

LOOKING AHEAD – 2016 700 years of Industry Experience Speak Out on the Future

*Strategic Issues in the Apparatus Service
Industry in 2016 and Beyond.*

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INTRODUCTION

This year's newsletter is packed with observations, quotations and *Looking Ahead* predictions (🔮) from 17 seasoned members of the electrical apparatus service industry; these include shop owners, managers, vendors and service providers. They have an average of over 40 years of experience and over 700 years cumulatively.

The traditional motor repair industry thrived for the three decades after World War II with plenty of rewind and repair work from a bountiful number of customers that resulted in significant profits. Beginning in the mid-1970s, around the time of the oil embargo, the industry began encountering key changes that impacted the succeeding four decades.

Our purpose is not to dwell on history but offer these predictions for the benefit of the following generations of participants in the electrical apparatus service industry.

"Those who cannot remember the past are condemned to repeat it."

KEY ISSUES

- Current Consolidation
- Markets
 - Shrinking Traditional Markets
 - Rebalancing of Traditional Markets
 - Diversification and Growth in New Markets
 - Changing Sales Relationships
- Human Resources
 - Scarcity
 - Less Trained
 - Safety Concerns
 - Higher Costs
- Operations
 - Quality control
 - Standards and documentation
 - Productivity
 - Motors and Other Equipment
- Financial, Administrative and Other

CURRENT CONSOLIDATION

This second consolidation of private equity (PE) firms and strategic buyers acquiring larger shops has slowed down.

Go to “The ‘RACE’ Back to the Future,” [2013 Looking Ahead](#) newsletter for a look at the 1978-1982 consolidation and the current buyers’ investment criteria

There are many potential buyers still cruising the industry for acquisition opportunities; however, the low-hanging fruit has been picked. The PE firms that have made the consolidating acquisitions are beginning to experience the reality of the sales cycles that are historically inherent within the industry as emphasized by downturns in coal, oil, and other commodity industries.

☞ As long as interest rates remain relatively low, there will be “pools” of private money available for acquisitions to improve the PE investor’s returns. However, the financial incentives to sell are limited. PE valuations are typically limited to historical multiples with little consideration of strategic potential.

Ex-owners with cash on hand face low financial returns on stocks or bonds. Even an 8% return on investment in their own company is better than a 4% return or less on financial investments, and the owner has a job!

☞ Smaller shops will continue to be limited to making deals with each other or other smaller companies. Most of these deals are significantly financed by the seller. The deal transaction costs and ongoing overhead costs associated with a larger PE firm or large strategic buyer cannot be profitably absorbed with acquisition of smaller shops.

Vendors are also consolidating as the traditional industry shrinks. Many motor manufacturers have already consolidated their traditional brands of motors. Historically, there were dozens of distributors of wire, insulation and shop supplies.

Today there are only two major distributors and a small handful of regional distributors. The majors are abandoning “windshield” coverage of certain regions in favor of centralized warehouses, phone sales, independent reps and online ordering.

“As the motor repair industry continues to consolidate, the supply chain will continue to shrink as well. Costs for shipping will rise and the vendors will have increased pricing power with less competition.”

☞ This trend toward more consolidation will continue for years to come. It will provide exit opportunities for larger business owners, but not necessarily at the price level they expected.

MARKETS

Shrinking Traditional Markets

Among the reasons for the shrinking of the traditional rewind and repair markets are:

- US manufacturing moving offshore
- Better insulations, bearings and motor protection devices
- Cheaper replacement motors relative to the repair costs
- The war on fossil fuels
- Decreased customer plant investment, especially since the recession began in 2008
- Government policy and regulatory actions

☞ Until the US trade, tax, labor and regulatory policies are made less costly, the trend for more jobs to move offshore will continue. Many industries have been lost for the foreseeable future, such as mass-produced clothing manufacturing.

“Government intervention into the repair market up to and including eliminating rewinding some types of motors entirely is possible under the guise of energy efficiency and environmental impact.”

The repair point of a standard motor has gone from near 5hp toward 100hp or higher.

☞ Cheaper motors will continue to drive up the horsepower on standard motors where repairs and rewinds are economical, thus further reducing the population of repairable motors. Less motor failures from new technologies and better materials will also reduce the need for future rewinds.

“The cheap (foreign) motors coming in push the feasibility of motor repair to higher and higher HP ratings, so as the new motor sales grows, the repair side continues to be eroded by this issue....in the future our shop repair (may) only be above NEMA ratings or special units.”

☞ As the traditional markets continue to decline and with the increased capital expenditures needed (discussed below), it is likely that bigger shops will get bigger and smaller shops that rely on traditional markets will diminish in size and number.

*“Back then (1976) there were about 2,600 EASA shops and 1,400 Non-EASA shops. (Today) EASA is down to about 2200 shops and there may be 800 or 900 non-EASA shops around, but that number is declining.”
(These figures were one contributor’s estimates and not verified with EASA)*

☞. The war on fossil fuels will continue regardless of the US political tides. Natural gas will become an interim fuel until the renewable energy capacity and costs are competitive.

Companies in the eastern and western coal belts, and the oil drilling states, are reaching out into neighboring geographic areas already served by non-fossil fuel based repair companies. This has

resulted in driving down prices in these extended areas, a redistribution of personnel, and lower profits for everyone.

✎ Eventually, and unfortunately, there will be some shake out of the financially and technically weaker shops unless oil prices rebound significantly and the war on coal is ended.

There are higher cash flows and more idle cash balances in big corporations than ever in history. This cash is being directed toward increased dividends and share buy backs. Some of it is effectively frozen offshore or can only be used offshore because of oppressive and archaic U.S. tax laws.

Corporations are not reinvesting in capital plant and equipment in the U.S. anywhere near historic levels. Political uncertainty at home and abroad, pressure for quarterly earnings, residual carryover of the 2008 recession scare and a host of other reasons are causing this.

Throughout this newsletter, reference is made to increasing oppressive government regulations: safety, health care, environmental and other. Many contributors reference government regulations in one form or another as a major deterrent to growth.

✎ Until there is a sweeping change in the role of government, far greater than the results from one or two presidential elections, government regulations will increase. Regulations are a source of power and money for the politicians that control them and for the U.S. Treasury when fees or fines are imposed.

Rebalancing of Traditional Markets

From the late 1970s to the mid-1990s, the repair services of GE (160 plus shops in the 1970s), Westinghouse (60 plus), scores of captive shops in steel mills and other process industries, and shops on Navy ships were all substantially eliminated. As an estimate, these shops counted for as much as 40% of the total repair and service market. The transfer of this work to the independent shops counteracted the ongoing decline in traditional repair services.

✎ This rebalancing is over now, but may reemerge if the current consolidation in the industry begins to unravel.

Diversification and Growth in New Markets

Industry growth has come primarily from diversification including:

- Energy efficiency motors and related controls
- Panel building
- Technical field services
- Sub-contracted maintenance services
- Machining

- Pump and other mechanical repair and services
- Servo repair
- Sophisticated shop and field testing services
- Motor management
- Renewable energy production
- Energy conservation

Some of this growth is work transferred from companies done outside the core electrical apparatus industry, e.g. pump repair. Other services arise from the increase in technology, e.g., electronic controls and servo repair.

“The customer basewill require repairs on equipment that does not even exist today, technologically speaking.”

↻ Continuous monitoring of the services needed by your customers is the key to future growth. Your customer’s capital expenditures that are based on new technology will continue to change their maintenance and repair needs. As their equipment and processes improve, your company will need to improve its capabilities and talents to service these customers.

↻ Standard motor and control product sales will decline from the inability to compete on price with the broad-based electrical distributors and the Internet. Within a decade, we will see drones flying replacement parts and small motors directly to a job site. And they will come from an Amazon or similar large distributor warehouse.

“Medium and High voltage VFDs will become the norm not the exception. Low voltage drives will become a commodity and the path to market will shift from EASA shops to broad-based distributors.”

↻ Servicing and repair of wind, solar, water and other renewable energy equipment will continue to grow. In 2015, more people worked in the renewable energy industries than in the oil and gas industries. The entire country of Portugal recently went four days in a row without using any fossil fuel energy.

↻ For companies not serving customers producing renewable energy, growth opportunities exist to help customers reduce their energy expenditures through motor efficiencies and technology. In some industries, energy has replaced labor as their largest cost.

Changing Sales Relationships

“Things are changing but still the same as 47 years ago. Customers don’t want to stock a spare for a critical application, but when it fails it becomes “our” problem. Why don’t we have one of those in our stock? Why does it take so long to rewind it, if you don’t have one in stock?”

Traditional “windshield” sales activities have declined. Purchasing, accounting, voice recordings and other gatekeepers are making it harder to get face time with decision makers. NASCAR box seats, fishing trips, and other traditional major sales incentives are limited to the executive suites in larger corporations. These are no longer part of a standard salesperson’s arsenal of selling tools.

Email and texting have replaced most written correspondence. Web sites have replaced much of the previously printed sales and technical literature. Customers are insulating themselves from direct vendor contact. However, customers are demanding more when they need a service. If you can’t be reached on your cell phone within a couple of minutes, the customer may call an alternative vendor for service.

“I am shocked at what I am sometimes asked to do now. Store Spare Motors for N/C, (No Charge) repair motors now and bill them 90 days to 6 months later, warranty motors that have been in service for over 5 years because the customer thinks that it should have lasted longer. The list goes on and on...what customers ask and expect you to do now days, where 10 or 15 years ago it was not even considered or the customer would be embarrassed to ask such of a vendor.”

“You no longer make the repair/replace decisions. You have to do 4 to 6 hours of preliminary testing, taking critical measurements and then quote the motor alongside the cost of the new motor. In about 50% of the cases the motor sent in for repair is scraped and the new motor purchased.

☞ Customers will continue to find ways to insulate themselves from vendors until the need arises.

☞ Customer demands will continue for “free” technical and administrative services will increase as long as vendors allow it. These creeping costs (discussed elsewhere) are margin killers. Sometimes it becomes necessary to fire a customer or steadfastly invoice them for the technical assistance.

“The customers know just enough to be dangerous and they are dictating the policy.”

HUMAN RESOURCES

Almost every contributor addressed the changes in the area of human resources.

“Challenges past and future....people...people.... people....”

“...the need for quality people has never been greater. This is the overarching main concern of our business. It’s one that we can almost not spend too much time on.”

Scarcity

Members of the Greatest Generation, those that returned victorious from World War II and built this industry, have retired or passed on.

The scarcity of quality employees today stems from many factors:

- Baby boomers (born 1946-1964) are reaching retirement age
- Less interest by younger people in getting into trades
- No trade school motor winding courses
- Teaching/apprentice programs in Westinghouse, GE and the Navy are gone
- Poor public education standards

We are seeing more employees working into late 60s and sometimes into 70s. The recessions in 2000 and 2008 seriously reduced retirement benefits from IRAs and pensions. Often these employees have a better work ethic and more skilled talents than employees in Generation X (born from 1965-1980) or Generation Y (1981-2000), i.e., the millennials.

Less Trained

Training is now the responsibility of the employer.

“(With the reduction in the number of shops) the teaching/apprentice programs from years ago from companies like Westinghouse and General Electric (and the Navy) no longer exist....has really made for a lack of talent in the industry.”

☞ Training costs, even at very basic levels, will continue to increase. Training is a double whammy. Not only will the employer have to pay for the costs of training, every hour in training reduces the number of hours available for production and billing. In theory, more training should get a better billing rate, but that only happens with aggressive and timely price changes.

“Training is now on the job, watching someone else.”

Fortunately, webinars have reduced the cost of delivering certain types of classroom training. Trade associations offer more and more classes.

Safety Concerns

Safety has become a more significant issue in the past decades, as it should be. This is a result of both pushing from the regulatory agencies and insurance companies and pulling as employers and society in general became more cognizant to safety issues.

Most shops now have safety directors and regular safety meetings. Customers are demanding not only safety training for on-site services, but trade certification and re-certification for welding,

crane inspections, and other critical services. Safety, like other training, is an out-of-pocket cost that is hard to recover. It pays off in the long run, as it only takes one serious injury or death to drain the company both emotionally and financially.

Higher Costs

☞ With the decrease in the supply of quality employees, both shop and management, the pay rates needed to attract and retain good employees will continue to increase faster than inflation, even at the entry levels. This rise is also driven by the federal and state government increases in the minimum wage.

There are cases of skilled experienced shop employees negotiating sizeable signing bonuses to change employers or deferred bonuses for staying with an employer for some period of time.

☞ Similarly, fringe benefit costs, especially health care, will increase as a result of an aging population and also from government mandates for universal health care. Extended maternity leaves for both parents, liberal time off policies, higher unemployment and workman's compensation costs, potentially higher employer contributions to Social Security and Medicare, all contribute to the average cost of an employee.

“Our biggest worry..... is what our health insurance will do this summer at renewal.”

A lack of improved productivity in the industry (discussed elsewhere), increased training costs (discussed elsewhere) and more customer demands directly reduce the bottom line.

More important, all of these overhead costs tend to creep up over time. They are not like a price increase announced by a wire or bearing supplier or a motor manufacturer. Product price increases can be more easily passed through to the customer pointing the finger of reason at the vendor price increase. The industry has always been slow to respond to creeping cost increases, especially in overhead accounts. Much of the decline in the profitability of the industry (discussed elsewhere) can be attributed to less than aggressive pricing.

☞ Future employment decisions need to consider the total cost of an employee, not just the hourly rate or monthly salary.

☞ ☞ ☞ **Direct costs and creeping overhead cost increases must be analyzed frequently and timely price adjustments made to maintain margins.**

“You can't sell below break-even and make it up on volume!”

OPERATIONS

Quality Control

The most significant area of change in the shop is quality control.

“The quality of insulation and wire is much better than it was. - So is the quality of our stator laminations after the burn out process. 4 decades ago we guessed – today we know due to accurate measurement.”

Capital expenditures in the industry have been focused on test equipment: better test panels, motor circuit analyzers, and the list goes on.

Standards and Documentation

“...standards much improved over the years.”

To stay competitive, shops have had to increase conformance to new quality control standards such as ISO. These standards require complete documentation of shop procedures, certain training levels, regular current calibration of measurement devices, and the list goes on.

“I just got off the phone with one of the _____ shops in Canada and his comment about today's owners/customers is that they are demanding much tighter tolerances than ever before. Even the manufacturer's tolerances are not good enough. There are too many 'experts/consultants' running around today trying to justify their existence by saying they can make things better by tightening up tolerances and putting requirements on the repair shops that are quite frankly ridiculous. It will only get worse and cost the owner more money.”

The irony is that the higher quality, longer lasting repairs reduce potential future repairs on those units. But, at the same time, the customer wants a price for the repair based on some historical invoice, sometimes a decade old, before many of these quality assurance costs were standard in the industry.

☞ Quality requirements and costs will continue to increase as long as technology increases to test more accurately and new materials and processes are introduced.

Productivity

Unfortunately, the capital expenditures and other QC expenditures required by the customer have affected the money available from productivity improvements. There are a few pieces of equipment that have improved productivity, e.g., parts washers and automatic winding machines. However, with little exception, motor rewinds and repairs require almost as many labor hours today as decades ago.

Even reading the industry trade magazines, the majority of the articles are related to methods and improvements in testing, government regulation and other topics not related to improving labor

productivity. Little attention is paid on how to do the job with less direct cost while maintaining quality and safety.

☞ No contributor directly addressed improving productivity!

Motors and Other Equipment

The influx of customer motors and other equipment manufactured offshore is pronounced. The quality of this equipment varies. For many customers that are price driven, the brand name on the motor or the location of the manufacturer is not important. The only question is does it meet the minimum specifications now? Total life cycle time and running costs are not important.

More sophisticated motor customers are looking at total life cycle time and running costs.

☞ Offshore motor manufacturing will continue to increase. Lower quality motors, particularly from mainland China and Southeast Asia, will improve. Do not forget the lesson from the Japanese. As Japan was rebuilt after World War II, there was an influx of “cheap” goods of all kinds. “Made in Japan” was synonymous with “Made Cheap.” Today, Japanese cars and other manufacturer goods are some of the finest in the world. China may copy that model 50 years later.

It may be research in the electric car by the automobile manufacturers, Japanese, Chinese, U.S., European or others, that eventually leads to improvements in electric motors.

☞ Permanent magnet materials not using rare earth elements are predicted to be commercially available in the next decade for improving motor efficiency.

“These will create some new problems for the repair industry, and it is not clear that we will even repair these. There are safety concerns with the mechanical portion of repairs, and it is not clear whether the permanent magnets will be reusable after a failure.”

Manufacturers are supplying less and less data and technical assistance. Often the only data they will supply is what they have online. This offers opportunities for field service diagnostic services.

FINANCIAL, ADMINISTRATIVE AND OTHER

The industry was a 15% pre-tax business; today it is closer to a 5% pre-tax business. Margins have declined and operating costs increased.

“It is not a cheap business to be in or get into like it once was.”

There was almost no mention of how computer systems and the Internet have changed the way the industry does business: communications, advertising, recording transactions, record keeping, etc.

⌘ Financial Predictions

- Profits will not increase substantially as a percent to sales without another economic breakthrough, such as what initially happened with fracking and the oil boom up until the Saudis and OPEC lowered oil prices.
- Capital investments, particularly in testing and quality control, will continue to rise, thereby putting pressure on smaller shops.
- Interest rates will go up.
- Energy prices will stay reasonable unless or until the government adds more taxes.
- The economy will continue to cycle up and down as it has forever. A certain amount of uncertainty will be removed from the market after this presidential election, regardless of the outcome. This may free up some capital investment.

⌘ Administrative Predictions

- More paperwork will be required to be compliant in all government regulations. Much of it will be processed electronically over the Internet.
- Reliance on digital images of customer equipment, from the initial receipt through every process and testing step and until it is shipped, will become standard.

“All employees will be wirelessly connected recording both activities and their location.”

*“Many employees will report directly to (remote) job sites.
Amazon will deliver parts by drone.”*

⌘ Other Interesting Predictions from the contributors

“Motor protection will become a saleable service”

*“Motor shops may become suppliers of rotating torque with
'guaranties' for uptime, shaft accuracy, etc.”*

*“Internet (cloud) based equipment monitoring of motors:
Motors will join the Internet of things.”*

“EASA may have to consider merging with another industry group.”

*“(With one out of six in people in the U.S. having a Hispanic background),
bilingual skills will become more important.”*

WRAP UP

Hopefully, you have found the information in this newsletter valuable. Whether you agree or disagree with the predictions made, at least you have considered the topics in relation to the future of your company.

I only send one issue of *Looking Ahead* each year. If a major economic or geopolitical event were to occur, I might send an addendum, but never more than two mailings a year. To be added to the mailing list for this free newsletter, please send me an email. If you wish to be removed from this mailing list, please send me a reply email from the email address that received this newsletter. Put the word REMOVE in the subject line. Past issues of *Looking Ahead* may be referenced at <http://www.value-a-business.com/LookingAhead>.

To compliment my business valuation work on selling and buying companies, I am pleased to announce that I recently earned the Certified Valuation Analyst (CVA) designation from the National Association of Certified Valuators and Analysts. Most attorneys, banks, state and federal courts of law, the Internal Revenue Service and the SBA recognize CVA designees as business valuation experts for legal, tax and financing matters.

My thanks to everyone who contributed to this newsletter. They are listed at the end of the newsletter. While competitive, one of the greatest strengths of this industry is the willingness of independent companies to cooperate and share information, equipment, and in some natural emergencies, personnel.

Please send any questions or comments regarding this newsletter to the email address below.



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