

Accelerating Biomedical Innovation

Moderna employs cloud-native integration technologies to automate business processes, scale on demand, and free scientists from administrative overhead.



Biomedical

Cambridge, MA, U.S.A.

Business needs

Moderna Therapeutics began in 2011 with a clear vision of its future. To speed innovations that could improve lives, it would be a cloud-first company, using only SaaS applications.

This approach required integration for a portfolio of applications, including SAP (ERP), Workday (HR), Solium (equity plan management), and Concur (expense reporting).

Solutions at a glance

- Boomi AtomSphere Integration Platform
- Boomi MDM Management

Business results

- Delivers cost savings in platform administration and maintenance
- Automates complex, cross platform business transactions
- Supports rapid growth without increasing G&A staff
- Minimizes data errors while increasing process visibility
- Streamlines application migrations
- Simplifies integration mapping — reducing cost of additional master data connections
- Speeds employee onboarding by automating access to applications and resources
- Improves permissions management reliability, consistency, and documentation
- Reduces IT effort focused on user access and permissions

What if something our bodies manufacture could dramatically alter the way we treat life-threatening diseases?

The sole focus of Moderna Therapeutics, headquartered in Cambridge, Mass., is to pioneer the development of protein therapies based on mRNA technology, investing more than \$100 million annually in its research.

“mRNA science requires intense analytics,” explains Marcello Damiani, chief digital officer for Moderna. “You need analytics in R&D, in clinical development, in process development, in manufacturing. So data is at the center of what we do.”

To best manage that data and Moderna's cutting-edge approach to medical research, Damiani built a new kind of biotechnology company, one that “uses the full power of the cloud,” he says.

Damiani explains that the cloud helps Moderna accelerate learning, create automated processes, and improve quality at scale.

But to harness the full power of the cloud, Moderna needed to integrate its best-in-class, on-demand applications and data. That's when it turned to Dell Boomi.

[Boomi's native-cloud integration platform](#) allowed Moderna to scale efficiently by integrating systems and automating complex, cross-platform business transactions that included budgeting, vendor payments, and human resources management.

MDM addresses integration complexities

As Moderna grew, the company developed more than a dozen point-to-point integrations driven by Boomi. Although the Boomi integrations performed exactly as planned, the company hadn't foreseen how complicated its integration architecture would become. As the number of integrations expanded, Moderna ran into mounting challenges keeping its data in sync across multiple application platforms.

To simplify the architecture, Moderna's technology partner Kitepipe recommended [Boomi's MDM Management platform](#). Boomi's unified platform for core integration and master data management helps organizations validate, enrich, aggregate and synchronize data in any domain. Boomi MDM helps businesses ensure their data is consistent across on-premise or cloud systems for managing customers, products, employees, or vendors.

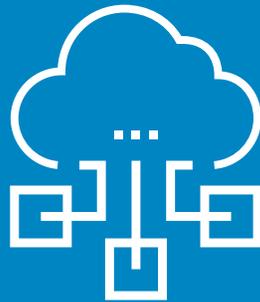
MDM makes it possible to enter data once in a system of record, which in Moderna's case was the Workday HR system, and have it flow to all systems across the company.

“When you can enter data once and have it connect everywhere, that is a tremendous advantage,” Damiani says.

The combination of Boomi's core integration platform with its MDM management capabilities allowed Moderna to scale its operations and remain agile without increasing administrative staff. As Moderna added scientific personnel, its general staffing numbers remained flat.

Thanks to Boomi's integration capabilities and data orchestration, business processes, such as the purchase cycle workflow, were automated and needed little manual intervention. Controls were baked into processes so they could be managed by exception. Data errors were also minimized, and processes became visible end-to-end.

The Boomi integration platform and MDM capabilities solved the “last mile” problem for Moderna.



MDM solves single sign-on user provisioning

Boomi MDM Management also addressed a vexing problem for Moderna as a cloud-first enterprise: ensuring the right users had the approved level of access to the correct set of applications.

“User provisioning is the dark side of single sign-on,” says Kitepipe founder Larry Cone. “SSO solutions are slick at managing access. But no one likes to talk about how users are provisioned and de-provisioned in the applications.”

The Boomi integration platform and MDM capabilities solved that “last mile” problem for Moderna. Using a simple Boomi process, the company can access master data to update user provisioning across a host of cloud applications.

MDM bonus: simplifying migration from NetSuite to SAP

As Moderna’s operations grew, the company wanted to migrate from NetSuite to SAP to support its unique set of ERP needs, particularly for its financial operations.

NetSuite had many connections with other systems, as would also be the case with the SAP implementation. But Boomi MDM was able to simplify the integration map and reduce the number of application endpoints. This made the transition smoother, and the MDM repository provided a place where Moderna could coordinate data matches between NetSuite and SAP and stage integration test data. The successful switch took only four months.

Boomi also brought other key benefits to Moderna. Its scientists spend most of their time in the company’s Drug Design Studio (DDS) — a suite of informatics tools developed in-house. Moderna scientists use the DDS to digitally design and order mRNA constructs for use in their research and pre-clinical studies.

“User provisioning is the dark side of single sign-on. No one likes to talk about how users are provisioned and de-provisioned in the applications.”

Larry Cone
CEO, Kitepipe

By integrating the Studio with SAP and coordinating data from the MDM repository, scientists could remain in their application "comfort zone" while mRNA orders and project costs were automatically captured in SAP. The scientists don't have to switch into the unfamiliar interface of SAP and spend their extremely valuable time on administrative tasks.

Next step: manufacturing

As Moderna progressed in its drug development process, it also faced a hurdle common to many new drug companies — establishing a [good manufacturing practice \(GMP\) environment](#).

The identity, access, and change management restrictions of GMP required by governmental regulations go far beyond what is necessary for day-to-day enterprise operations.

To avoid having GMP slow its pace of innovation, Moderna created a separate GMP environment. But with Boomi, the company easily supports both its enterprise operations and GMP systems, with the MDM golden record accessible from both the enterprise and GMP Boomi environments.

Indeed, Boomi has helped Moderna break down most any barrier to its revolutionary approach for biomedical innovation.

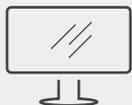
"We use Boomi integration because it works, and it's so easy to put in place," Damiani says. "And with Boomi MDM, our data is correct everywhere, whether it's flowing to our HR applications, finance applications, or our scientific tools."

Dell Boomi Specialist Kitepipe Key to MDM Deployment

Kitepipe, one of Dell Boomi's most successful system integrator (SI) partners, worked with Moderna every step of the way as it integrated the cloud-based applications so vital to the company's daily operations. So, when the number and complexity of point-to-point integrations reached the tipping point, Kitepipe realized that Boomi MDM could simplify integration architecture while creating a single, cloud-based repository from which to manage "master data" — the nouns of a business such as customers, vendors, employees, contract research organizations, etc.

Kitepipe's expertise with all aspects of the Boomi platform made the MDM implementation straight forward. The SI recommends Dell Boomi MDM because it:

- Sets up easily, provisioned in the Boomi cloud
- Supports rich and complex data models
- Offers rule-based validation and quarantine by data source
- Provides notification for updates in the source system or direct master data updates in the platform
- Uses the rich connectivity and data transformation features of Boomi AtomSphere
- Acts on application endpoints based on changes to master data, delivering user provisioning to the application



Learn more about the Boomi cloud-native integration platform
boomi.com/integration



Speak with a [Boomi integration expert](#)



View all customer stories at Boomi.com/Customers



[Connect on social](#)