# An Analysis of a Strategic Transformation Plan: The Case of Alaska Airlines

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*In 2003, amid the turmoil of the U.S. airline industry in the post-9/11 environment, the senior management of the Alaska Air Group announced a "strategic vision" entitled "Alaska 2010." The pronouncement articulated positions with regard to cost leadership, product differentiation, and growth. This study empirically assesses the efficacy of this decision with regard to the major network carrier of the air group, Alaska Airlines. The analysis focuses on the period beginning with the announcement and ending in 2010.*

*The implementation of such a strategic protocol is dynamic and inter-temporal in nature. Therefore, it is often difficult to assess the effectiveness of changes in strategies, particularly since such effectiveness is often a function of the confounding forces of organizational strategy and market conditions. Thus, this study utilizes the multi-period methodology of the strategic variance analysis of operating income.*

*This methodology decomposes operating income into three components: (1) growth, (2) price recovery, and (3) productivity. This is of particular interest from a strategic planning perspective, as the price component evaluates a company's product differentiation strategy while the productivity component evaluates whether an airline's low cost strategy was successful because of efficiency gains.*

## INTRODUCTION

In 2003, the U.S. airline industry was in turmoil. Airline traffic continued to be below 2001 levels, still reeling from the aftermath of the 9/11 terrorist attacks. A slow U.S. economy combined with rising fuel costs produced billions of dollars in losses for airlines. In addition, both US Airways and United Airlines filed for bankruptcy protection in 2002. In such a challenging business environment, it was clear that airlines had to change their operating strategies.

The management of Alaska Air Group, led by Chairman, President, and CEO William S. Ayer, did just that, announcing a "strategic vision" called "Alaska 2010." The plan was communicated to employees in June 2003, and elements of the plan were made public in the company's annual report to shareholders for the year ended December 31, 2003, as well as in subsequent years. Highlights of the plan included a goal of making permanent cost reductions to save the company $307 million per year, and to drive down the non-fuel unit cost to 7.25 cents per available seat mile (Ayer 2004). In the letter to shareholders, Ayer stated, "Our task is to make the critical changes necessary to transform ourselves into a thriving enterprise."

Alaska Air Group consists of two airlines: Alaska Airlines and Horizon Air Industries. As explained in the annual report to shareholders, the "business plans, competition, and economic risks differ substantially" (SEC 2004). The focus of this research is on the impact of the Alaska 2010 strategic plan on Alaska Airlines, since it is the major network carrier in the group.

From a research perspective, questions arose as to how Alaska Airlines was performing relative to other airlines. It was also asked if management was correct in perceiving a need to transform the company's operations. After all, by its own perception, the company was doing very well relative to the industry. In 2001, the company reported that "Alaska [Airlines] posted remarkable results following the 9/11 tragedy. For instance, industry traffic was down 19% in the fourth quarter, and

Alaska's was only down 5.6%. Likewise, yield per revenue passenger mile and unit revenues were down 17% and 20% respectively for the major carriers combined, while Alaska's were down only 7.3% and 5.5%." (Kelly 2002). Similarly, in 2002, the company stated that "Alaska [Airlines] had the best traffic, revenue, and yield performance of the majors." (Kelly 2003). Nonetheless, the company was losing money.

This paper assesses the Alaska 2010 strategic transformation using strategic variance analysis (SVA). SVA is used to analyze a company's profitability by breaking it down into strategic components, namely, cost leadership, product differentiation, and growth (Horngren et al. 2000, 2006, 2012). Sopariwala (2003) extended the analysis to include a fourth component, capacity underutilization. SVA has been used by Mudde and Sopariwala (2008) and Bailey et al. (2009) to analyze a given airline's profitability, and by Caster and Scheraga (2011) to analyze the performance of all U.S. network carriers.

## THE ALASKA AIR GROUP LONG-TERM STRATEGIC PLAN

In discussing "Alaska 2010," the Alaska Air Group long-term strategic plan, Ayer noted that the company's goal for the future was "a combination of ideas that generate savings or increase revenue while enhancing our standing with customers" (Ayer 2004). Ayer stated that cost management was a significant challenge. He went on to explain why the plan was called "Alaska 2010." He said that "if we make the right moves now, 2010 will be the year we look back with great pride at how we transformed ourselves - - how we took control and willed ourselves to be one of the preeminent airlines in the United States" (Ayer 2004).

Additional details of the strategic plan emerged in the annual report to shareholders for calendar year 2004. In the letter to shareholders dated April 11, 2005, Ayer (2005) explained that permanent reductions in annual costs of $185 million had been achieved. This reduction was accomplished in part through a fuel hedging program, in addition to savings achieved through a "top-to-bottom review of our supply chain." Cost savings were also achieved by streamlining the fare structure, by improving the website for the purchase of fares online, and by improving turn times of aircraft between flights. Ayer acknowledged that competitors were improving their cost structures at an even faster pace than Alaska Air Group, and to that end, it was necessary to reduce the workforce, in part by outsourcing some of its maintenance operations. Ayer (2005) also reported that "a big part of our Alaska 2010 plan focuses on achieving competitive labor costs for all major work groups." The company estimated that wages and benefits were approximately $125 million above market, with most of that amount due to pilots.

Although some details of the strategic plan are disclosed in the annual reports, the information does not provide a complete picture. In fact, only those details that management chooses to disclose are available. Strategic variance analysis provides a better means for analysis of Alaska's performance. It provides an independent lens through which to view and analyze that performance. In addition, it allows for benchmarking with peer companies, in this case, the other network carriers. The following two sections provide a description of strategic variance analysis and the details on calculation and interpretation of the variances.

## STRATEGIC VARIANCE ANALYSIS

SVA was introduced by Shank and Govindarajan (1993) as a management tool that combined the then rising field of business strategy to traditional profit variance analysis in cost accounting. SVA, as modified by Sopariwala (2003), takes a company's profit (or loss) and breaks it down into four components: growth, price-recovery, productivity, and capacity underutilization. Each component is discussed in greater detail in the following section of the paper. Variances are defined as the differences between actual results and expected results, and they are calculated for each component.

Sopariwala (2003) based his version of SVA on Horngren et al. (2000). Horngren et al. (2012, 478-485) illustrate how SVA can be used to analyze profitability "from one period to *any* future period." Their illustration shows how to calculate and interpret the growth component, the price-recovery component, and the productivity component. As discussed in Horngren et al. (2012), the price-recovery component is related to product differentiation and the productivity component is related to cost leadership.

Product differentiation and cost leadership are two of the three generic strategies developed by Porter (1980, 35) for "outperforming competitors in the industry." His third strategy is "focus," which involves specializing in a niche area of the market. Cost leadership means that a company is recognized throughout the industry as the low cost provider of goods or services. Porter states that it requires "a great deal of managerial attention to cost control." (Porter 1980, 35). According to Porter (1980, 37), product differentiation involves "creating something that is perceived *industrywide* as being unique. Having a unique product or service leads to brand loyalty, which allows a company to charge a higher price, thereby outperforming others in the industry without having low costs as a primary objective. Horngren et al. (2012) refer to this as price-recovery, because the company is able to recover its higher costs through higher revenues, thus earning a decent return.

Porter's third strategy is similar to the other two, in that a company chooses to follow a low cost strategy or a product differentiation strategy, but it does so in a narrow niche of the market. Therefore, the focus strategy is not an industry-wide strategy.

Porter then goes on to describe companies that are "stuck in the middle." It is possible that Alaska Air Group perceived itself in 2003 as a company that could be "stuck in the middle." A company that is stuck in the middle "lacks the market share, capital investment, and resolve to play the low-cost game, the industry-wide differentiation necessary to obviate the need for a low-cost position, or the focus to create differentiation or a low-cost position in a more limited sphere" (Porter 1980, 41).

SVA is an ideal technique for assessing the success or failure of a long-term strategic plan, such as Alaska 2010. Management of Alaska Airlines measures its success by looking at profitability, goals for reducing its cost structure, and customer satisfaction. But the acid test is how Alaska Airlines has performed relative to its peers. SVA provides easy comparisons between Alaska Airlines and the rest of the U.S. network carriers.

## DEVELOPMENT OF VARIANCES

The variances used for SVA are calculated based on Sopariwala (2003), using the four components of a company's performance as described in Mudde and Sopariwala (2008). Each component, and the variances associated with that component, is explained as follows:

### Growth Component

The growth component measures the change in operating income due to a change in revenue passenger miles (RPMs). Four separate variances are calculated related to changes in RPMs. The revenue effect of growth captures the change in revenues due to a change in RPMs, holding air fares (revenue per RPM) constant. As explained in Mudde and Sopariwala (2008, 25), it would show "higher expected revenue due to higher RPMs."

The other three variances relate to costs and expenses, namely, fuel costs, flight-related costs, and passenger-related costs. Mudde and Sopariwala (2008) base the cost drivers on Banker and Johnston (2003), who suggested volume-based and non-volume-based cost drivers appropriate for the airline industry. The fuel cost effect of growth is calculated using available seat miles (ASMs) as the cost driver, while holding the price of fuel constant. The variance is calculated based on budgeted ASMs compared with actual ASMs. Thus, an airline would experience higher fuel costs

and a corresponding decline in operating profit if it experienced growth in the market that exceeded expectations, while holding the price per gallon of jet fuel constant to isolate the impact of growth. In a similar manner, expectations and variances are developed for the growth effect of flight-related and passenger-related costs, while holding all else equal.

**Price-Recovery Component**

The price-recovery component measures the change in operating income due to changes in the prices of inputs and outputs, holding all else equal. Four separate variances are calculated related to changing prices. The revenue effect of price-recovery captures the change in airfares, holding RPMs constant. The other three variances relate to the cost of inputs, namely, fuel costs, flight-related costs other than fuel, and passenger-related costs. For example, if the cost of jet fuel increases in the current period, operating profit would decline, holding gallons of fuel used and budgeted ASMs constant.

**Productivity Component**

The productivity component measures the change in operating income due to changes in the use of inputs, holding all else equal. Productivity is measured in terms of fuel usage efficiencies and passenger cost related efficiencies, as calculated by Mudde and Sopariwala (2008). Three variances are calculated, two of which are related to fuel usage. The first fuel usage efficiency variance measures fuel usage per gallon, holding the cost per gallon and budgeted ASMs constant. Gallons used per ASM in the previous period are the expectation for the current period, and the variance is then based on actual gallons used per ASM in the current period. The passenger load factor also has an impact on fuel usage, so a second fuel usage variance is calculated by holding the price per gallon constant and the gallons used per ASM constant, while comparing budgeted ASMs to actual ASMs in the current period. The third variance is calculated based on the difference between budgeted revenue passengers and actual revenue passengers served, while holding the cost per passenger constant. The variance is favorable, and thus operating profit would increase if an airline achieves the same RPMs while carrying fewer passengers, and hence the cost associated with that would decrease.

**Capacity Underutilization Component**

The capacity underutilization component measures the change in operating income due to changes in capacity, holding all else equal. Three variances are calculated, each of which involves the impact on flight-related costs (excluding fuel costs). The first variance is the cost of acquiring additional capacity that goes unused in the current period. The variance is calculated by subtracting actual RPMs in the current period from actual ASMs in the current period. The second variance is the cost of underutilization of available capacity. The variance is simply the change in actual ASMs over the period under study, holding the cost per ASM constant. The third variance measures the impact of a change in capacity actually used. The variance is simply the change in RPMs over the period under study, holding the cost per ASM constant.

**THE DATA SET**

Data were obtained from two sources: The International Civil Aviation Organization, *Financial Data: Commercial Air Carriers, Series F* and *Traffic: Commercial Air Carriers, Series T*, and from the U.S. Department of Transportation, Bureau of Transportation Statistics, *Transtats Aviation Database*. We chose three, three-year time periods for the analysis, 2001 to 2003, 2004 to 2006,

and 2007 to 2009. We also examine the one-year period from 2009 to 2010 to include the last year of Alaska's strategic plan. The three-year time frame is consistent with the work of Caster and Scheraga (2011).

Alaska Airlines is a U.S. network air carrier, as classified by the Department of Transportation, therefore, we collected data on the other network air carriers for benchmarking purposes. In the first two three-year time periods, we construct a composite based on the seven network carriers: Alaska, American, Continental, Delta, Northwest, United, and US Airways. In the last three-year time period, US Airways was dropped from the analysis due to its merger with America West, which would make the data non-comparable to the earlier periods.

## RESULTS OF THE STRATEGIC VARIANCE ANALYSIS

Table 1 provides the financial data for Alaska Airlines. It is interesting to note, just from the raw data, that operating profit changed dramatically during the period. For the year ended December 31, 2000, Alaska Airlines reported a net operating loss of $12,375,000. The annual operating loss grew to $103,629,000 for the year ended December 31, 2006. But three years later, they reported an annual net operating profit of $208,421,000.

**Table 1: Alaska Airlines – Financial Data ($)**

| | 2000 | 2003 | 2006 | 2009 |
|---|---|---|---|---|
| **Operating revenues** | 1,759,867,000 | 2,027,376,000 | 2,692,507,000 | 3,005,999,000 |
| **Operating expenses** | 1,772,242,000 | 2,037,996,000 | 2,796,136,000 | 2,797,578,000 |
| **Flying operations** | 662,612,000 | 737,423,000 | 1,141,147,000 | 1,014,188,000 |
| **Maintenance** | 204,115,000 | 244,001,000 | 269,370,000 | 293,567,000 |
| **Depreciation and amortization** | 83,860,000 | 119,467,000 | 137,811,000 | 178,488,000 |
| **User charges** | 35,185,000 | 57,771,000 | 51,976,000 | 54,161,000 |
| **Station expenses** | 266,623,000 | 346,011,000 | 393,344,000 | 369,387,000 |
| **Aircraft and traffic servicing** | 301,808,000 | 403,782,000 | 445,320,000 | 423,548,000 |
| **Passenger services** | 155,622,000 | 200,381,000 | 207,062,000 | 211,298,000 |
| **Promotion and sales** | 248,499,000 | 218,672,000 | 209,078,000 | 176,864,000 |
| **General & Administrative** | 104,851,000 | 103,267,000 | 364,515,000 | 216,133,000 |
| **Transport related expenses** | 10,875,000 | 11,003,000 | 21,833,000 | 283,492,000 |
| **Operating profit** | -12,375,000 | -10,620,000 | -103,629,000 | 208,421,000 |

Data Source: International Civil Aviation Organization, *Financial Data: Commercial Air Carriers, Series F*, Montreal, Quebec, Canada, 2000, 2003, 2006, and 2009

Table 2 provides the operating data and Table 3 provides the fuel data for Alaska Airlines needed to perform the strategic variance analysis. Table 4 reclassifies the operating data to show fuel costs, flight-related costs less fuel costs, and passenger-related costs, the three cost drivers used in prior studies (e.g., Caster and Scheraga 2011, Mudde and Sopariwala 2008). Table 5 uses the data from Tables 2, 3, and 4 to calculate the data needed for strategic variance analysis of Alaska Airlines.

**Table 2: Alaska Airlines – Operational Data**

| | 2000 | 2003 | 2006 | 2009 |
|---|---|---|---|---|
| **Revenue passengers** | 13,512,111 | 15,046,919 | 17,148,313 | 15,523,498 |
| **Revenue passenger miles** | 11,976,022,528 | 14,553,539,641 | 17,810,371,493 | 18,315,689,560 |
| **Available seat miles** | 17,291,684,686 | 20,803,557,288 | 23,257,684,435 | 23,070,335,242 |

Data Source: International Civil Aviation Organization, *Traffic: Commercial Air Carriers, Series T*, Montreal, Quebec, Canada, 2000, 2003, 2006, and 2009

**Table 3: Alaska Airlines – Fuel Data**

| | 2000 | 2003 | 2006 | 2009 |
|---|---|---|---|---|
| **Total gallons used** | 302,437,826 | 336,686,178 | 353,844,599 | 303,896,417 |
| **Total fuel costs** | 286,073,111 | 296,732,291 | 716,950,639 | 529,385,990 |
| **Average fuel cost per gallon ($)** | 0.95 | 0.88 | 2.03 | 1.74 |

Data Source: U. S. Department of Transportation, Research and Innovative Administration, Bureau of Transportation Statistics, *TranStats Database*, Washington, D.C., 2000, 2003, 2006, and 2009

**Table 4: Alaska Airlines – Reclassified Financial Data ($)**

| | 2000 | 2003 | 2006 | 2009 |
|---|---|---|---|---|
| **Total operating revenues** | 1,759,867,000 | 2,027,376,000 | 2,692,507,000 | 3,005,999,000 |
| **Less: Total operating expenses** | 1,772,242,000 | 2,037,996,000 | 2,796,136,000 | 2,797,578,000 |
| ***Fuel costs*** | 286,073,111 | 296,732,291 | 716,950,639 | 529,385,990 |
| ***Flight-related costs*** | 935,861,889 | 1,118,809,709 | 1,424,787,361 | 1,667,780,010 |
| ***Passenger-related costs*** | 550,307,000 | 622,454,000 | 654,398,000 | 600,412,000 |
| **Operating income/(loss)** | -12,375,000 | -10,620,000 | -103,629,000 | 208,421,000 |

| | 2000 | 2003 | 2006 | 2009 |
|---|---|---|---|---|
| **Flying operations** | 662,612,000 | 737,423,000 | 1,141,147,000 | 1,014,188,000 |
| **Less: Fuel Cost** | 286,073,111 | 296,732,291 | 716,950,639 | 529,385,990 |
| ***Flying operations (excluding fuel cost)*** | 376,538,889 | 440,690,709 | 424,196,361 | 484,802,010 |
| **Maintenance** | 204,115,000 | 244,001,000 | 269,370,000 | 293,567,000 |
| **Passenger service** | 155,622,000 | 200,381,000 | 207,062,000 | 211,298,000 |
| **General and administrative** | 104,851,000 | 103,267,000 | 364,515,000 | 216,133,000 |
| **Depreciation and amortization** | 83,860,000 | 119,467,000 | 137,811,000 | 178,488,000 |
| **Transport related** | 10,875,000 | 11,003,000 | 21,833,000 | 283,492,000 |
| ***Total flight-related costs*** | 935,861,889 | 1,118,809,709 | 1,424,787,361 | 1,667,780,010 |

| | 2000 | 2003 | 2006 | 2009 |
|---|---|---|---|---|
| **Aircraft and traffic servicing** | 301,808,000 | 403,782,000 | 445,320,000 | 423,548,000 |
| **Promotion and sales** | 248,499,000 | 218,672,000 | 209,078,000 | 176,864,000 |
| ***Total passenger-related costs*** | 550,307,000 | 622,454,000 | 654,398,000 | 600,412,000 |

Data Sources: 1) Data Source: International Civil Aviation Organization, *Financial Data: Commercial Air Carriers, Series F*, Montreal, Quebec, Canada, 2003, 2006, and 2009 and 2) U. S. Department of Transportation, Research and Innovative Administration, Bureau of Transportation Statistics, *TranStats Database*, Washington, D. C., 2003, 2006, and 2009

**Table 5: Alaska Airlines – Data Used in Strategic Variance Analysis[1]**

| | 2000 | 2003 | 2006 | 2009 |
|---|---|---|---|---|
| **Total operating revenues ($)** | 1,759,867,000 | 2,027,376,000 | 2,692,507,000 | 3,005,999,000 |
| **Revenue passenger miles (RPMs)** | 11,986,220,472 | 14,553,539,641 | 17,822,404,781 | 18,361,670,904 |
| **Average revenue per RPM** | 0.147 | 0.139 | 0.151 | 0.164 |
| | | | | |
| **Revenue passenger miles (RPMs)** | 11,986,220,472 | 14,553,539,641 | 17,822,404,781 | 18,361,670,904 |
| **Available seat miles (ASMs)** | 17,314,311,918 | 20,803,557,288 | 23,275,770,873 | 23,144,012,157 |
| **Passenger load factor (%)** | 69.23% | 69.96% | 76.57% | 79.34% |
| **Hence, budgeted available seat miles** | | 21,022,850,818 | 25,476,236,573 | 23,980,043,662 |
| | | | | |
| **Revenue passenger miles (RPMs)** | 11,986,220,472 | 14,553,539,641 | 17,822,404,781 | 18,361,670,904 |
| **Revenue passenger enplanements** | 13,524,685 | 15,046,919 | 17,164,501 | 15,561,087 |
| **Average revenue passenger miles per passenger ($)** | 886.25 | 967.21 | 1038.33 | 1179.97 |
| **Hence, budgeted revenue passenger enplanements** | | 16,421,527 | 18,426,602 | 17,683,860 |
| | | | | |
| **Number of gallons used** | 302,437,826 | 336,686,178 | 353,844,599 | 303,896,417 |
| **Available seat miles (ASMs)** | 17,314,311,918 | 20,803,557,288 | 23,275,770,873 | 23,144,012,157 |
| **Average number of gallons per ASM** | 0.0174675 | 0.0161841 | 0.0152023 | 0.0131307 |
| **Total flight-related costs ($)** | 935,861,889 | 1,118,809,709 | 1,424,787,361 | 1,667,780,010 |
| **Available seat miles (ASMs)** | 17,314,311,918 | 20,803,557,288 | 23,275,770,873 | 23,144,012,157 |
| **Average flight-related cost per ASM ($)** | 0.054 | 0.054 | 0.061 | 0.072 |
| | | | | |
| **Total passenger-related costs ($)** | 550,307,000 | 622,454,000 | 654,398,000 | 600,412,000 |
| **Revenue passenger enplanements** | 13,524,685 | 15,046,919 | 17,164,501 | 15,561,087 |
| **Average cost per revenue passenger ($)** | 40.69 | 41.37 | 38.13 | 38.58 |
| | | | | |
| **Revenue passenger (RPMs)** | 11,986,220,472 | 14,553,539,641 | 17,822,404,781 | 18,361,670,904 |
| **Available seat miles (ASMs)** | 17,314,311,918 | 20,803,557,288 | 23,275,770,873 | 23,144,012,157 |
| **Idle or unused capacity (ASMs)** | 5,328,091,446 | 6,250,017,647 | 5,453,366,092 | 4,782,341,252 |
| **Hence, budgeted idle capacity (ASMs)** | | 6,469,311,177 | 7,653,831,792 | 5,618,372,758 |

Data Sources: 1) International Civil Aviation Organization, *Financial Data: Commercial Air Carriers, Series F*, Montreal, Quebec, Canada, 2000, 2003, 2006, and 2009, 2) International Civil Aviation Organization, *Traffic: Commercial Air Carriers, Series T*, Montreal, Quebec, Canada, 2000, 2003, 2006, and 2009, and 3) U. S. Department of Transportation, Research and Innovative Administration, Bureau of Transportation Statistics, *TranStats Database*, Washington, D. C., 2000, 2003, 2006, and 2009

[1]Budgeted Available Seat Miles from year x to year y = Revenue Passenger Miles (year y) / Passenger Load Factor (year x), Budgeted Revenue Passengers Enplanements from year x to year y = Revenue Passenger Miles (year y) / Average Revenue Passenger Miles per Passenger (year x), and Budgeted Idle Capacity in year y = Budgeted Available Seat Miles (year y) – Revenue Passenger Miles (year y). [See Mudde and Sopariwala (2008).]

Table 6a provides the strategic variance analysis for Alaska Airlines and six other network carriers for the three-year time frame ending December 31, 2003. The first column shows the results for Alaska Airlines, and the last column is a composite of all of network carriers in the sample. The annual net operating loss in 2003 was $10.6 million, an improvement of approximately $1.8 million compared with 2000 (Table 1). Strategic variance analysis provides a breakdown of the change in annual operating profitability. Alaska Airlines achieved productivity gains of nearly $84 million. More than half of the gain is from passenger-related costs, i.e., lower costs due to flying more miles per passenger. The growth component contributed approximately $59 million to increased profitability. All of that increase is due to the revenue effect of growth, meaning that Alaska Airlines had higher RPMs in 2003 than in 2000. In contrast, the price-recovery component showed a large decrease of approximately $93 million. Nearly all of that decrease is due to the revenue effects, meaning that Alaska Airlines charged lower airfares in 2003 than in 2000. The capacity underutilization component shows a decrease of more than $48 million. A large increase in ASMs led to a $190 million decrease in operating profits due to underutilization of available capacity. However, by increasing its RPMs in the period, Alaska enjoyed a $139.5 million increase in operating profits due to the capacity it actually used.

Table 6b provides the strategic variance analysis for Alaska Airlines and six other network carriers for the three-year time frame ending December 31, 2006. The net operating loss increased by approximately $93 million compared with December 31, 2003 (Table 1). The strategic variance analysis reveals results very similar to the prior period. Alaska Airlines' operating profits improved by almost $73 million due to the growth component, with all of that improvement attributable to the revenue effect of growth. Productivity gains were achieved from all three measures, amounting to an improvement of $166.2 million in annual operating profits. Capacity underutilization was not material in this period, although the pattern was similar to the prior period in terms of unused ASMs and RPMs actually flown. However, the decrease in profitability due to the price-recovery component of more than $334 million in the period overwhelmed the increases in the other three components. Although Alaska Airlines raised its fares in this time period, the revenue effect of fare increases was not sufficient to recover increased costs of fuel, primarily, and also other flight-related costs.

Table 6c provides the strategic variance analysis for Alaska Airlines and five other network carriers for the three-year time frame ending December 31, 2009. Alaska Airlines experienced dramatic improvement in its annual operating profits, going from a loss of $103.6 million to a profit of $208.4 million (Table 1). The first three components of the strategic variance analysis show positive impacts on annual operating profits. The growth component was much less of a factor than in the previous two periods, contributing just $6.5 million to increased profitability. Productivity gains were quite significant, contributing $186.2 million to increased profitability. Alaska Airlines was able to significantly reduce the amount of jet fuel used, resulting in a savings of approximately $85 million. It also had a savings of $81.7 million in passenger-related costs by flying more miles per passenger than in the earlier period. Perhaps most interesting is the $129.4 million increase in annual operating profits due to the price-recovery component. The revenue effect of price-recovery shows that Alaska Airlines was able to charge higher fares, which helped to recover higher flight-related costs. They also achieved some cost savings in fuel costs during the period. Capacity underutilization was relatively insignificant during the period, with a decrease in operating profitability of approximately $10 million. The fact that management was able to increase profitability through higher airfares and through further gains in productivity shows that a blended strategy, as discussed in Caster and Scheraga (2011) was in use during this three-year period.

**Table 6a: Strategic Variance Analysis 2001-2003**

| | Alaska | American | Continental | Delta | Northwest | United | US Airways | Composite |
|---|---|---|---|---|---|---|---|---|
| **GROWTH COMPONENT 2001-2003** | | | | | | | | |
| ***Revenue effect*** | 378,764,093 | 542,547,377 | -795,290,979 | -2,647,808,299 | -1,474,097,506 | -3,507,658,420 | -1,784,221,315 | -9,232,678,935 |
| ***Fuel cost effect*** | -61,569,552 | -65,736,738 | 112,306,023 | 305,811,129 | 235,419,092 | 419,454,747 | 217,716,581 | 1,181,317,908 |
| ***Flight-related cost effect*** | -139,500,579 | -202,026,324 | 298,061,677 | 1,002,067,784 | 513,324,575 | 1,418,489,068 | 750,982,716 | 3,547,436,803 |
| ***Passenger-related effect*** | -118,438,798 | -160,584,629 | 231,453,819 | 722,530,896 | 478,923,290 | 992,810,816 | 508,832,697 | 2,688,384,420 |
| ***TOTAL*** | **59,255,164** | **114,199,686** | **-153,469,460** | **-617,398,489** | **-246,430,549** | **-676,903,789** | **-306,689,321** | **-1,815,539,804** |
| **PRICE-RECOVERY COMPONENT 2001-2003** | | | | | | | | |
| ***Revenue effect*** | -111,255,093 | -1,256,347,377 | -1,000,592,021 | 1,529,988,299 | -298,727,494 | -2,425,892,580 | -635,371,685 | -4,253,284,065 |
| ***Fuel cost effect*** | 23,727,216 | -296,749,205 | -8,277,005 | -320,690,710 | 43,972,399 | -320,743,696 | 62,554,603 | -818,195,494 |
| ***Flight-related cost effect*** | 4,982,349 | -1,564,386,963 | 3,961,889 | -2,743,783,895 | -471,616,518 | -506,749,111 | -291,009,423 | -5,452,683,518 |
| ***Passenger-related effect*** | -10,518,693 | 762,694,658 | 124,377,854 | -309,539,166 | -32,658,773 | 300,230,296 | -8,588,462 | 636,226,823 |
| ***TOTAL*** | **-93,064,220** | **-2,354,788,887** | **-880,529,282** | **-1,844,025,473** | **-759,030,386** | **-2,953,155,090** | **-872,414,966** | **-9,887,936,254** |
| **PRODUCTIVITY COMPONENT 2001-2003** | | | | | | | | |
| ***Fuel cost effect*** | 24,192,121 | 140,261,783 | 112,548,760 | 167,280,637 | 56,584,736 | 176,437,081 | 87,011,745 | 750,166,834 |
| ***Fuel (ASM) cost effect*** | 2,991,035 | 13,822,849 | 20,359,221 | 23,041,256 | 13,371,442 | 109,350,508 | 29,419,071 | 210,577,880 |
| ***Passenger-related effect*** | 56,810,491 | 5,311,971 | 160,670,327 | 142,734,270 | -63,957,517 | 188,402,887 | 303,736,764 | 950,623,757 |
| ***TOTAL*** | **83,993,646** | **159,396,602** | **293,578,308** | **333,056,163** | **5,998,661** | **474,190,476** | **420,167,580** | **1,911,368,472** |
| **CAPACITY UNDERUTILIZATION COMPONENT 2001-2003** | | | | | | | | |
| ***Unused capacities*** | 2,139,670 | -583,709,853 | 1,259,403 | -946,583,580 | -138,564,355 | -156,183,386 | -106,042,848 | -1,841,908,757 |
| ***Available capacities*** | -190,069,839 | -224,132,872 | 480,053,707 | 1,460,497,163 | 711,275,204 | 2,435,963,858 | 1,238,996,270 | 5,710,889,146 |
| ***Used capacities*** | 139,500,579 | 202,026,324 | -298,061,677 | -1,002,067,784 | -513,324,575 | -1,418,489,068 | -750,982,716 | -3,547,436,803 |
| ***TOTAL*** | **-48,429,590** | **-605,816,401** | **183,251,434** | **-488,154,201** | **59,386,273** | **861,291,403** | **381,970,707** | **321,543,586** |

**Table 6b: Strategic Variance Analysis 2004-2006**

| | Alaska | American | Continental | Delta | Northwest | United | US Airways | Composite |
|---|---|---|---|---|---|---|---|---|
| **GROWTH COMPONENT** | **2004-2006** | | | | | | | |
| ***Revenue effect*** | 453,691,878 | 2,811,775,915 | 2,496,491,053 | 1,531,735,627 | 553,888,048 | 1,727,294,826 | -66,291,108 | 9,855,630,117 |
| ***Fuel cost effect*** | -66,403,583 | -388,327,209 | -358,212,552 | -171,911,836 | -84,464,216 | -248,461,285 | 7,094,394 | -1,317,325,858 |
| ***Flight-related cost effect*** | -175,151,540 | -1,375,345,063 | -1,061,955,929 | -813,147,817 | -227,598,043 | -890,324,602 | 33,377,004 | -4,780,185,949 |
| ***Passenger-related effect*** | -139,294,499 | -768,232,901 | -728,649,836 | -390,941,719 | -191,634,632 | -514,421,314 | 17,788,048 | -2,820,943,581 |
| ***TOTAL*** | **72,842,256** | **279,870,742** | **347,672,736** | **155,734,255** | **50,191,158** | **74,087,625** | **-8,031,663** | **937,174,729** |
| **PRICE-RECOVERY COMPONENT 2004-2006** | | | | | | | | |
| ***Revenue effect*** | 211,439,122 | 2,278,247,085 | 3,180,486,947 | 1,604,370,373 | 2,817,239,952 | 4,208,835,174 | 1,380,200,108 | 15,333,774,883 |
| ***Fuel cost effect*** | -471,710,024 | -3,828,438,185 | -1,853,965,777 | -2,920,895,535 | -2,246,447,729 | -2,841,063,847 | -1,007,233,236 | -15,222,020,603 |
| ***Flight-related cost effect*** | -133,242,925 | 865,320,879 | -1,671,102,977 | 503,537,331 | -700,464,092 | -1,029,314,359 | -158,519,829 | -2,032,146,563 |
| ***Passenger-related effect*** | 59,044,396 | 436,067,853 | 25,400,970 | -160,708,624 | 353,833,643 | 687,418,915 | 217,983,665 | 1,493,693,325 |
| ***TOTAL*** | **-334,469,432** | **-248,802,368** | **-319,180,837** | **-973,696,455** | **224,161,774** | **1,025,875,882** | **432,430,708** | **-426,698,958** |
| **PRODUCTIVITY COMPONENT 2004-2006** | | | | | | | | |
| ***Fuel cost effect*** | 50,035,532 | 481,709,093 | 204,174,231 | 365,698,506 | 194,445,736 | 87,427,468 | 56,814,411 | 1,508,342,435 |
| ***Fuel (ASM) cost effect*** | 67,859,727 | 560,049,736 | 212,520,098 | 251,902,660 | 313,814,762 | 340,760,327 | 105,158,016 | 1,842,933,707 |
| ***Passenger-related effect*** | 48,306,103 | 246,734,048 | 268,723,866 | 879,725,343 | 8,554,989 | 269,628,399 | 168,608,287 | 2,121,185,256 |
| ***TOTAL*** | **166,201,363** | **1,288,492,877** | **685,418,195** | **1,497,326,509** | **516,815,487** | **697,816,193** | **330,580,715** | **5,472,461,399** |
| **CAPACITY UNDERUTILIZATION COMPONENT 2004-2006** | | | | | | | | |
| ***Unused capacities*** | -40,752,430 | 214,467,764 | -378,268,935 | 134,235,787 | -125,392,998 | -224,154,281 | -44,119,994 | -481,362,397 |
| ***Available capacities*** | -131,982,297 | -649,794,077 | -1,016,842,088 | -438,742,912 | 164,855,537 | -459,679,021 | 335,692,238 | -2,470,754,722 |
| ***Used capacities*** | 175,151,540 | 1,375,345,063 | 1,061,955,929 | 813,147,817 | 227,598,043 | 890,324,602 | -33,377,004 | 4,780,185,949 |
| ***TOTAL*** | **2,416,813** | **940,018,750** | **-333,155,094** | **508,640,691** | **267,060,581** | **206,491,299** | **258,195,240** | **1,828,068,830** |

**Table 6c: Strategic Variance Analysis 2007-2009**

| | Alaska | American | Continental | Delta | Northwest | United | Composite |
|---|---|---|---|---|---|---|---|
| **GROWTH COMPONENT** | **2007-2009** | | | | | | |
| ***Revenue effect*** | 76,392,142 | -2,746,117,173 | 247,721,124 | 322,069,175 | -1,788,986,906 | -2,792,013,981 | -6,782,251,227 |
| ***Fuel cost effect*** | -20,341,412 | 681,059,676 | -54,221,482 | -75,585,266 | 459,271,131 | 662,631,241 | 1,631,023,084 |
| ***Flight-related cost effect*** | -30,956,254 | 1,101,536,116 | -111,433,874 | -145,802,625 | 669,969,292 | 1,274,484,766 | 2,898,030,959 |
| ***Passenger-related effect*** | -18,566,661 | 590,939,477 | -49,027,225 | -61,239,564 | 428,428,256 | 512,292,668 | 1,390,268,958 |
| ***TOTAL*** | **6,527,814** | **-372,581,904** | **33,038,544** | **39,441,720** | **-231,318,227** | **-342,605,306** | **-862,928,226** |
| **PRICE-RECOVERY COMPONENT 2007-2009** | | | | | | | |
| ***Revenue effect*** | 237,099,858 | 151,015,173 | -896,725,124 | 385,372,825 | 97,349,906 | -182,607,019 | -107,178,773 |
| ***Fuel cost effect*** | 103,408,138 | 5,602,930 | 114,270,960 | -600,032,058 | 595,433,020 | 522,238,504 | 669,748,078 |
| ***Flight-related cost effect*** | -202,025,261 | -1,440,766,152 | -39,062,189 | -719,963,590 | -868,515,032 | -363,159,189 | -3,749,230,763 |
| ***Passenger-related effect*** | -9,109,301 | -377,711,018 | -272,718,665 | -405,034,217 | -373,895,922 | -227,871,310 | -1,598,991,366 |
| ***TOTAL*** | **129,373,433** | **-1,661,859,067** | **-1,094,235,018** | **-1,339,657,040** | **-549,628,027** | **-251,399,014** | **-4,785,652,825** |
| **PRODUCTIVITY COMPONENT 2007-2009** | | | | | | | |
| ***Fuel cost effect*** | 85,057,117 | 8,308,068 | 141,677,759 | -118,679,257 | 227,211,753 | 50,184,026 | 544,457,269 |
| ***Fuel (ASM) cost effect*** | 19,440,806 | 31,884,475 | 28,810,763 | 200,305,717 | -24,843,792 | -9,110,740 | 188,753,647 |
| ***Passenger-related effect*** | 81,661,963 | 23,640,541 | 223,950,890 | 359,075,781 | 386,617,666 | 178,274,642 | 1,198,430,408 |
| ***TOTAL*** | **186,159,886** | **63,833,084** | **394,439,412** | **440,702,242** | **588,985,628** | **219,347,928** | **1,931,641,323** |
| **CAPACITY UNDERUTILIZATION COMPONENT 2007-2009** | | | | | | | |
| ***Unused capacities*** | -52,444,574 | -345,352,446 | -8,320,470 | -154,375,462 | -168,581,670 | -80,286,845 | -828,939,806 |
| ***Available capacities*** | 11,477,186 | 1,439,083,450 | -57,020,340 | 232,399,916 | 729,066,589 | 1,527,048,003 | 4,017,372,492 |
| ***Used capacities*** | 30,956,254 | -1,101,536,116 | 111,433,874 | 145,802,625 | -669,969,292 | -1,274,484,766 | -2,898,030,959 |
| ***TOTAL*** | **-10,011,134** | **-7,805,112** | **46,093,063** | **223,827,079** | **-109,484,373** | **172,276,392** | **290,401,727** |

Table 9 provides the strategic variance analysis for Alaska Airlines for the last year of the long-term strategic plan. Other network carriers are not included because the group changed yet again with the merger of Northwest Airlines into Delta. The analysis shows that Alaska experienced continued and significant growth in profitability due to growth in the market. In 2007, Alaska began adding service to Hawaii, and by 2010, that market represented 15% of its total network (Ayer 2011).

The price-recovery component for 2010 shows a contribution to net operating profits of $49.5 million, achieved primarily through higher airfares. Productivity gains contributed $68 million, primarily due to fuel cost savings and passenger-related savings. In addition, Alaska Airlines made much better use of capacity, achieving a gain in profitability of $69.3 million. According to Ayer (2010), Alaska reduced its capacity on routes with low demand while increasing capacity on routes with higher demand, particularly the routes to Hawaii.

On the surface, it would appear as if the Alaska 2010 strategic plan was a huge success. However, it is not sufficient to look at the performance of Alaska Airlines in a vacuum. Benchmarking against the other network air carriers is necessary to determine just how successful the plan has been. Tables 7a, 7b, and 7c provide rankings for the network carriers, after normalizing the data for size differences by dividing by RPMs. Alaska Airlines ranked first in the growth component in the earliest period, second in the middle period, and third in the last three-year period. This analysis shows that for most of the time, Alaska Airlines was among the leaders in increased market share as air travel recovered and grew after the tragedy of 9/11.

The price-recovery component directly corresponds to Porter's (1980) product differentiation strategy. It is interesting to note that Alaska Airlines ranked first during the three years ending December 31, 2003, and December 31, 2009. But for the three years ending December 31, 2006, it ranked last. The productivity component directly corresponds to Porter's (1980) cost leadership strategy. Alaska ranked second in the first two, three-year periods, and improved to a first place ranking in the third, three-year period. Its consistently high ranking on this component suggests that Alaska 2010 was focused primarily on cutting costs and becoming the low-cost leader in the industry. However, it is also evident that management is using a blended strategy, since it ranked first in price-recovery for two of the three periods.

Alaska Airlines ranked fifth and sixth over the nine years in terms of capacity underutilization. This suggests that managing capacity was not a major focus of the Alaska 2010 strategic plan, or, if it was, then the competition continues to do a better job than Alaska at managing capacity. Going forward, this also suggests that management may be able to increase future profitability by improving its use of capacity.

As shown in Tables 6a, 6b, and 6c, Alaska Airlines experienced increases in annual operating profits due to growth in the market. The growth component, however, is impacted by exogenous factors as well as endogenous factors. Horngren et al. (2012) provide an adjustment to the growth component to estimate how much of the growth component is due to management's strategic decisions (endogenous factors). The estimate is based on the overall growth in the market, in this case, the composite figures for the network carriers. For example, if the market grew by 50%, then 50% growth is assumed for Alaska Airlines. Any growth above and beyond 50% is assumed to be endogenous.

Table 8a shows that nearly 150% of Alaska's growth is attributable to endogenous factors. Overall, the market actually decreased by more than 10% for the period, yet Alaska grew its market share by 21.42%. Similarly, management's initiatives contributed 39.3% to Alaska's growth in 2006, as shown in Table 8b, and 352% in 2009, as shown in Table 8c. In 2009, the overall market decreased by 7.64%, yet Alaska grew its market by 3%. Thus, in all three periods, management's strategic decisions had a positive impact on growth in the market. This result is consistent with Alaska's high ranking on productivity, as companies that follow a low cost strategy tend to exhibit growth in market share.

**Table 7a: Normalized Strategic Variance Analysis 2001-2003**

| | Alaska | American | Continental | Delta | Northwest | United | US Airways | Composite |
|---|---|---|---|---|---|---|---|---|
| **GROWTH COMPONENT 2001-2003** | 1 | 2 | 3 | 6 | 4 | 5 | 7 | |
| ***Revenue effect*** | 26,025,565 | 4,522,050 | -13,983,430 | -29,705,485 | -21,537,181 | -33,781,010 | -47,303,405 | -18,821,496 |
| ***Fuel cost effect*** | -4,230,555 | -547,906 | 1,974,653 | 3,430,863 | 3,439,571 | 4,039,619 | 5,772,118 | 2,408,204 |
| ***Flight-related cost effect*** | -9,585,337 | -1,683,859 | 5,240,754 | 11,242,094 | 7,499,887 | 13,660,963 | 19,910,108 | 7,231,711 |
| ***Passenger-related effect*** | -8,138,144 | -1,338,449 | 4,069,603 | 8,105,999 | 6,997,270 | 9,561,408 | 13,490,209 | 5,480,470 |
| ***TOTAL*** | **4,071,529** | **951,837** | **-2,698,421** | **-6,926,529** | **-3,600,453** | **-6,519,019** | **-8,130,970** | **-3,701,112** |
| **PRICE-RECOVERY COMPONENT 2001-2003** | 1 | 4 | 3 | 5 | 2 | 7 | 6 | |
| ***Revenue effect*** | -7,644,538 | -10,471,465 | -17,593,194 | 17,164,779 | -4,364,534 | -23,362,908 | -16,845,020 | -8,670,633 |
| ***Fuel cost effect*** | 1,630,340 | -2,473,360 | -145,533 | -3,597,796 | 642,455 | -3,088,968 | 1,658,452 | -1,667,952 |
| ***Flight-related cost effect*** | 342,346 | -13,038,928 | 69,661 | -30,782,225 | -6,890,515 | -4,880,320 | -7,715,263 | -11,115,697 |
| ***Passenger-related effect*** | -722,758 | 6,356,944 | 2,186,909 | -3,472,688 | -477,158 | 2,891,411 | -227,698 | 1,296,995 |
| ***TOTAL*** | **-6,394,611** | **-19,626,808** | **-15,482,157** | **-20,687,929** | **-11,089,751** | **-28,440,786** | **-23,129,529** | **-20,157,286** |
| **PRODUCTIVITY COMPONENT 2001-2003** | 2 | 6 | 3 | 5 | 7 | 4 | 1 | |
| ***Fuel cost effect*** | 1,662,284 | 1,169,061 | 1,978,921 | 1,876,704 | 826,727 | 1,699,203 | 2,306,862 | 1,529,270 |
| ***Fuel (ASM) cost effect*** | 205,519 | 115,211 | 357,972 | 258,497 | 195,362 | 1,053,116 | 779,961 | 429,279 |
| ***Passenger-related effect*** | 3,903,551 | 44,274 | 2,825,032 | 1,601,321 | -934,446 | 1,814,441 | 8,052,691 | 1,937,917 |
| ***TOTAL*** | **5,771,355** | **1,328,546** | **5,161,924** | **3,736,522** | **87,643** | **4,566,760** | **11,139,513** | **3,896,465** |
| **CAPACITY UNDERUTILIZATION COMPONENT 2001-2003** | 5 | 6 | 3 | 7 | 4 | 2 | 1 | |
| ***Unused capacities*** | 147,021 | -4,865,133 | 22,144 | -10,619,622 | -2,024,483 | -1,504,147 | -2,811,416 | -3,754,867 |
| ***Available capacities*** | -13,060,042 | -1,868,113 | 8,440,681 | 16,385,165 | 10,392,028 | 23,459,901 | 32,848,359 | 11,642,068 |
| ***Used capacities*** | 9,585,337 | 1,683,859 | -5,240,754 | -11,242,094 | -7,499,887 | -13,660,963 | -19,910,108 | -7,231,711 |
| ***TOTAL*** | **-3,327,685** | **-5,049,388** | **3,222,071** | **-5,476,551** | **867,658** | **8,294,791** | **10,126,835** | **655,490** |

Note: Numbers in shaded areas are rankings, from 1 to 7, of the effect of a component on operating income.

**Table 7b: Normalized Strategic Variance Analysis 2004-2006**

| | Alaska | American | Continental | Delta | Northwest | United | US Airways | Composite |
|---|---|---|---|---|---|---|---|---|
| **GROWTH COMPONENT 2004-2006** | 2 | 3 | 1 | 4 | 5 | 6 | 7 | |
| ***Revenue effect*** | 25,473,465 | 20,175,983 | 32,747,227 | 15,511,530 | 7,632,226 | 14,735,230 | -1,774,916 | 17,621,381 |
| ***Fuel cost effect*** | -3,728,366 | -2,786,454 | -4,698,782 | -1,740,911 | -1,163,863 | -2,119,577 | 189,949 | -2,355,314 |
| ***Flight-related cost effect*** | -9,834,244 | -9,868,830 | -13,929,997 | -8,234,559 | -3,136,157 | -7,595,193 | 893,655 | -8,546,737 |
| ***Passenger-related effect*** | -7,820,977 | -5,512,478 | -9,557,920 | -3,958,976 | -2,640,604 | -4,388,432 | 476,267 | -5,043,708 |
| ***TOTAL*** | **4,089,879** | **2,008,221** | **4,560,528** | **1,577,085** | **691,602** | **632,028** | **-215,044** | **1,675,622** |
| **PRICE-RECOVERY COMPONENT 2004-2006** | 7 | 4 | 5 | 6 | 3 | 2 | 1 | |
| ***Revenue effect*** | 11,871,685 | 16,347,631 | 41,719,408 | 16,247,086 | 38,819,781 | 35,904,788 | 36,954,265 | 27,416,033 |
| ***Fuel cost effect*** | -26,485,131 | -27,471,074 | -24,319,029 | -29,579,230 | -30,954,626 | -24,236,586 | -26,968,237 | -27,216,222 |
| ***Flight-related cost effect*** | -7,481,199 | 6,209,136 | -21,920,362 | 5,099,205 | -9,651,951 | -8,780,889 | -4,244,300 | -3,633,378 |
| ***Passenger-related effect*** | 3,315,169 | 3,129,018 | 333,192 | -1,627,459 | 4,875,603 | 5,864,243 | 5,836,419 | 2,670,650 |
| ***TOTAL*** | **-18,779,475** | **-1,785,289** | **-4,186,791** | **-9,860,398** | **3,088,807** | **8,751,556** | **11,578,146** | **-762,917** |
| **PRODUCTIVITY COMPONENT 2004-2006** | 2 | 3 | 4 | 1 | 6 | 7 | 5 | |
| ***Fuel cost effect*** | 2,809,348 | 3,456,518 | 2,678,215 | 3,703,344 | 2,679,339 | 745,827 | 1,521,181 | 2,696,842 |
| ***Fuel (ASM) cost effect*** | 3,810,124 | 4,018,654 | 2,787,690 | 2,550,960 | 4,324,169 | 2,906,963 | 2,815,561 | 3,295,075 |
| ***Passenger-related effect*** | 2,712,246 | 1,770,448 | 3,524,932 | 8,908,774 | 117,882 | 2,300,150 | 4,514,414 | 3,792,575 |
| ***TOTAL*** | **9,331,718** | **9,245,620** | **8,990,837** | **15,163,077** | **7,121,390** | **5,952,940** | **8,851,157** | **9,784,491** |
| **CAPACITY UNDERUTILIZATION COMPONENT 2004-2006** | 6 | 2 | 7 | 3 | 4 | 5 | 1 | |
| ***Unused capacities*** | -2,288,129 | 1,538,920 | -4,961,868 | 1,359,375 | -1,727,836 | -1,912,218 | -1,181,294 | -860,652 |
| ***Available capacities*** | -7,410,418 | -4,662,617 | -13,338,225 | -4,443,047 | 2,271,605 | -3,921,436 | 8,988,015 | -4,417,588 |
| ***Used capacities*** | 9,834,244 | 9,868,830 | 13,929,997 | 8,234,559 | 3,136,157 | 7,595,193 | -893,655 | 8,546,737 |
| ***TOTAL*** | **135,697** | **6,745,133** | **-4,370,096** | **5,150,886** | **3,679,926** | **1,761,539** | **6,913,067** | **3,268,497** |

Note: Numbers in shaded areas are rankings, from 1 to 7, of the effect of a component on operating income.

**Table 7c: Normalized Strategic Variance Analysis 2007-2009**

| | Alaska | American | Continental | Delta | Northwest | United | Composite |
|---|---|---|---|---|---|---|---|
| **GROWTH COMPONENT 2007-2009** | 3 | 4 | 1 | 2 | 6 | 5 | |
| ***Revenue effect*** | 4,170,858 | -22,445,070 | 3,188,719 | 3,202,043 | -28,747,399 | -27,838,296 | -14,086,888 |
| ***Fuel cost effect*** | -1,110,600 | 5,566,562 | -697,950 | -751,476 | 7,380,071 | 6,606,888 | 3,387,672 |
| ***Flight-related cost effect*** | -1,690,150 | 9,003,278 | -1,434,400 | -1,449,584 | 10,765,800 | 12,707,488 | 6,019,276 |
| ***Passenger-related effect*** | -1,013,703 | 4,829,975 | -631,089 | -608,850 | 6,884,454 | 5,107,909 | 2,887,620 |
| ***TOTAL*** | **356,406** | **-3,045,255** | **425,279** | **392,133** | **-3,717,074** | **-3,416,010** | **-1,792,321** |
| **PRICE-RECOVERY COMPONENT 2007-2009** | 1 | 5 | 6 | 4 | 3 | 2 | |
| ***Revenue effect*** | 12,945,178 | 1,234,305 | -11,542,836 | 3,831,414 | 1,564,325 | -1,820,717 | -222,613 |
| ***Fuel cost effect*** | 5,645,877 | 45,795 | 1,470,920 | -5,965,576 | 9,568,069 | 5,207,076 | 1,391,082 |
| ***Flight-related cost effect*** | -11,030,175 | -11,775,935 | -502,817 | -7,157,947 | -13,956,250 | -3,620,946 | -7,787,237 |
| ***Passenger-related effect*** | -497,350 | -3,087,177 | -3,510,492 | -4,026,889 | -6,008,169 | -2,272,033 | -3,321,141 |
| ***TOTAL*** | **7,063,531** | **-13,583,012** | **-14,085,225** | **-13,318,999** | **-8,832,025** | **-2,506,621** | **-9,939,909** |
| **PRODUCTIVITY COMPONENT 2007-2009** | 1 | 6 | 3 | 4 | 2 | 5 | |
| ***Fuel cost effect*** | 4,643,948 | 67,905 | 1,823,706 | -1,179,921 | 3,651,087 | 500,369 | 1,130,850 |
| ***Fuel (ASM) cost effect*** | 1,061,429 | 260,604 | 370,858 | 1,991,459 | -399,217 | -90,840 | 392,046 |
| ***Passenger-related effect*** | 4,458,580 | 193,223 | 2,882,743 | 3,569,966 | 6,212,596 | 1,777,521 | 2,489,167 |
| ***TOTAL*** | **10,163,957** | **521,732** | **5,077,308** | **4,381,504** | **9,464,466** | **2,187,049** | **4,012,063** |
| **CAPACITY UNDERUTILIZATION COMPONENT 2007-2009** | 5 | 4 | 3 | 1 | 6 | 2 | |
| ***Unused capacities*** | -2,863,369 | -2,822,698 | -107,103 | -1,534,816 | -2,708,955 | -800,515 | -1,721,727 |
| ***Available capacities*** | 626,631 | 11,762,182 | -733,978 | 2,310,542 | 11,715,440 | 15,225,717 | 8,344,173 |
| ***Used capacities*** | 1,690,150 | -9,003,278 | 1,434,400 | 1,449,584 | -10,765,800 | -12,707,488 | -6,019,276 |
| ***TOTAL*** | **-546,588** | **-63,794** | **593,320** | **2,225,310** | **-1,759,315** | **1,717,714** | **603,171** |

Note: Numbers in shaded areas are rankings, from 1 to 6, of the effect of a component on operating income.

**Table 8a: Impact of Endogenous Strategies - Growth Component**
**2001 (12/31/00) – 2003 (12/31/03)**

| | RPMs 2001 | RPMs 2003 | %Δ2001-2003 | ENDOGENOUS |
|---|---|---|---|---|
| **Alaska** | 11,986,220,472.44 | 14,553,539,641.00 | 21.42 | 149.86% |
| **American** | 116,546,866,300.80 | 120,299,948,301.92 | 3.22 | 431.68% |
| **Continental** | 62,344,035,830.75 | 57,577,384,884.77 | -7.65 | 39.61% |
| **Delta** | 107,817,843,792.25 | 89,412,207,706.99 | -17.07 | -37.43% |
| **Northwest** | 79,204,321,760.92 | 68,746,644,595.56 | -13.20 | -19.09% |
| **United** | 126,906,366,817.78 | 104,371,719,160.11 | -17.76 | -39.86% |
| **US Airways** | 46,870,108,565.97 | 37,774,319,225.72 | -19.41 | -44.98% |
| **Composite** | 551,675,763,540.92 | 492,735,763,516.07 | -10.68 | |

Endogenous Effect = $[\%\Delta RPMs(2001\text{-}2003)_{Airline\ i} - \%\Delta RPMs(2001\text{-}2003)_{Market}] / |\%\Delta RPMs(2001\text{-}2003)_{Airline\ i}|$

**Table 8b: Impact of Endogenous Strategies - Growth Component**
**2004 (12/31/03) – 2006 (12/31/06)**

| | RPMs 2004 | RPMs 2006 | %Δ2004-2006 | ENDOGENOUS |
|---|---|---|---|---|
| **Alaska** | 14,553,539,641 | 17,822,404,781 | 22.46 | 39.31% |
| **American** | 120,299,948,302 | 139,420,782,629 | 15.89 | 14.22% |
| **Continental** | 57,577,384,885 | 76,302,518,293 | 32.52 | 58.09% |
| **Delta** | 89,412,207,707 | 98,887,497,017 | 10.60 | -28.58% |
| **Northwest** | 68,746,644,596 | 72,674,331,902 | 5.71 | -138.70% |
| **United** | 104,371,719,160 | 117,445,990,416 | 12.53 | -8.78% |
| **US Airways** | 37,774,319,226 | 37,357,913,286 | -1.10 | -1339.09% |
| **Composite** | 492,735,763,516 | 559,911,438,325 | 13.63 | |

Endogenous Effect = $[\%\Delta RPMs(2004\text{-}2006)_{Airline\ i} - \%\Delta RPMs(2004\text{-}2006)_{Market}] / |\%\Delta RPMs(2004\text{-}2006)_{Airline\ i}|$

**Table 8c: Impact of Endogenous Strategies - Growth Component**
**2006 (12/31/06) – 2009 (12/31/09)**

| | RPMs 2006 | RPMs 2009 | %Δ2006-2009 | ENDOGENOUS |
|---|---|---|---|---|
| **Alaska** | 17,822,404,781 | 18,361,670,904 | 3.03 | 352.15% |
| **American** | 139,420,782,629 | 122,391,483,735 | -12.21 | -37.43% |
| **Continental** | 76,302,518,293 | 77,768,332,936 | 1.92 | 497.92% |
| **Delta** | 98,887,497,017 | 100,711,842,838 | 1.84 | 515.22% |
| **Northwest** | 72,674,331,902 | 62,941,173,546 | -13.39 | -42.94% |
| **United** | 117,445,990,416 | 100,453,973,793 | -14.47 | -47.23% |
| **Composite** | 522,553,525,039 | 482,628,477,752 | -7.64 | |

Endogenous Effect = $[\%\Delta RPMs(2006\text{-}2009)_{Airline\ i} - \%\Delta RPMs(2006\text{-}2009)_{Market}] / |\%\Delta RPMs(2006\text{-}2009)_{Airline\ i}|$

**Table 9: Strategic Variance Analysis Alaska Airlines 2009-2010**

| | Alaska | Normalized Alaska |
|---|---|---|
| **GROWTH COMPONENT 2009-2010** | | |
| ***Revenue effect*** | 326,586,654 | 16,083,578 |
| ***Fuel cost effect*** | -57,515,122 | -2,832,476 |
| ***Flight-related cost effect*** | -143,852,606 | -7,084,382 |
| ***Passenger-related effect*** | -65,231,740 | -3,212,500 |
| ***TOTAL*** | **59,987,186** | **2,954,219** |
| **PRICE-RECOVERY COMPONENT 2009-2010** | | |
| ***Revenue effect*** | 94,039,346 | 4,631,203 |
| ***Fuel cost effect*** | -163,054,470 | -8,030,026 |
| ***Flight-related cost effect*** | 96,567,740 | 4,755,720 |
| ***Passenger-related effect*** | 21,979,726 | 1,082,447 |
| ***TOTAL*** | **49,532,341** | **2,439,344** |
| **PRODUCTIVITY COMPONENT 2009-2010** | | |
| ***Fuel cost effect*** | 5,392,354 | 265,560 |
| ***Fuel (ASM) cost effect*** | 35,155,480 | 1,731,320 |
| ***Passenger-related effect*** | 27,478,015 | 1,353,224 |
| ***TOTAL*** | **68,025,849** | **3,350,103** |
| **CAPACITY UNDERUTILIZATION COMPONENT 2009-2010** | | |
| ***Unused capacities*** | 19,325,217 | 951,719 |
| ***Available capacities*** | -93,894,199 | -4,624,055 |
| ***Used capacities*** | 143,852,606 | 7,084,382 |
| ***TOTAL*** | **69,283,624** | **3,412,046** |

**Table 10a: ASM and RPKm by Aircraft Type - 2003**
**(A Prefix = Alaska, H Prefix = Horizon, T Prefix = Total (A + H), ST Prefix = Summary Total)**

| Airline | Aircraft Type | %AASM | %ARPM | %HASM | %HRPM | %TASM | %TRPM | %STASM | %STRPM |
|---|---|---|---|---|---|---|---|---|---|
| Alaska | Boeing 737-700/700LR | 19.46% | 20.21% | | | 17.33% | 18.16% | | |
| Alaska | Boeing 737-400 | 38.55% | 37.44% | | | 34.33% | 33.65% | | |
| Alaska | Boeing 737-200C | 2.91% | 2.16% | | | 2.59% | 1.94% | | |
| Alaska | Boeing 737-900 | 12.42% | 12.97% | | | 11.06% | 11.66% | | |
| Alaska | McDonnell Douglas DC9 Super 80/MD81/82/83/88 | 26.66% | 27.22% | | | 23.74% | 24.46% | 89.05% | 89.87% |
| Horizon | De Havilland DHC8-400 Dash-8 | | | 32.64% | 31.57% | 3.57% | 3.20% | | |
| Horizon | De Havilland DHC8-200Q Dash-8 | | | 20.96% | 20.81% | 2.29% | 2.11% | | |
| Horizon | Fokker F28-4000/6000 Fellowship | | | 0.34% | 0.38% | 0.04% | 0.04% | | |
| Horizon | Canadair RJ-700 | | | 46.06% | 47.23% | 5.04% | 4.78% | 10.94% | 10.13% |

Data Source: U. S. Department of Transportation, Research and Innovative Administration, Bureau of Transportation Statistics, *TranStats Database*, Washington, D. C., 2003

**Table 10b: ASM and RPKm by Aircraft Type - 2006**
**(A Prefix = Alaska, H Prefix = Horizon, T Prefix = Total (A + H), ST Prefix = Summary Total)**

| Airline | Aircraft Type | %AASM | %ARPM | %HASM | %HRPM | %TASM | %TRPM | %STASM | %STRPM |
|---|---|---|---|---|---|---|---|---|---|
| Alaska | Boeing 737-700/700LR | 19.93% | 20.22% | | | 17.24% | 17.57% | | |
| Alaska | Boeing 737-800 | 11.24% | 12.20% | | | 9.72% | 10.60% | | |
| Alaska | Boeing 737-400 | 32.04% | 30.35% | | | 27.71% | 26.37% | | |
| Alaska | Boeing 737-200C | 1.13% | 1.04% | | | 0.98% | 0.91% | | |
| Alaska | Boeing 737-900 | 15.30% | 15.73% | | | 13.23% | 13.66% | | |
| Alaska | McDonnell Douglas DC9 Super 80/MD81/82/83/88 | 20.37% | 20.46% | | | 17.62% | 17.77% | 86.50% | 86.88% |
| Horizon | De Havilland DHC8-400 Dash-8 | | | 36.01% | 35.78% | 4.86% | 4.70% | | |
| Horizon | De Havilland DHC8-200Q Dash-8 | | | 14.67% | 14.62% | 1.98% | 1.92% | | |
| Horizon | Canadair RJ-700 | | | 49.32% | 49.60% | 6.66% | 6.51% | 13.50% | 13.13% |

Data Source: U. S. Department of Transportation, Research and Innovative Administration, Bureau of Transportation Statistics, *TranStats Database*, Washington, D. C., 2006

**Table 10c: ASM and RPKm by Aircraft Type - 2009**
**(A Prefix = Alaska, H Prefix = Horizon, T Prefix = Total (A + H), ST, Prefix = Summary Total)**

| Airline | Aircraft Type | %AASM | %ARPM | %HASM | %HRPM | %TASM | %TRPM | %STASM | %STRPM |
|---|---|---|---|---|---|---|---|---|---|
| Alaska | Boeing 737-700/700LR | 11.70% | 11.48% | | | 10.24% | 10.15% | | |
| Alaska | Boeing 737-800 | 55.90% | 57.51% | | | 48.93% | 50.84% | | |
| Alaska | Boeing 737-400 | 19.21% | 17.49% | | | 16.82% | 15.46% | | |
| Alaska | Boeing 737-900 | 13.19% | 13.52% | | | 11.55% | 11.95% | 87.54% | 88.40% |
| Horizon | De Havilland DHC8-400 Dash-8 | | | 59.76% | 57.39% | 7.44% | 6.65% | | |
| Horizon | De Havilland DHC8-200Q Dash-8 | | | 0.01% | 0.01% | 0.0013% | 0.0013% | | |
| Horizon | Canadair RJ-700 | | | 40.23% | 42.60% | 5.01% | 4.94% | 12.45% | 11.59% |

Data Source: U. S. Department of Transportation, Research and Innovative Administration, Bureau of Transportation Statistics, *TranStats Database*, Washington, D. C., 2009

## THE INTERACTION BETWEEM ALASKA AND HORIZON AIR INDUSTRIES AND THE IMPACT ON SVA RESULTS

Although the focus of this research is Alaska Airlines, the Alaska 2010 initiative impacted both airlines in the group, Alaska Airlines and Horizon Air Industries. During the period of this study, it is possible that Alaska Airlines shifted routes, frequencies of flights, and aircraft to its regional affiliate, Horizon Air Industries. If this occurred to a significant degree, then there might be an important impact in terms of the underlying drivers of the results of the strategic variance analysis.

ASMs and RPMs by aircraft type for both carriers were examined to try and detect route interactions between the two airlines. Conceptually, if such an interaction were of significant magnitude, then one would see a larger share of ASMs and RPMs being flown by the aircraft types of the regional affiliate airline. Table 10 shows virtually no change in ASMs and RPMs by aircraft types flown by Alaska Airlines versus those flown by Horizon Air Industries for the years ending in 2003, 2006, and 2009 (the end points of each of the periods used in the SVA analysis). Instead, Alaska Airlines phased out its usage of McDonnell Douglas aircraft in favor of more efficient ones from the single Boeing 737 family. Horizon Air Industries phased out its Fokker and De Havilland DHC8-200Q Dash-8 airplanes in favor of the more efficient De Havilland DHC8-400 Dash-8 aircraft.

In addition, the annual reports of the Alaska Air Group were examined for each year in the study. Typically, in the letter to shareholders, the CEO discusses progress made in the strategic plan for the preceding year. In only one year, 2007, was there any mention of a shift in service between the two airlines. In that year, Alaska Airlines contracted with Horizon Air Industries for the use of some 70-seat Canadair RJ-700 aircraft for certain routes for which Alaska's Boeing 737 jets were too large to be profitable. Thus, it appears that for the entire period of the study, any interaction effects were minimal.

## SUMMARY AND CONCLUSIONS

In 2003, Alaska Air Group embarked on a long-term strategic plan to transform the company. Management referred to the plan in annual reports to stockholders in 2003 and in subsequent years, marking their successes and further needs for improvement. In fact, the plan appeared to be highly successful based on the 2010 annual report to stockholders. Strategic variance analysis provides a means to assess the plan and to categorize management's efforts in terms of Porter's (1980) long-term strategies for business success. This paper examines Alaska Airlines' performance in three-year time windows from 2001 to 2003, 2004 to 2006, and 2007 to 2009. In addition, we examine 2010, the last year of the strategic plan.

Strategic variance analysis shows that Alaska Airlines focused primarily on growing its share of the market and on productivity gains by cutting costs. In later years, they also followed a product differentiation strategy, raising air fares sufficiently to cover increased costs for such a strategy. Finally, they made changes in their routes to achieve greater profitability through better use of capacity.

The success of the plan may also be measured by comparison with the other network carriers. That analysis revealed that by 2009, Alaska ranked first in both productivity and price-recovery, as well as third in growth in market share. In sum, it appears that management delivered on its forecast in the 2003 annual report that 2010 would be a year where they could "look back with great pride at how we transformed ourselves" (Ayer 2004).

## APPENDIX
## Calculation of Strategic Variances from Year i to Year j

***The Growth Component***

**1. Airline Revenues**

**[*Revenue effect of the Growth Component (i.e., lower expected revenue due to lower RPM)*]**

Variance = {Year i revenue/RPM} * {Year j RPMs – Year i RPMs}

**2. Fuel Costs**

**[*Fuel cost effect of the Growth Component (i.e., lower expected fuel costs due to lower RPMs)*]**

Variance = {Year i fuel cost/gallon} * {Year i gallons used per ASM} * {Year i actual ASMs – Year j budgeted ASMs}

**3. Flight-related Costs**

**[*Flight-related cost effect of the Growth Component (i.e., lower expected flight-related costs due to lower RPMs)*]**

Variance = {Year i cost/ASM} * {Year i passenger load factor} * {Year i actual ASMs – Year j budgeted ASMs}

**4. Passenger-related Costs**

**[*Passenger-related cost effect of the Growth Component (i.e., lower expected passenger-related costs due to lower RPMs)*]**

Variance = {Year i cost/passenger} * {Year i revenue passengers – Year j budgeted revenue passengers}

***The Price-Recovery Component***

**1. Airline Revenues**

**[*Revenue effect of the Price-Recovery Component (i.e., higher revenue due to higher airfares)*]**

Variance = {Year j RPMs} * {Year j revenue/RPM – Year i revenue/RPM}

**2. Fuel Costs**

**[*Fuel cost effect of the Price-Recovery Component (i.e., higher costs due to higher fuel prices)*]**

Variance = {Year j budgeted ASMs} * {Year i gallons used/ASM} * {Year i fuel cost/gallon – Year j fuel cost/gallon}

**3. Flight-related Costs**

**[*Flight-related cost effect of the Price-Recovery Component (i.e., higher costs due to higher flight-related costs per ASM)*]**

Variance = {Year j passenger load factor} * {Year j actual ASMs} * {Year i cost/ASM – Year j cost/ASM}

**4. Passenger-related Costs**

**[*Passenger-related cost effect of the Price-Recovery Component (i.e., higher costs due to higher costs per passenger)*]**

Variance = {Year j budgeted revenue passengers} * {Year i cost/passenger – Year j cost/passenger}

***The Productivity Component***

**1. Fuel Costs (a)**

**[*Fuel cost effect of the Productivity Component (i.e., lower costs due to lower fuel usage per gallon)*]**

Variance = {Year j fuel cost/gallon} * {Year j budgeted ASMs} * {Year i gallons used /ASM – Year j gallons used/ASM}

**2. Fuel Costs (b)**

**[*Fuel (ASM) cost effect of the Productivity Component (i.e., lower costs due to higher passenger load factor)*]**

Variance = {Year j fuel cost/gallon} * {Year j gallons used/ASM} * {Year j budgeted ASMs – Year j actual ASMs}

**3. Passenger-related costs**

**[*Passenger-related cost effect of the Productivity Component (i.e., lower costs due to higher miles per passenger)*]**

Variance = {Year j cost/passenger} * {Year j budgeted revenue passengers – Year j revenue passengers}

***The Capacity Underutilization Component***

**1. Flight-related costs (a)**

**[*Changes in flight-related costs relating to unused capacities (i.e., higher unit costs to acquire capacity that is unused)*]**

Variance = {Year j actual ASMs – Year j RPMs} * {Year i cost/ASM – Year j cost/ASM}

**2. Flight-related costs (b)**

**[*Changes in flight-related costs of available capacities (i.e., lower underutilization due to decrease in available capacity)*]**

Variance = {Year i cost/ASM} * {Year i actual ASMs – Year j actual ASMs}

**3. Flight-related costs (c)**

**[*Changes in flight-related costs of used capacities (i.e., higher underutilization due to decrease in capacity used)*]**

Variance = {Year i cost/ASM} * {Year j RPMs – Year i RPMs}

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