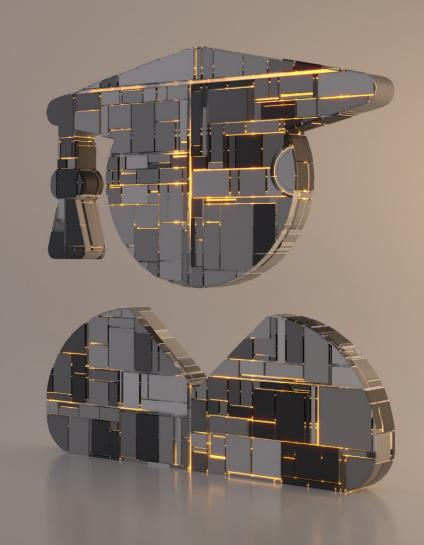
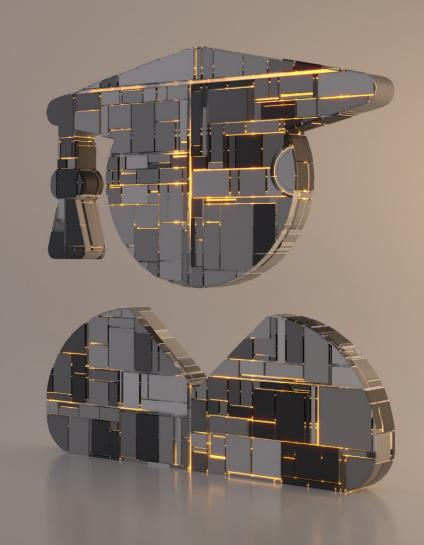


A Risk-Based Information Security & Cyber Strategy for Higher Education





A Risk-Based Information Security & Cyber Strategy for Higher Education



A Risk-Based Information Security & Cyber Strategy for Higher Education





Frank Yako
CIO, Director of Strategic Initiatives
ASMGi



Steve Roesing President, CEO ASMGi

ASMGi is full-stack technology company headquartered in Cleveland, OH. Our expertise across the full spectrum of IT Services, GRC & Cyber Services and SDLC Services provides value to our customers.

Higher Education leverages our ONEteam turn-key solutions to achieve relevant, cost effective outcomes combining Programs, Technology and Operations.



Agenda



- Cyber Security Landscape in Higher Education
- ◆ Discussion Topic #1 Security Strategy & Assessments
- ◆ Discussion Topic #2 Cyber Security Solutions
- Conclusion + Key Points
- Questions + Closing Remarks

Educause Top 10 IT Issues



2020 Top 10 IT Issues

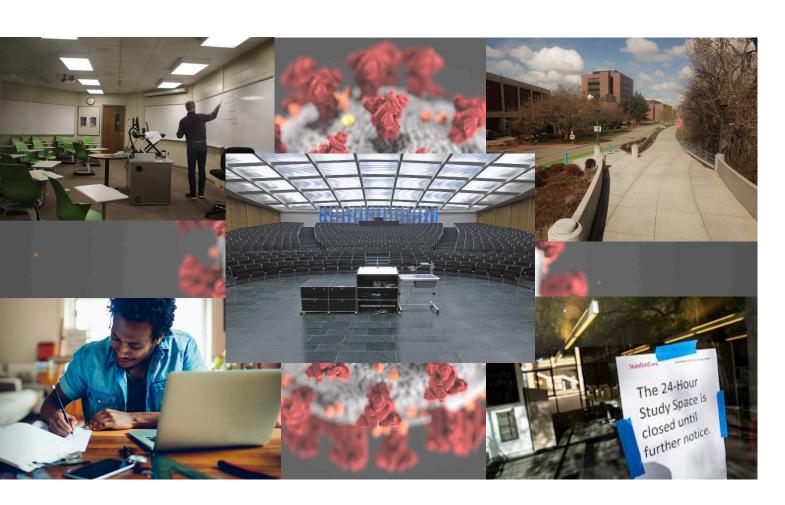
- ✓ 1.Information Security Strategy: Developing a risk-based security strategy that effectively detects, responds to, and prevents security threats and challenges
- 2.Privacy: Safeguarding institutional constituents' privacy rights and maintaining accountability for protecting all types of restricted data
 - **3.Sustainable Funding:** Developing funding models that can maintain quality and accommodate both new needs and the growing use of IT services in an era of increasing budget constraints
 - **4.Digital Integrations:** Ensuring system interoperability, scalability, and extensibility, as well as data integrity, security, standards, and governance, across multiple applications and platforms
 - **5.Student-Centric Higher Education:** Creating a student-services ecosystem to support the entire student life cycle, from prospecting to enrollment, learning, job placement, alumni engagement, and continuing education

- **6.Student Retention and Completion:** Developing the capabilities and systems to incorporate artificial intelligence into student services to provide personalized, timely support
- **7.Improved Enrollment:** Using technology, data, and analytics to develop an inclusive and financially sustainable enrollment strategy to serve more and new learners by personalizing recruitment, enrollment, and learning experiences
- ✓ 8. Higher Education Affordability: Aligning IT organizations, priorities, and resources with institutional priorities and resources to achieve a sustainable future
- ✓ 9.Administrative Simplification: Applying user-centered design, process improvement, and system reengineering to reduce redundant or unnecessary efforts and improve enduser experiences
- ✓ 10.The Integrative CIO: Repositioning or reinforcing the role of IT leadership as an integral strategic partner of institutional leadership in supporting institutional missions

Source: Educause Website, 2020, https://www.educause.edu/research-and-publications/research/top-10-it-issues-technologies-and-trends/2020

Has Coronavirus impacted your Top 10 IT Issues?





 An Information Security Strategy, including Data Privacy & Protection is more critical now than ever

> What about WFH and Remote Learning security – is it currently in your program?

 Affordability is a heightened concern as economic models are disrupted

Are you faced with cutting costs even more than before?

 Digital Transformation is expedited to accommodate remote learning requirements

Did Digital Transformation initiatives such as remote learning become your highest priority?

Discussion Topic #1



SECURITY STRATEGY & ASSESSMENTS

Does your Information Security Strategy Lower your Risk and Improve your Security Posture?

The fundamental problem with Strategy

Many Enterprises ...





Implement security tools / technologies based on Frameworks (HIPAA, PCI, ISO 2700x, NIST, etc. = Controls-based)



Don't validate their controls - are the tools and techniques working?



Don't prioritize initiatives based on greatest risk to the organization





Are not able to demonstrate return on investment AND reduction in risk



The ONEteam Strategic Plan

What if there was a way to ...



Get more from your existing security



Minimize security exposure



Ensure you are meeting compliance requirements



Test your Incident Response Plan



Prioritize initiatives based on actual Risk



Rationalize your cyber investments and demonstrate performance



Reality of enterprise security

97%

of breaches are at companies which have already deployed the right controls 99%

of attacks are known and have been for years

95%

of firewall breaches are due to misconfiguration



Discussion Topic #1 <continued>



ASSESSMENTS

How many assessments do you do per year to meet your Compliance and Privacy requirements?

Common Controls Framework (CCF)



Compliance

PCI-DSS

HIPAA

FERPA

GLBA

FISMA

Global and State Privacy Laws

Frameworks

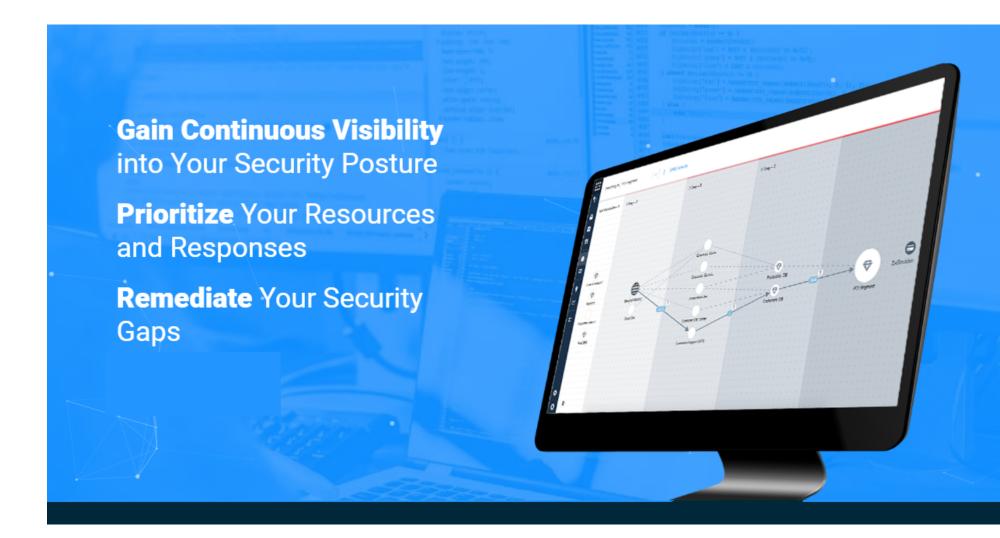
NIST ISO/IEC 27001,2 CIS

	CIS CRITICAL SECURITY CONTROL	NIST 800-53 rev4*	NIST Core Framework	DHS CDM Program	ISO 27002:2013	ISO 27002:2005	
	Inventory of Authorized & Unauthorized Devices	GL7 BL3: SL4 OH4 SL4 PM-5 SC-17	ID.AM-1 ID.AM-3 PR.DS-3	HWAY: Eurobrare Auet Management	AB1.1 A9.12 A13.1.1	A711 A1042 A1041 A1146	Hap Your I Baseline M Document
2	Inventory of Authorized & Unauthorized Software	OH-7 OH-8 SH-4 SH-4 OH-2 OH-10 SC-18 PH-5 OH-11 SC-34	ID.AH-2 PR.05-6	HWW Eurovare Aust Management SWAY: Software Aust Management	A125.1 A1262		Baseline M Executable Configuration
3	Secure Configurations for Hardware & Software	047 084 08-11 92-15 08-2 08-7 88-4 92-34 08-3 08-8 88-5 9-2 08-5 08-9 58-4 9-4	PILIF-I	C9t Configuration Settings Hanagement	A1424 A1428 A1823	A1522	Patch Man Baseline M Data-at-Re Configuration
4	Continuous Vulnerability Assessment & Remediation	CA-2 BA-5 SI-4 CA-7 SC-34 SI-7	ID.NA-1 DECH-8 ID.NA-2 RS.M-3 PRJP-12	• WL: Vulnerability Hanagement	A12.61 A142.8	A12.61 A13.12 A15.22	Patch Manage Configuration
5	Controlled Use of Administrative Privileges	AC-2 AC-19 U-5 AC-6 CA-7 SI-4 AC-17 UA-4	PLECA PLENS 2 PLECA PREPERS		A91.1 A922 - A926 A93.1 A94.1 - A944	A 10.44 A 11.5.1 - A 11.5.3	User Access Baseline Ma Log Manage
6	Maintenance, Monitoring, & Analysis of Audit Logs	AC-23 AB-6 AU-11 UL-10 AU-2 AB-7 AU-12 9-4 AU-3 AU-8 AU-13 AU-4 AU-9 AU-14 AU-5 AU-10 CA-7	PRPFI DEDR3 DEAE-3 DEDR4 DEDR-1 DEDR5 DEDR-2	Generic Audit Hunitaring	A1241 - A1244 A127.1	A10.10.1 - A10.103 A10.104	• Log Manag
7	Email & Web Browser Protections	047 044 05-11 52-15 052 057 864 52-34 053 058 865 92 055 059 584 94	PILIF-I	C9t Configuration Settings Management	A1424 A1428 A1823	A1522	Patch Hara Baseline Ha Data-at-Res Configuration
8	Malware Defenses	0-7 SC44 S-4 SC-39 S-3 S-8	PILPS-2 DE.OH-4 DE.OH-5		A83.1 A122.1 A1323	A1841 - A1842 A187.1	Device Acce Virus Scann Prevention Security Ga Frewalk
9	Limitation & Control of Network Ports	#51 #54 PM-13 #52 SA-11 PM-14 #53 SA-16 PM-16	PILAGS DEAE-1	Boundary Protection	A912 A121.1 A121.2 A141.2	A1861 - A1862 A1144	• Baseline Ho • Configuration
10	Data Recovery Capability	(P-9 (P-10 MP-4	PLP4		A101.1 A123.1	1.201.A E8.01.A	• Backup Str
Ш	Secure Configurations for Network Devices	AC4 CA9 ONS MA4 GA3 ON2 ON6 SC24 GA7 ON3 ON8 SI4	PILIF-I PILIF-I	CSt Configuration Settings Hanagement Boundary Protection	A9.12 A13.1.1 A13.1.3	A1861 - A1862 A11A5 A11A7 A11S1 - A11S3	Hap Your B Patch Hard Baseline Hard Decument Y
13	D	AC4 CA7 SC2 AC-17 CA9 SC4	PILAG3 PILAG5		A912 A12A1 A1313	AIB&I - AIB&2 AII\$I - AII\$3 AII\$I - AII\$2	Bay Your N Betwork An Bustime Ma

How do you prioritize your initiatives?



Breach Attack Simulation



Discussion Topic #2



CYBER SECURITY SOLUTIONS

What problems are you trying to solve?

Lots to choose from ...



The Council on Cyber Security Annual 2014 Report coins the term "Fog of More" to describe the "Overload of defensive support...more options, more tools, more knowledge, more advice, and more requirements, but **not always more security**."

```
whitelisting
                                  continuous monitoring
 risk management framework
                                        virtualization
    security controls
                             security governance
                    threat intelligence
best practices
                                          audit logs
           threat feed
          maturity model two-factor authentication
                                 certifications compliance
                       anti-malware
user awareness training
 baseline configuration standards
                                   supply-chain security
      encryption
                                     pentetration testing
              The Fog of More
```

A Holistic Approach to Cyber Security



ONEteam = TOTAL SOLUTION

Program + Technology +

Operations







SOC as a Service / Managed Security Services



Core Security Services

- ◆ Managed Detect and Response (MDR) Included
- Cyber Incident Response (CIR) / Forensics Included
- Vulnerability Management—as-a—Service Included*
- Custom Reporting included
- User Behavior Analysis (UBA) Light included / Enterprise Optional
- ◆ Attack Simulation as a Service Included / Optional*
- Security Awareness & Phishing as a Service Optional
 - Facilitated / Automated Training
 - Facilitated / Automated Phishing
- Third Party Risk as a Service (TPRMaaS) Optional
- Virtual Desktop Infrastructure (VDI) / Desktop as a Service Optional
- Other Services depending on outcome of prioritized roadmap



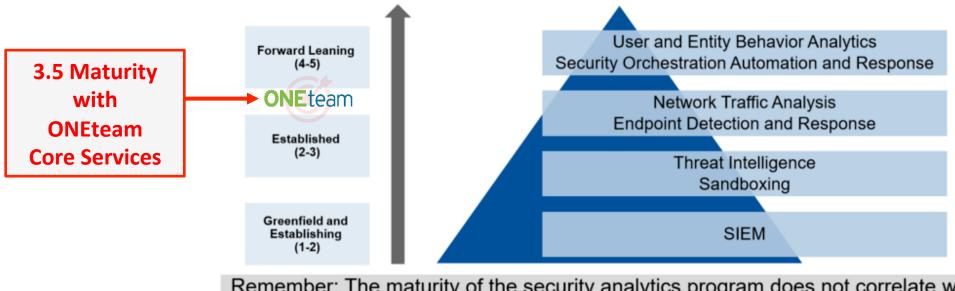
Add-On

Services

Gartner Maturity Model



Modern SOC Analytics Tooling and Stage of Maturity



Remember: The maturity of the security analytics program does not correlate with the number of tools.

Gartner

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Key to a Successful MDR/MSOC





24x7, Real-Time Threat Detection

Cybercriminals don't keep office hours, A security incident can unfold at any time. You need a 24x7 team of security analysts and engineers who monitor and triage alerts, and actively respond to indicators of compromise when they occur. You can't afford to wait for a report delivered to you hours or days later.



Threat Intelligence Integration

To reduce the risk of advanced threats, you need the latest threat intelligence from multiple sources. MDR solutions that integrate threat intelligence, as well as behavior analytics, are much better positioned to analyze data in the right context and to detect advanced. unknown threats.



Incident Response

The longer your dwell time, the more expensive your remediation becomes. The mean time to identify (MTTI) a breach is 197 days - but companies that identify a breach in fewer than 100 days can save \$1 million3. MDR providers include different degrees of incident response as part of their base fee, along with crisis support.



Threat Hunting

Defenses based on point-in-time scanning or signatures can no longer keep up with today's stealthy threats like fileless malware. Proactive threat hunting goes beyond scanning files when they enter your environment. Instead, it relies on a combination of automated tools and human analysts to track activity and identify suspicious behavior even as a threat evades perimeter or endpoint controls.



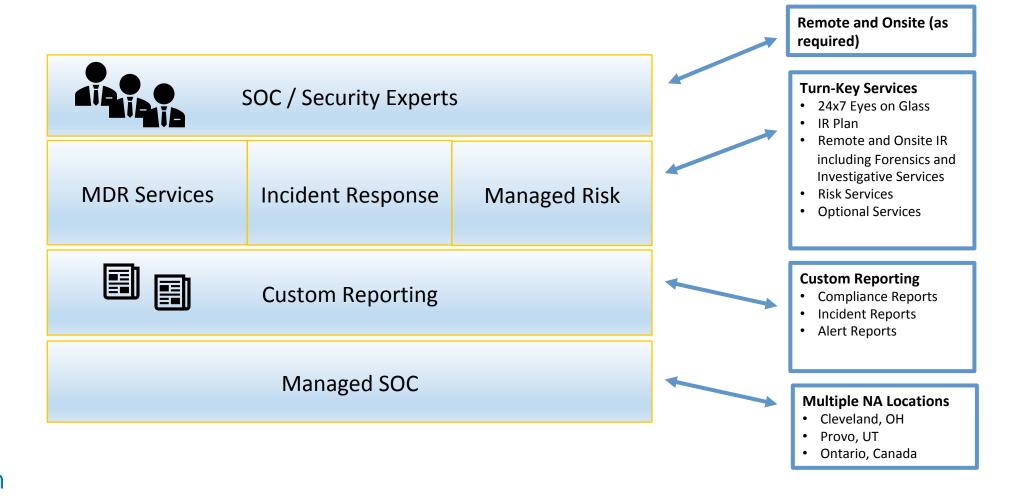
Advanced Analytics

Through leveraging machine learning. threat intelligence, and big data, advanced analytics is a critical MDR component that enables real-time threat detection. Top providers invest heavily in analytics platforms and other tools to analyze data in context, as well as correlate events across the entire environment.



ASMGi SOC as a Service = MDR / MSOC / MSSP





MDR / MSOC Services





Network Monitoring

Managed IDS, flow creation, network security monitoring



Cloud Monitoring

laaS/SaaS configuration, user/admin anomalies



Log Analysis & Search

Aggregation and correlation



Endpoint Visibility

Asset data, EDR lite



Threat Intelligence

Multiple sources leveraged to identify potential IOC or IOA



Reports and audit support



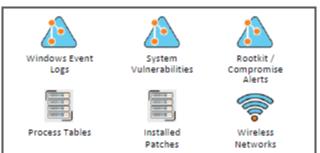
MDR / MSOC Architecture

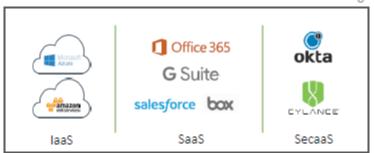




On Premises







Physical Sensor Agents Virtual Sensor



List of Log Sources *



Active Directory

- ► ADFS via NXLog
- NXLog
- ► NXLog-DNS

Authentication

- Cisco RADIUS
- Okta

Endpoint

- Arctic Wolf Agent
- ▶ Bit9
- Carbon Black Defense
- ▶ CylanceOPTICS
- ▶ CylancePROTECT
- Kaspersky
- OSSEC
- ► Palo Alto Networks Traps
- SentinelOne
- Sophos
- Symantec
- ► Trend Micro Control Manager
- ▶ Webroot

Firewalls

- ▶ Barracuda CloudGen Firewall
- Check Point
- ► Cisco-ASA
- FireEye
- ▶ Fortinet FortiGate
- Juniper
- Meraki
- NeSscreen
- ► Palo Alto Networks
- pfSense
- SonicWall
- Sophos XG
- Sorcefire
- Untangle
- Versa Networks
- WatchGuard Firefox

✓ IDS/IPS

- ▶ FireEye
- Sentinel

Mail Servers

- ▶ Barracuda
- ► CommuniGate Pro
- McAfee

SaaS/laaS

- \bigcirc
- AWS
- Azure AD
- Box
- G Suite
- ▶ Office 365
- Microsoft Azure
- Salesforce

SSL-VPN

Barracuda

✓ UTM

- Cisco WSA
- Sophos

✓ WAP

- Meraki
- Ubiquiti
- UniFi

Web Gateways

- Barracuda
- Cisco Ironport
- Cisco Umbrella
- Citrix Netscaler
- EdgeWave iPrism
- Symantec ProxySG
- Websense
- Zscaler

Others

- Darktrace
- Digital Guardian
- Microsoft Advanced Threat Analytics
- Microsoft Cloud App Security
- Microsoft SQL Server
- Pixer Scrutinizer
- Sailpoint
- Veronis



Cloud Services Monitoring

laaS





Virtual Sensors for Cloud Monitoring

Users, Apps, Data, Infrastructure Activity

IdaJ	JaaJ			
Supported Platforms	Supported Platforms			
AWS	Office 365			
Azure	Salesforce			
	Box			
	G Suite			
Supported Alerts	Supported Alerts			
Suspicious resource usage, access, and deletions	Modified administrator settings			
Changes to profiles and access	Administrator privilege escalation			
Brute-force logins	Resources accessed or altered			
Concurrent access	OAuth token and API access changes			
Blacklisted IP sign-in	Group privacy or domain changes			
Hijacked admin accounts	SSO configuration changes			
	Anomalous login activity			
	Brute-force logins			
	Concurrent access across geos			
	Compromised mobile device activity			
	DLP violations			
	Changes to file and folder permissions			

SaaS



Managed Risk Services





Asset Identification

Dynamic asset identification and classification



Comprehensive Risk Assessment

Identify vulnerabilities and provide a risk roll-up



Comprehensive Risk Profiling

Risk write-ups and recommendations



Monthly Risk Review

Discuss and validate progress tracking on vulnerabilities and asset classification



Incident Creation

Generate incidents for critical vulnerabilities



Configuration and Monitoring

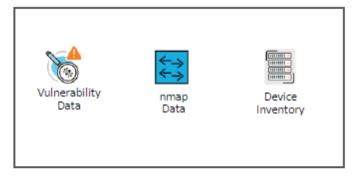
Scanner setup and monitoring to validate vulnerability scans are happening successfully

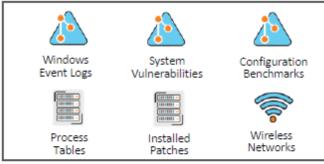


Managed Risk Architecture













Internal Scanner Agents External Scanner

Standard Reports



- Monthly Assessment
- Bi-Annual External Scan Report
- Weekly Security Review
- Weekly Summary of Events
- Weekly SaaS standard reports: O365, Salesforce, Box, Gsuite
- 12 Active Directory Reports

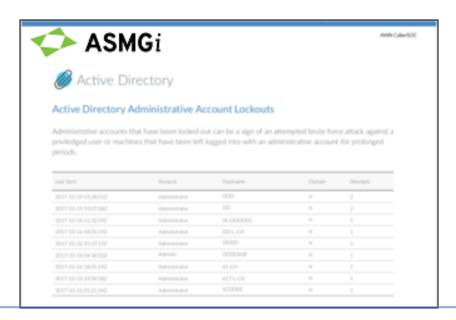




Active Directory Reports



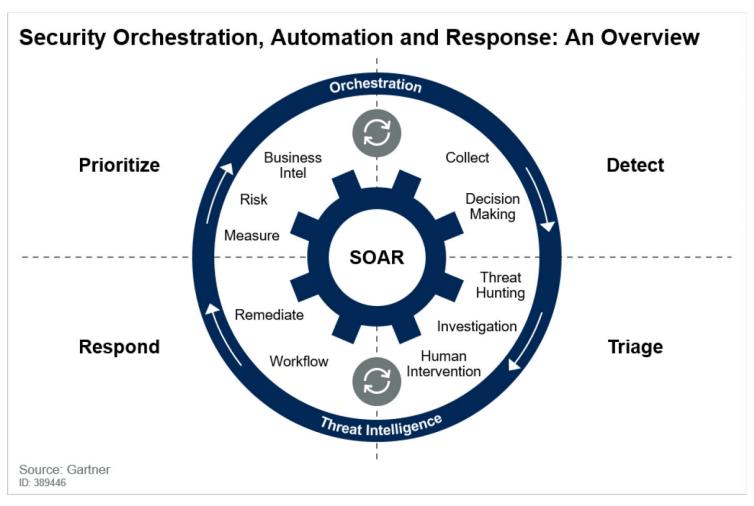
- User Lock and Unlock
- User account creation & user account enabled
- User account termination
- Login Failures
- Login Success
- Member Add/Remove Global/Domain Group
- Member Add/Remove Local Group
- Event Log Cleared
- Account Policy Change
- Password Change
- Password Reset
- Directory Object Modification





Security Orchestration, Automation & Response





(SOAR)

- Maximize Efficiency
- ♦ Economies of Scale
- Operational Excellence
- Built in Compliance



Create an ecosystem with great Technology Partners





















































Conclusion + Key Points



- ◆ Don't re-create the wheel —use what you already have
- Map controls to complete one assessment that meets all requirements
- Prioritize initiatives to improve security posture, lower risk and demonstrate return on investment
- ◆ There is strength in numbers! Let's work together to succeed!

Key Value Delivered:

- ✓ Immediate Results Short time to value
- ✓ Rationalized initiatives to lower risk and improve security posture
- ✓ Immediate maturity with Core Services
- ✓ No need for additional head count or expertise.



ASMGi ONEteam Program – How to begin?





Assessment

- Controls mapping
- Simulation against controls
- ◆ Current State / Future State



Strategic Plan / Road Map

- ◆ 2-3 year plan (by year)
- Based on outcomes and priorities from Assessment
- Defines the program to be deployed and operationalized in Step

3)

Tailored Program with a la carte components

- MDR/MSOC
- Attack Simulation
- TPRM

3

- Vulnerability Management
- MS Azure laaS, PaaS, Security Suite, WVD





QUESTIONS / DISCUSSION

QUESTION: Upended The Model

Question: Have you ever seen a change in program, technology or operations that ever substantially upended the model? is that the value you can bring that if there is a technology change or a better technology that evolves you can operationalize it at a lower cost point and no disruption of services.

◆ Answer: Part of the world that we collectively live in requires the ability to adapt to changes based on changing business, organizational, technology, or security / threat profile changes. These changes can happen very quickly, most recently as exemplified by COVID-19, or over a longer period of time such as an adoption of technology like public clouds. The value of adopting a service like those proposed by ASMGi is the ability to evolve over time based on ASMGi's ability to anticipate change as its' client base evolves and interaction with our strategic business partners to be prepared for change whenever it happens. The ultimate goal is to prepare for these changes based on a plan and to optimize the value that is delivered in a cost effective but fully comprehensive manner.

QUESTION: Plug and Play

◆ Question: Can you plug and play if we already have specific tech in place into the architecture tools you are describing?

◆ Answer: Yes, the overall program and service offering has been structured to leverage the investment that may have already been made in hardware or software solutions if they are meeting the business and security requirements. The development of the specific solution and offering is based on assessing an organization's current state to determine what specific solutions exist today in your environment and to determine whether they can be leveraged and integrated into the ASMGi operating model.





Thank You!

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