

## The No Compromise Charge Card

# NC3

NC3 addresses systemic problems with charge cards and new ways of addressing those problems with extraordinary enhancements.

The goals are:

Improve transaction security in all avenues of commerce making mass charge card information theft a profitless crime.

Do so without massive infrastructure costs for any participant: consumer, merchant, or provider, while reducing risks and costs for all.

Reduce transaction times for greater consumer throughput and provide additional operational enhancements for all participants.

Can a system so capable, so secure, and so easy to use be summarized in 10 slides or less without skipping over any major points?

**We'll try!**

## Why is NC3 Important To You?

Financial stability  
is a major support for our lives.



### **The problem:**

Charge card (including credit, debit and similar) compromise, both physical and card information, is massive. In 2014 over 1.4 billions accounts were compromised. In 2016 it was over 3.0 billion. Credit card compromise is painful. Debit card compromise can be ruinous.

### **This approach is unique.**

Some enhancements don't address security for treasure chests of consumer credentials held by merchants. Some impose their own requirements including massive costs (chip card readers cost billions). All costs are eventually paid by consumers.

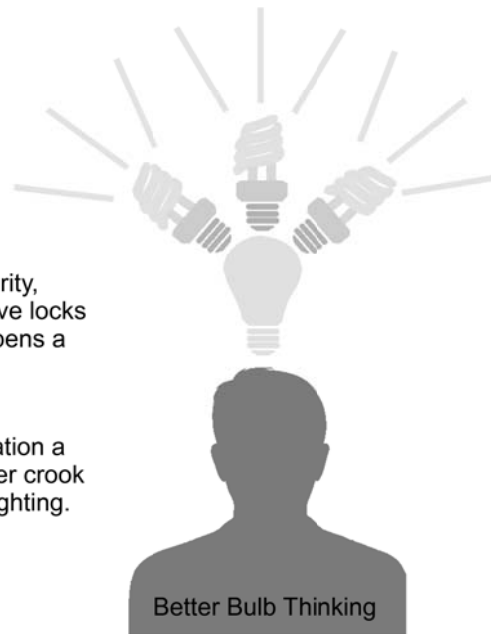
NC3 provides better security in physically present, electronically present and even non present to stop compromises of confidential consumer credentials. 2016 was a record year with over 3 billion credentials compromised and hundreds more data breaches where the company does not know, or isn't saying, how many were affected. Why we stopped tracking in October 2016.

NC3 provides operational enhancements that benefit consumers, merchants and providers without additional hardware at the merchant or the consumer, without transactional internet, and for all avenues of commerce allowing transactions in person (physically present), via electronic presence (using a computer), mobile presence (using your smart phone when not physically at a merchant), and non-presence (in the powder room without internet access).

## What Is NC3?

**NC3** is a new way of thinking about security, moving from more complex and expensive locks to a simpler and cheaper solution that opens a wide range of new capabilities.

**NC3** makes stealing charge card information a *profitless* crime. Denying a potential cyber crook any possible reward is winning without fighting.

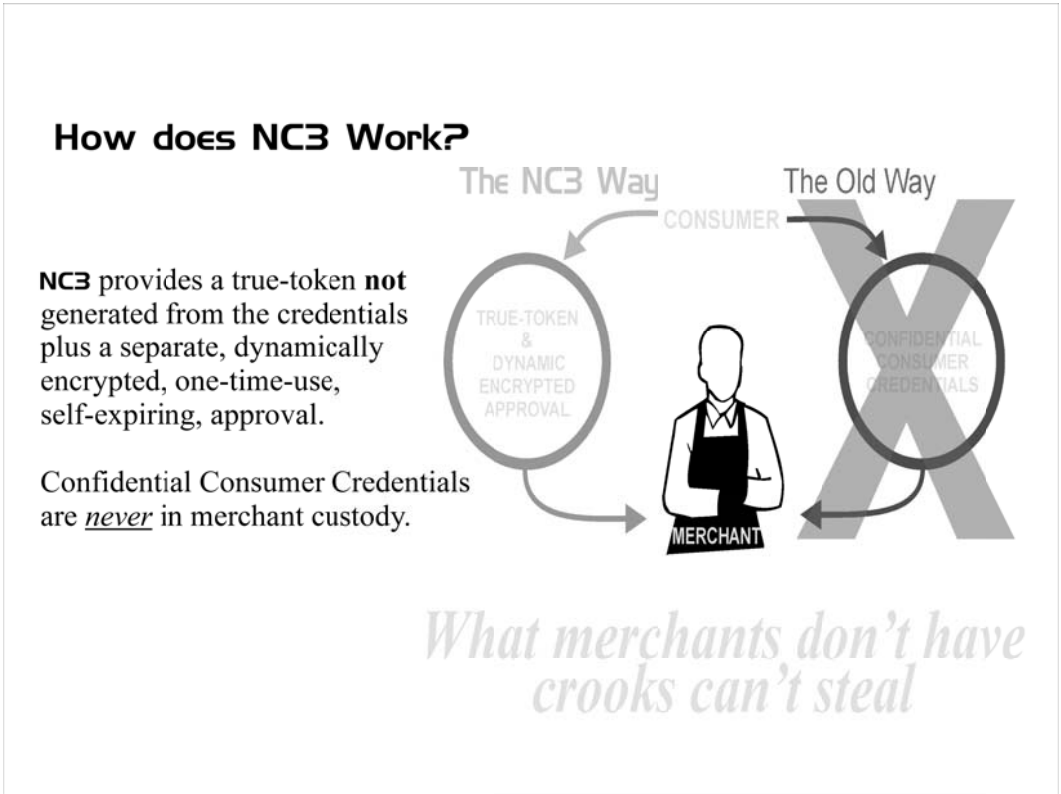


**Sun Tzu on winning without fighting:** “For to win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill.” Chapter 3 near the beginning. *The Art of War* Sun Tzu (Author), Samuel B. Griffith (Translator), B. H. Liddell Hart (Foreword), at the start of Chapter 3. Published by Oxford University Press September 15, 1971 ISBN-13: 978-0195014761

**Sun Tzu on being first to the field of battle:** “Generally, he who occupies the field of battle first and awaits his enemy is at ease, and he who comes later to the scene and rushes into the fight is weary. And, therefore, those skilled in war bring the enemy to the field of battle and are not brought there by him. ... Appear at places which he is unable to rescue; move swiftly in a direction where you are least expected.” *ibid* at the start of Chapter 6.

**Schumpeter on Creative Destruction:** “Every piece of business strategy acquires its true significance only against the background of that process and within the situation created by it. It must be seen in its role in the perennial gale of creative destruction; it cannot be understood irrespective of it or ... on the hypothesis ... of a perennial lull.” *Creative Destruction* by Joseph A. Schumpeter circa 1940. Originally published in *Capitalism, Socialism and Democracy* 1942 Reprinted New York: Harper, 1975 from pages 82-85 as shown in <http://transcriptions.english.ucsb.edu/archive/courses/liu/english25/materials/schumpeter.html>

**Implementation Model:** NC3 can only be implemented by providers as part of the “**Hybrid**” model. *Conglomerate Model* – Big eats small. *Digital Model* – Nimble and focused small eats monolithic and unfocused large. *Hybrid Model* – Small, but radical innovation enables larger, inertia bound organization to move to places they couldn't reach before.



**What is a “true-token”?** Some “tokens” are encrypted versions of the confidential consumer credentials (name, account number, expiration date, etc.). A “true-token” is random to content. It cannot be decrypted, reverse engineered or otherwise cracked to expose the confidential consumer credentials because *those elements just are not there*.

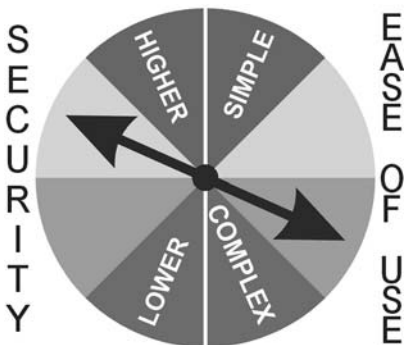
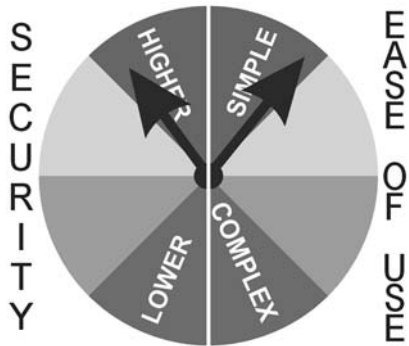
**How does a true-token work?** A provider gives true-token to consumer. That true-token represents the consumer. The true-token alone *cannot* authorize a transaction.

**The authorization** is encrypted, dynamic, content-rich transaction authorization that can be restricted to a single merchant, for a specified or a not-to-exceed amount, for a specified transaction, on a specific day, and valid only for a specific duration. It is highly “context-sensitive” and duplicates have no value.

**This improved security is automatic and transparent to the consumer.** This breaks the traditional inverse relationship between increased security and ease-of-use.

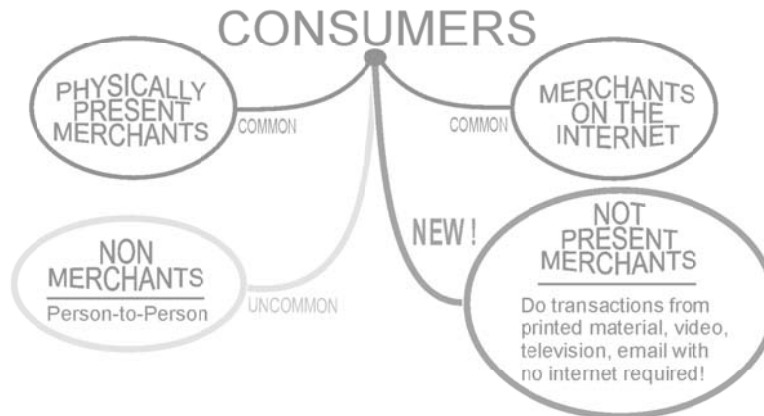
Automatic security makes **NC3** easy to use.

Traditional Inverse Relationship.



## Where Can You Use NC3?

**NC3** can be used anywhere! You can be physically present at a merchant (brick & mortar), electronically present on the internet, or not connected to a merchant at all. You can even do transactions person-to-person.



**Improved security exists in all avenues of commerce.** Information is only provided to those that need it. This means confidential consumer credentials are never provided to merchants anywhere, nor are they exposed when doing a person-to-person payment (P2PP).

**Non Present Merchants:** You can make an order from a printed poster, from a newspaper ad, television, video almost anything. You can get a printed utility bill and pay it faster than even going to your computer.

**For P2PP** the receiver may be using **NC3**, but they don't have to be! All the sender (you) need is their smartphone number. You decide how much and from which source you want funds taken: checking, savings, money market, you define them in advance. The recipient never knows anything about that source account!

**Near Field Communications (NFC)** has significant security concerns. **NC3** puts security in the message, not in the communications medium and allows for touch-and-go payments in physical presence commerce avenues without being concerned about NFC weaknesses. See [www.NC3.mobi/references/nfc](http://www.NC3.mobi/references/nfc)

## Who Benefits from NC3?

All participants in commerce, including billions of consumers, millions of merchants and hundreds of providers benefit from adoption of **NC3**. Some reasons are listed below. See *Notes* for more.

### Consumer Security & Operational Enhancements

**NC3's** optical communications are line of sight, not omnidirectional. Unless the crook is between you and the terminal interception isn't possible.

Altered card swipers gather nothing of value. Each transaction is encrypted differently and perfect copies are useless.

Enhancements include: Touchless Operation, Voice Command, Order-in-Advance, Person-to-Person transactions, Foreign Currency detection, Gratuities, Sub-Accounts, not-to-exceed authorizations, all in a single interface,

### For Merchants

Not holding consumer credentials reduces risk. Using existing communications and transaction infrastructure (no new hardware required) reduces adoption cost.

Order-in-Advance allows for complex ordering and increased queue speed because the consumer arrives at checkout with the charge already authorized.

More: Easy Wireless Tableside Checkout, Foreign Currency awareness, optionally initiating the multi-option Gratuity Calculator, and migration possibilities to eBilling for conventional services (think printed utility bills), and more.

### For Providers

Add revenue enhancement and cost savings to security and operational enhancements. If the underlying credentials are never revealed, it is unnecessary to *ever* re-issue a card and that reduces cost. The **NC3** identifier can be re-provisioned by the consumer without assistance.

Revenue enhancements include the billions in fees annually earned by companies whose reason for existence is the security that **NC3** provides at no extra cost. Add the revenue from an estimated 40% of consumers who avoid e-commerce simply because of security concerns. There is more.

**Beneficiaries Document** Email [webmaster@nc3.mobi](mailto:webmaster@nc3.mobi) and ask for the 1-page Beneficiaries.pdf document

**Consumer Security:** In physical presence transactions NC3's non unidirectional communication can't be intercepted unless the crook is between you and the cashier. Altered card swiper devices are useless. Each transaction is encrypted differently for each consumer and for each transaction. Perfect copies of authorizations are useless.

**Consumer Operational Enhancements:** Include Touchless Operation, Voice Command, Order-in-Advance, Person-to-Person transactions, detection of Foreign Currency charges, automatically initiated multi-choice Gratuity Calculator, limited Sub-Accounts, recurring transactions, not-to-exceed authorizations, a single consistent interface instead of checks, electronic funds transfer, e-checks, cash, separate charge cards, bank e-payment sites, substitute charge cards or fourth parties such as PayPal.

**Merchants:** Never having the consumer credentials greatly reduces risk. Operating within existing communications and transaction infrastructure (no new hardware required) reduces costs. Operation efficiencies such as Order-in-Advance allows for complex ordering (think of a specialty coffee drive thru) without depending on remote microphones. Authorization for payment happens at the same time. Think of the increased queue speed if, by the time the consumer arrives at the checkout window, the charge was already processed. Hand them their order and they move on. Other enhancements include: Easy Wireless Table Side Checkout, Foreign Currency charge awareness, optionally initiating the Gratuity Calculator, and for restaurants, having to transmit the complete bill for authorization a single time versus once for the charge amount and a second time to include a gratuity. That is a 50% reduction in communications sessions. Scalable integration that starts with zero additional hardware, migration possibilities to eBilling for conventional services (think utility bills), and more.

**Providers:** There are security and operational efficiencies as well as material revenue enhancements. Consider, if the underlying charge card number is never revealed why re-issue cards many times over a consumer's lifetime? The NC3 identifier (a link to the underlying account available only to the issuing provider) can be re-provisioned by the consumer without assistance. Revenue enhancements include the over \$18 billion dollars in fees annually earned by companies whose reason for existence is the security that NC3 provides. \$18B is PayPal's May 2020 ttm revenue. Other enhancements include the estimated 40% of consumers who avoid e-commerce simply because of security concerns. Think about touchless ATM integration where the transaction(s) and authorization are transmitted in one request without so many key-presses.

**Benefits to Our Nation:** We get economic benefits in saving untold hours expended by identity theft victims. Billions of law enforcement dollars can be saved, at no cost to the government, by preventing charge card information theft. NC3 can be applied to Electronic Benefit Transfer (EBT) based public assistance. EBT is a pre-paid debit card from a government funded provider. Plastic EBT cards are improperly loaned or sold. The NC3 based version is more likely to remain with the intended recipient. NC3 can also be applied to Medicare/Medicaid to reduce fraud. Saving crime-related expenses and increasing sales on a national scale translates to a more vibrant economy. As the perpetrators of some major breaches were foreign nationals there is an element of nation security to be protected.

**Benefits to The Global Economy:** Take all of the above for all consumers, all merchants, all providers in all nations and you have an improvement to the global economy.

## When Will NC3 Be Here?

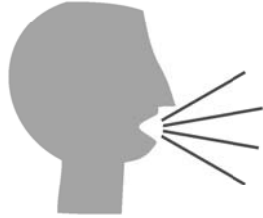
When enough people get tired of replacing their cards and dealing with credit monitoring.

When you're sick of being worried, get mad as hell and won't take it anymore.

When you get riled up and let providers, merchants and your politicians know a better way exists and you want it!

*Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.*

Margaret Mead



How do you let them know? See  
<http://nc3.mobi/how-to-get-nc3/>

# Start with the big two providers

## MasterCard

If you haven't already sent one, tweet @MasterCard

Email

### **Christine Elliott**

Executive Vice President, Global Communications  
Try [christine\\_elliott@mastercard.com](mailto:christine_elliott@mastercard.com)  
Or Via LinkedIn  
<https://www.linkedin.com/in/christine-elliott-b20876b/>

If you really want to make an impact,  
send snail mail to:

### **Mr. Ajay Banga**

Chief Executive Officer  
Mastercard Corporate Headquarters  
2000 Purchase Street  
Purchase, NY 10577

## Visa

If you haven't already sent one, tweet @Visa

Email

### **Sandra Chu**

Senior Director  
Global Public Affairs and Issues Management,  
Visa Inc.  
650-432-1217 [sanchu@visa.com](mailto:sanchu@visa.com)

If you really want to make an impact,  
send snail mail to:

### **Alfred F. Kelly, Jr.**

CEO since December 2016  
and chairman since April 2019  
Visa Inc.  
PO Box 8999  
San Francisco, CA 94128-8999

**NC3 has multiple goals  
to benefit consumers, merchants and providers**

**Improve Security**

Protect consumers, reduce loss risk and liability by ending the tempting lure of massive volumes of consumer credentials held by merchants.

**Add Operational Improvements**

Reduce order and transaction times  
Increase security AND ease-of-use  
Create one mode for all commerce avenues

**Reduce Costs**

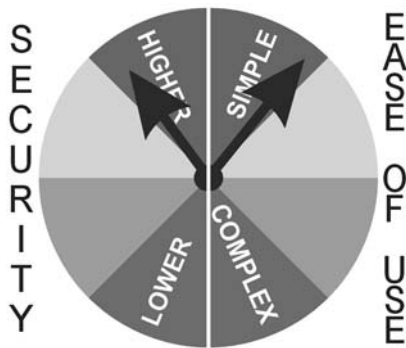
Reduce implementation cost by using existing hardware  
Reduce transaction cost by using existing transaction infrastructure

**Operational Improvements**

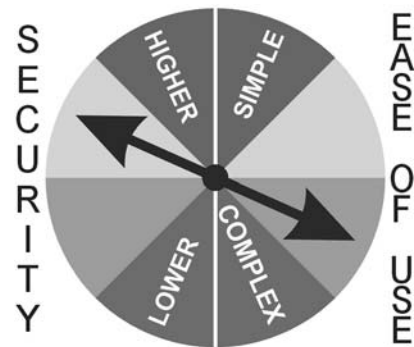
Reduce transaction times by including authorization in ordering process and reducing the number of merchant and provider communications sessions per transaction.

Reduce total time for Observe-Orient-Decision-Action (OODA) loop

Break inverse relationship between increased security and decreased ease-of-use



**NC3**



**EXISTING MODEL**

Establish common transaction mode for physically present, electronically present, and not-present so consumers can use a single interface and method instead of many. See examples <http://nc3.mobi/how-it-works/examples-main/>

**Reduce Costs**

No new hardware for merchant and consumer  
Work in existing transaction and communications infrastructure



## Long term trends guided NC3 development

### Crooks are Not Dummies

They are just as smart as anyone else and, absent committee meetings, binding regulation or moral constrictions, they are more efficient taking just seconds to compromise systems and minutes to exfiltrate massive volumes of data.

### There is a Traffic Change on Avenues of Commerce

NC3 can provide better and simpler security for growing electronic and mobile commerce and provide for traditional brick and mortar retail, restaurant, service and other in-person commerce.

### Make Life Simpler

Use technology consumers, merchants and providers *already* have.

### Be Effective *and* Efficient *and* Fair

Be secure and do so while making living better, not more complex or confusing. Include benefits for all participants. Don't burden some while rewarding others.

**Crooks:** Time values from Verizon 2015 *Data Breach Investigations Report*, slides 5-8 on <http://news.verizonenterprise.com/2015/04/2015-data-breach-report-info/>

**Commerce:** sales via electronic and mobile avenues are growing faster than traditional, physically present commerce, but that avenue is going to be around a long time. The need for touchless increased during 2020 COVID-19 pandemic.

**Simpler** – avoiding fourth parties in addition to consumers, merchants and providers. Let technology provide security and not adding another password

**Effective** – NC3 can prevent compromise of confidential consume credentials.

**Efficient** – Consumers use smart phones. 50% +/- of all mobile phones are smart and 80% +/- of all new mobile phone sold are smart. Let the computer do the security work and leave us to enjoy life while not having to remember more PINs..

**Fair** – There are benefits for consumers, merchants and providers. Email [webmaster@nc3.mobi](mailto:webmaster@nc3.mobi) and ask for the one-page Beneficiaries document.

There are inertial trends that embody the *7 Deadly Words of Management*

**We've always done it that way before.**

**We can do better!**

**For More Information About**  
The No Compromise Charge Card

See the web site  
**www.NC3.mobi**



There is a better way to protect consumers and merchants than what we have now.

Let the providers know NC3 is worth their evaluation!

There are many advantages of NC3 over similar appearing offerings. Those are proprietary solutions and not always welcome at all places where charge cards are readily welcome. They have names such as xxx-pay, or pay-xxx.

Some are not from banks or other providers and are properly classified as a fourth-party (in addition to consumer, merchant and provider) who themselves hold underlying consumer credentials, a treasure for hackers.

Most require Near Field Communications (NFC) for in person transactions. NFC can be compromised four ways. See <https://nc3.mobi/references/nfc/>

None of them can effect transactions from printed material, video, television, email etc with no transactional internet requirement (Not Present Merchants)