

Outline of VETT IP

Introduction

VETT (Verified Electronic Transaction Technology) This presentation provides an overview of the processes and technology behind VETT. This technology is designed to leverage the secure online and telephone banking environments enabled by Bank systems. I should however point out that VETT is not solely dependant upon 'buy in' from the banks. The technology would be as equally effective if introduced via the mobile communication market. VETT also have a software engine in development which will form the core for future applications.

We start with an initial look at the Key components, Special features, Advantages and Benefits to the financial industry. We will then look at VETT in operation through a 'step-by-step' example of a generic transaction. We can then look at the benefits to Customers and also for Third Parties connected to the transaction.

To complete the overview of VETT we will look at a few specific examples of applications. Each example will take approximately 2 minutes to review. The first looks at a 'Cash-Over-The-Counter' transaction. The next looks at online banking, another looks at how VETT works with mobiles. There is also an example showing a new product called the Guardian Account.

To close, we will review benefits for financial institutions and finish with a summary of VETT.

The founders of VETT are Garry Gibson who is the author of the technology and Faye Wright in support for research and development.

The Patent

The filing date for VETT was June 2000 with Patent granted in the UK in July 2004.

VETT has patents pending for Europe, North America and Canada.

What does VETT do?

'VETT will enable anyone with access to a phone or the internet to conduct secure transactions between remote locations.'

When we say "anyone", we mean either an Individual or someone acting on behalf of an organisation. By 'remote' we mean transactions which are NOT face-to-face.

To gain access and use VETT, the technology works in the real world 'offline face-to-face' as well as for ecommerce.

We emphasise these terms 'offline' and 'remote' because VETT can be used for both telephone and mail order commerce as well as on the internet.

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What can VETT do?

The simple but elegant functionality of VETT can deliver the flexibility for many different applications in a variety of commercial environments.

Beyond those we will highlight specifically in this presentation, a few of the many other potential applications are listed here:

- Digital Signature will enable anyone with a bank account to authorise a document with little more than a single phone call.
- Identity Verification. VETT will enable an individual to say 'this is who I am' rather than 'this is who I say I am' as one would with an ID card.
- Remote Voting will support shareholders or directors unable to attend a meeting. VETT is a secure product and the management believe the technology can be deployed for local and national elections.
- VETT has an application for procurement operations to authenticate users, track use and deliver management control over the budgets of participants.

An important point to note for VETT is that the process for each and every one of the applications can be defined as a 'transaction' rather than just a simple secure payment. Each application will utilise the same core components enabling true flexibility.

Key Components

Looking at the technology in operation you will note that each transaction will leverage four 'key components' and these are;

- The existing relationship that the Bank has with its Customers
- The Bank's extensive investment to verify Customer identities, for example 'money laundering regulations'.
- VETT delivers the third component, a 'single point of reference' for transactions prior to processing.
- The fourth element is the unique reference number. Regardless of who provides the service which generates a transaction, Service Providers are free to define and issue a numeric reference independent of VETT. This overcomes interoperability issues and provides an open source platform for universal 'Straight Through Processing'.



Benefits to the Bank

VETT will deliver many benefits for Banks;

- Minimises the opportunities to repudiate transactions which will reduce the banks exposure to risk and reduces costs.
- Straight Through Processing will move operations closer to the goal of paperless transactions.
- VETT is 'technology neutral.' What does this mean? It means that the Bank can step back from the need to chase the latest shiny technology. With VETT banks will gain greater control over operational costs.
- Customer self administration means a reduction in back office operational costs because Customers will manage, securely and with confidence, more of the ordinary administrative tasks.
- VETT's unique operational features, common to all applications, will deliver scope for the banks to deploy new products and develop new profitable revenue streams.
- And of course, VETT is easy to use and simply secure.

Special Features

- VETT employs a 'push' transaction which means Customers do not have to enter their account details and expose sensitive private data to any Third Party.
- Unlike others in the market VETT does not require the Customer to use a smart card, a card reader, carry a token or use a certificate. This means no replacement expenses for lost, stolen, broken or 'out-of-date' devices.
- VETT employs but does not rely on encryption.

VETT is dynamic

This "slow-motion" explanation for a generic VETT transaction is designed to demonstrate the VETT process and is split into seven separate detailed actions.

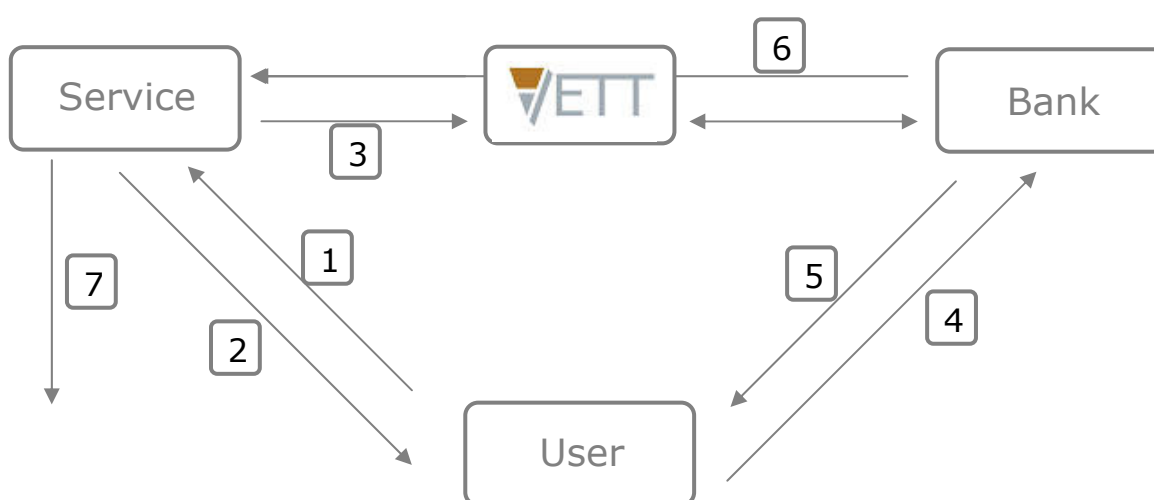
For users a VETT transaction will take about the same time as an ATM withdrawal.

A VETT transaction can be initiated via telephone, mobile, the Internet, by mail order or face-to-face to issue an instruction, and via telephone, mobile, Internet and also face-to-face to authorise an instruction. VETT targets users who are less than comfortable about disclosing their account data or debit and credit card details to a third party. VETT can also work for people who do not have a debit or credit card and even for people without a bank account.



In this description the reference to 'Service' could represent a Merchant, a Solicitor, a Government department or an online banking instruction. 'VETT' refers to the VETT platform, 'Bank' means the User's Bank and its systems and 'User' is a person employing VETT to conduct a remote transaction. It assumes that the VETT platform is in place, the relevant Bank and Service Providers are operating VETT and that the User wishes to use it to protect their security.

Representation of Transaction



Setting up an instruction – Point One

The 'User' connects to a Service Provider and selects a service from a list/menu or makes a choice from a catalogue. The User will choose from a menu to say how they want to authorise the instruction. (For instance, a Consumer shopping online would be asked to select a method of payment). In this example the User selects VETT as the preferred method to authorise the transaction.

The Service Provider's system will present a screen and ask for the User's details. The User will enter:

- Their name
- Their 'Communications Address' and also,
- Their delivery instructions, no other data required.

The User will then select 'proceed'. Note that VETT does not require an account or card number or any other personal details.

The Service Provider's system will record the User's instruction and store the information as a VETT transaction pending authorisation. (The program to handle this operation is supplied and installed as part of the setup and registration process for the Service Provider).



Point Two

A copy of the instruction is sent electronically to the User's 'communication's address'. The instruction will show the Service Provider's registered details and 'Terms and Conditions' which allows the User to review their instruction details prior to taking further action. The copy provides the User with the all important 'unique reference number'.

Point Three

In the background a duplicate of the instruction is copied to VETT pending further action. Receipt data is exchanged between VETT and the Service Provider for future reference.

Let's take a moment to review where we are. If we are looking at a transaction and at this point an order has been placed. The User must pay to complete a purchase.

Authorisation – Second Step – Point Four

To complete the transaction the User connects to their Bank. On connection the User is asked to enter their authentication details. Once the Bank's system authenticates the User's input, the User is asked to select a service in this example the choice is VETT. ^[1]

Point Five

The Users Bank asks the User to input the VETT unique reference number provided in 'Step two'. VETT will use the number to locate the User's instruction on its database. Information held in the record is reported to the User. The User is first asked to confirm the details and will then be asked to authorise the instruction. (It is assumed the details are correct).

Point Six

The User's authorisation will trigger a completion process by the Bank's systems to record the transaction. The Bank's system will then generate and send an authorisation code for the authorised instruction via VETT to the Service Provider. ^[2] The code is delivered to the Service Provider together with a copy receipt to show when the instruction was filed with VETT. The authorisation code is supported by a VETT authentication code. ^[3]

Point Seven – Completes the transaction

On receipt of the authenticated authorisation code the Service Provider will action the User's instruction.

[1] For a remote transaction the User can connect via the Internet using only the link advised by their bank. The Bank's website will then ask for the User's authorisation code and PIN. The User could alternatively connect by phone using a designated telephone number and enter their PIN and authorisation number in a prescribed manner. Telephone transactions employ 'text-to-speech' to report all information for the instruction. The authentication data is the same as the information that the Bank provides to a Customer to access their 'Internet' or 'Telephone' banking facility.

[2] All Service Providers must register to participate in VETT in a similar manner to the processes required to register as a credit card Merchant.

[3] Where payment is part of a transaction the User's bank will forward funds to the Service Provider's registered account).



What is a Service Provider?

At this point we should look at candidates for the title of Service Provider which could be;

- A bank instruction; to action a funds transfer or bill payment;
- Account management, a User wishes to change or update information connected to their account an example could for example be a change of address.
- A document requires a signature;
- A Service confirming identity,
- Electronic voting,
- Web-shop, or even ...

VETT is only limited by imagination, yet provides a remarkable level of security for such a simple and identical process for each application.

Double Check

User - The User sets-up the instruction (places an order) and is then required to authorise their transaction.

Service - The Service Provider must provide a copy of the instruction with a reference number to the User (in the background a duplicate is copied to VETT). Receipt of the authorisation code will enable fulfilment of the instruction.

Bank - The Bank provides access firstly for authentication and then provides access to the duplicate instruction. The Bank issues an authorisation code to complete the transaction.

There are lots of people (Technocrats) willing to risk the current single action method relying on the Bank's generosity to refund any losses for online fraud. VETT demonstrates a two action process which will help to reinforce the User's sense of security and arrest fraud.

Minimise Repudiation

Regardless of whether you are in the real, or a virtual world, it is difficult to say 'not me' with a VETT transaction. For Banks and Service Providers minimising repudiation is key to the delivery for certainty of payment – this in turn will reduce administration and associated costs.



No limitation to User access

Most products and systems introduced to deliver security for e-commerce can be described as 'point solutions', that is to say they are designed and operated in a limited environment (e.g. an Internet application or a mobile application etc.), VETT is different because it is universal.

- Users are able to access VETT via the internet, by telephone and by mobile.
- VETT extends access for Mail Order operations and to face-to-face transactions.
- Further, when programmed to accept VETT - Users will be able to authorise transactions at ATMs.

Important, VETT should not cause any issues with Accessibility for the disabled.

Benefits for Service Providers

- Minimises repudiation which helps to reduce exposure to risk
- VETT's functionality enables straight through processing (STP) which helps to maximise back office automation and reduce costs.
- For commerce in general, matching User instructions to an authorisation or payment can be a very costly exercise. For bill payment VETT will eliminate un-allocated cash.
- Service Providers can reduce operational costs.
- And where money is concerned there is 'Certainty of Payment'.

User Benefits

- Users do not have to change their preferences to access VETT and Users do not require any special device, software or upgrades.
- Personal account data is never exposed to any third party or their Staff.
- Users can action instructions immediately or take time to consider. A disadvantage to Merchants? No. There are services which require a cooling off period as a consumer right. (NOTE: 66% of shopping carts are abandoned).
- Specifying fulfilment instructions means the User can specify the delivery address. All other proposed systems for remote commerce rely on checking the account address. With VETT the User specifies delivery instructions and then authorises.
- VETT provides a single platform with a common set of actions for almost any type of transaction, it's easy to use, offers certainty and most importantly; VETT is 'simply secure'.



Developments in the payments market

- The European Payments Council has around 100 members including Banks and Associations.
- The EPC set-up the Electronic Payment Taskforce in 2004. The body was tasked to find a best of breed framework for online payments to be operated by Banks.
- The recommendation is known as OBeP. There are however a few fundamental flaws that handicap this proposal.

VETT is not handicapped by a flawed design

As you will see here, and we must stress that this information is extracted directly from EPC research material, the OBeP framework requires further development.

- No defence against websites set-up to direct Users to a fictitious service to fool people into giving away their authentication data.
- The system will act like a honey-pot for Hackers creating a potential single point of failure.
- The proposed OBeP model does not address the issue of email Phishing.
- Multi-level authentication issues arise when Service Providers expect to remain connected during a transaction.
- Issues concerning interfacing with disparate systems operated by European Banks

Simply Secure™

These issues are fully addressed or simply do not arise with VETT. Further, VETT will employ current banking systems to integrate seamlessly into the payment infrastructure for the Single European Payments Area. VETT is technology neutral.



Summary

This paper provides a brief outline to show how VETT works and what it can do. To some, VETT may seem familiar. Indeed the advantages and benefits will sound similar to many 'Point Solutions' which exist within a very active market sector. Security, cost reduction, certainty, minimise repudiation the list goes on.

However, VETT is not restricted to just the Internet or just restricted to mobile transactions or just something you use for protection when accessing an online account. Quiet simply VETT is not just another point solution. VETT is different.

- VETT will deliver a powerful and efficient transactional platform aimed at maximising the relationship between Bank and Customer.
- VETT will enable the introduction of new and innovative banking products and increase opportunities for delivering Value Added services.
- VETT is 'now' and will give the first mover a significant market lead over competitors.

Banks, Merchants, Utilities, National and Local Government - there is no need to chase new technology for each new project.

VETT delivers ubiquity of access to match consumer needs. VETT is flexible and robust. Online, offline, on the phone or on the mobile, whether banking online or buying through mail order. In fact VETT will deliver many new and exciting opportunities to develop profitable revenue through Identity Verification, Signatures, Remote Voting and many other products and service innovations. Quiet simply and we say it again, VETT is different.

Shouldn't all transactions be VETted!



A Selection of example applications

- Cash over the counter
- Online banking
- Guardian Account
- Mobile

The following examples provide an outline summary for potential applications. Key points are highlighted to draw attention to features and benefits for each application. These examples offer an outline description and are not intended as a complete representation of the applications.

Potential applications for VETT

- Online Bank Instruction
- Protection for Credit Card Transactions
- Merchant Payment Platform
- Remote Signature
- Identity Verification
- Remote or Electronic voting
- Procurement Management
- Remote Authorisation
- Authentication
- Over the Counter
- E – Procurement
- Charge to Mobile
- Mobile Payments
- Authorised Credit
- Commerce Platform
- Virtual Global Bank
- Guardian Account

Value added services

- Marketing Tools
- Tax collection for Revenue
- Remittance Advice
- Multiple Authority control

The value added services listed above are extensions to VETT. Each requires a detailed presentation for operation and to show the benefits to interested parties.



Cash 'over the counter' is the first example

This example shows how the User will be able to use VETT without using their bank account. Please note that once the cash enters the system all processes are automated.

In this example it shows a Bank Teller receiving the cash. VETT can be deployed to enable 'Approved agents' (e.g. Post Office) to accept cash deposits.

1. User connects to a Service Provider and places an order. 'Cash' is selected as the preferred option for payment. The User is still required to provide their name, a communications address and delivery instructions.
2. The Service Provider will provide a copy of the instruction to the User together with the unique reference number and the amount payable.
3. The Service Provider's system automatically forwards a duplicate copy to VETT.
4. **Paying with Cash** - The User will take a copy of the Service Provider's reply to a participating bank (or approved Agent) along with funds to cover the amount due. Note the order reference could be contained in a 'text' message.
5. At the bank (or Post Office) the Teller scans or enters the unique reference number to the bank's system. The number is used to retrieve the data from VETT then compiles a payment message.
6. The payment message details the amount due. The User hands over the cash enabling the Teller to complete the transaction.
7. The Teller places the cash in the till; payment triggers an authorisation code to be sent to the Service Provider. Funds for the Service Provider are transferred using the bank's standard infrastructure.

The Bank will only need the unique reference number to replace a Service Provider's Giro slip. With VETT it's that simple to create a paperless transaction.

The benefits for cash over the counter

- The Unique reference finds the bill which shows all the details to complete the transaction: Service Provider's account details, the Customer reference and the amount due.
- While the amount of time saved for processing at the counter is minimal VETT nevertheless frees time for Bank Staff.
- Payment can be made in Cash or, the User may wish to use a Card or they could ask to make the payment by way of an account transfer.
- When programmed, VETT could be accepted through ATMs with the payment transferred directly to the Service Provider's account.

And of course, it's paperless.



Internet Banking – example two

Employing VETT for online banking will provide User access to their online account facility. In this example the User can set up an instruction without having to enter their authentication data. The User will however have to use the authentication data to access the account to authorise the instruction.

1. The User connects to the online bank facility and selects 'Pay a Bill'. The User will enter details for the Payee, Customer reference and the amount due. Please note that the Payee does not have access to VETT through their Bank yet!
2. The online bank facility will forward a copy of the User's instruction to the User's registered email address. As before the copy provides the User's instruction, the Bank's information and the terms for the transaction. You will note that the copy could be sent to the User's mobile using SMS.
3. As before a duplicate is sent to VETT.
4. To confirm and authorise the transaction, the User will connect to the bank to be authenticated.
5. VETT will request input for the unique reference number, locate the User's instruction and report the detail. Once the system receives the User's authorisation the User's account is checked for funds. The Bank's system will flag the amount to be paid and record the transaction to the User's account.
6. A payment message is generated and funds are directed to the Payees account in the usual manner.

VETT delivers a holistic approach with multi-factor authentication.

Benefits of VETT for online banking

- The Bank can maximise return on investment in existing online systems
- Customers get the opportunity to review transactions before confirming. This should minimise errors and reduce administration.
- The benefits for Straight Through Processing are well known. There is also an advanced VETT product 'Authorised Debit' which will optimise the potential for STP
- Minimises Repudiation. It's difficult for the User to say 'not me' when they have taken two separate actions.
- VETT will enable the Bank to maximise protection for Customers and additionally help to defeat Phishing. This in turn will help to extend online functionality.
- VETT will enable bank systems to compile and issue a remittance advice which could be sent by either SMS or email.

And a real bonus for the Bank is that there is no hardware, no software or upgrades for Customers.



Guardian Account – example three

This application will do exactly what it says on the label, delivers protection for the young and those who need supervision.

1. The User connects and places an order online. In this instance a 12 year old buying a present for Dad's birthday. Buying online can help the User make real savings.
2. A copy of the order is sent to the User along with the Service Provider's details, their terms and conditions and the unique reference number.
3. A duplicate copy of the order is sent to VETT.
4. With the Guardian account the order requires consent from the Guardian who simply logs on to the User account and enters the authentication data.
5. VETT asks for the unique reference number, locates the order and reports the detail to the Guardian. In this case Mum approves the purchase which means Dad will get his present and the child saves some money.
6. VETT generates an authorisation code which is sent to the Service Provider.
7. A successful transaction generates a payment message and funds are transferred to the designated account.

Benefits

The Guardian Account is designed to provide Parents and/or Carers with an additional level of supervisory control over the finances of minors or those in their care.

- Getting young people online early will help to encourage use of remote services.
- The controls offered by VETT will open the market to new age groups.
- Delivers safeguards for the vulnerable
- The Guardian account is a new service and could deliver added value for the Bank as well as Customers.
- Guardians can set and change the limits using VETT online banking.

With VETT the 12 year old is given the freedom to shop. The difference is the amount the child can spend without supervision.

One real market is the private school boarding problem. Boarders are constantly in need of funds for this and that. This could be marketed through the Public Schools Association.



Mobile – example four

As with all VETT applications Mobile will allow the Bank to provide maximum functionality to those Customers who want to access facilities using a Mobile device. In this example the User will request delivery to an address which is different to their account address, and please remember the User is mobile.

1. The User connects to a Service Provider and places an order. The User is asked to enter the name of the recipient, a communications address (in this example it's the User's mobile number) and an address for delivery.
2. The User receives a copy of the unique reference number by SMS.
3. The Service Provider sends a duplicate copy to VETT.
4. User connects to their Bank and gets authenticated.
5. VETT requests the unique reference number, locates the instruction and presents the data for confirmation.
6. The User will review the detail, confirm and authorise the details.
7. This will then generate an authorisation code which is sent to the Service Provider, who in-turn can now fulfil the User's delivery instructions.
8. The payment message goes through the usual channels and funds are transferred to the Service Provider's account.

VETT Mobile allows any registered Customer to access any service or account feature available to them via the Internet, landline or G3 Mobi service. Because all transactions are first reviewed by the User prior to authorisation operating a VETT service via a mobile device is as safe and secure as operating a VETT transaction from a desk top.

- VETT with help deliver virtually full access to any service on the move
- It's easy to use and operates the same way for all VETT transactions
- Remittance advice helps to give Users certainty of payment
- New value added service

VETT is more than just a payment system – It's a step change for banking.

Useful fact

The European Distance Selling Directive number 2334 amended in 2005 requires Merchants to provide 'terms and conditions' to Customers in a durable format. VETT can do this and enable Merchants to minimise financial risk for the transaction.

Shouldn't all transactions be VETted!