This document outlines the underlying technology foundation of the DNA platform, reviewing key technology features and the benefits they provide to financial institutions and their customers or members.

The DNA account processing platform provides a state-of-the-art technology environment, combining a relational, person-centric data model; flexible n-tier architecture; Microsoft® .NET framework; service-oriented architecture (SOA); and a customizable, extensible platform. DNA leverages this environment to deliver the flexibility and customization capabilities financial institutions need to respond rapidly to changing consumer needs and preferences, increasing regulatory demands and expanding delivery channels.

**At-A-Glance**

DNA is a state-of-the-art account processing platform written in C# within the Microsoft .NET framework, architected around people and relationships instead of transactions and accounts. Its highly relational and normalized n-tier architecture is fully featured and exploits the value of customer or member information in real-time to make each interaction more meaningful. The DNA platform allows financial institutions to tailor their operational and geographic preferences with custom-created account processing system extensions, meeting the needs of virtually any institution globally.

**Unified System Design**

DNA offers the functionality needed for managing deposits and loans (including consumer, commercial and real estate loans) within a single application design. Teller and service representative capabilities, along with extensive CRM features, are also included in the platform. DNA clients enjoy the functionality of a large, complex array of systems within a single unified design, eliminating the need to maintain and integrate numerous, disparate systems. DNA delivers cost savings and efficiency gains through features such as single sign-on access to all rights-enabled platform solutions; one-time entry of data that is propagated throughout the platform in real-time for a single customer/member information file that never needs cleaning; a 360° relationship view that is always just a click away; a single screen for processing all transaction types; and enterprise-wide relational pricing.

**Flexible N-tier Architecture**

DNA is designed with a three-tier architecture that isolates the application across multiple servers for enhanced scalability and ease of maintenance. The three tiers include a database server for data storage, an application-tier server
containing the business logic of DNA, and a user interface tier that runs on end-user workstations, such as PCs. This three-tier architecture simplifies upgrades and reduces downtime by enabling Fiserv and our clients to enhance focused components of the system without having to upgrade all components simultaneously. For example, Fiserv can enhance business logic to accommodate regulatory changes without having to deploy a new version of the teller application currently in use by front-line employees. Each tier continues to communicate with the shared database server.

**Contemporary Foundation**

The DNA application and user interface tiers are based on Microsoft’s leading .NET architecture and the C# programming language. An open architecture and native application programming interface (API) enable the platform to be easily extended with other contemporary programming languages, including Java, Perl and Ruby on Rails. This modern development platform provides Fiserv with a large and growing talent pool from which to select the most experienced development professionals to continually enhance DNA functionality. At the same time, Microsoft’s continued investment in the platform’s underlying technologies provides turnkey capabilities that Fiserv can leverage, such as security enhancements. The stable, modern technology foundation of DNA ensures that it will be supported by Microsoft operating systems and other future technology progressions well into the future.

**Person-Centric, Relational Data Model**

DNA stores all customer and account data in a single integrated data model that is centered on people and the limitless relationships that connect them to each other, organizations and other entities. This self-extendable data model allows for the unlimited collection of account, person and business information as well as custom data and artifacts, such as documents and photos. DNA uses relational database management system (RDBMS) best practices: data is never stored redundantly, relationships between data elements are highly flexible and unlimited data elements can be added without coding. And since DNA presents information using real words, it maintains unparalleled consistency between the database, reports, statements, notices and screens. No code or data translation is needed.

**Industry-Leading Oracle Database**

DNA is optimized for use on industry-leading Oracle® relational database technologies. Oracle provides best-of-breed database maintenance, redundancy, security and data access flexibility. Most important, this database platform allows fast, efficient, 24x7 real-time data updating, dramatically reducing batch update cycles and providing up-to-the-second data consistency to all delivery channels and business continuity assets. Database-level encryption maximizes security and broad market acceptance gives financial institutions access to a wide variety of ancillary tools. The system’s asynchronous processing offers simultaneous access to multiple data stores when DNA is integrated with additional, value-added solutions from Fiserv or third parties. The DNA database supports a choice of three transaction posting modes, which clients can select based on their preferences: online/real-time, memo-post plus or a hybrid combination of real-time and memo post.

**IT Infrastructure Agnostic**

The open architecture of DNA maximizes the financial institution’s hardware, operating system and deployment options. The DNA data store operates with Microsoft,
UNIX® and Linux® operating systems, with distribution models that include smart client, thin client and other virtual desktop distribution options. The smart client model combines the robustness, efficient development and off-line capabilities of two-tier (fat client) architectures with the small footprint and ease of deployment of a browser. Financial institutions that deploy DNA can run the software on desktop and server hardware supplied by a wide array of vendors, including HP, IBM®, Dell™, Oracle/Sun and Unisys®. DNA can be deployed in an in-house or hosted environment, giving financial institutions flexible technology options that are highly scalable to support their unique growth and cost-reduction strategies.

**Virtually Unlimited Scalability**

The DNA platform’s open, flexible architecture is designed to serve financial institutions of virtually any size, with the ability to accommodate both gradual and sudden growth in the business. Comprehensive testing has proven the platform’s ability to meet the processing requirements of up to a $40 billion asset institution with four million accounts. The n-tier architecture supports deploying multiple application tier servers based on the number of users, known as load balancing. The DNA platform’s scalable architecture enables it to effortlessly manage unexpected increases in processing volumes and support dramatic growth, whether organic or by merger.

**Easy Integration**

The DNA application tier leverages a service-oriented architecture (SOA) to provide rich interfacing capabilities for any solution that needs to interact with the platform. The system’s native Web Services API is widely used today by Internet banking, call center, voice response and other systems requiring real-time interaction with DNA data and logic.

Fiserv also offers proprietary software (DNAconnect™) to translate, interface and manage traffic between external systems that require data in more restricted formats. DNAconnect acts as an optional universal translator between the account processing system, business and delivery systems, as well as partner systems and online data sources, to provide true third-party-to-third-party compatibility. As the central nervous system of the enterprise, DNAconnect centralizes information collection and movement throughout the institution. Through these features, DNA provides the ability to easily integrate best-of-breed solutions from Fiserv, partners and peers to provide a unified, consistent and real-time user experience regardless of the vendor or system.

**Ground-Breaking Extensibility**

DNA was the first extendable account processing platform enabling financial institutions, partners, resellers and independent developers to create custom applications, or DNAapps™, that extend the base system functionality without impacting the underlying code. DNA users can create their own DNAapps using the DNAcreator™ toolkit or purchase apps created by others through the DNAappstore™, a revolutionary online marketplace for custom applications. Developers can generate a new source of revenue through the sale of their DNAapps, while all DNA clients benefit from an on-demand repository of community-created innovations.

As seamlessly integrated extensions of the account processing system, DNAapps can access all platform functions, including single sign-on, screen and data access security, business logic and all underlying data. DNAapps can be created and used to add new features and data to DNA; offer new products; create custom workflows and data views; tightly integrate third-party systems or localize functionality for
international installations. DNAcreator and the DNAappstore empower a global network of users to create and download custom solutions at a pace that is faster and a price that is lower than traditional development models. Instead of competing with other users to have priorities included in the next release, DNA users can innovate when and how they see fit.

**Single Global Platform**

With wide acceptance in North America and installations in areas of the world both directly and through resellers, DNA is truly a global platform. DNA leverages the many inherent features of its .NET architecture to support international installations without the need for region-specific variants, and supports unlimited currencies and multiple languages using simple translation files.

Highly flexible product definition files and the ability to add nearly limitless person, organization and account information add to the innate ability of DNA to support financial institutions of any type around the globe.

Using the DNAcreator toolkit, DNAapps can be developed rapidly to localize DNA for international markets—creating region-specific functions to meet regulatory requirements, offer geographically unique products and respond to local demands. Since localization is accomplished without changing the DNA core code line, Fiserv can focus its development resources on continual system enhancements, rather than maintaining local variants for each market.

**Large and Diverse Client Community**

The state-of-the-art technology, modern approach to data modeling and open, standards-based architecture of the DNA platform make it highly flexible, extendable and scalable—resulting in one of the fastest growing and most diverse communities of financial industry collaborators and innovators. The platform’s flexibility allows it to equally support commercial banks, thrifts, mutuals, credit unions and other types of financial institutions, while the DNAappstore has attracted partners and independent third-party developers to contribute to the system’s functionality. This diverse, global community of financial institutions, partners and independent third parties continually develops and shares account processing system innovations for the benefit of all DNA clients.

**A Revolutionary Platform that Delivers Competitive Advantage**

Trusted by hundreds of banks and credit unions in the U.S., Canada and abroad, DNA is a proven account processing solution built on modern technology that can be extended in endless ways. Through its person-centric data model, flexible n-tier architecture, Microsoft® .NET framework, service-oriented architecture and customizable, extensible platform, DNA enables financial institutions to respond rapidly to changing consumer needs and preferences, increasing regulatory demands and proliferating delivery channels.

**Connect With Us**

For more information about DNA from Fiserv, contact us at 800-872-7882, email getsolutions@fiserv.com, or visit www.fiserv.com.