

*[white paper]*

eicon  
technology  
corporation

# **Aviva Web-to-Host Server**

## **Publishing Host Data using 3270-to-HTML Conversion**

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# Extending Host Data

The Internet age has transformed the face of business. The explosion of the Internet has underlined the public's demand for 24/7 access to information. And it is this same technology and demand for information that now drives business-to-business transactions around the globe. With an estimated 70% of corporate data residing on legacy host systems, it only makes sense to leverage this valuable source of information to fulfill this demand. Now, corporations can use 3270-to-HTML conversion products to extend host-based information to their employees, partners, suppliers and customers. By bringing host data right to user's Web browsers, corporations are realizing tremendous savings through efficiencies and new revenue opportunities. In fact, utilizing existing host applications and extending the reach of those applications provides an extremely high return on IS investments. By leveraging legacy systems, enterprises benefit from a new application portfolio without the high cost needed to design, develop, test and roll out new applications. In addition, 3270-to-HTML conversion solutions can be implemented much faster than new host application development or re-write.

Web-enabling SNA applications via 3270-to-HTML conversion is uncomplicated, flexible, highly cost-effective and proven. Eicon's Aviva Web-to-Host Server is a leading example of this technology, which permits SNA applications running on a mainframe to be readily accessed from within a standard Web browser. These products can essentially provide two levels of rejuvenation capability for Web-enabled host access, without having to change the original host application. First, they can provide an out of the box "on-the-fly" 3270-to-HTML conversion, which provides a simple "default" rejuvenation of the dated "green-on-black" 3270 user interface used by most SNA applications, which may be useful for certain intranet users. Second, and where the *true strength* of 3270-to-HTML conversion lies, is enabling companies to develop completely custom rejuvenation of the "green-screen", into a more intuitive contemporary Web page interface within a Web browser. The end result is so remarkable and transparent that users are unable to distinguish

that the data provided to them in the Web page resides on one or more legacy applications written a decade ago. That is the power of 3270-to-HTML conversion: SNA applications appear as custom and modern Web pages (Figure 1).

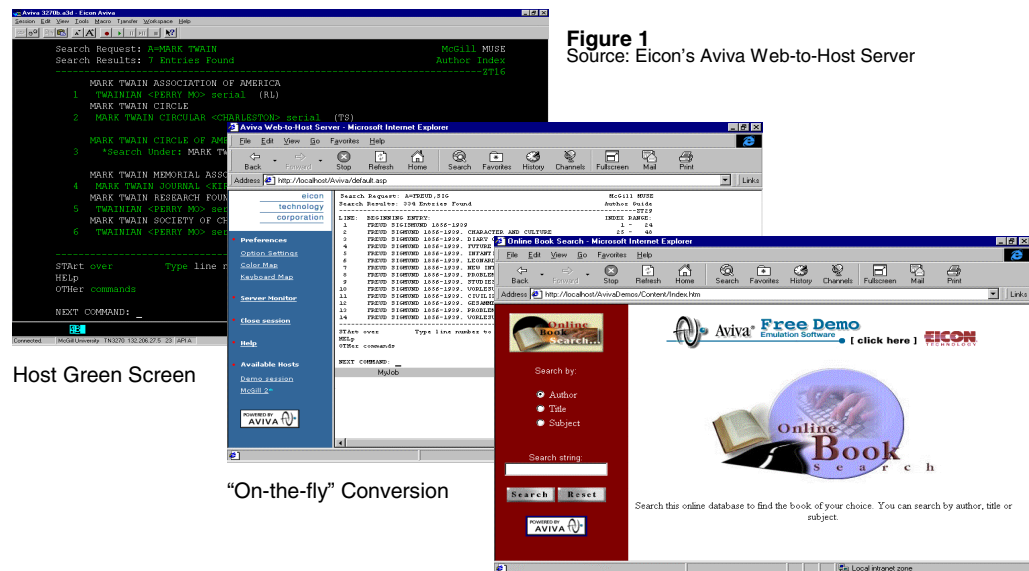


Figure 1  
Source: Eicon's Aviva Web-to-Host Server

Complete Rejuvenation Example

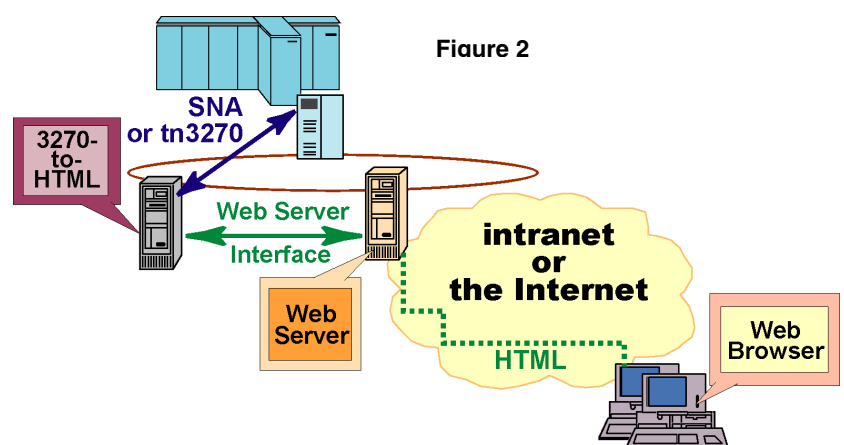
# Flexible to Serve Many Uses and Users

Diverse user groups each have differing needs for host data, and the application possibilities for 3270-to-HTML conversion is virtually limitless. 3270-to-HTML conversion is most often implemented for users external to the enterprise or for users who require occasional access to information. It is best suited for providing access to limited, select and specific host data for an end-user base that is not familiar with navigating host applications and require only quick transaction-based access to certain host data. Though such users are typically found in e-commerce scenarios (e.g., transacting with customers over the Internet), there are also numerous cases of such user requirements in e-business type scenarios with partners/suppliers, or internal uses such as mobile employees or smaller remote offices. And so, Web browser users can access data center resources across Intranets, extranets and the Internet.

Another advantage of 3270-to-HTML conversion is that the end-user desktop does not have to meet any minimum requirements, for say, running Java or ActiveX. All that is required is that the end user have a browser, and so, virtually any operating environment is supported; DOS, 16 or 32-bit Windows, OS/2, UNIX, Linux, even Mac. This is especially critical for e-commerce and some e-business applications where there is little or no control over the end user computers. And so, the customer/user base is not limited to those with a given browser or OS. And equally important in e-commerce and e-business is security. 3270-to-HTML conversion, due to its very nature, supports industry-standard SSL security through the connection between the Web server and the end user's Web browser. Further security is also thanks to the nature of the 3270-to-HTML conversion, since the technology only extracts certain host data and there is no "direct" connection with the host, users cannot access other confidential host data.

## Simple Yet Powerful Architecture

3270-to-HTML conversion is a gateway function usually performed on a Web server (Figure 2). After the user submits data in a form on his or her Web browser, it is delivered to the gateway by a Web server in Internet-standard HyperText Markup Language (HTML). The gateway converts this HTML request into a 3270 data stream, over SNA or tn3270, to the host application, subject to the necessary authentication and security measures. The host application responds to the request by automatically navigating to one or more 3270 screens that contain the desired data. This data is extracted and communicated to the gateway, which formats it to



HTML as desired and then passes them to the Web server for delivery to the browser user. Of course, 3270-to-HTML conversion implementation can be either uni-directional (read only), or bi-directional (read and write) so that information that is accessed can be updated from the Web browser interface.

Web pages can be custom designed to include data from one or more data sources. 3270-to-HTML conversion offers a variety of data integration options. Thus, it can also integrate nearly any back-end data source without the need for application rewrite or new application development. Instead of modifying each data system for Web access, one can install a 3270-to-HTML conversion product that also allows interfaces to 5250, VT, and ODBC data access. The integration of the back-end systems is performed on the 3270-to-HTML conversion server resulting in HTML delivered to the Web server where the Web page is customized.

## *Advantages of 3270-to-HTML Conversion*

- Host applications residing on a mainframe are Web-enabled.
- Tools and/or scripting permits custom rejuvenation of the user interface, without changing the host application.
- Ability to consolidate data from multiple hosts, multiple host applications and other data sources within a single Web page.
- No client software required at the user workstation other than a standard Web browser (zero deployment).
- Browser and client operating system independence via pure HTML output (PCs, Macs, Unix workstations, Windows CE etc.)
- Works with standard Web server-based security and encryption schemes, such as SSL. Permits persistent user sessions and user authentication. Further security because the user never logs “directly” on to the host.
- Configuration management is centralized on the Web server and remotely accessible by administrator.
- Reduced cost of ownership due to centralized installation. It is not necessary to update workstations, as they simply use their browser.
- No learning curve due to completely familiar data presentation through customizable intuitive Web page interface, resulting in decreased user training costs.
- Faster time to market through low-cost, simple and virtually overnight “augmentation” of host applications, eliminating the need for time-consuming and costly re-write of host applications,.
- Extends proven and established data center applications to the Web for e-commerce/e-business.
- Replace existing private multi-protocol networks used to interconnect remote offices with corporate headquarters by Internet based and cost-effective Web-to-Host access.

# *3270-to-HTML Conversion Application Scenarios*

Web-to-host integration technology can be profitably used to synergistically bring together proven data center applications and new Web-based users in a plethora of different scenarios ranging from purely, in-house intranet specific situations to e-commerce initiatives that straddle the globe. Some examples of high 'return-on-investment' uses for today's proven Web-to-host integration technology are as follows:

## 1) On-line Trust Management

Many banks provide a variety of trust management services for some clientele. Often a trust fund will consist of underlying stocks, bonds, mutual funds and real estate holdings. Understandably, fund owners require up-to-date status on the performance of their trust funds. Typically, banks use mainframe applications to manage these trust funds. Many banks require trust fund clients have to either call or visit the bank and talk to a trust fund manager to gain the information they require. This approach is inconvenient for the clients and inefficient, by disrupting the trust manager's schedule and tasks.

A more ideal solution is available through 3270-to-HTML conversion, which can be used very effectively to provide trust fund clients with easy, real-time access to trust fund information. It has all of the necessary security features to guarantee that only authorized users can gain access to the data, and that all data being conveyed across the Internet is securely encrypted on an end-to-end basis. The user interface seen by the trust clients is presented as a contemporary Web page of a 'point-and-click' nature. Finally, since the mainframe access is across the Internet, the trust fund clients will only require a standard Internet connection to reach the bank. This access will not require any special software, just a standard Web browser.

The result is a secure and easy-to-implement Web-based access to trust fund status that eliminates the need for trust fund holders to regularly call or visit the bank trust fund manager to obtain information on their trust funds. This improves trust client satisfaction by providing fast access to required data, and increases savings through better allocation of trust fund management time.

## 2) Courier Parcel Tracking Service

Perhaps partially thanks to the Internet facilitating global business, there is a strong and growing demand around the world for freight and expedited package delivery services. Commercial airlines augment their passenger revenues by transporting freight and urgent packages. There are also traditional cargo carrying van lines [e.g. National Van Lines, Atlas etc.] and the specialized expedited package delivery companies [e.g. FedEx, UPS etc.]. Such companies usually rely on mainframe applications to track freight movement and delivery status. With enormous

volumes of freight and packages being delivered to all corners of the globe, around the clock, there is a constant demand for up-to-date information on shipment status. In the past, call centers were the only means these companies used to address queries for shipment status. Shippers or customers awaiting freight/packages would phone the call center, quoting a parcel number, and then have a representative track the progress of that item using a mainframe application.

With today's popularity of the Internet, 3270-to-HTML conversion provides a more cost-effective means to provide parcel tracking. Customers are able to directly access the requisite information just by entering the parcel number(s) into a specified input field on an easy-to-use Web page incorporating 3270-to-HTML conversion technology. Rather than calling up a call center, customers are able to get all the information they want on-line, 24/7 across the Web – quickly, securely and effortlessly, without having to wait patiently “on hold” until “the next available operator” can take the call. Thus, customer satisfaction is increased via self-serve access to delivery data, whilst freight companies realize significant cost savings by scaling back their call center operations.

### 3) Government Agencies Publishing Public Information

Many local/state governments and their associated agencies maintain large and diverse databases of public domain information on IBM mainframes. For example, a particular state's State Department maintains its entire library of land zoning, property plot plans and building layout maps on a central mainframe. This information, which one would expect to find in a ‘map room’ at a local authority, is non-classified, public domain information that is open to any member of the public. Providing the general public with direct access to such mainframe information, across the Internet, via a standard Web browser, eliminates the need for them to visit or call the local authority. Given that U.S. public libraries now offer free Internet access, providing this type of host information via the Web is a complimentary and logical approach. It ensures fast and efficient service, eliminating delays associated with trying to gain this type of data via the telephone, fax or mail. Providing such data over the Web also satisfies the charter that most states have already instituted to make as much of their data Web-accessible, as soon as possible.

Governments can thus better serve their public by making public information more readily available. The public need no longer be constrained by the limited government “open hours” of operation, and can access information at any time. 3270-to-HTML conversion has provided an inexpensive, easy-to-implement, near-zero maintenance solution that enables the general public to gain access to data to which they are entitled, over the Web, in a user-friendly interface, without the need for either any special software at the client end or any specialized hardware.

## 4) Web-enabling Automobile Dealer-to-Manufacturer Communications

Automobile manufacturers have chains of dealerships worldwide that sell and service the manufacturer's automobiles in addition to supplying customers with parts or accessories they might require. These dealerships require constant, on-line access to the manufacturer's mainframe host systems to look up parts, order parts, order new automobiles, check on delivery schedules and reconcile financial accounts. Typically dealers need to purchase IBM-specific communications adapters and emulation software for multiple PCs and then use dial-up connections to realize host access. Some of the larger dealerships might have dumb terminals, 3270 control units and even expensive leased lines, which are old, unreliable, slow and very expensive to maintain.

3270-to-HTML conversion PC-to-mainframe access across the Internet will provide these dealerships with the host access they require without the complexity, cost, or unreliability of what they have today. Using 3270-to-HTML conversion, automobile manufacturers need not change host applications in any way. Dealers will require simple PCs with standard Web browsers and local, Internet connections through an Internet Service Provider (ISP). Manufacturer host data can be accessed directly from the dealership user's Web browser, appearing as a user-friendly Web page. Increased user efficiency and reduced user training time are realized. But even greater benefits result from increased reliability, and reduced complexity and maintenance costs of dealer-to-manufacturer communications.

## 5) Web-based Access to Host Data for Mobile Salesforce

Mobile sales people in the field require on-line access to customer account, product pricing and availability data. In many corporations, this data is stored on host systems. Many sales people rely on printed materials or telephone communications in order to receive such information. However, printed documents can quickly become out of date and thus prevent giving a specific customer the most competitive price to which he is entitled. Similarly, product managers or accounts receivable personnel may not be available when the salesperson calls for information, and cannot function as a "salesforce call center". Often salespeople must make numerous sales visits to a given customer in order to deliver price quotes or delivery dates piecemeal. The result is poor salesforce efficiency due to longer sales cycles, increased cost of sales due to increased number of visits, increased risk of competitors stealing business, and lost opportunity costs.

3270-to-HTML conversion allows sales people to benefit from having direct access to required host information in real-time over the Internet, while at the customer site. Easy-to-use Web page interfaces provided by 3270-to-HTML conversion allow salespeople to access the necessary host data by simply dialing a mobile ISP account (e.g. AT&T Business Internet Services) while at the customer location. In addition, because 3270-to-HTML conversion delivers pure HTML, this Web-to-host access is available through "thin" Web browsers, such as Microsoft's Pocket Internet



Explorer for Windows CE portable computers. With 3270-to-HTML conversion, Web pages can be designed to fit the screen size of the palm-sized or handheld devices running Windows CE that are popular with mobile sales people.

Armed with direct access to current information, sales people can react faster to customer questions and arguments, and provide firm price quotes and delivery dates with confidence, while on site. A knowledgeable and confident sales representative often wins the business. Similarly, they know when to walk away from a potentially money-losing sales agreement.

## 6) Online Access to Student and Curriculum Information

Many academic institutions maintain much of their student information [e.g. grades, courses taken, requirements for graduation] plus their course curriculums on mainframe host computers. Since mainframe access, until now, has required special emulation software (or equipment), academic institutions did not provide students with direct access to the information maintained on the mainframes. Instead, students had to either visit or call an administrative center and talk to a representative to get information about their courses, performance or academic requirements.

Considering the number of students in the average college-level institution, this one-on-one type of administrative service is costly, requiring multiple representatives to handle student queries. In addition, in order to attract new students, including foreign students, these institutions need to publicize their curriculums with as much detail as possible.

3270-to-HTML conversion provides a very easy mechanism for existing and prospective students to gain authorized, secure and monitored access to mainframe based data. By enabling mainframe access across the Web, existing students can check their academic reports, and print them, on-line using their current Web browser. Prospective students from around the globe and existing students can also investigate curriculums and course details, across the Web, and even register to attend courses. This allows the academic institution the ability to significantly reduce administrative costs, provide better service to students, and easily extend the target market for the university/college to cover the world.

## *Conclusion*

3270-to-HTML products are a versatile, secure and cost-effective means to publish host data to new user groups. They allow corporations to leverage and extend their existing host applications for uses that go far beyond their original design, without changing a line of code. A synergistic relationship results from melding the vast wealth of 20<sup>th</sup> century data center resources with 21<sup>st</sup> century Web technologies in order to deliver unprecedented access to information. 3270-to-HTML conversion can effortlessly serve various types of applications and user groups, from

lucrative Internet-based e-commerce initiatives, to achieving partner efficiencies via e-business, or even internal users by slashing networking costs and making host information mobile. With 3270-to-HTML conversion solutions currently available and proven, from such notable vendors as Eicon Technology, the time has come for corporations to realize the true potential of their data centers.

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