



*High Performance Data Integration*

# **8 Reasons to Consider ETI Built-to-Order Integration**

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## Introduction

No hand coding. No software to license. No hardware to buy. No maintenance hassles. No waiting on long implementation schedules. Built-to-order integration software deployed in as little as two weeks. Sound too good to be true?

It's a reality for customers who leverage the ETI Integration Center™ (iCenter) for their data integration initiatives. The ETI Built-to-Order™ (BTO) connectors integrate mainframe, legacy and proprietary applications with your current business intelligence, data warehousing and SOA-based infrastructures. No data is too old. No data is too proprietary. No data is too complex. The ETI Built-to-Order connectors are created in a state-of-the-art Integration Center leveraging the power of ETI Solution® software.

Until recently, companies had few choices for an integration strategy – either hand coding or integration tools that required a proprietary runtime. Hand coded interfaces provide superior performance and require no capital expenditures for software and/or hardware, but they are error-prone to develop and expensive to maintain. Integration products reduce the time required to develop and maintain interfaces, but have the following limitations:

- The productivity they provide in development is offset by the upfront capital expenditure for software and hardware.
- Similarly, the productivity they provide in maintenance is offset by increased costs in maintenance fees and system administration.
- They require training.
- They typically handle only one type of integration (for example, ETL versus EAI) so that companies have to purchase more than one type of product.
- Complex transformations and data manipulation still have to be hand coded.

BTO Integration offers the best of both worlds: high-performance connectors that eliminate the need for hand coding and do not require integration runtime engines. This paper explains how.

## 1. No platform software to buy

**The problem** - Integration products that require an integration runtime engine are inefficient in three ways. First, there is the time required to install and test them, not to mention the time required to engage or train the staff to use them. Second, because they are often either interpretive (like ODBC/JDBC-based connectors) or require the data to be transferred to some other platform for processing, they are slower in execution than handwritten code. Third, they add to a company's risk because every time a company buys a new software product, they incur an unexpected cost if the vendor fails or is acquired and the product is grandfathered.

**The solution** - BTO connectors require no proprietary runtime integration engine, but interface to the software you have in place. Because there is no need to install and test new software, there is improved time-to-value. Equally important, you are adding neither additional system administration overhead to your maintenance burden nor are you introducing a new point of risk for disaster recovery and security.

## 2. No maintenance hassles

**The problem** - In its 2003 *Chaos Report*, the Standish Group maintained that 50-80% of a corporation's IT budget is being spent on maintenance. Every time a company acquires and installs a new type of software, they are adding to that cost, since they not only must pay maintenance to the vendor and upkeep for the hardware, but with every new release they add to the complexity of their system administration and the testing they must do. In fact, this testing overhead is so burdensome that some companies restrict the upgrading of their systems to one or two times a year, the result being

that different business units will run on different (and often incompatible versions) of the same applications.

Maintaining highly heterogeneous IT environments also adds to an organization's staffing challenges. Timely and cost-effective access to the right technical skills in IT has been a long-standing problem for large corporations and government agencies, as all of the options have their downside:

- Maintaining an internal staff of permanent employees is costly during periods when there is little new development. Moreover, the skills of long-term IT employees tend to atrophy over time.
- Long-term contracts with contractors or consultants offer most of the benefits of permanent employees – that is, same knowledge of business practices and applications – but they are more expensive in the short-term as they are paid more than permanent employees. Short-term contracts with contractors or consultants allow organizations to choose the specific skills they need at any particular time but are costly because the organization must not only pay higher rates but also pay for the time required.
- Offshore developers offer significantly cheaper rates and typically have a large pool of employees with a variety of skills, but studies of actual cost savings suggest that the real savings run only between 10-15% (Deloitte Consulting “Offshore Outsourcing: Is It The TCO Slasher IT Promised It to Be?”, 2003). Moreover, in highly distributed heterogeneous integration projects – where a significant amount of communication with data owners is required during the development and test phase – it is quite possible that outsourcing to an offshore developer could be more expensive due to differences in time zones.

**The solution** - Because ETI BTO connectors interface to the software you already have in place – or have decided to put in place – you incur no additional maintenance overhead or system administration cost. Likewise, there is no need to have access to additional technical staff. The BTO connectors can be put through the same test and release procedures used for hand written code.

Moreover, because they come with documentation that accurately represents everything that is done to the data during the execution of the connector, they actually contribute to building a “corporate memory.” ETI’s integration engineers can use the metadata acquired in earlier projects for the same customer to maximize the amount of re-use of business rules for greater consistency and minimize the need to “re-discover” and “re-create.”

### 3. No Hand Coding

**The problem** - Data integration is more than taking data from one system and putting it in another; there are usually differences in the way data is represented. These include:

1. Technical – for example, two systems have different conventions for representing a data type such as ‘date.’
2. Semantic – Differences in how equivalent data is represented – for example, annual salary vs. weekly salary or salary in dinars vs. salary in dollars.
3. The need to apply some business logic and conditional processing – for example, *if. . .then* logic to subdivide US customers according to their line of credit.

Hand coding simplifies the task of getting started, as there is no need to evaluate products, justify expenditures, install new systems or train staff. However, on large projects hand coding usually takes longer and leads to overruns in schedule. Likewise, hand coded interfaces are much more difficult to maintain.

Because most integration products provide only limited support for the transformation of data values, customers find themselves hand writing small snippets of code that are called from the integration products as user functions. The problem with this approach is that the integration product has ***no visibility*** into what’s happened to the data values within those user functions. As a result, the metadata that the integration product captures about the data relationships is partial – a

situation that limits its value in providing the transparency required for both re-use and regulatory compliance.

**The solution** – The ETI Integration Center uses ETI Solution software to eliminate the need for hand coding. As part of that platform, ETI's Integration Design Studio enables the specification of extremely complex business rules (for example, *if. . .then. . .else* nested 13-levels deep) from dynamically created menu-based dialogues. This allows ETI integration engineers to create specifications in such a way that a natural language description of the transformation is captured as part of the metadata audit trail.

In short, BTO connectors are accompanied by documentation that provides full visibility into everything done to the data values in the process of executing the interface.

Moreover, because BTO connectors are **native code**, they run up to 20 times faster than ODBC/JDBC-based solutions. In fact, ETI customers have often found that ETI-generated interfaces run faster than the handwritten code they have previously produced internally, thereby providing the benefits of hand coding at a fraction of the time and a fraction of the cost.

## 4. No hardware to buy and impede performance

**The problem** - Many integration product vendors require that the customer buy additional servers in order for their software to perform adequately. Not only does this type of solution slow the time-to-value for initial implementation and add to maintenance burden discussed above, but it can result in sub-optimal performance during production.

With respect to performance, the more places that data has to move the slower an application will perform. In the case that files are used to pass data between systems, these solutions require two extra I/O steps. In the case that data is streamed or transported via some middleware product, the result is unnecessary network traffic. As companies seek to push critical real-time information to dashboards for their business units, the amount of network traffic is growing

exponentially. Even with the efficiencies afforded by web services, why choose an integration solution that will only add to the load?

Moreover, every server (separate integration engine) in a system introduces another potential point of failure. As companies depend on real-time information to drive business decisions, the failure to get that information can significantly affect the bottom line.

**The solution** - BTO connectors are built to run on the hardware and software you already have and maintain, enabling you to push processing to the place where it makes the most sense – as close to the data source as possible. There is no need to introduce an additional burden for disaster recovery and security. The result is an integration solution that performs more efficiently, is less costly to maintain and incurs less risk.

## 5. No waiting on long implementation schedules

**The problem** - In its 2003 *Chaos Report*, research performed by the Standish Group revealed that:

- Only 34% of IT projects are completed on time and on budget
- 43% of all projects experience cost overrun
- **82% of all projects experience schedule overrun**

The least efficient part of the IT process lies in the communication between data owners and developers. In the results of interviewing 400+ senior IT managers for their *Software Development Study 2004*, IDC reports that flawed specifications were the largest single reason for project failure – followed by 1) bad estimates on time and resource requirements and 2) the inability to integrate with other systems, both of which are in large part due to flawed specifications.

These results are not surprising when you consider the process used to gather and communicate specifications in most integration initiatives. In this process, data owners are usually asked to help produce mapping documents that describe how the data values in the systems that they use or maintain correlate to some set of data values

required by a target application or interchange format. Sometimes the data owners are the individuals who use the source application and they may be unaware that the value that they see is not actually stored on disk. At other times, the data owner is the developer maintaining the source system who may not understand the conventions used in specifying the data values. When the data source is some legacy system like VSAM or IMS, neither type of data owner may be aware of inconsistencies that have been introduced in the data over time in order to avoid having to rebuild the historical data.

In any case, the result of this specification-gathering process is usually a spreadsheet or document that can run hundreds of pages in length. Developers then use the mapping specification as the cookbook for implementing the interfaces, relying on phone or email to make clarifications, which may or may not make their way back into the mapping document. As a result, often it is only when the interface is being tested that problems appear. Then the developer must play detective to determine where the error originated – with the data owner's understanding, in the mapping specification itself, in the developer's interpretation of the mapping document, in the actual development of the interface, or because some communication that took place by email or phone was not recorded accurately.

**The solution** - iCenter integration engineers use a rapid integration development methodology made possible through ETI Solution. The ETI platform also includes a user interface that helps customers automate the capture and communication of mapping specifications. Data owners at the customer site download a web service-based analyst client that provides them with a GUI into which the source and target data layouts have been loaded. Then they merely drag and drop to indicate the desired mapping, attaching annotations where they want business or transformation logic to appear. When they are finished, the information becomes immediately accessible to an iCenter integration engineer through the ETI Solution platform.

In addition, iCenter integration engineers have access to a broad range of tools provided with the ETI Solution platform – including ETI

Data Profiler™ for data discovery, ETI Data Cleanser™ for complex cleansing, reformatting and matching, and ETI Impact Analyst to determine the impact of a proposed change.

The result is that fully documented connectors are delivered in a fraction of the time required with other methods – in weeks instead of months – and changes to your connectors can often take place in hours rather than days or weeks.

## 6. No limits

**The problem** - Companies are facing huge challenges in improving the bottom line – increased global competition, increased regulation, disruptive technology and the need to do business in “real time.” IT is critical to success in these areas, but in many cases IT is part of the problem. “Large corporate customers looking at rationalizing the IT cost structure are beginning to choose to do business with fewer suppliers and technology platforms for their usage. The software industry is beginning to respond through consolidation – as companies try to increase their range of products to compete better for tight IT budgets.” (S. Sadagopan, “Enterprise Software: Mutation Before Consolidation,” SandHill.com)

As a result, an integration strategy that requires an organization to replace their existing systems and/or invest in licensing, installing, and maintaining new hardware and software is probably not in the organization’s long-term best interest.

On the other hand, many companies have put in the effort to integrate their internal systems to meet critical business imperatives and found that they are now paralyzed in their own webs. Massive amounts of handwritten integration have produced environments that support the current processes but are too fragile and mysterious to change.

**The solution** - BTO connectors can address any integration initiative and can do such things as:

- Manipulate thousands of source fields and run in batch if migrating data to a packaged application
- Merge data from multiple data sources to populate a data warehouse in near real time
- Create XML wrappers around legacy transactions for SOA that not only translate between the legacy and XML formats but perform any required data transformations as well

ETI BTO Integration provides scalability across multiple dimensions:

- Performance – Because BTO connectors are native code, they tend to perform more efficiently than solutions involving a proprietary runtime engine.
- Applicability – BTO Integration can provide connectors for any type of application or technology.
- Time – Because BTO Integration is based on the ETI Solution open architecture, it is future proof. Upgrades to BTO connectors are quick and easy with the business rules and metadata captured in ETI Solution. Rebuilding connectors to a new technology or application takes half the time of traditional approaches because of those same business rules and metadata.

BTO connectors enable the agility required to stay in business. Because of ETI Solution, ETI Integration Center enables the timely delivery of connectors that:

- Work with the technologies you have today or what you may choose to get tomorrow
- Provide superior performance by going to the data rather than making the data come to them
- Take the mystery out of your integration

## 7. No risk – get exactly what you need

**The problem** - One size doesn't fit all. Different organizations need different solutions. Even two companies in the same industry with the same IT strategy will face different challenges based on their history. Companies that have grown by merger and acquisition are likely to

have more duplicate applications and greater need for profiling and cleansing when implementing new applications than companies that have grown organically and have fewer duplicate applications. Similarly, the ability to interface to legacy mainframe technologies is probably less important for Internet companies than for those in established industries like automobile manufacturing.

Likewise, different types of applications face different integration challenges. For example, data profiling is less important to e-business applications since they typically do not need historical data and are therefore less likely to encounter inconsistencies within a database. As a result, evaluating the best mix of integration products to use as part of a company's infrastructure is a complex problem.

**The solution** – ETI Integration Center can build BTO connectors that suit your company's needs, regardless of the systems or execution protocol – batch, event-driven, or publish and subscribe. Communication between the developers and your staff is captured and provided as part of the documentation with the connector, providing visibility into process as well as functionality for efficient change management and regulatory compliance.

In Bloor's 2006 ETL Bullseye™ report on ETL, ETI won silver awards for "general purpose products" in the areas of "enterprise class" and "organizational class."

The ability of iCenter to deliver results is not in question, as it is based on a proven methodology and technology, with particular success in the area of integrating mainframe legacy systems to modern (e.g., relational, XML, web services) architectures. The only difference is a new model for delivery.

## **8. No data is too old, complex or proprietary**

**The problem** - To meet the needs of BI and e-business, Gartner maintains that IT organizations must support what they call the *distributed* model that "comprises an ERP system which is connected to business domains at the fringe of the company, each with its own

'mini-centralized' mentality." (Andrew White et al., *Enterprise Information Management Represents the Future of Data*, February 2005) In order to maintain data consistency in such an environment, it is critical that companies be able to integrate all their applications and information resources efficiently and effectively.

In large companies, this may require interfacing to technologies that span forty or fifty years – COBOL files, hierarchical and network database systems, proprietary formats including unstructured data, enterprise applications (ERP, SCM, CRM), and one or more EAI/ESB products. This landscape is even more complicated in companies that have grown through mergers and acquisition, since there are often duplicate applications that represent and organize equivalent data differently. Once implemented, a service oriented architecture that uses XML as the intermediate format promises to turn these legacy systems into IT assets. But to realize these benefits, a company must first build connectors that can correlate the native representation of data with the appropriate XML schema and vice versa. (Note that even when application and database vendors provide releases that support XML, these interfaces do nothing to help rationalize the different semantics and formats across applications.) In short, SOA depends on effective integration that requires technical expertise spanning generations of development teams.

**The solution** - BTO integration is possible because Integration Center leverages the open architecture of ETI Solution. This architecture allows the same core engines to generate different types of code based on the contents of a set of rules and data structures we call Data System Libraries (DSL). Each DSL encapsulates the 'best practices' for coding against a particular environment so that every ETI BTO Integration connector produced by the ETI Integration Center meets customer requirements. For example ETI has DSLs for VSAM, IMS, IDMS, ADABAS and more.

As a result, there is no system too old, no data format too proprietary, no business logic too complex and no future technology that cannot be addressed.

Since 1991, ETI Solution has been used by Global 1000 companies for some of their most critical IT initiatives ranging from the implementation of enterprise data warehouses to the largest web service-based application in the world. The technology and the methodology are proven. Integration Center is just a new model for delivery enabled by the web service-based architecture of ETI Solution.

ETI BTO Integration: the best time-to-value integration solution in the market.

**Don't take our word for it**

We encourage you to challenge our claims and put ETI BTO Integration to the test by evaluating it for your project today. Contact us today to arrange a demonstration or evaluation at [icenter@eti.com](mailto:icenter@eti.com).

“ETI, Evolutionary Technologies International, the ETI logo, MetaStore, SuccessFirst, AnswerLink, Dialogue Coach, ETI Solution, ETI Lite, ETI Data Profiler, ETI Data Cleanser, ETI Change Data Capture, ETI Data Monitor, ETI Built-to-Order, ETI Integration Center and ETI iSpec are trademarks or registered trademarks of Evolutionary Technologies International, Inc. Software and/or information encodings included in ETI Solution are subject to the following U.S. Patent: 6,523,172. All other company and product names may be trademarks or registered trademarks of their respective owners. © 2008 Evolutionary Technologies International, Inc.”