The Intelligent Warehouse™

How to Maximize Profits, Market Share and Portfolio Values
by Better Understanding Student Loan Borrowers

Table of Contents

Just iQ SM

Foreword

Dear Student Loan Industry Executive:

Do you want more control over your business?

This paper examines how to manage the lifecycle of a student loan by integrating data from all internal and external sources—gathering knowledge from the very first time a prospect goes to your website through the very last payment they make on your loan.

Our solution gives you a comprehensive, flexible view of every customer and each loan—enabling you to make better, faster and more profitable decisions.

Unlike relying upon partners or existing systems to provide you this information, our approach gives you the ability to reconcile, audit and analyze every transaction and customer activity.

Intelligent Warehouse is an "open box solution." It is a development platform that includes a set of powerful tools that can be mixed and matched to meet the unique needs of each customer. This allows us to maintain and upgrade the system over time, thus minimizing the total cost of ownership. The solution includes database, security, integration and business intelligence modules.

JustIQ is a division of Integrant Inc., a leading edge software and consulting firm. Our core competencies include:

- Software installation, testing and integration
- Custom application development
- IT infrastructure support

We foster an idea-driven culture. We encourage feedback, discussion and criticism of this white paper. Thank you for your consideration.

Olin Hyde
VP Sales & Marketing
Phone: 858.457.3200 x102
Email: Olin@JustIQ.com

I. Executive Summary

Strategic Goals

Student loan executives must understand the traits of individual customers and predict borrowing and repayment behaviors to maximize profits, market share and portfolio values. Analyzing and comparing information gathered from disparate data sources enables executives to make better operational and strategic decisions:

Finance

- Optimize indenture placements to maximize pricing.
- Maximize special allowance payments (SAP) for Federal Family Education Loan Program (FFELP) products.
- Tailor new loan products with more effective benefits to target niche markets.
- Evaluate and predict risks based on historical data and borrower behavior.
- Attract more favorable financing by providing more comprehensive reporting on portfolio characteristics and performance.

Accounting

- Accurately track loans in transit.
- Verify servicer conversions.
- Reconcile loan accounting activity with bank transactions.

Marketing

- Track lead to loan conversion rates.
- Increase volume of qualified leads.
- Enhance value of information provided to Financial Aid Offices.

Operations

- Streamline processes by integrating systems.
- Track loan applications, school certifications and loan approvals.
- Eliminate data entry errors and omissions.

Executive Leadership

- Base critical business decisions on real-time reports and analysis.
- Receive accurate reports generated from a single data source.

Performance Obstacles

Most education finance companies are data rich and information poor—it is difficult or impossible for them to combine, analyze and report on the vast amount of data relating to individual borrowers and specific loans. External systems, such as loan servicing, do not share detailed transactional information with internal systems, such as loan origination. Executives make decisions based on data that is potentially incomplete, inaccurate and often not current. A number of situations compound this problem, including:

- Disparate systems—lenders depend on multiple internal and external sources, with each providing only a partial view of vital information.
- Inconsistent data—inability to control, share and update all information across all systems.
- Unreconciled transactions—inability to track and verify individual transactions across all systems.
- Errors and omissions—introduced by manual data entry.

Solution

JustIQ's℠ Intelligent Warehouse™ solution combines, shares and reports on all information associated with each borrower and every loan. A secure database gathers and updates information to provide precise, real-time analysis, reporting and sharing of all information across the enterprise. The solution includes three distinct sub-systems:

1. A Data Warehouse collects, stores and shares all information from both internal and external systems, including servicing, origination, application, CRM, etc.
2. Integration Tools enable disparate systems to compare and share information. A change made in one application automatically updates other related systems in the enterprise.
3. Business Intelligence (BI) tools transform this vast store of data into information critical to making sound business decisions.

Benefits

JustIQ's Intelligent Warehouse provides a complete view of the student loan life cycle, enabling executives to base corporate strategy on actual portfolio performance and borrower behavior. This customer-centric decision process enables companies to become more competitive by:

- Increasing indenture profitability—by using predictive analytics based on historical portfolio performance information on borrower behavior.
- Boosting investor confidence—with accurate and complete disclosure of risks combined with precise predictions of portfolio performance.
- Rapidly adapting to market and regulatory changes—by using flexible and customizable information systems that streamline business processes to create new products.
- Improving interdepartmental cooperation and communication—by propagating "one truth" throughout the organization with a central data repository.
- Developing better tools to understand markets—by creating accurate, proprietary analytical tools to extract meaning from previously inaccessible data to segment customers and predict behaviors with precision.

II. Goals

Enterprise Objectives

The education finance industry is experiencing unprecedented change:

- Increasing competition—as new lenders enter the market with new products and business models.
- Regulatory uncertainty—as Federal and State agencies change rules more frequently.
- Decreasing margins—as interest rate and special allowance payment (SAP) gaps decrease.
- Expansion of the private loan market—as students increasingly use alternative loans to supplement Federal loans.

These factors will likely become more intense during the next few years—thus driving some companies to merge with competitors as others seek to gain advantages with new products, business models and innovations.

Regardless of the strategy a student loan company pursues, the goal is the same: to gain competitive advantage. Successful companies will thrive in this new environment by finding better ways to:

1. More effectively capture customers—sell more loans to new customers while preventing existing borrowers from consolidating with competitors.
2. Respond quickly to regulatory and market changes with new products, compliance measures and business models.
3. Become more efficient—increase productivity of existing systems by streamlining business processes and procedures.

A CFO's Life Before & After Intelligent Warehouse

Prior to implementing Intelligent Warehouse the CFO relied upon servicers to provide Portfolio Characteristics Reports (PCRs). These reports were neither flexible nor detailed. Even worse, the CFO had no way to independently verify their accuracy. It was akin to trusting the bank to balance the CFO's checkbook.

After implementing Intelligent Warehouse, the servicer still provided PCRs—but now, the CFO used these reports as only one of many tests to determine if the servicer's information was accurate. The CFO immediately determined the servicer's information was wrong.

Errors included:

- Multiple billings for the same borrower
- Incorrect calculation of SAP payments
- Failure to enforce benefits
- Failure to apply new benefits

Even more importantly, the solution provided the analysts with better, more powerful tools that were faster and easier to use than Excel spreadsheets. They were, for the first time, spending more time analyzing information than manipulating data in and out of spreadsheets.

Departmental Performance Measurements

Each department within a student loan company is a potential strategic competitive asset or liability as the market becomes less forgiving of poor decisions. Now, more than ever, executives must manage each department as a competitive advantage—driving performance towards measurements that reflect the relationship the company has to each borrower and every loan. Examples of such performance measurements include the following:

Finance
- Maximize portfolio margin spreads.
- Accurately predict loan performance.
- SEC Reg AB compliance.
- Develop new products for niche markets.

Accounting
- Independently predict accurate SAP payments.
- Decrease loan transit times.

Marketing
- Attract new customers.
- Keep customers with new consolidation products.
- Improve effectiveness of campaigns.

Operations
- Improve lead to loan conversion rates.
- Reduction of servicer costs.
- Protect and control data.

CRM: Marketing's Best Friend

Customer Relationship Management (CRM) systems enable a company to track every interaction it has with a customer—from the first time the customer receives marketing material to the last time they called for service.

CRM systems help companies develop personal relationships with customers by providing a complete picture—including who said what to whom, when and what problems customers experienced and, most importantly, what customers want.

III. Performance Obstacles

In mid 2006, Integrant Inc. conducted an interview-based survey of leading student loan company executives to identify the biggest obstacles to becoming more competitive. Our findings determined that most student loan companies suffer from:

1. Inaccessible, un-reconciled and un-audited aggregated servicer data. Common servicing errors go undetected due to the inability to compare individual borrower repayment data to loan application, origination and disbursement information. Student loan companies suffer lost profits and higher operating costs as a result of:
   a. Difficulty identifying loans lost in transit (i.e. originated but not serviced).
   b. Failure to enforce benefit compliance (e.g. Failure to disqualify borrowers from benefits).
   c. Incorrect application of borrower benefit plans.
   d. Incorrect coding of SAPs and interest rates resulting in failure to collect government payments
2. Dependence on manual data manipulation and analysis. Discrete pool analysis and compliance with SEC Regulation AB is largely a manual process performed by financial analysts to access, aggregate and analyze data. Common tools used are Excel spreadsheets and customized SQL databases—which are often designed, maintained and operated within finance departments. These systems require significant manual data manipulation that result in:
   a. Errors introduced by manual input.
   b. Inconsistent data sets between departments resulting in interdepartmental confusion as they arrive at different conclusions.
3. Rigid, process-driven operational procedures. Departments adhere to strict data management protocols to ensure data accuracy. As a result:
   a. Systems do not easily adapt to the introduction of new loan products, regulations or other changes to the business model.
   b. Data verification requires human intervention—resulting in the creation of new errors from manual input.
   c. Executives do not have access to highly flexible reports and analysis.
4. Breeches in data security. To reconcile data disparities, companies transfer data via tapes (often from servicers) and store confidential information on personal and notebook computers. These portable devices are vulnerable to loss, theft, or misplacement—resulting in the risk of fraudulent use of confidential borrower information.

How a Simple Question Can Lead to Disaster

A CEO at a student loan company asks his CFO, CMO and COO to independently create a strategic plan to to meet growth targets for the next three years.

Data from external partners, such as servicers and originators is sent to Finance, Marketing and Operations to be analyzed along with data from internal loan applications, disbursements and other systems. Analysts in each department use different methods to crunch the numbers. Finance has a SQL database that exports servicer data to Excel pivot tables. Marketing exports aggregated Department of Education information on schools to compare against origination files. Operations compares data from Accounting against servicer and origination data using Excel spreadsheets.

Each department arrives at very different results. Finance determines they should change servicers and stop working with a vendor preferred by Operations. Marketing wants to introduce a new consolidation loan product that Finance believes will be not profitable. Disagreements overwhelm the executive committee. The CEO directs each department head to re-evaluate the numbers. Silos of information form as managers gather and keep information in a well-intentioned effort to "preserve data integrity."

Soon, there are many databases and no two sets of data look alike. Marketing and Finance can't even agree on which loans are the best to promote. Proactive management based on an enterprise view of the data becomes so impossible that people make jokes about the left and right hand fighting with each other.

The CEO hires an external consultant to "provide objective analysis and insight." Databases are transferred to the consultant's laptop computer—which then gets stolen along with financial and credit records on more than 500,000 students. The press finds out and runs a story in a prominent newspaper. Soon thereafter, the student loan company is served with a class-action lawsuit and several universities remove the lender from Preferred Lender Lists.

The theft was subsequently blamed on the use of social security numbers to identify borrowers while Government officials announced the drafting of new regulations to protect confidential student information.

In our opinion, the root problem was failing to provide a secure way to access, compare and analyze disparate data sets.

The castastrophic mistake was allowing the transfer of confidential customer data to a notebook for analysis. This would not have happened if the company had a secure, integrated data management system like the Intelligent Warehouse and followed widely accepted IT security policies and procedures.

Data disparity is the root cause of all these problems. Internal and external systems do not share or update information with each other—leaving executives to make decisions based on incomplete, potentially inaccurate and unreliable data.

The fundamental obstacles to improving enterprise performance are all data related:

- Disparity—disagreement of information between systems.
- Unreliability—data is not accurate in all systems at all times.
- Inaccessibility—systems do not enable the retrieval of all data from all systems.

Just iQ SM

IV. Solution: The Intelligent Warehouse

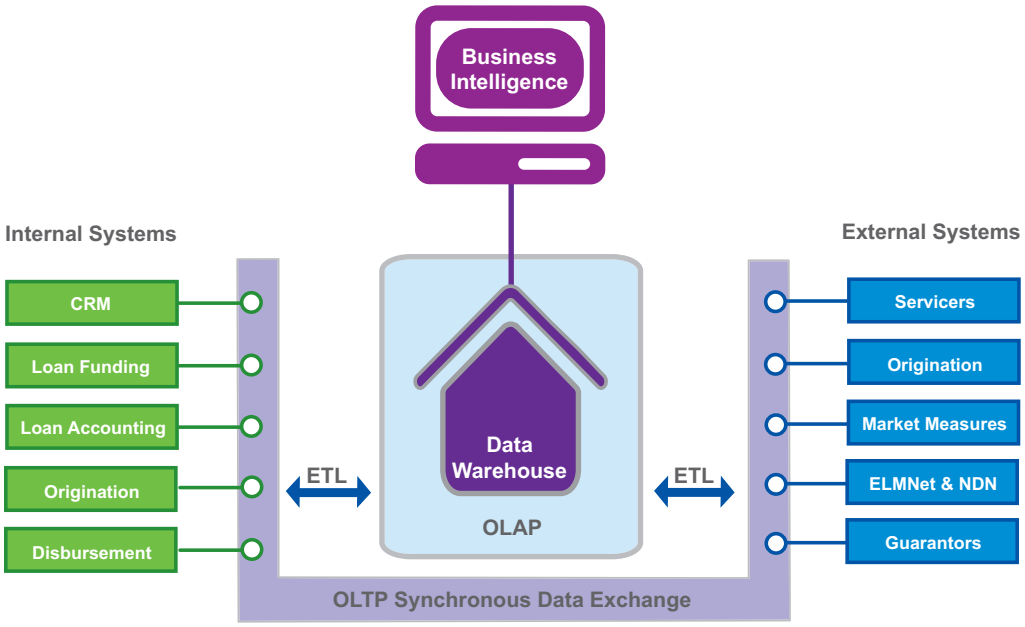
Combine, Share & Report

JustIQ's Intelligent Warehouse combines a data warehouse to store and share all student loan data with business intelligence tools to access, report and analyze the information. It is a single system tailored to manage the entire student loan life cycle—providing education finance companies a comprehensive view of all activities, transactions, borrowers and loans.

Sharing information between schools, lenders, guarantors and borrowers is nothing new, yet it is exceedingly complex. Industry groups and companies such as EFC, NCHELP, PESC, ELM Resources and others have helped standardize communication and file format protocols such as CommonLine, CAM, CRC and XML. Servicing agencies such as Sallie Mae, ACS, NELNET and Great Lakes benefit from tremendous economies of scale. There is no incentive for them to standardize file formats for servicer information. Just six companies provide more than 80% of all servicing to the industry. It is important to note that external entities, particularly servicers, often use legacy information systems that were designed and developed with pre-Internet technologies. The inflexibility of these legacy systems provide the unintended benefit of generating data feeds with consistent, if not optimal, attributes.

Unlike other information sharing systems, Intelligent Warehouse gathers, combines and stores information from both internal and external systems. Often, the solution is configured to ingest data directly from existing systems, such as ELMnet. Moreover, Intelligent Warehouse is an open solution—new data sources are easily added based on the needs of each customer. Customers own, control and manage the solution to address their unique needs.

Diagram 1: Conceptual Overview of Intelligent Warehouse



Sharing information is useless unless executives can use it for analysis and reporting. For example, structuring, modeling and predicting the cash flows of student loan revenue bonds is extremely complex. Currently, many CFOs rely upon securitization software, such as SS&C's DBC Student Loan, to perform these critical tasks. These software packages are comprehensive, sophisticated and

reliable. Their weakness is a reliance upon data input from spreadsheets that often have disparate or inaccurate information.

Intelligent Warehouse enhances the value of analytical software systems by providing accurate and comprehensive data from all application, origination, disbursement and servicer systems. Moreover, the solution is more secure and operationally efficient than solutions designed solely for reporting and analysis because:

1. All data is within the client's control at all times so there is nothing to steal or lose, and;
2. Each system actively shares information with other systems—thus verifying data and providing opportunities to create new value (such as dynamically creating content on a website to answer specific borrower questions).

Analysis as a Competitive Advantage

Intelligent Warehouse provides clients with previously unimaginable access to a vast amount of information. It enables companies to develop proprietary methods for capturing and evaluating business opportunities.

Now, for the first time, analysts have the power to develop sophisticated statistical models to explain and predict critical events and business conditions based on actual transactional data, such as:

- Defaults—when and which loans are most likely to default, what are the risk factors.
- Prepayments—which borrowers and loans will most likely prepay and when.
- Benefit Utilization—which packages will best influence borrower repayment behaviors.
- Demand—which loans will appeal most to each market niche.
- Cash Flows—how serialization and prepayment rates will affect an indenture.

What is an Intelligent Warehouse?

JustIQ coined the term "Intelligent Warehouse" to describe the combination of four technologies that are often confused and misinterpreted:

- Business Intelligence (BI) systems are tools designed to turn massive amounts of data into useful information. They usually include features for reporting, data mining, predictive analysis and decision support systems. Think of them as "pivot tables on steroids."
- A Data Warehouse (DW) is a database system that stores information for on-line analytical processing (OLAP)—enabling BI systems to access all data. Think of these as "information gold mines."
- Extraction, transformation and loading (ETL) tools gather and ingest information into a database. Think of these tools as a way to store and share "apples with apples and oranges with oranges."
- On-line transaction processing (OLTP) systems optimize data exchange between systems by dividing each update into a unit of work that is controlled by clearly defined rules to ensure the completeness and accuracy of each transaction. Think of these as "traffic cops" controlling a busy intersection to prevent accidents and to keep things moving.

Our solution wraps an OLTP system around a DW with ETLs to share information between the two systems. A series of ETLs provide BI tools with access to the DW.

Companies achieve the greatest ROI when all four systems work together.

JustIQ's Intelligent Warehouse is best described as an open development platform providing a set of tools that can be easily configured to meet the unique needs of each company. Clients get a lower-cost, faster and more reliable way to gain the benefits of a custom made solution.

Modeling variations of data over time empowers executives to make better decisions—and avoid costly mistakes. For example, if an undergraduate physics major at Stanford almost always buys Stafford, Plus and alternative loans and typically pre-pays FFELP loans within six years, student loan companies can then tailor loan products to attract these students and optimize cash flows into specific indentures. This methodology is similar to how insurance companies determine risks. They simulate the distribution of potential outcomes based on random variations in historical data. These models account for how volatile these variations become in the future. This approach provides much more accurate predictions than making projections based soley on aggregated PCR reports and "best guesses" about the future.

Common analytical uses of the Intelligent Warehouse include:

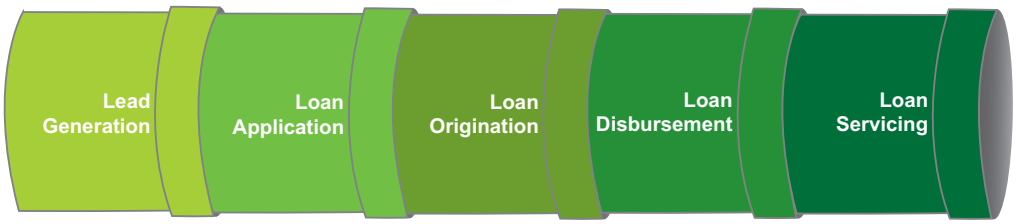
- Predictive analytics—to determine probable outcomes of campaigns, new products, etc.
- Descriptive analytics—to accurately measure and characterize borrowers, loans, etc.
- Data mining—to find hidden relationships such as likely candidates for new products, etc.

Analysis is only as good as the analyst—there is no substitute for the human ability to interpret results. JustIQ is a powerful tool that accelerates the understanding of borrowers and loans.

Why It Works

The solution works because all student loan companies fundamentally share a common business model composed of five distinct processes:

Diagram 2: Student Loan Pipeline



1. Lead Generation—Attract prospects who seek loans to finance educational pursuits.
2. Loan Application—Qualify loan prospects. For alternative loans this may include analysis of their credit worthiness, income, FICO scores, indebtedness, etc.
3. Loan Origination—Convert prospects into customers by securing a legally binding master promissory note to ensure that borrowers agree to repay the loan. For FFELP loans, schools certify eligibility and a government sanctioned guarantor insures the loan.
4. Loan Disbursement—Distribute funds to either the borrower, school or other valid entity.
5. Loan Servicing—Collect regular payments from the borrower, ensuring the terms of repayment are met until the loan is either paid off or discharged.

Each of these processes may involve several information sub-systems as illustrated in Diagram 3. All of these systems manage a small portion of a loan's complex life cycle. For example, FFELP loans typically go through at least 26 stages involving an array of internal and external entities:

- Government (State and Federal)
- Schools
- Borrowers
- Guarantors
- Lenders
- Servicers

Diagram 3: Simplified Example of Lending Sub-Systems

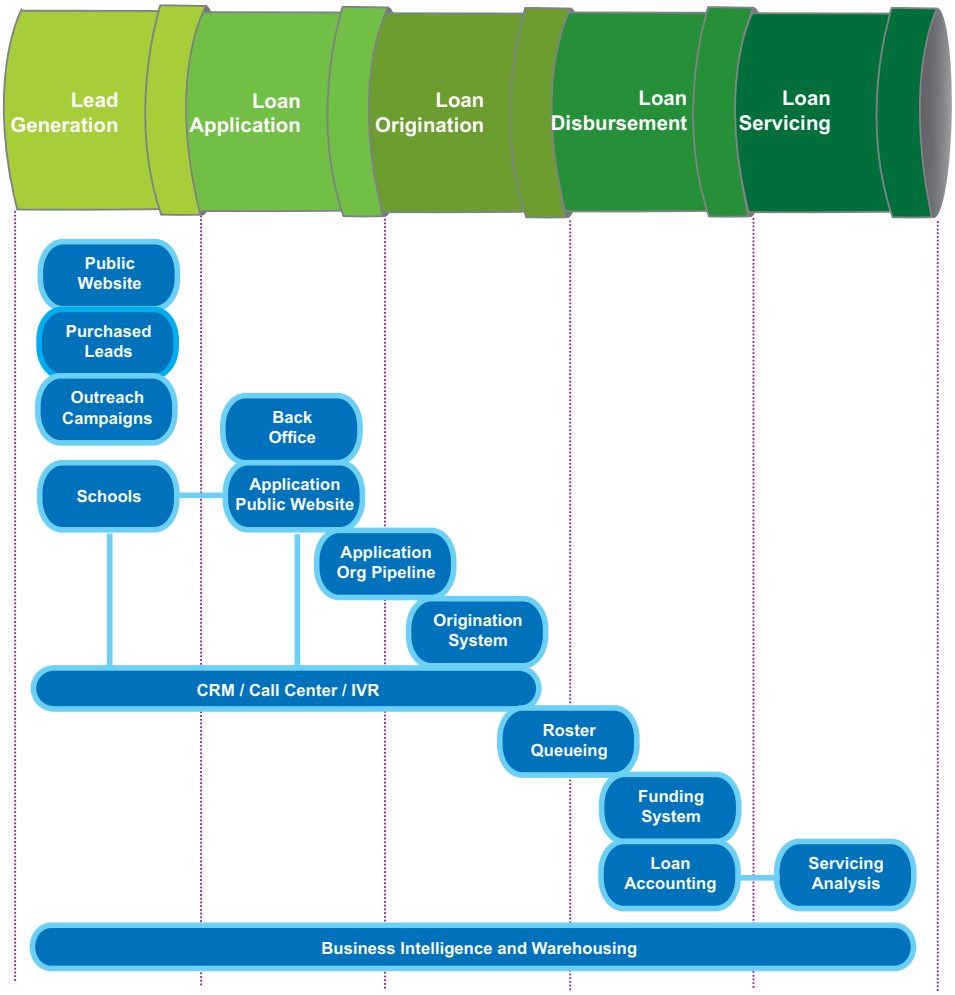
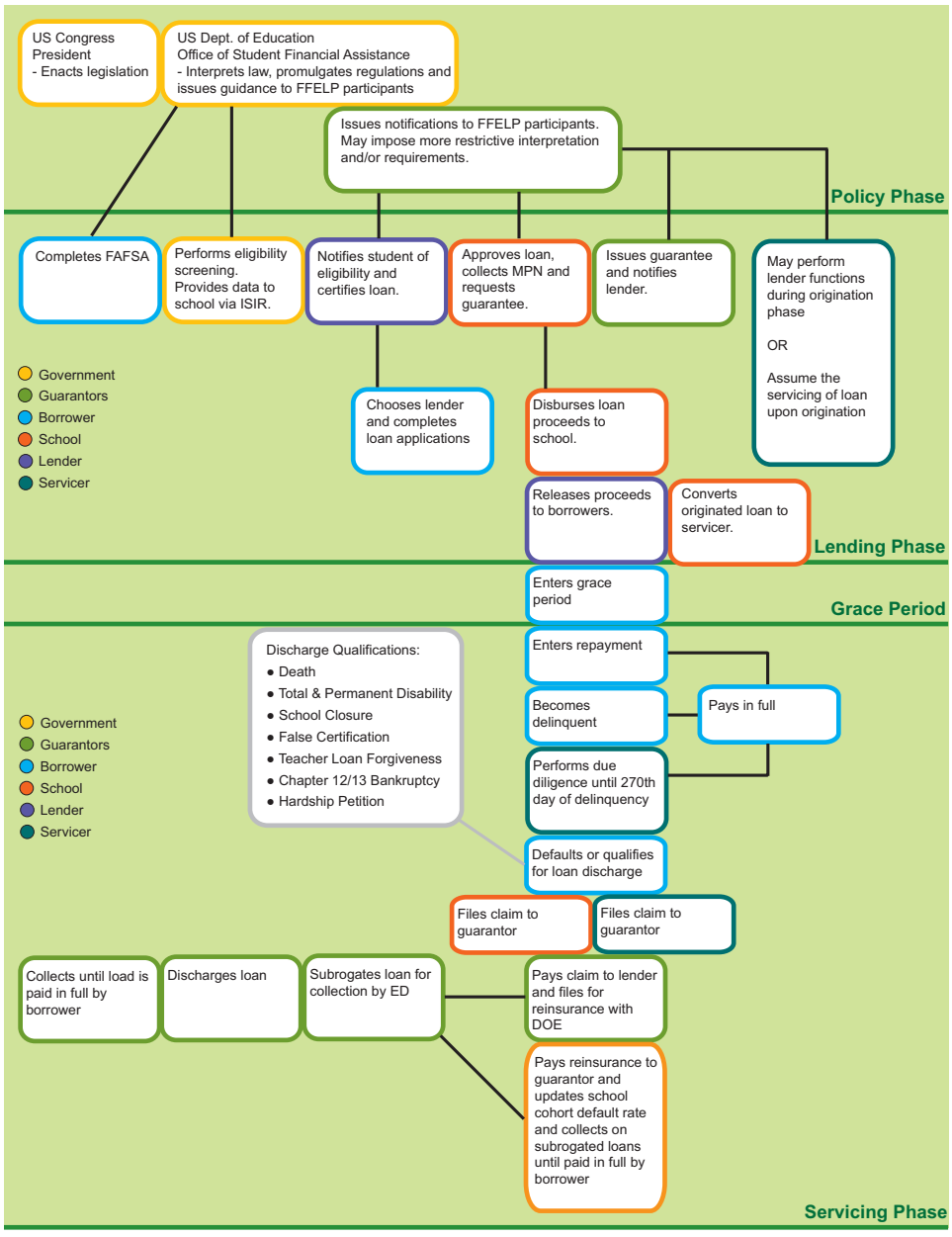


Diagram 4 illustrates the life cycle of a generic FFELP Stafford loan. Each box represents a process. Each process utilizes multiple internal and external systems. For example, a student loan company may use an origination package (such as AppWorks) internally while also using external vendors (such as Open Net).

Diagram 4: Life Cycle of a FFELP Student Loan



Complexity increases with the addition of each external entity—thus making it difficult for many student loan companies to simultaneously access and analyze information across all five business processes. Moreover, data disparities quickly arise from the proliferation of systems—as systems were never designed nor intended to be integrated from start to finish.

Intelligent Warehouse focuses on the natural point of integration for these systems: the lender; and the common denominator for all data elements: the borrower. Our solution empowers executives to make more informed decisions based on “one truth” by:

1. Storing all information in a data warehouse.
2. Sharing and comparing common data across all systems.

3. Conforming data to industry standard formats.
4. Relating all data elements to each other.
5. Securing and protecting data with multiple encryption layers and access controls.
6. Reporting and analyzing information from any perspective.

How It Works

Intelligent Warehouse works by creating logical similarities between data feeds from external data sources using rules that reflect the unique business process of each client.

Diagram 5: How Intelligent Warehouse Works

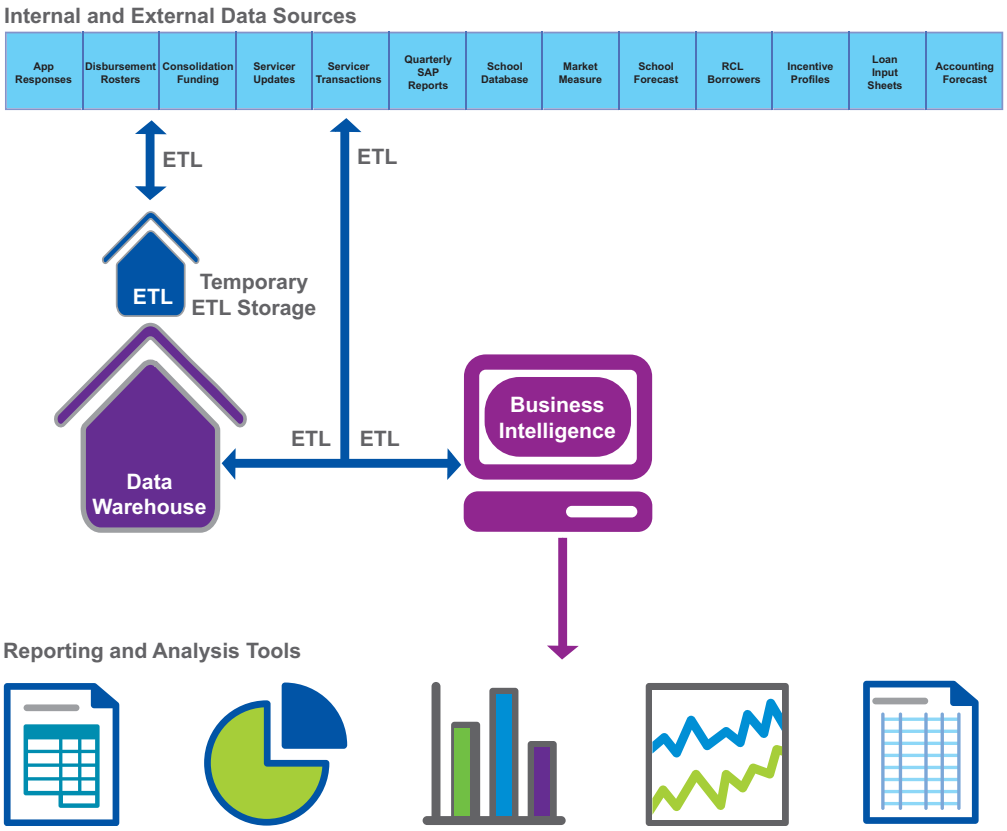


Diagram 5 illustrates how the solution works. Component steps include:

1. All data sources are fed into tables in a Level 0 database. No information is manipulated at this point. It is simply stored in a controlled environment where every transaction is recorded in a format similar to the native system's format. This level enables the data warehouse to control the process of ingesting information by creating a staging area for disparate data sources.
2. Next, data goes through extraction, transformation and loading (ETL) into a Level 1 database. This is where all data is cleaned, normalized and made relational. Business rules in this layer identify data elements that do not conform to expectations and flags exceptions to ensure that data anomalies and errors do not contaminate the database. For example, older loans without a CommonLine identifier (CLID) code are automatically assigned a generic loan identifier (GLID) based on industry standard naming conventions.
3. A separate online transactional processing (OLTP) system shares data with other systems using a service oriented architecture (SOA). For example, the loan application system automatically updates CRM records. Security layers within both the OLAP and OLTP systems protect and control access to information at a user, field, column and row level.
4. Finally, Business Intelligence reporting and analysis tools access the data in a number of ways:
   a. Directly accessing the Level 1 database (often called relational on-line analytical processing or ROLAP) to access all facts and attributes within the data structure. This approach provides the greatest flexibility for reporting and analysis.
   b. Directly accessing OLAP cubes (or mini-databases) optimized to run specific reports. Specialized ETLs update these cubes based on the needs, requirements and configuration of each client. These cubes are optional and are usually deployed to enhance performance.
   c. Accessing a group of related multiple OLAP cubes (often called a MOLAP or data mart) to analyze a specific function. For example, the marketing department will usually have a data mart to analyze sales performance.
   d. Concurrently querying cubes, data marts and/or the Level 1 in with a hybrid on-line analytical processing (HOLAP) approach.

Most importantly, Intelligent Warehouse enables clients to use almost any BI tool—such as Cognos, Business Objects, MicroStrategy, MS Analytics, Oracle Discoverer, SAP, etc. This open architecture enables clients to leverage existing skills and investments in BI systems.

Security

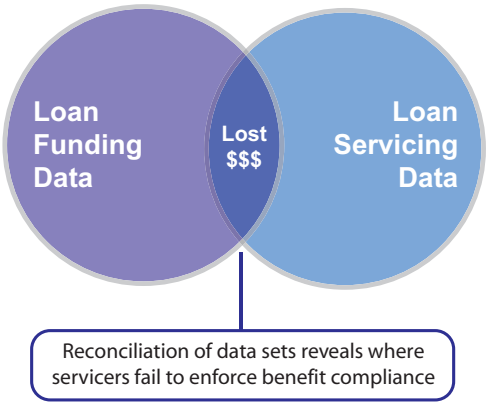
Intelligent Warehouse eliminates almost all security vulnerabilities by eliminating the need to send confidential data outside the enterprise firewall. BI tools such as MicroStrategy or Cognos enable reporting to be done completely over an encrypted internet browser while blocking out sensitive information such as social security numbers. The core database uses a feature in SQL Server 2005 that allows the encryption of specific fields within the database using various techniques, including: symmetric/asymmetric encryption, password protected fields and certificate-based encryption/decryption. This means that companies have multiple ways to control who sees what, where and how. These robust, multiple layers of security eliminate the need for sensitive information to be stored on portable devices, such as notebook computers, and makes internet hacking almost impossible, thereby eliminating the two greatest threats to data security.

V. Benefits

Enterprise Success

The core value of the Intelligent Warehouse solution is that it enhances the value of existing systems by creating new functionality through integration with other, previously unrelated systems. The benefits include measurable results that will vary depending on the size, complexity of product offerings and age of the student loan company. At minimum, success metrics for the enterprise include the following:

- Productivity increases as measured by headcount per $1,000,000 of loan volume. The solution enables the same head count to attract, originate and process more loans.
- Volume of loans sold increases as the company innovates new loan products and benefit packages while simultaneously providing better service and support to prospective and existing customers.
- Margins increase as both SAP and interest rate gaps widen with indentures that are more accurately priced based on the stress-testing of actual borrower repayment behaviors.
- Catastrophic risks diminish as data is more tightly controlled and opportunities for theft and loss are eliminated.



Departmental Success

Intelligent Warehouse provides a complete view of the customer, Operations and Finance. This “one truth” transforms an abundance of data into a wealth of flexible, easy to use information based on the relationship of data to the most important factor—the borrower. The following table details important reports and associated benefits for each functional area of a typical student loan company:

Table 1: Sample Departmental Performance Measurement Reports

Department	Function	Sample Report	Benefits
Accounting	Track servicing of all funded loans	Loans in transit	• Tracks at the borrower level • Instant identification of discrepancies by borrower and servicer
	Close monthly books	Monthly Servicer Transaction Report	• Processing time dropped from five FTE working weeks to one FTE working one day
Finance	Determine portfolio performance	Portfolio Characteristics Report	• Unlimited data flexibility • Identified pre-payment patterns by borrower. Processing time dropped from one FTE working four weeks to one FTE working one day. Drops processing time by up to 97% (one FTE day versus one month FTE)
	Regulation AB Compliance	Indenture Risk Analysis Reports	• Processing time dropped to less than one hour per indenture
Marketing	Plan and meet sales goals	New Loan Volumes Reports	• Compares plans versus actuals for all new loans by school, representative, product, etc.
	Attract new customers	Benefit Utilization by Borrower Trait	• Reveals which benefits appeal to which borrowers • Determines utilization of benefits by customer-type
	Sell existing customers new products	Consolidation Net/Bleed Report	• Determines where consolidations are won and lost every month • Processing time dropped from one FTE working one day to less than one hour per month
Operations	Reduce servicing costs	Exceptional Servicer Fee Report	• Identifies borrowers that are generating multiple servicer fees
	Reduce origination processing times	Origination Errors and Omissions Report	• Identifies loans not processed due to missing or incorrect data
Executive	Track Special Allowance Payments	SAP Monthly Report	• Eliminates reliance on accuracy of servicer reporting • Client identified $750,000 of lost SAPs caused by servicer errors in first six months
	Monitor and improves enterprise performance	Portfolio Characteristics Report (PCR)	• Interactive report enabling CEO to “drill anywhere” to see performance at every level of detail

Return on Investment

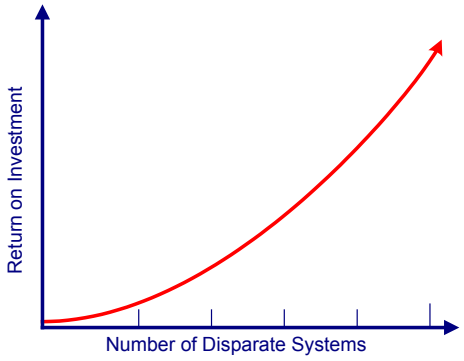
Implementing Intelligence Warehouse typically generates a positive return on investment within the first year of becoming fully functional. This can be attributed to monies recovered from errors and omissions from external vendors.

Generally speaking, the solution provides the greatest benefit to student loan companies that have the following characteristics:

- Dependence on external servicers—Intelligent Warehouse allows companies to compare and reconcile servicer data with disbursement information.
- Multiple originators—consolidate information from all origination systems into one central repository with data warehouse.
- High default rates—automate outbound calls to remind borrowers of late payments via a call management system.

Gartner Group estimates that by the end of 2006, 70% of the Fortune 500 will have implemented Business Intelligence (BI) and Data Warehousing (DW) solutions to manage disparate data systems. BI market share leaders include: MicroStrategy, Cognos, Oracle, SAS, Business Objects, Hyperion and SAP. Microsoft is also aggressively entering this market with MS Analytics.

VI. Costs & Complexities



Developing a system to share data between disparate systems is exceedingly complex. Data feeds from servicers are highly proprietary and vary in format and content. For example, the data dictionary for one major servicer is over 70 pages long. Additionally, lenders receive disbursement rosters from multiple originators in varying formats on a daily basis.

JustIQ developed Intelligent Warehouse with these complexities in mind. Our solution is modular, enabling clients to pick and choose individual features. We can quickly change the functionality of each system to meet the unique needs of every client by using a Service Oriented Architecture (SOA). Web Services and XML-based Application Program Interfaces (APIs) enable clients to synchronize data in real-time across multiple systems.

JustIQ's Intelligent Warehouse simplifies complex tasks by providing clients with an open-standard development platform with a robust architecture, scalable functionality and ready-to-use ETLs.

VII. Tools within Intelligent Warehouse

Data Sources

The system currently accommodates feeds from the following information sources:

Servicers	Industry Systems	Origination Systems	COTS Applications
Sallie Mae	ElmNet	AppWorks (V-Tek)	Microsoft CRM 3.0
Great Lakes	OpenNet	OpenNet	Microsoft Great Plains
ACS	Dept of Education	Great Lakes	Salesforce.com
PHEAA (mid- 2007)	Marketmeasures	ACS	
Nelnet (mid-2007)			

It is important to note that the open structure of the system can accomodate any data feed.

The costs of implementing Intelligent Warehouse vary depending on the number of systems the student loan company wishes to integrate into the system. It is designed to be highly modular and offers clients the flexibility to start small and build as the system proves itself worthy of continued investment.

Technology

Intelligent Warehouse utilizes industry-standard technologies using an open architecture that is highly scalable.

- The data warehouse and ETLs are built in Microsoft SQL Server 2005.
- Open data schema and structure—clients can use any BI tool to access the information.
- ETLs are built using SQL Server Integration Services (SSIS)—this enables our ETLs to feed alternative database platforms, such as Oracle and Terradata.

JustIQ℠

- Standard “out of the box” reports, dashboards and analysis tools are built using MicroStrategy business intelligence tools.
- Integration modules between systems are built with .NET, XML and SXML technologies.
- Sharing of information between systems using CRC, CL4, CL5, CAM and XML protocols.
- The code base is managed in modules that deploy in a Service Oriented Architecture (SOA)

VIII. Best Practices to Implement an Intelligent Warehouse Solution

- CEO ownership of Intelligent Warehouse to facilitate adoption across the entire organization.
- Deploy Intelligent Warehouse in a phased approach based on departmental needs.
- Focus all initial efforts on data quality.
- Deploy other systems (such as new origination packages) anticipating adoption of CRC standards.
- Understand and anticipate the scope and complexity of data flows, warehousing and reporting.
- Implement ETL feeds for all internal and external sources, including: servicers, trustees, guarantors, schools, Department of Education, market data, accounting, CRM, application, origination, disbursement and other systems.
- Use-case testing at every stage of development.
- Remember that Intelligent Warehouse is a catalyst for organizational change.
- Training, user-acceptance and management support are essential for a successful implementation.

IX. Conclusion

Intelligent Warehouse provides strategic advantages to student loan companies including:

- Better and faster innovation of loan products based on accurate predictions of borrower behavior and portfolio performance.
- Increased effectiveness of marketing and sales efforts through improved campaign tracking and analysis.
- Increased value of loan portfolios by maximizing special allowance payments and increasing interest rate gaps.
- Lower servicing costs by reconciling transactional records to prevent and correct servicing and funding errors.
- Reduced operational costs by minimizing errors and omission, and streamlining processes .
- Improved organizational effectiveness by providing “one truth” to be shared across the organization.
- Increased productivity by improving access to data and facilitating analysis.
- Increased ROI by integrating existing systems with a business intelligence tool to transform data into useful information.

X. Afterword

The Intelligent Warehouse is applicable in several areas outside the scope of this paper. Most notably, Guarantors, Schools, Investment Bankers and Private Lenders can benefit from our solution to optimize business and decision-making processes. As mentioned in the Foreword, we encourage open discussion and debate about our ideas, products and services. We look forward to receiving your feedback.

Please visit us at www.JustIQ.com.

5665 Oberlin Drive, Suite 102 • San Diego, CA • 92121

858.457.3200 • www.JustIQ.com