



*Integration: "Making it Simple"*

# **5 Reasons Laboratories Are Turning to Interface Engines**

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A white paper by eTransX, Inc.

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## Introduction

While electronic medical record (EMR) adoption in mid-to-large healthcare organizations has steadily progressed over the past few years, the adoption rate among smaller providers had remained relatively low. Thanks to Uncle Sam, that's all about to change. The passage of the HITECH provision of the American Recovery and Reinvestment Act of 2009, and its promise of stimulus dollars, has set the stage for more aggressive EMR adoption among physician providers.

However, higher EMR adoption, and the greater demand for application connectivity that comes with it, presents a real challenge for clinical pathology laboratories. When it comes to health care integration, creating connections between disparate systems usually means sinking significant time and money into creating one-off solutions. Over the past few years, many laboratories have relied on their Laboratory Information System (LIS) vendors, or internal and/or external programmers, to develop custom, point-to-point interfaces with provider EMRs or Hospital Information Systems (HIS).

While point-to-point interfaces may have seemed like a viable solution when there were solely 1-2 requests for interfaces per year, this approach is fraught with deficiencies that are now putting many laboratories in a precarious position as they deal with higher volume. As there is both a high cost as well as a slow turn around time associated with point-to-point interfaces, this inefficiency can often cause laboratories to fail to meet ordering and reporting requirements from physicians and hospitals. Failed productivity, of course, can result in higher customer churn rates. As a result, many laboratories currently face the threat of losing clients to the larger national laboratories.

Currently, many laboratories are turning to third-party applications, called interface engines, to facilitate the development of HL7 enabled interfaces. This added functionality increases a clinical facility's capacity to meet connectivity demands. Without question, interface engines are transforming the way labs build and deploy application interfaces. Fundamentally faster, less complicated, and more economical, interface engines, such as eTX HEMI by eTransX, grant laboratories the capacity to meet the connectivity requests of their referring physicians.

Below are the top 5 catalysts for the migration from point-to-point interfaces to interface engines:

1. Reduced interfacing costs
2. Reduced dependency on LIS vendors
3. Rapid interface development and deployment
4. Enhanced monitoring & alerting capabilities
5. Simplified maintenance

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## Reduced Interfacing Costs

To achieve EMR connectivity, a clinical facility must make it possible for its LIS to accept orders generated by the EMR and return results to it via an HL7 interface. At its most basic level, an HL7 interface consists of the following:

- Export endpoint from the sending application
- Import endpoint for receiving application
- Secure method for moving the data between the two applications



Figure 1.0 - Essential Elements of an HL7 Interface

The three primary cost drivers of creating an HL7 interface:

- Interface Development
- Port Fees
- Data Transfer Fees

### - Interface Development -

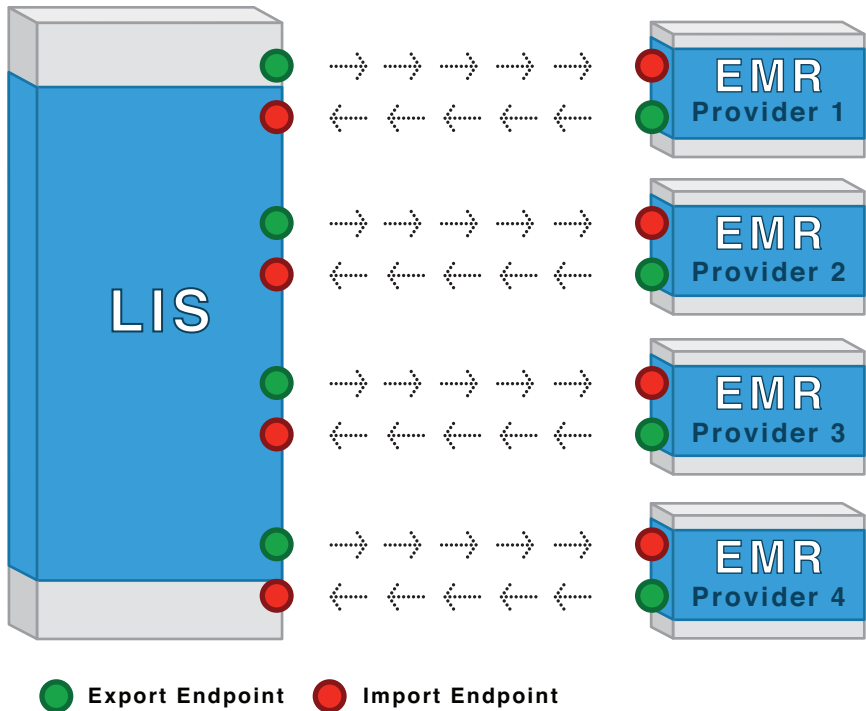
High development costs are one of the customary drawbacks to developing and deploying point-to-point interfaces. On average, laboratories incur an expense of \$8,000 for each custom interface. As even a small facility can use an average of 25 interfaces, these costs can quickly spiral out of control. Depending on the resources of the laboratory, the interface programming may be performed by internal programmers or external resources such as their LIS vendor.

In contrast, an HL7 engine allows the interface creation process to be brought in-house. Further, programming skills are not required. In fact, intuitive configuration tools allow the laboratory's internal IT staff to create an interface in as little as a few hours. Licensing fees for interface engines vary. However most costs, including that of eTransX HEMI, when spread across several interfaces, are far less expensive than writing one-off programs. Of course, as the number of required interfaces rise, the corresponding savings increase as well.

### - Port Fees -

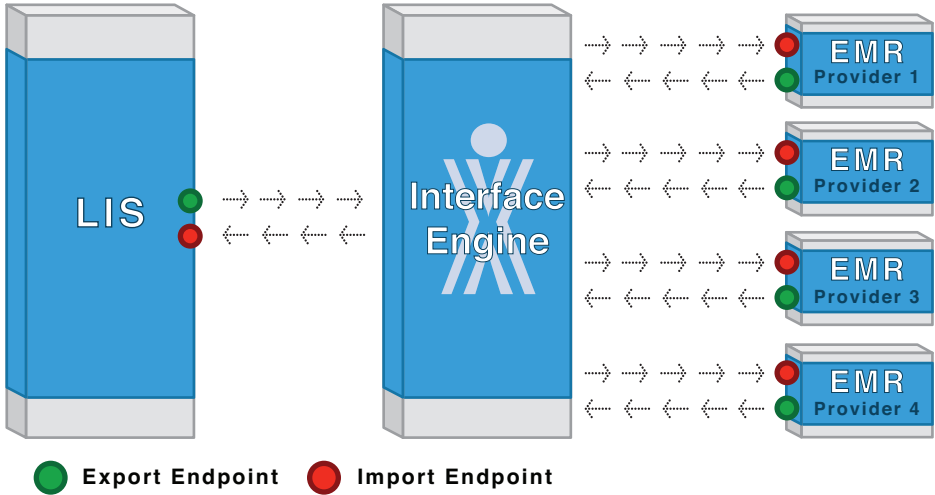
Each new system requires an export point from the sending system and an import point into the receiving system. With a point-to-point interface, a minimum

of four end-points are required for each and every interface. At an average cost of \$5,000.00, the end-points, also called port fees, are one of the major cost contributors to creating an HL7 interface.



**Figure 2.0** - Number of Endpoints with Point-to-Point Interfaces

Figure 2.0 above demonstrates the number of endpoints required for a laboratory to interface with four provider EMRs. With four endpoints for each interface, the laboratory would be required to establish 16 total endpoints, resulting in an approximate cost of \$80,000.00.



**Figure 3.0** - Number of Endpoints with an Interface Engine

In contrast to the point-to-point interfaces, an interface engine leverages a single import and export point from your LIS for all interfaces. Its ability to reuse a single data feed generates substantial savings for laboratories in the form of end-point reduction. For each new interface, you just need a feed in and out of the provider's EMR or HIS. This process reduces the number of port fees in half, translating into an average savings of \$10,000 per interface, with the exception of the initial interface. Using the example in Figure 3.0 above, a laboratory could realize an approximate cost savings of \$30,000.00 through the elimination of 6 endpoints. If a laboratory only creates a single new interface per month, the annual savings realized from an interface engine could easily reach \$120,000.

### **- Data Transfer Fees -**

Once the custom interfaces have been completed, and the port fees have been paid, laboratories still need a mechanism for securely transferring the data back and forth between the two systems. More often than not, laboratories turn to Virtual Private Networks (VPN) to handle the data transfer. A VPN establishes a connection between the computers at each location and exchanges the messages. However, over the years, VPNs have proven to be unreliable. When the connection is strong, this method does indeed work. However, Virtual Private Networks are prone to frequent connection drops, creating errors in the HL7 message exchange. Further, setting up VPN connections can prove to be an administrative nightmare on both sides. This is especially the case for those organizations that work with multiple client locations. To make matters worse, laboratories may pay an average of \$2,000 for the standard VPN with dedicated communication lines, VPN hardware and software.

To avoid the cost and frustration associated with VPNs, laboratories can leverage an interface engine with advanced connectivity tools. In the case of eTransX, eTX Stream comes as a companion to eTX HEMI and serves as the message transfer mechanism. Using a secure socket level (SSL) connection as the data transfer method, Stream solves the data transfer problem. The costly and unreliable VPN is replaced with a real-time, HIPPA-compliant connection. When extrapolated across each interface, resulting cost savings can add up quickly.

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## **Reduced Dependency on LIS Vendors**

Another key drawback of point-to-point interfaces is that many laboratories are entirely dependent on their LIS vendors. As a result, these laboratories relinquish their control on the programming schedule, essentially tying their provider connectivity responsiveness to the availability and ability of their LIS vendor. More often than not, the development cycles get dragged out and the laboratory's go-live date gets pushed back.

In addition to the compelling economic incentive, an interface engine affords

laboratories much greater control on the programming schedule. By bringing the interface development process in-house, the clinical facility has complete control over both performance and time line.

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## **Delivers Shorter Development Cycles**

While costs are usually cited as posing the greatest challenge to EMR connectivity, long development cycles are usually a close second. It's not uncommon for a point-to-point interface to take three months to complete. One of the many problems with these one-off interfaces is that none of the work that was initially performed can be leveraged in each new interface. Due to the fact that each configuration is unique with different point-to-point interfaces, significantly longer development cycles can result.

The long development cycles associated with one-off interfaces can create unnecessary strain on the laboratory-provider relationship. Doctors and hospitals cannot maximize the value of their EMR without laboratory data, which can make up more than 50% of all of a given patient's information. If the development cycles take longer than anticipated, providers may decide that it's in their best interest to work with the larger national laboratories due to their superior interfacing capabilities.

However, with an interface engine, laboratories are able to develop and deploy HL7 interfaces in a fraction of the time. Through configuration driven tools, clinical facilities can create interfaces in days, not weeks or months. Further, non-programmers can easily create an interface with intuitive point and click mapping tools. And, due to the fact that an interface engine can leverage past system knowledge, through innovations like interface libraries, it's possible to create an interface in as little as a few hours. By eliminating the need for custom programming, clinical facilities can reduce development time by 90% or more.

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## **Greater Monitoring & Alerting Capabilities**

With a point-to-point interface, there is no central application that can be used to monitor the performance of connections. In fact, most laboratories who use this system will not even be aware of connectivity problems until they receive a call from a frustrated provider. At this point, the issue may require the laboratory to dig into the log files of multiple applications, each with a different corresponding protocol to follow for various connection problems.

In contrast, an interface engine becomes the central point of communication for all interfaces and can serve as a monitoring and alert mechanism. Through the advanced integration of logging, monitoring and alerting, an HL7 interface engine offers the laboratory much greater control over interface performance. By these

means, facilities can provide much improved customer service to their referring physicians.

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## Simplified Maintenance

With point-to-point interfaces, even simple changes are a challenge. The clinical facility has to contact the LIS vendor each time a change to the interface is necessary. And, in the ever-evolving world of healthcare IT, changes are frequent. When a referring physician's EMR is updated, the end result may be that a point-to-point interface needs to be completely recreated. This common situation could possibly cost the laboratory \$5,000 or more, not to mention that the laboratory would be at the mercy of the LIS vendor to perform the updates.

When an interface engine is employed, a laboratory does not need to rewrite the programming of the interface. By simply modifying the interface configuration, updates can be made with minimal time and expense.

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## Conclusion

Without question, application interoperability is transforming the way laboratories and providers communicate. Because there is no "plug and play" functionality in the world of HL7, laboratories consequently rely on interface engines to facilitate the creation of EMR connections.

Clinical facilities that wish to remain competitive are finding that connectivity with provider EMRs is no longer optional. Currently, laboratories who fall behind on the technology curve are quickly finding themselves at a competitive disadvantage. This fact is especially true when they are compared to larger national chains.

Laboratories need to deliver patient results to hospitals and physicians in the most efficient and cost-effective manner possible, while, of course, complying with regulatory requirements. It is imperative for these clinical facilities to optimally communicate with providers. Due to the fact that interface engines deliver efficiency, tremendous cost-savings, as well as dependable results, this technology is the clear solution for laboratories that are looking to stay ahead of the curve.

For more information, please call (888) 221-4971 or visit us online at [www.etransx.com](http://www.etransx.com).

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