



NCR APTRA™ Mobile Banking - Browser/SMS

CONTENTS

- **The time is right for Mobile Banking**
- **Why NCR's APTRA Mobile Banking - Browser/SMS?**
 - Unique capabilities from website to mobile
 - Optimum customer reach and experience
 - Flexibility and control
 - Hosting options
 - Speed to market
 - Carrier and device independence
 - Scalable solution with today's broadest customer base
- **Core banking functionality**
- **Additional features**
 - NCR APTRA Mobile Active Messaging and Alerts
 - NCR APTRA Mobile Business Banking
- **Why NCR?**

THE TIME IS RIGHT FOR MOBILE BANKING

With consumer demand for banking on the move increasing, there are exciting reasons to extend your channel delivery mix with mobile services. Mobile Banking will not only meet your customers' demand for extra levels of convenience, but this complementary new channel will also extend your customer reach, improve customer retention, achieve operational efficiency and increase wallet share. NCR's APTRA Mobile Banking portfolio will provide you with a Mobile Banking channel that has the right combination of security, broad functionality, flexibility and rich user experience. NCR is uniquely qualified to help you connect, interact and transact with your customers at 'anytime, anywhere' across multiple channels.

When it comes to Mobile Banking technology you have the option of SMS, browser and downloadable applications. Each has its own pros and cons when it comes to customer reach, functionality and user-experience. The optimum benefits of the mobile channel can be achieved through offering a combination of all three technologies – usually referred to as "triple-play".

NCR'S APTRA MOBILE BANKING PORTFOLIO WILL PROVIDE YOU WITH A MOBILE BANKING CHANNEL THAT HAS THE RIGHT COMBINATION OF SECURITY, BROAD FUNCTIONALITY, FLEXIBILITY AND RICH USER EXPERIENCE.

While the NCR APTRA Mobile Banking portfolio offers you the complete triple-play portfolio so you can choose the best fit for your strategy and business objectives, here are the reasons why NCR believes the combination of SMS and browser is the best place to start.

WHY NCR'S APTRA MOBILE BANKING - BROWSER/SMS

Unique capabilities from website to mobile

What makes NCR's APTRA Mobile Banking - Browser/SMS unique is the way it can securely 'refactor' your online website. Refactoring enables you to customize your online banking pages to fit the smaller mobile phone display. Key information from your online banking pages will be transferred and repositioned to create a neat and easy to navigate Mobile Banking screen. This is totally different to just making your online site accessible on a mobile device.

Optimum customer reach and experience

With NCR you can reach the broadest customer base possible. NCR's APTRA Mobile Banking library stores the settings of over 14,000 different handsets today so that the online site can be refactored to suit them and this list is updated constantly. NCR APTRA Mobile Banking is able to detect in real-time the user's handset model and the Mobile Banking site is optimized to ensure the best user experience with ultimate viewability and the ideal navigation setting for that particular device. Because the mobile interface has the same look and feel as online banking, you will also be able to offer your consumers a consistent experience with NCR APTRA Mobile Banking - Browser/SMS.

NCR APTRA Mobile Banking - Browser/SMS also supports a 137 character set which covers most international languages including Japanese, Chinese and Korean.

Flexibility and control

NCR APTRA Mobile Banking solutions redefine flexibility to give you complete control over your Mobile Banking channel. NCR APTRA Mobile Banking - Browser/SMS gives you the ability to control the front-end look and feel of your Mobile Banking pages, and the back-end technical options. NCR's flexible Mobile Banking platform can work across a range of different protocols and interfaces.

Hosting options

NCR also gives you choice when it comes to hosting services. You can host your solution in-house or leave it to NCR to totally manage the hosting for you. NCR has over 40 years of experience in hosting and providing customers with unmatched IT support service.



Bank's home page on a mobile screen



Bank's home page refactored with NCR APTRA Mobile Banking - browser/SMS

WHILE THE NCR APTRA MOBILE BANKING PORTFOLIO OFFERS YOU THE COMPLETE TRIPLE-PLAY PORTFOLIO SO YOU CAN CHOOSE THE BEST FIT FOR YOUR STRATEGY AND BUSINESS OBJECTIVES, NCR BELIEVES THE COMBINATION OF SMS AND BROWER IS THE BEST PLACE TO START.

Speed to market

Because it is refactoring your existing online banking site rather than creating a stand-alone application, NCR APTRA Mobile Banking – Browser/SMS gets you up and running fast, with the typical Mobile Banking implementation taking between six to eight weeks, regardless of the bank's size.

Moreover, NCR APTRA Mobile Banking – Browser/SMS can be created with no resource from your web site administration team. Rather than creating a Mobile Banking application from scratch, NCR APTRA Mobile Banking - Browser technology can create an application that interfaces with your existing online banking website.

Carrier and device independence

NCR APTRA Mobile Banking – Browser/SMS is compatible with all Internet-enabled mobile devices across all carriers. Relationships with carriers are not required, and your customers can use your Mobile Banking channel regardless of their network operator or handset model so long as they have Internet-enabled phones.

Scalable solution with today's broadest customer base

NCR's APTRA Mobile Banking has a proven track record of successful implementations, and the industry's largest and broadest client list also proves that the NCR APTRA Mobile Banking platform can scale from small and mid-sized banks to the largest financial institutions. When it comes to supporting your evolving needs, only a scalable solution such as NCR APTRA Mobile Banking – Browser/ SMS can meet this goal.

NCR not only offers you best-in-class Mobile Banking solutions, but extends the service to provide consulting, training and integration services.

CORE BANKING FUNCTIONALITY

NCR APTRA Mobile Banking – Browser/SMS offers full Mobile Banking functionality plus much more.

Core functionality:

NCR APTRA Mobile Banking – Browser/SMS functionality includes:

- Balances
- Transaction histories
- Account transfers
- Bill Pay:
 - Schedule new payments to existing payees
 - Presentment – View and Pay Bills and due eBills
 - Review and cancel pending payments
 - View bill pay history
- Mobile Web Site:
 - Location services: ATM and branch locators with direct links to online maps
 - Contact us, about us
 - Rates
 - Relevant promotions
 - Self branding features
- Messaging for account balance and history:
 - View cleared checks
 - Mobile redirection filter
 - Mobile Banking demo

Each functionality set has supporting features, for example APTRA stretches 'View Balance' to include the ability to view various accounts such as credit card statements and mortgage statements. APTRA also extends Mobile Banking functionality to include relatively unique features such as check image display and the ability to open accounts.

NCR'S APTRA MOBILE BANKING HAS A PROVEN TRACK RECORD OF SUCCESSFUL IMPLEMENTATIONS, AND THE INDUSTRY'S LARGEST AND BROADEST CLIENT LIST ALSO PROVES THAT THE APTRA MOBILE BANKING PLATFORM CAN SCALE FROM SMALL AND MID-SIZED BANKS TO THE LARGEST FINANCIAL INSTITUTIONS.

With messaging for account balance and transaction history, your customers can receive messages with their current balance and/or transaction history (last three) provided they have enrolled their phone number via the safe online program. The SMS functionality is not transactional due to security reasons, your customers can not make any payments or move funds from accounts.

The enrollment process is part of the NCR APTRA Mobile Banking – Browser/SMS solution and will reside on your web pages. It will allow your customers to register their phone and mobile network operator to guarantee the text message is routed correctly to their mobile. Your customers will also be asked to provide a password which will be used every time they run this service. Once enrollment is completed successfully, customers will be provided with a toll-free number which they can use to request the balance and/or transaction history. They will be asked to enter their password, when verified a text message with the requested information will be sent to their handset. For extra security, only the last four digits of their account number will show in the text message.

By sending a text message, your customers can also request information, such as balance or transaction history, using messages. Consumers will enter a code in the message to identify the kind of information they need, for example Bal for balance and Hist for account history, and send the message to a special number (referred to as Short Code), typically a short number that is easy to remember. A message with the requested information will be sent back to consumers' phone.

Complete security

In terms of security, NCR leaves no room for compromise. NCR's APTRA Mobile Banking – Browser/SMS implements a complete end-to-end security approach that ensures the safety of every aspect of the mobile channel both logical and physical.

Information integrity and user security

- NCR APTRA Mobile Banking technology uses a high level of encryption to ensure the integrity of data exchanged over the air. Secure Socket Layer encryption (SSL) encrypts the data transferred, and only the sender and recipient are able to decode the transmission. APTRA Mobile Banking supports data encryption at 128 bit, the same high level of encryption used for the strict online banking. Information is never exposed in clear text as it travels over the wireless and wired Internet to ensure confidentiality of all your customers' financial and personal data.
- Firewalls are also used for additional security. All traffic sent across the Internet to the internal network is filtered, verifying the source and destination of each packet to eliminate anything suspicious.
- To prevent unauthorized users from trying to masquerade as internal sources, NCR uses filtering routers that verify the source and destination of each information packet sent to the NCR secure host environment. Any packets not addressed to specific network services are filtered out and only HTTPS traffic is allowed to the Transaction Processing Server.
- The NCR Mobile Run-Time engine uses a double key encryption method to encrypt all URLs being accessed, so that the actual URL being processed can not be seen.

IN TERMS OF SECURITY, NCR LEAVES NO ROOM FOR COMPRISE. NCR'S APTRA MOBILE BANKING – BROWSER/SMS IMPLEMENTS A COMPLETE END-TO-END SECURITY APPROACH THAT ENSURES THE SAFETY OF EVERY ASPECT OF THE MOBILE CHANNEL BOTH LOGICAL AND PHYSICAL.

NCR APTRA Mobile Banking - Browser/SMS White Paper

- NCR's Virtual Private Networks (VPN) solutions are integrated in the firewalls implementation and support IPSec, 3DES, and DES encryption using digital certificates or IDE as well as SHA-1 and MD5 strong authentication. Both server certificates are used for our websites, which are enabled to use SSL/TLS protocol, and digital certificates from certified authorities, such as VeriSign.
- In addition to encryption, NCR APTRA Mobile Banking – Browser/SMS uses session time-out. If the device is idle for more than a predefined number of seconds, the session will be signed off automatically and re-authentication will be required before the consumer can perform further transactions. Session time out is particularly valuable in the case of losing a handset. If for instance a user loses a mobile while still logged into a Mobile Banking session, the consumer is still protected against fraud. The application will require the password to be re-entered before the session can be continued and since no information such as the balance or the account number is saved on the device, it can not be retrieved from the handset either. Even if the handset fell into the wrong hands, there is no compromise on security.
- For security reasons, NCR APTRA Mobile Banking – Browser/SMS also disables two functions that would bring risk on a mobile phone: It prevents the addition of new payees on the mobile and also the creation of new external transfers.
- Finally, NCR APTRA Mobile Banking – Browser/SMS allows you to control access to the Mobile Banking channel, you can prevent unauthorized use of the software by activating the password feature.

When activated, all URLs require a unique key generated by a secure algorithm in order to be processed by Mobile Run-Time Engine.

Hosting environment security

NCR's complete security model not only covers the logical safety of the information as it travels from and to the server, but also the physical security of the hosting environment through imposing strict measures and taking the highest precautions. This includes rigid compliance programs such as annual SAS 70 (Type II) reviews, ISO 27001 certification, vulnerability assessments and penetration testing.

NCR has implemented fault tolerance in its system and storage configurations, also Data Backup and Recovery. Among some of the physical security features are continuous video surveillance, biometric access and exit sensors, UPS systems and back up generators and Server Operations Monitoring

ADDITIONAL FEATURES – MORE THAN JUST BANKING

NCR APTRA Mobile Active Messaging and Alerts

Whether or not you use NCR APTRA Mobile Banking, you can use NCR APTRA Active Messaging and Alerts to reach your customer at the right time. For example you can alert your customers in case of a suspicious transaction on their debit/credit card. This additional functionality empowers you and your customer against fraud, by adding an extra safety layer. Active Messaging can also be used to send customer critical account information, such as reaching a balance threshold or due payments.

NCR'S COMMITMENT TO DEVELOPING BEST-IN-CLASS MOBILE BANKING SOLUTIONS IS UNMATCHED, MOBILE SERVICES, COMBINED WITH AN EXPANDING PORTFOLIO OF MULTI-CHANNEL APPLICATIONS, WILL HELP YOU SUCCESSFULLY ENRICH YOUR RELATIONSHIP WITH YOUR EXISTING CUSTOMER BASE AND ATTRACT NEW CLIENTS.

Alerts and notifications are set up by your customers in the enrollment process, so they can decide what events trigger the notifications. With APTRA you can also send the notification messages via multiple channels. The same event notification can be delivered to your customers via one or multiple of the below channels:

- Wireless Alerts (Text Messaging, or 'SMS')
- Short Messages to mobile phones, PDAs, Pocket PCs, pagers
- Email Alerts
- Voice Alerts, delivered to cell phone, regular phones, voice mail
- Fax Alerts

NCR APTRA Mobile Business Banking

Again a stand-alone feature, NCR's APTRA Mobile Business banking leverages the capabilities of NCR APTRA Mobile Banking – Browser/SMS and provides additional services specific to business banking. These include:

- ACH wire transfer
- LockBox: gives your customers the ability to remotely (via mobile) monitor Lockbox deposits. The Lockbox typically shows text-based reports about the individual items and the summary list. However, where check images are scanned and presented in an image format, your customer will be able to display the check image.
- Stops, notifications and receivables
- Investments

Select an Alert to Activate

Alerts, with the exception of "Daily Balance Update", will run at twenty minute intervals from 7:00 am to 1:00am EST. An alert created during off-hours will activate the same day at 7:00am EST. "Daily Balance Update" will run once daily at 8:00am EST. An alert will only send you a message if there is a new information to report

Alerts Options

- Balance Alert**
Receive notification when account balance exceeds or falls below a threshold
- Check Cleared**
Receive notification when check cleared on your account
- Daily Balance Update**
Receive a daily notification of your balance
- Deposit Made**
Receive notifications when a deposit is made to your account
- Failed Payment Alert**
Receive notification when a bill payment failed to post
- Payment Made**
Receive notification when a payment is posted from any of your accounts
- Proponent News and Alerts**
Receive periodical news updates from Proponent
- Withdrawal Made**
Receive notification when a withdrawal is made from your account

NCR UNDERSTANDS THAT MOBILE BANKING IS ONLY THE BEGINNING, AND THEREFORE WE HAVE BUILT A SCALABLE MOBILE BANKING – BROWSER/SMS OFFER THAT DOES NOT LIMIT YOUR POSSIBILITIES. NCR BELIEVES IN GIVING YOU THE FUNCTIONALITY YOU NEED TO MEET AND EXCEED YOUR CONSUMERS' NEEDS TODAY, AND TOMORROW.

KEY BENEFITS	FEATURES	APTRA MOBILE BANKING - BROWSER/SMS
ULTIMATE USER-EXPERIENCE THAT OFFER PREMIUM VIEWABILITY AND IDEAL NAVIGATION SETTING	<ul style="list-style-type: none"> - Unique "refactoring" capability to customize the online experience to achieve optimum setting for each mobile phone - Refactoring settings for a wide range of mobiles (14,000 devices) 	<ul style="list-style-type: none"> ✓ ✓
WIDEST CUSTOMER REACH	<ul style="list-style-type: none"> - Mobile Banking available to all data-enabled devices regardless of carrier or mobile model - Extensive languages support including Japanese, Chinese and Korean 	<ul style="list-style-type: none"> ✓ ✓
FLEXIBLE SOLUTION	<ul style="list-style-type: none"> - Gives control over look and feel - Choice of totally managed world-class hosting service or in-house 	<ul style="list-style-type: none"> ✓ ✓
SPEED TO MARKET	<ul style="list-style-type: none"> - Typical mobile banking implementation between six to eight weeks - Minimal impact on bank resources 	<ul style="list-style-type: none"> ✓ ✓
COMPLETE BANKING FUNCTIONALITY	<ul style="list-style-type: none"> - Core functionality: balances, transaction history, account transfers, bill pay, schedule new payments, view due bills, review & cancel pending payments, view bill history, location services (ATM & branch) with links to online maps, rates, relevant promotions, self branding features, messaging for balance and transaction history, mobile redirection filter, mobile banking demo, view cleared checks 	<ul style="list-style-type: none"> ✓
ADDITIONAL FUNCTIONALITY	<ul style="list-style-type: none"> - NCR APTRA Mobile Active Messaging & Alerts - NCR APTRA Mobile Business Banking 	<ul style="list-style-type: none"> ✓ ✓
SCALABLE SOLUTION WITH GLOBAL SUPPORT	<ul style="list-style-type: none"> - Proven track record of successful implementation - Scalable support for institutions of all sizes 	<ul style="list-style-type: none"> ✓ ✓
COMPLETE SECURITY	<ul style="list-style-type: none"> - Logical security: <ul style="list-style-type: none"> - Encryption (128-bit SSL) - Firewalls - Filtering routers - URL encryption - Virtual Private Networks - Use certificates - User security: <ul style="list-style-type: none"> - Session time-out - No information saved on handset - Disabled mobile functions that bring risk such as adding new payees, and creating new external transfers - Control access to mobile banking & prevent unauthorized users - Hosting environment with highest physical security standards 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓

WHY NCR?

NCR's commitment to developing best-in-class Mobile Banking solutions is unmatched. Mobile services, combined with an expanding portfolio of multi-channel applications, will help you successfully enrich your relationship with your existing customer base and attract new clients.

NCR offers you the complete 'triple-play' Mobile Banking solution portfolio, enabling you to choose the technology approach or grouping of approaches that suits your present and future needs. NCR's Mobile Banking Browser/SMS offer provides you with the right technology combination to achieve broad customer reach, optimum customer experience, security, functionality and speed-to-market.

NCR understands that Mobile Banking is only the beginning, and therefore we have built a scalable Mobile Banking – Browser/SMS offer that does not limit your possibilities. NCR believes in giving you the functionality you need to meet and exceed your consumers' needs today, and tomorrow.

Within the NCR APTRA mobility portfolio, we have created optional stand alone solutions such as NCR APTRA Mobile Active Messaging and Alerts as well as NCR APTRA Business Banking.

To complement the technology NCR also has world-class hosted services that make the introduction of these new mobile services highly secure, cost-effective and quick to market.

NCR's mobility portfolio is continually growing with innovative technology and services that support new consumer services such as appointment scheduling and mobile payments, helping you to always better connect, interact and transact with your customers.

**NCR IS UNIQUELY QUALIFIED TO HELP YOU CONNECT,
INTERACT AND TRANSACT WITH YOUR CUSTOMERS AT
'ANYTIME, ANYWHERE' ACROSS MULTIPLE CHANNELS.**



NCR Corporation
1700 South Patterson Boulevard
Dayton, Ohio, 45479, USA
www.ncr.com
© 2008 NCR Corporation.

NCR continually improves products as new technologies and components become available. NCR, therefore, reserves the right to change specifications without prior notice.

All features, functions and operations described herein may not be marketed in all parts of the world. Consult your NCR representative for the latest information.

NCR is a registered trademark of NCR in the United States and/or other countries.