

**Overview of Some Conclusions from a University of Michigan Research Regarding
Productivity in the Electrical Construction Industry,
Union vs. Non-union Contractors
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- Information for research was gathered from review of publications and economic data, extensive interviews with union shops, open shops, general contractors, manufacturers, distributors and retailers.
- The material distribution system used in the U.S. is antiquated and hampers productivity.
- Management practices are not getting the most out of skilled workers.
- Studies show 40% to 50% of work time in construction industry spent on moving material.
- With efficient management practices, a contractor can be profitable and low cost.
- Cost of labor is not the main reason NECA contractors cannot compete.
- The most important difference between union and open-shop Electrical Contractors is their operational models.
- Open-shop managers look at their operations as a business, while a majority of the union contractors view themselves as an extension of their field operations.
- Union electrical contractors look at themselves as electrical shops doing business versus businesses providing electrical services.
- Open-shop contractors consider themselves as the managers and owners of the means of production, while most union contractors believe that it is the labor that controls the means of production.
- Open-shop contractors believe that they are responsible for the productivity and therefore, the profitability of the jobs.
- Union contractors believe the quality of the labor determines their productivity and profitability. In other words, they believe that it is the labor in the field that makes them money.
- Open-shop contractors believe that the money is made in the field by effectively managed labor.
- Union contractors believe that the labor is the highest risk and uncertainty of the job, while open-shop contractors consider the management of the labor to be the highest risk.
- On average, union labor cost is 10.5% higher than open-shop contractors.

- The number of IBEW members in the construction industry has been fairly constant.
- The rapid expansion in population has resulted in little or no growth in number of Union contractors.
- The open shops have expanded to meet this growth and the Union has lost market share.
- 30% of Union workers lack commitment.
- 72% of Union contractors come from the field.
- **Four causes of performance problems:**
 1. Insufficient explanation of performance expectations (60%),
 2. Lack of worker commitment to performance expectations (30%),
 3. Lack of knowledge or skill (9.5%),
 4. Mental incapability (1/2%).
- **Ten most costly causes on non-productive "wait time":**
 1. Waiting for material at warehouse and off site,
 2. Waiting for tools and equipment,
 3. Waiting for equipment breakdowns to be fixed,
 4. Rework due to design changes, prefabrication, or field errors,
 5. Interface from other crews,
 6. Overcrowded work areas,
 7. Work place changes,
 8. Waiting on permits,
 9. Waiting on instructions,
 10. Other delays.
- Lack of planning is very expensive.
- Union contractors as a rule only plan 2 to 3 days ahead.
- The amount of industrial work is dropping. Unions contractors have historically performed higher percentage of this work than the open-shop.
- **Perceived Union Advantages:** The IBEW has a reputation for better-trained electricians, with historical strength in industrial markets, and reliable all around training.
- **Perceived Union Drawbacks:** Union electricians see Unions as their employer along with a perceived lack of flexibility.
- **Perceived Non-union Advantages:** Open-shop contractors have more flexibility, no union safety net (depend on company), incentive plans that encourage value engineering, lower labor costs.

- **Perceived Open Shop Drawbacks:** Reputation for poorly trained workers, forced to comply with city, state crew ratios, majority of training comes out of company budget.
- Union training is technical while open shop training is more varied and better in areas of productivity and company values.
- Union electricians are expected to improve productivity on their own based on their reputations as being well trained, capable and knowledgeable.
- Open-shop Electrical Contractors emphasize more communication among electricians, foremen, superintendents and project managers. This communication flow allows ideas for productivity improvement to be spread among all of the electricians to management.
- Open shop electricians generally continue training throughout an electrician's career. Union electricians generally train extensively at the beginning of their career. Their training slows down or stops once the electrician has reached journeyman level. Open shop electricians train consistently throughout their career. This philosophy has allowed open shop electricians to pick up the newer commercial, VDV, and service markets.
- 29% of the job cost (Electrical) is labor wages.
- 13% of the job cost is the labor adder.