

# American connector case essay

[Economics](#)



**ASSIGN  
BUSTER**

I make the initial observation that all of Mr. Li's suggestions must be viewed in light of the fact that we do not currently know what type of facility that DJC may construct, or indeed if it will construct any facility at all. This uncertainty may have consequences. Unlike DJC, we purchase much of our machinery from outside suppliers who have in the past not only disclosed our intentions to competitors, but actually sold them the same products so that they could more effectively compete with us. In addition, DJC can be expected to attempt to pirate some of our engineers, for both their information and expertise. We need to consider the impact of our reconstruction plans being dissected by our potential major competitor in time for DJC to optimize its response.

Given that much of Mr. Li's plan may be implemented in one year, and that it would likely require more than a year for DJC to permit and construct a new plant, there is sufficient time to evaluate the plan with respect to those portions useful on their own merit, and those required as a counter to DJC should it materialize. We now proceed to evaluate the Li Memo by Phase and paragraph, in the light of the above facts.

P1. 1 – Separate Cell Prototype. Currently our plant is set up as in Exhibit A, with five process modules and at least 2 inventory holding areas (WIP) in the assembly line. The terminal plating area is bordered by a holding area on each side. Plastic housing manufacture proceeds most swiftly and accumulated WIP has to be delivered to a holding area to await plating of the fabricated electrodes to catch up in order that all components can be delivered to the assembly area.

Thus plating capacity is the limiting factor in our assembly process. Mr. Li's proposition that manufacturing could speed up by removing prototype runs to an area across the street ignores the fact that fabricated connectors then must return to the main plant for plating before assembly can continue. We advise that Mr. Li's suggestion could more effectively enhance plant output if additional plating capacity was installed across the street.

An analysis should be performed of how that additional plating capacity might speed the entire process. If any item is to be shuffled from one side of the road to another, priority should be given to that item which best augments total output. P1. – Quality Control Measures.

If current trends continue, Sunnyvale will produce 510 million units /year in 1996 (85% of design capacity). Given the current defect effect rate of 2.6%, approximately 13,260,000 faulty units would have to be removed by inspectors, or they would be passed along to customers whose products might not then function unless the customer was burdened by the requirement to re-inspect. Mr. Li's goal of improving quality by 50% still leaves a 1.3% failure rate. Statistical Process Control and Design for Experimentation, if implemented to the Six Sigma level, has the capability of reducing error to an average of 3. units/million produced.

A number of defective units below 2,000 represents a significantly higher yield, and therefore a major difference in quality. We would immediately achieve a 2.5+% in our saleable output. DJC claims to achieve a quality level that produces only 1 defect per million connectors manufactured, or about 510 defects for an entire year of our plant's output, versus about 2,

000 for a Six Sigma result or 6.5 million from Mr. Li's proposed 50% improvement. We suggest this contrast reveals a major shortcoming of Mr. Li's proposal.

Mr. Li's assumption that employee training in statistical quality control measures combined with automated inspection will reduce defects by only 50% strongly suggests that either the current work force cannot be trained adequately, and/or the contemplated control measures are inadequate.

Employees exclaiming that "we do it the old fashioned way" demonstrates an unacceptable and apparently ingrained attitude.

Perhaps DJC's practice of skewing the pay scale to generate a constant influx of younger workers not wedded to yesterday's methods is itself a quality control measure that should be considered. P1.3 – Automated inspection equipment DJC seeks to fully understand the production process before it is automated, both to reduce waste and enhance reliability. Adding in automated inspection equipment at the end of the assembly line might save on labor costs (depending upon the useful life of the equipment), but our current reputation is that we deliver a quality product is apparently based upon adequate manual inspection. DJC seeks to so refine manufacturing that very few defective pieces are created. The idea is to produce far fewer rejects. Merely selecting a more economical method to discover them is an inadequate focus for reformation.

P1.4 Work Teams Mr. Li provides little guidance on what he means by work teams.

Assuming that he is following the DJC model, we would have at least a product planning group and a materials planning group. The mere existence of specialized groups would not maximally enhance the overall manufacturing process unless their objective also included a mandate to share information and integrate discoveries. DJC also has a molding technology group.

A molding technology work team will also be useful for us in assisting to implement Phase III section 1 of Mr. Li's proposal, as we will alter address. P-II.

1 Make-to-Order production cell One of our strengths, acclaimed by our customers, is our ability to quickly respond to non-standard orders and to develop new products to address specific technological requirements. However, such non-standard runs materially interfere with the smooth operation of the manufacturing process, and are therefore shunned by DJC. Moving make-to-order products to a separate area would restructure 15% of the plant's output and likely result on the remaining manufacturing process being more easily automated and refined to improve quality. Likewise, keeping the ability to respond quickly to customer needs assists in maintaining customer loyalty. Custom products will likely consume more engineering expertise than standard parts, and therefore we need to determine if additional staff will be required to run this additional proposed cell. Perhaps the efficiencies gained by removing the disruption of assembling custom products amid standard runs will increase productivity and minimize any additional hiring. P-II. 2 Reduce product variations to 4,

000It is unclear how much impact a reduction from 4, 500 products to 4, 000 products will improve overall efficiency.

DJC's plant favored long production runs of far fewer products (only 640). How many of the 500 dropped items would have been assembled on the new made-to-order manufacturing cell? Perhaps a better solution would be to divide the plant into an area which may be devoted to long runs of standard items, such that maximum efficiency, highest quality and lowest cost may be achieved based upon the DJC model, while another area handles short runs of numerous products. By this approach the customers' desire for a low cost on items considered "staples" could be achieved, while simultaneously keeping our reputation for being responsive to specialty requirements. P-III-1 Reduce set up times in housing-molding and terminal fabrication. Reducing WIP and thus carried inventory would certainly be useful to reduce carrying costs. Given that we do not have the cost of WIP or applicable financing rates, we cannot quantify the savings, if any, from Mr.

Li's postulated 30% reduction of WIP. However, reducing set up times in order to shorten production runs, as Mr. Li proposes, flies in the face of the economies achieved by DJC by making runs as long as possible. DJC's production runs averaged a week with some noted as nearly "continuous" while our runs are down to 1.

5 days. However, if cost reduction is a primary goal From ACC-Ex. 3 effective waste reduction in the manufacturing process can alone reduce our costs by 9%. Canvassing customers to determine the acceptability of "tin plating" might produce substantial additional savings [ACC-Ex 3]. We suggest that

these savings will far outweigh any savings from financing a reasonable inventory. PIII- 2 Move Production to Seven Days, per Market During the two year production rebound from 1988 to 1990, sales growth averaged 60 million parts/ year. If 85% capacity is achieved in 1996, up from 70% in 1991, our production will increase at about 18 million parts/ year, and will be at 79% of capacity in October of 1994 when Mr. Li wants us to be prepared to move to 7-day production “ as needed.

” However, our traditional 85% ceiling would not be reached for two additional years, and could take longer if DJC is in operation here by then. Increasing our operation from its current 250 days/year to match DJC’s 330 days would increase maximum capacity to 792 million pieces, or 673 million at 85% utilization (See exhibit B). Consequently, we could use the existing plant for 11 more years without expansion at current growth rates and keeping 85% of capacity as the limiting factor (See Exhibit B).

Mr. Li’s suggestion is useful if current expansion rates can be maintained since we will hit 85% of capacity in 1996. However incurring any current cost of making the plant ready to operate 330 days/year may be premature until we discover if DJC is in fact coming here, in which case growth rates ought to be more conservative. It may have been appropriate to have long ago moved to a 330 day production year (before the last expansion) given the very unfavorable comparative utilization rate comparisons shown for Kawasaki versus Sunnyvale as set forth in ACC- Ex 6. Our connector output per square foot of plant space is only 2/3 of Kawasaki’s and our fixed asset utilization as measured by “ plant not operating” is five times worse. This lesson must guide our next consideration of expansion.

<https://assignbuster.com/american-connector-case-essay/>

Conclusion: Mr. Li's proposal contains many useful suggestions, some of which we support as above noted, especially moving to 7 day production as needed. However, in many places the proposals lack focus if the goal is to improve our manufacturing to be more reliable and economical in line with the DJC model. DJC has objectively demonstrated that reducing waste and increasing efficiency in the manufacturing process also results in cost reduction. If we can fine tune our response to DJC's potential arrival through modifications of Mr. Li's memorandum as above suggested, we will be better able to preserve our market share regardless of any competition.