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Cyber Security in the Digital Oilfield

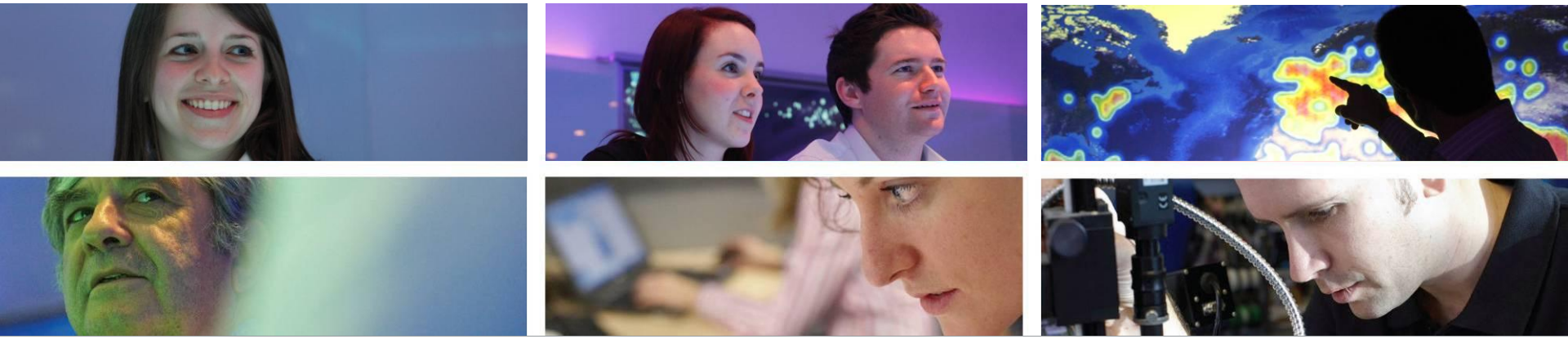
A Practical Perspective

FindingPetroleum – Development in the Digital Oilfield

Tuesday 4th December 2012

Joe Hancock

Alex Richards



Agenda

- About BAE Systems Detica
- Operating Environment
- Current Risk Landscape
- What Can We Do About It?

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About BAE Systems Detica

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Our vision and strategy

SECURING A CONNECTED WORLD

Mission-critical information solutions

Cyber security

Communications intelligence

Financial crime and compliance

Differentiated services

- Differentiated systems integration and managed services
- Repeatable processes and standardised methodologies
- Innovative pricing models

Internationalise

- Regional hubs in Europe, the Americas and AsiaPac & Middle East
- Globalise differentiated products
- Multiple, complementary channels to market

Innovate

- Investment in world-class software and electronic systems
- Re-use of capabilities across Detica portfolio
- Detica NetReveal®
- Detica Treidan™

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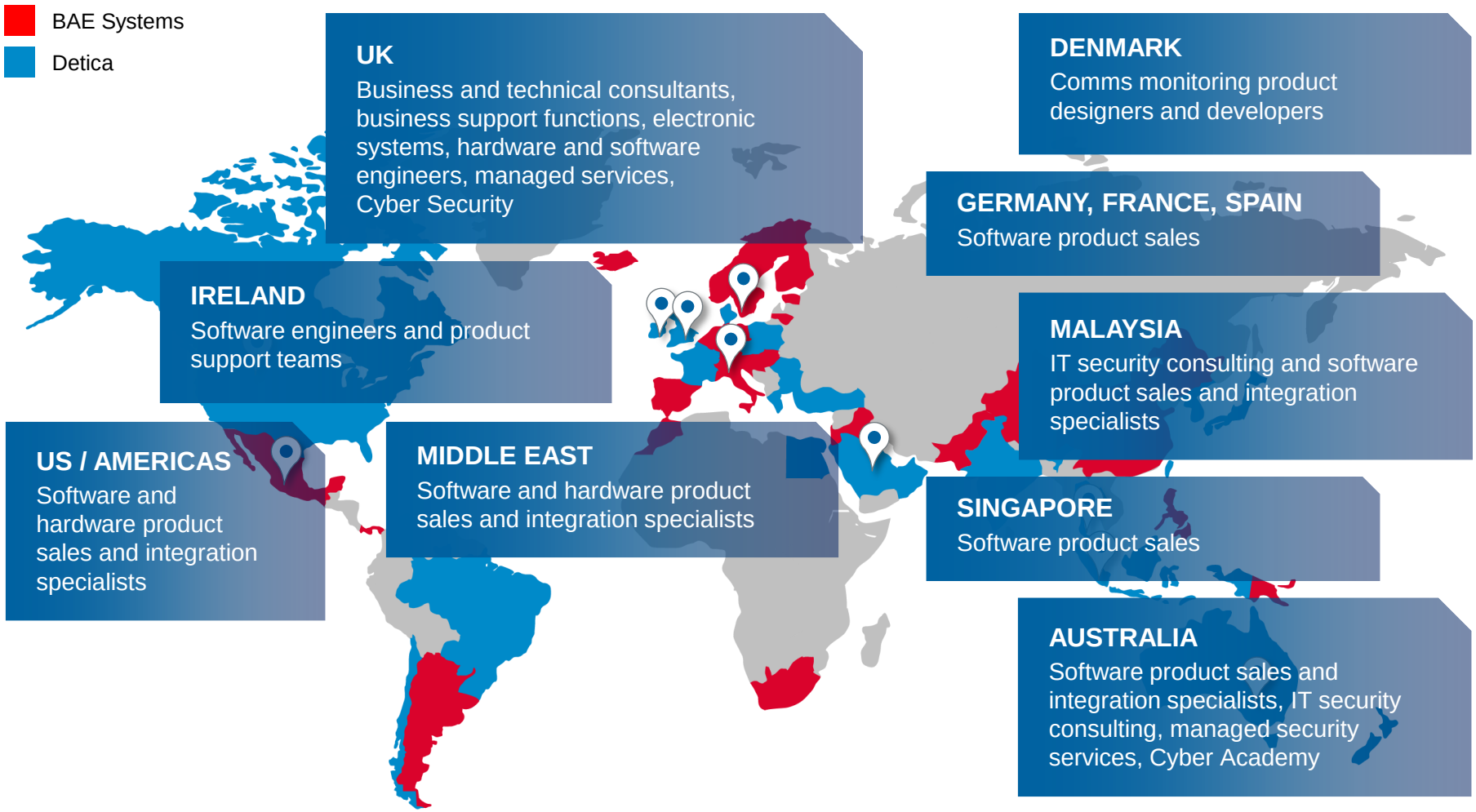
A global business spanning the Americas, EMEA and Asia Pacific



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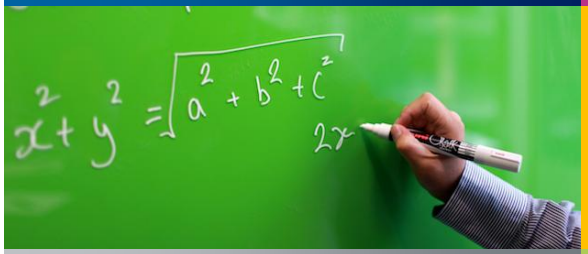
Detica in numbers

10,000
Estimated number of analysts around the world who now use Detica NetReveal®.

2 in a trillion
The accuracy of the National Time Frequency Signal controlled by our technology.

£1bn
Amount of tax fraud we identified for HMRC in their first year of using Detica NetReveal®.



£27bn
The annual cost of cyber crime to the UK, which we estimated for the Cabinet Office.

1.5 Tb
Amount of data that Detica DataRetain® captures and indexes every day for one major European telecommunications operator.

6,000
Approximate number of miles of road we help the UK Highways Agency manage.

70%
The proportion of Australia's 20 largest companies that use Detica in Australia Cyber Security Services.

50,000
Approximate number of hours of security testing of client systems completed by Detica in Australia each year.

100,000,000,000
Bits per second processed on our Titan line card

621
The number of arrests through Detica's work with the Insurance Fraud Bureau.

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Services

Big Data

Experience and expertise to help you navigate the opportunities and challenges of Big Data. We help clients improve, protect and exploit their data.

Consulting

We take a pragmatic approach to strategy, helping our clients successfully implement business and technology transformation.

Cyber Security

Strategy, Assurance, Improvement, Technology, Monitoring, Responding.

Risk & Compliance

Tackling Fraud & Non-Compliance, Employee Assurance, Organised Crime & Terrorism, Resilience.

Systems Integration & Managed Services

Intelligence Systems, Web-based Systems, Risk-based Targeting Systems, Managed Cyber Security Services

Digital Media

Digital Transformation, User Experience, The Power of Mobile, Social Business, Delivery and Support.

Tactical Training & Equipment

Technical Operations Equipment, Training Courses.

Electronic Systems

An innovative high-end supplier of effective security technology, specialising in communications and surveillance.

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Operating Environment

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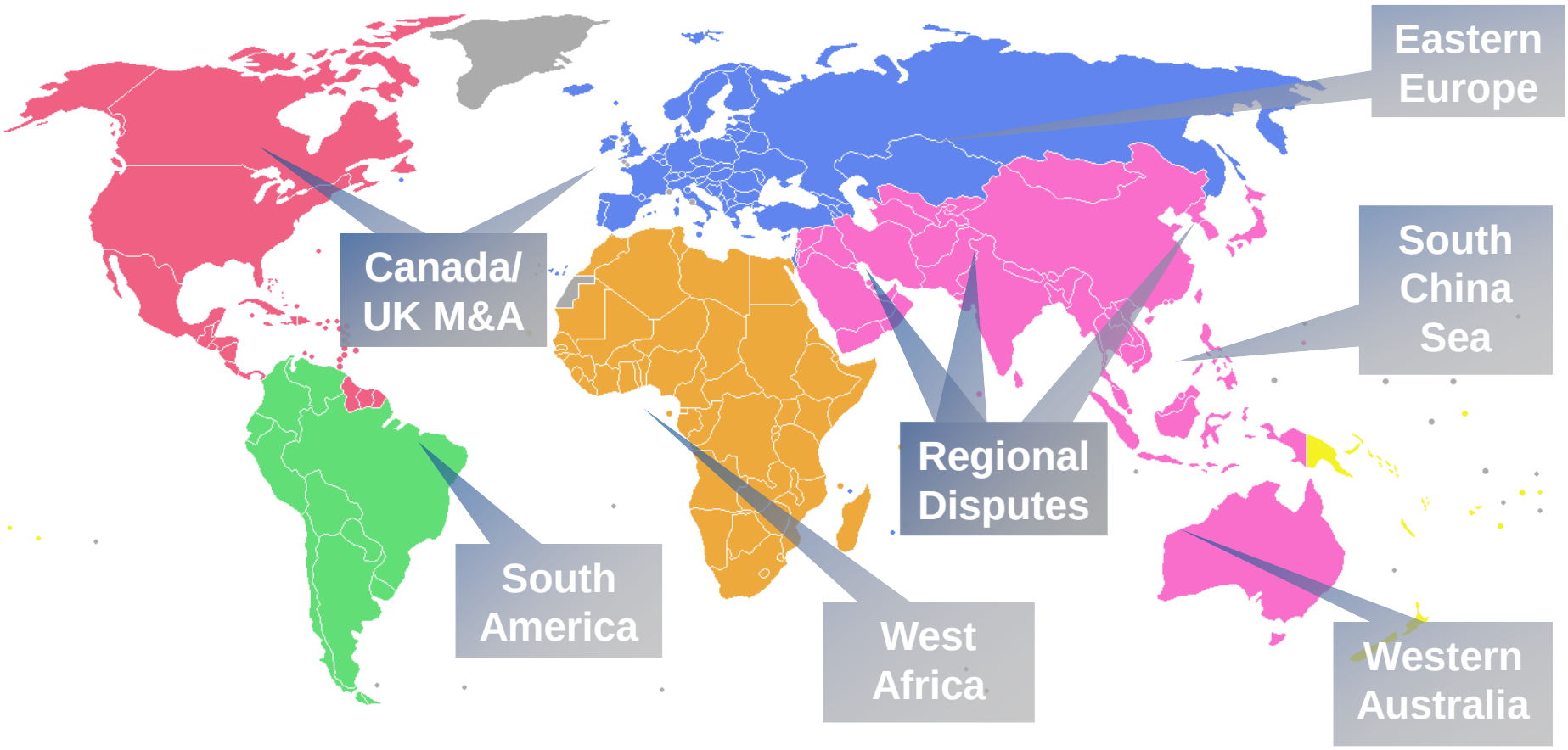
Global Commercial Developments



- The oil industry is an economic target working with and against countries know for cyber espionage in a number of geographies.
- The international nature of the industry also exposes oil companies to the fallout from regional disputes and geopolitical threats

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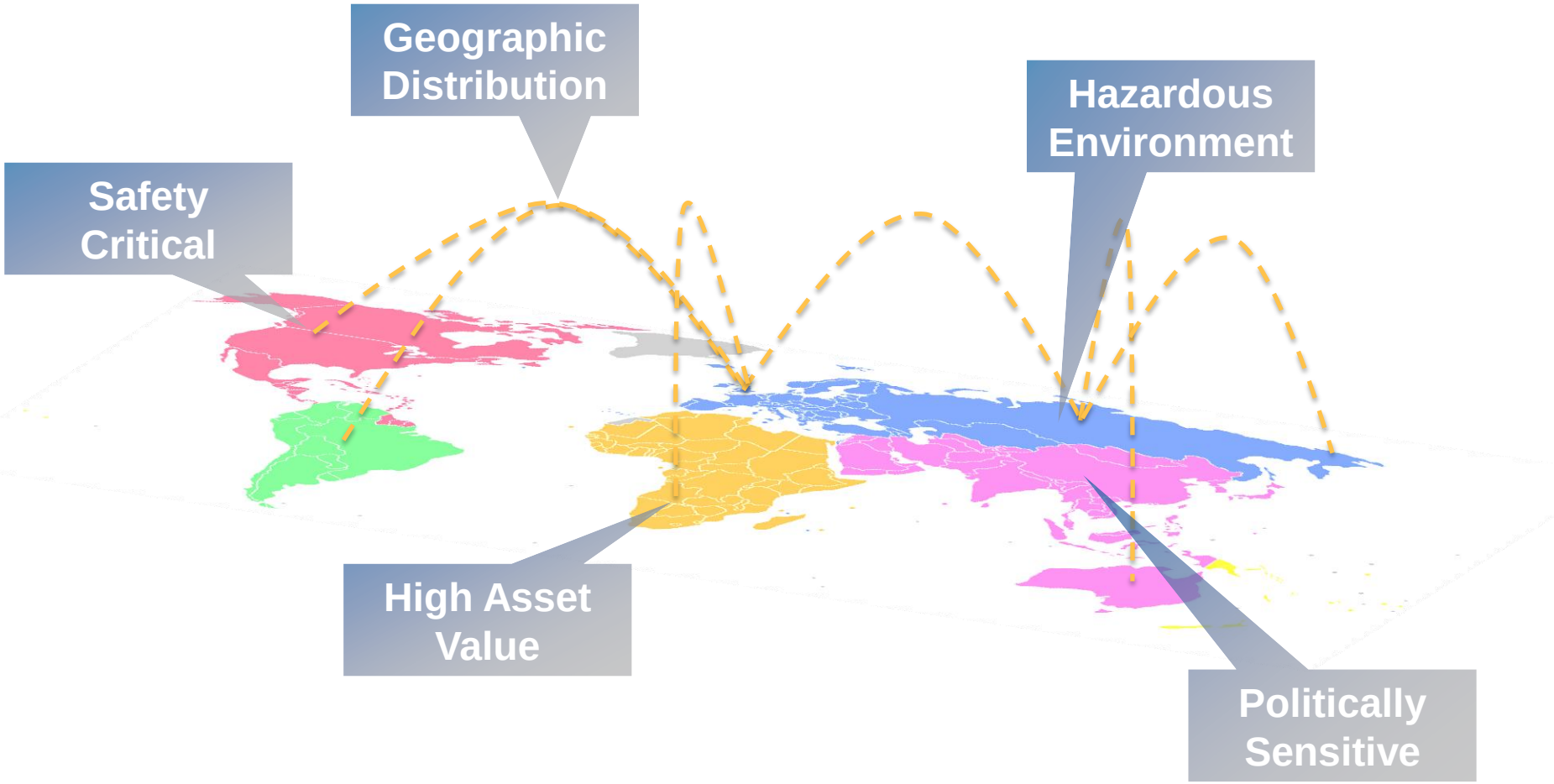
Physical Environment



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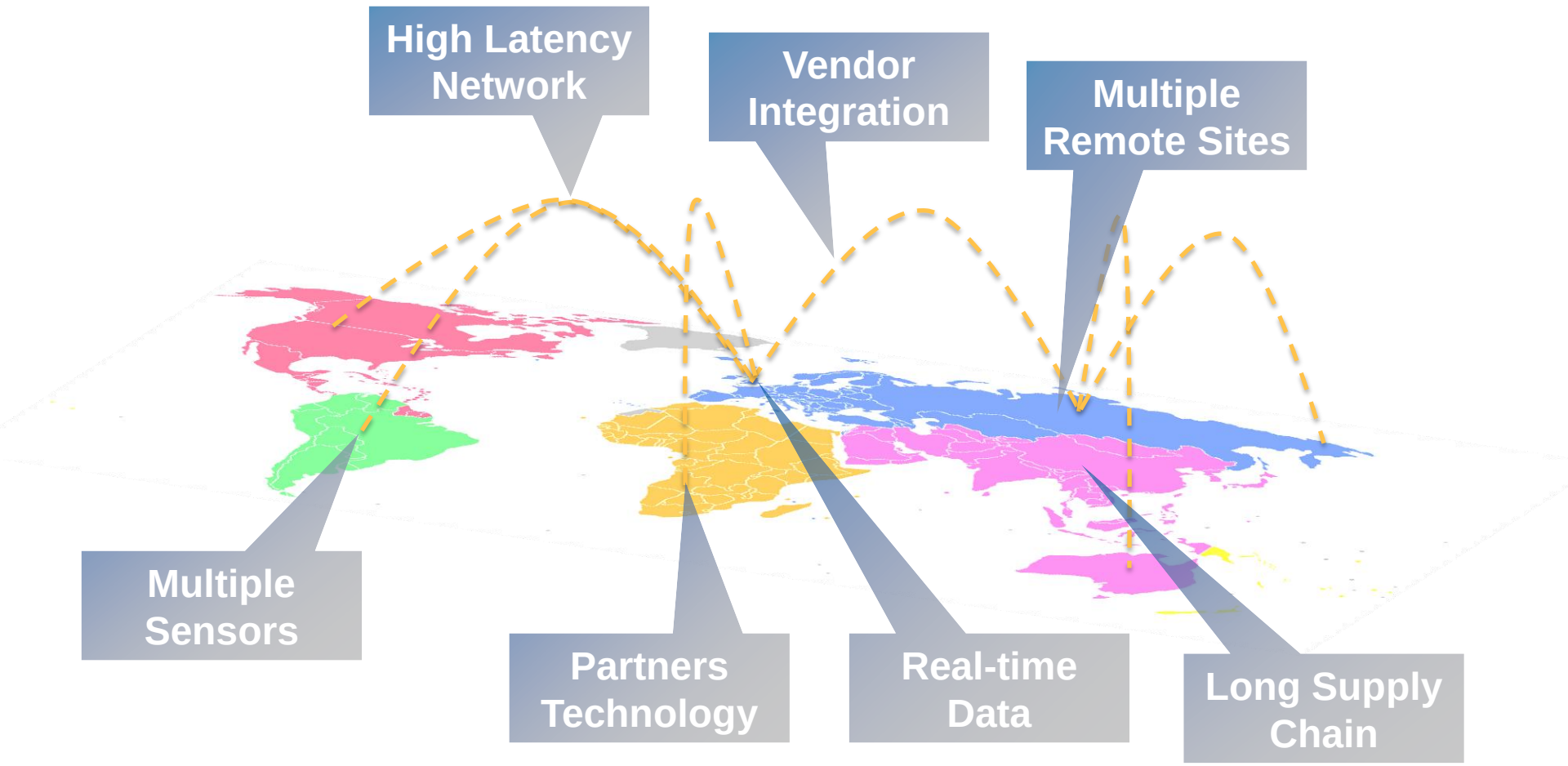
Technical Environment



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Current Risk Landscape

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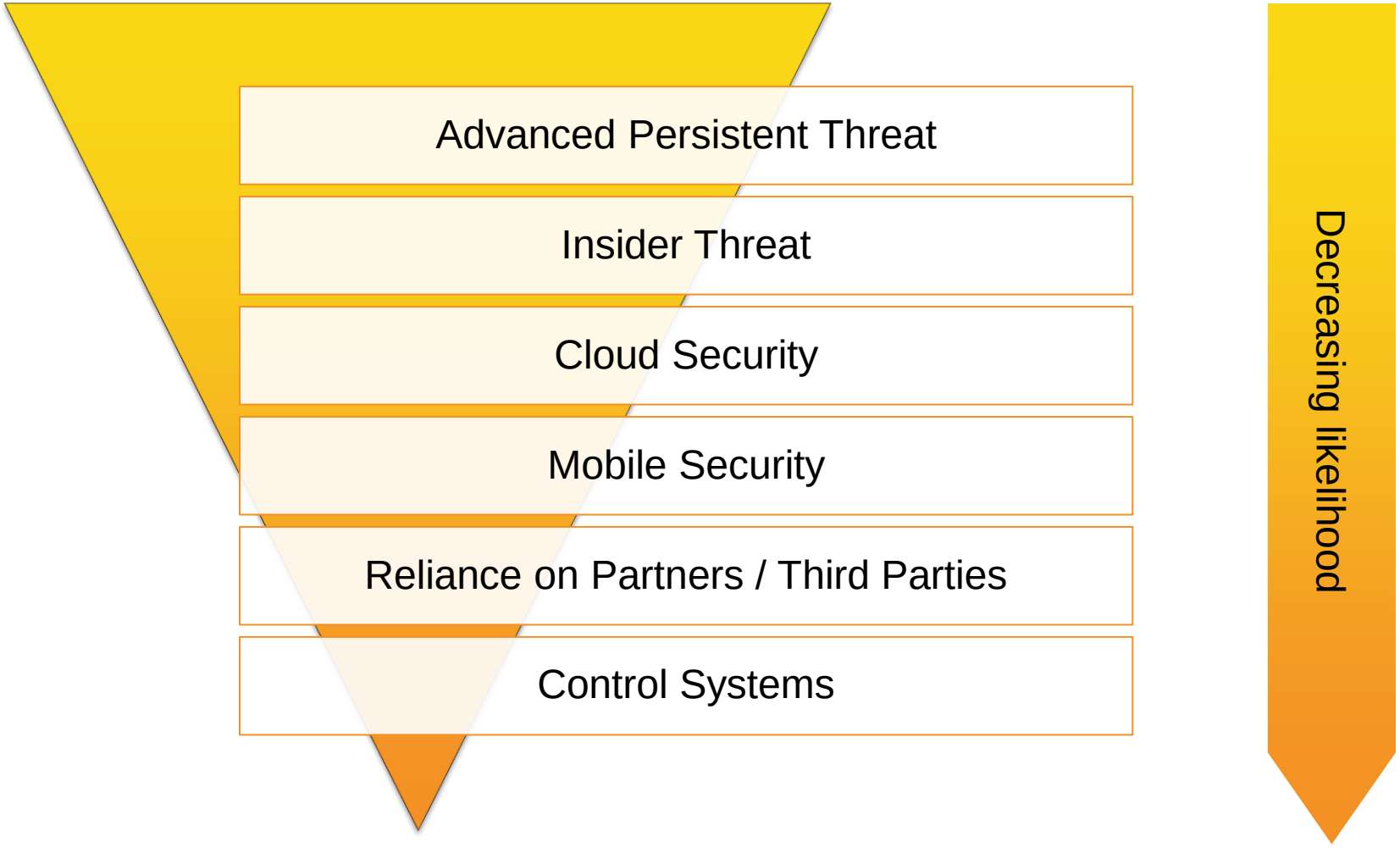
Risks



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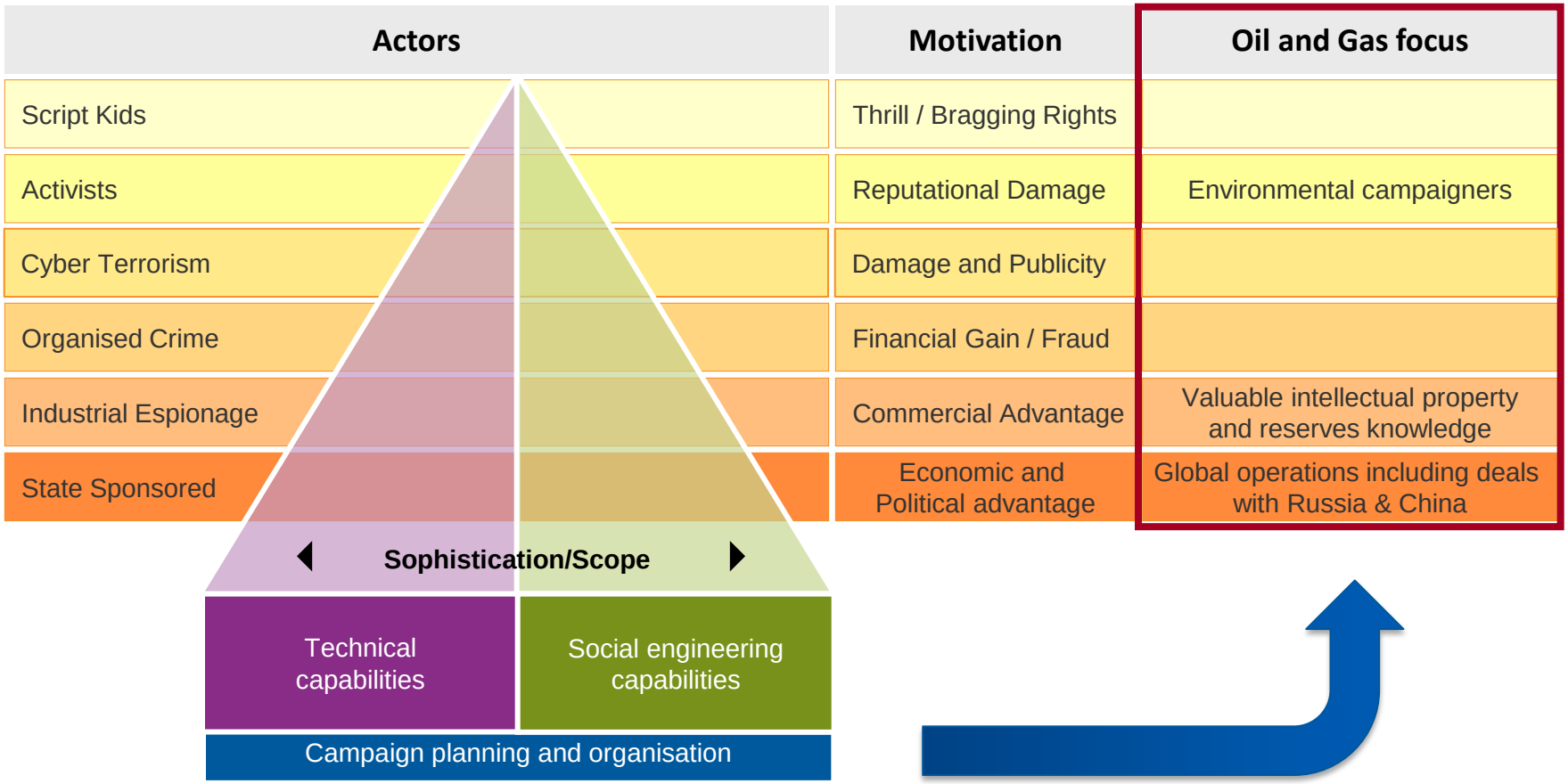
Current Threats

Actors	Motivation	Oil and Gas focus
Script Kids	Thrill / Bragging Rights	
Activists	Reputational Damage	Environmental campaigners
Cyber Terrorism	Damage and Publicity	
Organised Crime	Financial Gain / Fraud	
Industrial Espionage	Commercial Advantage	Valuable intellectual property and reserves knowledge
State Sponsored	Economic and Political advantage	Global operations including deals with Russia & China



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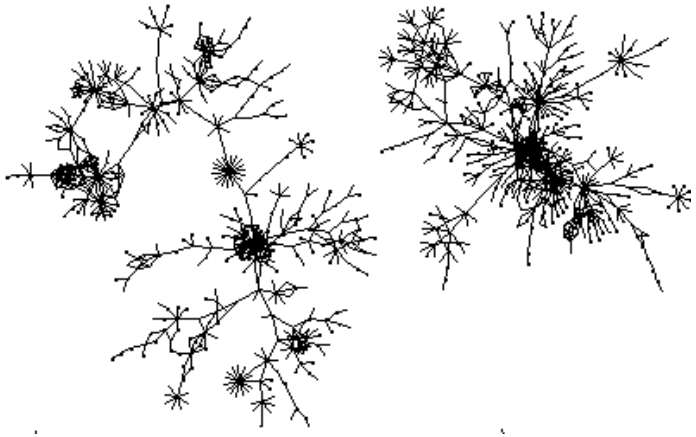
Current Attacks



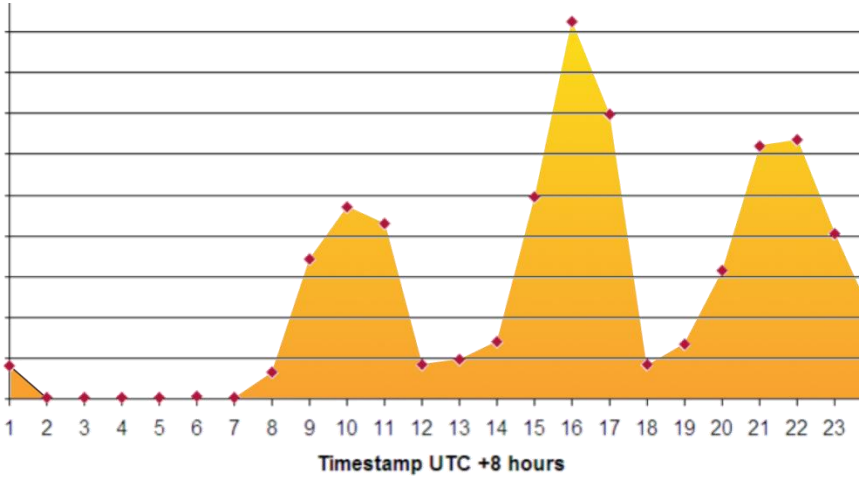
We've observed a range of attacks across commercial organisations including Oil and Gas, both directly as customers we monitor, and indirectly through "fourth party" traffic.

Attacks tend to be very sophisticated, as part of a planning and directed campaign to gather data. One organisation found 10% of their network traffic was generated by attackers

Finding links between attacks enables us to increase the amount of data we can use for attribution of each one.

This graph shows the time that the attacker was active within one of the groups.

We can see the attacker has a typical working day with an additional evening shift.



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Business Impacts

Increasing business impact

IP of discoveries which is hard for a third party to exploit	Limited impact on business as intelligence would be gained by other routes if not via a cyber attack. Monitoring gives potential to regain upper hand in negotiations.
Positioning for deals involving the attacker or other third parties	
Pricing or commercials on deals involving the attacker	Could impact bottom line depending on the importance of what's taken. Need to have ability to respond to monitoring alerts to block the more serious attacks before they impact.
IP related to exploitable technology or oil reserves	
Infrastructure or control system damage to cause loss of revenue	Has the potential to cause significant damage and threaten the entire business. Segregation of the most important assets is required to keep them protected from attack.
Damage to cause environmental impact or as part of wider offensive	

Decreasing probability of occurrence

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What Can We Do About It?

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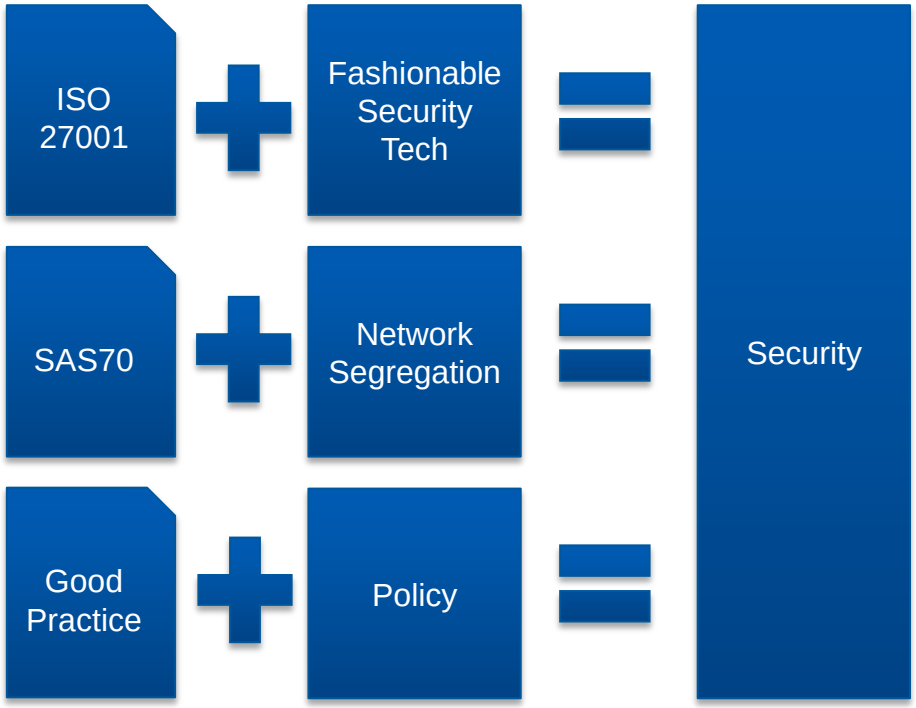
Best Practice?

- Standards such as ISO27001/2 set out best practice and control frameworks for security set out a “one size fits all” approach.
- Fashionable security technologies add layers of “defense in depth”.
- Architectural mechanisms such as network segregation, keep the bad things away – assume we’re protected.
- **This doesn’t equal security, sometimes less is more.**



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More is not necessarily better....

- Assume that systems are already compromised, move to limit damage.
- Assess the risk to the organization in business terms.
- Protect only the business critical assets.
- Use standards, compliance and traditional solutions as they were intended, to provide controls not to drive them.
- **Security should now add business value.**

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Cyber Security

PREPARE

- Consulting services which deliver a clear understanding of clients' exposure to cyber attack and the impact such an attack would have on their business.
- Enables business to make informed investment decisions putting in place pragmatic, cost effective cyber defences

PROTECT

- Delivering repeatable products and solution integration.
- Protects business critical information from Cyber attack.
- Allows only those authorised with a business need to access critical information
- Enables businesses to enjoy secure collaboration with partners, supply chain, clients and employees across a global estate.

MONITOR

- Products and services which continually monitor client networks.
- Identify malicious behaviour, understand its intent and prevent it from achieving its goal.
- Effective against increasingly sophisticated, persistent and tailored attacks.
- Enables businesses to enjoy secure collaboration with partners, supply chain, clients and employees across a global estate.

RESPOND

- Consulting services which minimise business impact of successful cyber attack.
- Urgent remediation work to assess extent of attack and minimise impact on business continuity.
- Crisis management services being created for more holistic response offering.
- Enables businesses to minimise cost/reputational damage resulting from cyber attack

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Thank You

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