Swarm Market

the first decentralized threat intelligence market

SWARM

Today's threat protection economy is broken.

SWARM

Perverse incentives abound.

Today's market:

- **mandates duplication of effort.**
  All AV must detect WannaCry. This is
  duplication of effort and cost.

- **disincentivizes specialized offerings.**
  Lowest common denominator wins: invest
  in ubiquitous threats.

- **discourages interoperability.** You can't
  run both McAfee and Symantec if you
  wanted to. And you don't want to.

Figure A (Old)

left circle: AV 1 coverage
right circle: AV 2 coverage
black: blind spot

Figure B (Old)

you went with AV 1
black is still your blind spot

Figure C (Swarm)

The Swarm Market encourages
full, combinatorial coverage

Fragmented market. Fragmented coverage.
(Antivirus, $8.5B)

Legend:
- Symantec
- McAfee
- Trend Micro
- Other

Incentives for up-to-date threat protection are fragmented across the market.

Every provider duplicates some amount of coverage.

Majority of subscription revenue goes to overhead, not user protection.

Swarm fixes the economics.

Swarm decentralizes and tokenizes malware threat intelligence.

Swarm automatically rewards security experts for timely judgements on the malintent of things submitted by Enterprises & End Users.

But **how**?

But how?

`1. blockchain`

blockchain (high level)

1. trustless

2. distributed

3. append-only

4. ledger

blockchain cryptography (very high level)

1. **hash**
   - one way summary of data
2. **signatures**
   - digital "seal"
3. **proof of work**
   - solving tough math problems
4. **Merkle tree**
   - O(log n) optimization

What is Bitcoin?

1. an application

2. running on top of a blockchain

3. purpose:

   a. store value

   b. mining reward to sustain blockchain

But how?

1. blockchain
2. Ethereum

Bitcoin: the first blockchain app.

Bitcoin: the first blockchain app.

Currency first, protocol incidental.

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Currency first, protocol incidental.

Ethereum: the first platform for blockchain apps.

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Currency first, protocol incidental.

Ethereum: the first platform for blockchain apps.

Protocol first, currency incidental.

Ethereum

1. blockchain-based

2. distributed

3. Turing-complete

4. computing platform

distributed apps built on "**smart contracts**"

But how?

1. blockchain
2. Ethereum
3. market design

market design via Ethereum smart contracts

1. distributed programs

2. good at:
   a. escrow
   b. vesting
   c. **designing economic incentives**

3. bad at:
   a. external data ingestion, off-chain settlement
   b. **confidentiality**

```
contract MyToken {
    /* This creates an array with all balances */
    mapping (address => uint256) public balanceOf;

    /* Initializes contract with initial supply tokens to the creator of the contract */
    function MyToken(
        uint256 initialSupply
        ) {
        balanceOf[msg.sender] = initialSupply;          // Give the creator all initial tokens
    }

    /* Send coins */
    function transfer(address _to, uint256 _value) {
        require(balanceOf[msg.sender] >= _value);       // Check if the sender has enough
        require(balanceOf[_to] + _value >= balanceOf[_to]); // Check for overflows
        balanceOf[msg.sender] -= _value;                // Subtract from the sender
        balanceOf[_to] += _value;                       // Add the same to the recipient
    }
}
```

Swarm rewards (timely) accuracy.

Threat protection redefined

Enterprises

Bounties

Offers

- **Have**: money, streams of maybe-malicious artifacts (files, URLs, traffic)

- **Want**: timely protection for their users from broad, up-to-date, experts

- **Swarm provides**: single submission and payment point for multiple threat protection points of view.

Experts

Bounties

Offers

- **Have**: vast expertise in finding badness in files, urls, and network traffic (artifacts)

- **Have**: up to date intel on their slice of the malware underground

- **Want**: passive tokenized income from encapsulating knowledge into "micro-engine" that lives in the Swarm Market

Ambassadors

Bounties

Offers

- **Have**: Enterprise customers and accuracy data for Swarm's security experts.

- **Want**: income from curated offerings to Enterprises.

- **Swarm provides**: curated offerings in a simple subscription model to Enterprises. Market maker for experts.

Swarm bounty in 60 seconds

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Swarm bounty in 60 seconds

Swarm's byproduct: high-quality threat data.

"by-products"

1. artifacts
2. assertions
3. verdicts
4. ground truth

Volume
sustains
the Swarm.

VirusTotal subscriptions are ~$160K/mo

VirusTotal scans 10M+ samples/day

Estimated about `0.015/USD per sample`

The
plan.

Bootstrapping a
New Market

After the token sale, we focus on market development and security expert onboarding via:

- open tooling

- blockchain-based reputational transparency

- passive income opportunities that ensure the network grows quickly

1000+

experts on platform

Transactions & Future Revenue

- Swarm Market tokenizes fees and revenue; Swarm Technologies, Inc. takes tokenized fees for bounty arbitration from day 1.

- Open tooling doesn't mean free support. Our open endpoint agent support becomes a source of enterprise revenue.

- Appliance integrations: Cisco / Juniper / Palo Alto sit at the edge, lack broad and constant intelligence feeds

$45
avg/yr cost of endpoint protection agent

fees
mrr: minute recurring revenue

18%
CAGR for Threat Intel*

* https://goo.gl/EbRzSn

Swarm has industry support.

Swarm is fortunate to be advised by world-renowned information security experts hailing from both industry and academia.

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Thanks!

SWARM