Taking Charge of Change

The volume of data is growing so rapidly, humans will create more information this year than in the last 5,000 years combined.¹ New types of data, new technologies, and new approaches for managing data are being introduced on a daily basis, creating new business potential: the potential to build deeper customer relationships, revolutionize supply chains, and create entirely new business models. There is even the potential to solve the world’s most challenging problems: preventing crime, combating hunger, conserving precious resources, and finding a cure for cancer.

The Inevitability of Change

Individual pockets of data—whether new or old—deliver little value on their own. Just as a handful of separate pixels do not reveal an image, fragments of raw data do not deliver knowledge or drive action. True potential is only tapped when data is brought together in ways that were not even imagined a couple of years ago.

However, because all the change around data and data technologies is happening so quickly, and because you must also continue to manage the previous generations of datatypes and technologies, the complexity of accessing and managing data is increasing at an exponential pace. Change is inconvenient. It is also inevitable. Here is the math:

- In the mainframe and mid-range computing era, companies and governments automated the back office. There were several different computing platforms, often with multiple languages and datatypes. This first generation of computing created $10^3$ potential combinations of technologies, languages, and datatypes.
- Then the industry adopted client-server architectures, and it significantly broadened both the number of business applications and the number of end users. Many new technologies proliferated, from ERP systems to middleware to RDBMS to data warehousing. This generation of computing created $10^5$ potential combinations.
- Then came the Internet, with e-commerce as the killer Web 1.0 application. Technology boomed, including a rapid succession of browsers and proliferation of application servers, which resulting in $10^6$ potential combinations.
- A decade ago the nature of the data center changed, both through virtualization and through adoption of public cloud infrastructures. Information technologists rapidly created new technologies, new cloud applications, and new cloud platforms. These developments expanded the potential combinations to $10^9$.
- Recently the technology industry has seen the rise of social networks, fostering and harnessing human interactions. With social applications flourishing on both the Web and mobile devices, this has expanded the potential combinations to $10^{10}$.
- The next phase the industry is just entering is the industrial Internet or the Internet of things. Between human-to-machine and machine-to-machine interactions, this will add at least three orders of magnitude to the complexity, with $10^{12}$ potential combinations of technologies, languages, and datatypes.

¹ David Evans, Chief Futurist, Cisco
The Virtual Data Machine: The Only Way to Harness Change

Each new generation brings new technologies—and you can’t afford to wait months or years to ramp up before you can pursue new initiatives. Nor can you afford a different approach each time you incorporate a new type of data, leverage a new technology, or service a new consumer. And you certainly don’t want to be crushed by the weight of all the existing technologies that you have to maintain.

The only way to adapt quickly and cope in the face of rapidly accelerating change and exponentially increasing complexity is to have the secret ingredient that insulates you from all the changes in the data and the technologies. The secret ingredient that makes all this data—old and new—accessible. The secret ingredient that lets you focus on designing the logic for what you need to do with the data, rather than learning how to code in the latest language. The secret ingredient that keeps up with all the changes so that you do not have to.

That secret technological ingredient is a virtual data machine (VDM). A VDM is an embeddable data management engine that separates the data integration instructions and specifications, which map out the business logic for handling data, from the underlying execution technology. It can deploy your logic regardless of type, volume, or source of data; computing platform; or end user. Most important, if any of those things changes, the VDM lets you redeploy without recoding, redevelopment, or re-specification. It can be embedded into applications, middleware infrastructure, and devices—wherever you need to access, aggregate, and manage data. A VDM is the only way to ensure that you can take advantage of the latest new data and technologies as quickly as possible. It is the only way to keep up with the pace of change and the range of complexity that completely overwhelm any approach relying on hand coding or on point tools tied to a single datatype, application, or computing platform. A VDM is the only way to harness data in every application, every process, for every person, and in every device around the globe.
An Information Platform: Turning Raw Data into Actionable Information

Informatica has the only VDM in the world. It’s called Vibe™ and it’s the reason why our customers can map once and deploy anywhere, so that change is their competitive weapon, not their enemy.

The Vibe virtual data machine, although critical, is not sufficient by itself to solve the wide spectrum of data integration challenges. Vibe lets you master complexity and change, and it makes all data accessible. But in many places where data lives, especially some of the emerging data sources, the data is unfiltered. Unstandardized. Uncleansed. Unrelated. Some of it is even unnecessary. It takes a considerable amount of work and expertise to understand how to transform raw data into information that provides insight and value.

So in addition to the enabling capabilities that Vibe delivers, you also need to layer on services from a fully integrated information platform that ensures that data is:

- **Complete.** Insight comes from a complete picture, not from fragments. You have to integrate the data fragments so you are looking at a whole—a whole person, a whole account, a whole product, a whole business process, a whole organization, a whole nation—rather than pieces or parts.
- **Timely.** Different consumers and different use cases require data at different times and frequencies. You want one platform that accelerates the delivery of data when, where, and how it is needed, whether it is via messaging, bulk delivery, or through a virtual view.
- **Trusted.** If data is incomplete, inaccurate, or unrelated, it’s not of much use. You need data quality services that let you diagnose problems and then cleanse the data in a sustainable, efficient way.
- **Authoritative.** You also need master data management services to master the data and relationships that constitute the “whole” for your key business entities, even as the data fragments feeding into the “whole” continually change.
- **Actionable.** Ultimately, data needs to serve a user—whether it is a human or a machine. The platform needs to help the user understand when it needs to pay attention to an event, investigate an issue, or act.
- **Secure.** With the exponential rise in combinations of people accessing data across different systems, the potential for a security breach also rises exponentially. You must be able to secure data consistently and universally, no matter where it resides or how it is used.

But it is not sufficient for an information platform to merely have a long checklist of information services. Only an information platform powered by a VDM provides the interoperability required to easily combine services on the fly to meet your specific business requirements. Only an information platform powered by a VDM can provide the right tools and capabilities for the simplest entry-level uses to the most complex cross-enterprise initiatives, allowing you to share work across that entire span without recoding. And only an information platform powered by a VDM has the flexibility to be deployed stand-alone in the data center, as a cloud service, or embedded into applications, middleware infrastructure, and devices.
The Informatica Platform: Built on Vibe. 
Built for Change.

Although many vendors can claim to have a top-notch information platform, only the Informatica Platform is powered by Vibe, so you have the ability to “Map Once. Deploy Anywhere™”. Every other vendor requires you to recode to one extent or another when something changes or when you want to adopt a new computing platform. We don’t.

Moreover, Informatica offers unrivaled expertise in transforming raw data into actionable information with best-in-class information services. It is our sole focus and has been for 20 years, and we have done it for thousands of customers. Our engineers have poured that experience into our information platform so you don’t have to re-derive best-practice techniques and algorithms for harnessing data. And we are the market leader across all of the critical information services categories, including data integration, data quality, master data management, and information lifecycle management—just ask the industry analysts. Better yet, ask our 5,000 enterprise customers why they rely on Informatica to harness the full potential of their information to compete in today’s interconnected information age.

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.