NHS Lancashire and South Cumbria Integrated Care Board

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Local Authorities	• Lancashire County Council • Blackburn with Darwen Borough Council • Blackpool Council • Cumbria County Council • Preston City Council (Central Lancashire ICP) • Chorley Council (Central Lancashire ICP) • South Ribble Borough Council (Central Lancashire ICP) • Fylde Council (Fylde Coast ICP) • Wyre Council (Fylde Coast ICP) • West Lancashire Borough Council (West Lancashire MCP) • Barrow-in-Furness Borough Council (Morecambe Bay ICP) • Lancaster City Council (Morecambe Bay ICP) • South Lakeland District Council (Morecambe Bay ICP) • Burnley Borough Council (Pennine Lancashire ICP) • Hyndburn Borough Council (Pennine Lancashire ICP) • Pendle Borough Council (Pennine Lancashire ICP) • Ribble Valley Borough Council (Pennine Lancashire ICP) • Rossendale Borough Council (Pennine Lancashire ICP)
NHS Providers	• Blackpool Teaching Hospitals NHS Foundation Trust • East Lancashire Hospitals NHS Trust • Lancashire and South Cumbria NHS Foundation Trust • Lancashire Teaching Hospitals NHS Foundation Trust • University Hospitals of Morecambe Bay NHS Foundation Trust • North West Ambulance Service NHS Trust
Clinical Support/ Commissioning Groups	• NHS North West Regional Specialised Commissioning Team • NHS Midlands and Lancashire Commissioning Support Unit • North West Share Infrastructure Service
Universities	• University of Central Lancashire (UCLan) • Edge Hill • Lancaster University • The University of Cumbria
Voluntary Organisations	• Voluntary, Community, Faith and Social Enterprise Sector Alliance

200+ GP surgeries 100+ of which on the COIN

Lancashire Fire and Rescue | North Cumbria County Council | Southport & Ormskirk Hospital Trust

Lancashire Police | Commissioned Commercial Entities (Care Homes, Palliative Care, Step Down Units, housing associations) | DoE | DWP | Home Office | MOD | NCSC/GCHQ

David Willis Acting Senior Information Security Officer

CISSP Certified Information Systems Security Professional | CISM Certified Information Security Manager An ISACA Certification | CAN DG | iNetwork Innovate Influence Inspire | The Cyber Resilience Centre for Greater Manchester

How do we build both Defenses and Resilience?

Organisation

People

Technology

Ciaran Martin – Ex-CEO NCSC

Organisation

- Do you understand your organisation ?

- Do your organisation understand what you do ?

People

Senior Team

Profit & Loss
Risk and Incident
Growth, Acquisition or Sale
Bottom Line what do I need to do my job

Staff

Bottom Line what do I need to do my job

Cyber/IS/IG Specialist(s)

Threat Actor, Threat Vector
Vulnerability
Risk and Incident
Bottom Line what do I need to do my job

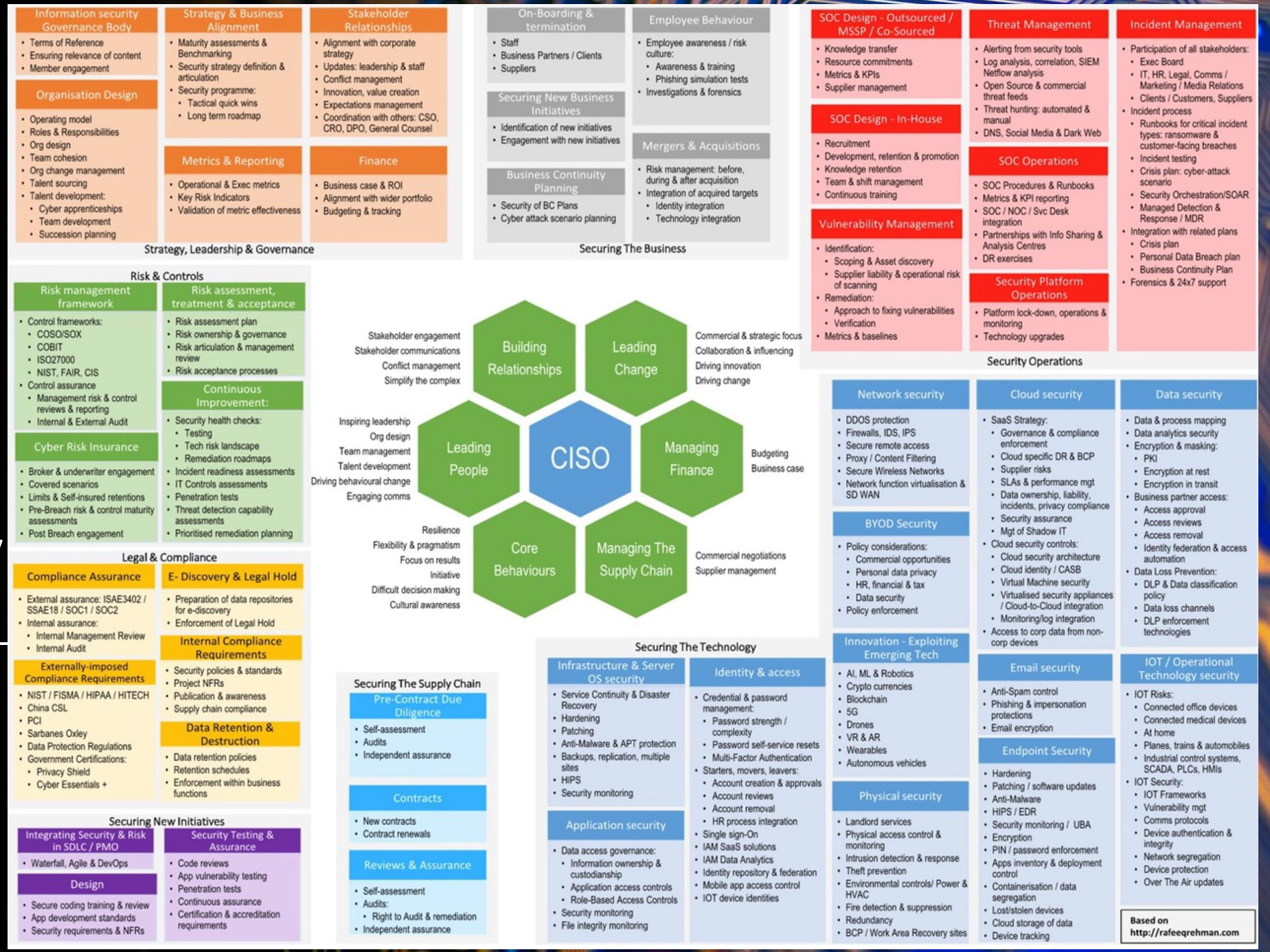
Suppliers

Bottom Line what do I need to do my job

Technology

Cyber is about technology

Technology


Information security Governance Body
• Terms of Reference
• Ensuring relevance of content
• Member engagement
Organisation Design
• Operating model
• Roles & Responsibilities
• Org design
• Team cohesion
• Org change management
• Talent sourcing
• Talent development:
• Cyber apprenticeships
• Team development
• Succession planning
Strategy & Business Alignment
• Maturity assessments & Benchmarking
• Security strategy definition & articulation
• Security programme:
• Tactical quick wins
• Long term roadmap
Metrics & Reporting
• Operational & Exec metrics
• Key Risk Indicators
• Validation of metric effectiveness
Stakeholder Relationships
• Alignment with corporate strategy
• Updates: leadership & staff
• Conflict management
• Innovation, value creation
• Expectations management
• Coordination with others: CSO, CRO, DPO, General Counsel
Finance
• Business case & ROI
• Alignment with wider portfolio
• Budgeting & tracking
Strategy, Leadership & Governance
On-Boarding & termination
• Staff
• Business Partners / Clients
• Suppliers
Securing New Business Initiatives
• Identification of new initiatives
• Engagement with new initiatives
Business Continuity Planning
• Security of BC Plans
• Cyber attack scenario planning
Employee Behaviour
• Employee awareness / risk culture:
• Awareness & training
• Phishing simulation tests
• Investigations & forensics
Mergers & Acquisitions
• Risk management: before, during & after acquisition
• Integration of acquired targets
• Identity integration
• Technology integration
Securing The Business
SOC Design - Outsourced / MSSP / Co-Sourced
• Knowledge transfer
• Resource commitments
• Metrics & KPIs
• Supplier management
SOC Design - In-House
• Recruitment
• Development, retention & promotion
• Knowledge retention
• Team & shift management
• Continuous training
Vulnerability Management
• Identification:
• Scoping & Asset discovery
• Supplier liability & operational risk of scanning
• Remediation:
• Approach to fixing vulnerabilities
• Verification
• Metrics & baselines
Threat Management
• Alerting from security tools
• Log analysis, correlation, SIEM Netflow analysis
• Open Source & commercial threat feeds
• Threat hunting: automated & manual
• DNS, Social Media & Dark Web
SOC Operations
• SOC Procedures & Runbooks
• Metrics & KPI reporting
• SOC / NOC / Svc Desk integration
• Partnerships with Info Sharing & Analysis Centres
• DR exercises
Security Platform Operations
• Platform lock-down, operations & monitoring
• Technology upgrades
Incident Management
• Participation of all stakeholders:
• Exec Board
• IT, HR, Legal, Comms / Marketing / Media Relations
• Clients / Customers, Suppliers
• Incident process
• Runbooks for critical incident types: ransomware & customer-facing breaches
• Incident testing
• Crisis plan: cyber-attack scenario
• Security Orchestration/SOAR
• Managed Detection & Response / MDR
• Integration with related plans
• Crisis plan
• Personal Data Breach plan
• Business Continuity Plan
• Forensics & 24x7 support
Security Operations
Risk & Controls
Risk management framework
• Control frameworks:
• COSO/SOX
• COBIT
• ISO27000
• NIST, FAIR, CIS
• Control assurance
• Management risk & control reviews & reporting
• Internal & External Audit
Cyber Risk Insurance
• Broker & underwriter engagement
• Covered scenarios
• Limits & Self-insured retentions
• Pre-Breach risk & control maturity assessments
• Post Breach engagement
Risk assessment, treatment & acceptance
• Risk assessment plan
• Risk ownership & governance
• Risk articulation & management review
• Risk acceptance processes
Continuous Improvement:
• Security health checks:
• Testing
• Tech risk landscape
• Remediation roadmaps
• Incident readiness assessments
• IT Controls assessments
• Penetration tests
• Threat detection capability assessments
• Prioritised remediation planning
Legal & Compliance
Compliance Assurance
• External assurance: ISAE3402 / SSAE18 / SOC1 / SOC2
• Internal assurance:
• Internal Management Review
• Internal Audit
Externally-imposed Compliance Requirements
• NIST / FISMA / HIPAA / HITECH
• China CSL
• PCI
• Sarbanes Oxley
• Data Protection Regulations
• Government Certifications:
• Privacy Shield
• Cyber Essentials +
E- Discovery & Legal Hold
• Preparation of data repositories for e-discovery
• Enforcement of Legal Hold
Internal Compliance Requirements
• Security policies & standards
• Project NFRs
• Publication & awareness
• Supply chain compliance
Data Retention & Destruction
• Data retention policies
• Retention schedules
• Enforcement within business functions
Securing New Initiatives
Integrating Security & Risk in SDLC / PMO
• Waterfall, Agile & DevOps
Design
• Secure coding training & review
• App development standards
• Security requirements & NFRs
Security Testing & Assurance
• Code reviews
• App vulnerability testing
• Penetration tests
• Continuous assurance
• Certification & accreditation requirements
Stakeholder engagement
Stakeholder communications
Conflict management
Simplify the complex
Building Relationships
Leading Change
Commercial & strategic focus
Collaboration & influencing
Driving innovation
Driving change
Inspiring leadership
Org design
Team management
Talent development
Driving behavioural change
Engaging comms
Leading People
CISO
Managing Finance
Budgeting
Business case
Resilience
Flexibility & pragmatism
Focus on results
Initiative
Difficult decision making
Cultural awareness
Core Behaviours
Managing The Supply Chain
Commercial negotiations
Supplier management
Securing The Supply Chain
Pre-Contract Due Diligence
• Self-assessment
• Audits
• Independent assurance
Contracts
• New contracts
• Contract renewals
Reviews & Assurance
• Self-assessment
• Audits:
• Right to Audit & remediation
• Independent assurance
Securing The Technology
Infrastructure & Server OS security
• Service Continuity & Disaster Recovery
• Hardening
• Patching
• Anti-Malware & APT protection
• Backups, replication, multiple sites
• HIPS
• Security monitoring
Application security
• Data access governance:
• Information ownership & custodianship
• Application access controls
• Role-Based Access Controls
• Security monitoring
• File integrity monitoring
Identity & access
• Credential & password management:
• Password strength / complexity
• Password self-service resets
• Multi-Factor Authentication
• Starters, movers, leavers:
• Account creation & approvals
• Account reviews
• Account removal
• HR process integration
• Single sign-On
• IAM SaaS solutions
• IAM Data Analytics
• Identity repository & federation
• Mobile app access control
• IOT device identities
Network security
• DDOS protection
• Firewalls, IDS, IPS
• Secure remote access
• Proxy / Content Filtering
• Secure Wireless Networks
• Network function virtualisation & SD WAN
BYOD Security
• Policy considerations:
• Commercial opportunities
• Personal data privacy
• HR, financial & tax
• Data security
• Policy enforcement
Innovation - Exploiting Emerging Tech
• AI, ML & Robotics
• Crypto currencies
• Blockchain
• 5G
• Drones
• VR & AR
• Wearables
• Autonomous vehicles
Physical security
• Landlord services
• Physical access control & monitoring
• Intrusion detection & response
• Theft prevention
• Environmental controls/ Power & HVAC
• Fire detection & suppression
• Redundancy
• BCP / Work Area Recovery sites
Cloud security
• SaaS Strategy:
• Governance & compliance enforcement
• Cloud specific DR & BCP
• Supplier risks
• SLAs & performance mgt
• Data ownership, liability, incidents, privacy compliance
• Security assurance
• Mgt of Shadow IT
• Cloud security controls:
• Cloud security architecture
• Cloud identity / CASB
• Virtual Machine security
• Virtualised security appliances / Cloud-to-Cloud integration
• Monitoring/log integration
• Access to corp data from non-corp devices
Email security
• Anti-Spam control
• Phishing & impersonation protections
• Email encryption
Endpoint Security
• Hardening
• Patching / software updates
• Anti-Malware
• HIPS / EDR
• Security monitoring / UBA
• Encryption
• PIN / password enforcement
• Apps inventory & deployment control
• Containerisation / data segregation
• Lost/stolen devices
• Cloud storage of data
• Device tracking
Data security
• Data & process mapping
• Data analytics security
• Encryption & masking:
• PKI
• Encryption at rest
• Encryption in transit
• Business partner access:
• Access approval
• Access reviews
• Access removal
• Identity federation & access automation
• Data Loss Prevention:
• DLP & Data classification policy
• Data loss channels
• DLP enforcement technologies
IOT / Operational Technology security
• IOT Risks:
• Connected office devices
• Connected medical devices
• At home
• Planes, trains & automobiles
• Industrial control systems, SCADA, PLCs, HMIs
• IOT Security:
• IOT Frameworks
• Vulnerability mgt
• Comms protocols
• Device authentication & integrity
• Network segregation
• Device protection
• Over The Air updates
Based on http://rafeeqrehman.com

State of the Union ?

- Do you understand what your business do and does your business understand your role?
- Do you understand the languages used within your business and are you able to communicate ?
- Do you have the technology and resource to do your job sustainably?
- What does your business do when it all goes wrong ?

L&SC Plan?

- Visibility of the digital/cyber risk that exist at local organisation level.
- A response solution which can respond to incidents in real time.
- Understand the capacity, capability and sustainability of the teams
- Develop and hold a regional digital/Emergency Planning Resilience & Response event(s)

Link everything to the wider business