Product Requirements Document - Google-Only Architecture

Product Name

GoVAULT - Household Information Management System

Overview

Problem Statement

Families struggle to organize and maintain access to critical household information scattered across physical documents, multiple digital locations, and various family members' knowledge. Important documents like insurance policies, passwords, financial accounts, and legal papers are often lost, forgotten, or inaccessible when needed most, creating stress and inefficiency in managing household affairs.

Solution Summary

GoVAULT is a modern, highly secure web application that serves as a centralized repository for all essential family information. The system operates entirely within the Google Workspace ecosystem, leveraging Google Drive for secure document storage and Google Sheets for structured data management. The elegant dashboard interface provides easy access and management, with the family owner maintaining complete control over access permissions while enabling secure collaboration with family members and trusted third parties.

CRITICAL INTERFACE PRINCIPLE: All user interactions occur exclusively through the GoVAULT web interface. Users never directly access Google Drive folders, files, or Google Sheets - all document viewing, editing, uploading, and management happens within the secure web application. The web interface provides comprehensive functionality that eliminates any need for users to interact with the underlying Google Workspace storage.

Success Metrics

- Time to locate important family documents reduced by 80%
- Time to find specific information (policy numbers, account details) reduced by 90%
- 100% of critical household information digitally organized and accessible
- Zero missed renewal dates or important deadlines through automated reminders
- All authorized family members able to access needed information within 30 seconds
- 100% secure access control with zero unauthorized data exposure incidents
- 95% of information requests satisfied through quick-access data without opening documents

Simplified Google-Only Architecture

Single Ecosystem Benefits

GoVAULT operates entirely within Google Workspace, providing several critical advantages:

Complete Google Integration

- Single authentication system using Google OAuth

- Native collaboration features built into Google Sheets

- Seamless integration between Drive documents and Sheets data

- Unified permission system across all Google services

- Built-in real-time updates and synchronization

Simplified Technical Stack

```
Frontend (React) ↔ Google APIs Only
                    ├── Drive API (documents)
                    ├── Sheets API (structured data + permissions + logs)
                    ├── Docs API (document generation)
                    └── Gmail API (invitations)
```

Cost and Maintenance Benefits

- **Lower operational costs** - no third-party database services

- **Simplified architecture** - fewer moving parts and integration points

- **Easier maintenance** - single ecosystem reduces complexity

- **Native scalability** - Google's infrastructure handles all scaling

- **Built-in backups** - Google's redundancy and backup systems

Web Interface as Universal Gateway

GoVAULT operates on a fundamental principle: **the web interface is the ONLY way users interact with their family information**. This architecture provides several critical benefits:

Complete Abstraction from Google Services

- Users never see Google Drive folders, file structures, or Sheets

- All document management appears as intuitive web-based file management

- Underlying Google storage complexity is completely hidden from users

- No need for users to understand or navigate Google Drive permissions or sharing

Unified User Experience

- Single login provides access to all family information

- Consistent interface across all devices and platforms

- No switching between Google applications or services

- All functionality available through responsive web design

Enhanced Security Through Interface Control

- All access is mediated through secure web application

- No direct Google service access reduces security vulnerabilities

- Complete audit trail of all user activities

- Granular permission control enforced at interface level

Complete Category Structure & Data Architecture

Document Storage Layer (Google Drive Backend)

Document Management Through Drive API

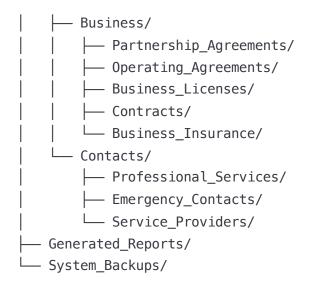**Purpose:** Secure, versioned storage of complete documents

- **User Perspective:** Documents appear as embedded viewers within web interface
- **Technical Reality:** Files stored in owner's Google Drive with automated organization
- **User Interaction:** Upload, view, and download through web interface only
- **Version Control:** Google Drive's native versioning handled transparently
- **Organization:** Automated folder structure invisible to users
- **Permissions:** Managed entirely through Drive API, never exposed to users

Google Drive Folder Structure (Hidden from Users)

```
GoVAULT_Family_Data/
├── Documents/
│   ├── Family_IDs/
│   │   ├── Drivers_Licenses/
│   │   ├── Passports/
│   │   ├── Social_Security_Cards/
│   │   ├── Birth_Certificates/
│   │   └── Other_IDs/
│   ├── Finance/
│   │   ├── Bank_Accounts/
│   │   ├── Investment_Accounts/
│   │   ├── Retirement_401k/
│   │   ├── Brokerage/
│   │   ├── Pension/
│   │   ├── Loans_Mortgages/
│   │   └── Credit_Cards/
│   ├── Property/
│   │   ├── Real_Estate/
│   │   ├── Vehicle_Titles/
│   │   ├── Jewelry_Valuables/
│   │   ├── Home_Improvements/
│   │   └── Major_Purchases/
│   ├── Passwords/
│   │   ├── Digital_Accounts/
│   │   ├── Financial_Logins/
│   │   ├── Home_Security/
│   │   └── Utilities_Services/
│   ├── Insurance/
│   │   ├── Home_Insurance/
│   │   ├── Auto_Insurance/
│   │   ├── Life_Insurance/
│   │   ├── Umbrella_Policies/
│   │   ├── Health_Insurance/
│   │   └── Specialty_Coverage/
│   ├── Taxes/
│   │   ├── Tax_Returns/
│   │   ├── Tax_Documents/
│   │   ├── Receipts_Deductions/
│   │   └── Tax_Correspondence/
│   ├── Legal/
│   │   ├── Wills_Trusts/
│   │   ├── Power_of_Attorney/
│   │   ├── Healthcare_Directives/
│   │   ├── Contracts/
│   │   └── Legal_Correspondence/
```

```
|   ├── Business/
|   |   ├── Partnership_Agreements/
|   |   ├── Operating_Agreements/
|   |   ├── Business_Licenses/
|   |   ├── Contracts/
|   |   └── Business_Insurance/
|   └── Contacts/
|       ├── Professional_Services/
|       ├── Emergency_Contacts/
|       └── Service_Providers/
├── Generated_Reports/
└── System_Backups/
```

Structured Data Layer (Google Sheets Backend)

Multi-Sheet Database Architecture

Purpose: Instant access to critical information without opening documents

Master Data Sheets

Family_IDs Sheet:

- ID Type, ID Number, Expiration Date, Issuing Authority, Renewal Requirements

- Associated Family Member, Location Notes, Document Link

Finance_Accounts Sheet:

- Account Type, Institution Name, Account Number, Routing Number

- Balance, Interest Rate, Contact Information, Login Credentials Link

- Maturity Date, Beneficiaries, Document Links

Property_Assets Sheet:

- Property Type, Description, Purchase Date, Purchase Price, Current Value

- Location/Address, Insurance Policy Links, Loan Information

- Maintenance Records, Warranty Information, Document Links

Passwords_Vault Sheet:

- Service/Account Name, Username, Password (encrypted), URL

- Security Questions, Two-Factor Setup, Last Updated

- Category, Shared With, Recovery Information

Insurance_Policies Sheet:

- Policy Type, Insurance Company, Policy Number, Coverage Amount
- Deductible, Premium, Renewal Date, Agent Contact
- Beneficiaries, Claim History, Document Links

Tax_Records Sheet:

- Tax Year, Filing Status, Preparer Information, Key Deductions
- Refund/Owed Amount, Important Dates, Document Links
- Audit History, Estimated Payments, State/Federal Status

Legal_Documents Sheet:

- Document Type, Parties Involved, Effective Date, Expiration Date
- Attorney Information, Key Terms Summary, Witness Information
- Storage Location, Related Documents, Action Items

Business_Info Sheet:

- Business Name, Business Type, Formation Date, Tax ID
- Partners/Members, Registered Agent, Annual Requirements
- Insurance Information, Banking Details, Document Links

Contacts_Directory Sheet:

- Contact Type, Name, Company, Phone, Email
- Address, Specialization, Relationship to Family
- Emergency Contact Status, Preferred Contact Method

System Management Sheets

- **Users_Permissions:** User roles, access levels, permission matrices
- **Audit_Log:** All user activities, document access, data modifications
- **Document_Registry:** Links between Google Drive files and structured data
- **Reminders_Alerts:** Automated reminder system data and alert history
- **System_Config:** Application settings and configuration data

Data Relationship Management

- **Cross-Sheet References:** Google Sheets formulas link related data across sheets

- **Document Linking:** Each data row contains Google Drive file IDs for associated documents

- **Permission Enforcement:** User access controlled through permission matrix in Google Sheets

- **Audit Tracking:** All data changes automatically logged with user identification and timestamps

---

Enhanced Permission System for All Categories

Category-Specific Access Control

Permission Matrix Sheet Structure

```
User_Email | Role | FamilyIDs_View | FamilyIDs_Edit | Finance_View | Finance_Edit |
Property_View | Property_Edit | Passwords_View | Passwords_Edit | Insurance_View |
Insurance_Edit | Taxes_View | Taxes_Edit | Legal_View | Legal_Edit | Business_View |
Business_Edit | Contacts_View | Contacts_Edit
john@gmail.com | Owner | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE
jane@gmail.com | Spouse | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | FALSE |
TRUE | TRUE | TRUE | FALSE | TRUE | FALSE | TRUE | FALSE | TRUE | TRUE
kid@gmail.com | Child | TRUE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE
| TRUE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | TRUE | FALSE
advisor@firm.com | Financial | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE
| FALSE | TRUE | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE | FALSE | TRUE | FALSE
attorney@law.com | Legal | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
FALSE | FALSE | FALSE | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE | TRUE | FALSE
```

Role-Based Access Templates

Primary Owner:

- Complete control over all categories and documents

- Can modify permissions for all users

- Access to all sensitive information including passwords

Spouse/Partner:

- Broad access with editing capabilities across most categories

- Limited access to business information and tax preparation

- Can view but not edit passwords and legal documents

Adult Children:

- Access to family IDs and basic contact information

- Limited insurance information for their own policies

- No access to financial details, passwords, or legal documents

Dependents:

- View-only access to basic family information

- Access to emergency contacts and their own ID information

- No access to financial, legal, or password information

Financial Advisor:

- Access to financial accounts and investment information

- View-only access to insurance policies and tax records

- No access to personal passwords or legal documents

Attorney:

- Access to legal documents and estate planning information

- View-only access to property and business information

- No access to financial accounts or passwords

Tax Preparer:

- Seasonal access to tax documents and financial records

- Access to business information if applicable

- Automatic expiration after tax season

Insurance Agent:

- Access to relevant insurance policies and property information

- View-only access to contact information

- No access to financial accounts or legal documents

Complete Page Structure & User Experience

1. User Dashboard - Comprehensive Overview

Category Status Cards

- **Family IDs:** Expiration alerts, renewal reminders

- **Finance:** Account balances, recent transactions alerts

- **Property:** Insurance renewal dates, maintenance reminders

- **Passwords:** Security alerts, update recommendations

- **Insurance:** Policy renewals, coverage gaps

- **Taxes:** Filing deadlines, document preparation status

- **Legal:** Document expiration dates, action items

- **Business:** Compliance deadlines, renewal requirements

- **Contacts:** Emergency contact verification, update reminders

Quick Access Widgets

- **Expiring Documents:** All categories with upcoming expiration dates

- **Recent Activity:** Cross-category activity feed

- **Action Items:** Pending tasks across all categories

- **Security Alerts:** Password updates, document access notifications

2. Category-Specific Management Pages

Family IDs Management

- **Quick Data View:** ID numbers, expiration dates, issuing authorities

- **Document Gallery:** Scanned copies of all ID documents

- **Renewal Tracking:** Automated reminders for upcoming expirations

- **Family Member Assignment:** Link IDs to specific family members

Finance Management

- **Account Overview:** All financial accounts with current balances

- **Investment Tracking:** 401k, brokerage, and investment accounts

- **Loan Management:** Mortgages, car loans, and payment schedules

- **Banking Details:** Account numbers, routing numbers, contact information

Property Management

- **Real Estate:** Property details, purchase documents, current values

- **Vehicles:** Titles, registration, maintenance records

- **Valuables:** Jewelry, art, collectibles with appraisals

- **Home Improvements:** Contracts, warranties, before/after photos

Password Vault

- **Secure Storage:** Encrypted password storage with access control

- **Category Organization:** Email, financial, home security, utilities

- **Security Monitoring:** Password strength analysis, update reminders

- **Two-Factor Authentication:** Setup tracking and backup codes

Insurance Center

- **Policy Overview:** All insurance policies with coverage details

- **Premium Tracking:** Payment schedules and auto-pay setup

- **Claims History:** Past claims and settlement information

- **Coverage Analysis:** Gap analysis and recommendation engine

Tax Management

- **Return Archive:** Historical tax returns with searchable data

- **Document Organization:** W-2s, 1099s, receipts, and deductions

- **Preparer Coordination:** Shared access for tax professionals

- **Deadline Tracking:** Filing dates, extension requests, payment due dates

Legal Documents

- **Estate Planning:** Wills, trusts, power of attorney documents

- **Healthcare Directives:** Medical decisions and healthcare proxies

- **Contracts:** Personal and family contracts with key terms

- **Legal Correspondence:** Attorney communications and legal notices

Business Information

- **Entity Management:** Business formation documents and agreements

- **Partnership Details:** Operating agreements and partnership terms

- **Compliance Tracking:** Annual requirements and filing deadlines

- **Business Insurance:** Commercial policies and coverage details

Contacts Directory

- **Professional Services:** Attorneys, financial advisors, insurance agents

- **Emergency Contacts:** Medical emergency and family contacts

- **Service Providers:** Home maintenance, utilities, and service contacts

- **Relationship Management:** Notes, preferred contact methods, service history

3. Advanced Search & Discovery

Cross-Category Search

- **Unified Search:** Search across all categories simultaneously

- **Smart Filters:** Filter by category, date, family member, or document type

- **Relationship Search:** Find related documents across different categories

- **Saved Searches:** Store complex searches for repeated use

Category-Specific Search

- **Financial Search:** Search by account type, institution, or amount

- **Insurance Search:** Search by policy type, coverage amount, or renewal date

- **Legal Search:** Search by document type, parties involved, or effective date

- **Contact Search:** Search by profession, location, or relationship type

4. Intelligent Reminders & Alerts

Category-Specific Alerts

- **ID Renewals:** Driver's license, passport, and other ID expiration alerts

- **Financial Deadlines:** Account reviews, investment rebalancing reminders

- **Property Maintenance:** Seasonal maintenance, warranty expiration alerts

- **Password Security:** Update reminders, security breach notifications

- **Insurance Renewals:** Policy renewals, coverage review reminders

- **Tax Deadlines:** Filing dates, quarterly payment reminders

- **Legal Actions:** Document renewals, court dates, compliance deadlines

- **Business Compliance:** Annual filings, license renewals, tax obligations

- **Contact Updates:** Annual contact verification, emergency contact reviews

Smart Alert Rules

- **Escalation Paths:** Route alerts to appropriate family members

- **Frequency Control:** Adjust reminder frequency based on importance

- **Category Priorities:** Different alert schedules for different categories

- **Professional Notifications:** Automatic alerts to relevant professionals

Technical Implementation - Complete Category Support

Google Sheets API Integration for All Categories

Category-Specific Data Structures

javascript

```javascript
// Family IDs data structure
const familyIDsSchema = {
  idType: 'string',
  idNumber: 'string',
  expirationDate: 'date',
  issuingAuthority: 'string',
  familyMember: 'string',
  renewalRequirements: 'string',
  documentLink: 'string'
};

// Finance accounts data structure
const financeSchema = {
  accountType: 'string',
  institutionName: 'string',
  accountNumber: 'string',
  routingNumber: 'string',
  currentBalance: 'number',
  interestRate: 'number',
  contactInfo: 'string',
  loginCredentials: 'string',
  documentLinks: 'array'
};

// Property assets data structure
const propertySchema = {
  propertyType: 'string',
  description: 'string',
  purchaseDate: 'date',
  purchasePrice: 'number',
  currentValue: 'number',
  location: 'string',
  insurancePolicyLinks: 'array',
  loanInformation: 'string',
  documentLinks: 'array'
};

// Passwords vault data structure
const passwordsSchema = {
  serviceName: 'string',
  username: 'string',
  encryptedPassword: 'string',
  url: 'string',
  securityQuestions: 'array',
  twoFactorSetup: 'string',
```

```javascript
  lastUpdated: 'date',
  category: 'string',
  sharedWith: 'array'
};

// Insurance policies data structure
const insuranceSchema = {
  policyType: 'string',
  insuranceCompany: 'string',
  policyNumber: 'string',
  coverageAmount: 'number',
  deductible: 'number',
  premium: 'number',
  renewalDate: 'date',
  agentContact: 'string',
  beneficiaries: 'array',
  documentLinks: 'array'
};

// Tax records data structure
const taxSchema = {
  taxYear: 'number',
  filingStatus: 'string',
  preparerInfo: 'string',
  keyDeductions: 'array',
  refundAmount: 'number',
  importantDates: 'array',
  documentLinks: 'array'
};

// Legal documents data structure
const legalSchema = {
  documentType: 'string',
  partiesInvolved: 'array',
  effectiveDate: 'date',
  expirationDate: 'date',
  attorneyInfo: 'string',
  keyTerms: 'string',
  witnessInfo: 'array',
  documentLinks: 'array'
};

// Business information data structure
const businessSchema = {
  businessName: 'string',
```

```
  businessType: 'string',
  formationDate: 'date',
  taxId: 'string',
  partnersMembers: 'array',
  registeredAgent: 'string',
  annualRequirements: 'array',
  insuranceInfo: 'string',
  documentLinks: 'array'
};

// Contacts directory data structure
const contactsSchema = {
  contactType: 'string',
  name: 'string',
  company: 'string',
  phone: 'string',
  email: 'string',
  address: 'string',
  specialization: 'string',
  relationshipToFamily: 'string',
  emergencyContact: 'boolean',
  preferredContactMethod: 'string'
};
```

Google Apps Script Functions for All Categories

Category-Specific Alert Processing

javascript

```javascript
// Process alerts for all categories
function processAllCategoryAlerts() {
  processFamilyIDAlerts();
  processFinanceAlerts();
  processPropertyAlerts();
  processPasswordAlerts();
  processInsuranceAlerts();
  processTaxAlerts();
  processLegalAlerts();
  processBusinessAlerts();
  processContactAlerts();
}

// Family IDs alert processing
function processFamilyIDAlerts() {
  const familyIDsSheet = SpreadsheetApp.getActiveSpreadsheet()
    .getSheetByName('Family_IDs');
  const today = new Date();
  const alertThreshold = new Date(today.getTime() + (90 * 24 * 60 * 60 * 1000)); // 90

  const data = familyIDsSheet.getDataRange().getValues();
  data.forEach((row, index) => {
    if (index === 0) return; // Skip header
    const expirationDate = new Date(row[2]); // Assuming expiration date is in column
    if (expirationDate <= alertThreshold && expirationDate > today) {
      sendExpirationAlert('Family ID', row[0], row[1], expirationDate, getUsersWithAcc
    }
  });
}

// Insurance renewal alert processing
function processInsuranceAlerts() {
  const insuranceSheet = SpreadsheetApp.getActiveSpreadsheet()
    .getSheetByName('Insurance_Policies');
  const today = new Date();
  const alertThreshold = new Date(today.getTime() + (30 * 24 * 60 * 60 * 1000)); // 30

  const data = insuranceSheet.getDataRange().getValues();
  data.forEach((row, index) => {
    if (index === 0) return; // Skip header
    const renewalDate = new Date(row[7]); // Assuming renewal date is in column H
    if (renewalDate <= alertThreshold && renewalDate > today) {
      sendRenewalAlert('Insurance Policy', row[0], row[2], renewalDate, getUsersWithAc
    }
  });
```

```
    }

    // Tax deadline alert processing
    function processTaxAlerts() {
      const taxSheet = SpreadsheetApp.getActiveSpreadsheet()
        .getSheetByName('Tax_Records');
      const today = new Date();
      const taxDeadline = new Date(today.getFullYear(), 3, 15); // April 15th

      if (today >= new Date(taxDeadline.getTime() - (60 * 24 * 60 * 60 * 1000))) { // 60 d
        sendTaxDeadlineAlert(taxDeadline, getUsersWithAccess('Taxes'));
      }
    }
```

Enhanced User Experience Scenarios

Scenario 1: Complete Family Setup

1. **Owner Authentication:** Primary owner signs in with Google account

2. **Category Setup:** System creates all category folders and data sheets

3. **Bulk Document Upload:** Owner uploads documents across all categories

4. **Data Extraction:** Apps Script processes documents and populates all category sheets

5. **Family Member Setup:** Each family member gets appropriate access to relevant categories

6. **Professional Access:** Temporary access granted to attorney, financial advisor, and tax preparer

Scenario 2: Annual Tax Preparation

1. **Tax Season Alert:** System alerts about upcoming tax deadline

2. **Document Gathering:** Tax preparer gains temporary access to Finance, Business, and Tax categories

3. **Collaborative Preparation:** Real-time collaboration on tax document organization

4. **Secure Sharing:** Tax preparer accesses only necessary documents through web interface

5. **Automatic Expiration:** Tax preparer access automatically revoked after filing

Scenario 3: Emergency Access

1. **Emergency Trigger:** Family member needs immediate access to critical information

2. **Emergency Override:** System provides emergency access to Contacts and Medical information

3. **Audit Trail:** All emergency access activities logged for security review

4. **Notification System:** Family owner notified of emergency access activation

5. **Temporary Elevation:** Temporary permission elevation for emergency situations

Scenario 4: Estate Planning Update

1. **Legal Document Review:** Attorney gains access to Legal and Property categories

2. **Collaborative Editing:** Real-time updates to estate planning documents

3. **Cross-Category Updates:** Changes to legal documents trigger updates in other categories

4. **Beneficiary Updates:** Insurance and financial account beneficiaries updated simultaneously

5. **Compliance Tracking:** System tracks all legal document updates and requirements

---

Success Metrics for Complete Category Implementation

Category-Specific Metrics

- **Family IDs:** 100% of family IDs digitized with expiration tracking

- **Finance:** All financial accounts documented with automated balance updates

- **Property:** Complete property inventory with insurance linkage

- **Passwords:** 100% of family passwords securely stored and regularly updated

- **Insurance:** All policies documented with automated renewal reminders

- **Taxes:** Historical tax returns accessible within 10 seconds

- **Legal:** All legal documents current with automated compliance tracking

- **Business:** Business information centralized with deadline management

- **Contacts:** Emergency contacts verified and updated annually

Cross-Category Integration Metrics

- **Related Document Linking:** 95% of documents properly linked across categories

- **Permission Accuracy:** 100% of access permissions correctly enforced across all categories

- **Search Effectiveness:** Cross-category search results returned within 3 seconds

- **Alert Reliability:** 100% of important dates and deadlines trigger appropriate alerts

- **Audit Completeness:** All user activities across all categories logged and traceable

User Experience Metrics

- **Category Navigation:** Users can access any category within 2 clicks

- **Information Retrieval:** 90% of information requests fulfilled without opening documents

- **Mobile Accessibility:** All categories fully functional on mobile devices

- **Collaboration Efficiency:** Real-time updates visible across all categories within 5 seconds

- **Professional Integration:** External professionals can access relevant categories within 1 minute of invitation

---

This comprehensive update ensures that GoVAULT supports all the specified categories with complete data structures, user experience design, and technical implementation details. The system now provides a robust foundation for managing every aspect of family information across all critical categories.