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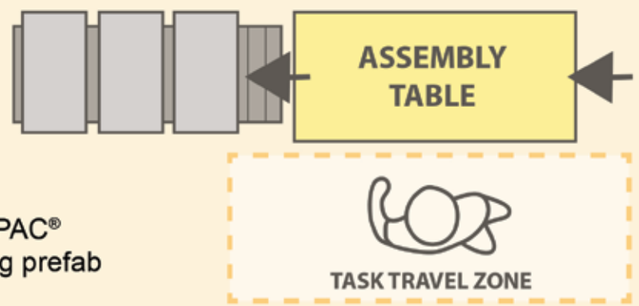

MCA offers specific applications of the Industry leading productivity tracking tools JPAC® and SIS® that are optimized for projects using prefab and versions to support shop management.

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FEATURE

How to Make Money in a Good Economy

PREPARING FOR THE NEXT RECESSION

By **Dr. Perry Daneshgari** and **Dr. Heather Moore**
with contributions by **Jim Ford**

The current economic cycle is the second longest expansion that our country has seen since the inception of economic growth measurement. The economy has been recovering since 2009 following the major recession of 2007-2008. While the economy has been expanding for the last nine years, some economists predict a slow-down or the next recession to begin around 2019 and onwards. Here at MCA Inc. working with our contractors we believe, based on the collective backlog and barring any major catastrophic events both naturally and socially that we may see the next slow down around 2022-2023. If there is a recession to follow, we don't believe that it would hit until 2025.

So, now what? Well, see if you can answer yes to any of the following questions:

1. Are you busier than you have been for the last few years?
2. Are your customers pickier than before?
3. Are you running out of skilled labor to do the work?
4. Are job margins barely covering your overhead and SG&A?

If you answered yes to two or more of the above questions you are experiencing the same things as everyone else. These types of things always happen when the economy is good. All of the projects that were put on hold over the years are now being released, which causes a flood of work in the market. Since the owners' just experienced tight budgets a few years back, they are not willing to spend enough on their jobs to make the jobs profitable until there are not enough contractors to do the work. The contractors, on the other hand, are going to have a hard time finding good people to do the work. It's a catch-22, you like to have the work, but you can't get it for the profits that you want and need. Then if you do get the work you don't have people to do it.

How can a contractor, in a simple way, deal with this paradox? Try introducing these steps into your company's next strategic planning session:

1. Keep an eye on the construction economic indicators in your trade magazines
2. Follow the market breakdown in your area to understand the market mix
3. Analyze your historical data to find your sweet spots
4. Set up budgets for your Direct, Indirect and SG&A
5. Calculate your composite rate and see which jobs you won or lost and back into where your composite rate should be
6. Use any prefab or tracking that can help you reduce your composite rate
7. Create a plan for your taxes, revenues, savings and LOC
8. Use the recent depreciation laws to renew your equipment and put more cash in your pocket
9. Create a "War Chest" for the next down turn
10. Build reserves in form of assets, short and midterm funds

By putting these steps into motion you are creating a situational awareness for your company both internally and externally based on the current state of operations, and at the same time you are creating future goals and plans necessary to get there.

The following is a more detailed explanation of the readiness steps:

1. Keep an eye on the construction economic indicators in your trade magazines:

Every year trade magazines provide a breakdown of the construction market based on US Census data, permits, housing starts, employment, GDP, etc. While these do provide an overall picture of the market, they can be rather vague when it comes to anything specific in your area. MCA Inc. has their proven methodology to breakdown the construction market not only into the specialty trades: electrical, mechanical, finish trades, but also the segments of markets available for each of the trades in the area of operation. Figure 1 shows the overall electrical construction market for the U.S. from 1964-2017.

2. Follow the market breakdown in your area to understand the market mix:

Often times' owners and project managers get fixated on their market as construction vs. service. The problem is you're not seeing the actual types of projects that are driving your markets. By breaking down your overall market into the Industrial, Commercial, and Residential segments you can begin to identify the primary types of work going on within your market. However, the real pinnacle of understanding your market is being able to break the segments down into select detailed categories with historical trends to identify new and emerging opportunities, and what the root causes are for the underlying swings that impact your business. Figure 2 provides us with a sample breakdown of select detailed categories within each of the market segments for the year at a local level.

3. Analyze your historical data to find your sweet spots:

As an owner you may have a gut feeling about what your niche market is or what areas your project managers excel in, but without quantifying it with data; it is nothing more than just a gut feeling. Often times we tend to block out or try to forget the killer jobs and only remember the ones that we cashed in on. In Figure 3 for an example, we took a look at last year's revenue of a typical contractor and grouped it into a series of categories by size, counted the number of projects, their revenue and gross margin contributions, and their corresponding profitability. You can take this analysis even further and segment it by project manager or division. This will provide you with the quantitative results as to the internal strengths and weaknesses within the company.

4. Set up budgets for your Direct, Indirect and SG&A:

This may seem like business 101, but it is surprising how many contractors don't have a formal structure in place on what they are planning to spend in the upcoming months or for the next year. Quite often it is just pay as we go mentality, and we'll figure it out at the end of the year. Now I know what you're thinking here, we're just a small outfit and we can't afford another high dollar software program. A simple spread sheet with your historical month ends for the past few years can give you an operational baseline on the seasonality of your business and help establish your budgets. This will give you the ability to see if you're operating within your established parameters as you go forward. In Figure 4 for instance assuming that this contractor is making 9% gross profit on their projects while operating with $9 million in SG&A annually, we can see that we need to have $100 million in revenues to just break even.

5. Calculating your composite rate and see which jobs you won or lost and back into where your composite rate should be:

This one sounds a lot tougher than it actually is, and the payoff is huge.

FIG. 1: U.S. Electrical Construction

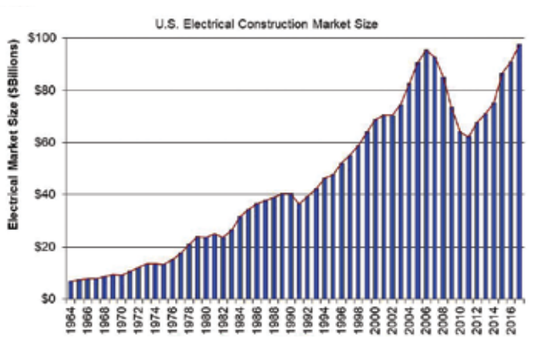


FIG. 2: Detailed Market Composition

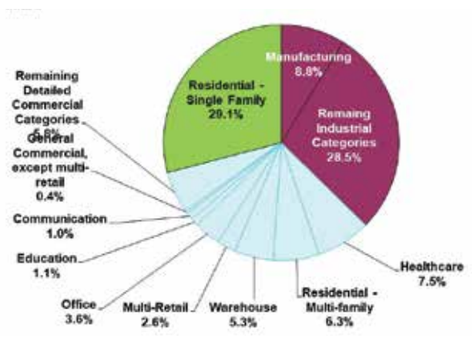


FIG. 3: Your Sweet Spot

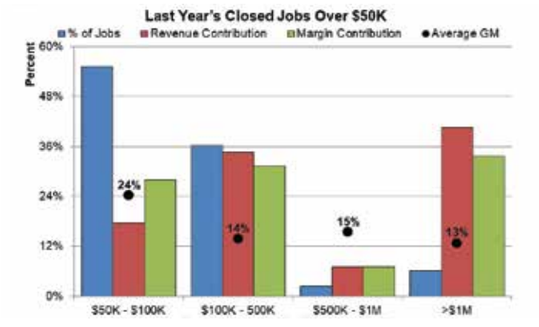
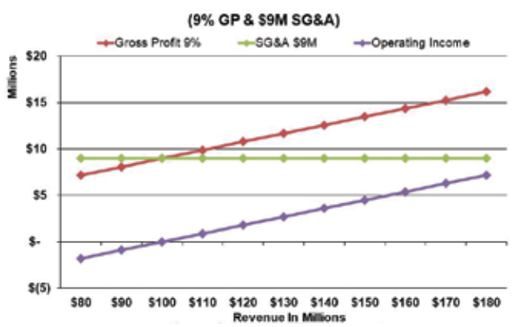


FIG. 4: Operating Metrics



We've all have had a streak where we just couldn't land anything that we were bidding on, which can be normal considering the average hit rate is around 10%. Put together a list of jobs you've lost and the type of project that they were, and break out the cost that you bid the job at based on your labor cost, labor hours, material, subcontractors, and other. Now find out what the job went for and the difference will be on the labor, assuming the same hours for installation the difference will be the composite rate needed to win the job.

Figure 5 provides an example of this for just the industrial work a company was doing for the year. Depending on the situation this can be done for the company as a whole or just for a specific detailed category, such as hospitals, schools, hotels or even roof top solar.

6. Use prefab or tracking that can help you reduce your composite rate:

Hands down the fastest way to reduce your composite is through prefab. Manufacturing assemblies in a controlled environment with a lower cost labor reduces the amount of non-value work on the job site, translating to faster installation times on site. Figure 6 provides a structured breakdown of the types of prefabrication and the actions you should begin to focus your prefabrication activities on. Even if you're incurring more prefab hours than anticipated, compared to the field labor costs 2 hours of prefab can have the same costs as just over an hour of field labor. Typically during an 8 hour shift your field labor may only spend 4 hours actually installing material. By utilizing the lower cost labor from the prefab shop to reduce the amount of common material handling and prepping activities your field workers would normally have to perform before they can actually install the material, allows the field worker to focus on more and faster installation times.

7. Create a plan for your taxes, revenues, savings and LOC:

Just like budgeting we can't stress this one enough. You need to plan for what your revenue stream will be like over the next year, the taxes you will be incurring, how your operations will be performing based on your budgets will indicate what your LOC needs will be. Figure 7 gives us a snap shot of our overall cash flows with the difference leading us to dip into the line. Far too often contractors have gotten themselves into a tail spin by continually dipping into their line, not getting back out right away, and eventually end up slowly sinking themselves. Planning for the expected ebbs and flows of contracting isn't just sound financial advice it is absolutely necessary for survival. Plan on keeping enough cash reserves to help supplement your operations and keep you from being buried by your LOC.

8. Use the recent depreciation laws to renew your equipment and put more cash in your pocket:

If you are leasing you should really consider this one. With the new laws you can purchase new trucks with a gross vehicle weight rating above 6,000 pounds for your fleet, take the write off and take the full depreciation on them, hence reducing your tax burden at the same time. Figure 8 provides a high level example assuming a 35% tax rate of how you can benefit from both the write off and depreciation of your newest assets.

9. Create a "War Chest" for the next down turn:

At the end of a good year we like to reward everyone with the windfall of cash from a couple of the golden jobs. Instead of spreading all the wealth at the company Christmas party plan on building your War Chest. Plan on setting aside a significant portion of money you've earned from your golden projects. This will provide you with the security and peace of mind that you can keep your operations afloat even in the event of the worse disaster (Figure 9).

10. Build reserves in form of assets, short and midterm funds:

In our assessments of hundreds of companies over the past years, we have only seen a handful of small companies who have successfully structured themselves in this area. Not that you need to go out and hire a full time finance professional, but your CFO should be able to work with your accounting or investment firm to plan out your needs. Take your War Chest and work on developing a fully diversified portfolio structured with a combination of common stocks, bonds and mutual funds, as shown in Figure 9. As we saw in Figure 7, you'll want to keep a portion of your instruments with short term maturities, so you can readily access your cash when you need to.

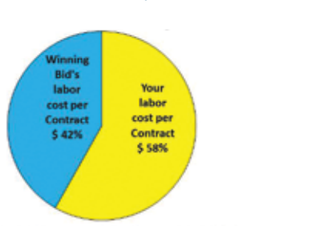
By putting these steps into motion you are creating a situational awareness for your company both internally and externally based on the current state of operations, and at the same time you are creating future goals and plans necessary to get there. Externally you are now actively monitoring your markets, and understanding what are the primary drivers of your market. Internally, based on your historical performance, you are establishing the baselines of your revenue streams by identifying the strengths and weaknesses of your project managers or departments in their current state. Beginning to look forward with the company, you are developing budgets and creating operational metrics to ensure the company is performing within established guidelines for the next year. Next, by identifying the gaps in the composite rate both overall and between the different categories of work, will allow you to increase your hit rate to ensure you are operating at full capacity. Now that you know what your composite rate needs to be to get the work you are going to use prefabrication to reduce and keep your composite rate in alignment with the open market. Looking forward to the future, focus on what the financial needs will be for the next year, and how much is it going to cost to finance your upcoming operations. Lastly, you want to begin planning on building your assets both in the form of equipment and the war chest in the form of financial instruments. Welcome to the future of contracting and what it takes to survive and be successful in today's market.

Dr. Heather Moore is vice president of Operations for MCA Inc. She holds a Ph.D. in Construction Management from Michigan State University. Additionally, she holds an MBA from University of Michigan (Flint) and a B.S.E. in Industrial and Operations Engineering from the University of Michigan (Ann Arbor). She was a contributor for the ASTM Standard E2691, "Job Productivity Measurement," and was co-author of the newly published ASTM book, "Application of ASTM E2691 Standard Practice for Job Productivity Measurement in Agile Construction®."

Dr. Perry Daneshgari is the president/CEO of MCA Inc. MCA Inc. is a research and implementation company that focuses on implementing process and product development; waste reduction; and productivity improvement of labor, project management, estimation, accounting, and customer care. He has published four books and an ASTM Standard for Job Productivity Measurement.

Jim Ford currently is MCA's Lead Data Analyst. Jim's educational experience includes a Masters in Accounting from Oakland University, and a BBA from the University of Michigan with concentrations in Accounting, Finance, & Marketing. Jim leads the financial analysis and project audits for the field; raising awareness of how to reduce unknowns and uncertainties in the early stages of a project before it is too late. His prior work experience includes 13 years as a low voltage subcontractor.

FIG. 5: Industrial Composite Crew Rate



Your Bid: $1 Contract Dollar = $0.50 labor cost
Winning Bids: $1 Contract Dollar = $0.36 labor cost

28% reduction in your composite rate needed to be competitive

FIG. 6: 3 Types of Prefabrication

1. **Standard Items: Non-Job-Related**
   - **Boxes**
   - **Pipes with pre-built connections**
   - **Prepped piping (with threads, connections, bends, etc.)**
2. **Standard Items: Job-Related**
   - **Pre-assembled equipment and controls**
   - **Panels and variable air volume units**
   - **Wire prepping (paralleing, coiling)**
   - **Material packaging and kitting**
   - **Tool gang box replenishment**
3. **Job-Specific Items**
   - **Pipe bending and assembly**
   - **Racks for distribution of MEP equipment**
   - **Equipment testing**
   - **Special carts or platforms**

FIG. 7: Overall Cash Flows vs LOC

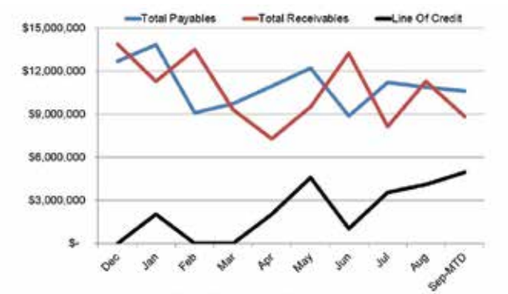


FIG. 8: 2018 Deduction Example

• Equipment Purchases:	$1,250,000
• First Year Write Off: ($1,000,000 = maximum in 2018)	$1,000,000
• 100% Bonus 1st Year Depreciation (Updated to 100% 'Tax Cuts and Jobs Act')	$ 250,000
• Normal 1st Year Depreciation (20% in each of 5 year on remaining amount)	$ 0
• Total First Year Deduction: ($1,000,000 + $250,000 + 0)	$1,250,000
• Cash Savings: ($1,250,000 * 35% Tax Rate)	$ 437,500
• Equipment Cost After Tax: (Assuming 35% Tax Rate)	**$ 812,500**

FIG. 9: War Chest