



Lessons Learned From A 2 Year Old Cat

NEARLY 1200 FINANCIAL INSTITUTIONS HAVE COMPLETED
SBS' CYBER-RISK TOOL; WHAT CAN WE LEARN?

PRESENTED BY:

JON WALDMAN, PARTNER – SBS – CISA, CRISC

Contact Information

Ç Jon Waldman

- Partner, EVP IS Consulting
- CISA, CRISC
- Master's of Information Assurance, Dakota State University
- Mission: save the world!
- Phone: 605-380-8897
- jon@sbscyber.com
- www.sbscyber.com

Ç SBS Institute

- sbsinstitute@sbscyber.com
- 605-269-0909



FFIEC “CAT” Overview

User's Guide

Overview

In light of the increasing volume and sophistication of cyber threats, the Federal Financial Institutions Examination Council¹ (FFIEC) developed the Cybersecurity Assessment Tool (Assessment), on behalf of its members, to help institutions identify their risks and determine their cybersecurity maturity.

https://www.ffiec.gov/pdf/cybersecurity/FFIEC_CAT_May_2017_All_Documents_Combined.pdf

Risk Management Approach

Ç Tier 1 FFIEC CAT = Organizational Risk Assessment

- Cyber-Risk: <https://cyber-risk.protectmybank.com/>

Ç Tier 3 TRAC = Asset Based Risk Assessment

- TRAC: <https://sbscyber.com/products/trac>

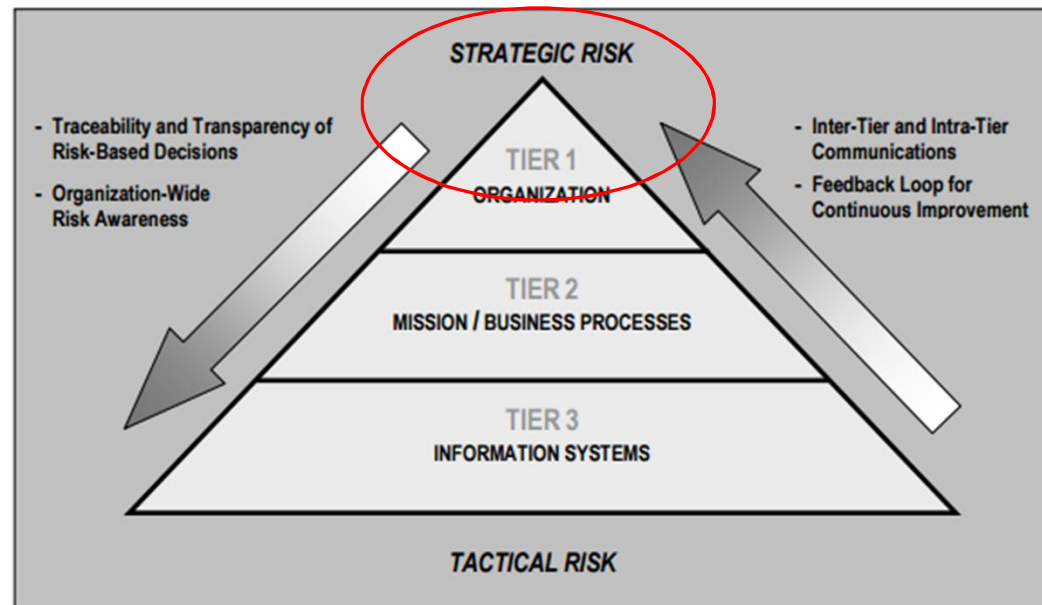


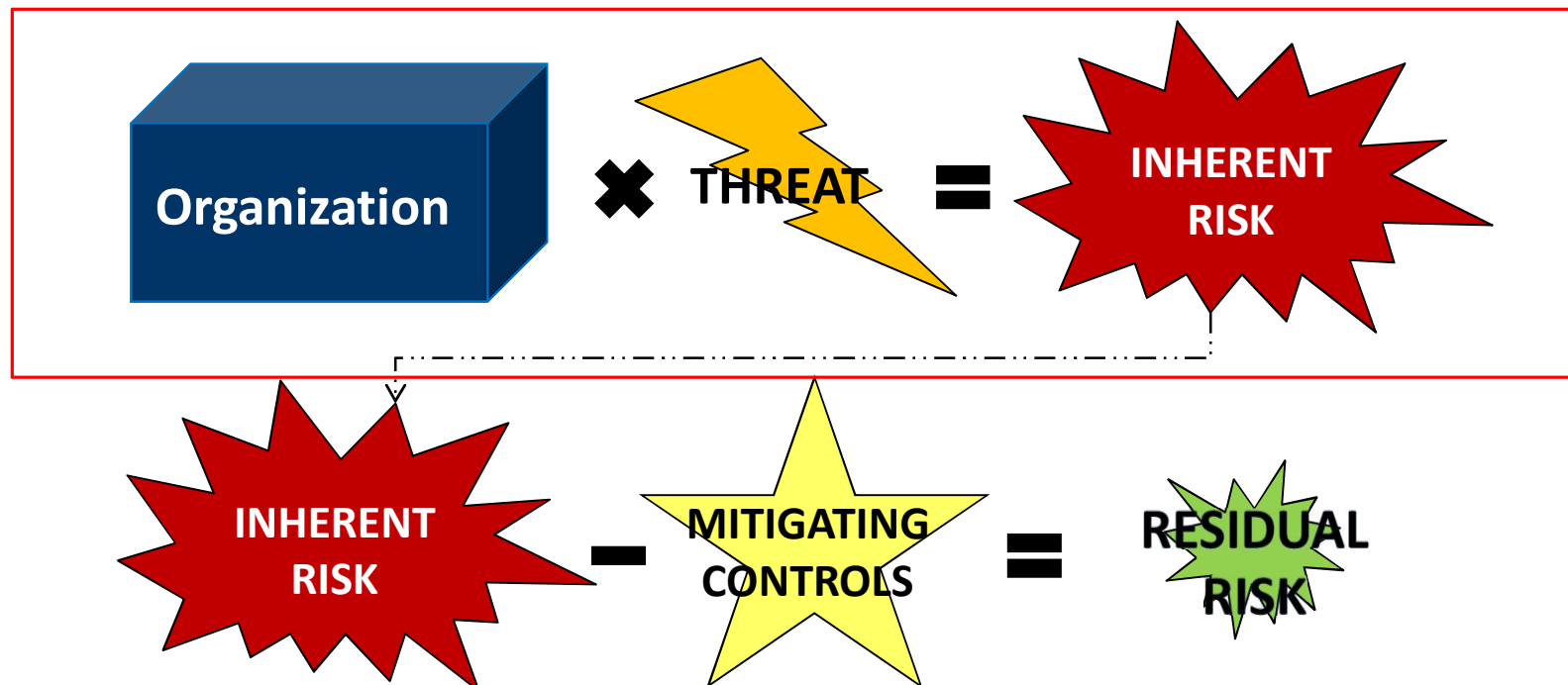
FIGURE 4: RISK MANAGEMENT HIERARCHY

Risk Assessment Formula

Ç Based on [NIST 800-30](#)

Ç FFIEC simplified approach, concept same.

Ç Focus on first part of process.



SBS Cyber-RISK



- Web based FFIEC Cybersecurity Assessment Tool
 - www.sbscopyer.com
- Complimentary Access
- Over 1300 active users
- Nearly 1200 completed assessments
- 100% Follows FFIEC CAT

Cyber-RISK Login TRAC Login

A screenshot of the SBS Cyber-RISK assessment tool interface. The top navigation bar includes links for Inherent Risk Profile, Cyber Maturity, Reports, What's Next?, About, and FAQ, along with a user profile icon. The main content area is titled "Complete your Cybersecurity Assessment in three easy steps:" and lists three steps: Step 1: Inherent Risk Profile (100.00 % - Current Level: Minimal), Step 2: Cybersecurity Maturity (100.00 %), and Step 3: Analyze Your Report (Generate Now). Below Step 1, a table shows the number of statements selected in each risk level: Least (21), Minimal (13), Moderate (2), Significant (1), Most (0), and Unanswered (0). To the right, there is a video player showing a tutorial. At the bottom, there are two boxes for "CYBERSECURITY STARTER TOOLKIT" and "CYBERSECURITY ADVANCED TOOLKIT", each with a list of features and a "LEARN MORE" link.

Complete your Cybersecurity Assessment in three easy steps:

Step 1 Inherent Risk Profile
100.00 % - Current Level: Minimal

Number of Statements Selected in Each Risk Level					
Least	Minimal	Moderate	Significant	Most	Unanswered
21	13	2	1	0	0

Step 2 Cybersecurity Maturity
100.00 %

Step 3 Analyze Your Report
Generate Now

What's Next?

CYBERSECURITY STARTER TOOLKIT

- ✓ Cybersecurity documents and annual reports
- ✓ Questions for your Board
- ✓ FFIEC Board Management Overview
- ✓ SBS consulting - 1 hour

Get a head start on your cybersecurity regulatory expectations.

CLICK HERE TO LEARN MORE

CYBERSECURITY ADVANCED TOOLKIT

- ✓ Cybersecurity documents and annual reports
- ✓ Cybersecurity documents for the Board
- ✓ Action Tracking in TRAC
- ✓ SBS consulting - 3 hours
- ✓ And more!

Take your cybersecurity program to the next level.

CLICK HERE TO LEARN MORE

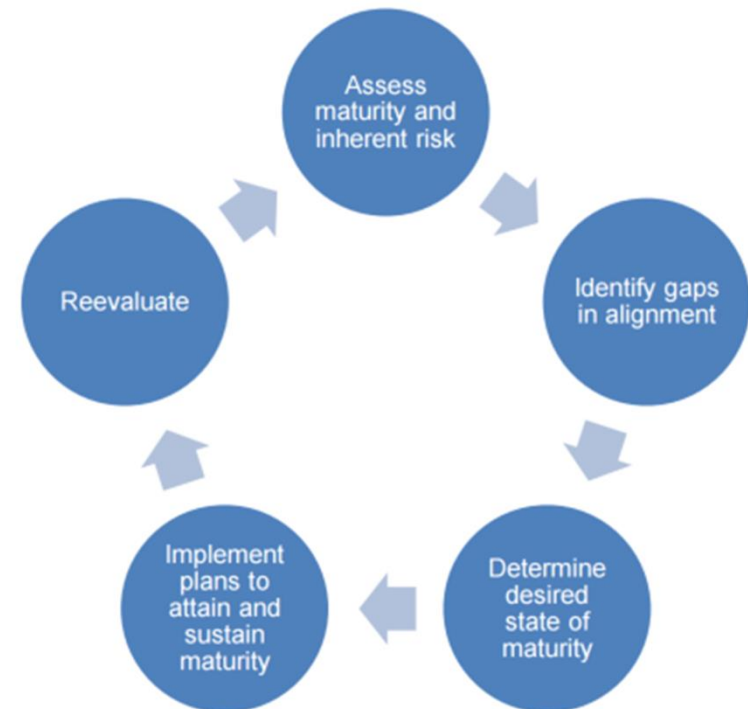
FFIEC CA Tool (3 parts)

Ç Three (3) major components

1. Rating your **Inherent Risk** for Cybersecurity threats based on your size and complexity
2. Rating your **Cybersecurity Maturity** regarding how prepared you are to handle different Cybersecurity threats
3. **Interpreting and analyzing** your results by understanding how your Inherent Risk ties to your Cybersecurity Maturity, and where you SHOULD be regarding risk vs. maturity.

FFIEC CAT Process

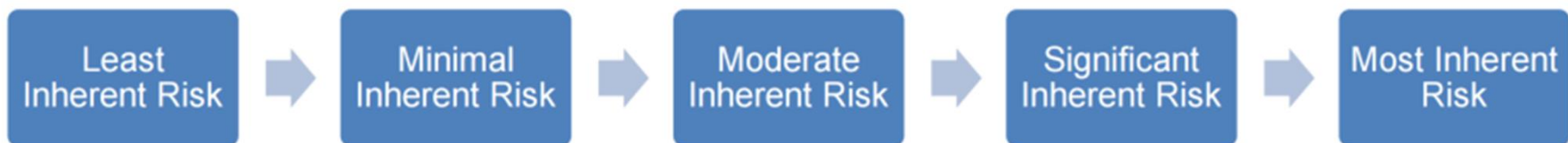
1. Determine Inherent Risk
2. Determine Domain Maturity
3. Identify Goals
4. Identify Gaps
5. Implement additional controls
6. Increase maturity
7. Repeat



Cybersecurity Inherent Risk

Ç Five Inherent Risk Areas (39 Questions)

1. Technologies and Connection Types
2. Delivery Channels
3. Online/Mobile Products and Technology Services
4. Organizational Characteristics
5. External Threats

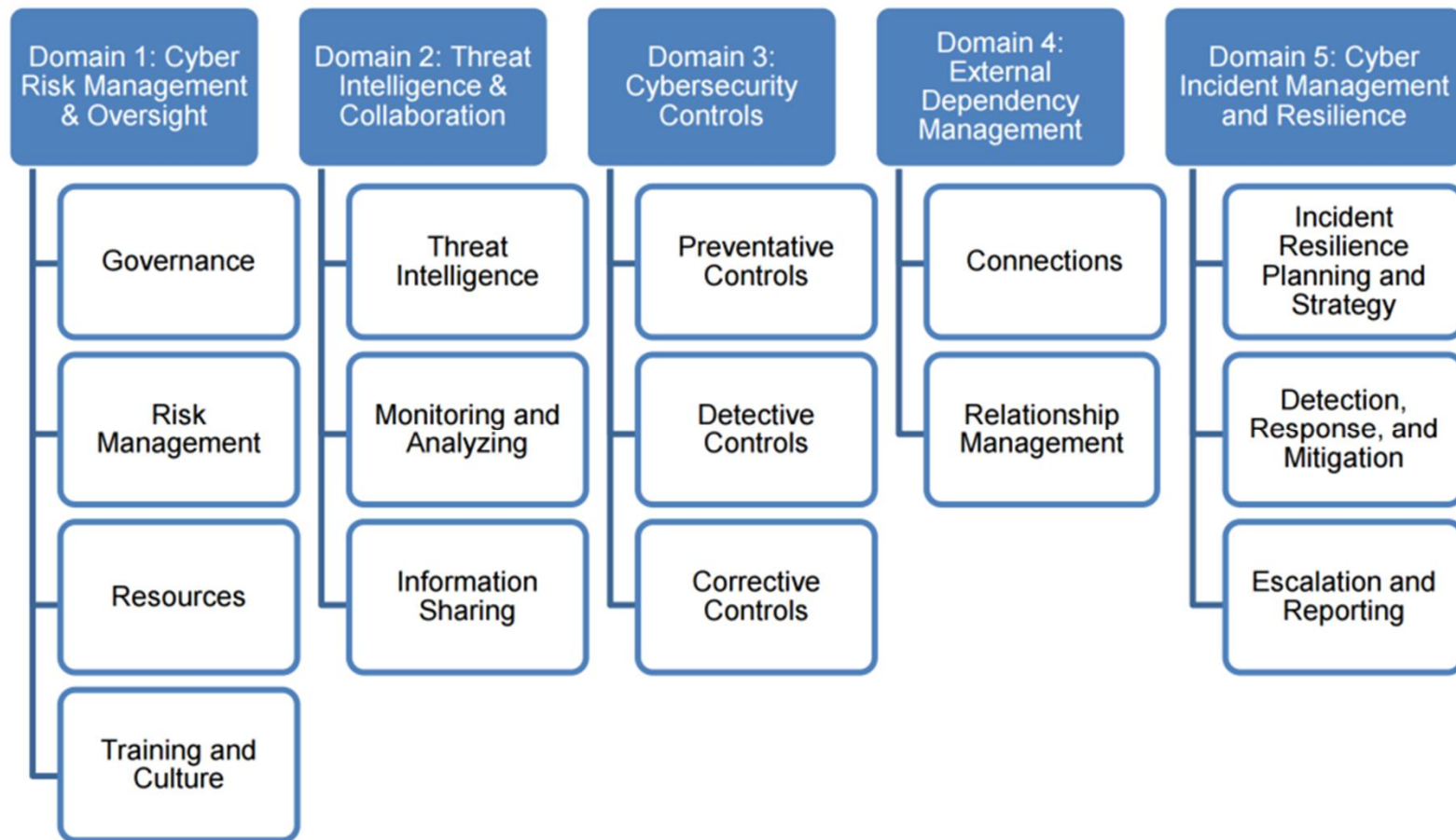


Inherent Risk Profile

Inherent Risk Profile

Category: Technologies and Connection Types	Risk Levels				
	Least	Minimal	Moderate	Significant	Most
Total number of Internet service provider (ISP) connections (including branch connections)	No connections	Minimal complexity (1–20 connections)	Moderate complexity (21–100 connections)	Significant complexity (101–200 connections)	Substantial complexity (>200 connections)
Unsecured external connections, number of connections not users (e.g., file transfer protocol (FTP), Telnet, rlogin)	None	Few instances of unsecured connections (1–5)	Several instances of unsecured connections (6–10)	Significant instances of unsecured connections (11–25)	Substantial instances of unsecured connections (>25)
Wireless network access	No wireless access	Separate access points for guest wireless and corporate wireless	Guest and corporate wireless network access are logically separated; limited number of users and access points (1–250 users; 1–25 access points)	Wireless corporate network access; significant number of users and access points (251–1,000 users; 26–100 access points)	Wireless corporate network access; all employees have access; substantial number of access points (>1,000 users; >100 access points)
Personal devices allowed to connect to the corporate network	None	Only one device type available; available to <5% of employees (staff, executives, managers); e-mail access only	Multiple device types used; available to <10% of employees (staff, executives, managers) and board; e-mail access only	Multiple device types used; available to <25% of authorized employees (staff, executives, managers) and board; e-mail and some applications accessed	Any device type used; available to >25% of employees (staff, executives, managers) and board; all applications accessed
Third parties, including number of organizations and number of individuals from vendors and subcontractors, with access to internal systems (e.g., virtual private network, modem, intranet, direct connection)	No third parties and no individuals from third parties with access to systems	Limited number of third parties (1–5) and limited number of individuals from third parties (<50) with access; low complexity in how they access systems	Moderate number of third parties (6–10) and moderate number of individuals from third parties (50–500) with access; some complexity in how they access systems	Significant number of third parties (11–25) and significant number of individuals from third parties (501–1,500) with access; high level of complexity in terms of how they access systems	Substantial number of third parties (>25) and substantial number of individuals from third parties (>1,500) with access; high complexity in how they access systems

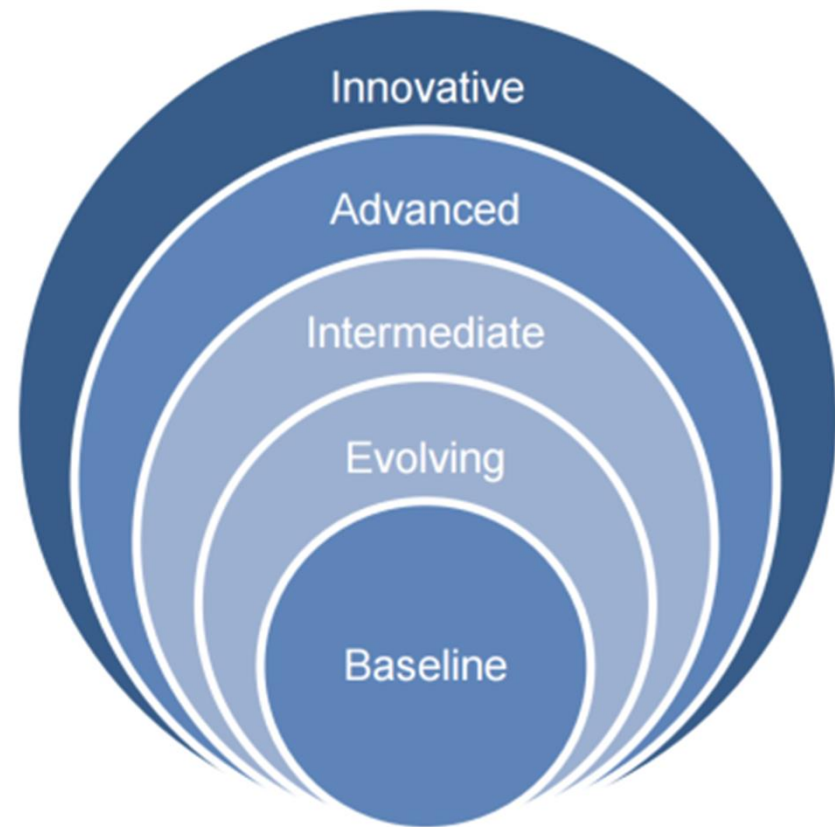
Cybersecurity Maturity



How does Cybersecurity Maturity work?

Measured by 5 Cybersecurity Maturity Levels

1. Baseline
2. Evolving
3. Intermediate
4. Advanced
5. Innovative



Declarative Statements

Ç Are the risk mitigating controls in your program

Ç 494 overall declarative statements

	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Total
Baseline	31	8	51	16	17	123
Evolving	34	7	39	13	20	113
Intermediate	33	11	39	9	21	113
Advanced	28	11	25	7	15	86
Innovative	15	8	20	6	10	59
	141	45	174	51	83	494



Compensating Controls!



- Ç ***All declarative statements in each maturity level, and previous levels, must be attained and sustained to achieve that domain's maturity level.***
Attained and sustained requires affirmative answers to either “Yes” or “Yes with Compensating Controls” for each of the declarative questions within a maturity level.
- Ç **Compensating control** - A management, operational, and/or technical control (e.g., safeguard or countermeasure) employed by an organization in **lieu of a recommended security control** in the low, moderate, or high baselines that **provides equivalent or comparable protection** for an information system.

Answer Declarative Statements

Cybersecurity Maturity

Domain 1: Cyber Risk Management and Oversight			
Assessment Factor: Governance			
		Y, Y(C), N	
OVERSIGHT	Baseline	Y	Designated members of management are held accountable by the board or an appropriate board committee for implementing and managing the information security and business continuity programs. (FFIEC Information Security Booklet , page 3)
		Y(C)	Information security risks are discussed in management meetings when prompted by highly visible cyber events or regulatory alerts. (FFIEC Information Security Booklet , page 6)
		Y	Management provides a written report on the overall status of the information security and business continuity programs to the board or an appropriate board committee at least annually. (FFIEC Information Security Booklet , page 5)
		Y	The budgeting process includes information security related expenses and tools. (FFIEC E-Banking Booklet , page 20)
		Y	Management considers the risks posed by other critical infrastructures (e.g., telecommunications, energy) to the institution. (FFIEC Business Continuity Planning Booklet , page J-12)
	Evolving	Y	At least annually, the board or an appropriate board committee reviews and approves the institution's cybersecurity program.
		N	Management is responsible for ensuring compliance with legal and regulatory requirements related to cybersecurity.
		Y	Cybersecurity tools and staff are requested through the budget process.
		Y	There is a process to formally discuss and estimate potential expenses associated with cybersecurity incidents as part of the budgeting process.

Identify Gaps



Compensating Controls (PCI)

According to the PCI Council, compensatory controls must:

- Ç 1) Meet the intent and rigor of the original stated requirement;
 - Ç 2) Provide a similar level of defense as the original stated requirement;
 - Ç 3) Be "above and beyond" other PCI DSS requirements (not simply in compliance with other PCI DSS requirements); and
 - Ç 4) Be commensurate with the additional risk imposed by not adhering to the original stated requirement.
- Ç <http://whatis.techtarget.com/definition/compensating-control>

Document Compensating Controls

[Inherent Risk Profile](#)[Cyber Maturity](#)[Reports](#)[What's Next?](#)[Admin](#)[About](#)[FAQ](#)[Log off](#)

Cyber Maturity

Cyber Maturity

[Cybersecurity Controls](#)[Preventative Controls](#)[Secure Coding](#)

Baseline

Developers working for the institution follow secure program coding practices, as part of a system development life cycle (SDLC), that meet industry standards. (FFIEC Information Security Booklet, pg 38; FFIEC Management Booklet, pg 31)

Mark Unanswered
Baseline Questions☒ YES ☐ NO

YES YES (C) NO

[Comment](#)

The security controls of internally developed software are periodically reviewed and tested. (*N/A if there is no software development.) (FFIEC Information Security Booklet, pg 21; FFIEC Management Booklet, pg 31)

YES YES (C) NO NA

[Comment](#)

The security controls in internally developed software code are independently reviewed before migrating the code to production. (*N/A if there is no software development.) (FFIEC Development and Acquisition Booklet, pg 2 & pg 9; FFIEC Management Booklet, pg 31)

YES YES (C) NO NA

[Comment](#)

Intellectual property and production code are protected and managed. (FFIEC Development and Acquisition Booklet, pg 39)

YES YES (C) NO NA

[Comment](#)

Evolving

Security testing occurs at all post-design and development phases of software development.)

Mark Unanswered
Evolving Questions☒ YES ☐ NO

YES YES (C) NO NA

[Comment](#)

Intermediate

Response Comment

Describe the management, operational, and/or technical compensating control used in lieu of a recommended security control.

The institution has integrated vendor management controls into its review process to ensure third party relationships which develop software used by the institution include requirements for secure SDLC practices.

[Save](#)[Cancel](#)Mark Unanswered
Intermediate Questions☒ YES ☐ NO

Help Desk • 605-923-8722 • Mon-Fri • 9am-5pm CST

[Get Certified!](#)

SBS CyberSecurity

Appendix B: Compensating Controls:

Cybersecurity Controls

Preventative Controls

Access and Data Management

Access controls include password complexity and limits to password attempts and reuse. (FFIEC Information Security Booklet, pg 15)

Access controls do not address password reuse and attempt lockouts but workstation systems are protected by complex passwords and multifactor smart card authentication.

Preventative Controls

Secure Coding

Developers working for the institution follow secure program coding practices, as part of a system development life cycle (SDLC), that meet industry standards. (FFIEC Information Security Booklet, pg 38; FFIEC Management Booklet, pg 31)

The institution has integrated vendor management controls into its review process to ensure third party relationships which develop software used by the institution include requirements for secure SDLC practices.

Detective Controls

Event Detection

Processes are in place to monitor for the presence of unauthorized users, devices, connections, and software. (FFIEC Information Security Booklet, pg 2)

The institution monitors for unauthorized hardware and software using an automated product from Manage Engine. Connections are monitored by our Intrusion Prevention System and user access is periodically reviewed manually.

Corrective Controls

Patch Management

Patches are tested before being applied to systems and/or software. (FFIEC Operations Booklet, pg 22)

A dedicated testing environment cannot be established given limited resources. However, patches are deployed in a stage process, to minimum operational risk and use existing systems and software to test prior to rolling out updates on all systems.

Determining IR vs. CS Maturity

Table 3: Risk/Maturity Relationship

		Inherent Risk Levels				
		Least	Minimal	Moderate	Significant	Most
Cybersecurity Maturity Level for Each Domain	Innovative					
	Advanced					
	Intermediate					
	Evolving					
	Baseline		X			

Domain 1: Cyber Risk Management and Oversight

Domain 2: Threat Intelligence and Collaboration

Domain 3: Cybersecurity Controls

Domain 4: External Dependency Management

Domain 5: Cyber Incident Management and Resilience

Increasing Maturity

Table 3: Risk/Maturity Relationship

		Inherent Risk Levels				
		Least	Minimal	Moderate	Significant	Most
Cybersecurity Maturity Level for Each Domain	Innovative					
	Advanced					
	Intermediate					
	Evolving					
	Baseline					

Domain 1: Cyber Risk Management and Oversight

Domain 2: Threat Intelligence and Collaboration

Domain 3: Cybersecurity Controls

Domain 4: External Dependency Management

Domain 5: Cyber Incident Management and Resilience



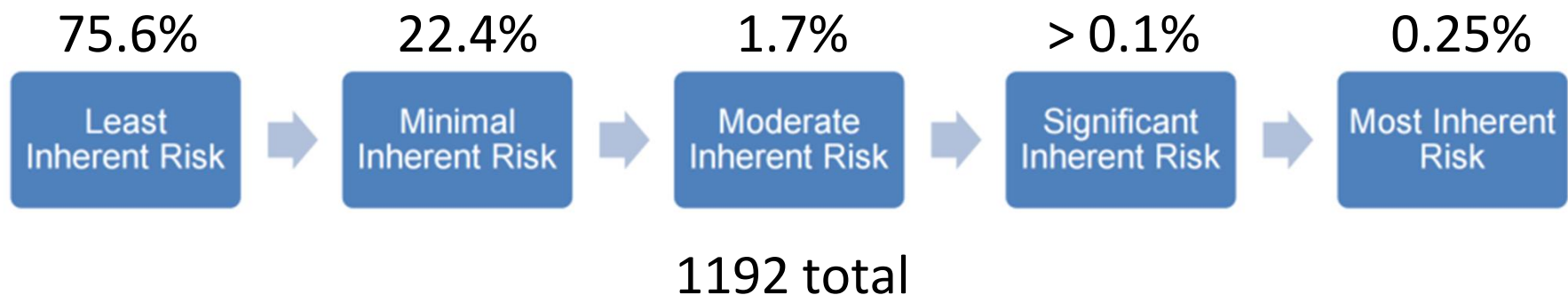
Lessons Learned

FDIC'S INFORMATION TECHNOLOGY RISK
EXAMINATION PROCEDURES – WHAT YOU NEED TO
KNOW

Cybersecurity Inherent Risk

Ç Five Inherent Risk Areas (39 Questions)

1. Technologies and Connection Types
2. Delivery Channels
3. Online/Mobile Products and Technology Services
4. Organizational Characteristics
5. External Threats



Orgs Meeting Maturity Levels

Domain 1: Cyber
Risk Management
& Oversight

Domain 2: Threat
Intelligence &
Collaboration

Domain 3:
Cybersecurity
Controls

Domain 4:
External
Dependency
Management

Domain 5: Cyber
Incident Management
and Resilience

Below Baseline	43.9%	36.3%	54.9%	46.9%	43.9%
Baseline	56.1% (45.2%)	63.8% (46.6%)	45.1% (41.3%)	53.2% (43.1%)	56.1% (45.6%)
Evolving	10.9% (9.7%)	17.2% (14.9%)	3.8% (2.5%)	10.1% (7.0%)	10.5% (8.1%)
Intermediate	0.7%	1.2%	0.8%	1.1%	1.1%
Advanced	0.2%	0.7%	0.3%	1.6%	0.8%
Innovative	0.3%	0.4%	0.2%	0.4%	0.5%

Orgs SETTING Maturity Levels

Domain 1: Cyber
Risk Management
& Oversight

Domain 2: Threat
Intelligence &
Collaboration

Domain 3:
Cybersecurity
Controls

Domain 4:
External
Dependency
Management

Domain 5: Cyber
Incident Management
and Resilience

Baseline	79.8%	80.6%	80.2%	80.8%	80.4%
Evolving	16.4%	15.8%	16.2%	15.4%	15.9%
Intermediate	2.4%	2.2%	2.4%	2.4%	2.2%
Advanced	0.5%	0.4%	0.2%	0.3%	0.4%
Innovative	0.9%	1.0%	1.0%	1.0%	1.1%
Actually MEETING Goals	45.6%	55.4%	34.3%	44.7%	46.8%
NOT MEETING Goals	54.4%	44.6%	65.7%	55.2%	53.2%

Top 5 Domain 1 Baseline Controls Not Met (31 Total)



Ç Governance > Strategies and Policies

1. The institution has policies commensurate with its risk and complexity that address the concepts of threat information sharing. (6% No)

Ç Governance > IT Asset Management

2. A change management process is in place to request and approve changes to systems configurations, hardware, software, applications, and security tools. (6.25% No)
3. Organizational assets (e.g., hardware, systems, data, and applications) are prioritized for protection based on the data classification and business value. (6.25% No)

Ç Resources > Staffing

4. Processes are in place to identify additional expertise needed to improve information security defenses. (5.43 % No)

Ç Training and Culture > Training

5. Customer awareness materials are readily available (9.66% No)

Top 3 Domain 2 Baseline Controls Not Met (8 Total)



§ Threat Intelligence and Information

1. The institution belongs or subscribes to a threat and vulnerability information-sharing source(s) that provides information on threats (e.g., FS-ISAC, US-CERT). (4.28% No)
2. Threat information is used to enhance internal risk management and controls. (4.38% No)

§ Monitoring and Analyzing

3. Audit log records and other security event logs are reviewed and retained in a secure manner. (4.25% No)

Top 12 Domain 3 Baseline Controls Not Met (51 Total)



Ç Preventative Controls > Access and Data Management

1. All passwords are encrypted in storage and in transit.
(6.82% No)
2. Mobile devices (e.g., laptops, tablets, and removable media) are encrypted if used to store confidential data.
(5.86% No)
3. Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.
(6.33% No)

Ç Preventative Controls > Device/End-Point Security

4. Controls are in place to restrict the use of removable media to authorized personnel. (9.15% No)

Top 12 Domain 3 Baseline Controls Not Met (51 Total)



Ç Preventative Controls > Secure Coding

5. Developers working for the institution follow secure program coding practices, as part of a system development life cycle (SDLC), that meet industry standards. (8.14% No)

Ç Detective Controls > Threat and Vulnerability Detection

6. Firewall rules are audited or verified at least quarterly. (11.83% No)

Top 12 Domain 3 Baseline Controls Not Met (51 Total)



Ç Detective Controls > Anomalous Activity Detection

- 7. Access to critical systems by third parties is monitored for unauthorized or unusual activity. (7.3% No)**
- 8. Elevated privileges are monitored. (7.89% No)**
- 9. The institution is able to detect anomalous activities through monitoring across the environment. (7.52%)**

Top 12 Domain 3 Baseline Controls Not Met (51 Total)



Ç Detective Controls > Event Detection

10. A normal network activity baseline is established. **(11.26% No)**

11. Processes are in place to monitor for the presence of unauthorized users, devices, connections, and software. **(9.27% No)**

Ç Corrective Controls > Patch Management

12. Patches are tested before being applied to systems and/or software. **(7.89% No)**

Top 5 Domain 4 Baseline Controls Not Met (16 Total)



Ç Connections > Connections

1. Data flow diagrams are in place and document information flow to external parties. **(15.16% No)**

Ç Relationship Management > Contracts

2. Contracts establish responsibilities for responding to security incidents. **(8.37% No)**
3. Contracts identify the recourse available to the institution should the third party fail to meet defined security requirements. **(7.87% No)**
4. Contracts stipulate that the third-party security controls are regularly reviewed and validated by an independent party. **(7.76% No)**

Ç Relationship Management > Ongoing Monitoring

5. Ongoing monitoring practices include reviewing critical third-parties' resilience plans. **(7.46% No)**

Top 5 Domain 5 Baseline Controls Not Met (17 Total)



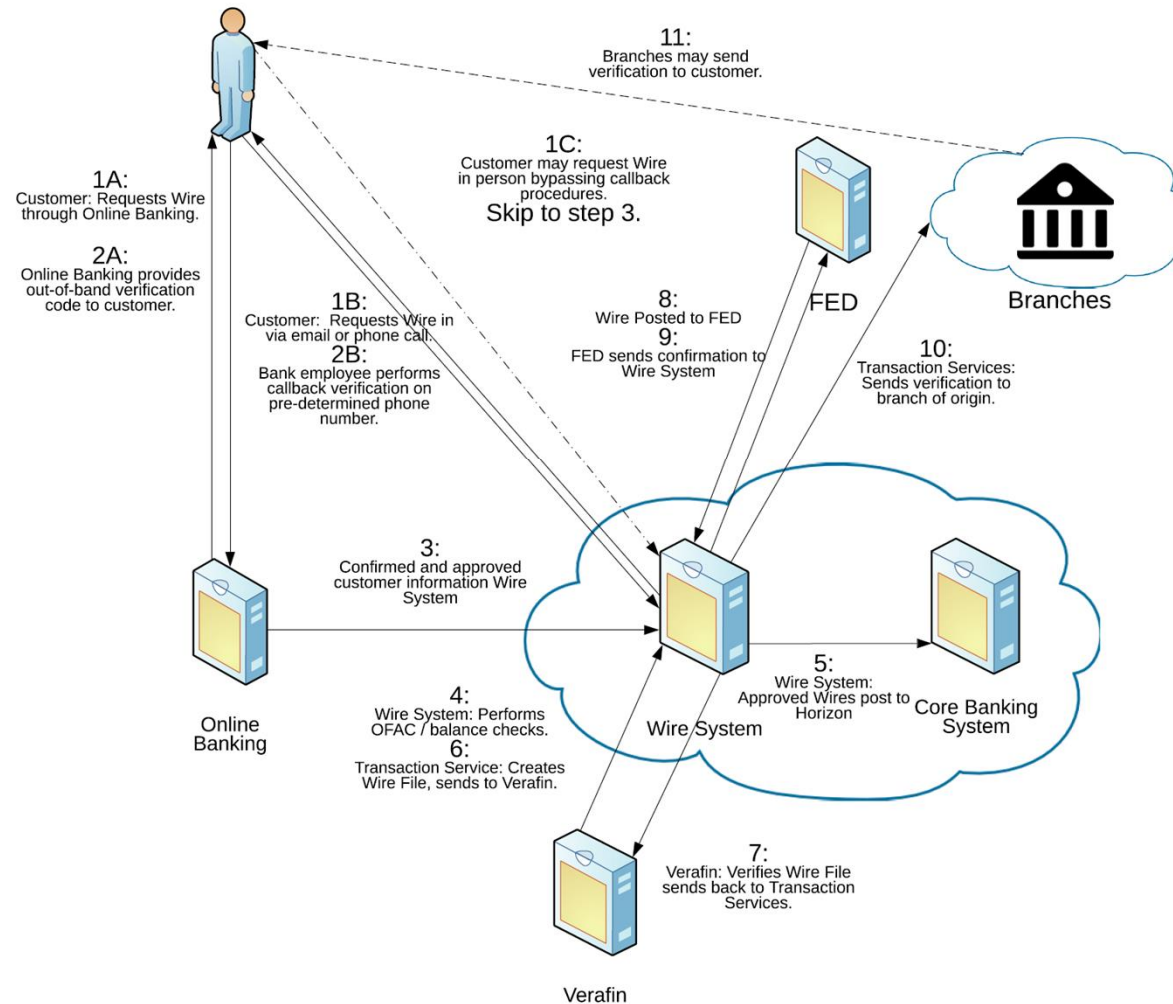
- Ç Incident Resilience Planning and Strategy > Planning
 1. The institution has documented how it will react and respond to cyber incidents. (6.16% No)
- Ç Incident Resilience Planning and Strategy > Testing
 2. Business continuity testing involves collaboration with critical third parties. (6.96% No)
 3. Scenarios are used to improve incident detection and response. (6.48% No)
- Ç Detection, Response, and Mitigation > Detection
 4. System performance reports contain information that can be used as a risk indicator to detect information security incidents. (7.57% No)
 5. Tools and processes are in place to detect, alert, and trigger the incident response program. (6.88% No)

5 Biggest Baseline “No” Offenders

1. **Data flow diagrams** are in place and document information flow to external parties. **(15.16% No)** (Domain 4)
2. **Firewall rules are audited or verified at least quarterly.** **(11.83% No)** (Domain 3)
3. **The institution is able to detect anomalous activities** through monitoring across the environment. **(11.26% No)** (Domain 3)
4. **Customer awareness materials** are readily available **(9.66% No)** (Domain 1)
5. Processes are in place to **monitor for the presence of unauthorized users, devices, connections, and software.** **(9.27% No)** (Domain 3)

#1 – Data Flow Diagram

Data Flow Diagram
Wire Transfer Process



#2 - Quarterly Firewall Review

- Ç Look for changes in current firewall rules vs. previous firewall rules
- Ç Evaluate firewall **change management** procedures, logging of rule changes, and the adequacy of the change management process
- Ç Look for any rules that seem out of place or odd
- Ç Resolving external IPs that are specifically called out or allowed in rules
- Ç Look for hard-coded passwords in rules
- Ç Evaluating open ports and the business need of said open ports

#3 - Detect Anomalous Activity

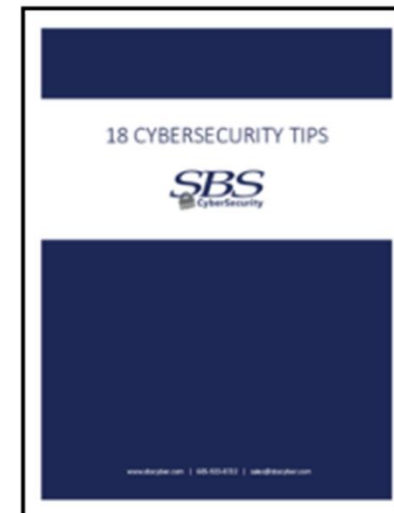
Ç How would you know if someone was in your network?

Ç Do you have Key Risk Indicators in place?

- | | |
|--|---|
| Ç Total Network Logs per Second | Ç New Admin Credentials created |
| Ç Patch Management % / Known Vulnerabilities | Ç Threshold for successive account lockouts |
| Ç Denied FTP Requests | Ç VLAN ACL violations |
| Ç Denied Telnet Requests | Ç Changes to Group Policy |
| Ç Failed Remote Logins | Ç Increase in network bandwidth |
| Ç VPN Connections / Failed VPN Connections | Ç Increase in outbound email traffic |
| Ç Blacklisted IP's Blocked | Ç DNS Request anomalies |

#4 – Customer Security Awareness

- Ç SANS Securing the Human: <https://www.sans.org/security-awareness-training/>
- Ç SBS CyberSecurity Free Downloads: <https://sbscyber.com/education/free-downloads>
- Ç Hang up Security Awareness Posters around your buildings (Google some free posters)
- Ç Send out regular newsletters and have conversation with customers over social media



#5 – Detect New Stuff on your Network

- Ç Start with having (and keeping) and up-to-date Asset Inventory
- Ç Look into automating said asset inventory
- Ç Get alerts when new things are found on the network or on your devices
- Ç Detection is just as important as protection



Top 5 Y(CC) Baseline Controls

Ç Cybersecurity Controls > Preventative Controls > Access and Data Management

1. Mobile devices (e.g., laptops, tablets, and removable media) are encrypted if used to store confidential data.

(22 instances - 2.11% YCC)

- Most Y(CC) descriptions talk about mobile devices “not storing confidential information” but can *ONLY* access email or connect to the network via VPN
- What is a TRUE Compensating Control?

Top 5 Y(CC) Baseline Controls

Ç Cybersecurity Controls > Preventative Controls > Access and Data Management

2. Remote access to critical systems by employees, contractors, and third parties uses encrypted connections and multifactor authentication.

(21 instances – 2.02% YCC; 91.3% Yes; 6.3% No)

- Most Y(CC) descriptions discuss vendors using encryption but not MFA or “having to request access from the bank first”
- What is a TRUE Compensating Control?

Top 5 Y(CC) Baseline Controls

Ç Cybersecurity Controls > Preventative Controls > Secure Coding

3. Developers working for the institution follow secure program coding practices, as part of a system development life cycle (SDLC), that meet industry standards.

(49 instances – 4.75% YCC; 79% Yes; 8.1% No)

- Majority of Y(CC) descriptions discuss not having development capabilities internally; some reference Core Banking vendor
- What is a TRUE Compensating Control?
- This would certainly be a candidate for an N/A answer, depending on the interpretation of your regulator

Top 5 Y(CC) Baseline Controls

Ç Cybersecurity Controls > Detective Controls > Threat and Vulnerability Detection

4. Firewall rules are audited or verified at least quarterly.

(30 instances – 2.91% YCC; 85.3% Yes; 11.8% No)

- Most Y(CC) descriptions reference annual reviews, rather than quarterly; others reference logging of changes (but not verified) or the vendor managing the firewall
- What is a TRUE Compensating Control?

Top 5 Y(CC) Baseline Controls

Ç Cybersecurity Controls > Corrective Controls
> Patch Management

5. Patches are tested before being applied to systems and/or software.

(31 instances – 3.02% YCC; 89.1% Yes; 7.9% No)

- Y(CC) descriptions include accepting the risk and the ability to roll-back; critical patches being applied “automatically”, vendor testing, or scaled roll-out to “test” systems before rolling out to entire production network
- What is a TRUE Compensating Control?

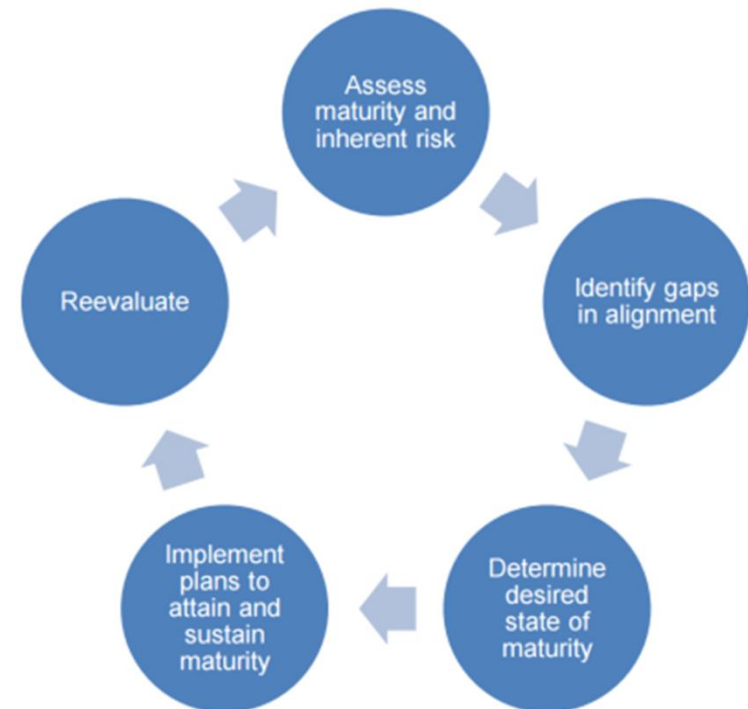


Next Steps

WHAT ARE THE NEXT STEPS TO FOLLOW AFTER
YOU COMPLETE THE FFIEC CYBERSECURITY
ASSESSMENT TOOL?

Next steps?

- ~~1. Determine Inherent Risk~~
- ~~2. Determine Domain Maturity~~
- ~~3. Identify Goals~~
4. Identify Gaps
5. Implement additional controls
6. Increase maturity
7. Repeat



Identify Gaps

Domain	Factor	Component	Statement	Level	Response
Cybersecurity Controls	Preventative Controls	Device/End-Point Security	Controls are in place to restrict the use of removable media to authorized personnel.	Baseline	No
Cybersecurity Controls	Preventative Controls	Secure Coding	Developers working for the institution follow secure program coding practices.	Baseline	No
Cybersecurity Controls	Preventative Controls	Secure Coding	The security controls of internally developed software are periodically reviewed.	Baseline	No
Cybersecurity Controls	Preventative Controls	Secure Coding	The security controls in internally developed software code are independently verified.	Baseline	No
Cybersecurity Controls	Preventative Controls	Secure Coding	Intellectual property and production code are held in escrow. (*N/A if there is no escrow.)	Baseline	No
Cybersecurity Controls	Detective Controls	Threat and Vulnerability Management	Independent testing (including penetration testing and vulnerability scanning) is performed.	Baseline	No
Cybersecurity Controls	Detective Controls	Threat and Vulnerability Management	Antivirus and anti-malware tools are used to detect attacks. (FFIEC Information Security Booklet, page 10)	Baseline	No
Cybersecurity Controls	Detective Controls	Threat and Vulnerability Management	Firewall rules are audited or verified at least quarterly. (FFIEC Information Security Booklet, page 10)	Baseline	No
Cybersecurity Controls	Detective Controls	Threat and Vulnerability Management	IE-mail protection mechanisms are used to filter for common cyber threats. (FFIEC Information Security Booklet, page 10)	Baseline	No
Cybersecurity Controls	Detective Controls	Anomalous Activity Detection	The institution is able to detect anomalous activities through monitoring and analysis.	Baseline	No
Cybersecurity Controls	Detective Controls	Anomalous Activity Detection	Customer transactions generating anomalous activity alerts are monitored and investigated.	Baseline	No
Cybersecurity Controls	Detective Controls	Anomalous Activity Detection	Logs of physical and/or logical access are reviewed following events. (FFIEC Information Security Booklet, page 10)	Baseline	No
Cybersecurity Controls	Detective Controls	Anomalous Activity Detection	Access to critical systems by third parties is monitored for unauthorized or unusual activity.	Baseline	No
Cybersecurity Controls	Detective Controls	Anomalous Activity Detection	Elevated privileges are monitored. (FFIEC Information Security Booklet, page 10)	Baseline	No
Cybersecurity Controls	Detective Controls	Event Detection	A normal network activity baseline is established. (FFIEC Information Security Booklet, page 10)	Baseline	No
Cybersecurity Controls	Detective Controls	Event Detection	Mechanisms (e.g., antivirus alerts, log event alerts) are in place to alert management.	Baseline	No
Cybersecurity Controls	Detective Controls	Event Detection	Processes are in place to monitor for the presence of unauthorized users, devices, or applications.	Baseline	No
Cybersecurity Controls	Detective Controls	Event Detection	Responsibilities for monitoring and reporting suspicious systems activity have been assigned.	Baseline	No
Cybersecurity Controls	Detective Controls	Event Detection	The physical environment is monitored to detect potential unauthorized access.	Baseline	No
Cybersecurity Controls	Corrective Controls	Patch Management	A patch management program is implemented and ensures that software and hardware are up-to-date.	Baseline	No
Cybersecurity Controls	Corrective Controls	Patch Management	Patches are tested before being applied to systems and/or software. (FFIEC Information Security Booklet, page 10)	Baseline	No
Cybersecurity Controls	Corrective Controls	Patch Management	Patch management reports are reviewed and reflect missing security patches.	Baseline	No
Cybersecurity Controls	Corrective Controls	Remediation	Issues identified in assessments are prioritized and resolved based on criticality.	Baseline	No
External Dependency Management	Connections	Connections	The critical business processes that are dependent on external connectivity are identified.	Baseline	No
External Dependency Management	Connections	Connections	The institution ensures that third-party connections are authorized. (FFIEC Information Security Booklet, page 10)	Baseline	No
External Dependency Management	Connections	Connections	A network diagram is in place and identifies all external connections. (FFIEC Information Security Booklet, page 10)	Baseline	No
External Dependency Management	Connections	Connections	Data flow diagrams are in place and document information flow to external parties.	Baseline	No
External Dependency Management	Relationship Management	Due Diligence	Risk-based due diligence is performed on prospective third parties before contracting.	Baseline	No
External Dependency Management	Relationship Management	Due Diligence	A list of third-party service providers is maintained. (FFIEC Outsourcing Booklet, page 10)	Baseline	No
External Dependency Management	Relationship Management	Due Diligence	A risk assessment is conducted to identify criticality of service providers. (FFIEC Outsourcing Booklet, page 10)	Baseline	No

Maturity Next Steps

- Ç You don't have to set a goal for EVERY one of the 5 Domains. If you have 2 or 3 Domains to work towards maturing, that's plenty to do for the next 6-12 months. Meeting some of your goals for now is OK.
- Ç Include timeframes, budget, priorities, etc.
- Ç Report Upstream

Cyber Maturity Level	Statements Needed
Baseline	
<i>Cyber Risk Management and Oversight</i>	6
<i>Threat Intelligence and Collaboration</i>	0
<i>Cybersecurity Controls</i>	4
<i>External Dependency Management</i>	0
<i>Cyber Incident Management and Resilience</i>	1

Build Action Plan



CBCM Bank Settings Help Tutorials Logout **TRAC**

<< IT ISP PRIVACY SAFETY AND SOUNDNESS DASHBOARD AUDIT 3PM BSA ACTION TRACKING CATRAC BCP ERM >>

Overview Items Reports Add Action Task | Cyber-RISK™

Action Tasks ?

-- Upcoming

Sort by: Plan Assignment ?

Cybersecurity Baseline Gap Analysis 0% Total:5 Unassigned:5 Incomplete:5

Create Date: 09/29/2015 Plan Authority: CCBSP User
Due Date: 03/29/2016 Approval Authority: Board of Directors

Upload Files Edit Plan Manage Items Make Available Plan Report Approve Plan

Plan: Cybersecurity Baseline Gap Analysis Item Filter: Off Work Papers Qu

The security controls of internally developed software are periodically reviewed and tested. (*N/A if there is no software development.) (FFIEC Information Security Booklet, page 62)

Cybersecurity Controls - Preventative Controls - Secure Coding

Status: Accepted Assigned To: INFORMATION SECURITY C Progress Complete: 25% Criticality: High

Response

Our institution has developed a software program for risk rating ACH transactions. We are in the process of getting bids for a consulting firm to conduct a source code audit. Also creating a policy to govern internal software development, which will include an auditing component on a period basis.

Start Date: 10/22/2015 Due Date: 12/01/2015 Complete Date: Mark Complete

A patch management program is implemented and ensures that software and firmware patches are applied in a timely manner. (FFIEC Information Security Booklet, page 62)

Cybersecurity Controls - Corrective Controls - Patch Management

Status: Accepted Assigned To: INFORMATION SECURITY C Progress Complete: 100% Criticality: High

Response

We manually patch software programs and have evaluating three different products. The have just rolled out our new patching solution.

Start Date: 10/20/2015 Due Date: 10/23/2015 Complete Date: 10/23/2015 Mark Incomplete

Biggest Takeaways

- Ç Only 55% of nearly 1200 organizations that have completed the CAT (in Cyber-RISK) are meeting baseline standards
- Ç Only about 1% of all responses are utilizing the Yes with Compensating Controls feature
 - And those that ARE using Y(CC) are not using it correctly

Biggest Takeaways

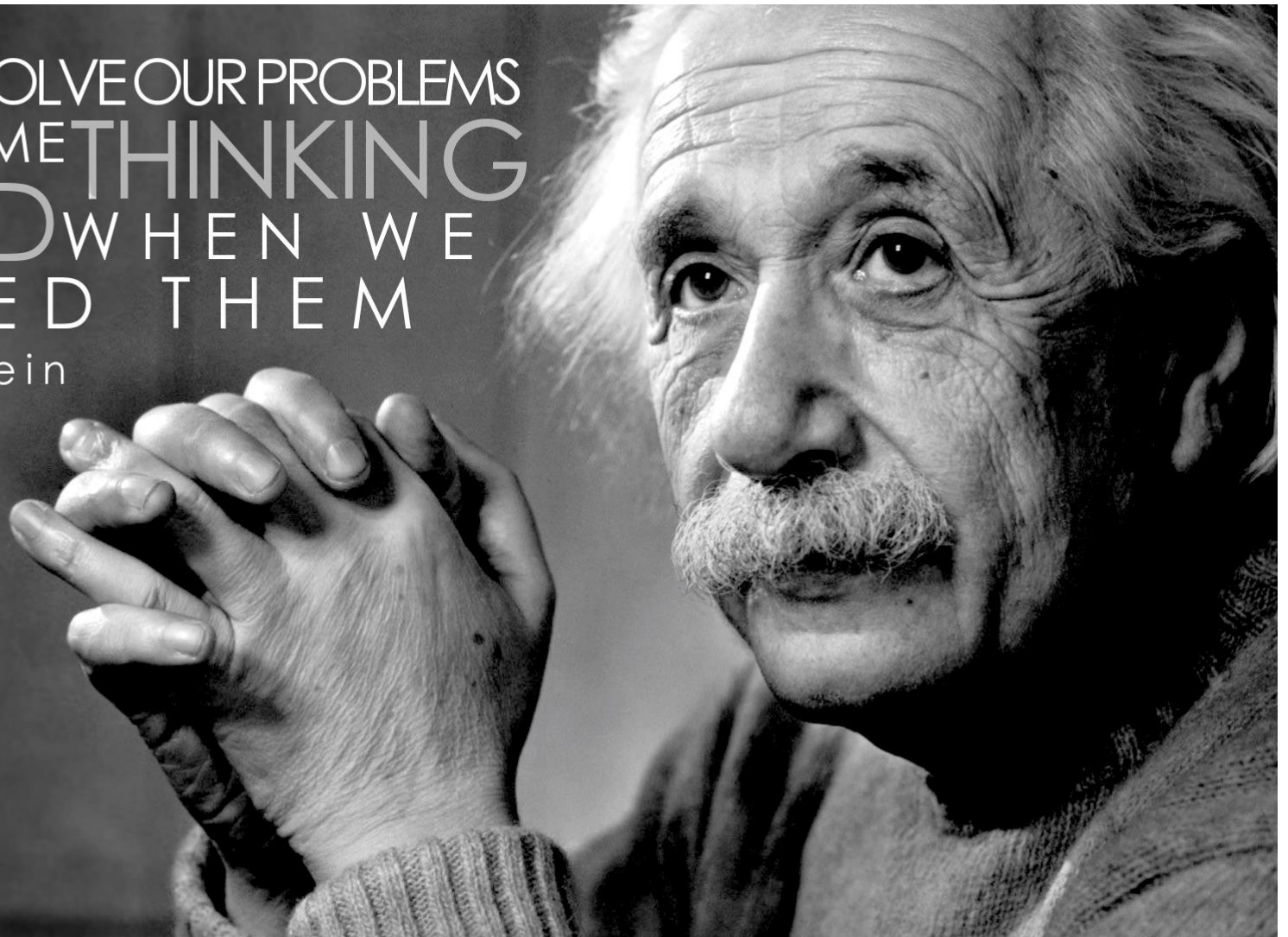
Ç It's ok to not be meeting Baseline, AS LONG AS YOU HAVE A PLAN.



Biggest Takeaways

- Ç A LOT of effort spent on completing the CAT – make sure it's **VALUABLE**
 - Over 500,000 answers to CAT maturity questions
 - If you assume 10 minutes per question, that's over **5 MILLION minutes** put into the CAT by users of Cyber-RISK
 - Over 83,000 hours – or almost 3500 days – or 9.5 years...
 - Take that 2X if you've completed the CAT twice
- Ç Use the CAT to PLAN the MATURITY of your Information Security Program

WE CANNOT SOLVE OUR PROBLEMS
WITH THE SAME THINKING
WE USED WHEN WE
CREATED THEM
- Albert Einstein



That's all she wrote...

- Ç Any questions, comments, or concerns?
- Ç Also, for a much deeper dive on Cybersecurity *specifically* for financial institutions, check out our eleven (11) **Cybersecurity Certification Programs!**
 - Including the **Certified Banking Cybersecurity Manager**
 - <https://sbscyber.com/education/certifications>
- Ç Contact info:
 - Jon Waldman
 - Partner, EVP IS Consulting
 - jon.waldman@sbscyber.com
 - 605-380-8897

