

# White Paper:

*Merging*

**External Data Integration Automation™**



*With*

**Business Information Solutions**

**Prepared for: Distribution**

**Created By: John Welsh, CEO**



**Dynamics Inc.**

**Canada: 416 447-2001**

**Global Dynamics, Inc.**

**United States: 716 694 7190**

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## Abstract

(**Note:** We are in the process of Trade marking, Registering and obtaining a Provisional Patent from the Intellectual Property Office and others for the name and process.)

This presentation describes External Data Integration Automation™ (EDIA™), a new approach to capturing and processing business information that is located on incompatible systems.

The overall objective of EDIA™ is to eliminate costs related to redundant data entry of information previously managed by others. Escalating costs associated with processing business information have caused a growth in the demand for technology-solutions. In addition, having previously reduced human resources to save costs, enterprises find it extremely challenging to manage expanded data needs in the traditional client/server computing model. This has spurred the demand for task specific applications and:

- Distributed Networking Solutions;
- Database Management Systems;
- Data Distribution Solutions;
- Improved Internal Data Center Automation;
- External Data Integration Automation™ Solutions.

## An Example

Global events have changed how organizations involved in international trade operate today. Meeting “Customs Entry Compliance”, especially when goods are to enter the commerce of the US or Canada, demands greater volumes of more accurate information, faster. This cannot be easily or cost effectively satisfied by the shipper, independently. Exporters and Importers of Record face stiff penalties, fines and demerge charges when e-files are not accurate or on time. Customs Brokers are performance-graded and face losing “Port of Entry Rights” when the overall accuracy of Entry Files falls below an average of 95%. Carriers’ loads are “Pulled” for further inspection when their ACE e-Manifest information does not precisely match entries e-filed by one or more Customs Broker.

New rules such as changes to “The Lacey Act” (banning commerce in illegally sourced plants and their products - including timber and wood products) are imposed regularly and require constant due diligence and up-dates to shared product and other data bases. It is costly, time-consuming and frustrating for companies involved in foreign trade to repeatedly: locate and extract product-content information, usually from more than one source; transform it to more than one use; then, ensure that it is appropriately loaded, often to more than one system. Consider that the US alone is involved with more than 100 trading countries, each with its own rules, tariffs and other requirements.

The ability to quickly and effortlessly share information with Third-Party businesses is increasingly essential to market globalization. The establishment of effective interfaces is critical in removing unnecessary costs from the process, especially with vendors, customers, carriers and others who deal with complex data management issues, or operate under stricter regulations imposed by various government agencies. This collection and sharing of information is made particularly difficult when the fields are not available or stored in external databases. Often, information is remote and fragmented, stored within and across many systems. Up to 80% of companies in this market still communicate information using telephone calls, faxes and emailed spreadsheets and PDFs.

Redundant data entry is costly, inefficient and error-prone. As information is received and processed, it often has to be manually transcribed onto paper-based forms, then somehow transformed to load into local and remote systems (accounting, order entry and more) or entered onto other forms and faxed. Often, information is entered into one system, printed, faxed and manually retyped into another. In international trade, shipment data is routinely stored and generated from an internal order-entry system, and then reports are printed and sent to the Customs Broker and Transportation Carrier. Both these parties print the faxed reports, then re-enter the same information into their own internal systems. Customs Brokers further process the data to create files for Customs and OGAs. Carriers use the data to generate the e-Manifests which contain trip and load information and filed to: US Customs via the Automated Carrier Entry (ACE); or, Canada Customs via Advance Commercial Information (ACI) portals.

## Overview

Business transactions such as Quotations / Buying / Selling / Returning are executed only as a result of two or more companies sharing and exchanging information. The only purpose for the existence of catalogues, forms and reports (electronic and paper-based) is to resource and store business activity information.

The differences in the way companies process the same business information causes manual processing costs to remain high across the information-chain. This challenges every company's Rate of Retained Revenue. The fact remains, too few companies invest in technology such as EDI. For those who do, the array of challenges continues to be overwhelming. Failing to resolve business information processing issues dramatically reduces opportunities for cost-effect and profitable domestic and foreign trade. The major challenge to most enterprises is the human resources and technology-cost of meeting requests for business information. Most choose not to participate in technology-solutions and continue to face becoming marginalized when they can no longer absorb costs and have to pass them along in the price of the goods.

Envision the common and enormous deficiency in business practices. Calculate the repeatable costs across any information-chain for individual companies who collect, then process universally used business information that is re-exchanged, re-collected and re-processed, internally, by trading partners and service providers. These constitute the "Repeatable Costs" business administrators endeavor to convert to "Repeatable Savings".

### What to do?

Business Information Exchange Services can be the answer but must be seen as both cost effective across the information-chain and proficient in seamlessly integrating information that is common to basic business-functions and systems, with that which is not.

For market acceptance, the service needs to be populated with applications that enable Data Providers, regardless of their technology level, to:

- locate and extract information from multiple sources;
- create and run rules, tables, searches and multiple data bases;
- transform it to the specific needs of multiple data recipients, who each process business information differently.

EC Dynamics' fully developed, unique External Data Integration Automation™ (EDIA™) system is earning global attention in this market-place because it is recognized as being capable of:

- Filling the growing demand across both international and domestic trading markets for cost savings.
- Bridging gaps across these complex task-driven information-chains.

## Elements for Effective EDIA™

It is our observation that business organizations have several common and fundamental requirements when selecting a business intelligence system. The first is to add value to current systems and reduce costs associated with supporting procedures; and the next is that it is equally deployable across all markets to ensure continuity:

All business functions are the same and managed in accounting, the central information source:

### Buying:

Accounts Payable: Purchasing (Purchase Request, Quotations, Purchase Order)  
Receiving (Goods Received, Inspected, Recorded)  
Storing: (Goods Stored and/or sent to Production)  
Monies Payments: (From Purchasing and Receiving Records)

### Selling

Accounts Receivable: Selling (Catalogue, the business primer)  
Production (Instructions for filling orders)  
Shipping (Goods packed and shipping records prepared)  
Billing (Invoices from shipping and production records)  
Monies Received: (From shipping and invoicing records)

However, business-transactions are processed using a vast array of business:

- **Form's configurations**, all using similar field names, conveying the same basic information.
- **Information processing systems and data configurations**, all using similar field names, processing the same basic information.

The “**gap**” between enterprises involved in foreign trade is that business transactions and required reporting-fields are not often available locally and must be provided by integrating external databases. Compounding the augmentation issue is the fact that high functioning information processors are needed when: currency, weights and measures often have to be converted; product information has to be validated against rules set out independently by the country and/or company receiving the goods; searches are run to separate specific system-selected Tariff Codes that describe the form and use of products such as foods, drugs, and textiles to ensure each item qualifies for import under the rules governing: commodity quotas, NAFTA, dangerous goods, country of origin prohibitions, and others. Importation of many products requires special handling and form-filling.

Most international customs agencies plan to follow the US and Canadian model, demanding e-files. This is rapidly making it no longer possible to provide paper-based customs entries and carrier load content information. EC Dynamics specializes in providing technology and networking services to companies with this need. We see the global demand increasing for highly functional and cost effective business information systems, methods and services that provide:

- Local and remote data extraction from one or more source(s);
- Centralized storage, access, editing and forwarding of information contained in:
  1. Catalogues that provide fields describing products in customs compliant ways;
  2. On-line and desktop e-forms and reports that are fillable by calling fields from various End-user managed and shared data bases, including stored business activity information that can be viewed, edited, distributed and transformed to many uses, then restored and repeated.
  3. The ability for End-users to generate business transactions and reporting both on-line and from the desktop, regardless of their current procedures and processes or the differences in the way recipient companies generate, format and use the information.
  4. The Business Activity Information System must distinguish between foreign and domestic transactions and process them within a common End-user experience.

## **EC Dynamics' EDIA™ System is:**

### **Deployable and adds value across any End-user's Information-Chain**

The market need is to empower, in an easy, transparent and cost effective way, the ability for any “Data Recipient” to enable any trading partner or service-provider to become a “Data Provider”, in any format needed, without either having to invest into technology or alter their current methods and procedures.

### **Manageable outside IT**

The EDIA™ system, following implementation, does not add to IT's system administration responsibilities. The system efficiently and proactively ensures the integrity of data mapping, identifies issues such as field name changes, provides notifications to one or more authorized persons in a timely way, and employs “Low-Tech” methods to fix such problems.

### **Compatible to current infrastructure**

The system works within existing environments, capable of capturing data from any source: PDFs of Reports and Forms, Spreadsheets, Web infrastructure, exported databases and more. It transforms the data to any and multiple use(s) and delivers any: data format, fax, PDF, on-line print able form or report; view on a web page, and more.

### **Security**

The solution ensures that access to both the EDIA™ service and the information in that system is always secured as required.

### **Usability**

To reach the broadest possible audience, our EDIA™ solution recognizes and accommodates different types of End-users through a common User experience, across all EDIA™ capabilities and on the full range of technology, including mobile devices. It is highly searchable so that Users can leverage EDIA™ information for which it has authorization and that any “Data Provider” or Over-site Organization has created and maintains.

### **Seamless Information Interchange**

In addition to the data extraction process selected and used locally to push business information to EDIA™, capabilities enable functionality to fit the needs of different Users.

### **Common business view**

For organizations with many data assets, applications and End-users, the EDIA™ solution delivers a synchronized view of the business activity information that is specific to the needs of managers and knowledge workers so they never have to worry about the validity of their data against other User's. User-designed views are based on selected data, and the quality of the data is maintained to ensure User confidence. Our data modelers are able to create an effective business model quickly and readily modify it to recognize the differences in the way companies operate; and, as the needs of business change over time.

### **Agility**

The EDIA™ solution easily adapts to evolving User-needs and to Customs Agency regulations.

### **Scalability**

The EDIA™ deployments scale in a linear fashion to accommodate thousands and tens of thousands of End-users both across a global organization and within domestic markets.

### **Reliability**

The EDIA™ system is operated on a 24x7 basis with redundancy for all capabilities and services.

### **Openness**

The EDIA™ is open in terms of the data you can access and for integration with existing and new applications, portals, security systems and more.

## Competitive Advantage

While software and VAN offerings have segments of our End to End **EDIA™** solution, we have not found any service that enables End-users wishing to receive data to simply reach across their information-chain with a selection of free data extraction solutions. In addition, no service ensures exchanging and processing 100% of the data required to fulfill: customs compliance, transportation and a multitude of other e-file mandates. Development of this EDIA™ has required EC Dynamics to constantly satisfy the individual needs of importers, exporters, service providers and the Government Agencies to whom they report. This decade of work has given us unique expertise and insight into their relationships and business processes. A major difficulty has been that every business is different and there is very little “will” for each to invest into changes in order to fit another enterprise’s business information processing needs.

One marketing edge we have is that we believe there is at least a two-year “knowledge” gap between our current and constantly evolving EDIA™, and one that even a large developer could create. This gap is constantly growing. A second is that extended End-user links make it difficult for a competitor to persuade companies to move to an alternate service as it would require attracting its entire information-chain to move at the same time. A third is Governments around the world constantly altering the rules that oversee foreign trading. We are currently compliant only with US and Canada Customs, and the regulatory changes they implement. Our End-user-directive is to ensure our service updates are in place in advance of rules being applied. We have many clients who are willing and capable of working with us to become globally compliant.

We are past the “Proof of Concept” stage to the extent that a “Niche Market Position” has been achieved. Our End-user experience is that EDIA™ eliminates all technology barriers by not requiring any Data Contributor to purchase software or alter current business processes and procedures in order to match requests for e-file compliance. Many End-users don’t comprehend that they are in fact contributing to an e-file.

Our ability to provide remote data extraction, on-line data processing, file visibility, automated and manual editing, and automated forms filling that is specific to any End-User’s needs ensures the availability of accurate, timely and useful information including the creation of importable files across the information-chain. EDIA™ extracts information from, and adds or expands the e-file capability of any application such as: DB2, SAP, spreadsheets, bookkeeping and other business systems. End-Users easily re-engage current clients and vendors, develop new prospects with first contact profiling, and generate new, long-term, and sustainable, retainable revenue while enjoying savings in back-room business activity information processing costs, reduced customs and other service fees and improved client / vendor relations. Equally valuable is the server’s ability to process data and disseminate it for use in applications related to IBM Cognos®, Informix products and more.

Implementation of our EDIA™ solution, designed specifically for this multifaceted global market place, provides much greater benefits to organizations than lower functioning Distributed Database Management Systems and Networks. For example, it is used to convey and implement unique application of information fields required when remitting e-files to domestic and foreign governments. More than perfunctory knowledge is required to apply these “Market / User” specific data bases. Each needs to be repeatedly and appropriately applied against specific customs rulings and to populate fields that are not familiar or found in basic business functions and systems. In addition, differences between the sending and receiving systems often require on-line blank field filling and information validation against: lists and rules; running basic and complex conversion tables; file visibility; and, local and on-line editor utilities to ensure that file information and structures match targeted enterprise applications.

EC Dynamics’ revenue is "Transactions Based". We provide: free software downloads, a growing library of data maps for OTC software such as ACCPAK and, pre-mapped forms.

## Conclusion:

The purpose of this White Paper is to describe EC Dynamics' External Data Integration Automation™ (EDIA™) solution and solicit information-chain interest in this technology.

We are an IBM Business Partner with global End-users and service providers capable of ensuring the EDIA™:

1. Meets Customs compliance between any two countries.
2. Manages data for both foreign and subsequent domestic shipping, across all markets.
3. To globally promote elimination of redundant data entry between any groups of related and unrelated applications, within an "Information-chain".

We firmly believe that EDIA™ is positioned as the "Go-To Cost Elimination" solution and can be reliably implemented where there are redundancies in extracting and processing business information. The service currently targets companies that exchange information contained in shipment transactions but can easily be expanded to eliminate redundant data entry in any information-chain.

At the end of any developed process, the following tasks will have been accomplished:

- a) Extracting and transforming targeted data from sources.
- b) Generation and distribution of necessary forms.
- c) Generation and distribution of computer readable and importable files.
- d) Elimination of the need for subsequent parties to retype the information.
- e) Creation of a searchable database of transaction history that can be shared and formatted for use by authorized parties for any purpose including research.

## Next Steps

We will be pleased provide free consultation in the review your requirements.

## ADDENDUMS

### *Data Collection Methods*

#### **Current Condition (Making use of existing computer data):**

Often, information needed has been previously processed and exists in a format that is not compatible and on an inaccessible system. More than 80% of time the information has to be:

- Located and extracted by printing one or more forms, reports, spreadsheets.
- Provided by telephone, fax or e-mail attachment.
- Transformed by isolating and marking specific fields.
- Combined on forms with associated information to complete a record.
- Validated against lists.
- Values calculated manually or by running tables on spreadsheets.
- Loaded by manual data entry.
- Reports generated and passed to other systems for redundant processing.

#### **EC Dynamics provides a wide range of options to collect:**

##### **Existing data**

- **EDI Upload**  
Shipment and other information can be posted by the Data Provider directly to the EC Dynamics Data Server using a variety of methods and formats. The data is edited and reformatted to match the needs of the Data Recipient.
- **Importing a Data File**  
A data file is generated by the Data Provider using their home grown script. The file can be imported using the EC Dynamics TranSendIT system or via a web based interface.
- **ODBC Link**  
The use of ODBC drivers and a "Select Statement" allows a Data Provider to pull data directly from existing internal systems. The ODBC link locates and extracts files and databases in real time, reflecting current status of transactions. There is no need to write files directly to the export function. An optional intermediate step allows the User to select specific transactions or other information for additional editing before sending the data to the Data Recipient. The ODBC link can be run from within the TranSendIT system or via a web based interface.
- **Spreadsheet or ASCII Files**
- Many companies are able to create spreadsheets or "flat" files containing targeted information. In fact, many of the reports that are printed and faxed are spreadsheet files. The EDIA™ automates creation of transaction data files directly from the spreadsheet or flat files that are currently being produced. There are four options available to the Data Provider to send information to the EDIA™ server:
  1. E-mailing the file(s).
  2. As the file is being printed using EDIA's™ virtual printer driver.
  3. Printing the reports or forms to a PDF file, and then emailing the PDF file.
  4. Printing the file to a PDF, and then posting it to the server via the EC Dynamics upload page.

## When data is not currently available or easily accessible.

The EDIA™ offers several solutions to extract or generate data:

- **Capturing Data from Internal Reports and Forms**  
Many of our End-users create a computer readable data file simply by printing one or more forms or reports. The EDIA™ "extracts" data that is normally paper-based three ways:
  1. As the reports or forms are being printed;
  2. By printing and emailing a PDF file;
  3. By printing then posting a PDF file to the EDIA™ server via the EC Dynamics upload page

The service: locates target or "mapped" fields from one or more document; integrates it one file; ignores the rest; then, posts it appropriately for processing and distribution.

Users are not required to change internal operations as current forms, reports and spreadsheets are used. The information can be printed on documents created on different systems, and there is no limit to the number of documents the EDIA™ can process in order to achieve the required results.

- **Web Fill-able Forms**  
This provides a very cost effective alternative for Data Providers to generate small-content files. The forms are accessed directly on the web and allow the creation and distribution of PDFs as well as computer readable files. There is no limit to the number of Data Recipients, and each can receive the information as a PDF, or as negotiated.
- **The TranSendIT System**  
Using the TranSendIT system, a shipper or authorized third party enters Shipment information for the purpose of creating the required documentation and posting the information electronically to the EDIA™ server for further processing. A variety of options exist to simplify manual data capture, including the ability to copy and paste from an spreadsheet file and the use of Kits that automatically expand the product selected into its component parts.
- **External Databases**  
Extensive use is made of optional external databases because data captured from internal systems rarely contain every required field.

These databases empower an End-user to create, maintain and store product and other related information not available in their internal data systems. When edit checks are deployed, information stored in the databases automatically fill missing or blank fields while the transaction data file is being processed. This eliminates the need for an End-user to: make changes to internal data structures and/or reports; arrange with external Data Providers to repeatedly re-send information updates; and dramatically reduces opportunities for errors.

*Examples of fields include:* HS Tariff, Country of Origin, Producers, PARS, etc.

## Forms we fill

### ACE Cover Letter

Used when generating the e-manifest computer file for ACE.

### Bill of Lading

Used when BOL is supplied by the shipper.

### BOND 7512:

Used for IT, IE and T&E Bonds.

### FCC 740:

Prints for all products in the shipment for which the "Print the FCC 740 Form" field in the Product database has been set as "Yes".

### FDA 2877:

Prints for all products in the shipment for which the "Print the FDA 2877 Form" field in the Product database has been set as "Yes".

### Inward Cargo Manifest

Used when Manifest is supplied by the shipper.

### NAFTA CERTIFICATE:

Prints for all products in the shipment for which the "This is a NAFTA product" field in the Product database has been set as "Yes".

### PROFORMA:

Page 1. A consolidated report that groups loads based on Tariff & Country of Origin.

Page 2. A report generated for FDA.

Page 3. The detailed portion of the ProForma Invoice.

Page 4. The summary portion of the ProForma invoice.

B-13 Export Declaration required by Statistics Canada.

### **VINS Forms 1:**

Page 1. Declaration

Page 2. Cover page that accompanies the vehicle folder to DOT.

Page 3. DOT Conformity Bond

Page 4. Statement of Conformity

Page 5. Vehicle Recall Statement

Page 6. E-15

Page 7. ProForma Invoice

Page 8. Certification

Page 9. Inward Cargo Manifest

Page 10. NAFTA Certificate

Pages 11 and 12. Warranty Recall Policy

Vehicle Labels:

Label without Tire information

Label with Tire information

## Market-specific External Databases

These databases have multiple uses, are password protected, stored and accessed on the web.

The data can be combined with End-user data when creating transaction files from external sources. Data not available in an End-user's internal systems can be stored in the external databases, and then automatically added to the transaction file as it is being created or posted. This includes generating files using the [EDI-Link](#), [ODBC Link](#), [File Import](#) and [EDI Upload](#) options.

### The Databases are:

#### *Product Related*

Product Profile  
HS Tariff Numbers\*  
FDA / FCC Producers  
Textile Producers

#### *Parties and Locations*

Customs Brokers  
Carriers  
FSIS Locations (USDA Shipments)  
Foreign Ports (In- Bond Shipments)  
Shippers

Vendors including bond providers.

#### *e-Manifest Related*

Drivers  
Equipment (Trailers)  
Vehicles (Power Units)

**\*Definition:** The **Harmonized Commodity Description and Coding System (HS)** of tariff nomenclature is an internationally standardized system of names and numbers for classifying traded products developed and maintained by the World Customs Organization (WCO) (formerly the Customs Co-operation Council), an independent intergovernmental organization with over 170 member countries. All existing products can be classified into the existing HTS utilizing the General Rules of Interpretation.

**Disclaimer:** The accuracy of the data maintained in external databases is the responsibility of the Shipper, Importer of Record and/or the Customs Broker. EC Dynamics does not enter or provide the data.

## **EXAMPLE: End-user experience:**

\_\_\_\_\_ Canada Inc. is a wholly owned subsidiary of a global environmental solutions company. The Division manufactures high volumes of the Company's proprietary diesel, gasoline and alternative fueled engine substrate/catalysts.

Technology: Web based forms fill.

### **Solution Implemented:**

**EC Global Dynamics' External Data Integration Automation™ (EDIA™)**

### **The business information problem this solution solves:**

The requirement was to eliminate the cost of redundancy in providing shipping information to Customs Brokerages and carriers. The processes used by this company to provide its Customs Broker shipping information required them to:

- Enter the information into internal systems.
- Print the information on reports.
- Re-enter the information twice:
- A ProForma/Commercial Invoice;
- A NAFTA Certificate for each qualified item shipped.

The solution provided by EDIA™ was to create a single data entry template as a save able PDF. Once the form is filled and a “Send” button clicked, the forms’ file is fully automated.

EDIA™ eliminated redundant data entry by consolidating all of the required fields on a single data entry save-able PDF template. Filling the PDF template and clicking a “Send” button caused the information to be imported to the ProForma/Commercial Invoice and NAFTA Certificate(s).

Then:

**The filled forms are automatically e-mailed as a PDF to authorized parties.**

**A computer readable and importable file is sent to the Customs Broker to eliminate redundant data entry to the ABI system.**

Business Result: User eliminated 50% of redundant data entry for the first item in a shipment and up to 90% of additional data entry for additional items in the same shipment.

Development Cost: \$250.00

*EXAMPLE: Logistics Provider Business Information Flow-chart*

**General Information Flow**

