

The Virtual Close and Continuous Monitoring at Cisco

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ABSTRACT: This case analyzes the implementation of a virtual close and continuous monitoring capability at Cisco. Cisco was among the first firms to implement such a system capability. This case traces the development of that virtual close capability and monitoring system through technology changes, accounting process changes, changes in accounting policies, implementation of standard accounting artifacts, and reorganization of the accounting and finance functions, and examines some of the resulting payoffs. The case also examines some of the limitations of the system. In addition, the case examines how expectations of these capabilities may have resulted in a class action suit against Cisco. The case is appropriate for accounting information system and business courses that examine issues related to enterprise resource planning systems. The case also can be used to address issues such as reengineering the finance function and potential control needs in a virtual close environment.

Keywords: virtual close; continuous monitoring; enterprise resource planning systems; reengineering; role-based controls.

THE CASE

We can literally close our books within hours, producing consolidated financial statements on the first workday following the end of any monthly, quarterly or annual reporting period. More important, the decision makers who need to achieve sales targets, manage expenses, and make daily tactical operating decisions now have real-time access to detailed operating data.

—Larry Carter, CFO, 2001

Larry Carter had joined Cisco in 1995 as the Chief Financial Officer (CFO), at a time when Cisco was in the midst of massive growth. Without the appropriate financial systems in

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place, such growth would be very hard to manage. Carter noted (Reason 2000), "I was concerned about the timeliness and integrity of our overall financial information. If you have a 14-day close at a company like Cisco . . . you can spin out of control." Timely information was critical to sustained growth.

As a result, in order to provide that information, Carter wanted to reduce Cisco's current 14-day close to roughly one day. But Carter wanted to do more than speed information flow; he also wanted to dramatically change the way that information flow was accomplished. Accordingly, Carter wanted to transform the way that decision making was supported, shifting the finance department from a transaction processing view to one of analyzing information and creating value (Carter 2001, 2): "We wanted to move from being a gatekeeper of information to being a catalyst for change throughout the organization." Finally, Carter also wanted to cut finance department costs in half.

Theoretically, the virtual close is the ability to close the books and to be able to generate consolidated financial statements *at any point in time*. John Chambers, the CEO, in a *USA Today* interview, defined the virtual close as "the ability to close the financial books with a one-hour notice."

However, the virtual close is only part of the story. Although Cisco began reengineering the financial systems in order to facilitate a virtual close, in so doing, they enabled an ability to do continuous monitoring. As also noted by Carter (Reason 2000), the most important part of the virtual close was being able to do continuous monitoring. "Even when I get the [close] numbers, I already know what the answer is because we have been monitoring it all along" (Reason 2000). Thus, one of the key benefits of the virtual close is that firms can continuously monitor key performance indicators and other accounting financial measures used for managing operational and strategic activities; i.e., virtual close capabilities facilitate continuous monitoring. As a result, Cisco's system has been designed to provide information on bookings, revenue, discounts, margins, and order status available on a daily basis (Reason 2000).

Cisco Systems (Cisco.com)

Cisco Systems, Inc., based in Silicon Valley's San Jose, is a worldwide leader in computer networking. Cisco's vision is that "the network is the platform to change the way that world works, lives, plays and learns." Cisco Systems was founded by a group of computer scientists at Stanford University in 1984 and became a public company in 1990. At the end of January 2011, Cisco had roughly 73,000 employees. During the fiscal year 2010, Cisco Systems had \$40 billion in sales, a net income of \$7.8 billion, and total assets of over \$80 billion.

CEO and CFOs at Cisco

John Chambers is the Chairman and Chief Executive Officer at Cisco. Chambers joined Cisco¹ in 1991 and was named Chairman in 2006. The redesign of Cisco's accounting and finance function started when Chambers was CEO and when Larry Carter was CFO, and has continued through Frank Calderoni, the current CFO. In 2003, Larry Carter retired after being Cisco's CFO for eight years (Cisco 2003). At that time, Dennis Powell replaced Carter as CFO. Powell had joined Cisco in 1997, after a career at Coopers & Lybrand that included being Senior Partner. In later years, Powell was credited with leading much of the implementation of the virtual close at Cisco (Kelly 2007). In 2008, Dennis Powell retired as CFO and was replaced by Frank Calderoni, who joined Cisco in 2004.

¹ See: http://resources.cisco.com/servletw13/FileDownloader/vamprod/571298/John_Chambers_bio_v2_11.09.pdf



Cisco's Order and Production Process

Cisco employs a dual manufacturing strategy (O'Connor 2008): an outsourcing strategy and a make-to-order strategy. In roughly 2000, approximately 25 percent of Cisco's revenue and 50 percent of its unit volume was manufactured and shipped out of external outsourced factories. These external factories are not owned by Cisco, and their employees were not Cisco employees. More recently, between 80 percent and 100 percent of Cisco's manufacturing tasks have been outsourced (Reece 2005). As a result, approximately 90 percent of Cisco's orders come in online (United Parcel Service [UPS] 2004), and more than half of those are never touched by Cisco employees (e.g., Reason 2000).

Since Cisco outsources most of its production, orders go from Cisco straight to subcontractors, who ultimately ship finished products to customers directly. As Carter noted (Reason 2000), "The only thing I have to do is collect the money." As orders are outsourced, they are booked. As orders are completed and delivered, they are booked. This limits the need to do cost accounting of manufacturing processes. As a result, since the manufacturing is outsourced, there is no overhead that needs to be allocated to manufacturing. Further, there is no need to assess characteristics associated with work-in-process. Transactions are executed on whatever triggers have been negotiated, and the accounting system captures those exchanges directly. The arms-length nature of these transactions creates an arrangement that facilitates a real-time close and continuous monitoring capability, by limiting the amount of accounting that needs to be done to support the production process. The vision of the virtual close was being actualized, in part, by the nature of Cisco's production activity. However, there was more that could be done.

How/What Did Cisco Do?

How and what did Cisco do to further evolve its accounting and finance processes to move the firm toward a virtual close and continuous monitoring capabilities? As Carter noted (Reason 2000), "The close process in a finance group is very akin to manufacturing. Anyone in manufacturing will tell you if you can reduce the cycle time to manufacture a product, good things happen. Costs go down, inventory goes down, productivity improves, and quality goes up." With this view in mind, Carter set to work reengineering many of the financial processes at Cisco and compressing its cycle times. However, as with manufacturing, developing the virtual close was not just a matter of implementing new technology. Instead, it also was a matter of redesigning and reorganizing the accounting and finance function: changing the accounting and data gathering processes, using standard accounting artifacts, changing accounting policies, reorganizing accounting and finance, and choosing the right information to manage the business.

Technology

According to Borsum (2006), Cisco manages its information technology infrastructure centrally, but other information technology resources and costs are co-located with the functional organization. In 2005, approximately 5 percent of Cisco's revenues were spent on information technology, while 1.1 percent of revenues were used to fund the financial organization, and 14 percent of these could be allocated to the Finance Information Technology.

The central technology application infrastructure and specific applications were used to support the virtual close process and continuous monitoring at Cisco. At the central technology application infrastructure level, Cisco implemented a single instantiation of an enterprise resource planning (ERP) system and a data warehouse (Austin et al. 2002). Together, they provided a structure that ultimately would facilitate and support accounting and finance department innovations. With its ERP system, Cisco had a computer-based financial application that was fully integrated with

operations. In addition, the ERP system provided consolidated information from across Cisco's diverse operations, including the ability to capture transactions from related entities (e.g., Caplan 2001).

In particular, a number of other specific applications also were implemented, oftentimes leveraging the technology application infrastructure and information in it. First, Cisco automated its order system so that customers could order goods directly over the Internet. Customers, value added resellers (VARs) that generate a substantial portion of Cisco's revenues (Cisco 1999), and others could enter orders online, exchanging digital information.

Second, wherever possible, Carter used the web to automate transactions, pushing the finance organization toward that one-day close. As orders came in over the Internet, Carter realized that the Internet had changed the way that Cisco did business (Reason 2000): "Because of the nature of the Web, transactions were being downloaded to our ledger virtually every day. Suddenly, it dawned on me that by having this information, selecting the right metrics, and making sure they were in the management reporting system, we could change the way we ran the company."

Third, where possible, Cisco mechanized processes that often had been manual processes. As an example, recurring entries were mechanized. As another example, invoices became digital. Accordingly, it was then possible for invoices that dealt with tangible objects to be automatically matched and processed according to a predefined defined set of rules.

Fourth, invoices for services were still individually approved; however, a workflow system approach to the approval process was developed in order to expedite and control approvals.

Finally, dashboards that captured and presented key performance indicators were developed to push process monitoring information out to the users (e.g., Cisco 2005). The virtual close is not useful unless, ultimately, the decision makers get the data in time to influence decisions. Web-based tools also allowed user-friendly access to the information by an appropriate user.

The ultimate effect of technology was substantial. From 1997 to 2002, as more transaction processing was automated and the focus at Cisco changed from transaction processing to continuous monitoring, the percent of time that the finance group spent on transaction processing fell from 65 percent to 35 percent, and finance group expenses as a percentage of total company revenue dropped to 1.3 percent from 2 percent. As another example of the impact of technology (Borsum 2006), at one point, Cisco was processing 8,000 paper invoices. However, in 2006, Cisco was processing 40,000 invoices electronically, with less staff.

Cisco did not stand still with its technology. Starting in 2002 (e.g., McAfee and McFarlan 2007), Cisco began an upgrade of its ERP system to Oracle 11i. Cisco (2007a) reports on the implementation of its manufacturing and accounting modules, Cisco (2007b) reports on the implementation of the purchasing module, and Cisco (2007c) reports on the technical support modules.

However, as noted by Pyykkonen (Reason 2000), getting the virtual close required more than just technology: "It is not just a matter of putting in a lot of computing power. You need a lot of operational know-how to work with the information."

Accounting Process Changes

Accounting process changes took at least three different approaches. First, there was a focus on doing what could be done at all points in the accounting cycle, rather than waiting or saving tasks for month-end or year-end. In many companies, finance and accounting departments wait until the end of the period to do reconciliations. This approach requires extra time and extra assistance at the end of the period. The peak number of hours spent can be substantial using this approach. However, by doing these activities on daily or other interim bases, the period-end close can be expedited with fewer peak

resources, but greater day-to-day attention to these concerns. As another example, Cisco (2005) took any isolated processes and procedures and fully integrated them as part of end-to-end processes.

Second, in order to facilitate a virtual close, the input information needs to be of a high quality. Dennis Powell (Vice President of Finance and Corporate Controller in 2002) stated (McClenahen 2002): “When the data comes in, you have to know it is absolutely correct . . . And with the virtual close you do not have the time to go through and audit the data at a detailed level and make inquiries back out to the field.” In order to improve the quality of the data, Cisco focused on gathering data from the source, in a manner congruent with Hammer’s (1990) approach to reengineering. As an example (Carter 2001), reconciliation can be a time-consuming process that can require substantial manual resources. Rather than divert resources to reconciliation between operating and financial data, Cisco developed Internet applications with a single comprehensive reporting capability to ensure correct data were gathered to begin with, focusing on gathering information at the source and reconciling the data at the time they were gathered.

Third, it has been suggested (Caplan 2001) that companies include too much minutiae about allocating costs between cost centers, intercompany charges, and accruals at the end of every quarter. Companies can speed the close by either automating these according to pre-specified rules or eliminating them. Cisco used both approaches.

Standard Accounting Artifacts

Perhaps one of the more important issues to facilitate continuous monitoring and the virtual close is to use the same set of accounting artifacts across the firm’s accounting systems. For example, using the same chart of accounts (e.g., Kersnar 2002) allows integration across different divisions, without taking the time to determine if different charts of accounts have the same accounts and how those accounts match up. Similarly, the same vendor code list or customer code list allows the ability to summarize by vendor or customer in a seamless integration. In so doing, Cisco could investigate sales to a specific customer or shipments from a specific vendor. The single ERP instantiation led to a standard set of artifacts across Cisco when the system was implemented. As noted by McAfee and McFarlan (2007), having a “single source of truth” customer database would play an important role in being able to better understand and monitor customer information.

Accounting and Finance Accrual Policies (Carter 2001)

Accounting accrual policies also were changed to facilitate a faster accounting close and easier implementation. For example, the capitalization policy was changed so that only expenditures of \$5,000 or more were capitalized. This cut down the need to allocate depreciation expenses to each period. It also decreased the number of accounting entries that the employees and supporting systems needed to generate in order to adjust accruals. Further, this led to more consistent and less *ad hoc* processing and analysis of accounting accruals.

Finance Organization Changes

Cisco also reengineered the finance and accounting organization to speed processes and facilitate the generation of high-quality information. As an example, although most finance and accounting groups separate accounts payable and purchasing for control purposes, Cisco consolidated those responsibilities (Carter 2001). Now, information is gathered straight from the source for each activity, which boosts productivity and mitigates errors. Appropriate controls were embedded in the computer-based applications to ensure no control lapses from a potential lack of separation of duties. “Role-based” controls were implemented so that individual users would be limited from performing potentially conflicting activities related to procuring and paying for assets.

Logs were implemented for monitoring user activity, and logs were monitored for potential control violations.

Choose Frequently Used and Useful Information

Carter (Reason 2000) noted that choosing information to be monitored is a critical aspect to the process of continuous monitoring, and seems to be based, at least in part, on frequency of use: “We try to be very selective and precise on the metrics that we need to run the company. That means that data on market share, for example, are pulled only once a quarter, while revenues and margins are available daily. Could I get EPS every day? Sure. But would it be useful?”

On the other hand, Carter (Reason 2000) also noted that some operational and strategic information, such as order status, needs to be available on an hourly basis: “I want our sales teams and managers around the world to know where they are at any point in time . . . If we have one region that is slowing down, we could start to increase resources somewhere else to pick up the difference.”

Payoff of the Virtual Close

As a result of these changes, Cisco was able to implement continuous monitoring and a virtual close capability, facilitating a more rapid flow of critical information to the people who needed it. In addition, there were some other implications of the implementation of these capabilities.

Made Cisco a Real-Time Company

Cisco's work in the area of the virtual close generated substantial attention for Cisco. As a result, Larry Carter won an award for guiding Cisco to a virtual close capability in 2000 (Reason 2000), where the virtual close was attributed to making Cisco a “real time” company. It was not just “accounting and finance for accounting and finance purposes.” Instead, the new capabilities would create value for the firm, and the firm could act in real time.

Transition to the Virtual Finance Organization

Later, when Powell took over as CFO, it was clear that he expected to grow the notions of virtual close and continuous monitoring as the finance and accounting group evolved (Cisco 2005): “Technology plays a particularly important role in transforming a finance organization because it's the basis upon which we can design better processes and transaction systems . . . Organizations have a lot to gain by moving from a traditional to an e-finance model. For example, isolated procedures will become fully integrated, end-to-end processes. And information access is transformed from periodic standard reporting to real-time, personalized dashboards, where all people have the information they need, when they need it, on their desktops . . . In this environment, the finance organization's involvement scales from simple transaction processing to supporting decisions. Ultimately, its impact reaches far beyond a purely fiduciary responsibility to driving shareholder value . . . At Cisco, transitioning to e-finance has helped create what we call the ‘virtual finance organization.’”

Value Creation

Perhaps most important of all, the move to the virtual close and continuous monitoring creates value for Cisco and changed the role of the CFO. For example, as noted by Powell (Cisco 2005), the role of the CFO “has expanded far beyond a purely fiduciary responsibility. Today's CFO must be a champion of shareholder value and a strategic business partner to the entire company . . . The

new role for a CFO is the provider of strategic analysis, the source of relevant information and controls, and the keeper of effective and efficient processes and transaction systems.”

Who Cared About Cisco’s Virtual Close and Continuous Monitoring?

One test of management concepts, such as the virtual close or continuous monitoring, is the extent to which executives of other firms (concerned with using a similar approach at their own firms) and analysts (interested in the impact on stock market price) express an interest in it.

What Do Other CFOs Think?

After Cisco let others know about its ability to conduct a virtual close, there apparently was substantial interest by other CFOs. For example, as noted in Reason (2000), there was so much interest in the ways that Cisco generated a virtual close that Carter spent substantial time talking with customer CEOs and CFOs. At one point, Carter suggested that around 30 to 40 percent of his time was spent in such discussions. “In the last six months, I have personally talked to 400-plus CFOs or finance directors around the world” (Reason 2000).

What Do Analysts Think?

The notion of a virtual close captured the attention of more than just CEOs and other CFOs. Analysts were more concerned about management’s ability to do continuous monitoring, rather than the mechanics of the virtual close. Martin Pyykkonen, an analyst with CIBC World Markets, noted that “To me, as an analyst, Larry’s (Carter) ability to drill down and see the productivity of the week by product, by region, or by account is actually more valuable than the virtual close . . . It gives me confidence in Cisco’s ability to actively manage the product and sales pipeline—almost in real time” (Reason 2000).

Limitations and Problems with the Virtual Close and Continuous Monitoring?

Unfortunately, there were some difficulties that emerged, and potential limitations with the systems and structures generated at Cisco to perform continuous monitoring and generate a virtual close.

Cost

To support a continuous monitoring and virtual close capability required substantial investment. Not only did Cisco experience substantial costs associated with its ERP system and data warehouse (Austin et al. 2002), but Cisco also had to upgrade and reestablish the single instantiation capabilities that had eroded over time as specific applications were hung on the ERP system. As discussed in McAfee and McFarlan (2007), Cisco allocated over \$200 million and three years to upgrade its ERP system. Further, the apparently simple task of standardizing across artifacts can be very costly. For example, just to generate a common view of the customer at Cisco, a director and 20 people were assigned to the task for two years (McAfee and McFarlan 2007).

Information Exchange in the Supply Chain

One of the biggest potential problems of generating continuous monitoring was information exchange in the supply chain. As noted above, a key aspect to information exchange is a standard set of artifacts. Even if Cisco had consistent artifacts, data definitions, and systems internally, others in the supply chain would not necessarily have the same artifacts. Although outsourcing created an arms-length transaction that could be used to facilitate closing the books, unfortunately, it also

created an arms-length in information and information systems. Accounting transaction information would not necessarily be robust enough for marketing purposes.

As a result, as noted in McAfee and McFarlan (2007), Cisco had 50 different customer survey tools. For example, periodically, Cisco customers would get calls asking “how much of X did you buy last month?” Ultimate customers could buy directly from Cisco or through VARs or from other customers. Although Cisco knew total sales, it did not necessarily know what sales were to specific customers. This potentially limited cross sales, up-sales, and other information insights. This situation was not unique for Cisco, in that any company that shipped its products through multiple chains potentially would face this issue.

Thus, information exchanged between firms may need to be interfaced with Cisco systems, possibly in manual ways or with special fixes. Further, information likely would need interpretation, and generally would not be at the same levels of granularity throughout the supply chain. In addition, supply chain firms are not likely to have the same definition of data or events. For example, a “sale” may not be defined the same way by each firm. (Is the trigger for the sale the order, delivery, or payment information?) As a result, exchanging information in the supply chain could lead to confusion, and generally would be slow compared to internal information exchanges.

Of course, this limitation was further compounded at least through 2004, because Cisco heavily relied on third-party information as its basis for end customer data (McAfee and McFarlan 2007). Accordingly, Cisco determined that it needed to work with all of these third parties to improve the data. For example, for sales by value added resellers (VARs), Cisco remained dependent on the VARs for information about the sale. As noted in McAfee and McFarlan (2007, 6), “We say to our partners, ‘In order to work together, we need information back from you. We need you to tell us when deals are done.’ Until we got the data right, we could not segment our customers by vertical or any other way.”

Expectations, Economic Slowdown, and a Class Action Suit

Expectations of Cisco’s virtual close and continuous monitoring were high. Carter (2001) wrote, “Our virtual close allows us to change directions and refocus our resources quickly, giving us sustainable competitive advantage.” Not surprisingly, Cisco’s virtual close had been publicized and had created substantial expectations. After all, if a firm could continuously monitor its financial records, should the market and the rest of the world expect more of that firm? Berinato (2001) suggested that the image that Cisco had created was almost “godlike” because it could “peer into every nook and cranny of the business 24/7.” As we will see below, these “godlike” expectations would haunt Cisco.

Economic Slowdown of 2001

Unfortunately, in the economic slowdown of 2001, Cisco was caught with rapidly decreasing revenues and, as a result, had large surpluses of inventory, including what would ultimately be an over \$2 billion write-down, because Cisco felt it would not be able to sell the inventory (Berensen and Gaither 2001).

The fact that Cisco apparently had been caught by surprise led to a questioning of the continuous monitoring capability at Cisco (Cope 2001). In response, John Chambers noted, “we never built models to anticipate something of this magnitude” (Cope 2001). Further, as noted by Cope (2001), Chambers indicated that while the virtual close facilitates Cisco’s examination of the financial state of the company on a daily basis, it does not allow Cisco “to predict the future,” particularly with respect to macroeconomic trends.

However, as noted by Berinato (2001), “other networking companies, with far less sophisticated tools started downgrading its forecasts months earlier. They saw the downturn

coming. Cisco did not. Other companies cut back on inventory. Cisco did not. Other companies saw demand declining. Cisco saw it rising.”

Although it appears that many observers blamed the virtual close and continuous monitoring for some of Cisco’s problems, others argued that it is likely that the impact of the economic downturn may have been larger if Cisco did not have a real-time capability. For example, Cisco’s CIO at the time, Peter Solvik, insisted that without its forecasting software, Cisco’s third quarter would have been even worse. Solvik suggested that “the speed of the swing caught everyone by surprise” (Berinato 2001). As still another view, Cisco Vice President of Sales Rick Timmins recalled that the over \$2 billion inventory write-down would have not been necessary if Cisco had “listened” to its own systems (Borsum 2006).

Class Action Suit

In 2001, in the United States District Court, a suit was filed against Cisco (an excerpt of that case is given in Appendix A). In summary, the suit argued that management at Cisco had a real-time information system that allowed them to monitor sales, inventory, and other aspects of its business on a daily basis because of the ability to virtually close the books. In spite of that capability, the management team let inventories build up, ultimately leading to a \$2 billion write-down of inventory. The suit also argued that during this time, top management at Cisco sold \$600 million in stock “while in possession of materially adverse non-public information” (United States District Court 2001).

The suit was settled in 2006 for \$91.75 million (Cisco 2006). At the time of the settlement, lead counsel for the class noted, “We provided a service to Cisco’s shareholders by bringing this action and conducting exhaustive discovery into the company’s performance in 2000–2001. Clearly, industry and macroeconomic conditions had a dramatic impact on Cisco’s stock price, which reduced potential damages. Though not required to prove securities fraud, there was a lack of insider trading, and Cisco was not required to make a financial restatement. In light of these litigation risks, we are satisfied that this is a fair settlement that returns value to the class members” (United States District Court 2001). Mark Chandler (Cisco 2006) indicated that “Cisco continues to firmly believe that the suit’s claims are without merit, and we have been eager to achieve a victory in this case. Given the expense and disruption associated with prolonged litigation, and the fact that this resolution is achieved with no additional cost to Cisco and with the consent of our insurance carriers, we believe this settlement is in the best interest of Cisco and its shareholders.”

Selected Discussion Questions for the Case

1. What is a “virtual close”? How is the virtual close related to “continuous monitoring”?
2. What is “continuous monitoring” as used by Cisco? Is “continuous monitoring” an “auditing” function or is it a “management” function, or is it both? Where is the value of continuous monitoring?
3. What is the role of “technology” in developing a continuous monitoring capability?
4. How might accounting and finance processes be “reengineered” to attain a continuous monitoring capability? What steps beyond those elicited at Cisco might be used at Cisco or at firms in general?
5. What are “role-based” controls? What kinds of “role-based” controls might be used in Cisco’s virtual close and continuous monitoring that would be necessary as part of developing a virtual finance organization?
6. Does outsourcing production facilitate or inhibit the virtual close and continuous monitoring?
7. Contrast the different perspectives (Chambers, Solvik, Timmins, and Berinato) on Cisco’s forecast in the section “Economic Slowdown of 2001.”

8. Would you expect that a “sophisticated” system that would allow a company to have a virtual close would help that firm avoid a general economic slowdown? Why or why not?

APPENDIX A

Excerpt from United States District Court (2001)

Cisco's computerized financial monitoring and reporting system is so sophisticated and refined that Cisco can “close its books” on a corporate-wide basis instantly, the so-called “real time” or “virtual” close. Cisco's top officers and directors, therefore, knew the rate of sales and order cancellations and prices for its products and demand for its products on a current basis and knew Cisco's revenues and profit/loss situation on a current basis. Thus, management of the Company knew that much of Cisco's sales growth was being generated by selling to companies who had been convinced to purchase Cisco product only through the granting of extremely liberal and excessive vendor financing and that some products were being shipped out incomplete or defective . . . The financial reporting system is so efficient that Cisco, in essence, is able to close its books instantly and is in a position to determine its quarterly revenues, profits and EPS to date instantly, at any time during the quarter, subject to non-recurring charges and adjustments. In fact, Cisco's top executives receive monthly financial statements for Cisco within a day or two after the close of a month that provide detailed financial information about revenues, profits and EPS on a company-wide basis and detailed sales data for each of Cisco's products in each of the geographic regions where Cisco operates, as well as for its own direct sales. Also, Cisco's top executives received *daily reports* on product sales and product inventories that allowed them to monitor the demand for each of Cisco's products in all of its markets and all of its distribution channels. The use of Cisco Systems Capital to push sales was closely monitored as it was a crucial part of Cisco's entry into the telecom market . . . In order to constantly and precisely monitor Cisco's inventories, Cisco tracked on a daily basis the precise amount of inventory of each type of product in the hands of each of its distributors and also monitored on a daily basis the sell-through of its products that, in turn, impacts channel inventories. Also, Cisco's top executives received daily reports of Cisco's finished goods inventories that were on hand at Cisco and knew precisely the amount of finished goods inventory on hand for each product. And, of course, Cisco was able to monitor on a daily basis the precise sales of each product. As a result of this sophisticated inventory monitoring system, Cisco's top executives knew as soon as demand began declining that retail sales were extremely weak for each of the products. Thus, Cisco's top executives realized that all of Cisco's new products were selling much more poorly than expected . . . The slowdown in sales of Cisco products also created a crisis inside Cisco as early as mid-2000, as Cisco's channel inventories began to balloon due to the slower than expected retail sell-through of new products as they were introduced. At the same time, the inventories of these products that Cisco had on hand also increased. As a result, *Cisco's top executives knew that Cisco was accumulating millions and millions of dollars of excessive inventories*. This problem was exacerbated by the fact that much of the inventory that had been financed through Cisco Systems Capital to now-failing companies who were then selling the equipment at liquidation prices, effectively competing with Cisco's sales at less than half the price, all of which was having a terribly negative impact on Cisco's revenues and EPS.

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