Chapter II

The Value of Coin Networks:
The Case of Automotive Network Exchange®

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EXECUTIVE SUMMARY

As a response to strong competitive pressures, the U.S. automotive industry has actively employed Electronic Data Interchange in communications between suppliers and carmakers for many years. This case reviews the recent development of ANX®, a COIN (Community of Interest Network) intended to provide industry-wide connectivity between carmakers, dealers and Tier suppliers. The authors identify technical and business challenges to the success of ANX®.

BACKGROUND

During the past 20 years the U.S. automotive industry has gone through significant change, heightened competition and increasing globalization. The industry can be characterized as a small number of manufacturers (Ford, GM, DaimlerChrysler, and Japanese and European transplants) that obtain automotive components from several thousand part suppliers. These manufactures then sell their products through a network of thousands of independent dealers. Through the 1970s, 1980s and 1990s the industry

has gone through wrenching changes as it faced the challenge of globalization and significant over-capacity. Two of the major strategic efforts made by U.S. manufacturers include the increased use of parts suppliers (so called "outsourcing") and an increase in the use of electronic data interchange (EDI) to facilitate communication between trading partners.

The suppliers that provide parts to the auto industry are categorized in a "Tier" structure. Those that deliver parts directly to a manufacturer are categorized as Tier 1 suppliers. Tier 1 suppliers, in turn, receive parts from a network of Tier 2 suppliers. Based on automotive industry estimates, there are approximately five thousand Tier 2 suppliers supplying a few hundred Tier 1 suppliers. The Tier 2 suppliers receive additional parts and service from Tier 3 suppliers bringing the total population to the tens of thousands of firms worldwide.

The supplier industry has evolved over the years. Earlier in the century, manufacturers largely took on the responsibility of creating their own components. Over time, manufacturers have migrated toward using outside suppliers. In the past the supplier community created individual components, typically for a single manufacturer. Now, due to industry consolidation, suppliers find themselves doing business with more than one manufacturer and supporting operations on a global basis. Further, manufacturers expect suppliers to engineer and manufacture entire sub-assemblies delivered "just in time" and sequenced for immediate assembly, rather than shipping individual parts. Suppliers face strong price competition from their peers and on-going expectations from manufacturers to lower their cost and improve their quality.

SETTING THE STAGE

Beginning in the 1970s and 1980s, manufacturers introduced the concept of Electronic Data Interchange (EDI). Each of the carmakers created a proprietary network and required their major suppliers to connect to this network. Since suppliers typically focused on a single manufacturer, they could standardize on whatever single platform was used by this manufacturer.

With suppliers changing to supply multiple carmakers, they had to maintain duplicate data connections to network with the various manufacturers or Tier 1 suppliers they did business with. For example, a single supplier may have a dedicated point-to-point data connection to Manufacturer A, a high-speed modem connection to a Tier 2 supplier, and a Frame Relay data connection to Manufacturer B. In addition, different applications (e.g., CAD/CAM or mainframe inventory systems) mean "a supplier may have a requirement for multiple connections to the same manufacturer based on different applications" (Kirchoff, 1997). Suppliers, or in some cases the carmaker they are supporting, are responsible for installing and maintaining these data connections and the hardware (such as modems and routers) necessary for the connections.

The auto industry established the Automotive Industry Action Group (AIAG) to create standards for the exchange of information between industry partners. Historically, AIAG's focus has been on application level standards. Known as "transaction sets," AIAG standards for various business documents, such as purchase orders or advanced shipping notices, simplified EDI for the industry. However, AIAG's focus at application level standards did not address lower level connection issues.

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