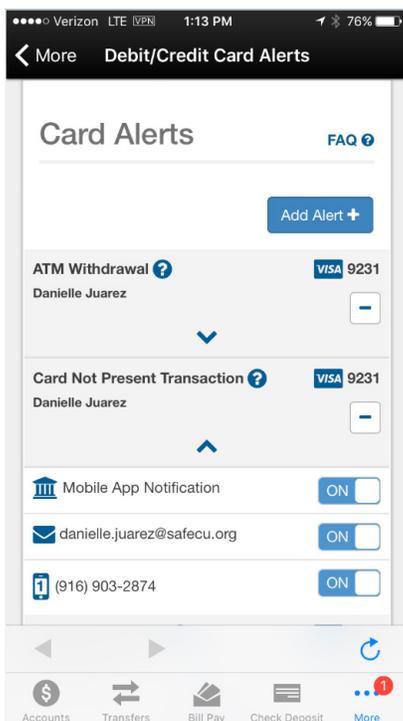
MainApp Navigation – More, Debit/Credit Card Alerts



On the first screen in the Web experience, when a user clicks on “alerts” for the very first time, his phone number and email address are pre-populated from his Online Banking alert settings. The user can select to turn alerts on or off via email and/or SMS.

On the first screen in the app experience, when a user clicks on “alerts” for the very first time, his phone number and email address are pre-populated from his Online Banking alert settings. The user can select to turn alerts on or off via email, SMS and/or push notifications.

These fields are pulled from the GetDestination DI API. If none exist, then SAFE calls GetCustomer from the DI API and creates an email destination with the CreateDestination DI API.



Card Alerts FAQ

Email card alerts to:
danielle.juarez@safecu.org
[Update](#)

Text card alerts to:
(916) 903-2874
[Update](#)

Alert Type			Amount	Add Alert
ATM Withdrawal ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Options [-]
Danielle Juarez 4194-55**-****-9231				
Card Not Present Transaction ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Options [-]
Danielle Juarez 4194-55**-****-9231				
Gasoline Purchase ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Options [-]

“Add an Alert” pull down on Web – Users can also remove and edit alerts previously set up

Card Alerts FAQ

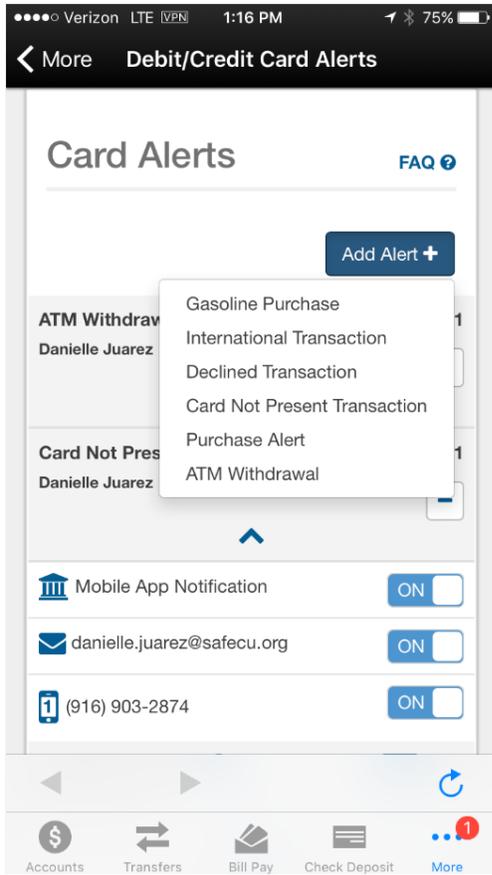
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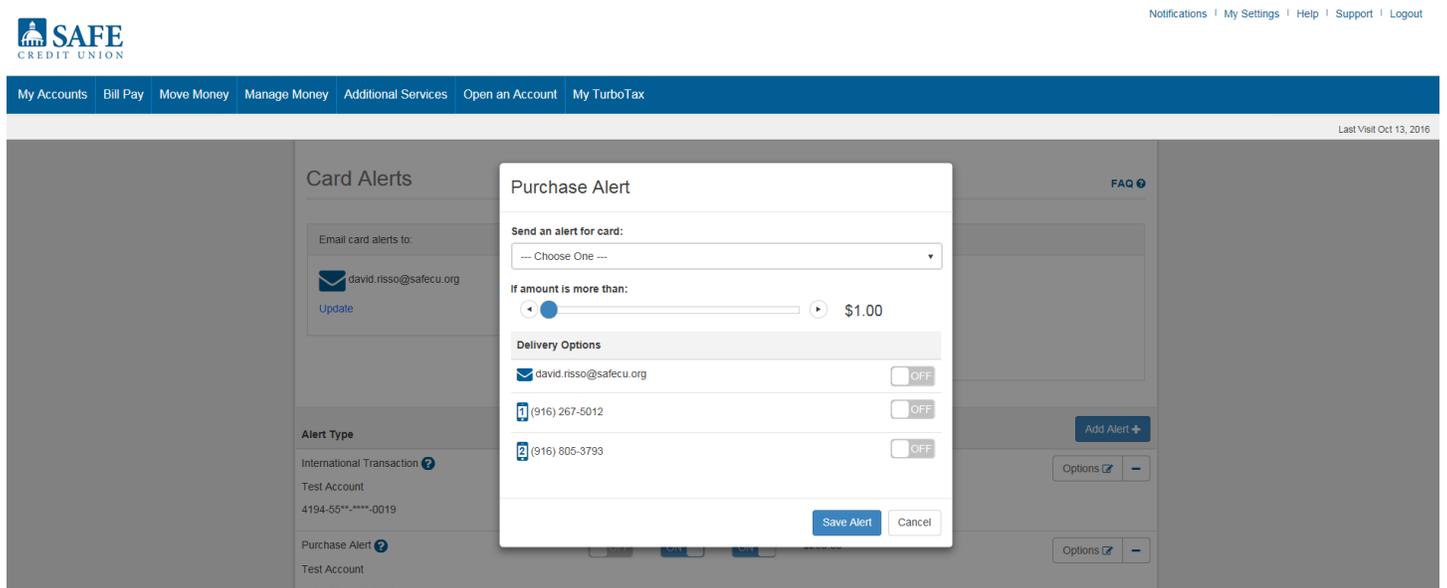
Alert Type			Amount	Add Alert
ATM Withdrawal ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Options [-]
Danielle Juarez 4194-55**-****-9231				
Card Not Present Transaction ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Options [-]
Danielle Juarez 4194-55**-****-9231				
Gasoline Purchase ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Options [-]

- Gasoline Purchase
- International Transaction
- Declined Transaction
- Card Not Present Transaction
- Purchase Alert
- ATM Withdrawal

“Add an Alert” pull down in the app experience



Web alert type example screenshots



Gasoline Alert

Send an alert for credit card:
--- Choose One ---

If the amount goes over:

Delivery Options

Emails
daniyell1980@yahoo.com OFF

Phones
(916) 705-5096 OFF

International Alert

Send an alert for credit card:
--- Choose One ---

Delivery Options

Emails
daniyell1980@yahoo.com OFF

Phones
(916) 705-5096 OFF

Declined Alert

Send an alert for credit card:
--- Choose One ---

Delivery Options

Emails
daniyell1980@yahoo.com OFF

Phones
(916) 705-5096 OFF

Card Not Present Alert

Send an alert for credit card:
--- Choose One ---

Delivery Options

Emails
daniyell1980@yahoo.com OFF

Phones
(916) 705-5096 OFF

Large Purchase Alert

Send an alert for credit card:
--- Choose One ---

If the amount goes over:

Delivery Options

Emails
daniyell1980@yahoo.com OFF

Phones
(916) 705-5096 OFF

Atm Withdrawal Alert

Send an alert for credit card:
--- Choose One ---

If the amount goes over:

Delivery Options

Emails
daniyell1980@yahoo.com OFF

Phones
(916) 705-5096 OFF

Atm Withdrawal Alert

Send an alert for credit card:

FREEDOM CHECKING-S09

Card Number: 4194-55**-****-8549
Card Holder: Danielle Juarez

If the amount goes over:

40.00

Delivery Options

Emails

daniyell1980@yahoo.com

Phones

(916) 705-5096

Save Alert Cancel

Mobile app alert type example screenshots

Verizon VPN 1:18 PM 75%

More Debit/Credit Card Alerts

Purchase Alert

Send an alert for card:

--- Choose One ---

If amount is more than:

\$1.00

Delivery Options

Mobile App Notification OFF

danielle.juarez@safecu.org OFF

(916) 903-2874 OFF

Accounts Transfers Bill Pay Check Deposit More

Verizon VPN 11:19 AM 27%

More Debit/Credit Card Alerts

Cardholder: Danielle Juarez

If amount is more than:

\$20.00

Delivery Options

Email

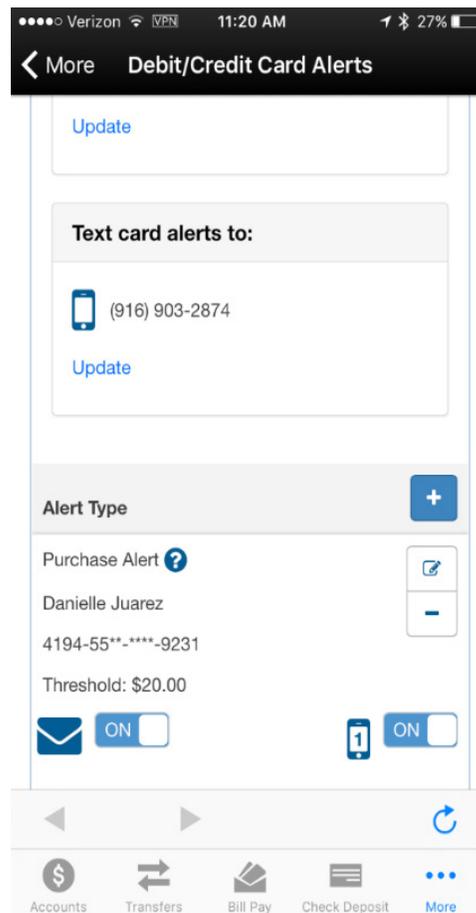
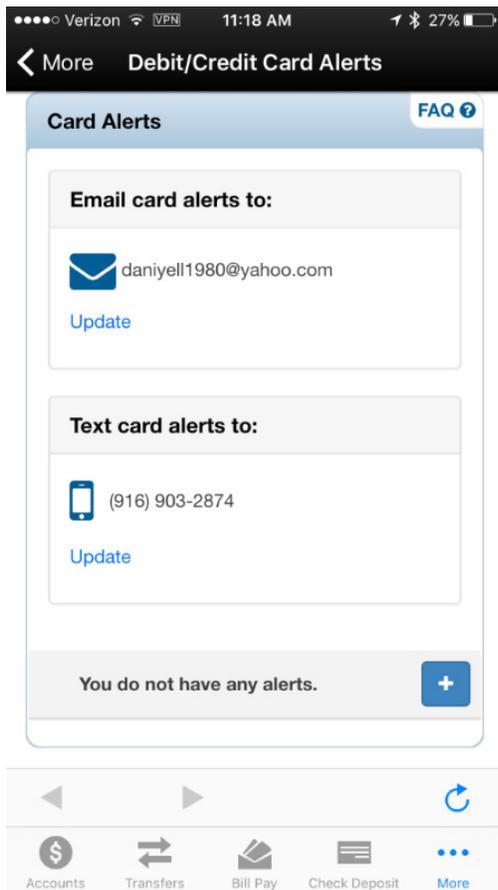
daniyell1980@yahoo.com

Text

(916) 903-2874

Save Alert Cancel

Accounts Transfers Bill Pay Check Deposit More



About Digital Insight

Digital Insight, an NCR company, helps banks and credit unions achieve their goals and grow by offering innovative online and mobile banking solutions that make it easier for consumers and businesses to manage their money. Our proven banking innovations give financial institutions the flexibility and control to engage more, increase retention and cross-sell effectively.



About NCR Corporation

NCR Corporation (NYSE: NCR) is the global leader in consumer transaction technologies, turning everyday interactions with businesses into exceptional experiences. With its software, hardware, and portfolio of services, NCR enables more than 550 million transactions daily across retail, financial, travel, hospitality, telecom and technology, and small business. NCR solutions run the everyday transactions that make your life easier. NCR is headquartered in Duluth, Georgia, with over 30,000 employees and does business in 180 countries. NCR is a trademark of NCR Corporation in the United States and other countries.

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