BAE SYSTEMS

The Intelligence Network

Our Vision for Tackling Cyber Fraud

Introducing our Vision for Tackling Cyber Fraud

When we launched The Intelligence Network a year ago, it was with the mission to safeguard society in the digital age. Since then, over 1,500 members have joined our cause, and our Steering Committee has established seven areas of focus, all of which we intend to tackle over time.

After consulting with members on where to start, we are first taking on the challenge of Tackling Cyber Fraud. You can find more detail about our other topics, and our journey so far, on our website.

With the guidance of our Steering Committee, and with valuable input from experts across industry, academia, government and law enforcement, we have researched the current cyber fraud landscape. This has allowed us to establish a vision for what we think 'good' would look like, if we are to tackle this major global problem.

The following document sets out our vision for change.

The process has been inspirational and stimulating, and on behalf of the Steering Committee I'd like to thank everyone for their involvement so far. Our commitment, as we continue to evolve our thinking, is to keep engaging the community in everything we do.

We therefore look forward to working closely together as we establish an action plan that will help us make our vision a reality.

James Hatch,

Chair, The Intelligence Network

Why Tackling Cyber Fraud Requires Change

Fraud accounts for nearly half of all crimes, and over half of all frauds are cyber-enabled[1]. Cyber fraud is also a primary motivator for cyber attacks on all organizations, so should be high on the agenda for security teams, business decision makers, and more.

If it's so prevalent, and if it impacts so many of us, why haven't we managed to crack down on cyber fraud yet?

Over 1,500 members of The Intelligence Network

Six months of research

It's Time for Significant Change

By understanding the nuances of the problem space, we've mapped out a vision for stimulating change in four problem areas. **We believe that making these changes will significantly reduce society's vulnerability to cyber fraud.**

1. Endemic attacks: the prevailing mind set in cyber security is that organizations should think about "when" not "if" they suffer a successful cyber attack. But the high number of attacks is making it too easy for criminals to access the data they need to commit fraud.

2. Operating in silos: while there is some sharing of information between security teams and fraud teams, sharing across functions and industries is limited and joint action is rare.

3. The cyber to fraud gap: effective cyber security, counter fraud and law enforcement are all critical to tackling cyber fraud, but are currently treated as ends in themselves and have their own objectives and terminology.

4. Social engineering: the ability of criminals to deceive people is at the heart of both cyber attacks and fraud. Most current effort goes into training people to make near impossible judgements, rather than making their tasks easier.

The goal to introduce change in these areas breaks down into 12 more detailed demands.

Our vision for tackling cyber fraud

1. Endemic Attacks

VISION

1a.	Cyber hygiene is the default across all sectors – prioritized by businesses and built in by suppliers
1b.	Cyber and fraud risk are an integral part of business strategy and new service development

4. Social Engineering

VISION

4a.	Opportunities to establish false trust are reduced and those that remain are well publicized and understood
4b.	The way organizations interact with customers and staff reinforces security
4c.	The security of interactions with individuals becomes less dependent on widely public information

We are continuing to gather proof that these changes are important

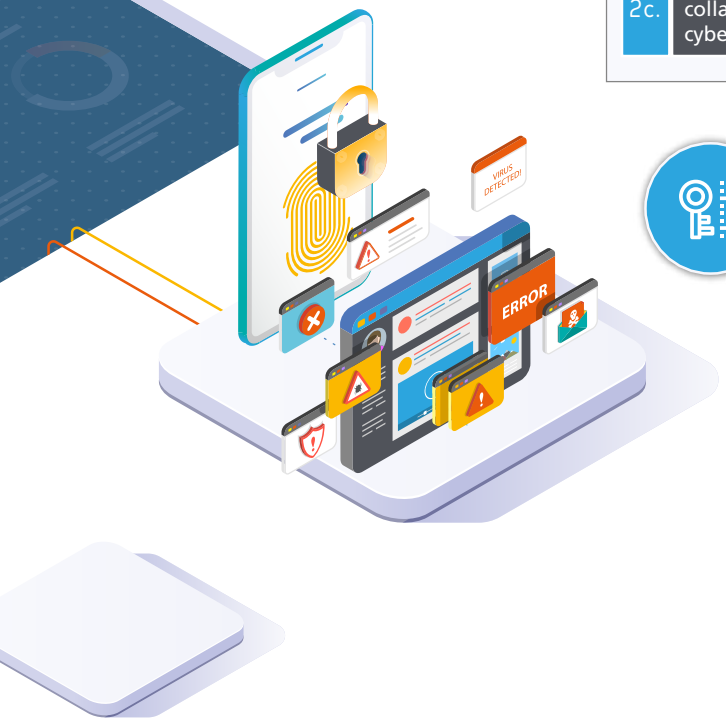
Four crucial areas of change

The goal to introduce change in these areas breaks down into 12 detailed demands

2. Operating in Silos

VISION

2a.	Cyber fraud is understood across functions within and between organizations
2b.	Organizations are recognized for sharing useful information not punished for suffering an attack
2c.	Business and law enforcement collaborate effectively to tackle cyber fraud



3. The Cyber to Fraud Gap

VISION

3a.	The response to cyber attacks minimizes the broader impact of data loss on society
3b.	Fraud teams in business and law enforcement are fully engaged in tackling cyber attacks as precursors to fraud
3c.	Enforcement is globalized to tackle remote, industrialized, depersonalized and rapidly evolving cyber fraud
3d.	Cyber and fraud terminology are understood across the relevant stakeholder communities

Let us know if you have evidence to share

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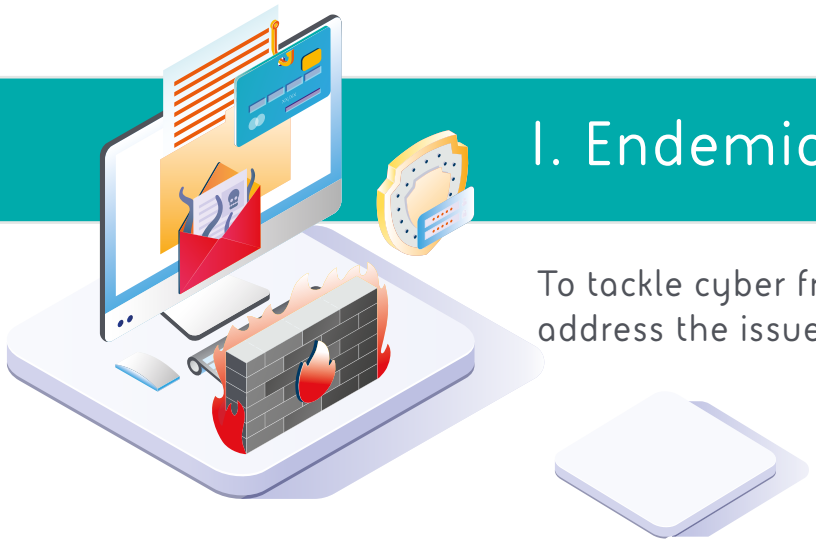

I. Endemic Attacks

To tackle cyber fraud we need to address the issue of endemic attacks

Why do we need to see change?

The prevailing mind set in cyber security is that organizations should think about 'when' not 'if' they suffer a successful cyber attack. But the high number of successful attacks is simply making it too easy for criminals to access the data they need to commit fraud. Making a real difference to the endemic level of cyber attacks is difficult. In the long term the only viable answer is that security becomes built-in to technology and working practices. This will not be enough to stop all cyber attacks, but will shift the economics of cyber fraud in society's favour.

Ia. Vision: cyber hygiene is the default across all sectors – prioritized by businesses and built in by suppliers

Purchasers of technology and business services have considerable power to demand levels of security in the aggregate, but as individuals their power is reduced. On the one hand, market demand is improving the level of security that suppliers provide, but that is not true of the cheapest or default options. Collective action and campaigning has the potential to accelerate improvements. In fact, in situations where purchasers (especially consumers) do not have the information or power to protect themselves, there is a case for moving towards regulation, for example, to support a secure by design approach[2].

"There is currently a culture of 'going through the motions' when it comes to cyber hygiene. This is coupled with an 'ease over security' attitude where people do the bear minimum to protect themselves, leading to data hacks and subsequently to fraud."

Phil Chapman, Firebrand
The Intelligence Network Corporate Supporter

Ib. Vision: cyber and fraud risk are an integral part of business strategy and new service development

Rather than being a retrospective consideration, we need security to be built-in to organizations, with a move towards cyber security models which are able to adapt along with the ever-evolving attack landscape. As situations evolve, so too should the management of risk and funding of controls, making it harder for criminals to achieve a breach that leads to fraud.

We need to see security considerations built into decision-making, and security should be an integral part of non technical roles. Certainly, where larger organizations may have enterprise risk management processes in place, these considerations are sometimes already covered, but a more pervasive approach will benefit the whole community.

"A recent roundtable event on fraud between The Intelligence Network and ADS members in the cyber security sector found that we need to move towards a culture where security is as important to organizations and their customers, as user experience. Having established this vision, we can now plot out a valuable action plan that will help all parts of industry make the crucial changes necessary. This needs to be a collaborative Endeavor and, if we can improve our collective resilience against attacks, we will ultimately make cyber fraud a harder crime to commit."

Dr Hugo Rosemont, Director – Security and Resilience Sector, ADS Group
The Intelligence Network Corporate Supporter

How do we make change happen?

We want to put in place some clear actions to shift the economics of fraud by making breaches harder to achieve. These may include some of the following actions and we are consulting with our members to confirm our approach:

- Support cyber hygiene initiatives (e.g. Cyber Essentials) and particularly the convergence of these internationally to improve consistency and reduce costs
- Develop a simple model of security by default, especially for new and smaller businesses that can operate fully in the cloud
- Work with cloud platform providers to make secure configurations the default 'opt-out' option rather than the 'opt-in' exception
- Promote security-centric approaches to moving to the cloud so security and cloud benefits reinforce each other rather than conflict
- Support the long term evolution of the cyber insurance sector to strengthen the economic incentives for cyber hygiene
- Support community sharing initiatives (eg Open Security Summit) that encourage reuse of both technical security approaches and business approaches such as investment cases for security

If you would like to contribute to delivering these changes, please get in touch with us.

2. Operating in Silos

To tackle cyber fraud we need to stop operating in silos

Why do we need to see change?

While there is some sharing of information between security teams and fraud teams, sharing across functions and industries is limited and joint action is rare. There's no doubt that sharing can be difficult, particularly when it involves trusting others with sensitive information, but it's important to build models for this, in order to enable joint action.

2a. Vision: cyber fraud is understood across functions within and between organizations

We must create a culture where information sharing is the norm, and where each party considers their information in relation to the bigger picture. Cyber fraud, security and financial crime teams frequently hold different pieces of the same puzzle, but struggle to collaborate in order to tackle instances of cyber fraud. Therefore, practical joint teams, or separate teams with shared objectives, could be established within and between organizations to speed up the process of dealing with fraud.

2b. Vision: organizations are recognized for sharing useful information not punished for suffering an attack

We need to move towards a landscape where the importance of sharing information is acknowledged, and where it is possible to share effectively. As seen in the development of safety mechanisms in other sectors, such as aviation, there are significant long term benefits to be gained from continued learning and improvement.

Currently, organizations are reluctant to be transparent, and this is often because post-breach stories from media and industry commentators tend to focus on the negative, rather than the positive point that organizations sharing information are trying to do the right thing.

"A recent well-publicized attack resulted in the affected power company adopting a transparent approach, arguably helping to limit further damage. But this is uncommon. Often, communication problems stem from a misunderstanding of how valuable the information held can be in a wider context. Linked to this is the fear of embarrassment and exposure of weaknesses."

Robert Clifford, BAE Systems Applied Intelligence
The Intelligence Network Member

2c. Vision: business and law enforcement collaborate effectively to tackle cyber fraud

If information sharing is difficult, joint action is even more difficult but also more valuable – because different parties have different information, power and resources that could together have a significant impact. However, law enforcement and businesses understandably have different objectives – whereas businesses will mostly focus on damage limitation, law enforcement will look to prosecute the perpetrators. Their differing objectives naturally mean that levels of joint action have been limited to date. Improved information sharing and understanding of the wider fraud economy is the starting point, but organizations need help to remove the barriers to joint action.

How do we make change happen?

The Intelligence Network was formed to help facilitate collaboration across the industry in order to break down silos. Specifically when it comes to tackling cyber fraud, our activities may include:

- Develop a cyber fraud intelligence model for capturing information from all fraud attempts including failed attempts and customer experiences
- Trial cross-functional sharing and action (between cyber security and fraud teams both within and between organizations) and publish case study on learnings
- Develop links between existing cyber security, fraud and financial crime intelligence sharing platforms to develop a more complete picture of the cyber fraud ecosystem
- Launch a mechanism for raising Suspicious Activity Reports for fraud (analogous to existing systems for money laundering), with an appropriate intelligence task force (similar to the UK Joint Money Laundering Intelligence Taskforce) to enable action particularly against criminals carrying out high volume low value fraud
- Analyze and reduce the barriers to collective action, including clarifying legal and regulatory constraints

If you would like to contribute to delivering these changes, please get in touch with us.

3. The Cyber to Fraud Gap

To tackle cyber fraud we need to close the gap between cyber and fraud

Why do we need to see change?

Effective cyber security, counter fraud and law enforcement are all critical to tackling cyber fraud. However, there is a disconnect between legal frameworks, the realities of cyber fraud, and its impact on society. Meanwhile, radically different perspectives have led to complicated and varied cyber fraud terminology among cyber fraud stakeholders. All of this amounts to a 'gap' between cyber and fraud which needs to close if we are to shift towards a society-wide perspective.

3a. Vision: the response to cyber attacks minimizes the broader impact of data loss on society

When dealing with a major cyber incident, organizations have many things to consider – the technical details of the attack, legal and regulatory requirements, contractual commitments, large unplanned costs and reputation. It is understandable that the focus is on managing and mitigating the harm to the business (and therefore to its customers and other key stakeholders). But this is not necessarily what will minimize the impact on society. For a pro-social response to become best practice, we need to support organizations that prioritize proactive harm reduction over their own short-term challenges.

3b. Vision: fraud teams in business and law enforcement are fully engaged in tackling cyber attacks as precursors to fraud

We need to move to a state where cyber fraud is investigated as one problem. In the current landscape, fraud is typically tackled as if its existence is simply a fact of life. But this attitude leaves stakeholders in the fraud life-cycle with less incentive to reach back down the chain, investigate tactics, understand what information fraudsters are using, and establish ways of limiting it from happening again.

In the UK, the laws used to prosecute those who commit cyber fraud are the 2006 Fraud Act and the 1990 Computer Misuse Act. Neither of these have a specific clause for dealing with cyber fraud and this is a problem seen elsewhere in the world too.

3c. Vision: enforcement is globalized to tackle remote, industrialized, depersonalized and rapidly evolving cyber fraud

We need to shift from the geographically-based policing of fraud to a state where enforcement is built into the transnational technology platforms and payment systems run by the private sector. The current legal, regulatory, ethical and enforcement framework surrounding cyber fraud simply does not work, because the nature of modern fraud is that it is not limited to traditional enforcement geographies. It is remote, industrialized, depersonalized and rapidly evolving.

3d. Vision: cyber and fraud terminology are understood across the relevant stakeholder communities

'Cyber fraud' is a broad term; organizations and specialist professions are using a diverse range of definitions for different parts of the problem. This is a natural result of different perspectives and objectives, but it is ultimately resulting in reduced understanding and is impeding action. We need to make it easier for different stakeholder communities in the fraud life-cycle to understand one another's language.

How do we make change happen?

We want to put in place some clear actions to change the cyber to fraud gap. These may include some of the following actions and we are consulting with our members to confirm our approach:

- Develop a model of 'pro-social response' for organizations suffering cyber attacks. This should be incentivized by regulators, insurers and the security community
- Work with investigative journalists and media organizations to highlight end-to-end case studies that illustrate the cyber fraud lifecycle and ecosystem
- Develop mechanisms to improve the visibility that individuals have of their online accounts and information with an indicator of personal cyber fraud risk and ways to reduce this risk
- Create a common terminology for cyber fraud – create a simple cross-reference of terminology between cyber security, fraud, financial crime and law enforcement communities. Similar to the MITRE ATT&CK framework, this could be used to check coverage, develop detections, test detections, and more.
- Support modernization and harmonization of cyber fraud legislations across legal jurisdictions

If you would like to contribute to delivering these changes, please get in touch with us.

4. Social Engineering

To tackle cyber fraud we need to address the issue of social engineering

Why do we need to see change?

The ability of criminals to deceive people is at the heart of both cyber attacks and fraud. Most current effort goes into training people to make near impossible judgements, rather than making their task easier. And sometimes we make it harder for people than it needs to be. For example, we train staff not to click on links or attachments when these are an integral part of business communication. And many consumer organizations communicate with customers in ways that are very hard to differentiate from those of fraudsters. At the same time, social media is making communication between consumers and corporations more public, increasing the potential for cyber-enabled fraud.

4a. Vision: opportunities to establish false trust are reduced and those that remain are well publicized and understood

Most people understand not to trust an email or social media notification from a stranger but underestimate how easy it is to impersonate someone online, or even to spoof a phone or text number. While increasing awareness of the risks will help, we will make a bigger difference if we could change the way technology works to reduce the opportunities for false trust. And organizations, which are very focussed on authenticating that a customer or staff member is who they say they are, need to make it easy for individuals to authenticate them.

> "There is a proportion of the public that simply thinks 'it will never happen to them,' so they have so far not paid much attention to awareness campaigns."
>
> Phil Chapman, Instructor, Firebrand Training
> The Intelligence Network Corporate Supporter

4b. Vision: the way organizations interact with customers and staff reinforces security

We learn what is normal from experience. Organizations can "nudge" how individuals behave through their interactions. We need to stop communicating in ways that unintentionally lead to insecure behavior, for example reaching out to customers by phone or text and asking the customer to authenticate themselves.

We would like to see a wider understanding of best practice interaction to reinforce security, and a movement away from prioritising ease of communication.

Staff members need to stop being trained to ask customers for personal banking details over the phone, and organizations need to stop prioritising ease of communication over security. We must move to more secure authentication processes, and change current methods of best practice.

> "People have an illicit trust in banking institutions, so they do not question interactions and hand over information. This is partly due to how we are neurologically and psychologically designed to build relationships. We need to train people to be less trusting online."
>
> Anon, social engineering expert

4c. Vision: the security of interactions with individuals becomes less dependent on widely public information

An increasing number of organizations use social media platforms to interact with their customers in a more public and popular way. However, this has opened up a new gateway for customers and organizations to become vulnerable. We've seen fraudsters exploit this at ease, scouring social media for customer complaints and then spoofing them to extract security details. Some examples[3] have been widely publicized, which may incentivize change over time, but organizations must consider their interactions more closely, and shift to security measures that are less dependent on widely public information.

How do we make change happen?

We want to put in place some clear actions to help make it harder for fraudsters to exercise social engineering tactics. These may include some of the following actions and we are consulting with our members to confirm our approach:

- **Explore models** for providing cyber security and cyber fraud advice services to the general public
- **Map out the mechanisms** by which criminals can establish false trust and stimulate research and investment into the removal or prevention of these mechanisms
- **Redirect existing** awareness campaigns to improve the understanding of existing mechanisms used to establish false trust (eg phone number spoofing currently)
- **Develop and publish** a best practice guide for how organizations interact with staff, customers and fraud victims to reinforce rather than undermine secure behaviors
- **Establish the principles** and mechanisms by which organizations can authenticate themselves to individuals to distinguish them from fraudsters
- **Establish an alert** service that monitors interactions on social media and flags to organizations behavior that appears to be fraudulent towards their customers

If you would like to contribute to delivering these changes, please get in touch with us.

The Journey to Change

Following our research into the problem of cyber fraud, we have established the challenges that we need to overcome if we are to tackle this global issue, and we have established what we want to achieve. This document maps out our vision for a future state. We're now calling for our members to help us get there.

We have some draft actions for exploration, but we need the help of the wider Network to prioritize activities and agree a way forward.

We are committed to this being a truly collaborative process, so we are inviting members of The Intelligence Network to come forward in support of our vision. We are asking members to provide evidence to help us establish priority areas. Based on the response, we will establish working groups to develop actions further, and build a plan to make our vision a reality.

We encourage all members of The Intelligence Network to share ideas and activities on our LinkedIn Group. Join us there to stay up to date, and to find out more about the upcoming working groups, which you can get involved in.

Share your ideas and join the conversation

Join the conversation on LinkedIn
www.baesystems.com/intelligencenetworkhub

Email us direct
theintelligencenetwork@baesystems.com

Discover more on our website
https://content.baesystems.com/theintelligencenetwork/us

Useful Resources

- Action Fraud: **https://www.actionfraud.police.uk/**
- NFIB: https://www.cityoflondon.police.uk/advice-and-support/fraud-and-economic-crime/nfib/Pages/default.aspx
- Fraud.org: https://www.fraud.org/
- The Little Book of Cyber Scams: https://www.met.police.uk/SysSiteAssets/media/downloads/central/advice/fraud/met/little-book-of-cyber-scams-2.0.pdf
- Federal Trade Commission, OnGuard: https://www.consumer.ftc.gov/features/feature-0038-onguardonline
- Cyber Aware: https://www.cyberaware.gov.uk/
- Cifas: https://www.cifas.org.uk/
- US Government: https://www.usa.gov/scams-and-frauds

With thanks to our Steering Committee and Corporate Supporters for their on-going support of The Intelligence Network

Louise Fisk, BAE Systems Applied Intelligence
James Hatch, BAE Systems Applied Intelligence
Siân John MBE, Microsoft
Peder Jungck, BAE Systems Inc.
Will Lin, Forgepoint Capital
Jonathan Luff, CyLon
Roxanne Morison, The CBI
Christina Richmond, ESG
James Sullivan, RUSI
Mark Swift, Trafigura

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