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Delta/Signal Corp.

"You know Brian, the shareholders will be watching your every move from here on out," said Rachel Weber, chairman of the board at Delta/Signal Corporation and daughter of Louis Weber, who founded the Ohio-based automotive electrical supplier in 1992. "The stock keeps slipping, our 2012 revenues are far below two years ago, material and production costs keep going up, and we continue to lose market share to our competitors. [See **Exhibit 1** for competitive summary and **Exhibit 2** for selected financial results vs. competitors.] You may not have much time before the shareholders start demanding your head, the way they rallied against Louis. At the same time, there are still several board members and a lot of longtime employees who thought it was a mistake to ask Louis to step down. They will want to see what kind of results you can deliver."

Brian Nielson, who was hired three months ago to replace Louis Weber as CEO, stirred his coffee thoughtfully. "I realize that whatever short honeymoon period I may have had is probably over now. And I know that our financial results are troubling. [See **Exhibit 3** for historical financial data.] But I have been using my time to gather information to craft a strategy for our turnaround. I believe that Louis's strategy of being all things to all customers was fundamentally flawed. Did you know we have 2,000 distinct products? Over the years, whenever a customer asked for something we would do it, regardless of whether it fit in with our capabilities. We have 100 separate production lines turning out everything from cut-rate instrument panel switches to high-end state-of-the-art powertrain sensors. We have sufficiently invested in the business to maintain acceptable quality, product performance, and cost competitiveness; however, we are not a leader at anything. We don't have a clear, concise message about our value proposition to customers and our managers don't have a clear set of goals to work towards. All this leads to substandard results."

"I know," Rachel sighed. "We should have hired a professional team years ago. Dad was a great visionary, but he wasn't cut out to be CEO and my cousin Taryn did not have the experience to be CFO, particularly once the company started expanding into other countries. I think we did the right thing by cutting back on manufacturing costs during the downturn by closing a few U.S. and U.K. plants, conducting layoffs, reducing our R&D budget, and cutting administrative costs, but now I'm wondering if we shouldn't make new investments for the future. I don't want Delta/Signal to be left behind when the economy recovers."

"I think it *is* time we started investing for the future," agreed Nielson. "But I want to make sure we head in the right direction. We have a good executive team in place now, and I've asked them for their input as I work on crafting a new strategy going forward. I have four possible strategies that I

Professor V.G. Narayanan, Research Associate Lisa Brem and Teaching Fellow Matthew Packard prepared this case. This version of this case is for use with the *Strategy Simulation: The Balanced Scorecard* (HBP# 114707). The Delta/Signal Corp. is fictional. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

would like to present to the board at the meeting next week: two that would target economy car makers and two that would target luxury car makers." (See **Exhibit 4** for EVP strategy recommendations, **Exhibit 5** for organizational chart, and **Exhibit 6** for global facilities.)

"That sounds promising, but you must be leaning toward one strategy that you think would be best," prompted Weber.

"Our recent expansion into Asia would support the economy-segment strategies," Nielson said. "Given the state of the world economy, lower priced cars will gain market share for the near future. And the growing middle class in emerging markets like Asia would also point towards pursuing low-cost strategies. However, nearly all of our competitors are rushing headlong into Asia because they see the same opportunities. This may leave the luxury OEMs in the United States and Europe up for grabs, and since our traditional expertise has been in R&D, we could capitalize on the lack of competitive interest in the luxury segment. There is also the recent threat that the Chinese government will enact a law requiring OEMs to share technology in order to sell cars in that country. I'm not sure we should get in a situation where we would be forced to share proprietary technologies."

Nielson stood and looked out over the view of Lake Erie from his office window in the company headquarters in Cleveland. "No matter what strategy we choose," he continued, "I want to build a strategy map and balanced scorecard to better direct and aid our strategy implementation throughout the company. I have engaged a consulting firm to work with division managers and EVPs to compile a list of objectives, initiatives, metrics, and targets that we could use to populate balanced scorecards and strategy maps. [See **Exhibit 7** for a list of suggested objectives and corresponding metrics, and the **Appendix** for a list of available initiatives with corresponding metrics and budgets.] We should be prepared to commit resources toward the initiatives that will best further the strategy we choose. Once committed to a direction, we can't afford to fail."

"I see the wisdom in focusing on one distinct strategy, and I will support you in allocating funds for new initiatives. The board would likely approve up to an additional $25 million of spending per period on initiatives that support the new strategy, but we need to make sure we use our money wisely. How soon will we know that the initiatives we fund will be worth the investment?" asked Weber.

"Some programs will have immediate results, while others will take some time to bear fruit," explained Nielson. "And I'm sure there will even be some initiatives that do not deliver the hoped-for-benefits. We need to monitor metrics that are leading indicators of future performance to evaluate the effectiveness of initiatives and to determine if we should discontinue initiatives that are not working and, instead, choose new initiatives that may better drive long-term success, or conserve the shareholder's money and reduce expenses. The sooner we learn which initiatives are working and which are not; the better."

Weber noted, "In the past we would invest in projects and see improved performance in a given area; however, after improvements were achieved, spending would be shifted to different projects and the original performance gains would be lost. For example, we once invested in Kaizen initiatives to reduce defects, which resulted in a 35% reduction in manufacturing defects. We were pleased with this improvement. However, after two years of investing in the program, further reductions in defects were no longer being achieved, so we stopped training employees in Kaizen methods. As people changed roles, new employees were hired, and new products and technologies were introduced quality began to deteriorate; within 18 months all of the previous quality

improvements had been lost. How can we be sure that when we improve in strategically important areas, performance gains will be sustained?"

Neilson responded, "We must continuously invest in those initiatives that are the most important drivers of our strategy. Meaningful improvements, compared to our current performance, in the metrics that are most closely related to our strategy will be a strong indicator that we are spending in the right areas and that we should maintain spending in those areas. If we divert spending from the primary drivers of our strategy to secondary drivers we will compromise our chances of achieving sustained long-term success."

"That sounds reasonable, and I agree we need to get started. I don't think you should leave it up to the board to decide which strategy we pursue. You should come in with your own recommendation, or else we will be debating for a year before we make a decision," said Weber.

Exhibit 1 Competitive Summary (Top Three Competitors)

Vulferam AG

Munich, Germany

Vulferam makes cables, wires, and wiring systems for the automotive, industrial, and telecommunication markets. Its wiring systems division makes cable harnesses and cabling systems for customers for luxury and mainstream automotive OEMs in Europe and North America. The cable division makes automotive and standard cables, cable assemblies, data cables, specialized cables, and mobile telecom assemblies.

In 2009 Vulferam acquired Centauri Connective Systems. The business had 2008 sales of €600 million (about $800 million). The acquisition was the largest in Vulferam's history to date, and it secured Vulferam's place as Europe's leading wiring systems supplier as well as a top five supplier worldwide.

The company completed the integration of Centauri, which Vulferam renamed Vulferam Wiring Systems Italy, in 2010. Also that year, the company continued its expansion when it acquired a 40% ownership stake in Korea-based wiring system provider Muan Precision Systems. That deal gave Vulferam a foothold in a key Asian market.

Odawa Systems Corporation

Flint, MI

Odawa Systems seeks to stay ahead of the competition by keeping an eye on the future of the automotive industry. The company designs and manufactures electrical distribution systems, not just for traditional power train vehicles but for hybrid and electric vehicles, as well. It designs products that require less wiring and are therefore cheaper to make and are lighter in weight. Odawa Systems also follows the trends of customers who are showing an increased desire for additional features in vehicles. The firm’s research indicates that electronic components account for nearly 40% of a car's total value. The company has exited non-core product lines, such as mirrors and seating, opting instead to focus on an automobile's electrical distribution system, with wired, as well as wireless systems.

Odawa Systems and other companies in the automobile industry were caught up in the trickle-down woes of North American OEMs. Odawa Systems is driven by consumer and fleet demand for automobiles. In order to cope with declining demand, it closed factories, reduced headcount, and eliminated all non-essential spending. The company also scaled back on new investments, although it has continued to transfer some manufacturing to regions with lower labor and materials costs, including China and Eastern Europe. More than half of all its facilities have been located to 20 countries where production costs are lower. Some of these countries include China, India, Mexico, Morocco, Russia, Thailand, the Philippines, and Vietnam. The company is not just manufacturing products in lower cost regions for sale to North American car makers, it is increasingly selling to local car manufacturers in regions where it has manufacturing operations.

Exhibit 1 (cont.) Competitive Summary (Top Three Competitors)

Shagimaw Corporation

Toledo, OH

The company had a major restructuring that wrung out approximately $500 million in savings from its operations through a campaign of facility closures, shifts to low-cost manufacturing and engineering regions (Brazil, Russia, China, and India), and outsourcing. In 2010 Shagimaw shed its brake components business to a competitor. Shagimaw is simultaneously taking on development of fuel efficient products, including key systems in a new electric vehicle being developed in partnership with a major North American OEM. At a recent European auto show, Shagimaw introduced an innovative electric air conditioning compressor for hybrid and electric vehicles.

Shagimaw moved forward with its global operations by entering into joint ventures in Russia and China. Shagimaw's Russian venture will supply dashboard electronics to Russian automotive manufacturers. Shagimaw's Chinese venture will manufacture climate control products for automotive and light truck markets.

Source: Casewriters' adaptation of excerpts from Hoover's.com, accessed May 2011.

Exhibit 2 Competitive Comparison Data (Top Three Competitors)

	Delta/Signal	Odawa	Vulferam	Shagimaw	Industry Median
2012 Key Numbers					
Annual Sales (millions)	$ 960	$ 7,173	$ 4,700	$ 5,973	
Employees	8,727	52,080	18,800	21,200	
Market Cap (millions)	$ 400	$ 1,151	$ 1,706	$ 3,959	
2012 Profitability					
Gross Profit Margin	20.00%	8.68%	17.51%	7.17%	16.36%
Pre-tax profit margin	3.15%	1.46%	3.03%	14.09%	5.43%
Net Profit Margin	2.05%	1.11%	2.27%	11.04%	-3.26%
Return on equity	2.93%	n/a	5.78%	n/a	-14.74%
Return on assets	1.95%	2.73%	3.33%	1.26%	-4.43%
2012 Valuation					
Price/Earnings Ratio	20.35	14.43	15.99	19.50	18.52
Price/Book Ratio	0.60	n/a	2.23	n/a	2.98
2012 Operations					
Asset Turnover	0.95	2.45	1.47	0.33	1.36
Effective Tax Rate	35.00%	24%	25%	33%	
2012 Financial					
Total Debt/Equity	0.50	n/a	3.63	n/a	0.59
Interest Coverage	2.50	1.73	1.85	5.56	6.27
2012 Per Share Data					
Revenue Per Share	$ 96.00	$ 154.30	$ 137.17	$ 37.68	
Dividend Per Share	--	--	--	--	
Book Value Per Share	$ 67.20	n/a	$ 85.56	n/a	
Total Assets Per Share	$ 100.80	$ 62.97	$ 93.63	$ 101.96	
2012 Growth					
12-month Revenue Growth	33.84%	22.74%	36.83%	11.68%	17.59%
36-Month Revenue Growth	-12.55%	-9.25%	7.69%	-12.82%	-4.84%

Source: Casewriters' adaptation of excerpts from Hoover's.com, accessed May 2011.

Exhibit 3 Delta/Signal - Historical Financial Data

	2012	2011	2010	2009	2008
Statement of Operations: Years ended December 31 (in millions, except per share data)					
Net Sales	$ 960	$ 717	$ 1,137	$ 1,098	$ 1,071
Cost of goods sold	768	584	885	844	831
Gross Profit	$ 192	$ 133	$ 252	$ 254	$ 240
SG&A and R&D	142	160	217	202	187
Goodwill impairment charge	--	--	98	-	-
Provision for doubtful accounts	--	--	--	0.1	0.4
Gain on sale of PPE, net	--	--	--	(2.6)	(2.0)
Restructuring charges	--	--	--	1.4	0.9
Operating income (loss)	$ 50	$ (27)	$ (63)	$ 52	$ 54
Interest expense, net	20	33	32	33	33
Other expense (income), net	0	(11)	(20)	(15)	(11)
Income (loss) before income taxes	$ 30	$ (50)	$ (76)	$ 34	$ 31
Provision (benefit) for income taxes	11	(2)	71	11	8
Net Income (loss)	$ 20	$ (48)	$ (146)	$ 24	$ 23
Summary Balance Sheet (Millions)					
Working Capital, Net	$ 48	$ 36	$ 57	$ 55	$ 53
Fixed Assets	960	911	957	985	1,002
Total Assets, Net	$ 1,008	$ 947	$ 1,014	$ 1040	$ 1,055
Debt, Net	$ 336	$ 295	$ 313	$ 193	$ 232
Equity	672	652	701	847	823
Debt, Net + Equity	$ 1,008	$ 947	$ 1,014	$ 1,040	$ 1,055
Share price ($)	$ 40.00	$ 38.00	$ 32.00	$ 51.00	$ 60.00

Source: Casewriters.

Exhibit 4 Strategy Recommendations

MEMO

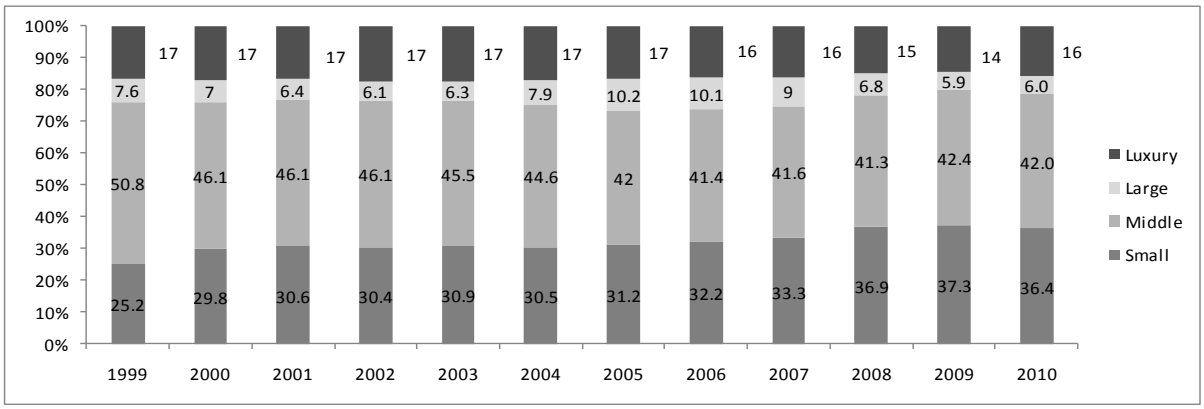
From: Sophia Moreno, EVP Manufacturing
To: Brian Nielson, CEO
RE: Strategy Targeting Economy Segment OEMs—"Low Initial Cost"

There are two major trends that position the economy segment as the future of the auto industry: the growth in sales and production in China and India and the fact that most of the cars being sold in these emerging countries are in the small-car segment. A 2009 study by Ward's Automotive found that:

> … China rose to vehicle-making dominance in the wake of an unexpected 46% increase in new-vehicle sales that allowed it to overtake the weakened U.S. market to become the world's largest consumer of new vehicles for the first time. It was a position the country was likely to maintain at least through 2011 and possibly longer. … Like China, the key to India's growth was in the small-car segment, where most manufacturers were preparing to vastly expand operations to meet escalating demand, forecast to reach at least 3.0 million units annually in 2015 – thanks to continuing improvements in the country's roads and infrastructure and increased personal income.[1]

The manufacturing department executive team believes that the stagnation of the car sales market in the U.S. will continue. The days of brisk sales of large, expensive vehicles are forever behind us. **Figure A** shows that in the last decade, small cars have been the only car segment to gain market share in the United States. In addition, our profits depend on how well we can maximize our plant capacity, and the only way to do that is to ride the wave of increased production and purchases of low-cost vehicles in emerging markets. We cannot allow our competitors to gain further market share in the economy segment; it is imperative that we focus our efforts to meet the needs of economy-segment customers, like Tata, Kia, and Chery, by building our expertise in low-cost procurement, production, and processes.

Figure A U.S. Car Sales by Segment (% of total car sales)



Source: Casewriters, compiled from Ward's AutoinfoBank, published in Ward's Motor Vehicle Facts & Figures 2010, p. 22.

Exhibit 4 (continued)

MEMO

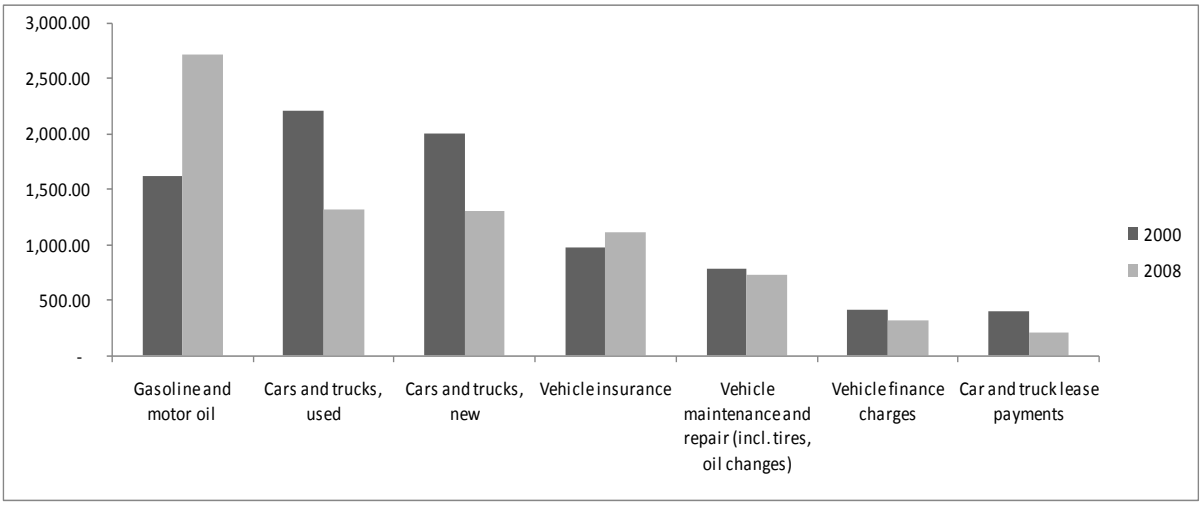
From: Nora Sullivan, EVP Sales & Marketing
To: Brian Nielson, CEO
RE: Strategy Targeting Economy Segment OEMs—"Low Lifetime Cost"

In this weakly recovering economy, car sales will continue to be predicated on perceived value. J.D. Power, in its 2010 quality study, reported that:

> For consumers, initial quality is an important consideration during the new-vehicle shopping and buying process. Initial quality has been shown over the years to be an excellent predictor of long-term durability, which can significantly impact consumer purchase decisions—not to mention out-of-pocket repair expenses down the road. Furthermore, consumers nowadays expect high levels of "out-of-the-box" quality, and even a single problem, no matter how small, can significantly affect a consumer's perception of a product or brand.[2]

As shown in **Figure A** below, the rising cost of gasoline has squeezed household spending on new cars and trucks, and we expect that trend to have intensified after 2008, putting more pressure on consumers to make frugal buying decisions. Helping our OEM customers to produce cars with high long-term value is the key to future profitability. It is our opinion that, thus far, Delta/Signal has focused less on quality and more on innovation and developing a wide range of products to satisfy our customers. The sales and marketing executive team believes that we are long overdue for a quality makeover; we need to focus on producing products that will have best-in-class long-term quality compared to our peers. Our market research has shown that our customers in the economy segment are turning to our competitors largely because of perceived quality issues over the long-term including defects and lower durability of the components and systems we provide. We believe that a concerted, companywide effort toward improving quality and durability should be the first order of business in taking Delta/Signal in a new strategic direction.

Figure A Transportation Spending in the US: 2000 to 2008 (2000 spending in 2008 $)



MEMO

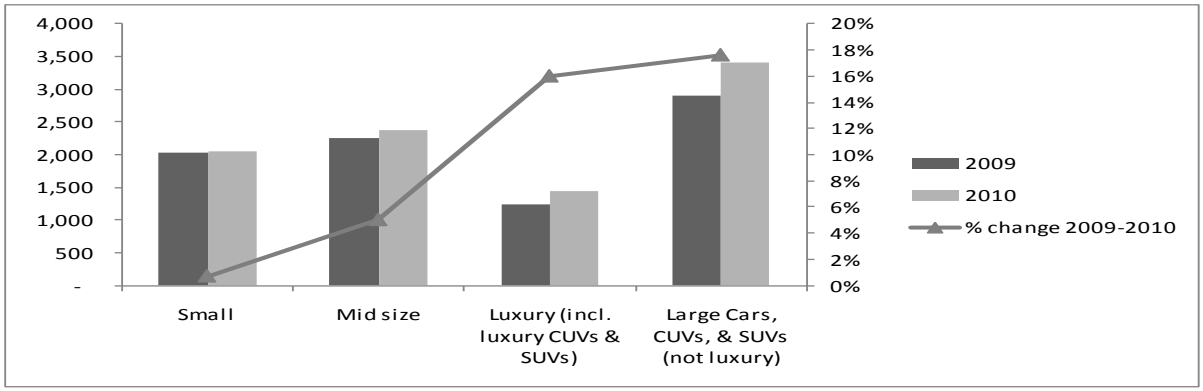
From: Sunil Choudhary, EVP Research & Development
To: Brian Nielson, CEO
RE: Strategy Targeting Luxury Segment OEMs—"Innovation"

A recent study by industry expert Oliver Wyman neatly sums up the R&D executive team's position on strategic direction:

> … [Innovation is] one of the most important success factors to maintaining a strong competitive position in the auto market. … Today, the entire innovation process, from the customer, the car dealer and the OEM marketing department to R&D at both OEMs and suppliers, is highly inefficient and ineffective. Within the next ten years, approximately EUR 800 billion will be spent on R&D – roughly 40 percent of that money will be invested incorrectly. For this reason, every OEM and supplier must screen its innovation portfolio to identify the innovations that really promise to meet the driver's needs. … Electrics and electronics will remain the most important enabler of automotive innovations through 2015 and beyond, and will grow by six percent annually.[3]

We believe that Delta/Signal should follow a niche-supplier innovation strategy that will allow us to charge a price premium for our products and maintain protection for our intellectual property. To succeed in this strategy, we will need to increase our expertise in producing innovative systems (not just single products), leverage technologies developed outside the company, protect our proprietary technologies developed in house, and engage our entire workforce in determining the right projects to pursue. It is our opinion that Delta/Signal should be careful to target manufacturers and regions where our innovation value proposition will command a price premium (i.e., in the luxury segment). The Wyman study found that between 2001 and 2005, for example, BMW spent 15 times more on R&D than Hyundai, and much higher than industry average (EUR 1,796 per car vs. average EUR 783).[4] In addition, as **Figure A** shows, there has been an uptick in luxury car sales in the U.S., and we expect this trend to continue as the U.S. economy recovers. Our long tradition of innovation has been at the heart of our success, and we believe that our corporate resources should be focused almost entirely on enhancing our capabilities in this area. We already have many promising systems and products available and in the pipeline, such as integrated safety systems, performance, fuel efficiency, and infotainment and connectivity. These systems put us in an excellent position to take advantage of our value proposition: to partner with selected luxury auto manufacturers to produce extremely high quality and innovative systems for the next generation of cars and CUVs.

Figure A U.S. Auto Sales by Segment (thousands of cars)



Source: Ward's Automotive Reports January 17, 2011, volume 86, no. 3.

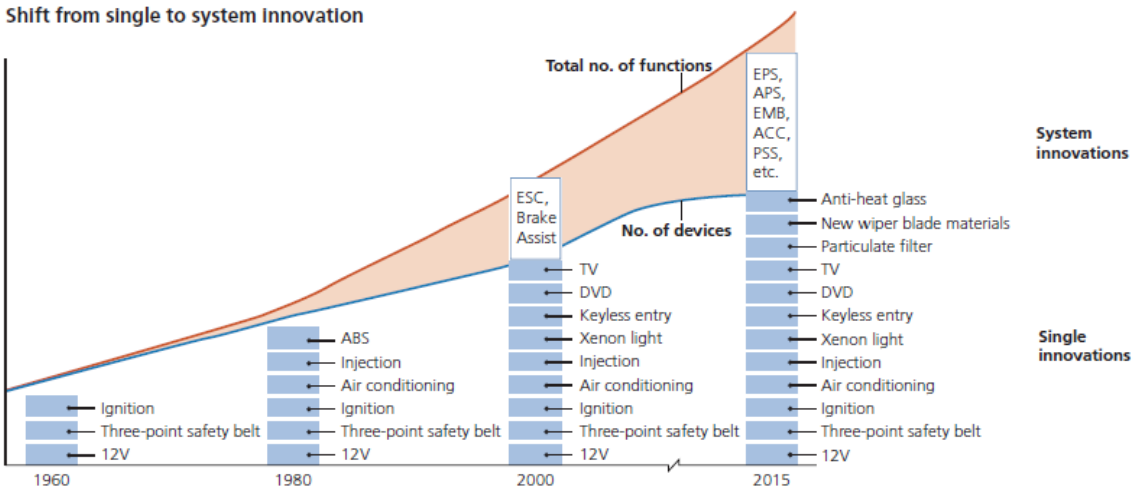
Exhibit 4 (continued)

MEMO

From: Arlo Dodd, EVP Customer Service
To: Brian Nielson, CEO
RE: Strategy Targeting Luxury Segment OEMs—"Customer Integration"

The Customer Service Executive team believes that building close customer partnerships should be the future direction for Delta/Signal. Specifically, we should closely integrate our processes—from R&D through manufacturing, sales and shipping—with a few key customers in the luxury segment who will pay a premium for our superior service. These customers should be more profitable for us and will be somewhat insulated from fluctuations in demand. Furthermore, a major trend in new product design is toward production and design of entire systems vs. single products (see **Figure A** below). As a relatively small supplier, we need to integrate not only with customers, but with other suppliers in order to provide the comprehensive systems and services that our customers increasingly want. Our size, coupled with our history of working closely with OEMs to custom-design high-end electrical components, makes Delta/Signal a perfect candidate to pursue a customer integration strategy in the luxury segment. It is our opinion that we should focus our resources on pursuing highly profitable customers in the luxury segment through a value proposition based on close customer partnerships, shared goals, and intimate involvement with electrical system production from inception through to final assembly.

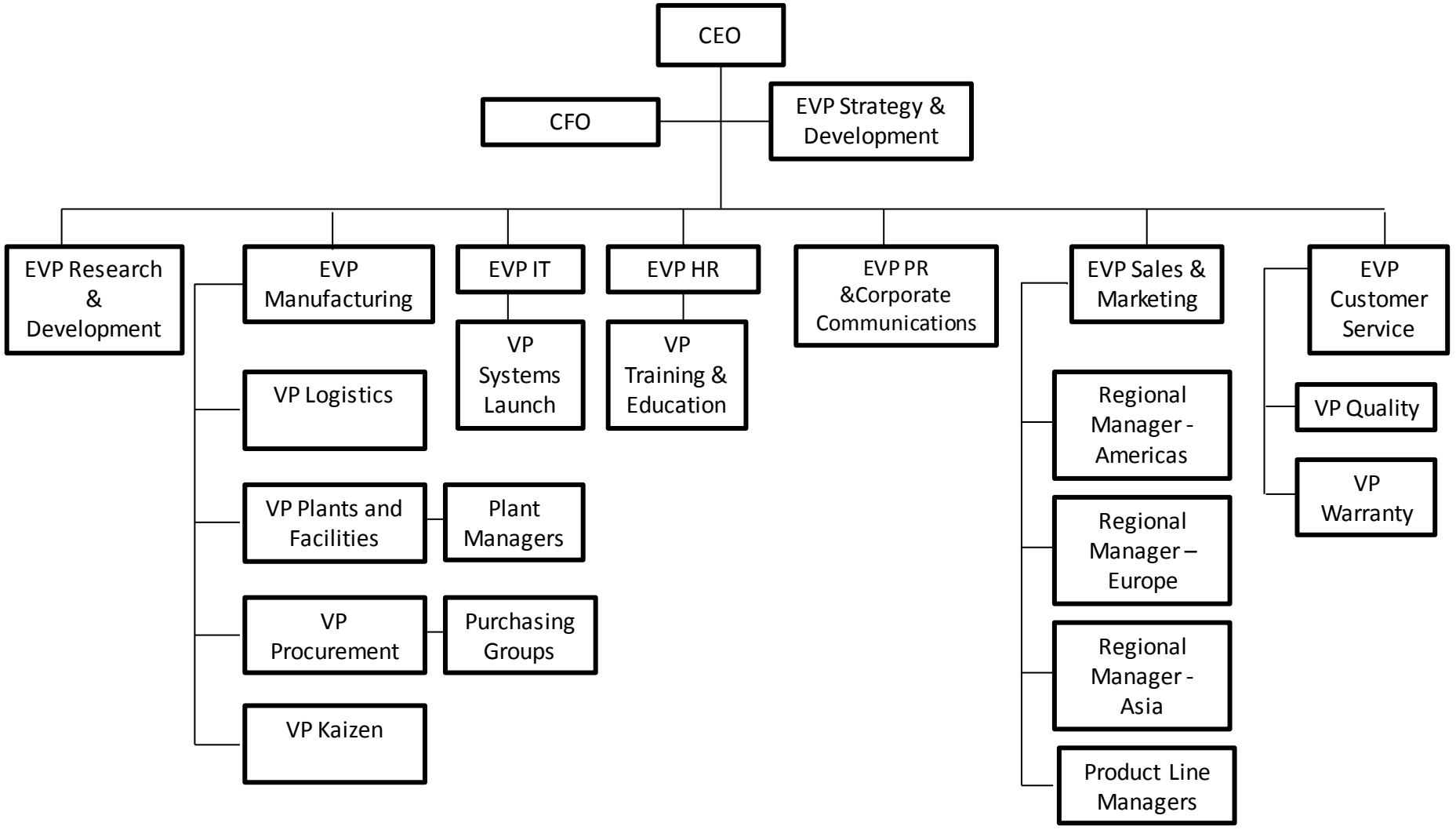
Figure A System Innovations vs. Single Innovations



Please note: ABS = anti-lock braking system, ESC = electronic stability control, EPS = electronic power steering, APS = adaptive power steering, EMB = electro-mechanical braking, ACC = adaptive cruise control, PSS = predictive safety systems

Source: Oliver Wyman "Car Innovation 2015," (2007): p. 12.

Exhibit 5 Organizational Chart



Source: Casewriters.

Exhibit 6 Delta/Signal Global Facilities as of 2012

Location	Owned/Leased	Use	Square Footage
Electronics:			
Socorro, Mexico	Owned	Manufacturing/Division Office	277,620
Dayton, Ohio	Owned	Manufacturing	274,820
Chihuahua, Mexico	Owned	Manufacturing	204,709
Frontera, Mexico	Owned	Manufacturing	172,351
Narva, Estonia	Leased	Manufacturing	129,726
Novi, Michigan	Leased	Manufacturing/Division Office	118,120
Eskilstuna, Sweden	Leased	Manufacturing	116,983
Cinderford, England	Leased	Manufacturing (Vacant)	112,933
Socorro, Mexico	Leased	Manufacturing	93,045
El Paso, Texas	Leased	Warehouse	75,500
Chihuahua, Mexico	Leased	Manufacturing	75,206
Solna, Sweden	Leased	Engineering Office/Division Office	56,948
Perth, Scotland	Leased	Manufacturing/Sales Office/Engineering Office	49,457
Dayton, Ohio	Leased	Warehouse	37,750
Cleveland, Ohio	Leased	Engineering Office/Division Office	37,101
Socorro, Mexico	Leased	Engineering Office/Manufacturing	15,100
San Sebastian, Spain	Leased	Sales Office/Warehouse	14,579
Solna, Sweden	Leased	Sales Office/Warehouse	3,040
Reims, France	Leased	Sales Office/Warehouse	2,356
Rome, Italy	Leased	Sales Office/Warehouse	1,836
Control Devices:			
Mansfield, Ohio	Owned	Manufacturing/Division Office	331,614
Franklin, MA	Owned	Manufacturing	200,166
St. Petersburg, FL	Owned	Manufacturing (Vacant)	173,650
Jinchang, China	Leased	Manufacturing/Warehouse/Division Office	38,863
Mansfield, Ohio	Leased	Warehouse	22,650
Mansfield, Ohio	Leased	Manufacturing	14,581
St. Petersburg, FL	Owned	Warehouse (Vacant)	11,760
Shanghai, China	Leased	Engineering Office/Sales Office	11,325
Corporate:			
Cleveland, Ohio	Owned	Headquarters/Engineering Office	23,000
Grand Rapids, MI	Owned	Sales/Engineering Office	19,000
Gablenberg, Germany	Leased	Sales Office/Engineering Office	2,500
Seoul, South Korea	Leased	Sales Office	1,500
Joint Ventures:			
Belem, Brazil	Owned	Manufacturing	250,000
Shanghai, China	Leased	Manufacturing/Engineering Office/Sales Office	120,000
Buenos Aires, Argentina	Leased	Sales Office	5,000

Source: Casewriters.

Exhibit 7 List of Objectives and Corresponding Metrics, by Balanced Scorecard perspective

Obj #	Objective	Met #	Metric
	Financial		
OF-1	Increase Asset Turnover	MF-1	Asset Turnover
OF-2	Increase Dividends per Share	MF-2	Dividends per share
OF-3	Increase Earnings per Share	MF-3	Earnings per share
OF-4	Increase Interest Coverage	MF-4	Interest Coverage
OF-5	Improve Gross Margin %	MF-5	Gross Margin %
OF-6	Improve Operating Income Margin %	MF-6	Operating Income Margin %
OF-7	Improve Operating ROA %	MF-7	Operating ROA %
OF-8	Improve ROE %	MF-8	ROE %
OF-9	Increase Sales	MF-9	Sales
OF-10	Maximize Dividends Per Share over time	MF-10	Cumulative Dividends Per Share, from base year
OF-11	Maximize Earnings Per Share over time	MF-11	Cumulative Earnings Per Share, from base year
	Customers		
OC-1	Align Goals with Customers' Strategic Objectives	MC-1	# of BSC Objectives Shared w/ Strategic Customers
OC-2	Co. Perceived as Highest Quality Provider	MC-2	% Customers Rank Co. "Best in Class" in Quality
OC-3	Competitive Price for Customers	MC-3	% of Customer Contracts with Price Protection
OC-4	Educate Customers on Firm Integration Capabilities	MC-4	# Customers in Company Sponsored Training
OC-5	Improve Customer Satisfaction	MC-5	% of Customers Who Would Recommend Co.
OC-6	Increase Customer New Product Trials	MC-6	% of Customers Requesting Test Products
OC-7	Increase Financial Ties with Customers	MC-7	% of Customer Contracts with Dedicated Investments
OC-8	Increase Lead Supplier Partnerships	MC-8	# Auto Models Where Company is Lead Supplier
OC-9	Perceived as Valued Partner for Luxury Segment	MC-9	% OEMs Rating Company as Desirable Partner
OC-10	Reputation As Leading Low Cost Supplier	MC-10	% Economy Customers Rank Co. Low Cost Supplier
OC-11	Reputation for Innovation & Technology	MC-11	% of Customers who View Co. as "Innovative"
OC-12	Reputation for Standing Behind Quality	MC-12	% Customers Rank Co. Guarantee "Best in Class"
OC-13	Valued Development Partner in Luxury Segment	MC-13	# of R&D Partnerships with Luxury Customers
	Process		
OP-1	Align Co. Spending with BSC Objectives	MP-1	% of Dept Budgets Linked to BSC Initiatives
OP-2	Design for High Quality	MP-2	% of New Designs with Wear-Resistant Parts
OP-3	Develop Products with Low Costs	MP-3	% of Products with a "Target Cost" Plan
OP-4	Enhance Skills for Multi Co. Team Mgmt.	MP-4	% Managers Trained In Multi-Company Team Management
OP-5	Highly Effective New Product Development	MP-5	% of R&D Projects Advancing to Next Development Stage
OP-6	Improve Assembly Line Efficiency	MP-6	Assembly Throughput Rate % of Base Year
OP-7	Improve Durability of Parts Produced	MP-7	% Parts with Top Rating for Durability
OP-8	Improve Innovation Processes Skills	MP-8	% R&D Employees Trained in Innovation Processes
OP-9	Improve Supplier Efficiency	MP-9	% of Suppliers with Low Cost "A" Rating
OP-10	Increase Quality of Supplied Components	MP-10	Supplied Component Defect Rate %
OP-11	Leverage Supplier Technology	MP-11	# Leading Technology Products from Suppliers Used
OP-12	License 3rd Party Innovative Technology	MP-12	# New Technology Innovations Licensed
OP-13	Maximize Use of Customer Info. Feedback System	MP-13	# of Customers In Feedback Data Capture Project
OP-14	Offer High Performance Products	MP-14	% of Products w/ Leading Performance
OP-15	Reduce Administrative Costs	MP-15	Administrative Costs, % of Base Year
OP-16	Reduce Investment in Working Capital	MP-16	Net Working Capital % of Annualized Revs.
OP-17	Reduce Plant Overhead Costs	MP-17	Plant Overhead Costs % of Base Year
OP-18	Supplier On-site Engagement in Quality Programs	MP-18	# Suppliers with a Quality Engineer Onsite

Exhibit 7 (continued)

Obj #	Learning & Growth	Met #	Metric
OL-1	Align Employees with BSC Objectives	ML-1	% of Employees Scoring >90% on BSC Quiz
OL-2	Align R&D Department with Strategic Initiatives	ML-2	% Products Using Decision Analysis & Strategy Maps
OL-3	Anticipate Luxury OEM Product Needs	ML-3	Technology Product Trends Identified
OL-4	Eliminate Product Defects	ML-4	Manufacturing Defect Rate %
OL-5	Enhance Cust. Data Exchange Capabilities	ML-5	# Customer Actions Via Data Exchange Portal
OL-6	Enhance Reputation as Employer	ML-6	% Job Candidates Ranking Co. "Desirable" Employer
OL-7	Enhance Workforce Skills in TQM	ML-7	% of Engineers Certified in TQM
OL-8	Enhanced Infrastructure for Collaboration	ML-8	% R&D Department with Latest Sharing Systems
OL-9	Improve Low-Cost Sourcing Employee Skills	ML-9	% of Buyers Certified in Low-Cost Sourcing
OL-10	Improve the Quality of Suppliers	ML-10	% of Suppliers with High Quality “A” Rating
OL-11	Improve Understanding of Product Costs	ML-11	% Indirect Costs Allocated Using ABC
OL-12	Improve Workforce Skills in JIT/Lean	ML-12	% of Employees trained in JIT & Lean
OL-13	Improve Workforce Skills in Six-Sigma	ML-13	% of Employees Certified in Six-Sigma Processes
OL-14	Increase Amount of Talent in JIT/Lean	ML-14	# of JIT/Lean Process Engineers
OL-15	Leading Edge R&D Tools	ML-15	% of R&D Tools Considered State-Of-Art
OL-16	Leading Workforce Capabilities in R&D	ML-16	% R&D Engineers Trained on Latest Technology
OL-17	Make Customer Integration an Employee Priority	ML-17	% Employees Scoring > 90% on Customer Integration quiz
OL-18	Make Quality a Priority for All Employees	ML-18	% of Employees scoring > 90% Qual. Aware Quiz

Source: Casewriters.

Appendix List of Possible Initiatives (by Balanced Scorecard Perspective)

Consultant's Note: Some of the following initiatives may produce a change in metrics immediately in the following period, while others may need more time (several periods) to bear fruit. In addition, some metrics are under the direct control of the department, while others could be influenced by a variety of factors.

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
Customer Initiatives					
C-1	Corporate Training	Corporate University Customer Education	# Customers in Company Sponsored Training (MC-4)	This customer service program seeks to educate customers on Delta/Signal's integration capabilities. We expect that employees trained in multi-company team management will encourage customers to take part in the program	$1 million
C-2	Customer Service	Customer Goal Sharing Initiative	# BSC Objectives Shared with Strategic Customers (MC-1)	This joint program developed by sales, marketing, and customer service aims to bring company goals in line with those of its key customers.	$2 million
C-3	Sales & Marketing	Customer Price Protection Program	% of Customer Contracts with Price Protection (MC-3)	These are contractual agreements that provide customers with confidence that they will receive competitive pricing from the company. Contractual price adjustments are tied to historically achievable efficiency improvements and objective cost input changes.	$3 million
C-4	Manufacturing	Customer Program Dedicated Investments	% Customer Contracts with Dedicated Investments (MC-7)	This program aims to deepen relationships with customers through increased financial commitments to customer programs. Dedicated program investments are in the form of specialized plant & equipment. In exchange for the increased financial commitments, the company seeks volume and price protection from customers.	$3 million
C-5	Sales & Marketing	Customer Satisfaction Promotions	% of Customers Who Would Recommend Co. (MC-5)	This is a sales and marketing program that uses various print and online methods to communicate and educate customers about the value proposition of the company. Delta/Signal account managers and salespeople further support the promotional materials through one-on-one conversations with targeted customers. We expect that customers' inclination to recommend the company will also be greatly impacted by other marketing campaigns.	$1 million
C-6	Strategy & Development	Customer Strategic Analysis	# BSC Objectives Shared with Strategic Customers	This program aims to increase the understanding of the strategies and objectives of the company's key customers. Where it is deemed appropriate, company objectives are aligned with customer objectives.	$2 million

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
			(MC-1)		
C-7	Sales & Marketing	"High Quality" Trade Marketing Campaign	% Customers Rank Co. "Best in Class" in Quality (MC-2)	This public relations and marketing initiative is designed to use print and other B2B marketing channels to educate the company's economy customers about its high-quality value proposition. We expect that more tangible actions by the company, particularly Kaizen and R&D initiatives that improve quality and durability, will ultimately influence how customers rank the company on quality.	$1 million
C-8	Sales & Marketing	"Innovative" Trade Marketing Program	% of Customers Who View Co. as "Innovative" (MC-11)	This public relations and marketing initiative is designed to use print and other B2B marketing channels to educate the company's luxury customers about its innovation value proposition. Of course, we expect that an increase of innovative and high performance products offered to customers will also greatly influence how they rank the company on innovation.	$1 million
C-9	Sales & Marketing	"Low Price" Trade Marketing Program	% Economy Customers Rank Co. Low Cost Supplier (MC-10)	This PR, sales, and marketing campaign uses print and other B2B channels to promulgate the message that Delta/Signal provides low cost electronic component solutions for today's auto makers in the economy segment. We expect that more tangible actions by the company, such as the number of low-price bids for projects, could also influence this metric.	$1 million
C-10	Strategy & Development	M&A: Acquire Critical Subassembly Firms	# Auto Models Where Company is Lead Supplier (MC-8)	The goal of this program is to increase integration with customers, on an ongoing basis, by identifying and acquiring smaller suppliers who have partnerships with luxury OEMs. Target companies are those that either design or manufacture sub-assemblies. We expect the associated metric will be heavily influenced by a variety of factors, including the implementation of customer and employee training and communication programs, and customer goal sharing initiatives. Investments in sub-assembly firms will need to recur over time to offset normal expected competitive losses.	$3 million
C-11	Sales & Marketing	New Technology Customer Trade Show	% of Customers Requesting Test Products (MC-6)	The company hosts a trade show that highlights new products and new technologies that can be incorporated into future product offerings.	$1 million
C-12	Customer Service	"No Questions Asked" Replacement Policy	% Customers Rank Co. Guarantee 'Best in Class' (MC-12)	This customer service program hopes to improve the company's reputation for standing behind the quality of its products by guaranteeing replacement parts to all OEM customers with no questions asked. Customers request a replacement and, within one week, a Delta/Signal driver delivers the replacement parts and collects the parts to be replaced	$3 million
C-13	Sales & Marketing	"Partner" Trade Marketing Campaign	% OEMs Rating Company as Desirable Partner (MC-9)	This public relations and marketing initiative is designed to use print and other B2B marketing channels to educate the luxury segment customers about the value of integrating operations, including R&D and manufacturing, with the company. We have identified possible initiatives that could have an impact on how luxury customers rate the company, including employee and	$1 million

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
				customer training programs and partnership initiatives.	
C-14	Sales & Marketing	Promotion of Corporate Training Programs	# Customers in Company Sponsored Training (MC-4)	This program promotes the availability of the company's corporate training programs to customer employees.	$1 million
C-15	R&D	R&D Partnership Initiative	# of R&D Partnerships with Luxury Customers (MC-13)	This R&D program seeks to position the company as a valued R&D partner for luxury OEM customers. The program seeks to integrate the company's R&D efforts within the broader R&D efforts of customers. We expect that this program will also increase overall perception of the company as a valued partner for luxury customers. The EVP of R&D has found that successful implementation of programs such as this depends on employee and customer education and goal sharing with customers.	$2 million
Process Initiatives					
P-1	Finance & Budgeting	Administrative Outsourcing Program	Administrative Costs, % of Base Year (MP-15)	By identifying functions and tasks that can be outsourced and/or off-shored more efficiently, the outsourcing program hopes to reduce the amount of money the company spends on administrative functions. Investments in outsourcing must be maintained to continue finding new opportunities to reduce administrative costs.	$3 million
P-2	Manufacturing	Assembly Line Equipment Upgrades	Assembly Throughput Rate % of Base Yr. (MP-6)	This program aims to improve assembly line efficiency by upgrading to equipment that will facilitate assembly process improvements. The budget listed is the amount expected to be spent on leasing equipment for a period of time. Continuing investments will be needed to maintain the leases on the assembly equipment.	$2 million
P-3	Finance & Budgeting	BSC Budgeting	% of Department Budgets Linked to BSC Initiatives (MP-1)	Supervised by the CFO's budgeting office, this program works one-on-one and in small groups with individuals responsible for crafting budgets at all levels to ensure that the budget follows the objectives and initiatives outlined in the unit's balanced scorecards.	$1 million
P-4	IT & Systems	Customer Feedback Data Capture Project	# of Customers In Feedback Data Capture Project (MP-13)	This goal of this IT program is to increase the customer feedback data available for decision making and to improve the analysis of the customer data. It is expected that more feedback data and better analysis of the data will enable the company to better anticipate customer needs, particularly in the luxury segment. The EVP of IT expects that the company will need to successfully implement incremental upgrades to the data exchange portal to reap maximum benefits from this program. The budget listed is the amount expected to be spent on each incremental upgrade which will involve leasing equipment and licensing software for a period of time. Continuing investments will be needed to maintain the leases and licenses and to keep the system fully up to date.	$2 million

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
P-5	Human Resources	Employee Training: Multi-Co. Team Mgmt.	% Managers Trained In Multi-Company Team Management (MP-4)	This HR program aims to enhance employee skills in cross-company team management by sharing best practices of multi-company teams. Training in this area will help managers to be more effective when collaborating closely with customers. We expect that managers would be more willing to invest time in this program if they were presented with reliable and timely customer feedback about the benefits of such teams, and had access to state-of-the-art collaborative R&D systems.	$1 million
P-6	Manufacturing	Inventory Reduction Program	Net Working Capital % of Annualized Revs (MP-16)	This joint program with procurement, operations, and manufacturing aims to dramatically reduce the amount of raw and finished materials in inventory, thus positively impacting the company's working capital.	$1 million
P-7	Manufacturing	Kaizen Team Initiative: Assembly line	Assembly Throughput Rate % of Base Yr. (MP-6)	The continuous improvement project, implemented by the manufacturing divisions, is designed to improve assembly line efficiency.	$2 million
P-8	Human Resources	Managing Innovators Training	% R&D Employees Trained in Innovation Processes (MP-8)	This HR program is designed to train R&D staff in processes that produce innovative product development.	$1 million
P-9	Manufacturing	Plant Reduce/Reuse/Recycle Program	Plant Overhead Costs, % of Base Year (MP-17)	This program aims to better control plant costs through the more efficient use of resources by focusing efforts on reducing material and energy use and reusing and recycling equipment and scrap materials.	$2 million
P-10	R&D	R&D Initiative: Wear-Resistant Parts	% New Designs with Wear-Resistant Parts (MP-2)	The aim of this initiative is to improve the durability of the parts in all products and subassemblies. We would expect other initiatives, such as manufacturing quality improvement, workforce training, and supplier improvement programs, to strongly influence the associated metric.	$3 million
P-11	R&D	R&D Process Efficiency Initiatives	% of R&D Projects Advancing to Next Development Stage (MP-5)	This R&D department initiative aims to identify, monitor, and improve the processes involved in product development. Several other factors could influence the associated metric, including R&D employee training initiatives, equipment upgrades, licensing, and supplier initiatives.	$2 million
P-12	R&D	R&D Program	% of R&D Projects	This program aims to improve the assessment of risks in R&D programs so that risk mitigation efforts can be implemented and improved decisions can be made on the viability and	$2 million

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
		Risk Assessments	Advancing to Next Development Stage (MP-5)	attractiveness of individual R&D programs. The program is designed to systematically evaluate the technical, operating, timeline, and financial risks of R&D programs through the use of custom management information systems and management processes.	
P-13	R&D	R&D: Applying Leading-Edge Technologies	% of Products w/Leading Performance (MP-14)	This R&D initiative aims to identify, monitor, and improve the processes that will increase the development of parts and subassemblies that are considered appropriate for high performance vehicles. The EVP of R&D believes that the company will need to make a concerted effort to improve R&D processes, training and equipment, the supplier pipeline for innovative products, and technology licensing efforts for this program to maximize its success potential. Investments need to recur over time to continually advance employee skills and maintain leases & licenses on advanced equipment and the most up-to-date software.	$3 million
P-14	Manufacturing	Supplied Component Quality Monitoring	Supplied Component Defect Rate % (MP-10)	This procurement initiative seeks to increase the quality of parts and raw materials by closely monitoring the performance and overall quality of supplied components. We expect that as the percentage of suppliers with an “A” rating for quality increases, we will also see a significant decrease in supplied component defects.	$2 million
P-15	Manufacturing	Supplier Optimization Program	% of Suppliers with Low Cost 'A' Rating (MP-9)	Designed to improve supplier efficiency and lower material costs, the program augments other JIT/Lean initiatives and trainings that educate employees and suppliers in low-cost procurement. The program evaluates and rewards the best low-cost suppliers with an “A” rating, which translates into a preferred supplier status. We expect to see JIT/Lean employee initiatives and supplier training greatly impact the associated metric.	$2 million
P-16	R&D	Supplier Pipeline for innovation Program	# Leading Technology Products from Suppliers Used (MP-11)	This R&D initiative recognizes that some of tomorrow’s innovations will be predicated on improvements in raw materials and supplies, and aims to identify and capture these technologies as they emerge.	$2 million
P-17	Manufacturing	Supplier Quality Engineer Onsite	# Suppliers with a Quality Engineer Onsite (MP-18)	Working with suppliers directly by having a supplier quality engineer onsite at the company’s manufacturing facilities will help to maintain high quality production and a smooth flow of materials. The quality engineer is paid by the supplier, but Delta/Signal provides work space, required equipment, and a manufacturing and production liaison to ensure that the supplier’s engineer is fully utilized.	$1 million
P-18	R&D	Target Costing Program	% of Products with a "Target Cost" Plan (MP-3)	This program focuses the company on the product cost levels necessary for products in development to achieve their market and financial targets. The program puts the emphasis on designing for both product attributes and a target cost level from the beginning of the development program.	$1 million
P-19	R&D	Technology Licensing	# New Technology	This R&D initiative seeks out innovative technologies and negotiates licenses for these	$3 million

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
		Initiatives	Innovations Licensed (MP-12)	technologies.	
P-20	Manufacturing	Warranty Data Analysis Program	% Parts With Top Rating for Durability (MP-7)	This program drives the analysis of product warranty data to identify opportunities for quality improvement. The program focuses on quality issues that drive warranty costs.	$3 million
Learning & Growth Initiatives					
L-1	Human Resources	Balanced Scorecard Communication Program	% of Employees Scoring >90% on BSC Quiz (ML-1)	This is an HR program designed to communicate the BSC concepts, processes, and align employees with BSC goals. The program uses online and printed content as well as videos and small group meetings to educate employees about the BSC and help them develop BSCs for their unit and for personal goal setting.	$1 million
L-2	Human Resources	Companywide JIT/Lean Training Initiative	% of Employees Trained In JIT & Lean (ML-12)	By providing training to all employees of the company, the Kaizen office hopes to increase companywide capability in JIT/Lean.	$3 million
L-3	Human Resources	Company Wide Six-Sigma Training	% of Employees Certified in Six-Sigma Processes (ML-13)	The HR department works with operations departments to provide small group and online Six-Sigma training to all personnel on a rotating basis. We expect that workforce communication programs that promote quality awareness will also motivate employees to participate in this training initiative.	$3 million
L-4	Human Resources	Customer Integration Communication Program	% Employees Scoring > 90% on Cust. Integration quiz (ML-17)	This HR initiative is designed to use online, print, and small group sessions to increase employees understanding of customer partnerships and communicate that proficiency in customer integration is an important strategic goal of the company.	$1 million
L-5	Human Resources	Employee Recruiting Initiatives	% Job Candidates Rate Co. "Desirable" Employer (ML-6)	This HR program seeks to recruit and hire employees who will have a good fit both in skill set and culturally with the company, thus increasing Delta/Signal's reputation as a desirable employer. We expect initiatives designed to increase employee satisfaction and the company's reputation as a good corporate citizen would also greatly impact this metric	$1 million
L-6	Manufacturing	Initial Quality Inspection	Manufacturing Defect Rate %	This program aims to proactively inspect and measure supplied product for quality.	$2 million

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
		Program	(ML-4)		
L-7	IT & Systems	IT Training: Collaborative R&D Systems	% R&D Department Using Latest Sharing Systems (ML-8)	This program seeks to provide ongoing training to R&D employees on the use of systems that facilitate data and communication exchange between the company and customer R&D departments.	$3 million
L-8	IT & Systems	IT Upgrade: Activity Based Costing System	% Indirect Costs Allocated Using ABC (ML-11)	The IT and facilities management department aim to upgrade the company's outdated costing system and replace it with a system that will better track costs of value-added and non-value-added activities that the company engages in to produce products and services for the customer, thus improving our understanding of true product costs. The IT department anticipates it will need to make several incremental upgrades for the system to be fully operational. The budget listed is the amount expected to be spent on each incremental upgrade which will involve leasing equipment and licensing software for a period of time. Continuing investments will be needed to maintain the leases and licenses and to keep the system fully up to date.	$3 million
L-9	IT & Systems	IT Upgrade: Customer Data Exchange Portal	# Customer Actions Via Data Exchange Portal (ML-5)	The goal of this IT program is to increase data exchange capabilities with partner companies, including customers, by upgrading the company's communication infrastructure. The IT department anticipates it will need to make several incremental upgrades for the system to be fully operational. The budget listed is the amount expected to be spent on each incremental upgrade which will involve leasing equipment and licensing software for a period of time. Continuing investments will be needed to maintain the leases and licenses and to keep the system fully up to date.	$3 million
L-10	Human Resources	JIT Process Engineers Hiring Initiative	# of JIT/Lean Process Engineers (ML-14)	By increasing the number of engineers with a proficiency in JIT processes, the company hopes to boost its JIT/Lean capabilities.	$3 million
L-11	Manufacturing	Kaizen Team Initiative: Defect Reduction	Manufacturing Defect Rate % (ML-4)	The continuous improvement project is designed to eliminate manufacturing defects and is supported and implemented by the Kaizen office. We expect employee and supplier quality improvement training and communication programs to contribute to lowering defect rates.	$2 million
L-12	Manufacturing	Low Cost Sourcing Training	% of Buyers Certified in Low Cost Sourcing (ML-9)	A joint endeavor of the HR and procurement departments, this series of group training sessions acquaints buyers with best practices in low-cost sourcing, including information on prices, promotions, and volume tiers from materials providers around the globe. We hope that the program will eventually lower material costs.	$1 million
L-13	R&D	Monitoring Technological	Technology Product Trends	This joint R&D and marketing department initiative monitors trade and other publications, and	$1 million

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
		Product Trends	Identified (ML-3)	conducts customer, supplier, and end-user surveys to anticipate luxury OEM product needs.	
L-14	Human Resources	Procurement Professional Recruiting	% of Buyers Certified in Low Cost Sourcing (ML-9)	This program seeks to attract highly trained and experienced procurement professionals by building the company's reputation as an excellent place for a procurement career and by working closely with the procurement professional recruiter community.	$1 million
L-15	Human Resources	Quality Awareness Internal Communication Program	% of Employees scoring > 90% Qual. Aware Quiz (ML-18)	This HR initiative is designed to use online, print, and small group sessions to educate employees in quality awareness concepts and communicate that proficiency in quality concepts is an important strategic goal of the company.	$1 million
L-16	Manufacturing	Quality Sourcing Training	% of Suppliers with High Quality 'A' Rating (ML-10)	This joint procurement and human resources supplier training program works in conjunction with onsite quality engineers employed by suppliers to increase the quality of the company's pool of suppliers. We hope that this training program will also help to greatly reduce the supplied component defect rate.	$1 million
L-17	R&D	R&D Engineer Training	% R&D Engineers Trained on Latest Technology (ML-16)	The goal of this joint human resources and research & development initiative is to train R&D engineers in state-of-the-art technologies.	$3 million
L-18	R&D	R&D Equipment Upgrades	% of R&D Tools Considered State-Of-Art (ML-15)	This R&D program seeks to upgrade R&D department equipment. The budget listed is the amount expected to be spent on leases of equipment. Continuing investments will be needed to maintain the leases and to keep the equipment up to date.	$3 million
L-19	R&D	Research Tech. Planning Tools Upgrade	% Products Using Decision Analysis & Strategy Maps (ML-2)	This program aims to embed BSC, strategy map, and decision analysis tools within the R&D planning process so as to guide the development process and better align the R&D department projects with strategic goals. The budget listed is the amount expected to be spent on leasing equipment and licensing software for a period of time. Continuing investments will be needed to maintain the leases and licenses and to keep the planning tools fully up to date.	$2 million
L-20	Manufacturing	Supplier Quality Data Feedback Program	% of Suppliers with High Quality 'A' Rating (ML-10)	The program's goal is to accurately measure the quality of supplied product and provide useful feedback to suppliers to help them improve their quality in the future.	$1 million

Initiative ID#	Primary Dept	Initiative Name	Primary Metric	Description	Budget
L-21	R&D	Technology of Future Forum Sponsorship	Technology Product Trends Identified (ML-3)	Sponsorship of a forum on developing technologies and their potential impact on the industry. Representatives of customers, suppliers, trade groups, and universities will be invited to participate as speakers, panelists, and workshop attendees.	$1 million
L-22	Manufacturing	Total Quality Management (TQM) Training	% of Engineers Certified in TQM (ML-7)	This HR initiative seeks to increase the overall workforce proficiency in TQM concepts. We expect that workforce communication programs that promote quality awareness will also motivate employees to participate in this training initiative.	$2 million

Source: Casewriters.

Endnotes

[1] Ward's Automotive Group "Ward's World Motor Vehicle Data," (2010): p. 4.

[2] J.D. Power, "2010 Initial Quality Study Results," http://www.jdpower.com/autos/articles/2010-Initial-Quality-Study-Results/, accessed May 2011.

[3] Oliver Wyman "Car Innovation 2015," (2007): p. 4.

[4] Wyman, p. 20.