SUPPLY CHAIN RISK MANAGEMENT

Paper Products, Hardware and Services

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Election Infrastructure
Subsector Coordinating Council

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Introduction

- Initiation
- Working Groups
- Outputs and Goals

Provide SCRM WG guidance on election-related supply chain risk management to assist others when procuring election-related software, hardware, and services;

Leverage existing resources provided by the Cybersecurity & Infrastructure Security Agency (CISA) and the Information and Communications Technology (ITC) SCRM Task Force;

Provide checklists and other resources that technology providers and election officials may use to assess their election supply chain risk management strategy;

Identify best practices regarding election-related supply chain risk management within the election community; and

Share resources through the election community to increase awareness of supply chain risk management practices.
Ballot Paper and Envelopes, etc
Paper Supply Chain | Why?

- U.S. and Canadian paper mills have been closing
- High demand for cardboard (i.e., pandemic - online ordering)
- High demand for ‘bleach board’ (i.e., pandemic - test kit/vial packaging)
- Labor shortage to manufacture paper
- Pressure on other global paper suppliers
Paper Supply Chain | Key Assets at Risk

- Paper supply – the leanest it has ever been
- Envelopes, inserts, voter guides
- Packaging – limited
- Vendors making paper promises – please confirm
- Transportation risks for paper to be delivered
- Labor shortages to deliver the paper
- Urgent requests are at risk to be fulfilled
Paper Supply Chain | Risk Mitigation

- Continue to communicate with your jurisdictions
- Your jurisdictions need to have ordered - November 2022
- Those orders/estimates - better than your vendor’s “guess”
- Misinformation (MDM) – “paper supply issue is false”
- Please review *Ballot Paper Supply Chain Risk Management*
- Continue your planning for 2023 and 2024
- Paper in place by Nov/Dec 2023 for Early 2024 primaries
Hardware and Services
Hardware

- Like paper, the pandemic and demand have conspired
  - Leadtimes two to three times the norm, not seen since 1999/2000
  - Costs from raw materials to components to finished goods significantly increased
  - Spotty, unpredictable problems due to transportation and pandemic related shutdowns

- Candid discussions regarding inventory, inventory carrying policies, outlook, OH/OO

- Order early, have contingencies if goods are found to be unavailable

- Inventory who are your hardware suppliers
  - Problems are not confined to the tabulation and ePollbook providers
Hardware and Services

- **Purchase Methods/Terms**
  - Identify and agree to the purchase methods and terms prior to any procurement
  - Ensure both parties agree on the payment and shipping terms.

- **Continual Evaluation, today and looking ahead**
  - Continually evaluate your supply chain management document’s policies and procedures.
  - At a minimum annually
  - Ensure all information is up to date
  - Use latest industry standard and best practices. These are evolving.
Supply Chain Risks to Election Infrastructure

Securing the complex supply chains serving our elections infrastructure is mission critical and comprehensive risk analysis is an important component of this process. Here are some key considerations, recommendations for election jurisdictions and election system providers to keep in mind as they mitigate risk and maintain a strong supply chain security posture.

**Key Considerations**

**Hardware**
- Election systems are comprised of many hardware components that are part of a complex, globally connected supply chain. In order to protect these critical infrastructure hardware components, it is necessary to put into place a robust hardware supply chain risk management plan.
- 1. Identify every touch point in your hardware supply chain. From the sourcing of raw materials through delivery to your organization.
- 2. Prioritize risk management resources on the hardware components that are most critical to your organization.
- 3. Focus hardware security defense mechanisms to limit the threat of counterfeiting, information leakage, sabotage and tampering.
- 4. Conduct physical inspections of the hardware components to ensure all verifiable and authentic artifacts (i.e., serial numbers, unique product IDs, etc.) produced during the manufacturing process are present.
- 5. If you have firmware of software embedded in your products and developed or loaded by the third party, inspect its integrity on a continuous basis.

**Software**
- Entities wishing to attack the election ecosystem may choose to manipulate the software used by election technology providers, election jurisdictions, and service providers to the election ecosystem.
- 1. Implement formal organizational roles and governance responsibilities for the implementation and oversight of secure software development across the development or manufacturing process.
- 2. Choose and implement a security control framework (industry or customized) to define software product offering security capabilities.
- 3. Protect all forms of code from unauthorized access and tampering, including implementation of a patch management plan.
- 4. Provide a mechanism for verifying software release integrity, including patch updates.
- 5. Verify that third-party software (including free and open source software) providers required security requirements/controls.

**Services**
- From consultant to custodian, election organizations are likely to have a wide spectrum of service providers. Some of these may be hidden but fall under your supply chain management umbrella. Take an inventory of these providers.
- 1. Some service providers may have uninsured access to your offices, server rooms, or other places where you store sensitive information. Review existing contracts and actual access granted to services supply chain employees.
- 2. The corporate ownership of your service providers might surprise you. When you bring in new service providers be aware of foreign investors or ownership.
- 3. Use contracts to ensure key service providers background checks, back-up sensitive information, and build and test their business continuity plans.
- 4. Integrate risk-based thinking into your supply chain management, determine which are critical suppliers and manage them accordingly.

**Ballot Paper**
- Ballot Paper Supply Chain Risk Management is the process of identifying, assessing, preventing, and mitigating the risks associated with the distributed and interconnected nature of the manufacturing of blank ballot paper stock and its respective service supply chains.
- 1. Paper mills are under unprecedented demand for many types of paper products. Order lead times are very long for ballot paper.
- 2. Other election-related raw materials are also supplied from pressure including envelope paper, mail pocket inserts, stickers, toner for on-demand printers, and many other materials needed for elections.
- 3. Transportation challenges such as fewer drivers, less trailer availability and higher prices contributing to delayed delivery of paper products.
- 4. Labor shortages are not healing the production of raw materials, and the labor needed for transportation and delivery of these election products.
- 5. Urgent, last-minute orders are at risk to be fulfilled. The supply chain shortages hamper the ability of ballot and mail providers to deliver last-minute orders.

**Recommendations**
- Election jurisdictions and election providers should establish a supply chain risk management plan, CISA, CSIS and SCC have recommended best practices on developing a plan which will help to address vulnerabilities and disruptions at all stages of the hardware supply chain.
- Election jurisdictions should take advantage of CISA, CSIS and SCC recommendations to detect and prevent software vulnerabilities at all stages of development and use.
- Think more broadly about who the service providers are to your organization. Investigate all assets that have to your facilities and networks. Remove those that are unnecessary and vet suppliers and their personnel carefully.
- Plan and order early. Ballot paper, envelope, and election material supply chain fulfillment are requiring the longest order lead times in decades due to unpredictable and delayed delivery times.
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Infographic mirrors the two publications:

Paper
Hardware
Software
Services

Summarized information, general
Summarized information, four categories

Call to action
Thank You!

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