The Informatica Platform for the United States Air Force

Reduce Costs and Increase Speed to Results

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Executive Summary

The mission of the United States Air Force IT organizations is clear and unwavering: support the warfighter and deliver results throughout all domains. Yet this mission faces such resource challenges as limited manpower and shrinking budgets. Another set of challenges arises from an expanding field of new technologies and technology requirements such as cloud computing, smart devices, modernization efforts, consolidation mandates, cyber threats, and other security issues.

Unleashing the power of new technologies on and off the battlefield can only happen when resources—including dollars, manpower, and capacity—are made available. And this demands a new approach to managing data.

Lean integration is this new approach. It is based on proven lean manufacturing methods that synchronize people, processes, and materials to eliminate wasted effort and resources. Lean integration is a combination of lean data management and agile data integration.

Lean integration extends proven lean methods to data quality and data integration by applying leading-edge technology to transform organizational processes through automation and reuse. Figure 1 shows how lean data integration principles can transform costly IT chaos and complexity into a lean and agile, data-driven enterprise.
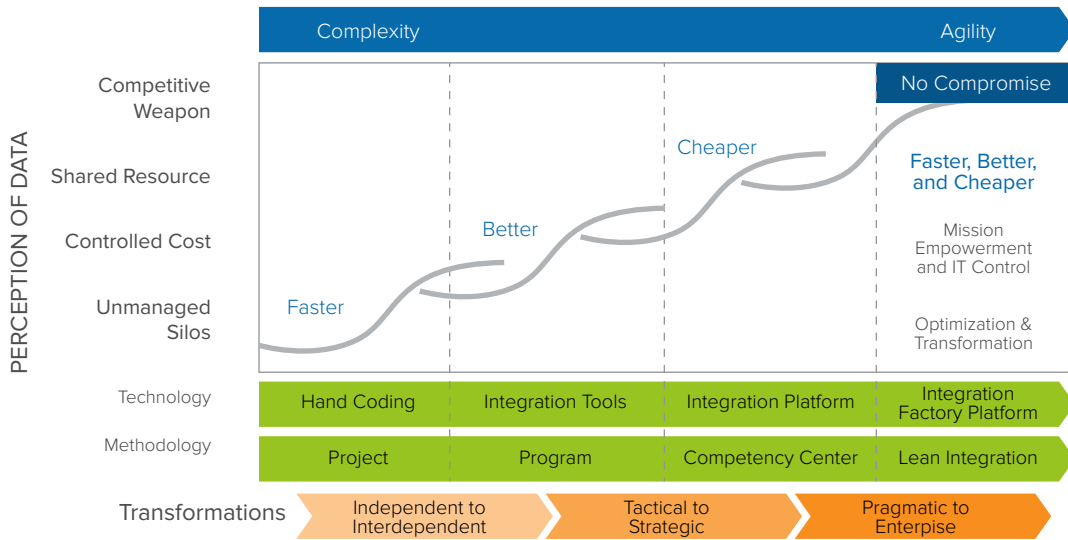
Figure 1: Lean integration transforms IT chaos and complexity into a lean and agile data-driven enterprise.

The technology that can drive this transformation is the Informatica® Platform, the leading enterprise data integration platform.

This white paper describes how lean integration principles can be used in United States Air Force IT operations to reduce operations and maintenance (O&M) costs, achieve cloud and big data goals, develop higher quality and lower cost interfaces, provide faster access to information, and increase situational awareness. The paper introduces the Informatica Platform and explains how its open, unified, economical, and comprehensive features are used in the context of lean integration. It then presents several examples of the Informatica Platform already in use in United States Air Force and similar defense agency environments.

Lean Integration

Let's examine how lean integration—both lean data management and agile data integration techniques—can be in the context of IT operations in the United States Air Force. Figure 2 summarizes how United States Air Force IT organizations can use lean integration to reduce costs and increase agility for faster time to value.

LEAN			AGILE		
Reduce O&M Costs	**Leverage Cloud and Big Data**	**Create Higher Quality, Lower Risk Interfaces**	**Accelerate Access to Information**	**Create Event-Driven Architecture**	**Enhance Situational Awareness**
• Retire stale or inactive data and applications and reduce costs • Manage retired data and applications for reporting, search, and compliance • Monitor application growth to prevent data explosion in applications	• Reduce complexity and risk of big data processing (Hadoop) • Reduce cost and risk of moving to cloud • Integrate cloud and ground systems	• Profile data quality in legacy applications before migrations • Synchronize and manage data interfaces and metadata between legacy and future • Create an SOA-compliant application to integrate data for mission	• Onboard and disseminate new data sources more quickly • Centralize data profiling, data quality and data delivery to common platform	• Push critical information in real time based on events affecting mission • Incorporate geo-spatial awareness, time dominance and alert across multiple data streams	• Acquire, correlate, and fuse disparate data sources • Automate data links, centralize metadata and tagging

Figure 2: Lean data management and agile data integration principles are used in a variety of United States Air Force IT organization scenarios to reduce costs and increase time to value.

Lean Data Management

Lean data management principles can help the United States Air Force control costs in the face of burgeoning data volumes and shrinking budgets and create a more streamlined, nimble, prepared, and informed warfighting effort. These principles establish best practices for eliminating the IT resource waste associated with aged or redundant data. Adopting lean applications, lean data stores, and lean applications portfolio policies can dramatically reduce costs, improve service levels, and ensure compliance, while fulfilling the mission and supporting the warfighter.

Reduce O&M Costs and Improve Performance with Lean and Secure Applications

- **Increase business agility** by classifying data based on its value or sensitivity and optimally focusing IT resources on mission-critical priorities

- **Maximize performance and lower TCO** by smart partitioning active data and archiving inactive data in production, resulting in lower storage, system, and management costs

- **Cut infrastructure and maintenance costs** by automating information lifecycle management best practices—transport, manage, and archive data more efficiently

- **Easily and automatically implement data security** by masking and de-identifying test data and dynamically masking data in live production systems with integrated compliance management and auditing

> "[Lean Integration] isn't just theory, [it] actually does work. We've seen it consistently. When you apply this waste-elimination kind of mindset, you should reduce cycle time by 90 percent, and improve productivity by about 50 percent on average."
>
> John G. Schmidt and David Lyle, Lean Integration: An Integration Factory Approach to Business Agility

Leverage Cloud and Big Data Strategies to Support Enhanced integrations

- **Create cost-effective infrastructure, applications, and storage architecture** to support strategic initiatives by moving appropriate applications and data to less expensive cloud environments

- **Create a Data As A Service (DaaS) layer** to connect your Software as a Service (SaaS), Platform as a Service (PaaS), or Infrastructure as a Service (IaaS) cloud platforms and applications

- **Seamlessly connect** on-premise, remote, and other cloud networks for increased integration and visibility

- **Reduce the complexity and risk** of big data by harnessing the processing power of Hadoop coupled with universal data access, metadata management, and data quality and governance

Reduce the Complexity and Expense of Building and Integrating Applications

- **Reduce software license, hardware, and management costs** by consolidating data efficiently, eliminating the need for costly interfaces

- **Embed quality and profiling tasks in your application interfaces** by integrating data quality rules and alerts into data flows and catching errors before they affect mission readiness

- **Enhance data accuracy and consistency** by profiling and mapping data in your legacy systems

Agile Data Integration

Supporting mission-critical activities and warfighter programs demands that data be accurate, easy to analyze and aggregate, and—most importantly—timely. Agile data integration ensures the speed, accuracy, and usability of data.

Better Data, Faster Results

- **Radically accelerate the data integration timetable**, shifting the period from days, weeks, or months to hours or even minutes

- **Enhance collaboration among IT and business users** through the use of a data services layer that emphasizes the involvement of business users at a very early stage of the data integration process

- **Access and merge all types of data from different data sources** in real time without physical data movement

Enable an Event-Driven Architecture

- **Improve decision making and reduce response times** by promoting the production, detection, consumption of, and reaction to events

- **Leverage geo-spatial awareness and time dominance** to advance real-time alerting and identify relationships and patterns instantly

Dramatically Improve Situational Awareness

- **Empower intelligence gathering and determination** through the acquisition, correlation, and fusing of disparate data to achieve unprecedented insight

- **Automate the linking and tagging of data** to advance sophisticated patterning, predictive modeling, and business intelligence

The Informatica Platform

The Informatica Platform is the leading-edge technology for lean integration. The Informatica Platform is a comprehensive, open, unified, and economical data integration platform that enables organizations to maximize their return on data by increasing the value of data while lowering its cost.

Unified Platform

The Informatica Platform is built upon shared data services, metadata, and data rules. These capabilities reduce costs through reuse, consistency, and transparency. They also reduce the impact of continual change. Unified features of the Informatica Platform include:

- **A single set of role-based tools** designed for each role but shared among IT and the organization, including a single Web-based configuration and administration console

- **Common capabilities delivered as reusable, shared services** such as data access, data profiling, data cleansing, and data transformation

- **A common set of data rules and metadata** for lineage and reporting, shared among different users across the enterprise

Open Platform

Designed for maximum flexibility and return on data, the Informatica Platform is built for change and integration with all data, hardware, software, and technology standards (see Figure 3). Open features of the Informatica Platform include:

- **Universal data access** for quick and reliable access to all data from all sources, regardless of type, structure, or location (e.g., on premise, with a third party, or in the cloud)

- **Interoperability** that supports a wide variety of hardware platforms, operating systems, databases, and networks

- **Open APIs and SDKs** that easily extend data integration capabilities and integrate them with other applications and technologies to speed development
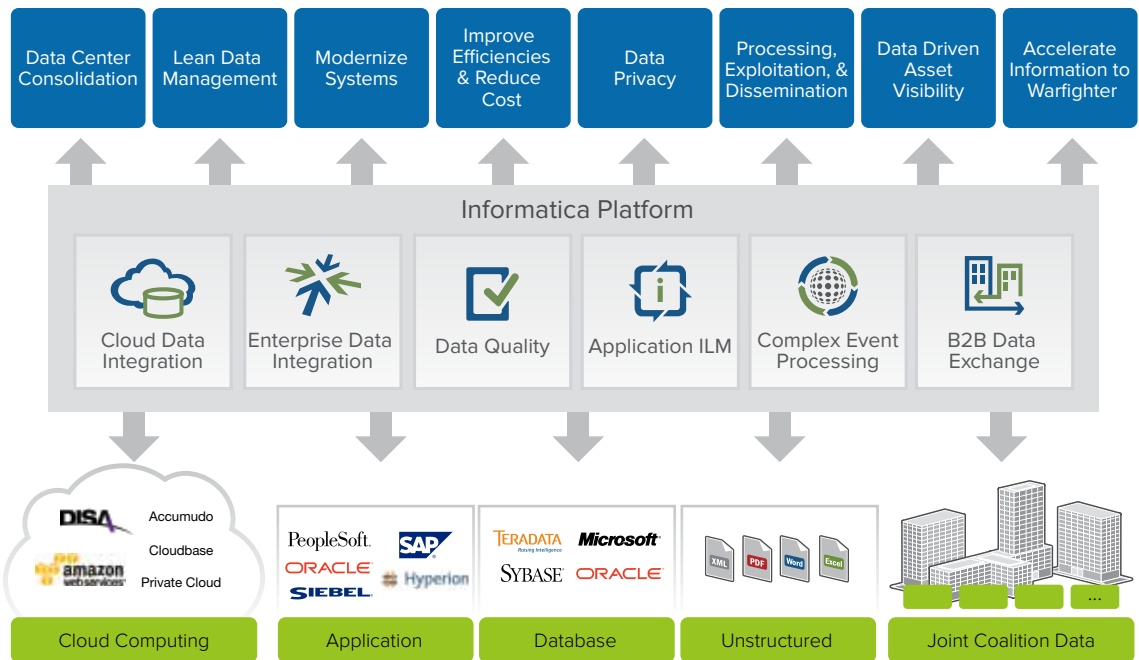
Figure 3: The Informatica Platform is built for change and integration with all data and all hardware, software, and technology standards.

Economical Platform

Reduce Costs

- **Cut development and maintenance costs by 50 percent or more** by reusing existing Informatica skills and data integration logic for all data access across all projects and by combining data integration, federation, transformation, profiling, cleansing, and management on a single platform

- **Reduce the cost of change** by insulating applications from underlying data changes

Improve Efficiency Through Reuse

- **Reuse data integration logic and data services without any rework**, across all applications and for all types of data access—Web services, SQL, or batch

- **Seamlessly reuse data integration logic and data services** across a full range of data integration projects and use cases, including data warehouse augmentation, data warehouse consolidation, MDM hub extension, data migration, and SOA

Boost Productivity at Lower Risk

- **Involve functional users early** in the data integration process for faster project rollouts, early validation, and minimal rework

- **Save developers from redundant work across projects** by leveraging prebuilt components and a zero-code model-driven environment, as well as fully reusable data integration and data quality logic

- **Ensure compliance with data privacy policies** by relying on integrated data management capabilities to ensure that your data complies with all relevant policies and to keep dirty data out of downstream applications and systems

- **Reduce outages, minimize costs, and meet SLAs** with such features as enterprise-grade security for large, globally distributed environments, dynamic partitioning, and workflow on grid

Comprehensive Platform

Data Archiving and Application Retirement

With the Informatica Platform, United States Air Force IT organizations can safely retire legacy systems and applications. Data needed to meet retention requirements can be sent to a highly compressed, immutable archive safely stored on modern IT infrastructure. Aging, redundant technology—applications, operating system, and hardware—can be safely decommissioned to reduce costs. Integrated data retention and disposition management features simplify compliance. IT organizations can retain appropriate levels of end-user access to the archived data through a data discovery portal or a standard reporting tool that supports ODBC/JDBC connectivity.

Integration in the Cloud

The Informatica Platform is available behind the firewall, and also as an integration Platform as a Service (iPaaS). This gives United States Air Force IT organizations the ability to access and integrate data easily and securely no matter where the data or applications reside. With the flexibility to deploy the appropriate method for provisioning integration services with a wide range of SaaS connectors and templates, United States Air Force IT organizations can take advantage of new cloud computing economics.

Big Data Integration

The Informatica Platform enables IT organizations to create, manipulate, and manage very large data sets (e.g., terabytes or even petabytes) and storage facilities. The need to manage and make the best possible use of data is critical to the Air Force teams in support of the warfighter. By providing access to critical data where and when it is needed, the Informatica Platform frees up critical resources to address other IT and data requirements. It helps United States Air Force IT organizations meet the challenge of managing massive data volumes cost-effectively.

Data Quality

Accurate, timely data is critical to decision making. The Informatica Platform delivers authoritative and trustworthy data quality to all stakeholders, projects, and data domains and for all projects and business applications—on premise or in the cloud. Data analysis, data cleansing, and data matching are combined in a single, unified platform.

Data Virtualization

The Informatica Platform provides a data abstraction layer for fast, direct access to data from many disparate sources, without the need for physical movement. Data is accessed, combined, and then federated across several heterogeneous sources to deliver a virtual view or virtual database. The federated data is profiled, cleansed, transformed, masked, and delivered in real time. As a result, the organization gets the trustworthy data it needs without delay. This is an important capability when speed to results is critical.

The Informatica Platform in Action

Let's now examine how the Informatica Platform drives lean integration in the United States Air Force and other similar IT environments.

> "Before Air Force Knowledge Services, there wasn't visibility on a timely basis. It might have taken weeks or months to extract that information manually out of all the stovepiped transaction systems."
>
> Mike Riley
> Program Manager,
> Air Force Knowledge Services

United States Air Force

Keeping the United States Air Force global fleet of thousands of aircraft, missiles, and satellites in repair and ready to fly required Air Force analysts to pull information manually from many different databases and information systems and compile it in spreadsheets. The United States Air Force wanted to streamline and automate this process by consolidating information in a single warehouse, dubbed Air Force Knowledge Services.

The challenges of creating Air Force Knowledge Services included:

- Accessing and integrating data from 26 discrete source systems and databases
- Improving the speed and availability of the data in the warehouse
- Introducing reporting tools and dashboards

Relying on Informatica PowerCenter®, a key product of the Informatica Platform, to access, integrate, and deliver data to and from the data warehouse, the United States Air Force was able to:

- Recoup $300,000 in excess equipment expenses in one week
- Identify more than $600 million in excess parts
- Shorten reporting time from six months to less than an hour
- Empower end users to generate approximately 20,000 reports a week

Netherlands Ministry of Defense

The Netherlands Ministry of Defense is responsible for maintaining peace and security in the country and for peacekeeping missions. The ministry needed to migrate more than 50 legacy army, air force, navy, and military police Informatica systems into a single ERP system in order to:

- Improve governance, reduce risk, and support compliance
- Increase efficiency and reduce defense costs
- Ensure faster delivery of high-quality data to enhance decision making

The Netherlands Ministry of Defense turned to key products in the Informatica Platform to create its single ERP system:

- Informatica Data Explorer to find hidden risks, pinpoint structural issues, and stop quality problems from spreading in data
- Informatica Data Quality to cleanse all data for all stakeholders, projects, applications
- Informatica PowerCenter® to access, integrate, and deliver data quickly and cost-effectively, without hand coding

The Informatica Platform enabled the Netherlands Ministry of Defense to:

- Save $65 million annually in development and maintenance costs
- Transform the materials management and logistics of peacekeeping operations
- Standardize data migration methodology for greater efficiency
- Improve the relationship between business users and the IT organization

> "There's no dispute: the Informatica Platform is helping the Netherlands Ministry of Defense maximize its return on data."
>
> Bert Braanker
> Head of Data Management,
> Material Logistics,
> Netherlands Ministry of Defense

> "Informatica PowerCenter has let us quickly adapt our infrastructure to handle complex file data integration with our enterprise data warehouse with no disruption to our core business processes, and without the time and expense of deploying a new platform. It also allowed us to move to a more real-time model thus improving service to our servicemen and women."
>
> Stan Ferguson
> Chief, Data Management Division,
> United States Defense
> Commissary Agency

United State Defense Commissary Agency

The 263 military commissaries of the Defense Commissary Agency (DeCA) provide groceries to more than 12 million United States military customers. To keep costs low and customer satisfaction high, DeCA replaced its aging point-of-sale solution—which necessitated a way to integrate data from the new system into its enterprise data warehouse.

DeCA relied on Informatica PowerCenter to access, integrate, and deliver data from both legacy and new systems seamlessly as part of the worldwide rollout of the new point-of-sale system. This key product of the Informatica Platform enabled DeCA to:

- Adapt its data integration architecture to accommodate both new data and legacy files
- Create on-demand views of core business activities
- Improve forecasting and inventory management
- Update data in the new point-of-sale system every 10 to 60 minutes instead of only once a day
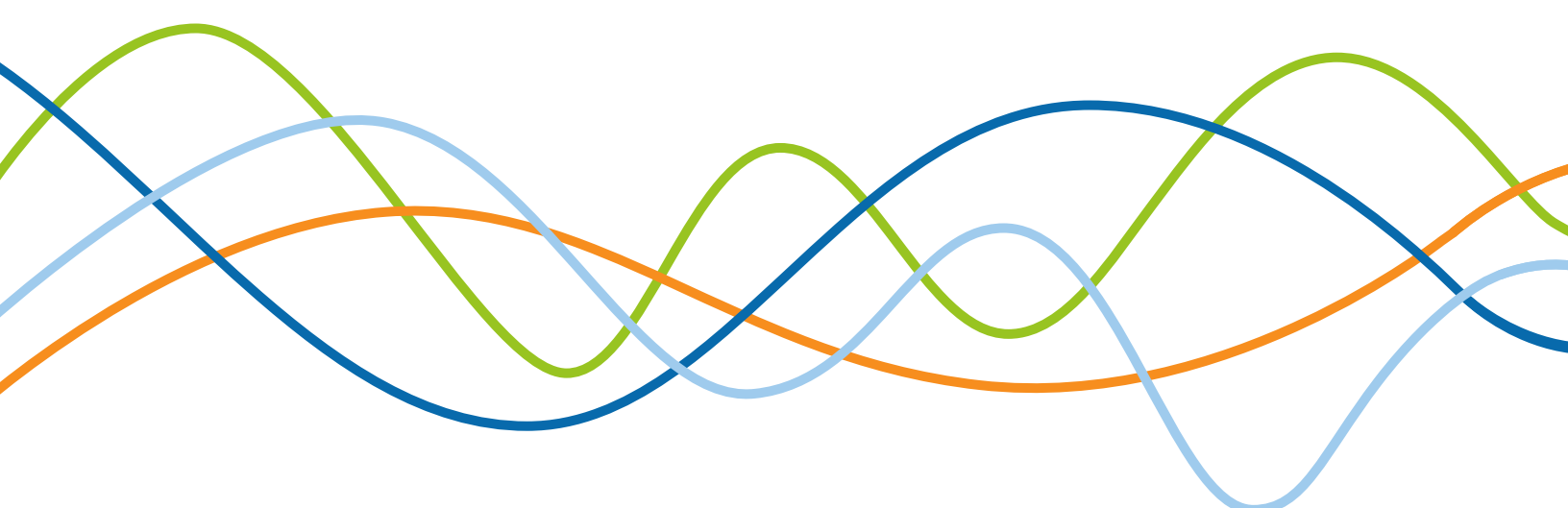- Shorten restocking time by 24 hours

Conclusion

The United States Air Force can only capitalize on the power of new technologies on and off the battlefield when resources—including dollars, manpower, and capacity—are made available. And this demands a new approach to managing data.

Lean integration is that new approach. Based on proven lean manufacturing methods, lean integration is a combination of lean data management and agile data integration. Lean integration extends proven lean methods to data quality and data integration by applying leading-edge technology to transform organizational processes through automation and reuse.

The Informatica Platform is the leading-edge technology that drives lean integration. This open, unified, economical, and comprehensive data integration platform has been used in United States Air Force and other similar defense IT environments to streamline IT chaos and complexity, reducing costs and accelerating time to value for the warfighter.

ABOUT INFORMATICA

Informatica Corporation (NASDAQ: INFA) is the world's number one independent provider of data integration software. Organizations around the world rely on Informatica for maximizing return on data to drive their top business imperatives. Worldwide, over 4,630 enterprises depend on Informatica to fully leverage their information assets residing on-premise, in the Cloud and across social networks.

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