DEPARTMENT OF VETERANS AFFAIRS

VA API GOVERNANCE

LICENSE AND ENTITLEMENT MANAGEMENT

EXECUTIVE WHITEPAPER

Background

The Department of Veterans Affairs (VA) provides a wide variety of Application Programming Interfaces (APIs) that enable innovative and modern technology solutions for Veterans. As various VA teams and projects expand their development and usage of APIs to deliver mission critical functionality, a greater need for governance is necessary.

The VA requires a governance model that focuses on the people, processes, and technologies associated with API use to enable successful governance and management.

Our Understanding

We understand that the VA currently utilizes thousands of APIs throughout the organization. APIs are currently tracked manually with varying tracking methods for each project. Tools such as Microsoft Excel are commonly used, with no centralized tracking, monitoring, or governance mechanisms in place. This fragmented tracking lacks an enterprise-wide method to manage licensing utilization for APIs, which prevents the VA from accessing cost savings, and exposes the organization to risks of fines and legal action.

Can lead to fines of
$150,000
per copyright infringed[1]

Tighter management and monitoring of API usage standards will protect the VA in case of an IT audit and enable the organization to find cost-savings on API usage through tier-based pricing structures.

Various IT Asset Management (ITAM) and Software Asset Management (SAM) tools exist to manage enterprise licenses, however these are built for managing traditional software licenses, and would require extensive customization to effectively manage APIs. Existing API gateways and logging capabilities contain the usage data that is essential to manage APIs, however this information cannot be easily accessed. The VA requires a solution that can simply gather this disparate data, consolidate it into a centralized database, and aggregate API data to enable actionable insights that reduce the costs and risks associated with their use.

This Whitepaper Focuses on Restful Web Services such as:

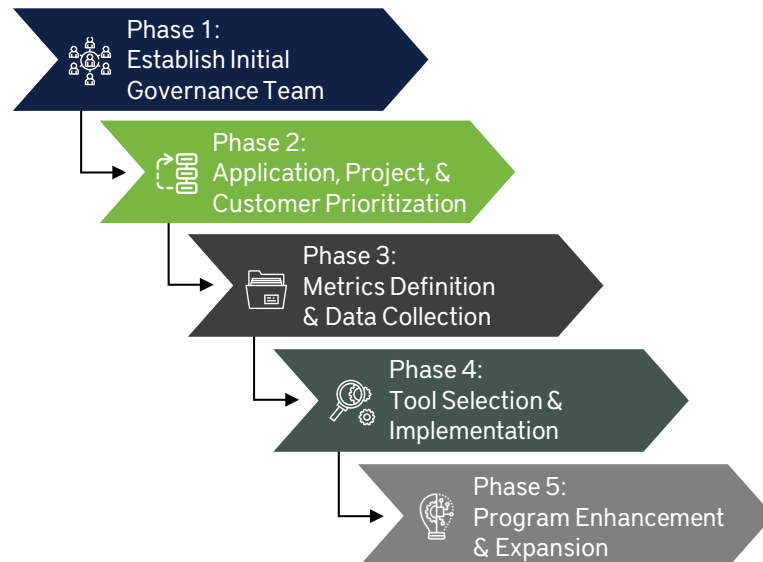| Externally Provided APIs	Internally Provided APIs
pitney bowes	**VA Benefits API VA Health API**
Externally provided APIs are used to get data or services from a source outisde the VA.	APIs developed by the VA that can be consumed by other VA applications or by outside parties.

Our Approach

The VA faces unique challenges in developing a governance model to manage the breadth of APIs that are currently in use throughout the organization. To efficiently manage this daunting task, the VA requires an automated solution. API data is currently disparate, with data stored in varying API gateways and logs, and without centralized usage records. Centralized API data is needed to establish a governance model, and an automated data collection process will streamline the process to establish this model. A multi-phase approach is needed to establish this solution.

Phase 1:
Establish Initial
Governance Team

Phase 2:
Application, Project, &
Customer Prioritization

Phase 3:
Metrics Definition
& Data Collection

Phase 4:
Tool Selection &
Implementation

Phase 5:
Program Enhancement
& Expansion

Establish Initial Governance Team

Phase 1:
Establish Initial Governance Team

Organizations such as the VA have large and complex technical landscapes, and software asset management (SAM) and IT asset management (ITAM) programs are critical to serve as the backbone of a governance model. We propose that the existing programs and governance teams should be expanded to include responsibilities for the management and governance of API license keys. The expanded governance bodies will have responsibilities in for the following areas as they pertain to APIs:

Discovery & Tracking - Identification and tracking of utilization metrics

License Management - Maintenance of an inventory of licenses and contractual details

Audit Management - Confirm contract compliance and license usage with proactive internal and vendor audits

Budgeting & Procurement - Centralize reporting and forecasting for license renewals for APIs throughout the organization

Application, Project, & Customer Prioritization

Phase 2:
Application, Project, & Customer Prioritization

To manage the breadth of APIs that are already deployed throughout the VA, we recommend a pragmatic approach that prioritizes and targets specific APIs and projects. To narrow the focus initially, the VA should select a handful of critical initiatives, projects, and applications in which the VA is creating or consuming APIs.

The approach should be prioritized to focus on the initiatives, projects, and applications that have the highest level of API usage that can be directly or indirectly traced to a cost. Projects with high levels of API usage are typically web or mobile applications that include industry-standard features that are expected by users, and should not be developed from scratch.

Potential starting candidates for governance include:

VA Video Connect
Telemedicine application that connects Veterans with physicisians utilizing video chat.

Civilian Health & Medocail Program of the Department of Veterans Affairs (CHAMPVA) Pay Mobile App
Enables Veterans to quickly view CHAMPVA medical codes, verify coverage status, and determines reimbursement details.

Annie App (for Clinicians & Veterans)
Texting based application that enables Clinicians to assign protocols to Veteran patients, and provides Veterans with automated reminders for self-care.

Application Features that Typically Utilize APIs

Maps   Address & Contact Information Verification   Natural Language Processing   Social Media Integration   Speech to Text

Metrics Definition & Data Collection

Once applications and projects have been prioritized, the governance team should define success metrics and begin gathering data from the prioritized applications. Metrics should include key performance indicators such as total spend on API usage, and targeted savings based on usage per API. The data collection effort must gather API data that will enable the VA to track these metrics. Key data elements to be tracked include:

Contract Start & End Dates

License Type

Dollar Value

Pricing Tier Usage Levels

API Alternatives & Cost Differential

Known VA API Consumers

Tool Selection & Implementation

The data governance team will explore and analyze solutions that will enable the VA to efficiently centralize these data utilizing a fully automated process. This evaluation will include scripting tools, existing SAM and ITAM tools, as well as emerging technologies such Robotic Process Automation These tools will be used to centralize API data and create monitoring dashboards for API usage and other key performance indicators. The future state solution will enable the following features:

Integration with API Gateways

Automated Usage Limit Alerts

Contract End of Life Alerting

Utilization Tracking & Reporting

Program Enhancement & Expansion

Phase 5:
Program Enhancement & Expansion

The establishment of a comprehensive API license and entitlement governance program will not have a defined end date. It will be a continual process of extension and expansion to monitor API usage and licensing compliance. This includes establishing mechanisms in place such as:

Extension of APIs Monitored
Using a prioritized inventory of APIs, select additional initiatives and projects to collect, track and manage API information. The prioritized inventory should be reviewed and updated periodically.

Audit Readiness
Establishing manual (or partially automated) processes to proactively prepare for vendor license audits via internal auditing and coordinating with vendors to track compliance.

Contract & Usage Optimization
The governance team will use the API information gathered to develop usage forecasts for all monitored APIs. The forecasts will be used with the Procurement and Budgeting departments to identify cost-savings opportunities on API utilization. There may be cost-saving opportunities when multiple projects utilize the same API, or by renegotiating contracts for underutilized APIs.
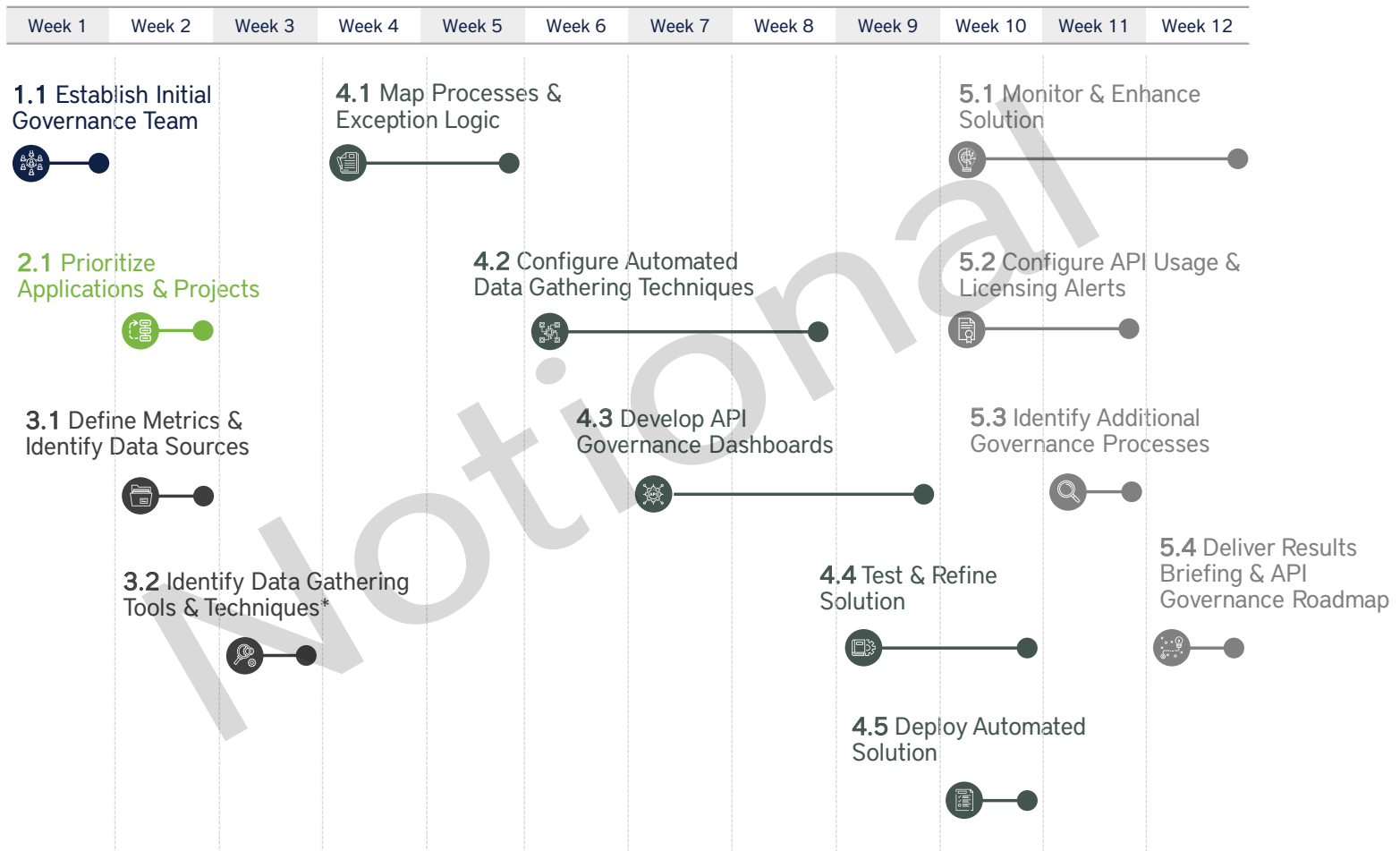
Enforcement of API Key Security Guidelines
Working with the VA IT Policy team to develop security practices for API keys. These processes and practices will help detect unauthorized API users and compromised API keys.

Implementation Plan

We have prepared a notional implementation plan to illustrate the actionable items to establish an API governance program utilizing automation technology. This implementation plan assumes resource availability, and the availability of data within VA API gateways and logs.

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12

1.1 Establish Initial Governance Team

4.1 Map Processes & Exception Logic

5.1 Monitor & Enhance Solution

2.1 Prioritize Applications & Projects

4.2 Configure Automated Data Gathering Techniques

5.2 Configure API Usage & Licensing Alerts

3.1 Define Metrics & Identify Data Sources

4.3 Develop API Governance Dashboards

5.3 Identify Additional Governance Processes

3.2 Identify Data Gathering Tools & Techniques*

4.4 Test & Refine Solution

5.4 Deliver Results Briefing & API Governance Roadmap

4.5 Deploy Automated Solution

*Please note that this timeline is dependent on any necessary procurement activities to procure an automated solution to gather API data (for example if the need for a new tool is identified in Activity 3.2)