Hello, I'm Jim Wilson, president of AgGateway Global Network.

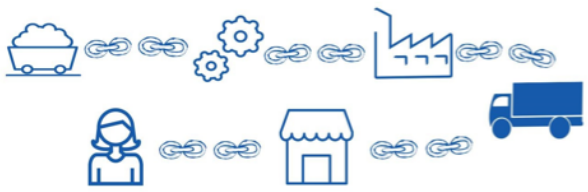
This presentation provides an overview of AgGateway's achievements in streamlining the supply chain; and the standards, guidelines, and implementation tools used in the associated projects.

AgGateway Global network is working with Latin American agribusinesses to form an AgGateway association for Latin America. Membership in AgGateway Latin America will help your company increase profitability, operate more efficiently, and help make your customers happy to do business with you. It will also give you access to global projects that have been done in Europe and North America, and will network you with other AgGateway members around the globe.

AgGateway brings companies together to collaborate on standards and on guidelines for implementing those standards.
For the past 12 years a group of over 230 agriculture companies have joined together in a non-profit organization called AgGateway to collaborate, standardize, and implement.
Let's discuss some of the successful implementations in the supply chain.

Some AgGateway Supply Chain Projects

- Warehouse Management
- Crop Protection
- Seed
- Crop Nutrition
- Paperless Fertilizer Tonnage Reporting
- Ag Retail Sales Reporting
- Specialty Chemical Sales Reporting



AgGateway has completed a number of supply chain-related project. They include a project focused on improving warehouse management efficiency; projects to improve order-to-cash efficiency for crop protection, seed, and crop nutrition; and projects to improve reporting efficiency for agricultural retail, specialty chemical, and fertilizer tonnage.

Warehouse Management Project

- Processes
- Value Calculator
- Bar Code Guidelines

In AgGateway's warehouse management project, representatives from companies throughout the supply chain worked together to document processes. They developed a value calculator that any company in the industry can use to estimate the value of warehouse automation. Finally, they updated bar code guidelines that serve as the basis for warehouse automation and industry traceability. Implementing warehouse automation standards, guidelines, and technologies will save the industry millions of dollars in the coming years. A couple of companies have completed highly successful pilots and other companies plan to follow.

Order-to Cash Projects

- Crop Protection
- Seed
- Crop Nutrition

AgGateway-member companies completed projects to improve order-to-cash processes for crop protection, seed, and crop nutrition. They addressed ordering, logistics, invoicing, and inventory reporting. They documented processes and created guidelines for the implementation of message standards. They promoted the use of an industry directory of standard identifiers for growers, retailers, distributors, manufacturers, and products. Finally, they agreed on messaging protocols essential for secure message exchange. Of course developing such resources alone does not create value. So, AgGateway worked with companies in the industry to connect with their trading partners. Consequently, manual entry errors dropped dramatically, orders are processed more quickly, inventory is better managed, working capital was released, and customer relations improved.

Reporting Projects

- Paperless Fertilizer Tonnage Reporting
- Ag Retail Sales Reporting
- Specialty Chemical Sales Reporting

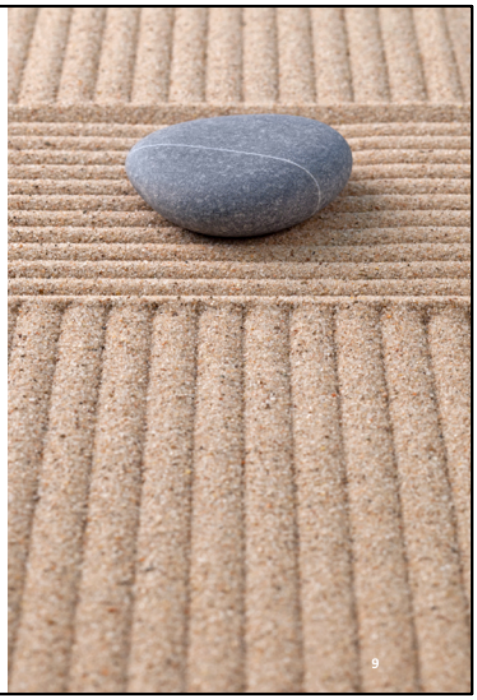
Reporting is a challenging but essential process in the agriculture industry. AgGateway's member companies worked together to develop standards for fertilizer tonnage reporting in XML format, and are now working on an equivalent Excel format. AgGateway developed an XML-standard format for sales reporting several years ago. This format is applicable to both ag retail and specialty chemical. To support small companies, AgGateway also developed equivalent Excel formats for those industry sectors. These reports provide for much more streamlined reporting processes for their implementers, which are in widespread use today.

AgGateway Standards, Guidelines, and Implementation Tools

Now that we have discussed some of AgGateway's successful projects, let's discuss some of the standards, guidelines, and implementation tools.

Overview

- In this section we will discuss fundamental elements of eBusiness:
  - Processes
  - Messages
  - Identifiers
  - Message Transport & Routing
  - Data Privacy & Security



Business Process Guidelines

- The context in which
  - Products and services are delivere
  - Payments are sent/received
  - Supporting activities are executed
- Written:
  - Business use cases
  - User stories
- Diagrammatic:
  - UML activity diagrams
  - UML state diagrams
  - BPMN diagrams

Context: The importance of processes cannot be overstated. A clear and shared understanding of process is critical to effectively implementing eBusiness between two trading partners. So often implementers want to jump right to the message (e.g., purchase order, invoice) without fully understanding individually, within a company, and among a set of trading partners what the process is in which a message sent. Messages are not exchanged in a vacuum. Messages are always exchanged in the context of a process.

Message Standards, Guidelines and Implementation Tools

- Ag eStandards
- Message Use Guidelines
- CLICK

Ag eStandards: In the agriculture industry, AgGateway has developed Ag eStandards. These are business message standards that describe the structures and data types of business messages identified in the business process guidelines. These standards are in XML Schema form.

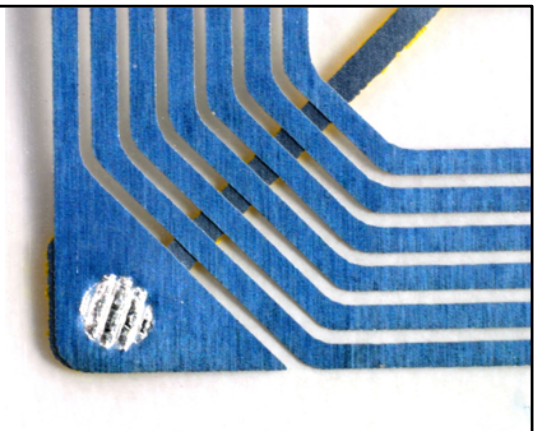
Message Use Guidelines: Messages are defined for use in a specified context, where context category is primarily process type (e.g., order-to-cash). However, messages are generally implemented in a context that is defined by further categories like industry (e.g., agriculture, seed) and geopolitical (e.g., European Union, North America). AgGateway has facilitated processes to document how messages are used in these more specific contexts using specially formatted Excel files produced by CLICK, which is described next.

CLICK: Business managers and developers often need to comprehend message standards. There are XML Schema tools like oXygen XML and XML Spy, but these tools are perceived as expensive and too technical for business-level message browsing. In response to this issue AgGateway offers a tool called CLICK. CLICK is tool for

- Exploring Ag eStandards, including

    - Structure
    - What is required, what is optional, and what may repeat
    - Data types, including code internal code lists
    - List of messages an element is used in
    - List of parent elements for a given element
- Producing Excel expressions of messages (the ones used to document message use guidelines as described in the previous section)
- Producing sample instance documents
- Copying XPaths

Identifier Standards, Guidelines, and Implementation Tools



- AGIIS
- GTINs
- GLNs
- Seed License Agreements
- RFID and Bar Code Standards & Guidelines

AGIIS: AgGateway provides an identifier directory service called the Agriculture Industry Identification System (AGIIS).

GLNs: AGIIS provides identifiers and associated attributes for organizations, organizational units, and locations (using GS1's Global Location Numbers or GLNs)

GTINs: AGIIS provides identifiers and associated attributes for some products/logistics units (using GS1's Global Trade Item Number).

RFID and Bar Code Standards & Guidelines: AgGateway has RFID guidelines and bar code guidelines. AIDC has reached out to CRISTAL to merge AgGateway's bar code guidelines with CRISTAL's traceability standards.

Transport & Routing Standards, Guidelines and Implementation Tools

- Provides a message envelope
- Moves messages from one trading partner to another
- Provides support for security
  - Guidelines
  - ebMS
- Web Services
- NEXUSe2e

Overview: Message transport and routing addresses the part of the eBusiness process whereby messages are delivered from one system to another. For simple eBusiness implementations, this could be a file system directory accessible by FTP both the sender and the receiver. More robust systems require standards-based solutions.

Envelopes: Message envelopes may provide such information as:

- Who the sending party is
- Who the intended receiving party is
- What sort of normal processing is expected
- What sort of error processing is expected

Security: Security is an important feature of transport and routing. Not surprisingly, security is addressed by transport and routing standards. We address security in the next section.

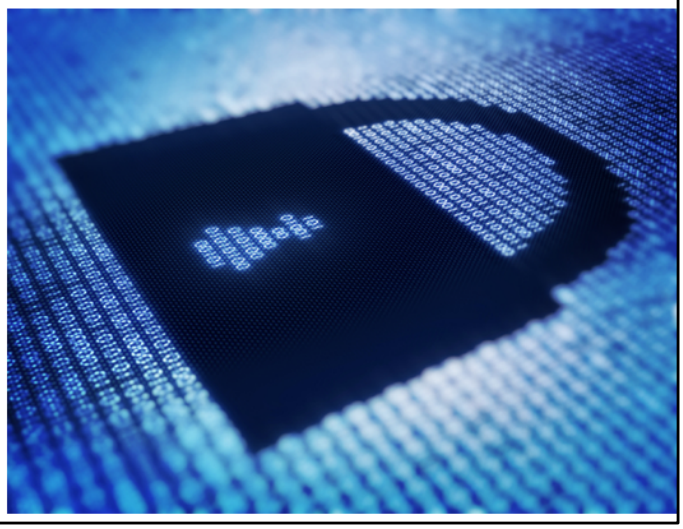
Guidelines: In the agriculture industry, AgGateway has developed transport & routing guidelines for both ebXML Message Service Specification (ebMS) and web services.

Standards and supporting technologies in this area are constantly advancing. AgGateway constantly considers how it can develop guidelines to keep pace.

NEXUSe2e: AgGateway financially contributed to the development of NEXUSe2e (also known as Ag eMessenger). NEXUSe2e is an open-source eBusiness messaging server that supports the ebMS and Web Services protocols. It has been implemented by a number of companies within the agriculture industry.

Data Privacy, Security, & Ownership

- Privacy
- Authentication
- Integrity
- Non-Repudiation
- Authorization
- Data ownership



There are several fundamental aspects of data privacy, security, and ownership. They are:

Privacy: Message contents are readable only by the sender and intended recipient.

Authentication: The sender's identity can be verified by the receiver, and vice-versa.

Integrity: The receiver can verify that what they received is what the sender sent (i.e., the message was not altered in route).

Non-Repudiation: The receiver has a means whereby they can affirm that a particular sender sent a specific message such that the sender can't credibly deny it. Optionally there may be the ability to affirm date/time

Authorization: The sender is permitted to deliver a particular message to a receiver and to expect such message to be processed by the receiver.

Note: Data privacy and security are addressed by the transport & routing layer. Circumstances dictate which combination of the five security components are

required, if any are required at all.

Data Ownership and Privacy: It is critical to understand the context in which the term *data privacy* is used. *Data privacy* is often used in the context of one party providing data to another party for a narrowly specified purpose. For example one party may deliver data to another party for the purposes of transforming the data into an industry format and passing on to *final* recipient. Another example would be a pool of data owners providing data to a service provider for the purposes of receiving benchmarking reports.

In many cases, many kinds of data are *owned* by the sender and what intermediaries and final recipients may do with the data must be explicitly permitted by the data owner through written agreement. It is beyond the scope of this paper to break down types of data (in a privacy/ownership context) and the nature of agreements between data owners and other parties. These are first and foremost legal and business-relationship matters. Technology plays a role in enabling both secure and insecure data flows.

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Thank you for your attention.