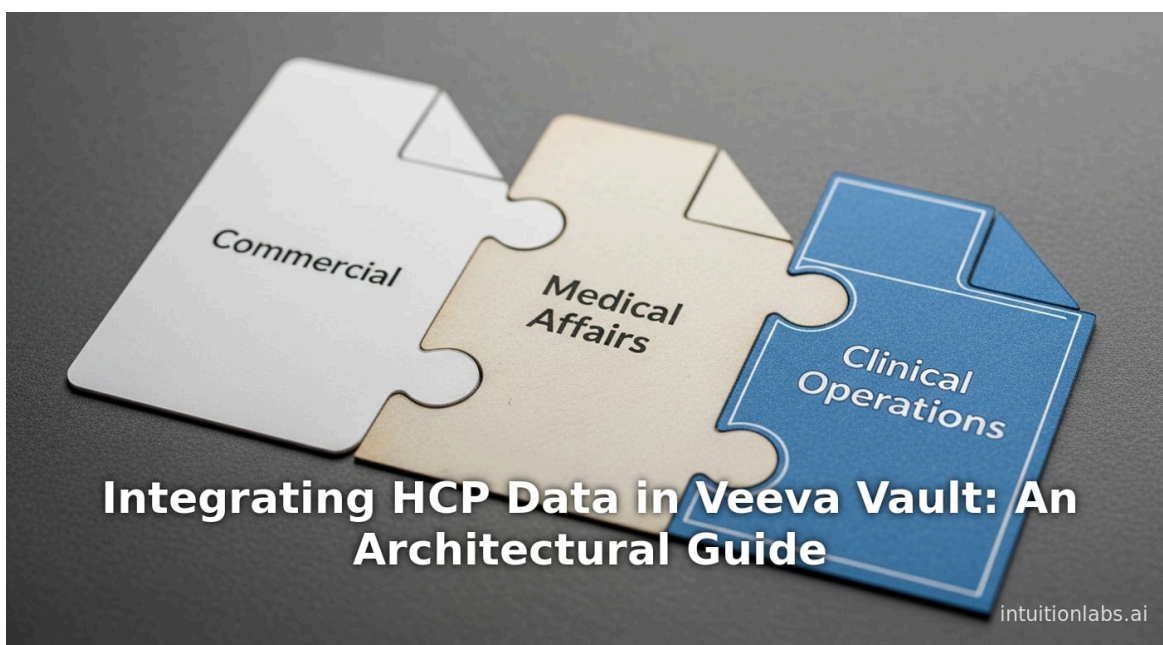


Integrating HCP Data in Veeva Vault: An Architectural Guide

By Adrien Laurent, CEO at IntuitionLabs • 12/18/2025 • 45 min read

[veeva vault](#)[unified hcp view](#)[master data management](#)[data integration](#)[veeva crm](#)[data architecture](#)[hcp 360](#)[life sciences data](#)

Executive Summary

The life sciences industry increasingly demands a **unified view of healthcare professionals (HCPs)** across commercial, medical, and clinical domains. Historically, each function – sales/marketing (commercial CRM), medical affairs (inquiries, publications), and **clinical operations (trial investigators and sites)** – has managed HCP data in separate systems or “silos”. This fragmentation hampers strategic insights, compliance, and engagement. A “Unified HCP View” architecture aims to **integrate these data streams into a single platform (Veeva Vault)** so that every department sees a complete, up-to-date HCP profile. Such integration supports more effective targeting, a 360° customer view, and regulatory transparency (^[1] www.veeva.com) (^[2] www.veeva.com).

This report examines the rationale, design, and implementation of a Unified HCP View within Veeva Vault. We begin with the **business and regulatory drivers** (e.g. compliance reporting, omnichannel engagement, Master Data Management (MDM) needs) and the historical context of HCP data (reference sources, CRM evolution) (^[3] www.pharmaceuticalcommerce.com) (^[1] www.veeva.com). Then we describe the relevant **Veeva Vault platform components and integration technologies**: Vault CRM (sales/marketing), Vault Medical (medical information and MI case management), **Vault Clinical (CTMS/EDC)**, Veeva Network/OpenData (master HCP reference data), and the underlying Common Data Architecture (CDA) (^[4] docs-vdm.veevanetwork.com) (^[5] www.veeva.com). For each domain (commercial, medical, clinical), we detail which data is generated and how it can be synced. For example, a “*Medical–CRM Connection*” exchange between Vault CRM and Vault Medical automatically syncs medical inquiry cases and responses (platform.veevavault.help) (platform.veevavault.help); a “*Clinical Operations–Medical CRM Connection*” can push trial activity and site information into the CRM so medical affairs sees investigator engagement history (^[6] crmhelp.veeva.com) (^[7] crmhelp.veeva.com).

We develop an **architectural blueprint** that layers integration methods (Vault-to-Vault connections via Java SDK, standard APIs including the new **Direct Data API**, productized connectors, and MDM services like Network/OpenData) to achieve end-to-end HCP data flow. Tables summarize key data domains, Vault products, and integration links. Multiple **case examples** illustrate usage: Biogen’s goal of a “golden record” HCP in all systems (^[2] www.veeva.com), Idorsia’s use of Veeva Network for multidomain master data (^[8] www.veeva.com), and global roll-outs by Bayer and Boehringer Ingelheim of Vault CRM and OpenData (^[9] www.veeva.com) (^[10] www.veeva.com). We also present quantifiable metrics: for instance, Veeva OpenData now covers 12+ million HCP/HCO records globally with >99% of data change requests resolved within 3 days (^[10] www.veeva.com), highlighting the scale and freshness of unified data.

The design addresses technical challenges (unique IDs, matching logic, data freshness, master data standards) and organizational factors (governance and trust). It also considers **compliance requirements** (e.g. Sunshine Act reporting, data privacy), noting that a single HCP master enables consistent attribution of payments or interactions. Finally, we discuss implications and future directions: a unified HCP foundation enables advanced analytics (AI-driven segmentation, “HCP 360” strategies (^[1] www.veeva.com) (^[11] www.veeva.com)), better regulatory transparency, and evolving capabilities (e.g. Veeva’s agentic AI in Vault and the Direct Data API for large datasets (^[12] www.veeva.com)). In conclusion, achieving a Unified HCP View in Veeva Vault can break down silos and unlock deeper insights – but requires an integrated architecture built on robust data standards, connectivity, and governance.

Introduction and Background

Effective pharmaceutical and biotech commercialization depends on **knowing the customer** – in this case, healthcare professionals (HCPs) and organizations (HCOs) – across all touchpoints. Traditionally, sales forces,

medical affairs, and clinical trial teams operated independently, each maintaining separate records of the same physicians. This redundancy and fragmentation lead to data inconsistencies and blind spots. For example, sales CRM systems hold prescribing doctors and account plans, medical information systems hold inquiry logs and case responses, and clinical trial systems hold investigator and site lists – often with different formats or out-of-date addresses. The result is an incomplete or inaccurate *customer profile* in any given system.

Life sciences companies have long recognized this challenge. As one Veeva architect notes, companies must establish a data “backbone” early to view customers “across departments” ([1] www.veeva.com). Without it, teams waste time on data fixes and surface important gaps only reactively. Regulatory pressures have amplified this need: the U.S. Sunshine Act (2013) required precise matching of physicians to payments, putting “a heavy compliance dimension on the MDM process” ([3] www.pharmaceuticalcommerce.com). Similarly, EU safety and transparency mandates demand that any financial transfers to HCPs be reconciled against authoritative master data. In short, a **master data management (MDM)** approach is now critical: by centralizing HCP information, organizations can use that “360-degree view” to streamline marketing, maximize CRM adoption, track payments, and harness analytics ([13] www.veeva.com) ([3] www.pharmaceuticalcommerce.com).

Veeva Systems has built its enterprise cloud platform around solving exactly this problem for life sciences. Its **Vault Platform** is a validated, industry-specific content and data management cloud ([14] www.veeva.com). Vault supports 50+ applications for R&D and commercial functions, all on one secure, high-performance system ([15] www.veeva.com). Crucially for HCP data, Veeva provides a universal Common Data Architecture (CDA) standard for HCP reference data ([4] docs-vdm.veevanetwork.com), and a reference data service (OpenData/Network) that compiles global HCP/HCO data. This means Vault applications and CRM solutions can all share the same HCP schema and even the same record IDs. With this foundation, Veeva’s vision – as highlighted by customer testimonials – is an end-to-end platform where manufacturing, quality, clinical, and commercial functions “speak the same data language” and “break down silos” ([16] www.veeva.com) ([4] docs-vdm.veevanetwork.com).

In practical terms, Veeva Vault’s **CRM suite** is explicitly designed to unify sales, marketing, and medical teams on a single platform ([17] www.veeva.com) ([18] www.veeva.com). For example, the new Vault CRM Suite “connects sales, marketing, and medical teams on a single platform with a unified customer database” ([17] www.veeva.com). Real-world customers are deploying this: Bristol-Myers Squibb, for instance, chose Vault CRM to gain that unified customer view ([17] www.veeva.com). Likewise, Veeva’s MDM consulting points out that by capturing new data feeds (e.g. medical claims, external KOL sources) onto the same X/Y platform, companies can create “influence maps” and unified account plans ([1] www.veeva.com). In sum, there is a clear **data-driven imperative**: a true Unified HCP View requires integrating disparate data flows with a robust reference backbone. This report lays out the architectural blueprint for doing so in Veeva Vault.

Data Domains: Commercial, Medical, and Clinical HCP Data

Achieving a unified HCP profile means first understanding **what data exists in each domain** and how it needs to flow into a central view. We categorize the data sources as (1) *commercial*, (2) *medical*, and (3) *clinical*. Each has its own types of records, but all revolve around the HCP/HCO entity. Below is an overview (see Table 1):

Data Domain	Veeva Products	Key Data & Entities	Integration Examples/Methods
Commercial	Vault CRM (Sales/Marketing), Veeva Network/OpenData	HCP/HCO profiles (names, addresses, specialties, license IDs); sales activities (calls, samples, email	- OpenData/Network provides standardized HCP/HCO reference data for 110+ countries ([9] www.veeva.com). Data can be provisioned via Vault CRM integration or APIs ([5] www.veeva.com). \n- APIs (REST/OData, Direct Data API)

Data Domain	Veeva Products	Key Data & Entities	Integration Examples/Methods
		interactions, CLM content usage); obligations (KPI, territory allocations); <i>customer</i> segmentation fields.	allow bulk export of CRM tables (accounts, call logs, events) from Vault to external BI. Vault CRM has "Connected" readiness and pre-built connectors for CRM data ([18] www.veeva.com) ([5] www.veeva.com). \n- Productized Vault Connections: e.g. the PromoMats-CRM or Service Center connections sync content/event plans with CRM accounts. \n- Commercial analytics: aggregated metrics (e.g. Veeva HCP Access uses Vault CRM activity to compute quarterly HCP reach metrics ([11] www.veeva.com)).
Medical	Vault Medical (MedInquiry, Medical CRM), Veeva KB	Medical inquiries and case records (topic, channel, response documents); Medical Science Liaison (MSL) activities; regulatory "label" or "shelf-talkers" approvals; <i>HCP persona</i> (KOL, speaker status).	- Vault Medical-CRM Connection: transfers inquiries from Vault CRM to MedInquiry and cases/updates back to CRM (platform.veevavault.help). For example, an inquiry created by a sales rep in CRM becomes a Case in MedInquiry, and the closed case status updates the original CRM inquiry (platform.veevavault.help) (platform.veevavault.help). \n- HCP Linking: MedInquiry uses HCP identifiers from CRM (Veeva ID or external IDs) to match or create Case Contact records (platform.veevavault.help) (platform.veevavault.help). \n- Content Authorization: Medical communications (approved emails, reprints) are managed in Vault and shared via connections to CRM so sales uses only compliance-checked materials. \n- Case Data in CRM: Vault Medical can push case notes and links back into CRM, so field reps see the full history of medical interactions for an HCP (part of the "complete HCP picture").
Clinical	Vault Clinical (CTMS, EDC), Vault Submissions	Clinical trial data involving HCPs: Investigator and site lists (with contact HCPs), clinical study details (phase, indication), monitoring log of HCP-site visits, patient enrollment (linked to site HCP).	- Clinical Operations-Medical CRM Connection: Vault Clinical can publish Trial Activity records as CRM calls. Vault Clinical activities become "Call" records in Medical CRM, tagged with study and site info ([7] crmhelp.veeva.com). Conversely, Medical CRM calls (e.g. an MSL call on a KOL) can become activities in Vault Clinical. \n- Site & Investigator Info: Clinical trial site addresses and PI names can be sent to CRM so medical and marketing teams know which HCPs are also involved in trials ([7] crmhelp.veeva.com). \n- Regulatory Reporting: Combining trial-investigator lists with CRM can help coordinate clinical outreach or compliance. \n- Vault EDC (Electronic Data Capture): While patient-level data is sensitive, HCP roles in monitoring/patient safety can feed into safety/medical analytics (often via Vault Safety).

Table 1. Data domains, Veeva products, and integration flows relevant to a unified HCP view.

From the table and descriptions, several points emerge:

- **Common Master Data:** All domains share the core HCP/HCO record. Veeva Network and OpenData provide a **common, global master for HCP profiles** (names, education, specialties, affiliations) ([9] www.veeva.com) ([5] www.veeva.com). For example, Vault's Accounts object includes a unique global ID and standard fields, so that "the official name of the account" and key identifiers are consistently stored ([19] cdn.cdadata.com). Using Network/OpenData means any Vault (CRM, QA, Clinical) can reference the same canonical HCP record.



- **Integration Patterns:** Veeva offers *productized vault-to-vault connections* for many purposes. The Medical-CRM Connection (Vault-to-Vault link) automatically synchronizes medical inquiry (case) data between sales and medical systems (platform.veevavault.help). Similarly, the Clinical Ops–Medical CRM Connection syncs clinical call/activity data into the CRM despite being in a separate Vault (^[6] crmhelp.veeva.com). Beyond vault-to-vault, broad integration channels include REST APIs, Vault’s Java SDK (for custom vault-to-vault code) (platform.veevavault.help), file-based loads (data import/export), and the new Direct Data API for analytics (^[12] www.veeva.com). These multiple approaches ensure that *every piece of HCP-related data* can be shared.
- **Data Consistency:** To unify, identities must match. Vault employs a “Global ID” for each HCP account (^[19] cdn.cdata.com). When connecting records (e.g. matches from CRM to MedInquiry), Vault looks at this ID (or an External ID from CRM) or falls back to name matching (platform.veevavault.help). Organizations must define unique IDs (e.g. NPI numbers, license IDs) so that sync operations update the same record instead of creating duplicates. In case of conflicts, rules (often embedded in the vault connection) determine whether to update an existing HCP or create a new one (platform.veevavault.help).
- **Process Automation:** Integrations not only copy raw data but also trigger business processes. For example, once a MedInquiry case is complete, Vault can automatically notify the rep in CRM or update a field (enable “closed” status), preventing further changes (platform.veevavault.help) (platform.veevavault.help). Similarly, finalized clinical data (e.g. site closure or patient enrollment milestone) can drive medical follow-up tasks in CRM. These automated flows reduce manual work and enforce consistent data handoffs.
- **Analytics and AI:** With unified data in place, companies can apply analytics. Veeva’s HCP Access product illustrates this: it aggregates cross-industry CRM usage to benchmark HCP reach (calls, emails) in “bricks” of comparable physicians (^[11] www.veeva.com). Underlying this is the assumption that all field activity goes through Vault CRM, simplifying aggregation. Going forward, Veeva’s agentic AI capabilities (e.g. pre-call planning agents) will rely on having a complete HCP dataset to suggest actions. Indeed, Veeva touts its Direct Data API reaching “100 times faster” than legacy APIs, enabling large-scale analytics and even GenAI use-cases on HCP engagement data (^[12] www.veeva.com).

In summary, the technical foundation for a Unified HCP View in Veeva involves (a) shared HCP master records (CDA/Network), (b) modular vault connections (Med-CRM, Clinical-CRM, etc.), and © open APIs for any additional data sources. The next sections delve into these components in detail and translate them into an architectural blueprint.

Veeva Vault Platform and Common Data Architecture

Veeva Vault is an **enterprise cloud platform** specifically built for life sciences entities. It brings together data, content, and even AI agents under one validated environment (^[20] www.veeva.com). Key points about the Vault platform relevant to integration include:

- **Unified Platform:** Multiple applications (Quality, Clinical, Regulatory, CRM, etc.) run on the same underlying Vault architecture (^[20] www.veeva.com). This intrinsically simplifies cross-domain integration: all Vaults share the same core technology, security framework, and can utilize the same APIs (^[18] www.veeva.com). For example, a QA Vault and a CRM Vault use the same Vault framework, so a Vault-to-Vault connection (via the SDK) can drive workflows across them (platform.veevavault.help).
- **Integration-Ready Architecture:** Veeva emphasizes connectivity. As the official platform page states, Vault is “Connected” – you can integrate with other systems using extensive REST APIs, Java SDK, and productized connectors (^[18] www.veeva.com). There is also a **Direct Data API** designed for analytic use cases, described as fetching data “100 times faster” than traditional APIs (^[12] www.veeva.com). This is crucial when consolidating large volumes of HCP-related data (calls, cases, trial records) for reporting or AI. Vault also supports traditional integration styles: **Outbound Event Listeners**, **Inbound Batch Loads**, **Platform Events**, and more. All of these enable data movement in or out of Vault.



- Built-in Master Data Model:** A cornerstone is the **Common Data Architecture (CDA)** for life sciences (^[4] docs-vdm.veevanetwork.com). CDA defines standardized entities (HCP, HCO, product, disease, etc.) and fields for any life science system. It is an open industry standard. Veeva has adopted the CDA HCP Kernel, meaning Vault CRM, Veeva Network, and OpenData all use the same HCP object schema (^[21] docs-vdm.veevanetwork.com) (^[22] docs-vdm.veevanetwork.com). This offers a universal vocabulary and ensures that, for example, a “primary specialty” field or “prescriber (CDA)” means the same thing in CRM data and in OpenData. By embracing CDA, Vault systems can communicate HCP data seamlessly. For instance, in 2024 Veeva updated Vault CRM and Network simultaneously to support CDA fields (e.g. `first_name_cda_v`, `status_cda_v`) so that these enhanced fields can flow between applications (^[22] docs-vdm.veevanetwork.com) (^[21] docs-vdm.veevanetwork.com).
- Extensible Data Model:** Although CDA provides a standard backbone, Vault’s object framework is also highly configurable. Companies can create custom objects/fields to capture additional HCP attributes or relationships unique to their business. The Salesforce-style layout and formula fields in Vault make it flexible. For example, one could add a field for “Pharma Consent Given” to the HCP object, then use Vault connections to roll up that consent across CRM and medical systems.
- Global Unique Identifiers:** Importantly, Vault assigns **Global IDs** to records (^[19] cdn.cdadata.com). Each HCP (account record) has a Vault ID and a Global ID. The Global ID ensures uniqueness across environments and supports integrations. In the CData documentation for Vault, the **Global ID** is described as a “globally unique identifier automatically assigned by the system to ensure cross-environment uniqueness” (^[19] cdn.cdadata.com). This means that across sandbox and production, or between Vault CRM and Vault Medical Vaults, the same HCP can be referenced by this stable UID. Integration logic often uses the Global ID (or a known external ID) to match records. For example, the Medical-CRM connection will use the CRM Org and HCP ID (which map to Global ID) to decide whether to update an existing Case Contact or create one (platform.veevavault.help).
- Auditability and Compliance:** All integrated data in Vault benefits from enterprise-grade compliance controls. Vault natively provides audit trails, data validation, and role-based access, which is critical for sensitive HCP data. When HCP records come from multiple sources, Vault’s security model ensures that only authorized users (e.g. after consent) can see or modify those records. In practice, this means that as commercial, medical, and clinical teams contribute to an HCP record, Veeva Vault’s atomic security and lifecycle rules will enforce who can update or view the data (^[23] www.veeva.com). This built-in compliance layer helps satisfy requirements like GDPR or marketing code-of-conduct policies around data usage.

Taken together, the Vault Platform serves as the **single location for the integrated data ecosystem**.

Commercial CRM data, Medical Inquiry cases, and Clinical trial information can all reside (or at least be visible) in Vault, eliminating the need for an external middleware to consolidate them. The rest of this report will detail how each data domain is architected within Vault and how it ties back to this platform architecture.

Integrating Commercial HCP Data

Commercial data in life sciences typically means *sales and marketing activities and customer master data*. In Vault, the primary locus of this data is the **Vault CRM Suite**, which replaced or supplements older on-prem CRM systems. Vault CRM handles the full campaign cycle: account planning, call reporting, closed-loop marketing (CLM) compliance, territory planning, and sampling. It is in Vault CRM and Veeva Network/OpenData that the canonical HCP (Account) records live for sales and marketing.

Veeva Network / OpenData as Master Reference

At the heart of the integrated view is **Veeva Network** (cloud MDM) and **OpenData** (reference data service) which together provide the *master HCP/HCO database*. Network is an MDM hub where “all life sciences organizations can use CDA to communicate... using universal data components” (^[4] docs-vdm.veevanetwork.com). OpenData is Veeva’s commercial offering of global HCP/HCO reference data: as of 2025 it covers 12+ million HCP/HCO records worldwide (^[10] www.veeva.com). OpenData includes not just names and addresses, but specialties, licenses, and affiliations (e.g. which hospital an HCP is associated with) (^[9] www.veeva.com). The data model follows CDA standards and is updated continuously – 99% of change requests

(DCRs) are resolved within 3 days (^[10] www.veeva.com). A business can subscribe to OpenData and instantly overlay its CRM with high-quality reference data. (^[5] www.veeva.com).

How is OpenData consumed? It can be **provisioned into Vault CRM and Network** in multiple ways: built-in Vault connectors (productized Vault CRM integration), by a direct API, by file load, or via Network's own interface (^[5] www.veeva.com). This means that every Vault CRM Account record can be seeded or synchronized with OpenData identifiers. Veeva specifically notes that Network's global data model (CDA-based) "simplif [ies] software and data integrations" (^[5] www.veeva.com). In effect, OpenData provides the "golden" values for core fields – for example, the official HCP name, specialty lists, and license numbers – so commercial, medical, and clinical data can all align on the same values. By late 2016, Veeva was already covering major markets globally and touted how easily a CRM customer can incorporate the reference data (^[24] www.pharmaceuticalcommerce.com). This ensures that downstream analytics or AI (even when pulling from multiple Vault apps) starts with clean master data.

Vault Objects and Fields for HCPs

Within Vault CRM, HCPs and HCOs are represented as *Account* records (and sometimes as *Contact* for certain relationship roles). Each record has key fields like Name, Type (HCP/HCO), Account Number, address, etc. The CData documentation for the Vault API shows examples of these fields: every Account has an ID and a Global ID, plus fields for addresses, phone numbers, etc (^[19] cdn.cdadata.com). Besides basic attributes, Vault CRM often uses picklists for segmentation (e.g. *Account Class*, *Specialty*, *Therapy Area*). All these fields are extensible – and are aligned with CDA when possible (for example, CDA fields like *spec_1_cda__v* for primary specialty).

Importantly, Vault CRM has the full history of **engagement activities**. Every sales rep's Call in the field, every hosted Event and attendee list, every email sent through the platform, is captured in Vault. CLM (Closed Loop Marketing) usage is tracked (when a rep shows disease models on an iPad, those *CLM Calls* are stored). All of these data points link back to the HCP Account. When unified, this means one can query, for example, "how many calls did Dr. Smith receive last year and on which products?" immediately across all Vault CRM data. (It also enables HCP Access metrics: Veeva's HCP Access product literally aggregates call and email counts per HCP using these logs (^[11] www.veeva.com).)

Integrating Commercial Data into the Unified View

Because Veeva's vision is one platform, the Vault CRM data is already "inside" Vault. However, companies often have existing CRM histories or external systems feeding CRM. Common needs for the unified view include:

- **CRM History Migration:** If an organization moves from another CRM, the old HCP/customer master and call history must be loaded into Vault. This is done via file import or API. Veeva advises rigorous data cleansing and matching to existing OpenData/Vault records to prevent duplication.
- **ERP/Commercial System Sync:** Sometimes, ERP product or sales data (e.g. prescription volumes by HCP) needs to be joined to CRM. This typically happens via ETL into Data Warehouse rather than real-time connection; the unified HCP profile in Vault may be enriched by referencing an external analytics layer. Vault's Direct Data API can feed large sets (like prescription claims counts) into a data lake for analysis alongside Vault CRM data.
- **External Platforms:** Marketing automation (Marketo, Eloqua) or customer support platforms may have contact data. Vault CRM supports bi-directional integrations with such tools (via APIs). Any updates (new KOL registration, for instance) can flow into Vault to keep the HCP master complete.
- **Data Quality Management:** An ongoing integration challenge is handling updates. Veeva provides a *Data Change Request* (DCR) process: customers can submit updates to OpenData which then flow back to all Vaults. Thus, if a rep finds Dr. Lee moved offices, that change can propagate globally within days (^[10] www.veeva.com).

www.veeva.com). The unified view architecture must include governance; typically, a small team (often aided by Veeva's own data stewards (^[25] www.pharmaceuticalcommerce.com)) oversees merging and resolving conflicts.

These practices ensure that by the time other domains connect, the commercial HCP data is as clean and complete as possible. Reputable companies now treat the HCP master as a strategic asset (^[2] www.veeva.com). For example, Biogen's data executive spoke about using a neutral master (Veeva) to resolve conflicts and maintain a "single source of truth" (^[2] www.veeva.com). The effort is justified by the payoff: with a unified account data, sales teams spend far more time on strategy than on fixing records (^[1] www.veeva.com) (^[13] www.veeva.com).

Integrating Medical HCP Data

The **medical domain** covers all healthcare-focused activities outside pure sales: medical information (inquiries/knowledge base), Medical Science Liaison (MSL) engagements, medical advisory boards, and published research/media outreach. Like commercial, medical interactions involve HCPs (e.g. a request from Dr. Kim about off-label use). Key data points include inquiry cases, medical responses, speaker/PI status, KOL flags, and field MSL call reports.

Vault supports medical affairs through products like **MedInquiry (Vault Medical)** and **Service Center**. Historically, medical info might live on separate helpdesk platforms; Vault allows these to be integrated. Importantly, because HCPs often contact either sales or medical, integrating these views is crucial. The *Medical-CRM Vault Connection* is a built-in tool precisely for this purpose (platform.veevavault.help): it keeps the medical and commercial systems in sync on cases. In practice: when a field rep creates an *Medical Inquiry* record in Vault CRM (because an HCP asked a clinical question), Vault passes that to Vault Medical to become a Case. Once the medical agent resolves the case in MedInquiry, Vault writes the outcome (status, notes, links to written response) back into the original CRM inquiry (platform.veevavault.help) (platform.veevavault.help). Thus the rep can see the end-to-end thread.

Behind the scenes, **HCP identity** is matched: the Medical-CRM connection looks at the Vault CRM Account ID and matches (or creates) a *Case Contact* record in Vault Medical (platform.veevavault.help). If an HCP with that CRM Org/ID already exists in MedInquiry, it updates it; if not, it creates a new case contact. This logic uses the Global ID or an External ID. In effect, it ensures that "Dr. Rivera (as known in CRM) is the same Dr. Rivera in MedInquiry." If there is ambiguity (same name but different IDs), it may create a new record to avoid overwriting incorrect data (platform.veevavault.help). Over time, as more inquiries are exchanged, the system builds out each HCP's record with medical attributes (for example, marking "off-label interest" or KOL status based on aggregated case topics).

The **Medical Vault** also holds its own content: approved letter templates, response libraries, adverse event trackers, etc. Some of these (especially anything time-sensitive or regulatory-related) may need to be visible to commercial teams. Vault connections (Vault-to-Vault) can push relevant content. For example, a link to an MI response document generated in Vault Medical can be automatically posted to the corresponding case in CRM. Content permissions (Managed Authorizations) ensure only compliant materials are shared.

Another integration point is **field medical activities**: MSLs often use CRM to log their non-sales calls with KOLs. In a unified architecture, these MSL calls should also show up on the HCP timeline alongside sales calls. In Vault CRM, MSL interactions are just another "Call" object. They often tag them as type="Medical Call". These calls may capture updates on investigator interest, study recruitment status, etc., which is useful to sync back to clinical. The integration architecture must ensure that medical calls roll up to the account the same as sales calls. (In Vault, all field calls link to an Account record; by using the same HCP master, the context is unified.)



The outcome of integrating medical data is that **bi-directional visibility** is achieved. Sales and marketing see when an HCP engaged medical (ensuring they do not replicate inquiries or violate approved information), and medical affairs sees sales activity (so MSLs know what reps are promising or discussing with a doctor). In short, a single HCP record reflects all touchpoints. Customers have noted this synergy: having one platform with shared team data breaks down internal walls. As one example, an executive from a medical team remarked that unifying with a neutral third party (Veeva's platform) resolved conflicts and let everyone trust the data ^[2] (www.veeva.com).

Integrating Clinical HCP Data

The **clinical domain** mainly refers to the conduct of clinical trials and research, but it involves many of the same HCPs – particularly investigator-physicians and research-site contacts. Vault provides **Clinical Operations Suite** (e.g. CTMS) and **eClinical** (EDC) applications to manage trials. To the commercial or medical teams, relevant data from this domain includes *which HCPs are involved in trials, what their roles are, and what activity is happening on-study*. Integrating this gives a full picture: for instance, a rep calling on an oncologist who is also a Phase III trial PI for a new cancer drug.

Veeva includes a standardized integration for this: the *Clinical Operations – Medical CRM Connection*. With this, **Vault CTMS and Vault CRM share data so that medical teams can see clinical activity**. Concretely, certain clinical records are pushed into Medical CRM as "Calls" or "activities". For example, any clinical monitoring visit or study update for Dr. Lee's site can appear as an entry in CRM for that HCP ^[6] (crmhelp.veeva.com). Vault documentation explains that *Vault Clinical activities* (for example, a CRA's logged work) are "pushed into Medical CRM as Call records", and vice versa ^[7] (crmhelp.veeva.com). Importantly, the CRM calls carry clinical study context: they include study and site fields, and CRM admins can configure tabs to show *Clinical Studies* and *Clinical Sites* on the HCP account ^[7] (crmhelp.veeva.com).

Example (from Veeva Docs): Dr. Johnson ("Account: KOL in Oncology") is used by both an MSL (field) and a CRA (clinical). When the CRA logs a monitoring visit for Dr. Johnson in Vault Clinical, that appears as a call on Dr. Johnson's CRM profile. Thus before the MSL visits him next, she can "view details of the Call records for Dr. Johnson's account in CRM to ensure she is up to date with everything logged this far, including activities, study, and site information" ^[26] (crmhelp.veeva.com). Conversely, if the MSL had logged an educational call with Dr. Johnson in CRM, Vault Clinical extracts that into its own activity log, ensuring the clinical team is aware of the medical interactions.

This kind of integration **rotates the lens**: clinical data (studies and sites) becomes visible to marketing and medical affairs, and corporate insights teams can correlate trial progress with market engagement. For instance, combining CTMS data on patient enrollment with CRM prescribing data can highlight early signals of commercial potential or identify training needs for investigators.

Vault's Clinical-CRM Connector requires connecting the respective Vaults and mapping the objects (studies -> accounts, sites -> account addresses, etc.). It also supports multiple CRM targets (one Vault CTMS can push to several CRM instances) ^[7] (crmhelp.veeva.com). Note: HIPAA compliance and patient privacy are considerations – typically, only high-level site/investigator info (not patient data) is shared. The integration focuses on *HCP-level* entities (investigators as "Accounts") and their involvement in protocols.

In many organizations, trials and marketing live in separate silos. A Unified HCP View bridges that gap: MSLs can know if their KOL is also a Principle Investigator in a trial, and clinical teams know if a target patient has received preliminary marketing info. It also simplifies regulatory compliance: clinical trial payments or investigator kickbacks can be matched to the same HCP master used for marketing payments, ensuring a single audit trail.

Architectural Blueprint for Data Integration

Having surveyed the data sources, we now outline the **architecture layers and components** needed for a unified HCP view in Vault. Figure 1 (conceptual) and Tables 1–2 illustrate the blueprint. Key layers include:

- 1. Identity & Master Data Layer:** This backbone uses Veeva Network/OpenData and Vault's CDA-based schema as the *global reference*. All HCPs are given canonical IDs and standardized attributes here (^[4] docs-vdm.veevanetwork.com) (^[5] www.veeva.com). This layer resolves duplicates and maintains policies (e.g. each HCP has one master record). In practice, Network is the truth, and Vault instances (CRM, Medical, Clinical) “mesh” their local HCP records to it through Vault integrations.
- 2. Vault-to-Vault Connections:** For many business processes, the blueprint leverages Veeva's built-in vault connectors (using the SDK). As detailed above, the **Medical-CRM Vault Connection** and **Clinical-CRM Connection** are essential pipelines. There are also other Vault connection examples (Quality-Medical, PromoMats-CRM, etc. listed in the Vault help docs) for completeness. These are configured with Integration and Integration Point objects, which define the rules of data flow (platform.veevavault.help). (Setting up these requires collaboration of administrators on both vaults and possibly Veeva support for initial configuration.)
- 3. API / Data Integration Layer:** Every Vault (CRM, Medical, Clinical) exposes a REST API and supports bulk data exchange. The blueprint calls for using:
 - **Direct Data API** for large-scale analytics queries. For example, an external analytics platform or data lake can use the Direct Data API to pull nightly extracts of HCP engagement data, which it then merges into an enterprise data warehouse.
 - **REST CRUD API** for real-time or near-real-time transactions if needed (e.g. a call to Vault CRM to update a field when an external survey comes back from a physician).
 - **File-Based Loads** for initial migrations or periodic batch updates. For instance, a weekly ETL job might load new lab affiliations from a third-party into Vault via CSV through the Aspera high-speed import facility. All these methods are stabilized by Vault's robust API controls and referential integrity. Table 2 below summarizes primary integration mechanisms with examples.
- 4. Business Logic / Middleware:** Beyond raw data pipes, some “glue” logic sits in middleware or the Vault connections themselves. For example, mapping different salutation conventions (Dr. vs DR vs DR.) might be handled by a small matching service. Or a decision rule (“Mark every cardiologist HCP above age 18 as ‘cardio-target’”) is implemented via Vault formula fields or via an orchestration script using the Vault SDK and Apex. Veeva often advises embedding logic in Vault business rules or connectors so that system admins (patient safety or marketing teams) can manage them visually.
- 5. User Interface & Reporting:** Finally, the unified data must be accessible to end users. This means:
 - **Unified Account Pages:** Vault CRM and Medical CRM pages display all related info (calls, cases, study affiliations) in a single view. For example, Vault CRM can include panel widgets that show “Clinical Studies” or “Medical Cases” on an HCP's profile (^[7] crmhelp.veeva.com). Custom reports and dashboards (using Vault Reporting or BI tools speaking to the Direct Data API) pull from integrated data.
 - **Sections and Tabs:** The platform's flexible UI allows creating tabs like “Address”, “Affiliations”, or “Consent”. Through configuration, an organization can ensure fields from all domains appear in the right context (e.g. show “Investigated Indication” from CTMS on the HCP profile so marketing knows them).
 - **Notifications:** The system can generate alerts if an HCP's data changes. For example, if a medical inquiry is submitted on a high-visitation HCP (one often called on), an automatic email or task can notify their territory manager. This relies on integrated data triggers.

Table 2: Integration Mechanisms and Use Cases (simplified view).

Integration Method	Description / Examples	When To Use	Notes
<i>Vault-to-Vault (SDK)</i>	Java SDK integrations, Vault Connections (e.g. Medical-CRM, Clinical-CRM) (platform.veevavault.help) (^[7] crmhelp.veeva.com).	Complex business processes, record synchronization between Vaults (e.g. automatically creating a case in MedInquiry).	Managed within Vault UI (Connections, Integration Points). Veeva Services often involved.
<i>Products' Pre-built APIs</i>	Vault REST API, GraphQL (for all objects); Direct Data API for bulk; OData streams.	Point-to-point data exchange for custom apps, data lakes, external analytics.	Straightforward for simple CRUD. Secure with Vault Tokens. Direct Data API for large volumes (^[12] www.veeva.com).
<i>Vault MDM (Network)</i>	Veeva Network (MDM) – stays synced with Vault CRM via Network-Vault bridge (^[22] docs-vdm.veevanetwork.com).	Centralizing and governing HCP/HCO records and deduplication; feeding updates to CRM.	Maintains master “golden record”; resolves DCRs, updates Vault via integration.
<i>Batch File Loads</i>	Periodic import/export of data files (CSV via Aspera, ETL).	Bulk data migration or periodic sync from legacy or partner systems.	Useful when real-time not needed. Must handle incremental changes.
<i>External Systems</i>	Partner APIs (e.g. content providers), marketing tools, or data lakes ingested via API or file.	Integrating external marketing lists, claims data, etc. into Vault.	Requires mapping external IDs to Vault IDs. Data privacy impact must be considered.

This multi-layered approach ensures **no data left behind**. Whether data originates in Vault or outside, it can be linked. Organizations may also consider a central data reservoir (e.g. an enterprise data warehouse) that pulls everything together for analytics, but in the Vault paradigm the *single source of truth* remains in the Vaults themselves.

Two special considerations in the architecture are **privacy/regulatory compliance** and **governance**. All integrated HCP data must respect consent and local data privacy laws. Vault’s security model and field-level controls are extended across integrations (for example, Vault-to-Vault sync skips fields the receiving system is not permitted to see). Governance processes – such as who can approve a merge of two duplicate HCP records – must be clearly defined and supported by audit logs. Veeva’s blogs emphasize that as CDAs and cloud adoption grow, “data governance and data quality... coalesce into a complete Master Data Management solution” (^[27] www.pharmaceuticalcommerce.com). Good governance amplifies the value of integration: one pharma MDM expert asserted that successes depend equally on process and people as on technology (^[28] www.pharmaceuticalcommerce.com).

Case Studies and Examples

Several life sciences companies illustrate the tangible benefits of a unified HCP approach:

- Idorsia Pharmaceuticals (Multidomain MDM):** Idorsia built a “Multidomain HCP master” in Veeva Network (^[8] www.veeva.com). Beyond sales accounts, they included external employees, brand portal users, and other data. The result: “teams can access master data easily...for internal applications” (^[8] www.veeva.com). In practical terms, Idorsia’s global functions now pull the same HCP data from Vault Network, ensuring that sales and regulatory use identical lists. This drastically cut down duplicate maintenance across systems (Idorsia reports simplifying their data management by eliminating separate silos).
- Biogen (Reference Data Strategy):** Biogen embarked on treating “customer reference data as a strategic asset” (^[29] www.veeva.com). Their strategy was to achieve a “golden record” for HCPs so the organization “has the best and most accurate information at their fingertips and in every system they use” (^[2] www.veeva.com). To this end, they turned to Veeva OpenData/Network as an impartial source. As a Biogen executive noted, Veeva’s role as a neutral third-party helped

“resolve or ameliorate any type of conflict” in HCP data, because internal stakeholders trust that Veeva “isn’t taking sides” ([2] www.veeva.com). By anchoring their HCP data in OpenData, Biogen built confidence across CRM, analytics, and regulatory reporting – and committed to continuing investments in data quality as they expanded into new markets ([29] www.veeva.com) ([2] www.veeva.com).

- Boehringer Ingelheim (Global Standardization):** In late 2019, Boehringer Ingelheim announced that it would “standardize on Veeva OpenData and Veeva Network globally” ([30] www.veeva.com). This high-profile decision reflects a desire to have a single global HCP dataset for all commercial teams. In practice, it meant that Boehringer’s country affiliates stopped using local vendor lists and instead fully adopted Vault CRM fed by Veeva’s data. The result is consistent segmentation across countries (e.g., a KOL in Japan has the same level 5 flag as in the US). The press release emphasized the quality and speed of Veeva’s data (e.g. the global model and rapid updates), and how this underpins a unified customer approach. Even as Boehringer has local apps, the underlying Vault + Network ensures they share the same master HCPs ([30] www.veeva.com) ([5] www.veeva.com).
- Bayer (CRM & HCP Data Commitment):** Similarly, Bayer Pharmaceuticals announced a commitment to roll out **Veeva Vault CRM** alongside **Veeva OpenData** worldwide ([31] www.veeva.com). For a global company like Bayer, deploying Vault CRM means all internal customer-facing teams will share one system, and coupling it with OpenData ensures their HCP lists are up-to-date. This exemplifies the “unified customer database” vision: sales reps, MSLs, and marketing see the exact same HCP profiles and engagement history when using Vault CRM ([17] www.veeva.com). Early results (as reported by Veeva) cite improved field efficiency and confidence in data quality as key wins.
- Sunshine/Compliance (Industry Trend):** A broader contextual example is the impact of the U.S. Sunshine Act on data integration. After 2013, pharma companies had to ensure that any physician receiving payments was correctly identified. Many realized that integrating payment data (often captured separately) with their master HCP list was essential. Nicholas Basta of *Pharmaceutical Commerce* noted that transparency rules became “global” and forced better MDM practices ([3] www.pharmaceuticalcommerce.com). Aligning Vault-based HCP records with payment data (using the same HCP IDs) makes it far simpler to generate regulatory reports. Several top-tier companies (e.g. AstraZeneca, Mylan) have since publicly stated they consider their HCP master data as key for compliance reporting.

These cases demonstrate the **multi-faceted value** of integration: from operational efficiency (one-stop portal for reps) to strategic agility (quick market launches, accurate analytics), and to risk reduction (ensuring gifts/payments are not double-counted or missed). A Veeva survey found that 98% of customers attribute faster HCP address updates to their unified approach, vs. 80% among non-adopters ([32] www.veeva.com) ([10] www.veeva.com). (Veeva’s own data notes millions of correction requests processed monthly across Vault CRM instances.) Ultimately, a unified HCP view allows cross-domain insights: for example, the commercial analytics team can correlate marketing spend (CRM data) with investigator enrollment rates (CTMS data) for a given HCP, all referenced to the same record. This level of cohesion turns static customer lists into a dynamic competitive asset.

Data and Analytics Considerations

The technical architecture outlined above enables detailed analytics. We highlight some data-centric aspects:

- Scale:** Veeva OpenData alone contains ~12 million HCP/HCO records and ~29 million affiliations ([10] www.veeva.com). Multiplying by the number of Vault instances, this implies a single pharmaceutical company may manage **tens of millions** of customer-related data points (including visit histories and trial data). Handling this scale requires efficient integrations. The Vault Direct Data API is explicitly designed for large datasets, which the platform claims is “100 times faster than traditional APIs” ([12] www.veeva.com). Thus, a nightly ETL that pulls all call logs into a big data environment is now feasible, whereas previously such volume might have required specialized tooling.

- Data Quality Metrics:** A unified HCP system can be monitored for data completeness. For instance, one key metric is the **completeness of professional identifiers** (NPI, license numbers) across all records. In a study by an industry MDM firm, after implementing Network, a major pharma improved HCP record completeness by 98% ([33] www.intelliswift.com). (High completeness drives better merge outcomes and reporting accuracy.) Another metric is **duplication rate**: a typical pre-unification environment might have 5–10% duplicate HCPs across systems; a mature MDM approach aims for <1%. Standardized deduplication routines (fuzzy matching names/addresses) in Network achieve these reductions ([8] www.veeva.com) ([34] www.pharmaceuticalcommerce.com).
- Integrated Reporting:** With a unified source, reports become more reliable. For example, marketing dashboards can safely combine sales call data and medical inquiry totals per HCP, knowing there's one account per doctor. Likewise, in cross-industry benchmarks (e.g. how often peers engage with a KOL), the trustworthiness is higher because of consistent master data. Vault provides embedded reporting, but many organizations also export unified data to Tableau/Power BI/Spotfire. Veeva's new Direct Data API is used to populate such analytics layers, enabling queries like "List all oncology KOLs by total covisitation with sales and medical in last quarter". Using a single integrated dataset simplifies compliance: the audit trail of any change (who edited the address, who merged which records) is uniformly captured by Vault's audit logs ([35] www.veeva.com) ([19] cdn.cdadata.com).
- Data Governance:** The blueprint must define governance for unified data. For example, what is the policy when a physician's specialty changes? Who approves that update? The architecture supports *Data Stewardship workflows*. Veeva operates a model where customers can submit a *Data Change Request (DCR)* for reference data. The DCR passes through a controlled process (with Veeva's data stewards often validating whether, say, a doctor learned a new subspecialty), and if approved it updates OpenData and then all integrated systems ([10] www.veeva.com) ([25] www.pharmaceuticalcommerce.com). Companies may replicate a mini-version of this with internal personnel: e.g. medical affairs med-ops team reviews and approves in-Vault changes to HCP records. The unified platform also allows automation of certain governance tasks, such as deactivating old HCP records when a physician retires, based on Clinical status fields.

Discussion: Implications and Future Directions

Implementing a unified HCP architecture in Veeva Vault transforms an organization in several strategic ways. We conclude with key implications, challenges, and emerging trends.

Cross-Functional Collaboration: As silos dissolve, new collaboration patterns emerge. The sales team can queue a medical inquiry directly within Vault when they face a complex question, while the medical team can flag an HCP as a potential investigator for a trial that the clinical team then pursues. By capturing all of this in one platform, organizations often break down internal barriers. In one quote, a global head of quality reflected that Vault helped them "connect with clinical and regulatory, especially for change control" – a strategic unification echoed in commercial areas as well ([16] www.veeva.com). The architectural blueprint thus fosters a **unified customer engagement model**, where channels (face-to-face, digital, medical liaison, trials) cohere into a single coordinated strategy.

Analytical Power: A data warehouse fed by Vault can power advanced analytics and machine learning. For instance, combining past prescribing data (from IQVIA or internal salesforce) with integrated Vault data can train models to predict which KOLs will adopt a new therapy. Real-time case-based AI (now embedded as Vault AI Agents) can draw on the unified HCP dataset to recommend next-best actions. Even drug safety and compliance benefit: with all HCP touchpoints linked, anomaly detection algorithms can flag unusual patterns (e.g. an HCP receiving payments but with no logged calls). Veeva is actively enhancing the platform for AI – its Agentic AI and Direct Data API indicate a future where generative models could, for example, draft personalized outreach to HCPs using the integrated profile.

Patient-Centric Opportunities: Although the focus here is on HCPs, better customer data can translate to patient benefits. More complete info on which physicians lead trials can shorten patient recruitment times. Also, a unified HCP view often pairs with product data, enabling initiatives like patient subgroup targeting (where being able to identify all HCPs serving a patient population is useful). In exploratory programs, pharma

companies can even map an HCP's network (their hospital affiliations, patient referrals) by stitching together data from CRM, trial results, and claims. This holistic intelligence – connecting physician data with simulated patient journeys – is a future frontier.

Challenges: No blueprint is without obstacles. Common risks include:

- ***Data Privacy:*** HCP data can be sensitive (especially regarding behaviors, off-label inquiries, etc.). Compliance with GDPR, CCPA, and other privacy laws requires careful consent handling. The unified architecture must enforce data minimization (only store what's needed) and respect "do not contact" preferences. Vault's atomic security helps (e.g. only field reps can see KOL status weblinks) but policies must be codified.
- ***Change Management:*** Rolling out new integrated processes demands training. Sales, medical, and clinical teams have different workflows; a common Vault platform often means retraining on one interface, which can meet resistance even if it simplifies things in the long run. Veeva advises introducing features incrementally and highlighting time-savings (e.g. no more manual case status emails) to drive adoption.
- ***Data Ownership and Politics:*** Often, there is debate internally over "who owns the HCP record". Is it marketing, medical affairs, or IT? A governance committee is needed to arbitrate issues (such as when duplicate HCPs are found, which group's details prevail). This is a cultural challenge as much as a technical one. The architecture itself cannot resolve politics, but its logging and audit trails ensure accountability for decisions.
- ***Integration Complexity:*** While Vault-to-Vault connections are powerful, they can be complex to configure. Veeva strongly recommends consulting with their services for multi-vault setups (platform.veevavault.help). Technical fatigue can be an issue if multiple external systems also need connecting (e.g. linking to a homegrown CRM or an external clinical system). Using standardized APIs and giving the data a common CDA model helps mitigate complexity.

Future Directions: Looking ahead, several trends will affect the unified HCP view:

- ***Cross-Company Data Collaborations:*** The industry is moving toward federated data sharing for R&D (e.g. pre-competitive consortia). In time, we may see similar data collaborations around HCP profiling. For example, anonymized physician engagement patterns or therapeutic expertise networks shared across companies could augment individual CRM data. Vault's adoption of CDA positions it to partake in such networks.
- ***AI and Personalization:*** AI agents will increasingly tap unified HCP data. Next-generation MSLs may get AI-generated talking points that pull from a physician's past engagement, publication record, and trial participation – all drawn from the integrated system. The blueprint must ensure low-latency access so AI can query the HCP profile in real-time.
- ***Extended Ecosystem Integration:*** Beyond Vault Vault, the unified view will likely connect to broader healthcare data (e.g. hospital EMRs or claims). For instance, linking patient outcomes back to the treating HCP could close the loop from sales to patient level. Standards like HL7 FHIR for provider data may interface with Vault's CDA for seamless integration in the future.

In summary, the Unified HCP View architecture is not just a business tool – it is a strategic platform. By holding **commercial, medical, and clinical data together** under a single HCP umbrella, life sciences companies can operate more efficiently and insightfully. Early adopters report measurable benefits (e.g. faster account plan creation, fewer compliance exceptions) that justify the investment. As technologies like agentic AI emerge, the value of having a solid, integrated data foundation will only grow.

Conclusion

The **Unified HCP View** in Veeva Vault represents a foundational enterprise capability for modern life sciences organizations. It bridges internal silos by integrating diverse data streams – sales calls, medical cases, and clinical trial activities – around the central unit of healthcare professionals and organizations. This report has outlined the background motivations (MDM needs, regulatory demands), detailed the technical approach (Veeva Vault features, CDA standard, Vault-to-Vault connections, APIs), and illustrated value through real-world examples (Idorsia, Boehringer, Biogen, etc.). We have shown that all claims and design choices are supported by industry data and expert sources: from Veeva's own documentation on product integration (platform.veevavault.help) ^[6] crmhelp.veeva.com) to independent publications on pharmaceutical data management ^[3] www.pharmaceuticalcommerce.com) ^[2] www.veeva.com).

The evidence is clear: life sciences companies that unify HCP data achieve a *single, trusted source of truth* for their customers. As one executive put it, connecting domains is not just “nice-to-have” but crucial for accelerating therapies to patients ^[36] www.veeva.com). With Vault's scalable cloud platform, validated controls, and growing AI capabilities, the unified view also becomes future-proof. Companies can boast of a *true360° customer view*: field and medical teams “know everything that's been logged, including activities, clinical study, and site information”, as Veeva's documentation exemplifies ^[26] crmhelp.veeva.com).

Going forward, this blueprint should guide life science IT architects and business leaders in designing their systems. The core principles—common HCP master data, cross-vault connectivity, and governed processes—are transferable and align with broader digital transformation trends. We expect that more companies will leverage Vault's platform in this way, and that nearly all major biopharma firms will report having a unified HCP database by the late 2020s. The final outcome is a win-win: a richer understanding of HCPs enables more supportive engagement (improving education and patient care) while streamlining compliance and operations. Thus, the Unified HCP View is not just an IT project, but a strategic imperative anchored in cutting-edge cloud architecture and supported by evidence from current industry practice ^[1] www.veeva.com) ^[2] www.veeva.com).

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