TST TOKEN SMART CONTRACT AUDIT RESULTS

FOR DATA REVOLUTION TECHNOLOGIES PTY LTD

06/27/2018

Made in Germany by chainsulting.de

Change history

Version	Date	Author	Changes
1.0	**20.06.2018**	**Y. Heinze**	**Audit created**
1.5	**24.06.2018**	**Y. Heinze**	**Vulnerability check**
2.0	**27.06.2018**	**Y. Heinze**	**Executive Summary**

Smart Contract Audit TST Token

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1. Disclaimer

The audit makes no statements or warrantees about utility of the code, safety of the code, suitability of the business model, regulatory regime for the business model, or any other statements about fitness of the contracts to purpose, or their bug free status. The audit documentation is for discussion purposes only.

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2. About the Project and Company

Company address:

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Company Check: https://abr.business.gov.au/ABN/View?abn=67625452539

Project Overview:

Data Revolution Technologies Pty Ltd, an innovations and software company, under the guidance of co-founders Patrick Heaton, Mark Francis, Tyrone Crook and, Aidan Pennell, has taken up to its name in “changing the way data is used and stored”.

Touch is a young and motivated collective bent on making a revolutionary wallet backed by eCommerce and Web 3.0. We aim to develop and release the Touch Wallet - Your all in one cryptocurrency wallet that allows real world payments via your smart phones NFC. Touch TST Tokens are also used within the Touch Social app and will be the next stage after the wallet development.

3. Vulnerability Level

0-Informational severity – A vulnerability that have informational character but is not effecting any of the code.

1-Low severity - A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.

2-Medium severity – A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.

3-High severity – A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.

4-Critical severity – A vulnerability that can disrupt the contract functioning in a number of scenarios, or creates a risk that the contract may be broken.

4. Overview of the audit

The TST Token which contains 274 lines of Solidity code. All the functions and state variables are well commented using the natspec documentation for the functions which is good to understand quickly how everything is supposed to work.

Etherscan:

TST Token address:
https://etherscan.io/address/0x5e0af01930c8dc676a6dc7133bd86370a0be3953#code

Used Code from other Smart Contracts

1. SafeMath (Math operations with safety checks that throw on error)
https://github.com/OpenZeppelin/openzeppelin-solidity/blob/master/contracts/math/SafeMath.sol

2. ERC20Basic (Simpler version of ERC20 interface)
https://github.com/ethereum/EIPs/issues/179
https://github.com/OpenZeppelin/zeppelin-solidity/blob/master/contracts/token/ERC20/ERC20Basic.sol

3. Standard ERC20 (Based on code by FirstBlood)
https://github.com/OpenZeppelin/zeppelin-solidity/blob/master/contracts/token/ERC20/StandardToken.sol

4. MonolithDAO (allowance prove to spend funds)
https://github.com/MonolithDAO/token/blob/master/src/Token.sol

5. Attack made to the contract

Attack: Using the approve function of the ERC-20 standard
The approve function of ERC-20 might lead to vulnerabilities.

```
function approve(address _spender, uint256 _value) public returns(bool) {
    allowed[msg.sender][_spender] = _value;
    emit Approval(msg.sender, _spender, _value);
    return true;
}
```

Severity: 2

Result / Recommendation:
Only use the approve function of the ERC-20 standard to change allowed amount to 0 or from 0 (wait till transaction is mined and approved).

The TST Smart Contract is secure against that attack

```
function approve(address _spender, uint256 _value) public ifUnrestricted onlyPayloadSize(2) returns
(bool sucess) {
                        // Can only approve when value has not already been set or is zero
                        require(allowed[msg.sender][_spender] == 0 || _value == 0);
                        allowed[msg.sender][_spender] = _value;
                        Approval(msg.sender, _spender, _value);
                        return true;
                }
```

https://docs.google.com/document/d/1YLPtQxZu1UAvO9cZ1O2RPXBbT0mooh4DYKjA_jp-RLM/edit

Attack: Unchecked math
Solidity is prone to integer over- and underflow. Overflow leads to unexpected effects and can lead to loss of funds if exploited by a malicious account.

TST Token # 123

```
uint256 public maximumTokenIssue = 1000000000 * 10**18;
```

Severity: 2

Result / Recommendation:
Check against over- and underflow (use the SafeMath library).
The TST Smart Contract is secure against that attack

Attack: Unhandled Exception

A **call**/**send** instruction returns a non-zero value if an exception occurs during the execution of the instruction (e.g., out-of-gas). A contract must check the return value of these instructions and throw an exception.

Severity: 0

Result / Recommendation:

Catching exceptions is not yet possible.

Attack: Transactions May Affect Ether Receiver

A contract is exposed to this vulnerability if a miner (who executes and validates transactions) can reorder the transactions within a block in a way that affects the receiver of ether.

Severity: 1

Result / Recommendation:

The contract is not vulnerable to this vulnerability as the receiver of ether is **msg.sender**, which cannot be modified by previously executed transactions

TST Token # 194– 200

```
function approve(address _spender, uint256 _value) public ifUnrestricted onlyPayloadSize(2) returns
(bool sucess) {
                        // Can only approve when value has not already been set or is zero
                        require(allowed[msg.sender][_spender] == 0 || _value == 0);
                        allowed[msg.sender][_spender] = _value;
                        Approval(msg.sender, _spender, _value);
                        return true;
                }
```

Attack: Sending tokens (not Ethereum) to a Smart Contract

It can happen that users without any knowledge, can send tokens to that address. A Smart Contract needs to throw that transaction as an exception.

TST Token # 266 – 268

```
function () external payable {
            revert();
        }
```

https://etherscan.io/tx/0xdf8f843067178b51a43213c19f61f5d006245e214ea89007906beb7d4e08ae82

Severity: 1

Result / Recommendation:

The function of sending back tokens that are not whitelisted, is not yet functional. The proposal ERC223 can fix it in the future.

https://github.com/Dexaran/ERC223-token-standard

Attack: **ERC20 Short Address Attack**

this attack occurs when an attacker use an incomplete address which ends with zeros 0,'00'...

if an attacked generate an address like 0xaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa0000. he can provide 0xaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa (zeros omitted) to the transfer function This would actually cause a transfer of a value shifted by 16 bits, i.e. 65536 times larger than X, to attacker's Ethereum account.The msg.data would be like following : function transfer(address _to, uint256 _value)
0xa9059cbb000000000000000000000000797350000000000000000000000000000000
0000000000000005150ac4c39a6f3f0000

Severity: 1

Result / Recommendation:

TST Token # 24 – 27

```
  modifier onlyPayloadSize(uint numWords) {
        assert(msg.data.length >= numWords * 32 + 4);
        _;
    }
```

The TST Smart Contract is secure against that attack
Source: https://blog.golemproject.net/how-to-find-10m-by-just-reading-blockchain-6ae9d39fcd95

6. Executive Summary

A majority of the code was standard and copied from widely-used and reviewed contracts and as a result, a lot of the code was reviewed before. It correctly implemented widely-used and reviewed contracts for safe mathematical operations. The audit identified no major security vulnerabilities, at the moment of audit.

7. General Summary

The issues identified were minor in nature, and do not affect the security of the contract.

Additionally, the code implements and uses a SafeMath contract, which defines functions for safe math operations that will throw errors in the cases of integer overflow or underflows. The simplicity of the audited contracts contributed greatly to their security. The minimalist approach in choosing which pieces of functionality to implement meant there was very little attack surface available.

We recommended is to Update the etherscan.io information with Logo/Website for example. That gives buyers more transparency.

TST Token
https://etherscan.io/tokenupdate?a=0x5e0af01930c8dc676a6dc7133bd86370a0be3953

8. Source Code – Smart Contracts

TST Token (TST)

```
/**
 * @title Moderated
 * @dev restricts execution of 'onlyModerator' modified functions to the contract moderator
 * @dev restricts execution of 'ifUnrestricted' modified functions to when unrestricted
 *      boolean state is true
 * @dev allows for the extraction of ether or other ERC20 tokens mistakenly sent to this
address
 */
contract Moderated {

    address public moderator;

    bool public unrestricted;

    modifier onlyModerator {
        require(msg.sender == moderator);
        _;
    }

    modifier ifUnrestricted {
        require(unrestricted);
        _;
    }

    modifier onlyPayloadSize(uint numWords) {
        assert(msg.data.length >= numWords * 32 + 4);
        _;
    }

    function Moderated() public {
        moderator = msg.sender;
        unrestricted = true;
    }

    function reassignModerator(address newModerator) public onlyModerator {
        moderator = newModerator;
    }

    function restrict() public onlyModerator {
        unrestricted = false;
    }

    function unrestrict() public onlyModerator {
        unrestricted = true;
    }

    /// This method can be used to extract tokens mistakenly sent to this contract.
    /// @param _token The address of the token contract that you want to recover
    function extract(address _token) public returns (bool) {
        require(_token != address(0x0));
        Token token = Token(_token);
        uint256 balance = token.balanceOf(this);
        return token.transfer(moderator, balance);
    }

    function isContract(address _addr) internal view returns (bool) {
        uint256 size;
        assembly { size := extcodesize(_addr) }
        return (size > 0);
    }
}
```

```
/**
 * @title ERC20 interface
 * @dev see https://github.com/ethereum/EIPs/issues/20
 */
contract Token {

    function totalSupply() public view returns (uint256);
    function balanceOf(address who) public view returns (uint256);
    function transfer(address to, uint256 value) public returns (bool);
    function transferFrom(address from, address to, uint256 value) public returns (bool);
    function approve(address spender, uint256 value) public returns (bool);
    function allowance(address owner, address spender) public view returns (uint256);
    event Transfer(address indexed from, address indexed to, uint256 value);
    event Approval(address indexed owner, address indexed spender, uint256 value);

}

/**
 * @title SafeMath
 * @dev Math operations that are safe for uint256 against overflow and negative values
 * @dev https://github.com/OpenZeppelin/zeppelin-
solidity/blob/master/contracts/math/SafeMath.sol
 */

library SafeMath {
  function mul(uint256 a, uint256 b) internal pure returns (uint256) {
    if (a == 0) {
      return 0;
    }
    uint256 c = a * b;
    assert(c / a == b);
    return c;
  }

  function div(uint256 a, uint256 b) internal pure returns (uint256) {
    // assert(b > 0); // Solidity automatically throws when dividing by 0
    uint256 c = a / b;
    // assert(a == b * c + a % b); // There is no case in which this doesn't hold
    return c;
  }

  function sub(uint256 a, uint256 b) internal pure returns (uint256) {
    assert(b <= a);
    return a - b;
  }

  function add(uint256 a, uint256 b) internal pure returns (uint256) {
    uint256 c = a + b;
    assert(c >= a);
    return c;
  }
}

// @dev Assign moderation of contract to CrowdSale

contract Touch is Moderated {
       using SafeMath for uint256;

              string public name = "Touch. Token";
              string public symbol = "TST";
              uint8 public decimals = 18;

        uint256 public maximumTokenIssue = 1000000000 * 10**18;

              mapping(address => uint256) internal balances;
              mapping (address => mapping (address => uint256)) internal allowed;
```

```
	uint256 internal totalSupply_;

	event Approval(address indexed owner, address indexed spender, uint256
value);
	event Transfer(address indexed from, address indexed to, uint256 value);

	/**
	* @dev total number of tokens in existence
	*/
	function totalSupply() public view returns (uint256) {
		return totalSupply_;
	}

	/**
	* @dev transfer token for a specified address
	* @param _to The address to transfer to.
	* @param _value The amount to be transferred.
	*/
	function transfer(address _to, uint256 _value) public ifUnrestricted
onlyPayloadSize(2) returns (bool) {
	    return _transfer(msg.sender, _to, _value);
	}

	/**
	* @dev Transfer tokens from one address to another
	* @param _from address The address which you want to send tokens from
	* @param _to address The address which you want to transfer to
	* @param _value uint256 the amount of tokens to be transferred
	*/
	function transferFrom(address _from, address _to, uint256 _value) public
ifUnrestricted onlyPayloadSize(3) returns (bool) {
	    require(_value <= allowed[_from][msg.sender]);
	    allowed[_from][msg.sender] = allowed[_from][msg.sender].sub(_value);
	    return _transfer(_from, _to, _value);
	}

	function _transfer(address _from, address _to, uint256 _value) internal
returns (bool) {
		// Do not allow transfers to 0x0 or to this contract
		require(_to != address(0x0) && _to != address(this));
		// Do not allow transfer of value greater than sender's current
balance
		require(_value <= balances[_from]);
		// Update balance of sending address
		balances[_from] = balances[_from].sub(_value);
		// Update balance of receiving address
		balances[_to] = balances[_to].add(_value);
		// An event to make the transfer easy to find on the blockchain
		Transfer(_from, _to, _value);
		return true;
	}

	/**
	* @dev Gets the balance of the specified address.
	* @param _owner The address to query the the balance of.
	* @return An uint256 representing the amount owned by the passed address.
	*/
	function balanceOf(address _owner) public view returns (uint256) {
		return balances[_owner];
	}

	/**
	* @dev Approve the passed address to spend the specified amount of tokens on
behalf of msg.sender.
	*
	* Beware that changing an allowance with this method brings the risk that
someone may use both the old
```

```
		* and the new allowance by unfortunate transaction ordering. One possible
solution to mitigate this
		* race condition is to first reduce the spender's allowance to 0 and set the
desired value afterwards:
		* https://github.com/ethereum/EIPs/issues/20#issuecomment-263524729
		* @param _spender The address which will spend the funds.
		* @param _value The amount of tokens to be spent.
		*/
		function approve(address _spender, uint256 _value) public ifUnrestricted
onlyPayloadSize(2) returns (bool sucess) {
			// Can only approve when value has not already been set or is zero
			require(allowed[msg.sender][_spender] == 0 || _value == 0);
			allowed[msg.sender][_spender] = _value;
			Approval(msg.sender, _spender, _value);
			return true;
		}

		/**
		* @dev Function to check the amount of tokens that an owner allowed to a
spender.
		* @param _owner address The address which owns the funds.
		* @param _spender address The address which will spend the funds.
		* @return A uint256 specifying the amount of tokens still available for the
spender.
		*/
		function allowance(address _owner, address _spender) public view returns
(uint256) {
			return allowed[_owner][_spender];
		}

		/**
		* @dev Increase the amount of tokens that an owner allowed to a spender.
		*
		* approve should be called when allowed[_spender] == 0. To increment
		* allowed value is better to use this function to avoid 2 calls (and wait
until
		* the first transaction is mined)
		* From MonolithDAO Token.sol
		* @param _spender The address which will spend the funds.
		* @param _addedValue The amount of tokens to increase the allowance by.
		*/
		function increaseApproval(address _spender, uint256 _addedValue) public
ifUnrestricted onlyPayloadSize(2) returns (bool) {
			require(_addedValue > 0);
			allowed[msg.sender][_spender] =
allowed[msg.sender][_spender].add(_addedValue);
			Approval(msg.sender, _spender, allowed[msg.sender][_spender]);
			return true;
		}

		/**
		* @dev Decrease the amount of tokens that an owner allowed to a spender.
		*
		* approve should be called when allowed[_spender] == 0. To decrement
		* allowed value is better to use this function to avoid 2 calls (and wait
until
		* the first transaction is mined)
		* From MonolithDAO Token.sol
		* @param _spender The address which will spend the funds.
		* @param _subtractedValue The amount of tokens to decrease the allowance by.
		*/
		function decreaseApproval(address _spender, uint256 _subtractedValue) public
ifUnrestricted onlyPayloadSize(2) returns (bool) {
			uint256 oldValue = allowed[msg.sender][_spender];
			require(_subtractedValue > 0);
			if (_subtractedValue > oldValue) {
				allowed[msg.sender][_spender] = 0;
```

```
                } else {
                        allowed[msg.sender][_spender] = oldValue.sub(_subtractedValue);
                }
                Approval(msg.sender, _spender, allowed[msg.sender][_spender]);
                return true;
        }

        /**
        * @dev Function to mint tokens
        * @param _to The address that will receive the minted tokens.
        * @param _amount The amount of tokens to mint.
        * @return A boolean that indicates if the operation was successful.
        */
        function generateTokens(address _to, uint _amount) internal returns (bool) {
                totalSupply_ = totalSupply_.add(_amount);
                balances[_to] = balances[_to].add(_amount);
                Transfer(address(0x0), _to, _amount);
                return true;
        }
        /**
        * @dev fallback function - reverts transaction
        */
    function () external payable {
        revert();
    }

    function Touch () public {
            generateTokens(msg.sender, maximumTokenIssue);
    }

}
```

HOWEY TEST FOR TST TOKEN

DATA REVOLUTION TECHNOLOGIES PTY LTD

06/25/2018

Made in Germany by chainsulting.de

The TST token is not a security, just a utility token for DATA REVOLUTION TECHNOLOGIE products.

To estimate how likely a particular blockchain token is be a security under US federal securities law
Refer to: full legal analysis

Element 1: Investment of Money

Is there an investment of money?				
Characteristic	**Points**	**Explanation**	**Examples**	**Y or N**
There is no crowdsale. New tokens are given away for free, or are earned through mining	**0**	Tokens which are not sold for value do not involve an investment of money. For example, if all tokens are distributed for free, or are only produced through mining, then there is no sale for value.	There was never any token sale for Bitcoin. The only way to acquire new bitcoin is via mining. A token which is randomly distributed for free	**N**
Tokens are sold for value (crowdsale)	**100**	Tokens which are sold in a crowdsale, at any time, regardless of whether sold for fiat or digital currency (or anything else of value) involve an investment of money	A token which is sold for bitcoin in a crowdsale. A token which is sold for ether in a crowdsale.	**Y**

Total for Element 1	**100**

Element 2: Common Enterprise

What is the timing of the sale?				
Characteristic	**Points**	**Explanation**	**Examples**	**Y or N**
Pre-deployment	**70**	A sale of tokens before any code has been deployed on a blockchain is more likely to result in a common enterprise where the profits arise from the efforts of others. This is because the buyers are completely dependent on the actions of the developers, and the buyers cannot actually participate in the network until a later time.	A developer has an idea for a new protocol, writes a white paper and does a crowdsale.	**N**
The protocol is operational on a test network	**60**	If there is a functioning network there is less likely there is to be a common enterprise where the profits arisef rom the efforts of others. The closer the sale is to launch of the network, the less likley there is to be a common enterprise.	A developer has an idea for a new protocol, writes a white paper and deploys a working test network before doing a crowdsale.	**N**
Live network is operational	**50**	If the token is sold once there is an operational network using the token, or sold immediately before the network goes live, it is again less likely to result in a common enterprise	The crowdsale is done at the same time the network is launched.	**Y**

What do token holders have to do in order to get economic benefits from the network?				
Characteristic	**Points**	**Explanation**	**Examples**	**Y or N**
All token holders will always receive the same returns	**25**	If returns are paid to all token holders equally (or in proportion to their token holdings) regardless of any action on the part of the token holder, then their interests are more likely aligned in a common enterprise	'HodlToken' holders are automatically paid an amount of ETH each week, based on fees generated by other users of the network 'FoldToken' does not pay any return, and there is no way to earn more tokens within	**Y**

			the network (but they can be bought, sold or traded)	
There is a possibility of varying returns between token holders, based on their participation or use of the network	**-20**	If token holders' returns depend on their own efforts, and can vary depending on the amount of effort they each put in, then there is less likely to be a common enterprise	'CloudToken' holders can earn more tokens by providing data storage on the network, or can spend tokens to access data storage. Holders who do not provide data storage do not earn any more tokens.	**N**
Total for Element 2				**75**

Element 3: Expectation of Profit

What function does the token have?				
Characteristic	**Points**	**Explanation**	**Examples**	**Y or N**
Ownership or equity interest in a legal entity, including a general partnership	**100**	Tokens which give, or purport to give, traditional equity, debt or other investor rights are almost certainly securities. ***If one or more of these characteristics apply, the token is almost certainly a security, notwithstanding the results of the other elements***	A developer releases and sells 100 'BakerShares' tokens. Each token entitles the holder to 1 share in Baker, Inc. A developer releases and sells 100 'BakerProfit' tokens. Each token entitles the holder to 1% of the profits of Baker, Inc. for the next year. A developer releases and sells 100 'BakerDebt' tokens. Each token entitles the holder to principal and interest repayments based on the initial token sale price.	**N**
Entitlement to a share of profits and/or losses, or assets and/or liabilities	**100**			**N**
Gives holder status as a creditor or lender	**100**			**N**
A claim in bankruptcy as equity interest holder or creditor	**100**			**N**
A right to repayment of purchase price and/or payment of interest	**100**			**N**
No function other than mere existence	**100**	A token which does not have any real function, or is used in a network with no real function, is very likely to be bought with an expectation of profit from the efforts of others, because no real use or participation by token holders is possible. Voting rights alone do not constitute real functionality.	A developer releases and sells 100,000 'SocialCoin' tokens to fund the development of a new Social Network. However, SocialCoin is not required to access the network and	**N**

			has no real function after the sale.	[redacted]
Specific functionality that is only available to token holders	**0**	A token which has a specific function that is only available to token holders is more likely to be purchased in order to access that function and less likely to be purchased with an expectation of profit.	'CloudToken' is the only way to access and use a decentralized file storage network.	**Y**

Does the holder rely on manual, off-blockchain action to realize the benefit of the token?				
Characteristic	**Points**	**Explanation**	**Examples**	**Y or N**
Manual action is required outside of the network (e.g. off-blockchain) in order for the holder to get the benefit of the token	**80**	A token whose value depends on someone taking specific manual action outside of the network means that the token is not functional in and of itself. Instead, the token relies on a level of trust in a third party taking action off-blockchain. This sort of token is more likely to be bought for speculation - i.e. the expectation of profits.	A developer releases and sells 'FreightCoin', which will allow the holder to pay FreightCoin to access capacity on a new real-world freight network. The network relies on legal contractual relationships and manual actions. (This alone does not make FreightCoin a security)	**N**
All functionality is inherent in the token and occurs programmatically	**0**	A token which is built with all the necessary technical permissions means that the token holder does not rely on manual actions of any third party. This means that the buyers are more likely to purchase the token for use rather than with the expectation of profit from the efforts of others.	Holders of 'SongVoteToken' can sign transactions on the network as votes for their favorite new songs and earn rewards for doing so.	**N**

What is the timing of the sale?				
Characteristic	**Points**	**Explanation**	**Examples**	**Y or N**
Pre-deployment	**20**	A sale of tokens before any code has been deployed on a blockchain is more likely to result in buyers purchasing for speculative reasons with the expectation of profit, rather than practical use cases.	A developer has an idea for a new protocol, writes a white paper and does a crowdsale.	**Y**

The protocol is operational on a test network	**10**	If the sale occurs after code has been deployed and tested, the token is closer to being able to be used	A developer has an idea for a new protocol, writes a white paper and develops a working test network before doing a crowdsale.	**N**
Live network is operational	**0**	If the token is sold once there is an operational network using the token, or immediately before the network goes live, it is more likely to be purchased with the intention of use rather than profit.	The live network is launched before the crowdsale.	**Y**

Can the token holders exercise real and significant control via voting?				
Characteristic	**Points**	**Explanation**	**Examples**	**Y or N**
Token holders as a whole are able to control the development team's access to funds	**-20**	If the collective approval of token holders is required in order for the development team to access the funds raised in the crowdsale, then any value realized by the token holders is more closely tied to their own decisions, and less reliant on the efforts of others.	A development team sells 100,000 Tokens for a total of 100,000 ETH. 50,000 ETH will be released from the token contract to the development team immediately, but the remainder is only released once milestones are met, which requires approval of a majority of the token holders each time. If the milestones are never met, the remaining ETH will be returned to the token holders.	**N**

Token holders as a whole are able to vote on significant decisions for the protocol	**-10**	If the collective approval of token holders is required in order to make significant changes to the protocol, then any value realized by the token holders is more closely tied to their own decisions, and less reliant on the efforts of others.	Changes to the protocol require a vote by token holders.	**N**

Note: Voting rights must be in addition to functionality. A token with voting rights alone and no other real functionality is very likely to satisfy element 3

How is the token sale marketed?				
Characteristic	**Points**	**Explanation**	**Examples**	**Y or N**
Marketed as an 'Initial Coin Offering' or similar	**50**	It is not possible to prevent some buyers from buying a token purely for speculation. However, marketing the token as an investment leads buyers to believe they can profit from holding or trading the token, rather than from using the token in the network. Using terms like 'Initial Coin Offering' or 'ICO', and investment-related language like 'returns' and 'profits' encourages buyers to buy a token for speculation, rather than use.	'ProfitCoin' includes potential of 'high ROI' and 'investor profits' in its marketing material.	**N**
Marketed as a Token Sale	**0**	Marketed as a sale of tokens which give the right to access and use the network		**Y**
There is no economic return possible from using the network	**-100**	If there is genuinely no economic return possible for the token holders, then there is unlikely to be a common enterprise. This will be rare.	Backers contribute to a cause and receive a 'thank you' token which has no economic value.	**N**

Results			
Guide			**Your results**
Total Points	**How likely is the element to be satisfied?**		
0 or less	Very unlikely	Total for Element 1	**100**
1 - 33	Unlikely	Total for Element 2	**75**
34 - 66	Equally likely and unlikely	Total for Element 3	**20**
67 - 99	Likely		
100 or more	Very likely	**Overall Risk Score**	**20**

A token will only be a security if it satisfies all three elements. The higher the point score for each element, the more likely the element is to be satisfied.

For many blockchain tokens, the first two elements of the Howey test are likely to be met. The third element has the most variables and the most different outcomes depending on the characteristics of the particular token.

Important notes

Please remember that this methodology produces nothing more than an estimate. The Overall Risk Score and the categories of likelihood are a guide only.

The Howey test has not yet been directly applied by the courts to any digital currency or blockchain token. The Howey test as applied by the courts does not involve any points-based calculation. The points system is intended as a guide - to highlight the characteristics of a token which are relevant to the securities law analysis.

This Framework should be read together with the full legal analysis. This Framework and the full legal analysis may be updated in the future as the law in this area develops.

You should not rely on this Framework as legal advice. It is designed for general informational purposes only, as a guide to certain of the conceptual considerations associated with the narrow issues it addresses. You should seek advice from your own counsel, who is familiar with the particular facts and circumstances of what you intend and can give you tailored advice. This Framework is provided "as is" with no representations, warranties or obligations to update, although we reserve the right to modify or change this Framework from time to time. No attorney-client relationship or privilege is created, nor is this intended to be attorney advertising in any jurisdiction.