John (CEO) and Jean Abernathy (CFO), a husband and wife team, owned and operated J&J Electrical Contractors, Inc. (J&J). J&J performed commercial, industrial, residential, and public electrical-contracting work. Electrical work included wiring and installing anything to do with power, lighting, or other electrical equipment, and electrical contractors had to be licensed by the state of California. Often, electrical contractors were called to a job by a general contractor who had overall responsibility for constructing a building or remodeling it. But they could also bid on projects independently, especially in the public sector.

By May 2006, John and Jean had successfully grown J&J from a company of three electricians to one of fifty-four employees. They took the company to 2005 revenues of $5.22 million, a 75 percent growth over revenues of $2.98 million in 2001. J&J prided itself on its reputation for good customer service as reflected by John:

Our most important accomplishment has been customer service. We have built our reputation on integrity, responsibility and reliability. Even though we are not always the cheapest, when customers hire J&J Electrical for a project they know what they are going to get; there are not a lot of surprises. When we do have a bad project, we never have to go to court. Instead of letting it go to our bonding company or walking away from the project and going into litigation, we just fix the problem, take the loss, and go on. You don't want to do that all the time, but sometimes you don't have a choice. So, we've built relationships that way. We have the same clients that we've dealt with since 1987, and we have continued to build clientele. So, our plan has been to focus on service and integrity.

Despite their success, however, the Abernathys were at a crossroad. Although J&J had experienced strong revenue growth, its net income after taxes (NIAT) had deteriorated over the past three years. According to John,

Ours sales have gone up, but profits have gone down because of the type of work we are doing. There are so many competitors coming into the electrical contracting market now as some of the other markets dry up. These firms think they can make an easy transition into this market, but they don't know the market and they put in low bids. When we submit bids, due to the increase in competition, our heart tells us to bid low, but our head tells us to bid the cost estimate. From experience we know what it takes to get the job done so we can only go down so low on our bids. We bid small projects that are several thousand dollars to projects that are over $2 million. We are doing all kinds of things including the smaller design and build projects. We have looked at where we have been the last five years and although we have been fortunate enough to increase sales a little
bit, our profits have continued to slide. How to turn the ship around is a major challenge that we are facing.

While most electrical-contracting firms worked in many different areas, J&J got to where it was by focusing in one area, modular classrooms for school districts, and found it difficult to change. The Abernathys were proud of how far they had taken the business; however, they knew that the company faced some critical issues and problems that had to be addressed to ensure its continued growth and success.

**The Electrical-Contracting Industry: What It Is**

The electrical-contracting industry was a segment of the construction industry. It primarily comprised establishments engaged in performing electrical work onsite, doing service maintenance, or selling and installing electrical equipment. Companies in the industry installed electric lights, power, electric wiring for construction projects, domestic exhaust fans, closed-circuit-video-surveillance systems, and communication wiring and cabling. In addition, they repaired or maintained electrical wiring (except for electrical transmission or distribution lines) and repaired and maintained communication and electrical equipment. Industry participants performed new work, additions, alterations, and maintenance and repairs. The primary workers in the industry were journeyman electricians. In 2005, about 50 percent of electricians were employed in construction, 10 percent were self-employed, and 40 percent were distributed in various industries performing electrical-contracting-related work. Over 74 percent of the companies in the industry had ten or fewer employees. Many of the smaller local firms were nonunion and family owned and operated, as was J&J. Electrical contractors typically performed the job at the construction site; however, they performed certain specialty jobs in their own shops.

Firms in the industry bid for public- or private-sector projects. Public-sector projects were publicly financed and usually designed to improve the existing infrastructure. Private-sector projects were privately financed projects. Public-sector projects were governed by multiple requirements and legislation, such as federal and state laws governing wages. Contractors in the state of California were required to pay the prevailing wage rates on construction work greater than $25,000 and on alteration, demolition, repair, or maintenance work greater than $15,000. Private-sector projects were governed by fewer laws and requirements. For example, private projects were not necessarily subject to competitive bidding and could be negotiated by the owner directly with a preferred contractor based on the contractor's reputation and performance on previous projects. Private-sector projects were not governed by prevailing wage laws and firms could pay whatever the market would bear as long as it was above federal and state minimum-wage requirements. The minimum wage in California was $6.75 per hour in 2005.

**The Electrical-Contracting Industry: Conditions Affecting Competition**

Commercial and industrial new building starts saw a major decline as a result of the recession of the early 2000s, while residential construction saw strong growth. The industry, which had been flat, began to see widespread growth in the mid-2000s. Electricians, in order to shield themselves against downturns in the construction industry, began...
branching into systems work, which included low-voltage applications such as voice-data-communication lines and alarm systems. By 2002, standard electrical work accounted for 60 percent of industry sales, while systems work accounted for 33.5 percent. The top two systems area applications for electricians in the 2000s were home networking and security systems installations.

The number of renovations (remodeling and add-ons) in both the public- and private-sectors continued to increase. Because of increases in housing costs, many homeowners opted to renovate their homes instead of buying new ones. Beyond residential renovation work, electrical contractors saw opportunities in the industrial- and commercial-conversion markets being driven primarily by code upgrades and technological advances. Existing power-distribution systems could not meet the demand for the greater number and variety of devices being used in buildings. Even newer buildings lacked the infrastructure necessary to take advantage of the advances in communications technology. State and local governments passed legislation to address the deficiencies in older buildings. For example, in California, several bond measures funded the renovation of public schools and universities to update them with the latest technology. Also, the state had mandated seismic compliance for older hospitals by 2010. Finally, many cities were turning low-occupancy areas such as downtowns into residential areas by converting offices and industrial buildings into residential lofts and condominiums. These and other trends were providing firms in the industry with the opportunity to design and deliver renovation solutions to clients.

In addition to opportunities in renovation, the Energy Policy Act of 2005 provided new opportunities for electrical-contracting firms. The act provided tax incentives to individuals who installed energy-conservation equipment in their homes, including energy-efficient appliances and heating and cooling equipment, and who utilized alternative-energy sources such as solar or wind power. Firms in the industry could provide services to make homes energy-efficient and to install alternative-energy solutions such as solar photovoltaic electrical installations. In addition to individual incentives, the act provided tax credits to businesses that installed qualified fuel cells, stationary micro-turbine power plants, and solar equipment as well as those who built energy-efficient residential and commercial buildings.

Energy costs and metal price increases plagued the construction industry as these were critical in performing construction work. Crude oil closed above $70.00 per barrel for the first time in history in early second quarter 2006, and year-to-date prices had increased by 15 percent. Copper, an essential component in electrical work, traded at $5,490 per metric ton with a year-to-date increase of 25 percent. Economic growth continued to drive the demand for energy and metals and the associated need for infrastructure in Asia, particularly in China and India. The lack of investment in exploration and production of precious metals and the shortage of easy-to-tap sources led to supply shortages. Increasing energy and material costs meant increasing production costs for electrical-contracting firms. Uncertainty associated with price increases meant greater difficulty with the estimating function. Also, substantial increases in costs translated into erosion of margins. The major cost components in electrical-contracting work were labor and materials which, combined, accounted for almost 70 percent of the total value of construction work.
THE ELECTRICAL-CONTRACTING INDUSTRY:
HOW CONTRACTS ARE WON OR LOST

Industry participants obtained work through intense competitive bidding, although private-sector projects could be negotiated contracts. Contracting agencies advertised the availability of projects and invited contractors to submit bids via a Notice to Contractors. Contractors obtained information regarding the availability of planned projects from multiple sources including local construction plan centers, local business journals, national/regional construction magazines, and contracting-agency information packages. In addition, contractors could subscribe to multiple online sources to receive information regarding upcoming projects. J&J used a weekly construction magazine, Southern California Construction Bulletin, published by Reed Bulletin Construction Data (www.reedbulletin.com). Public-contracting agencies often required that contractors who planned to bid on their projects be prequalified; that is, approved to construct a particular type of work up to a specified amount. For example, an agency might pre-qualify a contractor to perform concrete construction worth up to $350,000.

Once a contractor had decided to bid on a project, he purchased plans and specifications for the project from the contracting agency who often sold them for the cost of duplicating. The contractor determined the cost of the project by breaking the job down into its component parts to begin the process of estimating. First, he broke each bid item within the project proposal down into the operations that would be necessary to construct it. Second, he undertook quantity take-offs by determining the dimensions of each item from the plan and calculating the quantity that would be required for the project. Finally, he determined the costs of labor, materials, equipment, and small tools and miscellaneous items associated with each operation of each bid item either from past experience if he had performed a similar job or conceptually if he had no prior project-related experience. Powerful construction-estimating-software programs such as MasterBuilder had simplified the job-estimating function. Before finalizing the estimating process, the contractor typically participated in one or more job walks or site walks to get familiar with the project and identify any contingencies that might influence the cost of project execution. He could modify the estimated cost of the project based on additional or new information. Finally, the contractor determined the desired profit or risk margin to add to the estimate.

The contractor then prepared a bid which specified how much money it would cost him to complete the project and submitted it in a sealed envelope by the bid deadline. As part of the bid submission process the contractor also submitted a Bid Bond—a bidder’s guarantee that he could perform the work at the bid price if his bid was selected. The contracting agency opened all the bids submitted for a particular project on the Bid Opening Day and publicly read them. The agency awarded the contract to the contractor who submitted the lowest bid price for the project. The contractor submitted performance and payment bonds and insurance information once awarded the contract.

The lowest price was only one of the variables that could win or lose a bid. A bid could be rendered nonresponsive if it did not conform to all the requirements of the contracting agency. Bids had to be submitted on forms provided by the contracting agency, submitted on a certain date, by a certain time in a certain place, with clear and exact photocopies, and included the Bid Bond. A bid could be rejected or considered nonresponsive if it failed to meet any of these requirements. According to John:
A lot of things go into how we get the bid besides just having the right price. Sometimes you turn in your envelope and if it does not have the category number of your bid they don’t even open it. We bid six or seven jobs a week in a really busy week; because of circumstances, we may land three jobs in a row. Sometimes you’re the second bidder and you get the job because the lowest bidder got disqualified. Either they did not fill out the bid form correctly or did not have the signature or did not have the bond. So there are a lot of technicalities.

Construction contracts existed in many forms. Negotiated contracts, most commonly used in private-sector projects, involved the contracting agency negotiating directly with one or more contractors chosen on the basis of their reputations and overall quality of similar projects completed. Negotiated contracts had lower risks because the contractor was able to negotiate the contract costs. However, the contractor had to adhere to the contract amount specified in the contract once construction began. The typical profit margin for negotiated contracts was 5 to 15 percent. Fixed price contracts, most commonly used in public-sector projects, involved contractors preparing cost estimates to complete a proposed project based on the requirements of the contracting agency. The qualified bidder with the lowest price was awarded the contract. The contractor and the owner were not allowed to negotiate once the bid was accepted. Fixed price contracts had the greatest reward and the highest risk. If the estimates were accurate and the project managed efficiently, the profit margins could range from 5 to 25 percent; however, if the estimates were inaccurate and/or the project was managed inefficiently, the contractor absorbed the additional costs with no reimbursement from the owner. As a result, estimating the bid price accurately was critical. Once the bid was accepted, a contractor was bound by the bid price and had to complete the project as specified in its bid. Should anything change in the environment such as increased labor and/or materials costs, the contractor had to absorb the increased costs. Alternately, if the price of materials and labor went down, the contractor would benefit by keeping the difference. Sometimes a contractor was able to submit a change order to get the contracting agency to pay for the additional costs, but as indicated by Jean, pursuing legitimate change orders could be difficult:

Even with legitimate change orders we are having a hard time increasing the price of the project. Change orders have even gotten much more difficult, they are getting scrutinized so much more. We pursue legitimate change orders and everything is fine, but they limit you on how much they will allow you on your overhead and profit. It’s all spelled out in the beginning: you know going in what they are going to give you. But the guys who are kind of shrewd, who understand how far they can go, they can make more money because they push the envelope by starting out with a low bid and then trying to recoup their costs by submitting change orders. The way I see it, life is too short to do that. If it is a legitimate change order we pursue it because we want everything we can get for it; if it is not, we are not going to fight it.

Contractors had difficulty pursuing change orders in both public- and private-sector projects. However, it was more of an issue in private-sector projects as the owners were highly leveraged financially and fought the contractor vigorously to have the contract stay within or below the original budget. Legitimate change orders, although scrutinized, were often honored by public contracting agencies.
Competition in the electrical-contracting industry was intense in 2005, especially at the local level. Some of the larger national competitors located in Southern California included Bergelectric Corporation, Helix Electric, Inc., and Morrow-Meadows Corporation (MMC), all of which were privately held (see Exhibit 1). Bergelectric was founded in 1946 and was headquartered in Los Angeles. It focused on providing design-build and design-assist services for public-sector facilities such as schools, prisons, and office buildings.\(^{21}\) The company was ranked eleventh in *Engineering News-Record*’s 2005 ranking of top fifty national electrical-contracting firms. It reported 2004 revenues of $300 million and had over 2,000 employees.\(^{22}\) In addition to its facilities in Los Angeles, the company had multiple locations in San Diego, Las Vegas, Portland, Sacramento, Orlando, Denver, Phoenix, and Raleigh.\(^{23}\) Helix was ranked fourteenth of the top fifty national electrical-contracting firms in *Engineering News-Record*’s 2005 rankings.\(^{24}\) The privately held company was founded in 1985 and reported $186 million in sales in 2005. It specialized in commercial, hotel, design/build, retail, and high-density multi-unit residential projects.\(^{25}\) Helix was headquartered in San Diego and operated primarily in California and Nevada.\(^{26}\) Morrow-Meadows, headquartered in the City of Industry, CA (near Los Angeles), reported 2005 revenues of $177.5 million and had 1,200 employees. The company specialized in data-communication and power-distribution systems for commercial and industrial facilities.\(^{27}\) It had California locations in San Diego, San Francisco, and City of Industry, as well as locations in Oregon and Washington. The firm operated in Oregon and Washington as Cherry City Electric.\(^{28}\)

J&J did not compete directly with the largest firms in the industry although most of them operated in multiple locations across the U.S. and were well positioned to compete for jobs locally as well as nationally. As was typical of more than 70 percent of the firms in the industry, J&J competed only locally, primarily in the Inland Empire area of the Southern California region (an area about 40 miles east of Los Angeles). Some of the local competitors included Buck Electric, McBride Electric, Power Plus!, Daniel’s Electrical Construction Company, and Champion Electric Inc., all of which were privately held (see Exhibit 1).

Buck Electric was founded in 1975 in Poway, CA. It was a full-service electrical-contracting firm specializing in solar photovoltaic electrical installations, underground cable installation, location, fault-detection and repair, conventional power systems including commercial and residential services, and custom lighting.\(^{29}\) McBride Electric provided electrical, lighting, and data-cabling solutions to businesses across the nation. The company was founded in 1950 in Wichita, KS, and was headquartered in San Diego, California. McBride had offices in Texas, Georgia, Kansas, Colorado and California. It specialized in data-cabling services including the installation of Wi-Fi networks through its DataConnect unit.\(^{30}\) Power Plus! specialized in providing expert utility solutions and turnkey services including temporary power generators, permanent electric, irrigation pedestals, street and landscape lighting, high-voltage overhead distribution, utility installations, utility consulting and design, co-generation, and grid-independent applications.\(^{31}\) Power Plus! focused on serving the utility, construction, and “events” industries. It operated multiple Southern California locations in addition to operations in Las Vegas, NV, Houston, TX, and Phoenix, AZ. Power Plus! had over 30 years of industry experience in the Southern California market.\(^{32}\)
### Exhibit 1  Selected Southern California Competitors in the Electrical-Contracting Industry in 2005

<table>
<thead>
<tr>
<th>Name</th>
<th>Headquarters</th>
<th>Specialty</th>
<th>Revenues (Millions)</th>
<th>Locations</th>
<th>Number of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bergelectrica Corporation</td>
<td>Los Angeles, CA</td>
<td>Design-build and design-assist services for public-sector facilities such as schools, prisons, and office buildings</td>
<td>$300(^b) (2004)</td>
<td>California, Oregon, Nevada, Arizona, Florida, Colorado, North Carolina</td>
<td>2,000</td>
</tr>
<tr>
<td>Helix Electricc</td>
<td>San Diego, CA</td>
<td>Commercial, hotel, design/build, retail, and high-density multi-unit residential projects</td>
<td>$186(^d)</td>
<td>California, Nevada, Arizona</td>
<td>1,500</td>
</tr>
<tr>
<td>Morrow Meadows Corporation</td>
<td>City of Industry, CA</td>
<td>Data-communication and power-distribution systems for commercial and industrial facilities</td>
<td>$177.5(^f)</td>
<td>California, Oregon, Washington</td>
<td>1,200</td>
</tr>
<tr>
<td>McBride Electricg</td>
<td>San Diego, CA</td>
<td>Data-cabling services including the installation of Wi-Fi networks</td>
<td>n/a</td>
<td>California, Texas, Georgia, Kansas, Colorado</td>
<td>340</td>
</tr>
<tr>
<td>Champion Electricb</td>
<td>Riverside, CA</td>
<td>All aspects of electrical construction</td>
<td>n/a</td>
<td>California</td>
<td>80</td>
</tr>
<tr>
<td>J&amp;J Electric, Inc.</td>
<td>Pomona, CA</td>
<td>Heavy industrial installations, commercial and office buildings, educational institutions, public works, and many specialized systems including maintenance services</td>
<td>$5.22</td>
<td>California</td>
<td>54</td>
</tr>
<tr>
<td>Buck Electrici</td>
<td>Poway, CA</td>
<td>Solar photovoltaic electrical installations, underground-cable installation, location, fault-detection and repair, conventional power systems including commercial and residential services, and custom lighting</td>
<td>n/a</td>
<td>California</td>
<td>n/a</td>
</tr>
<tr>
<td>PowerPlus!j</td>
<td>Anaheim, CA</td>
<td>Temporary power generators, permanent electric, irrigation pedestals, street and landscape lighting, high-voltage overhead distribution, utility installations, utility consulting and design, co-generation, and grid-independent applications</td>
<td>n/a</td>
<td>California, Nevada, Arizona, Texas</td>
<td>n/a</td>
</tr>
<tr>
<td>Daniel’s Electrick</td>
<td>Fontana, CA</td>
<td>Electrical-contracting services in both the public and private sectors</td>
<td>n/a</td>
<td>California</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Daniel Electrical Construction Company, a privately held, unionized company located in Fontana, CA, was founded in 1973 by Dan Bozick, its current CEO. The company provided a broad range of electrical-contracting services in both the public and private sectors throughout California. In 1991, Glenn and Cynthia Rowden founded Champion Electric, Inc. in Riverside, CA, where the firm is still located. Glenn Rowden was the owner/president of Champion. The firm specialized in all aspects of electrical construction, primarily in the Inland Empire area. The firm had 80 employees. On March 16, 2006, Champion Electric and Suburban Electric of San Bernardino, CA, merged under the Champion umbrella.

Along with competitors who provided only electrical-contracting services, J&J also competed with firms that performed electrical-contracting services in addition to work such as carpentry or masonry. John, in describing the competition, had this to say:

Anybody who is bidding under the category of “electrical” is my competition. There are probably 10 to 15 that are right in our backyard here. There is a good core group that we deal with all the time . . . some are union contractors and others are non-union. We compete with them, it’s friendly you know, and we feel that we have gained their respect. When they see J&J on the bid list they know it is going to be a competitive bid, they know we are not going to be the guys that are way down there, unless we made a mistake! We are going to be there, that is why our hit ratio is 1 out of 10 to 15 because we are bidding more with statistics instead of “I’ve got to get the job.”

J&J ELECTRICAL CONTRACTORS, INC.:
A SMALL FISH IN A BIG POND

In 1987, after several years of experience working as an estimator and sales manager for other electrical contractors, John decided to found his own company in Glendora (a city in the Inland Empire). He entered into partnership with Miriam Murray, the wife of an acquaintance, who contributed $50,000 to the new business. John bought out Miriam’s interest in the business in 1991 and also purchased and relocated the firm to a facility in the nearby city of Ontario (about 40 miles east of Los Angeles). In 2004, John and Jean purchased a larger industrial unit in Pomona (about 10 miles west of Ontario) to accommodate the growing company and to take advantage of an attractive investment opportunity. They leased the Ontario facility to others and remodeled and expanded the new facility to accommodate their needs. In May 2006, J&J had 42 electricians, 3 estimators/project managers (including John), a field superintendent, a purchasing agent, a warehouse manager, a driver and four corporate staff including Jean and Wyatt Johnson, the new Project Coordinator and Accounting Assistant. (See Exhibit 2 for the organizational chart.)

According to the 2000 census, the Inland Empire experienced the highest rate of population growth both in Southern California and statewide. The four-county area where J&J had most of its contracts experienced an average population growth rate of 20 percent, with Riverside County experiencing the highest rate at 32 percent, San Bernardino County 20 percent, Orange County 18.1 percent, and Los Angeles County 7.4 percent. In addition, the area accounted for more than 35 percent of the new jobs in Southern California, 48 percent of all housing starts, and 75 percent of new industrial construction in the state of California. With homes getting more expensive in Orange and Los Angeles counties, more and more people were moving into San
Bernardino and Riverside Counties. J&J bid on projects of up to $2 million but when John Abernathy, Jr., joined the firm as an estimator/project manager upon graduating from college in 2004, this additional estimator/project manager enabled J&J to bid on larger projects.

THE CURRENT SITUATION: DECLINING PROFITABILITY

While J&J’s revenues had seen strong growth over the past five years, its net income after taxes (NIAT) was flat or declining (see Exhibit 3 and Exhibit 4 for the financial statements). The Abernathys identified two primary factors at the heart of this trend. The first was substantial increases in costs, especially the cost of materials and supplies; the second was J&J’s mix of public and private work.

Cost increases were critical as materials accounted for 33 percent of the value of construction work. According to John:

In the last year and a half, construction costs have gone up. In any article you read they are 30 percent higher, and that was in concrete. All of our steel is going to China because it has an industrial revolution going on over there and is getting ready for the 2008 Olympics. So, when I buy my EMT pipe, my steel fittings, and my metal boxes, they have all gone up. Before, that stuff would be the same price for a year, no problem on
our computer. Now they quote you prices for copper wire or PVC copper pipe that are
good for the week or even the day. For a project we are doing up in the high desert, we
bought over $50,000 worth of copper wire that is sitting in a warehouse at the whole-
saler. I don’t have to take it until next month; we paid it in March or April and they gave
us 60 days. We were able to bill it to our client. He understood the circumstances and
paid as long as we gave him the invoice. So, if you don’t forecast, you’re in trouble.

The unpredictability of the prices of essential commodities was particularly trou-
bling as it made it more difficult to accurately estimate project costs. Firms in the indus-
try obtained work primarily through intense competitive bidding. Thus, the estimating
function was especially important because jobs bid too low resulted in losses and those
bid too high resulted in failed bids.

The Abernathys hired Wyatt Johnson in January 2005 as Project Coordinator and
Accounting Assistant. J&J installed a new computer system in June 2005 and began
using MasterBuilder, a high-powered construction/accounting-software program. Jean
worked closely with Wyatt to fully customize the system to meet J&J’s needs. The sys-
tem generated reports of all current jobs, projected monthly billings, current receivables,
and other important data that form the basis for decision making. As a result of the new
system and the estimation software, bid preparation became more precise. The firm was
able to track dollars bid, when bid, and whether or not it won the bid. J&J was also able
to better track the cost of jobs, estimate more accurately the true overhead, and prepare
bids that were competitive and which provided margins that covered overhead and prof-
its. According to John:

<table>
<thead>
<tr>
<th>Exhibit 3</th>
<th>J&amp;J Electrical Contractors, Inc. Statements of Income and Accumulated Adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>$5,222,758</td>
</tr>
<tr>
<td>Cost of sales</td>
<td>4,118,768</td>
</tr>
<tr>
<td>Gross profit</td>
<td>1,103,990</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>932,656</td>
</tr>
<tr>
<td>Income from Operations</td>
<td>171,334</td>
</tr>
<tr>
<td>Interest income</td>
<td>182</td>
</tr>
<tr>
<td>Pension Contribution</td>
<td>50,000</td>
</tr>
<tr>
<td>Contract Settlement</td>
<td>0</td>
</tr>
<tr>
<td>Loss on Sale of Assets</td>
<td>0</td>
</tr>
<tr>
<td>Other Income (Expenses)</td>
<td>16,401</td>
</tr>
<tr>
<td>Net Income before income taxes (NIBT)</td>
<td>137,917</td>
</tr>
<tr>
<td>Net income after taxes (NIAT)</td>
<td>$136,930</td>
</tr>
</tbody>
</table>

Source: J&J Electrical Contractors, Inc.
Job-costing and accounting are like taking a snapshot of the company and being within a week of where you are—a week on labor and maybe three weeks on the material, because we don’t want to enter the material every week. But before [the new system] it took a long time to find out where we were. Now we get cost reports. I can see how many hours I have in this job, and I can go back and try to hone in on it to see if I have some

Exhibit 4  J&J Electrical Contractors, Inc. Consolidated Balance Sheet

As of December 31, (amounts in dollars)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>$ 95,891</td>
<td>$ 212,170</td>
<td>$(24,225)</td>
<td>$ 428,701</td>
<td>$(35,791)</td>
</tr>
<tr>
<td>Accounts receivable (less allowance for doubtful accounts)</td>
<td>954,712</td>
<td>738,842</td>
<td>639,519</td>
<td>489,516</td>
<td>588,530</td>
</tr>
<tr>
<td>Costs and estimated earnings in excess of billings on uncompleted contracts</td>
<td>59,227</td>
<td>184,473</td>
<td>176,606</td>
<td>59,142</td>
<td>0</td>
</tr>
<tr>
<td>Inventories</td>
<td>7,360</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Prepaid expenses and other</td>
<td>1,149</td>
<td>559</td>
<td>16,700</td>
<td>3,304</td>
<td>7,880</td>
</tr>
<tr>
<td>Bonds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td><strong>1,118,339</strong></td>
<td><strong>1,141,044</strong></td>
<td><strong>813,600</strong></td>
<td><strong>985,663</strong></td>
<td><strong>565,719</strong></td>
</tr>
<tr>
<td><strong>Fixed assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autos and Trucks</td>
<td>239,572</td>
<td>214,147</td>
<td>182,423</td>
<td>156,032</td>
<td>148,077</td>
</tr>
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<td>Shop Equipment</td>
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<td>Office Equipment</td>
<td>47,394</td>
<td>43,378</td>
<td>42,532</td>
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<td>Leasehold Improvements</td>
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<tr>
<td>Accumulated Depreciation</td>
<td>(207,277)</td>
<td>(250,090)</td>
<td>(217,388)</td>
<td>(180,146)</td>
<td>(154,676)</td>
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<td>Deferred Tax Assets</td>
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<td>0</td>
<td>224</td>
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<td><strong>Total fixed assets</strong></td>
<td><strong>118,087</strong></td>
<td><strong>45,833</strong></td>
<td><strong>34,832</strong></td>
<td><strong>42,948</strong></td>
<td><strong>60,463</strong></td>
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<tr>
<td><strong>Total Assets</strong></td>
<td><strong>1,236,426</strong></td>
<td><strong>1,186,877</strong></td>
<td><strong>848,432</strong></td>
<td><strong>1,028,611</strong></td>
<td><strong>626,182</strong></td>
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**LIABILITIES AND STOCKHOLDERS’ EQUITY**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
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<td>Accounts Payable</td>
<td>$ 265,024</td>
<td>$ 131,297</td>
<td>$ 92,291</td>
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<td>Accrued Payroll</td>
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<td>14,972</td>
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<td>Short Term Debt</td>
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<td>Billings in Excess of Costs and Estimated Earnings</td>
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<td>192,274</td>
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<td>Other Liabilities</td>
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<td><strong>283,741</strong></td>
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<tr>
<td><strong>Stockholders’ Equity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Stock (15,000 authorized, 2,000 issued and 1,000 outstanding)</td>
<td>20,000</td>
<td>20,000</td>
<td>20,000</td>
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<tr>
<td>Treasury Stock</td>
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<td>(9,500)</td>
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<td>Accumulated Adjustments (Retained Earnings)</td>
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<td><strong>744,870</strong></td>
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<td><strong>Total Liabilities and Stockholders’ Equity</strong></td>
<td><strong>1,236,426</strong></td>
<td><strong>1,186,877</strong></td>
<td><strong>848,432</strong></td>
<td><strong>1,028,611</strong></td>
<td><strong>626,182</strong></td>
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</table>

Source: J&J Electrical Contractors, Inc.
problems. So we start charting. We look to see what we have on the books in volume and in contracts. This helps us bid. We don’t want to bid on work that will require us to take on more manpower between June and September [the summer rush] because between those months you’re in trouble—that’s where your profits go down. So, now we are looking strategically for projects that start in September through the fall and winter where we get slow. We are trying to get smarter.

According to John, some of the bids that J&J won in the last few years did not accurately reflect the true costs of the projects because the firm had difficulty producing accurate estimates. J&J typically added a percentage of the project cost for overhead and profit to each bid. However, because of increased competition in the industry segment, J&J found that using this method did not produce competitive bids. In order to obtain more competitive bids, the firm had to take narrower margins which left little room for error. Currently, J&J added 10 percent to each job for overhead and profit.

An additional challenge in the estimating function was that several of the bids had no provisions for contingencies; that is, a firm was unable to submit bids contingent on the conditions that were prevailing at the time the work was actually performed. Each project was governed by a standard construction-specification book that addressed the requirements for the project including what was to be constructed, how it was to be constructed, safety measures, materials to be used, applicable wage rates, insurance requirements, bond amounts, etc. Electrical-contracting firms were obligated by the generalities of the specification book in the bid-preparation process. This made it difficult to prepare bids based on the forecast prices for materials at the time the actual work was performed as opposed to when the bid was prepared. The firm pursued legitimate change orders; however, it was constrained by how much was allowed for overhead and profit on the change orders. John believed that there was a need to tighten up the bid preparation process in order to obtain more accurate cost estimates and boost overhead and profit.

The second factor contributing to the downward trend in profitability was J&J’s mix of public and private work. In the early days, they focused primarily on private-sector projects in the Inland Empire. In the late nineties it saw an emerging opportunity in the public sector. The state of California adopted sweeping reforms to improve academic performance by requiring school districts to reduce class sizes in the early grades from 33 to no more than 20 students per class. The resulting demand for classrooms prompted the Department of State Architect to endorse modular classrooms, which were portable buildings manufactured complete with heating and air conditioning, carpeting, and whiteboards. J&J decided to fill this newly created and rapidly growing demand for the installation of modular classrooms and were successful in competing for public-works projects in K–12, community colleges, and public and private universities in the Inland Empire. Over time, J&J’s mix of public and private projects shifted to focus increasingly on public projects. In 2006, the company’s ratio of public to private work was 9:1; that is, nine public projects to one private-sector project.

While both public- and private-sector projects were subject to competitive bidding, they differed in important respects. Competition for public work was primarily dependent on the bid price. John believed that on a scale of 1 to 10, J&J would score an 8 for price-competitiveness. J&J had developed important relationships in the business over the years; however, in public-sector work, relationships did not matter as much when it came to obtaining the job. According to John:
I've got customers, school-district people, contractors, who would give me the job if they could. However, if it is over $15,000, it has to go to a competitive-bid process. That means they have to advertise it and it's got to be competitive. My best clients would want me to do the job but they can't. All they can do is give me notice maybe before it comes out in the publication, "hey this job's coming down the pipe, keep it in mind," and then I am like everybody else. I go and I buy my plans, I bid it, and I stand there with my envelope and that is it.

Public work was much more restrictive due in part to regulations related to prevailing wages, and tended to have lower profit margins. As a result, public projects had become increasingly less profitable. According to Jean:

There is actually more profit in private-sector work. With the public work, you're paying your electricians prevailing wage as well, so they are getting a higher wage. It is so competitive that your profit margins are so much lower, and there is not a lot of room for error. So, when you get to the end of a project there are so many inspections, so many these and so many thats, and you see your profit just going down. You know, no matter how much you think you're on top of it, things can just change at the end. It is just harder.

Public work was becoming increasingly competitive. In the early days when J&J focused on commercial and industrial work, its hit rate (proportion of bids won relative to the number submitted) was 25 percent. The firm's current hit rate with public-sector work was 6–10 percent. Public projects also produced high receivables. Many school districts used construction-management companies to manage their projects. A common practice of these firms was to hold 10 percent of the total project value as retention until the conclusion of the project. For example, for a $1 million project, the retention could be a substantial $100,000. Upon project completion, contractors were required to complete considerable close-out documentation to get the withheld money paid, taking as long as a year. This resulted in very high levels of accounts receivable for public-sector work.

Despite the problems associated with public projects, there were many opportunities in the state of California for these projects. Most school-district projects in California were funded from bond measures. In 2006 the state of California had $100 billion in school-construction bonds. John felt that J&J still enjoyed substantial opportunities in the public sector, especially in community colleges. As he explained:

Community Colleges! It's their turn. They seem to have gotten these bond measures passed. We just did a major job at a local college, the whole athletic field, and now we are doing another job there. We just finished a job at a second local college and they are asking us to bid more. So, there is money there. Now I am going to go into the colleges and maybe back off of the elementary and high schools.

The revenue generated in public projects was, as Jean put it, “as good as gold.” Once a bid was submitted and accepted, the company knew it was guaranteed payment. Although it could take up to a year before the retentions were paid, they were still paid in full. The public-sector projects for which J&J competed were financed by voter-approved bond money which was available to satisfy the public agency’s contract obligations. As indicated earlier, accurately estimated and properly managed public-sector projects often had greater returns than their private-sector negotiated-contract counterparts.

Another advantage of public projects was a greater confidence in the competitive bidding process. According to John:
For the public projects, when you turn your bid in its sealed envelope you either get it or you don’t. However, sometimes when we bid the general contractors unless you’re the friend they can take your bid price and pass it on to somebody else. In the private sector, it is all about relationships. We are learning to how work the private sector, but it has come with some hard lessons.

In private-sector work, while price was important, there was greater opportunity to compete on the basis of reputation, relationships, and negotiation. J&J’s investments in developing and maintaining strong personal relationships with its customers gave it a competitive advantage in the local area for private projects. According to John:

Relationships and negotiation skills matter more with private projects than with public projects. If it is private money, someone is managing that money, be it the trustees or the general contractor working for that firm or the owner. They have budgets; the architect tells them how he thinks it should be. The difference is that competition is based not only on the price, but also on relationships and the ability to negotiate. For instance, we have done a lot of work at the local university. We’ve built 70 percent of that campus and they are happy with us. Now we go in and negotiate with them. We can say to them [that] you have a project coming up and we want to work with you on it. Of course we are going to give them a fair price. But let’s say I am 3 percent higher than the lowest bidder, they can say I am going to give the contract to you because if I give it to this guy who I don’t know, that 3 percent is going to turn into 20 percent on the backside. Also, for private projects the owners can shrink the bid list. They put invited bidders only. There are about five or six general contractors that build all this retail stuff around us and they have their subcontractors. So, on private projects it is all relationships I am telling you….

Private work was less restrictive because it lacked the many rules and regulations that governed public sector work. According to John:

The private work is still a construction project; you still have architects, engineers and you still do it the same way. It’s just that on the operations side you don’t have as much paperwork. All of the labor compliance and the payrolls are not as difficult. You don’t have certified payroll every week, notarized certified billings, etc.; so, there is a lot of overhead time that goes into public work. In the private sector, we are still billing, we still invoice, and we still have payroll. But our payroll is lower. Electricians make less money in private work.

However, private-sector projects had added risks not associated with public-sector projects. The ability of private-project owners to meet their contract obligations was subject to the financial conditions of the firms and the vagaries of the economy. As indicated earlier, private project owners were often highly leveraged financially and sometimes had difficulty meeting their contract obligations. So, payment was not always guaranteed as was the case with public projects.

Construction was highly cyclical. During an economic boom, these firms were able to meet their contract obligations; however, during economic downturns, especially downturns in the housing market, they often had difficulty recouping their investments and meeting contract obligations.

THE FUTURE OF J&J: INCREASING PROFITABILITY

John and Jean faced some important decisions related to the future direction of the company. They needed to find a way to improve operating margins in the near term and
grow the business in the long term. John favored greater growth and saw many opportunities that J&J could pursue, while Jean, on the other hand, favored more controlled growth with an emphasis on improving sales and margins, a more conservative approach.

John described his aspirations for J&J as follows:

I would like to start or procure a low-voltage entity of J&J Electrical that does the structured cabling, fiber optics, category 5 wiring. Right now, we hire somebody else to do these. We go in and do all of the pipe work, the underground volts and infrastructure, and then hire somebody, or somebody else comes in and they pull all of the fiber optics, etc. We don't have anyone trained to do that. I would like to find a small company or a mid-sized company that for some reason wants to sell, and buy it if we could, and operate that as a different entity of J&J. It is another whole marketplace that is changing. I don't think if you get into that market that you're going to be on the outside looking in.

With the cost of homes going up so much, I see major remodeling of existing homes and businesses as another way for us to grow. People are going to get home-equity loans and be rebuilding or adding on. They say, 'well, it is too expensive to move.' I have a client who is riding at the top of that and he is kind of pulling me along with it right now, and I think that we have to learn that. And we have to get technology into homes. It is so great that there are so many things in these smart homes. I just read an article yesterday that all the homes they are building now are all pre-wired for technology; they've got high technology, the high-span wire, and category 5 and 6 wiring. You can go in there and it's for high-speed Internet. All these homes that are built down here in Southern California, they all have structured cabling in there. Before, you [used to] go in and you do a home, you put the canned lights and all—it [cost] nothing, $2 or $3 per square foot. Now, that part goes up to $5 to $10 per square foot sometimes because of all the automated systems in there. So the profits are going up and all the guys who have been doing it all these years are making more money. Now, to try to get into [this market] will take us some time.

Another opportunity would be having another entity of J&J do small buildings and general building projects. We do a lot of modular-classroom buildings that are not elaborate. You do some grading, some plumbing, some asphalt work, some electrical, and we can get in and out and do it, but again that is a whole other entity of the company.

Jean, on the other hand, had a more conservative view:

I am opposed to [taking advantage of some growth opportunities] because I saw last year and the previous year that we had our struggles with profits. I want to see us working smarter and increasing our profits before branching out into something else. I want to take what we have here now and fix it and make it better before we diversify and go in another direction.

Although J&J had experienced strong revenue growth over the past four years, it had struggled with finding ways to increase profitability. After three straight years of declining net income after taxes (NIAT), John and Jean needed to reverse the course of J&J’s profitability. In addition, the couple needed to find avenues for continued growth. Could J&J become profitable doing what it is currently doing? Should it change the ratio of public to private projects? Should it abandon public-works projects entirely and focus on private projects, or should it go in the direction of pursuing more community-college and university bond projects? Should J&J even continue to operate as just an electrical contractor? Should it become a general contractor? Should it open a retail electrical-supply shop? Should it diversify into related areas of home-audio or security systems, low-voltage installations, or installation of alternative-energy-power sources, either by hiring
individuals with the appropriate skills or acquiring a small company specializing in one of those areas? Should it expand into other high-growth areas in California and neighboring states? With such an array of possibilities, which direction should J&J take? Which option would be the most helpful in getting back on the road to profitability?

NOTES

8. Ibid.

17. Ibid.
18. Ibid.
19. Ibid.
20. Ibid.
23. Ibid.
32. Ibid.
