

# GLOBAL CONNECTION

VIEWS ON GLOBALIZATION, THE DIGITAL REVOLUTION, AND LEADERSHIP

## **Better Technology, Same Old Humans**

Perhaps the only thing more volatile than the Nasdaq itself is the hype surrounding it. Six months ago, Cisco Systems was lionized as the exemplar of everything that was right with the new economy. Today Cisco suffers from plunging sales and ballooning inventories, and is offered by many as proof that the Internet, in fact, changes nothing. As usual, the truth lies somewhere in between.

One of the many great hopes of the digital revolution was that Internetworking technologies would stabilize the economy. In theory, with real-time performance feedback, managers are better able to match supply and demand, thereby dampening the business cycle.

At some point, we allowed Internet hype to raise our expectations from dampening the business cycle to eliminating it. We lost sight of the fact that the process of matching supply and demand involves predicting the future. To eliminate the business cycle completely, we would have to invent a technology that predicted the future perfectly.

Don't hold your breath. Computer forecasting techniques haven't changed in decades. Forecasting still involves statistical regressions, trend extrapolations, adjustments for such elements as seasonality, and, most importantly, human judgment. Recent advances in computing have been about joining computers together in increasingly sophisticated networks, but networks have zero impact on forecasting methods.

That's not to say that computer networks have no impact on forecasts. In fact, they improve forecasts dramatically, not because there are better ways to predict but because the time periods associated with business predictions are getting dramatically shorter.

Roughly speaking, the length of a manager's forecast window is the sum of (1) the age of the data used to make the forecast, (2) the information-transmission delays associated with coordinating production and delivery, and (3) the time it takes to physically produce and deliver the product.

The good news is that Internetworking technologies can reduce all three: (1) data used to make forecasts can be real time, (2) coordinating information can travel essentially instantaneously, and (3) physical delays can be shorter because inventories can be reduced, because of numbers 1 and 2, at every step in the supply chain. The bad news is that the length of the forecast window is not reduced to zero (physical delays cannot be completely eliminated) and human judgment is still part of forecasting.

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And that brings us back to Cisco, now scorned for failing to predict a sudden and sharp falloff in sales. Many analysts have speculated that perhaps the company was a bit too complacent. More important is the recognition that Cisco's leading-edge use of Internetworking technology prevented the situation from becoming far worse.

If we are going to judge the promise of the Internet through Cisco's recent experience, we should take into account the tremendous unpredictability of its industry. Corporate investment decisions are always volatile. When the economy slackens, investment spending suffers the sharpest decline. In addition, information technology investment is far more volatile than investment in production capacity; it's much harder to estimate just how much you need.

Competitive pressures within rapidly growing industries raise the degree of difficulty even further. It's a land-grab mentality. The last thing you want to do is underestimate demand and lose new market space just because you didn't produce enough. Furthermore, when a shortage appears imminent, customers can worsen the forecasting situation. Anticipating some sort of rationing, they order extra, planning to cancel orders at the last second if necessary. Imagine trying to make forecasts when you can't even be sure just how many of your current orders are real.

Cisco's experience has been widely misinterpreted. The benefits from investment in Internetworking technologies are compelling and industry leaders will be wise to get back into the game. There is still much work to be done. ■

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