CASE STUDY: Ocean Portal Technology

BACKGROUND

Ocean Portal\textsuperscript{1} is the world’s largest manufacturer of a specific kind of component for desktop and laptop computers. The company was founded in 1979 and is based in northern California. Ocean Portal’s components are used in a variety of computers, from servers, desktops, and laptops, to other consumer devices, such as digital video recorders, Sony’s PlayStation 3 and Microsoft’s Xbox and Xbox 360 video game consoles, and in portable media players and automotive navigation systems. In addition, Ocean Portal designs rugged components optimized for extreme temperatures, shock and vibration.

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 & 2008 & 2007 & 2006 \\
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Revenue (US$) & 12,708,000,000 & 11,360,000,000 & 9,206,000,000 \\
Gross Profit (US$) & 3,205,000,000 & 2,185,000,000 & 2,137,000,000 \\
Operating Income (US$) & 1,376,000,000 & 614,000,000 & 874,000,000 \\
Total Net Income (US$) & 1,262,000,000 & 913,000,000 & 840,000,000 \\
Diluted EPS (Net Income-US$) & 2.36 & 1.56 & 1.60 \\
Inventories & 945,000,000 & 794,000,000 & 891,000,000 \\
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Primary Competitors
Tokyo, Japan (2)
San Jose, CA (1)
Santa Clara, CA (1)
Massy, France (1)
Boise, ID (1)
Seoul, South Korea (1)
Milpitas, CA (1)
Lake Forest, CA (1)

In the early 1980s, Ocean Portal secured a contract as a major original equipment manufacturer (OEM) supplier for the IBM XT, IBM’s first personal computer to contain the kind of component Ocean Portal produced. The volumes were large as IBM was the dominant supplier of PCs at the time and fueled Ocean Portal’s early growth. As IBM began purchasing from other suppliers, Ocean Portal responded by establishing a powerful distribution channel that supplied components for the millions of PCs hungry for its components.

\textsuperscript{1} Ocean Portal is a pseudonym for a real company. The actual name and type of product have been withheld for proprietary reasons. Information for this case study was derived from a variety of sources, including public domain (Internet) and personal interviews with knowledgeable former employees of Ocean Portal who were directly involved with this particular case.
In 1989, facing increased competition and margin pressure, Ocean Portal turned a challenging financial situation into success by making an important and strategic acquisition of a major component supplier to centralized computers. Ocean Portal management had always believed that vertical integration of key components was crucial in the face of competition from deep-pocketed competitors such as IBM and certain Japanese suppliers. This move gave Ocean Portal access to valuable technology manufacturing patents, and a competitive advanced component development capability. As well, the purchase provided access to a high-end server customer base and the first high-end components on the market. Ocean Portal quickly began to leverage vertical integration across its entire product line and once again became a dominant force in the business.

In the mid-to-late 1990s, Ocean Portal management began to acquire software companies that provided drivers and related software for its components, believing that the relentless pressure on product margins could be cushioned by diversification into software. The investment paid off as Ocean Portal eventually sold its software division to the XYZ Company and became one of the largest XYZ Co. shareholders. XYZ Co. stock soared and Ocean Portal was able to convert its investment into cash for its shareholders. In 2003, Ocean Portal re-entered the notebook market with a new component. In 2005, Seagate innovated a compact external device for desktops and notebook computers.

On December 21, 2005, Ocean Portal announced plans to acquire ABC Corporation. The all-stock deal was worth $1.9 billion. The transaction was completed in May 2006. With the ABC acquisition, Ocean Portal significantly increased its scale and expanded its line of components, tapping the fast-growing home and small-business markets. Ocean Portal's ABC line of products involves photos, videos, games and music.

Ocean Portal also moved to address another fast-growing market trend, in which corporate data center managers, faced with soaring energy costs, sought lower-power computing solutions. On June 2, 2008, Ocean Portal announced a new component that consumed 70 percent less power than traditional ones while significantly increasing capability.

Data security became another top concern among IT managers in the decade. Ocean Portal responded in September 2007 with a component that accommodates government-grade encryption technology to prevent unauthorized access to data on various systems.

Ocean Portal was traded for most of its life as a public company. In 2000, the company was taken private by an investment group composed of Ocean Portal management and others. Ocean Portal re-entered the public market in December 2002 on the New York Stock Exchange.

Ocean Portal replaced its top two executives and cut 3,000 jobs worldwide, with more cuts to come as the component manufacturer endures a bruising slowdown in technology spending. Its stock fell more than 15 percent. In a surprise move, the company announced that its chief executive since 2004, and the president and chief operating officer, had both left the company, effective in December 2008.

Ocean Portal's research and development efforts span the globe, with R&D in the U.S., Asia and Northern Ireland. In September 2006, Ocean Portal won the Technology Design Award for its breakthrough component technology.
THE OCEAN PORTAL SUPPLY CHAIN PROTOTYPE

In 2006, Ocean Portal’s Vice President for Supply Chain initiated a prototype for a new supply chain architecture based on the Theory of Constraints (TOC) distribution solution. The intended purpose was to validate the effectiveness of TOC supply chain management methods in reducing inventory in a controlled, narrowly defined segment of OEM deliveries. The OEM segment of Ocean Portal’s business constituted the lion’s share of total revenues, and the potential gains were proportionally higher than the retail market segment.

Initially, the prototype experiment was confined to the distribution pipeline for Hewlett-Packard (HP). It was confined to the highest-demand component across 32 OEM locations. If successful, it was expected to be expanded to all HP product lines, and eventually to all products for all OEMs supplied by Ocean Portal as well as the retail distribution network.

RESULTS

The prototype was run lasted for nine months. The results were noteworthy. During that time...

- Inventory-to-Pull (IP) Ratio decreased from 6 to 1.5 (a 75 percent reduction). NOTE: Ocean Portal used the IP ratio rather than the more commonly used “inventory turns” because it was easier to observe the benefit of the prototype project on the whole system.

- Stock-outs dropped from an average of 14 per week to zero.

- Ocean Portal’s total inventory value between 2006 and 2007 dropped by $97 million. A significant portion of this was attributable to the HP supply chain pilot.

[The thinking process logic trees that describe the strategy development for the innovated supply chain are appended at the end of this document.]

SUBSEQUENT DEVELOPMENTS

Despite the superlative success demonstrated by the prototype project, Ocean Portal senior executives decided not to take the supply chain innovation any further. Internal politics played a significant role in this decision. The Vice President for Supply Chain subsequently left the company in frustration over the lack of corporate-level support. In addition to a significant risk aversion, the key factor in short-stopping further expansion of the TOC supply chain solution was the insistence of the company financial executives on emphasizing cost-reduction over all other considerations and fully allocating costs to units of products. As a result, as indicated in the table at the beginning of this document, rather than decreasing further, Ocean Portal’s total inventory ballooned from $794 million in 2007 to $945 million in 2009. While it was not the only factor, this trend certainly played a significant part in the replacement of
the company’s two top executives. (Interestingly enough, all the financial executives remained in place at Ocean Portal.)

**OCEAN PORTAL’S INTERMEDIATE OBJECTIVES (IO) MAPS**

The IO Map above represents the goal and critical success factors for the entire Ocean Portal Corporation. As a subset of this, the supply chain IO map is shown below.

The supply chain IO Map reflects maximized return-on-investment as a surrogate for minimized inventory (in the corporate-level IO Map). These critical success factors and their supporting necessary conditions represent the expected outcomes of an effective, robust supply chain.
OCEAN PORTAL CRITICAL DILEMMA (CONFLICT)

The Evaporating Cloud diagram below represents the corporate level conflict that prevented the prototype from being extended throughout Ocean Portal. Because no resolution to this conflict was ever effected, nothing more came of the prototype’s success, and the results described earlier eventuated instead.

ASSUMPTIONS:
1. The sum of the local efficiencies equals the best total system efficiency.
2. No compromise to overall system success ever results from cost reductions.
3. The external competitive environment is always highly predictable.
4. Forecasts are always highly accurate.
5. No spare/excess capacity is ever required to accommodate variations in the environment.
6. Cost reductions will never compromise our ability to maintain maximum customer service levels.
7. Striving to satisfy localized cost reduction metrics never compromises system capability.

GOAL
Maximize profitability

Critical Success Factors #2, 3
Minimize total costs (fixed, variable, inventory)

Prerequisite #1
REDUCE COSTS EVERYWHERE

(Conflict)

Maximize marginal contribution to profit

Critical Success Factor #1

DON’T
REDUCE COSTS EVERYWHERE

Prerequisite #2

ASSUMPTIONS:
1. The potential to increase marginal contribution to profit exceeds the potential to safely realize cost reductions.
2. The external competitive environment is not predictable.
3. Forecasts are always unreliable.
4. Maximum customer service is essential to sustaining and increasing business.
5. Cost reductions can impact our flexibility to meet unanticipated customer requirements.