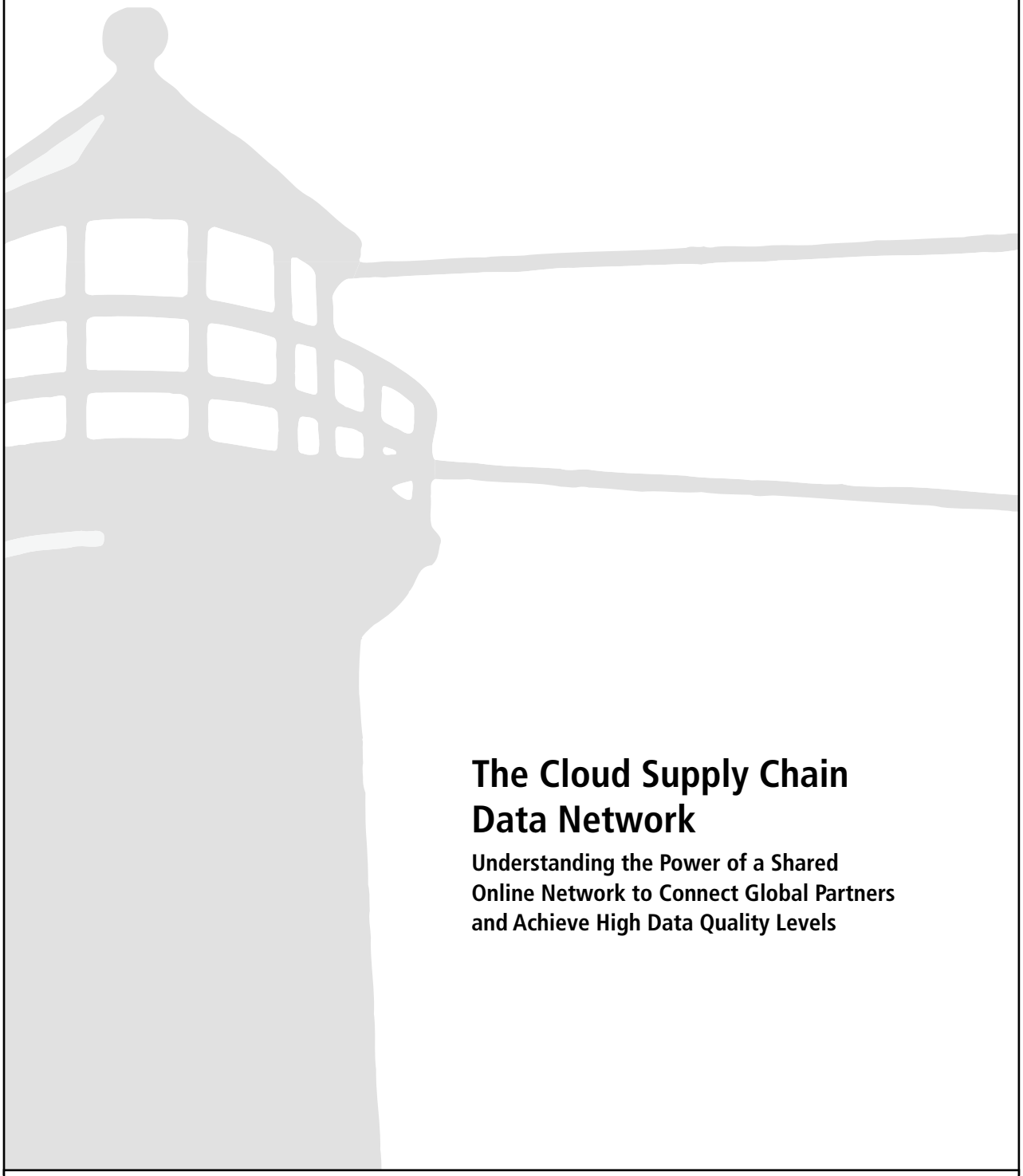


The Cloud Supply Chain Data Network

Understanding the Power of a Shared Online Network to Connect Global Partners and Achieve High Data Quality Levels

GT NEXUS™

A GT Nexus White Paper

Executive Summary

Quality data is the fuel for any business software. In international trade and logistics, where critical data comes from partners scattered across the globe, the challenge of obtaining quality data is even greater.

The traditional approach for connecting to a myriad of partners to receive and send data is costly, time-consuming and error-prone. It is the primary reason companies don't have global view, or a control tower for managing the full end-to-end global supply chain. Fortunately, there is a new model for delivering data to your solutions that makes what used to be impossible possible, while decreasing costs at the same time.

Modern cloud-based information platforms designed specifically for global supply chains take advantage of powerful network effects that lower costs by spreading them across a large community of users. Each new user that joins the network can take advantage of what's already in place supporting the existing user community. Conversely, the entire community benefits when new members join the network and bring on their partners, making those connections and data flows available to all. In addition, this structure provides a means for cooperative, continuous improvement of data quality.

Like electric power, a consumer is faced with two choices. Either build a power plant, or hook in to the electric grid. Surprisingly, most global companies have taken the power plant approach and still have a hard time keeping the lights on.

©2010 GT Nexus, Inc.

The Traditional Approach

In order for information systems to be able to inform operational decisions or to provide a realistic basis for planning, they must contain correct business logic and operate on high-quality data. Poor data quality takes many forms, from data that is incomplete or incorrect, to data that arrives too late to be of use or in a form that your systems cannot handle. Any one of these problems could make even the best, most advanced software systems useless for decision-making.

There are three steps for getting quality supply chain data for your applications:

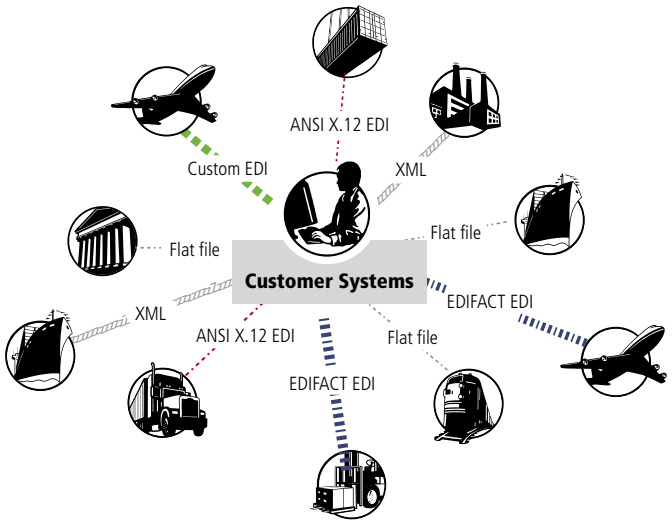
1. Connecting with your partners
2. Normalizing the data they provide
3. Managing data quality

> Data are of high quality if "fit for... intended uses in operations, decision-making and planning."
>
> *Joseph M. Juran, legendary quality guru*
>
> High quality data must be:
>
> - Accurate
> - Complete, as missing data can skew decisions as badly as incorrect data
> - Timely, because data that arrives too late is no better than data that is missing

1. Connecting with Your Partners

The traditional software model requires dedicating IT resources to building the connections. First, you need to build out your IT infrastructure to create the data "pipes" connecting you to your partners. You need to find the EDI contacts at your data providers. You need to agree with them on a communications protocol and on the format of your EDI messages. As the number of partners rises, so does the complexity of connecting them all.

FIGURE 1: Supply chain data chaos: How to get quality data with multiple standards, formats and communications channels?



©2010 GT Nexus, Inc.

2. Normalizing the Data

Once you have built the connections, you must monitor them to make sure data is flowing, which requires a dedicated IT staff, on call 24/7 to respond in the case of data failures.

You must ensure that the data is normalized, so you are making "apples-to-apples" comparisons and groupings across the data set. For instance, if you are analyzing data coming from a particular location, you must make certain that the location is consistently called the same thing by every participant in the supply chain. For example, you must deal with spelling variations, such as Antwerp vs. Antwerpen, changes and variations in standard location codes (such as HKHKG vs. CNHKG for Hong Kong), and other sources of potential confusion. If you are using data from multiple partners, this is a huge challenge.

Among data elements that will need to be normalized are:

- Locations
- Milestones
- Currencies
- Equipment types
- Organization names
- Reference codes
- Charge codes

In the traditional approach, either you create mapping tables, which quickly become complex or stale, or you just give up and build additional complexity into your reporting. This process gets exponentially more complex as your supply chain grows and you connect to more partners. Moreover, this complexity increases your switching costs, as your solution becomes so customized for one partner that the cost of changing partners becomes prohibitive and you become locked-in.

3. Managing Data Quality

Once you have everything set up, you must dedicate resources on an ongoing basis to monitor data quality (for accuracy, completeness, and timeliness) and to work with your partners to reach and maintain data quality goals. To do this well, you must have staff that are not only good at building complex reports to find missing data, but also have the people skills needed to manage the relationships with your partners so they will provide missing information.

Companies often overlook this key aspect to data quality management. During an implementation phase there's a focus to get the data flowing at high levels. Then, once the solution is live the IT focus shifts to the next project and before long the data quality begins to decay.

©2010 GT Nexus, Inc.

A Better Way — In the Cloud

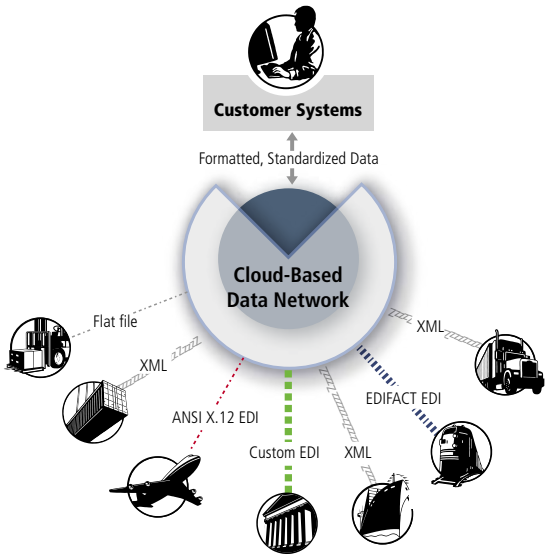
Fortunately, there is a better way to get the data you need, which dramatically lowers costs and time outlay. An on-demand data network shares the costs of doing this hard work among many constituents in the network, lowering costs for all participants.

Electrical utilities provide an excellent example. You could build and operate your own generator to provide the electricity for your home. However, this is not an efficient option for most people. Instead, a large generator is built to serve many thousands of homes and the cost of generating this electricity and building and maintaining the electric grid is shared across entire communities of consumers. The more people that "plug in" to the same network, the lower the cost of providing service to each individual user.

The cloud-based data network is similar. The administrators of the data network create and maintain all of the connections to your logistics partners. In many cases, you will find that those connections have already been made and are accessible right away.

The cloud data network also provides data that is already normalized, just as your utility company provides electricity of a standard voltage. Much of this work has already been done for others already on the network, thus lowering costs (because they are amortized across many parties), reducing time-to-benefit, and shifting the hassle and technology risk from you to the on-demand network provider.

FIGURE 2: The cloud data network does the heavy lifting of obtaining high-quality data.



The administrators of the network are responsible for the IT infrastructure (both electronic and human) needed to create and maintain the network and for the data-mapping and maintenance services needed to make it work and keep it working. Once again, this infrastructure and the services needed to support it are amortized over the entire user base.

©2010 GT Nexus, Inc.

The Network Effect: A "Free Ride" to Data Quality

These costs advantages are enough to favor using a cloud data network rather than building and maintaining the connections yourself. However, there is a powerful network effect compounding these advantages. A network effect is in play when the value of the network increases for every participant as each new participant joins in.

Although keeping up the pressure on your partners to provide you with high-quality data may seem like a one-on-one proposition, remember that many supply chain partners (suppliers, forwarders, etc.) are shared by a number of shippers. Any data quality improvement made for one consumer of the data benefits every other consumer of that data.

For example, assume there are ten customers on the network, all receiving shipment milestones from forwarder X. One customer finds that forwarder X is not sending customs release milestones for shipments originating in Hamburg, Germany. The forwarder, working with the customer to correct that problem, discovers a flaw in the customs system in Hamburg and corrects it.

Now, not only the customer who reported the problem benefits from the fix, but also everyone else on the network using that data. This is a "win-win" situation for everyone: The customer reporting the issue has the issue corrected. The forwarder is able to correct an error that was likely impacting many of its customers and the other customers receiving data from the network get a "free ride."

It gets even better. The network model allows customers not only to benefit from each other's data quality "repair work" but also to actively collaborate to improve data quality. Customers receiving data from the same partners can now work together with those data providers to get common problems solved. Affiliation with the same on-demand data network can serve as the basis for forming advisory councils — for customers or for their supply chain partners — where common problems can be identified, best practices can be shared, and high-value-added solutions can be developed and implemented.

Conclusion

Companies need technology to efficiently manage their supply chains — particularly complex global supply chains. But in order for technology to be effective, it must be fed with high-quality data.

Cloud, on-demand, or Software-as-a-Service (SaaS), solutions have become very popular in the world of applications, from Internet-based email applications (Yahoo mail and gMail) to Salesforce.com. Advantages of the cloud model include lower costs, lower risk, and faster time-to-benefit.

The cloud model can be applied to data as well as to applications, with the same upsides of lower cost, lower risk, and faster implementation. These data networks offer additional benefits based on powerful network effects that spread costs and share benefits across a large community and provide a structure for cooperative continuous improvement of data quality. Cloud is a faster, cheaper, and better approach to obtaining critical supply chain data and using that data to drive operation improvements throughout the organization.

©2010 GT Nexus, Inc.

GT Nexus, Inc.

email: information@gtnexus.com

www.gtnexus.com

