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**Collaborative Demand Planning in Telecommunications: Lucent Technologies and
Their ADSL Switch Supply Chain**

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Collaborative Demand Planning in Telecommunications: Lucent Technologies and Their ADSL Switch Supply Chain

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EXECUTIVE SUMMARY

The telecommunications equipment industry is in transition from operating in a supply driven behavior with focus on growth to becoming demand driven, focusing on meeting volatile customer demand with the leanest inventory levels possible. The transitioning characteristics of demand necessitate different forecast collaboration and demand planning techniques than many applied to suppliers to mass merchandisers of stable goods.

These challenges are not unique to the telecommunications equipment industry. Rather, they and the subsequent recommendations offered in this summary are applicable to any firm subject to long lead times and high inventory costs and seeking to refurbish its demand planning process.

Market and Inter-Industry Environment

Our examination of Lucent Technologies' demand planning process has shown that firms in this industry are likely subject to all or some of the following market and inter-industry environmental factors:

- Some downstream telecommunications network providers may engage in limited collaboration, but tend toward myopic behavior and arms-length relationships with suppliers.
- Demand is volatile and driven greatly by internal and external promotions, new product introductions, seasonality, and macroeconomic factors. This environment necessitates the incorporation of subjective information into the forecast.
- The forecasting process tends to be extensive and therefore time-consuming, but the timeliness of the forecast is just as important as its accuracy.
- Depending on the nature of subjective inputs to the forecast, their appropriate impact can be uncertain to greater or lesser extents.
- Forecasts are subject to frequent, sizeable revisions, the value of which can be captured to greater or lesser extents even in the final weeks before actual procurement.

Recommendations

In lieu of the aforementioned market and industry conditions, we make the following recommendations to telecommunications original equipment manufacturers(OEMs) and firms operating in similar environments who wish to perform broad-scoped reevaluations and, potentially, reengineer their demand planning processes:

1. If the forecast is created externally, explore the possibility of providing incentives externally to solicit better forecasts. Sometimes the collaborative forecasting relationship between two firms, such as that between a network provider and an OEM, is such that the firm in charge of developing the original forecast may not obtain the most benefit from its accuracy. If an OEM is in such a position and receives the forecast from a network provider, we recommend pressuring the network provider to move toward a more collaborative position, involving sharing key data and insight with the OEM which can be used to develop a forecast. Until this transition is possible, the OEM should explore ways to share their potential savings resulting from better forecasting with the network provider by offering forecast accuracy-dependent product discounts, guaranteed service levels, or preferential allocation of scarce resources.
2. Financially incentivize key personnel who have the ability to extract greater or lesser amounts of forecast-driving information depending on their associated effort levels. We highly recommend launching a pilot program to explore the effectiveness of implementing a large-scale information market-developed forecast.
3. Design and evaluate collaborative forecast processing and its distribution to suppliers based on both time-effectiveness and accuracy. Systematically remove non-time effective processes and coordination delays from the demand planning process. A good metric to use in evaluating the time-based cost incurred by a process or delay is to assume that every day earlier that a forecast is delivered is worth one divided by the number of working days in the forecast horizon times the average amount of forecast revision for a given month made from one rolling forecast to the next.
4. Include a forecasted mean or “most likely” value as well as some measure of uncertainty which can be used to scientifically calculate the need for safety stock buffers when a forecast includes the integration of key, subjective insight. Ask for three numbers from forecasters: a pessimistic, optimistic, and most likely number, each of which would all be used in the formulation of a triangular demand distribution.
5. Evaluate order history alongside forecast histories to determine the nature of demand distribution within forecasted time segments and to determine the signals to be drawn from an early deviation from these determined distributions for the creation of an order update process.
6. Pilot the use of a standardized, systematic process for the integrations of subjective, expert opinions into the forecast, such as the Delphi Method, which negates the biasing effects caused by group dynamics.

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7. Order syndicated research reports to obtain relevant macroeconomic-level insights for long-term forecasting considerations and key information on customers which can be used in negotiations to catalyze key changes in the network provider / manufacturer business relationship.

These recommendations are all based on basic supply chain management theory, the insight of experienced academic professionals, and extensive academic research and are worthy of exploration by the business parties aforementioned.