![technology enterprises logo]

VST Enterprises

Electronic Benefit Transfer

White Paper

Foreword

Louis-James Davis, CEO VSTE

The US electronic benefit transfer or EBT system is attractive to fraudsters due to lack of adoption and investment in new technologies. Processes for cloning cards that have minimal security - such as magnetic stripes - are well developed and the introduction of radio frequency identification (RFID) also fell short due to the ability of fraudsters to steal or 'skim' card details.

As well as consumer to business fraud, the US government is also grappling with business to business fraud, where a business uses collated fraudulent transactions to restock its store. This activity has a direct impact on every member of the population, even those who are not in receipt of benefits. Every dollar of public money spent combating fraud is a dollar less spent on essential services such as education, transportation or healthcare.

Unless the US government tackles fraud through the implementation of new technology with appropriate levels of security, fraud will continue to spiral out of control. The US could learn a lot from emerging economies such as India, which is investing heavily in technology infrastructure, enabling it to educate its population on various levels of security and update payment methods.

This investment also allows security specialists to pave the way for the implementation of new solutions like VST Enterprises' VBT™ product, which features a wide range of fraud prevention solutions.
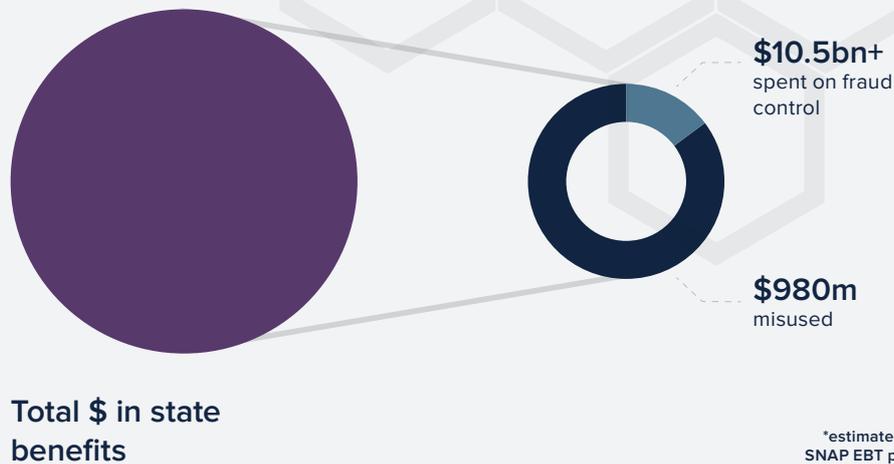
Many 'innovations' in secure payment, document transfer and delivery that have gone to market are largely based on pre-existing solutions. The one most likely to be revolutionary is Microsoft's 3D scan facial verification technology which can be integrated and deployed in various services under license.

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Executive summary

$10.5bn+
spent on fraud control

$980m
misused

Total $ in state benefits

*estimates based on SNAP EBT programme

Every year, tens of billions of dollars in state benefits are delivered to millions of Americans. EBT has transformed the delivery of supports such as food stamps since paper coupons were phased out in the 1990s.

Given the scale of the programme, its operational efficiency is impressive. Despite regular high profile reports of organised trafficking (in which benefits are illegally exchanged for cash, often at a considerable discount to the value of the benefit), the use of PINs has helped to reduce fraud as a share of annual benefits from 3.8% in 1993 to 1.3% in 2009-11.

However, challenges persist – recorded fraud is $980m, but the actual cost to the US government is estimated to be three times that figure and $10.5bn is spent combatting fraud. Public representatives acknowledge that fraud undermines public support for the programme.

Strong authentication has the potential to reduce trafficking by employing a combination of data sources to verify the authenticity of the transaction. It can interface with multiple card issuing platforms and benefits programmes, authenticating the benefit recipient at the point-of-sale without the need for additional hardware, determining the eligibility of the items purchased while allowing the merchant to maintain an audit trail of all transactions.

Headline Argument/Proposition
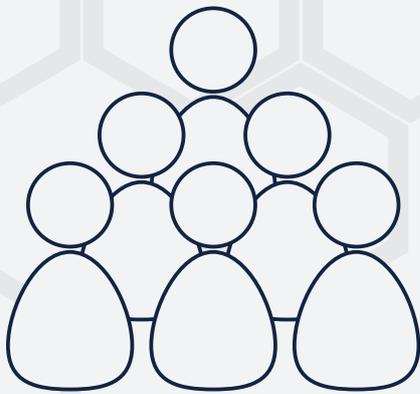
45.8m
people with just under

$70bn
in benefits via EBT cards

Data from the 2016 World Payments Report underlines the sheer scale of the electronic money transactions market in the US. Non-cash payments grew by 4.4% in 2014 across more than 128 billion transactions, an average of 402 transactions per head of population.[1] Despite recent growth, payment security has been a major issue in the US. In October 2015, liability for counterfeit card fraud shifted from card issuers to merchants that had failed to replace or upgrade their card acceptance and processing systems to chip-enabled devices and applications to process payment transactions. Yet the US Payments Forum estimates that no more than half of the cards in the market are chip cards.[2] One of the largest segments of the card payment industry in the US is the payment by state governments of benefits such as food stamps and cash to authorised recipients via a plastic debit card with a magnetic stripe.

Electronic benefit transfer, or EBT cards, can be used at participating merchants and ATM machines and point-of-sale terminals. In fiscal year 2015, SNAP (the nation's largest nutrition support programme) provided 45.8 million people with just under $70bn in benefits via EBT cards. In June 2016, Stacy Dean, Vice President for food assistance policy at the Center on Budget and Policy Priorities, told two US House of Representatives sub-committees about some of the systems designed to protect the integrity of the SNAP programme.[3]

Computer programmes monitor transactions for patterns that may suggest abuse, in which case federal and state law enforcement agencies are alerted. The US Department of Agriculture (USDA) also partners with state SNAP agencies to combat the illegal exchange of benefits for cash. Mike Carroll, secretary of the Florida Department of Children and Families, refers to a growing epidemic of identity theft and trafficking, not from 'mom and pop' storefront operations but from major criminal enterprises with ties to other serious and dangerous criminal activities including drug sales, prostitution and human trafficking.

As new technology becomes available and awareness of how problems arise improves, there will continue to be opportunities to improve SNAP accuracy and prevent fraud.

Federal law provides states with the option to require a photo of one or more adult household members on the EBT card. A report by the Urban Institute however, found that there was no compelling evidence that photos on EBT cards meaningfully reduced card trafficking, given that such trafficking involves the complicity of individuals and retailers for whom a photo on the card will not act as a deterrent.

The VCode® and the Intelligent VPlatform™ technology has the potential to deliver much greater benefits, using a combination of security protocols to verify the authenticity of the transaction rather than PINs that can be stolen, sold or guessed. The technology can seamlessly integrate with multiple card issuing platforms, stock systems and benefit programmes, authenticating the benefit recipient and qualifying EBT items at the point-of-sale without the need for additional hardware. The platforms GPS positioning technology validates both the merchant and recipient location.
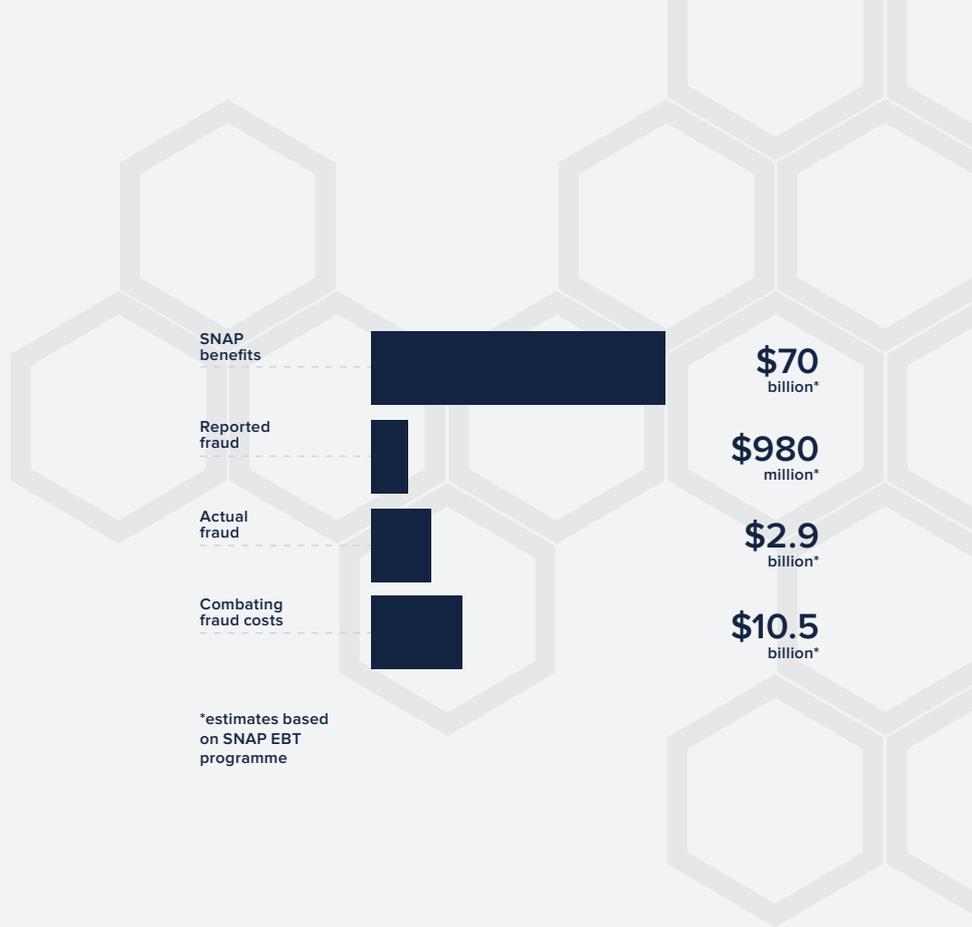
Expert views

Analyst perspective – Simon Willis

In 2014, USDA provided more than $5m to each state to boost the use of technology to identify possible fraudulent activity and increase the number of trafficking investigations. More recently, the department has provided funding for individual technology projects.

Kay Brown, Director of Education, Workforce and Income Security Issues at the Government Accountability Office (GAO) has revealed that enhanced detection tools and reporting to combat recipient fraud are in development.[4] However, any chain is only as strong as its weakest link and electronic benefit transfer is as vulnerable to cybercrime as any other payment system.

Cybersecurity is a global issue that cuts across all industries and encompasses all electronic payments, including state benefits. The significance of the threat to such a critical piece of public sector infrastructure cannot be underestimated.

Hackers target the control systems that operate critical infrastructure because of the enormous damage they can cause by crippling such infrastructure. These control systems typically weren't designed to be connected to the internet, so they lack the cybersecurity capabilities to ward off hackers.

Financial institutions are obvious potential beneficiaries of cutting-edge cyber security, but so is the public sector – at state and local level just as much as at federal and national level. When it comes to combatting state benefit fraud, one of the great opportunities presented by the digital revolution (which now includes the use of bots to develop and maintain software on an ongoing and iterative basis[5]) is that the ability to detect fraud by cross-checks between state and federal databases should become much more effective.

SNAP benefits	$70 billion*
Reported fraud	$980 million*
Actual fraud	$2.9 billion*
Combating fraud costs	$10.5 billion*

*estimates based on SNAP EBT programme

CFO perspective - Stephanie Sharp

While SNAP benefits have increased from $30bn to $70bn over the last eight years, known fraud as a percentage of overall payments has decreased to what has been referred to as an acceptable error rate of approximately 1.4%. However, total fraud is believed to be closer to three times that amount due to fraud involving collusion between the recipient and the retailer going undetected.

The cost of investigating and managing fraud and issuing and replacing lost and stolen cards is approximately $10.5bn. Implementing emerging technology solutions to manage the EBT wallet and the replacement of lost/stolen cards would reduce these administrative costs significantly, despite the cost of distributing a smartphone device.

Determining eligibility of items for smaller retailers is also a contributor to programme losses since many stores depend on the skillsets and integrity of their employees. By seamlessly utilising new solutions to identify eligible items at the point-of-sale, eligibility issues and fraud losses could be eliminated.

Reporting and analytics tools are available to states to utilise in managing their respective programmes, but enforcement staff lack the resources to actively pursue fraudsters. At a recent Food and Nutrition Service (FNS) hearing, state programme administrators explained that at current levels, it would take 23 years to clear all outstanding investigative cases.

Traditionally, EBT processing has taken a backseat in the world of electronic payment processing with limited deployment of innovative, real-time fraud detection tools. A commitment to authentication technology has the potential to save the taxpayer billions of dollars and improve public confidence in the EBT programme.

"A government based system needs to be compatible with thousands of point-of-sale hardware and software systems..."

Payments expert perspective - Joseph Cohane

The EBT payment network has improved the efficiency of SNAP payments by introducing electronic prepaid debit cards. However, with the whole world moving to EMV chip card standards it is only a matter of time before hackers and organised crime groups recognise the vulnerability of the EBT card transaction.

The challenge with a single use, government card based system is that it does not currently capture additional purchase information or have the capacity to run multiple government programmes on a dynamic centralized payment platform. By providing payment and data instruction from an interactive, centralised rule based system, government programmes can be instantaneously modified to meet changing demands.

So what payment method should government organisations migrate to in order to manage multiple payment programmes such as SNAP or the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) while using a single source, secure authentication method?

The chosen solution will need to be cost effective, easy to implement, provide added value to all programme participants, reduce fraud and allow for future upgrades in a seamless fashion.

"...With the emergence of NFC technology at the point-of-sale coupled with the widespread usage of smartphones, it is time to move the EBT card to the cloud."

A government based system needs to be compatible with thousands of point-of-sale hardware and software systems. The obvious answer would be to ride the traditional card system rails; although by selecting this path a new payment system would become beholden to the rules and cost structures of the major payment associations.

With the emergence of NFC technology at the point-of-sale coupled with the widespread usage of smartphones, it is time to move the EBT card to the cloud. VCode® can manage the maze of payment structures, payment software/ hardware providers and processing networks by providing a new standard in payment authentication and interactivity.

"VCode® can manage the maze of payment structures, payment software/hardware providers and processing networks by providing a new standard in payment authentication and interactivity."

"The 11 states studied by the GAO reported using detection tools required or recommended by the FNS to combat SNAP recipient fraud."

Identity security specialist perspective - Jonathan Davies

In 2014, the GAO found that although selected states employed a range of tools to detect potential SNAP recipient fraud, they faced challenges including inadequate staffing levels that limited the effectiveness of their actions. It also found that the FNS lacked data about the states' efforts.

The 11 states studied by the GAO reported using detection tools required or recommended by the FNS (among others) to combat SNAP recipient fraud. However, eight of these states reported difficulties in conducting fraud investigations due to reduced or stagnant staff levels and funding and some state officials suggested changing the financial incentives structure to help support the costs of investigating potential fraud.

The EBT system is vulnerable to identity theft. For example, recipients can traffic benefits by selling their cards to another person, exchanging the card and the corresponding PIN for cash or non-food goods or services such as rent or transportation.

These sales can occur in person or by posting offers on social media and e-commerce sites. Recipients can then contact state agencies to report the sold EBT cards as lost or stolen and receive new cards which can be used for future trafficking transactions, for example when the benefits are replenished the next month.

If the issue of identity fraud and abuse of the EBT system is not resolved, it could lead to the withdrawal of cards that have been replaced more than once or twice, to the detriment of potentially innocent claimants.

Implications, opportunities and threats

Government

The benefits to government of enhanced fraud prevention for EBT cards are significant. While the use of PINs has helped reduce trafficking as a share of annual SNAP benefits from 3.8% in 1993 to 1.3% in 2009-11, the volume of benefits claimed fraudulently is still considerable.[6]

In testimony to the House Committee on Agriculture in July 2016, Ohio Auditor of State Dave Yost suggested that fraud and poor management undermined public support for the programme.[7]

Research into EBT card usage in Ohio during a six month period in 2015 identified 36 instances where dead people received benefits more than a year after their death (in some cases, someone was still using the card). The research also identified 1337 recipients with balances greater than $2,300 - twice the maximum benefit for a family of eight – and found that almost $29m was spent in states as far away as Florida, Texas and Minnesota.

While the federal government shares in the costs of administering the programme, state budgets remain the limiting factor to ensuring the best systems and technology are deployed. Many states downsized their operations during the recent recession and have not yet rebuilt the capacity necessary to take full advantage of new options and technology.
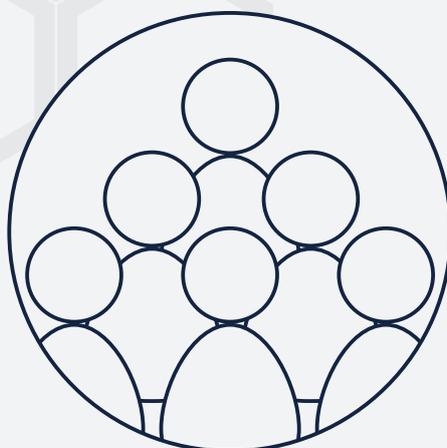
Consumers

In October 2016, the Consumer Financial Protection Bureau (CFPB) announced new standards to protect prepaid account consumers, including federal, state and local government EBT cards used to distribute social security benefits and unemployment insurance.[8]

The rules (which take effect in October 2017) protect against withdrawals, purchases or unauthorised transactions that happen when lost or stolen prepaid cards are reported to the issuer, limiting consumers' liability for unauthorised charges and creating a process for cardholders to get their money back in a timely fashion.

However, levels of fraud have encouraged some states to limit the number of times an EBT card can be automatically replaced. Earlier this year the Maine Department of Health and Human Services' Office for Family Independence announced that it would withhold a fifth EBT replacement card within a 12 month period[9] until the client contacted the department and provided an explanation for losing the first four cards. No replacement card would be issued if the person didn't respond and the case would be referred to the department's fraud, investigation and recovery unit.

Maine Department of Health and Human Services officials say there were more than 140 requests for replacement cards in 2015 that would exceed the threshold.
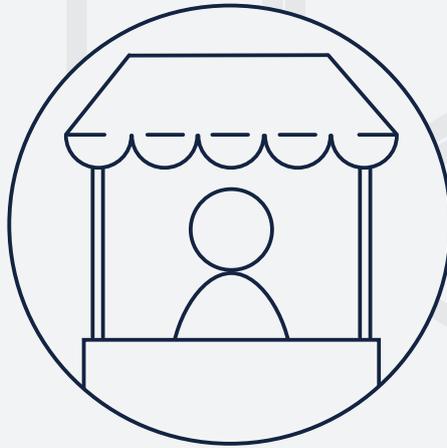
Retailers

EBT cards have already produced measurable benefits for retailers. A paper published by the National Bureau of Economic Research in March 2014[10] reported that the federal government's move to mandate individual states to convert the delivery of their welfare benefits from paper cheques to an electronic benefit transfer system in the 1990s reduced the amount of cash in circulation as a result of public assistance or welfare payments.

It has been long recognised that cash plays a critical role in fuelling street crime due to its liquidity and transactional anonymity. By exploiting the variation in the timing of the EBT implementation across Missouri counties, the National Bureau of Economic Research found that programme had a significant effect on the overall crime rate as well as on levels of burglary, assault and larceny. According to its estimates, the overall crime rate decreased by 9.8% as a consequence of the EBT programme.

In September 2016, the USDA issued a request for retailer volunteers for a two year, nationwide pilot to enable programme participants to purchase their groceries online.

Inevitably, improved fraud detection will benefit the retail sector by reducing the temptation for individuals to abuse the system. In fiscal year 2015, the USDA permanently disqualified over 1900 SNAP retailers for programme violations and imposed sanctions (through fines or temporary disqualifications) on a further 800 stores.

Closing remarks

To date, it could be argued that fraud across the EBT system has been treated as a 'cost of doing business', with a certain level of fraudulent activity almost becoming accepted. Genuine claimants are vulnerable to ID thieves and fraudsters, while the government is targeted both by individuals and by organised gangs committed to benefit fraud.

Compared to private sector markets such as financial services, retail and travel, the government has a way to go to implement strong authentication methods for EBT. Until a shift change in approach to the serious problem is made, US taxpayers and the welfare system will continue to lose hundreds of millions of dollars each year to fraudsters and ill-prepared technology.

VST Enterprises' Patented VCode® technology can provide the US, and other governments, with a nationwide and user-friendly approach to EBT, with a robust authentication standard that secures both the government and the benefit claimer.

VCode® delivers permissioned access to information, such as that held on the EBT card, via a standard smartphone or EPOS system, if needed. This means that, when necessary, only benefit providers, retailers or other persons with relevant permissions can access details of the remaining benefits due to the recipient.

The VCode® and VPlatform™ technology puts the user in control of their data. Not only is it secure, but it can also streamline the transaction process and integrate fully with other government and private sector schemes, such as public transport cards, national ID cards, electronic document signage and credit checks. No other technology on the international market today can solve security, distribution and consumer adoption challenges with a single protocol.

While there has been much hype and fear-inducing commentary surrounding cybersecurity, data breaches, counterfeiting and fraud, many of the solutions put forward are based on legacy technology or processes. There hasn't been much development when it comes to the implementation of solutions to address these issues. This is something that has validated our mission to implement simple and ubiquitous technology to ensure security and eliminate global counterfeiting.

Mike Carroll, secretary of the Florida Department of Children and Families, has called for greater investment in the 'right' technology. We believe the technology we have developed is the best solution.

Sources

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About VST Enterprises

VST Enterprises (VSTE) has been widely recognised for its development of VCode® which, among other applications, has the potential to revolutionise financial transactions on the internet in both the public and private sectors.

The versatile VCode® technology allows genuine users to authenticate themselves, and / or a product, across a variety of online transactions and interactions.

It is currently being utilised to protect against fraud in many sectors, from document verification, to authenticity checks on apparel and identity, and interactive charitable giving transactions. Already present in the UK, Europe, the Middle East and North America, VSTE bosses are also planning expansions into Asia with newly opened offices in New Delhi, Hyderabad and Singapore.

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