

# Check, Payment, Or Customer Heartbeat?

*Oracle solutions for Streamlining Payments  
Processing Across the Enterprise*

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# Check, Payment, Or Customer Heartbeat?

## *Oracle solutions for Streamlining Payments Processing Across the Enterprise*

**Image-enable an *all payments*  
Information Architecture...**

**Provide a trusted framework for straight  
through processing...**

**Shift the business focus to the  
customer.**

### INTRODUCTION

The Check21 legislation in the United States, has provided one of many opportunities for the Financial Services Industry to review and assess the payments process that has evolved since the introduction of pre-printed checks and their processing through clearinghouses in 1762. The last major innovation was the introduction of the MICR line with Bank of America's ERMA project in the early 1950's. As with most business processes, check processing has continued to change with new technologies enabling various components of the process to be performed more efficiently, or, as one line of business develops a niche solution to a problem in an isolated domain.

Globally, financial institutions are becoming aware that the traditional revenue streams are disappearing. The Internet has made available lower cost alternatives for moving payments transactions. "Payment clubs" are just one example of where companies are creating their own networks of partners for exchanging funds and information amongst themselves. The financial institution is only necessary for the bare minimum, settlement, in these situations. Thus, financial institutions around the globe are rethinking the value proposition associated with their payments offerings, and developing strategies to move to a role where they supply information, risk tolerances and liquidity information throughout the business day.

As financial institutions attempt to serve their customers "anywhere, through any channel", three common themes rise to the surface as barriers to their ability to focus on customer service rather than operational process:

- Paper checks and documents are dependent on transportation systems that pose geographic boundaries, isolating operational process to a specific location.
- Cumbersome devices used in multiple steps dealing with paper documents require that work be done in physical processing centers.
- Payments processing is frequently tied to a local time zone at the point of capture, while the financial institution's customer may request service from time zones across the globe.

The result is a payment system that is fragmented across a silo-based, heterogeneous environment. In both the retail and commercial lines of business, multiple, redundant repositories of payment information such as check images, signatures, invoices, and correspondence are acquired in distributed physical locations, processed by diverse application software systems and ultimately stored in a multiple proprietary archives. Often this information is used to the benefit of a single application or function when, in fact, it might be providing value to a consolidated view of customer activity or an enterprise view of corporate performance.

In the US, the true opportunity for Check21 is to migrate proprietary silos of payment information to an open infrastructure that enables consolidation and integration, allows financial institutions to maximize their investments in standards based technology platforms, and shifts the focus of the payments business to the customer. The operational payments process should become invisible to providers and customers who participate in its services. Solutions developed to address these requirements will also meet the global market's larger needs for better identity management, authentication of issuers of payments, and other payments related risk and liquidity information that can support all types of payments activity everywhere. This integrated, consolidated approach provides tremendous efficiencies and expense savings for new product rollout and time to market for new products.

## **PAYMENTS BUSINESS VISION**

At a high level of abstraction, the target state for check and payment processing is to capture the incoming transaction once; and instead of moving this data from application to application, and from one repository to the next, to change the state of the payment. These state changes are the result of business rules that automate operational process from capture through item processing, exchange, settlement, historical storage, and ultimately delete the item when it is no longer subject to regulatory retention. The more a financial institution knows about a transaction, the more intelligence it can apply to predicting the future state – such as whether a check is likely to clear or if there are any indications of fraud. State-based processing provides the ability to apply a “results-oriented” approach to payments systems.

Furthermore, the information associated with payments is domain knowledge of the financial institution...knowledge that can be used to competitive advantage from both a service and sales perspective; ...knowledge that can be acted on to reduce the cost of payment processing and improve risk management. This highly privileged information should not be outsourced, it should be maintained on a customer-centric architecture inside the institution. Creative application of this

domain knowledge will allow Financial Services Providers (FSP) to differentiate their services in an increasingly competitive market.

This shift from a business that is focused on operations to one that is focused on customer service will necessitate a transformation to a new payments processing model that simplifies the workflows for deposit automation, item processing, exchange services and historical retention for all types of payment. Consolidation of payments systems to a common infrastructure and aggregation of payment information to a shared data model will provide an enterprise view of the business. The transformation will enable financial institutions to manage operations across lines of business to achieve corporate performance goals. It will also empower customers to view their activity in new ways and improve their ability to make choices about how they spend or make investments. FSP's, who take on this challenge proactively, will take a leadership position in bringing new products and services to the market quickly.

Lastly, this customer-focused approach will enable financial institutions to accurately identify and integrate customer level data vital to customer profitability analysis, plus, provide an understanding of where the payments products are gaining traction with customers and where they are not. The customer "hub" approach aids the transformation of large volumes of customer data from disparate systems into accurate, consolidated, integrated profiles resulting that are more accurate, actionable and complete.

An additional, "unintended consequence" of consolidating and integrating the payment data in a single place, is the creation of a repository for payments related risk management information. This data can identify the intraday exposure on a per customer basis. It can also provide a comprehensive view to the values being exchanged across various payments systems – ATM, POS, Check, Credit Card, ACH, Wire Transfer, etc. This puts the financial institution in control of how its intraday liquidity is allocated, facilitating the flexibility to move liquidity to where it is needed, when it is needed at the most reasonable cost.

## **A SOLUTIONS FRAMEWORK FOR ENTERPRISE PAYMENTS**

In any business context, when new standards, legislation and technology drive a transformation from "business as usual" to a new vision, it poses an intimidating prospect. The changes often appear to be disruptive, the roadmap to the new vision full of pitfalls and the benefits of the future state elusive. Whether an enterprise chooses to be an early adopter or take a more conservative approach, there are always gains to be achieved from establishing a solution framework and a set of principles to guide the strategy early in the transformation. Having a

framework in place enables an enterprise to make proactive decisions based on a strategic plan, rather than reacting to market pressure late in the game.

Fortunately, there are already a number of solution providers and systems integrators who have either developed process automation capability, or have documented new operational process workflows for check processing. What may still keep one awake at night is wondering how to leverage this diverse set of solutions and workflows into an integrated framework, and, ...at what cost. The platform flexibility that empowers customer focus may be elusive.

*A proactive business model drives decisions from the top down, but an effective technology solution framework builds from the ground up. Oracle's strategy gives you the best of both worlds.*

The business goals for an Enterprise Payments Solution include a broad range of initiatives that will require a comprehensive technology infrastructure. In fact it is the dialog between technology innovation and business goals that will create the ability for financial institutions to differentiate their services and sustain competitive advantage. The goals should be prioritized in such a way that as a strategy for each is developed and implemented, it accelerates achievement of the next. With this in mind, Oracle believes the strategy must evolve towards the following strategic goals:

- An extensible framework that supports the evolution of new products and service, increasing customer self service
- An end-to-end payments process that enables straight through processing
- Process automation and decision support driven by a dynamic rules engine
- A non-disruptive transition from legacy operating environments to new systems
- The ability to layer business intelligence across all payments to provide customer insight

## THE ROADMAP TO ENTERPRISE PAYMENTS

### **An extensible framework that supports the evolution of new products and service, increasing customer self service.**

A number of payments regulations globally are acting as catalysts for change in the payments business. FSP's have an opportunity to design and build a payments infrastructure that optimizes performance for Business Logic, Application Services, Payment Data Architecture and Technology Infrastructure as independent layers of a solution. The ability to remove dependencies between layers of a solution framework provides the flexibility to take advantage of new technologies and standards in one layer without breaking a component in another domain. It also enables adoption of third party offerings, so the benefits of a best of breed tool or application can be combined with the economies achieved with a common infrastructure, in a "plug and play" environment.

The diagram below outlines a tiered view of the solution architecture recommended by Oracle. Solutions are actually built from the technology infrastructure up. As you add each layer, it allows a different type of user to focus on the business problem at a higher level of abstraction.

#### **Corporate Performance**

**E**xecutive management will review the impact of new products and services to make decisions about corporate strategy and ensure compliance.

#### **Business Logic**

**L**ine of business users with domain knowledge will focus on new customer opportunity, and should not be concerned with infrastructure operations.

#### **Application Services**

**A**pplication developers translate business logic into standards based services, which use API's to interact with data in the next layer.

#### **Data Architecture**

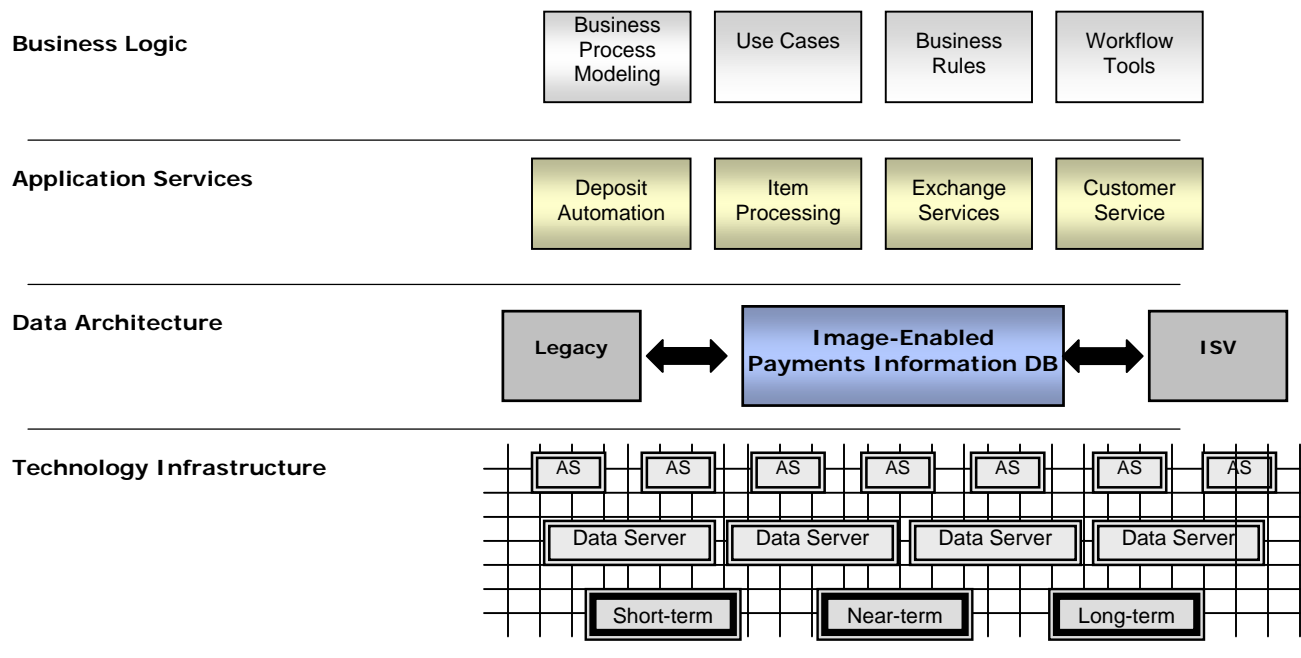
**P**rovide an image-enabled all payments data model with interfaces that allow application services to publish and subscribe to the data model.

#### **Technology Infrastructure**

**T**echnical architects implement application services and data repositories on a trusted infrastructure platform

The current release of Oracle's technology platform, Oracle 10g, best provides the foundation for an extensible infrastructure using a utility model where demand is spread across a data center or geography, resources are available on demand and applications are managed by Service Level Agreements, all from a central point of control. As in a electric utility network, one "plugs into the grid" to meet business need. The result is a trusted infrastructure platform that provides:

- Complete Payments Security - With check images serving as a legal representation of the payment, the system provides the highest levels of database security.
- Access control -
  - Operations only has access to components of a payment they are approved to view
  - Lines of business only have views to payment types appropriate to their domain
  - Image Exchange is authenticated by policy-based certification
  - Customers are ensured privacy
- Maximum Availability - Enterprise grids are built out of large configurations of standardized, commodity-priced components: processors, servers, network, and storage. Clustering technology, unique to Oracle 10g, is the basis for an infrastructure that can harness these components into a common processing system for all types of payments. Oracle's grid utility model dramatically reduces operational costs and provides new levels of flexibility so that systems become more adaptive, proactive, and agile.
- Complete, Unified Disaster Recovery - Unlike many archive solutions of today, this infrastructure ensures zero-data loss for all payment components with a single recovery process. Customers are back online in minutes.
- World Record Performance and Reliability – Dynamic provisioning of nodes, storage, CPUs, and memory maintain service levels across spikes in demand at certain times of the day, at many locations including branch, processing centers or a centralized data center and of availability to customers across the globe.
- Enterprise Management –Minimize the cost of administration for many proprietary payment archives in multiple locations and enable financial institution branches to operate on the same platform as central operations with self-managing features.



### An end-to-end payments process that enables straight through processing.

Financial institutions have been attempting to deliver straight through processing for a number of years. While it is often perceived as a function of on-line transaction processing capability, in this environment the challenges have more to do with moving payment images and data in and out of proprietary archives and between different applications.

A common data model that manages a single view of the image with its associated payment information simplifies the process and delivers many added benefits:

- Common Data Model for all payment types:
  - Data is structured to respond to the business, the business does not need to adapt to the data
  - Payments are treated as a composite object, including images, XML and other unstructured data
  - Customer centric views are enabled
- An image-enabled all Payments Database:
  - Zero Image Loss: Many image archives have up to 5% check image loss due to operational and synchronization problems between file-based image storage and the database managed

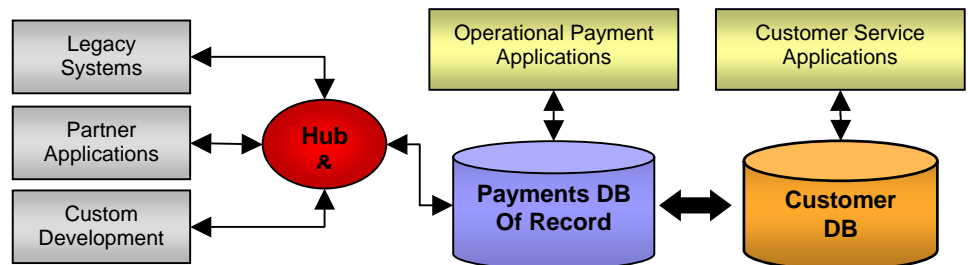
transaction, index and attribute data. Oracle handles all image content under full database transactional control.

- Dramatically lower research costs (up to 90% per transaction): True of any database driven image-based archive system. Archive retrieval and report generation costs are 90% less than manual or partially manual systems.
- Storage:
  - Dramatically Lower Cost Storage and Administration - Remove the need for hierarchical storage management systems and the dated storage devices they depend on. Use commodity storage at dramatically lower cost with higher availability. All payment data and images are online, fully recoverable, and disaster tolerant. Oracle DBA's work 55% faster with 41% less complexity than DB2.

A common model for all payments has the potential to eliminate many redundant archives, technology licenses and infrastructure platforms. With this approach, applications can change the state of the image using common interfaces, enabling a straight through process.

### **A non-disruptive transition from legacy operating environments to new systems**

The challenges of evolving to a consolidated payments business model from the proprietary applications and archives in place today will take most financial institutions years to accomplish. In some cases there may not be sufficient cost benefit to replace existing systems. The transformation will require an integration strategy or roadmap that over time connects an all payments data store to payment information from both internal sources and external archives.

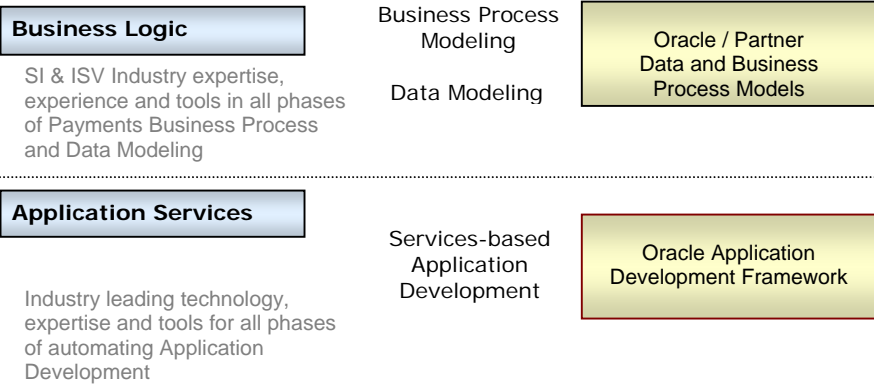


*Connect to Any Data* - Oracle Application Server 10g provides all the capabilities required to reliably deliver data from different databases and applications to virtually any system, including XML messaging, data transformation and validation,

and advanced metadata facilities. With Oracle Application Server 10g, you create a common payment data model that acts as a single hub of information and reduces the cost of future integration projects.

### Process automation driven by a dynamic rules engine

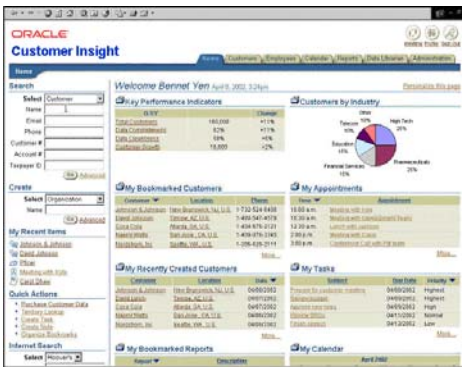
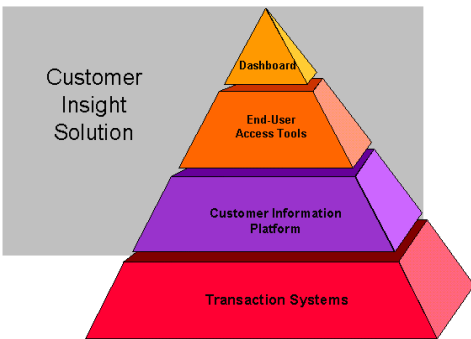
Process automation can be realized by the combination of rule-driven tools that model business logic and a development framework that automates the development of standards-based application services. Oracle has partnerships with key Independent Software Vendors (ISV)s that deliver the industry specific features and functions.



### The ability to layer business intelligence across all payments to provide customer insight

Oracle's Customer Insight Solution provides business intelligence about payment information based on customer views. It includes an integrated analytics platform as well as end-user analysis tools, which are accessed via a user-friendly dashboard. The platform provides consolidated customer and payments data from multiple internal and external sources (sales, marketing, service, call centers, wires, ACH, POS, etc.). The data is then stored in pre-defined formats that support reporting and analysis for risk management, performance measurement and customer information.

The benefits gained from Oracle's Customer Insight Solution are greater insight into your customers, which will drive revenue growth as well as improved business agility, lower costs, and reduced risk and liability.



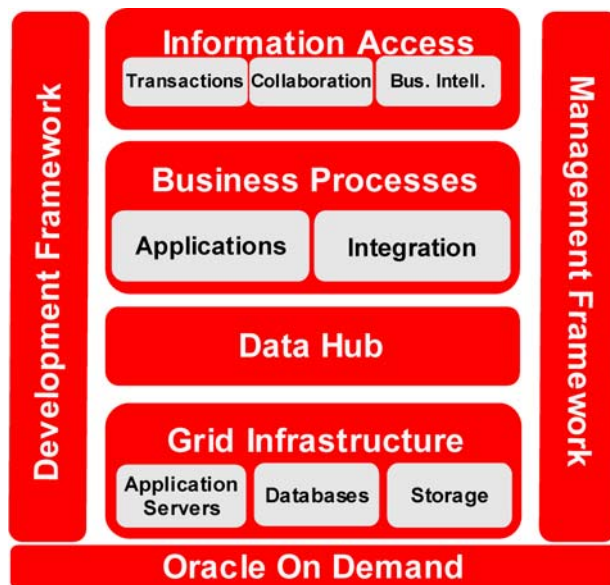
## ORACLE INFORMATION ARCHITECTURE

When an architect designs a structure he models spaces and materials to adapt to the way the structure will be used, yet the structure is built based on structural principles and building patterns which have evolved over thousands of years. The design process may be very innovative, but the infrastructure is based on construction principles that have evolved over centuries and are known to work.

Information architecture is no different. The more reliable and predictable the structural principles, the more flexibility there will be in the process of modeling a business solution. Oracle's Information Architecture is based on layers that enable creative solutions and have predictable and reliable performance at the same time. The Oracle Information Architecture (OIA) is grounded on the principle of consolidation – doing more with less – and addresses the issue of IT complexity in a fundamentally different way.

Oracle's Information Architecture differentiates Oracle's approach to enterprise software architectures from those of its competitors. Essential to achieving an information-based architecture is the objective of *Applications Consolidation* – delivering standardized global processes that traverse multiple lines of business, such as the various payments products: check, credit card, wire transfer, and ACH in Financial Services.

Enabled by application consolidation, is true transactional *Data Consolidation* – embracing the view that the consolidation of master data underneath consolidated applications eliminates data redundancies and supports the more sophisticated, real-time business processes demanded by modern organizations. Reduced application and data footprints enable *Technology Consolidation* by eliminating previously replicated infrastructure. This reduces cost, increases flexibility and minimizes operational risk.



Oracle Information Architecture

The roadmap to Enterprise Payments takes advantage of Oracle's approach to information architecture and sets a context for simplifying technology infrastructure across lines of business for any Financial Services provider.

## **CONCLUSION**

Analysts predict that financial institutions, that want to survive in the future, will use the opportunity presented with Check21 and other regional legislation around the world (e.g. SEPA in Europe), to step back and redefine their payments strategy. Rather than continuing to live with a technology infrastructure that was designed to meet the needs of a product driven market, industry leaders will choose to map their future architectures to meet their strategies. While it will take years to fully evolve to this strategic state, financial institutions that map out a plan and begin executing on it will be the survivors in the next round of industry consolidation.

The technology has finally met and exceeded the business requirements. There is no longer a reason to proliferate the duplication, inconsistency, and, lack of integration. Oracle provides a framework of products, tools and business rules/workflow that, in conjunction with ISV's, provides the most comprehensive, leading edge approach to payments. Start slowly and transition pieces at your own pace. Oracle puts the financial institution in control of its payments destiny.

For more information on Oracle Corporation's Enterprise Payment System Solution, please contact your Oracle Account Manager or call David Klebba, 610.722.2059.; Christine Condit, 720.330.1678.; or Greg Midtbo, 917.327.7242.

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