An Incomplete History of Interfaces

Introduction

Understanding the rough-cut history of interfaces and "EDI" will help you to avoid common pitfalls.

Origins

Back in 1975 AD digital data exchange between companies was inefficient and prone to error.
Data was usually sent through phonelines back then, and no one knew for certain the origin of the data, or whether the packages that arrived at each specific destination were complete and usable.

Therefore, a group of US computer wizards created an abstract platform called Electronic Data Interchange (EDI).

- Electronic digital interchange would be the next step to move to paperless office principles
- A secured connection would allow verification of origin and destination without being prone to fraudulent practices and hackers
- Common sets of data, like purchase orders and invoices, would be defined in a message type definition and used by all parties within the same industry
- Return messages would indicate whether received data was complete and usable
- An intermediary called a Value Added Network (VAN) would function as "post-office" for these messages and supply the secured connection and maintain a list of parties connected within the same industry for easy reference.

VANs would monetize this by charging for use of secure networks, charge per message sent and/or received and offer message type creatuion and translation services between various industry document standards.
The VAN would often configure a special piece of middleware on a customer application server to set up a connection and handle the upload and download of EDI files between the connected party and the VAN "post-office".

Complications

Standards Organisations

The American National Standards Institute (ANSI) was responsible for tracking industry standards on the US-side, and deposited the character-based ASC X12 standard.

In 1986 however, an United Nations ISO committee started their own EDI industry standard tracking and re-imagined the ANSI X12 standard as a comma separated file (CSV) and called this new standard the EDI For Administration Commerce and Trading (EDIFACT). But all the US companies that already invested and ran the ANSI X12 standard ofcourse didn't necessarily want to invest in the new standard. Something similar happened when an XML standard for EDI was introduced in the 90's.

The development of EDIFACT took a while, and in the mean-time the English made their own standard called TRADACOMS, which is maintained by the English bureau GS1UK.

Value Added Networks (VAN's)

Companies also sought to bypass the paid Value Added Network (VAN) services so that a lot of unprotected messages were sent over e-mail (POP3/SMTP) and file transfer (FTP) protocols. To make matters more complicated; various industries adopted file types from neighbouring industries and modified them to better accomodate their own industry. Sometimes these standards would be agreed upon per country or even per region. In various cases a standards bureau would also dispense barcodes (EAN codes) for centralized registration of products in the industry.

Software Development Issues

Software developers sometimes modified a standard with extensions and modifications for various pragmatic reasons.
Add to this that software developers sometimes neglect to update EDI document type definition documentation, accompanied sample files and also that various EDI standards do not really require you to add a version number which corresponds to the definition documentation.

In the olden days of limited data bandwidth both online (file transfer) and offline (database systems) it was also custom to use abbreviations for almost everything (max 8 character limit was usual), so a definition was essential in interpreting the content of an EDI file.

complications like this can ruin projects if they are not foreseen and handled properly.

Current state

The interface-and-standards landscape is somewhat fragmented. The misunderstanding of various core concepts and history of EDI results in miscommunication about the subject.

A new form of data exchange called Application Programming Interface (API) is becoming the norm, but again requires development and close cohesion between different development companies.
Therefore the batch-exchange of files according to EDI standards is nowhere near end of life in the real world.

Updating an EDI file type with new features still results in all connected companies having to update their processing software. VANs are gaining new life to combat this problem, supply and maintain a complete set of industry standards and provide translation services to combat the issue of re-investment in legacy software.