Leading Pack vs the Rest – A Data Driven Story
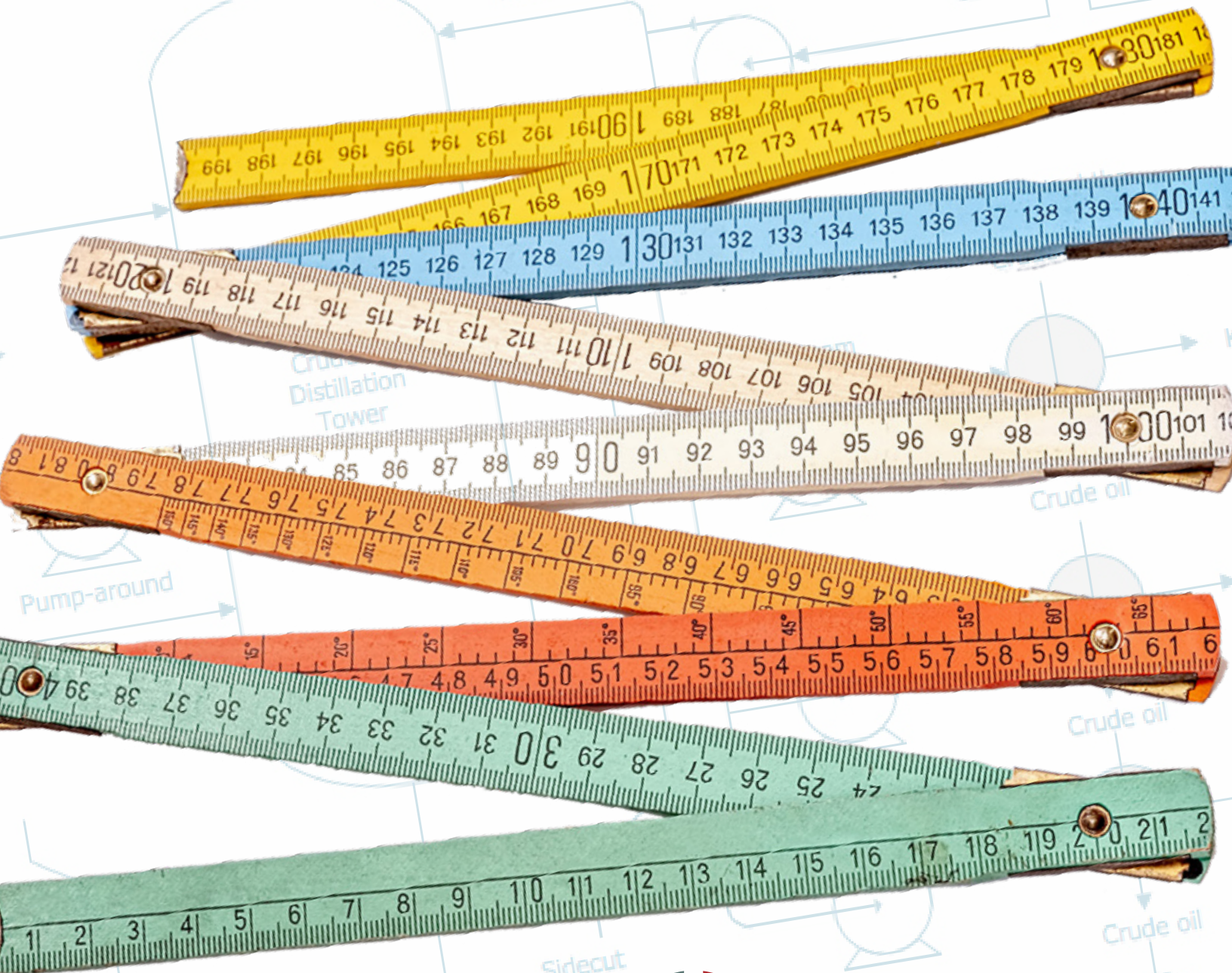
csia
control system integrators association

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Executive Summary

Charlie Bergman, the driving force behind CSIA, had a vision of improving the Control System Integrator industry. His famous saying "if you don't keep score, you are just practicing" inspired the surveys that CSIA has introduced. Over the years there have been almost 60 CSIA member companies contributing financial and operational data in the Pulse survey. Twenty six of these companies have faithfully submitted their metrics every quarter for at least the last four years, and 20 of them for over five years. This report is an analysis of those 26 companies which is designed to convey a sense of what "good" looks like across the industry of Control SIs. The analysis spans Q3 2016 to Q2 2020 inclusive.

The major finding is that the System Integration business can be a good investment. We emphasize the word "can" by discussing the success factors that separate the leading pack from the rest.

How to Read this Report

The details of this report are divided into 2 basic parts:

1. General Observations, which apply to the analysis and trends of all participatory companies, and

2. Analysis and trends of the participating companies. This part has 3 supporting sections: Total Revenue & EBITDA, Revenue by Labor Sales, and Revenue by Non-Labor Sales.

The companies in this analysis were divided into two groups, based on a concept called the "Rule of 20" (R20), which is a method that takes into consideration company revenue growth and company profit. The group with the best combined performance is referred to in this document as the R20 group. Sixteen companies were identified as CSIA Leaders, the R20 group, and 10 are not, the non-R20 group. Note: If R30 were used there would be 12 CSIA Leaders and if R40 were used there would be 3 CSIA Leaders. Both populations provide a good representation of company sizes as shown below and 13 of the R20 companies are CSIA Certified. All data remained anonymous.

For each of the analysis categories, where graphs are displayed, the graph on the left will be for the R20 companies and the one on the right will be for the non-R20 companies. If there is a single graph it will be for the R20 companies.

Methodology

The Pulse survey collects 15 data points from participating companies that have been used to calculate 57 metrics for evaluation (see Appendix A on page 15).

The "Rule of 20" (R20) is calculated by adding the % of revenue growth over the trailing twelve months with the average EBITDA % for that same period. In addition, we excluded any company with trailing twelve-month (TTM) revenue growth less than 1% (in other words not growing). The EBITDA number is not one that is captured in the Pulse survey and we created a "proxy-EBITDA" value estimated by taking the Total Revenue for the quarter and subtracting the Daily Spend * 13 weeks *5 days per week. While an estimate, we consider this estimate to be a good proxy and some sampled companies showed deviations of about 2% from actual. For the remainder of this document, EBITDA actually refers to this proxy-EBITDA.

A number of the data values were calculated on a TTM basis, which is the total over the last 4 quarters, and some were calculated on a rolling average basis which gives a quarterly value based on the average of the last 4 quarters. This latter approach helps smooth out the data.

As a validity check, we compared the revenue distributions between the two groups and found that each group was well-represented across a wide range.
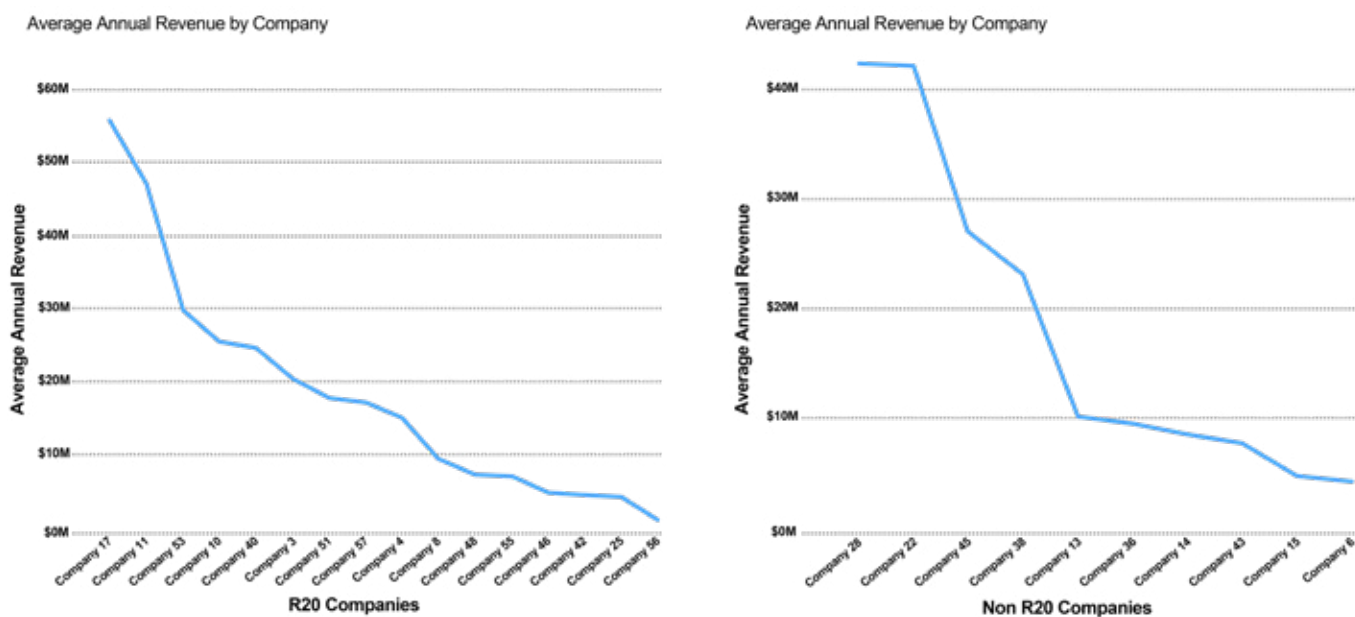

Figure 1 - Revenue TTM, R20 on left, non-R20 on right

General Observations

At a macroscopic level the industry did well up to 2019 when it grew at record levels before the pandemic took it all back. 2019 was very strong with the R20 group showing a TTM revenue growth of 28.3% on average. The growth was driven by the ability to deliver via workforce growth and increased non-labor sales as a percent of total revenue. Interestingly, in the graph below, the non-labor revenue tapered off in the fourth quarter of 2019 signaling a pending reduction in growth.

Importantly, the companies in the R20 group remained in this group throughout the entire 4-year period. Similarly, the non-R20 companies stayed in the non-R20 group throughout. Companies deciding to grow must structure themselves to maintain that growth.
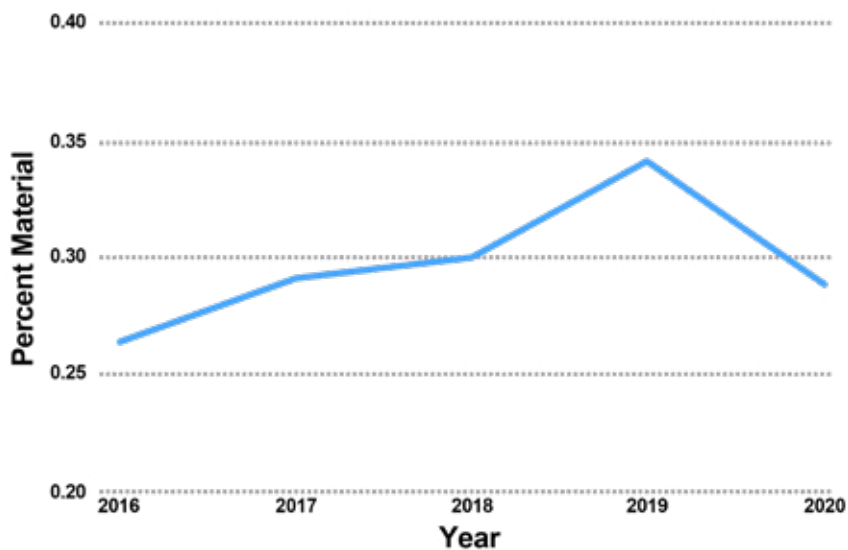

Figure 2 — Non - Labor / Labor Ratio for R20 Companies

Total Revenue & EBITDA

Both populations saw a reduction in EBITDA over the four-year period of approximately the same amount but the R20 group was starting from a much higher level. The increase in non-labor revenue would tend to drive the EBITDA down for the R20 group and it follows that there was a noticeable up tick when the mix changed at the end of 2019 dropping again as the pandemic took hold.
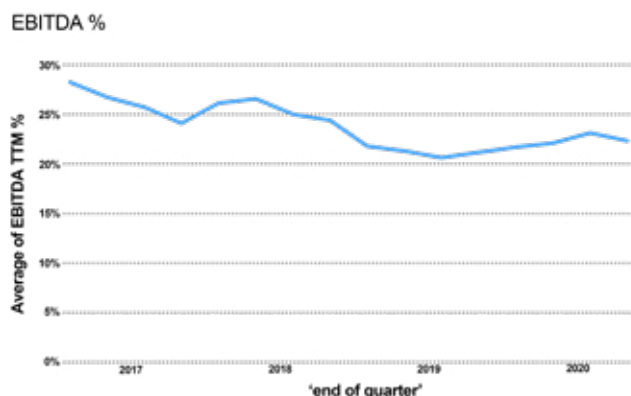
EBITDA %

Figure 3 - Average of EBITDA % for trailing 12 months

Importantly, as shown in Fig. 1, the companies in the R20 group have about the same range of revenues as the non-R20 group, so any differences seen are not attributable to company revenue size. There is however a dip in performance of the R20 companies in the $10-20 million range as they go through one of the known growth hurdles and another closer to $30 million.
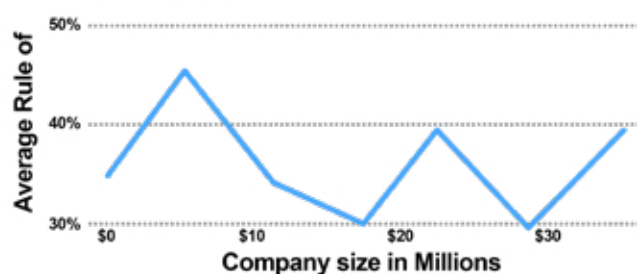
"Rule of" by Company size

Figure 4 - Histogram of average sum of revenue growth and EBIDTA for various company revenue sizes

The X axis shows the starting point of the histogram bin. For example, the point at zero tallies the companies in the range of 0 to about 6 M$ in revenue, the next bin covers 6 to 12 M$, and so on.

Summary of observations

- Some companies have performed well and shown consistent revenue growth
- EBITDA has decreased but stayed on average positive
- There is a group of companies that can consistently show revenue growth and good EBITDA
- Non-labor revenue is a significant consideration in the performance of the R20
- Both groups have room to improve especially on the utilization metric
- R20 companies continue to improve operational efficiency as company size increased
- The following pages will provide more detail and some ideas of where to focus to improve overall company performance.

Results

Reminder: In the next pages the graph on the left will be for the R20 companies and the one on the right will be for the non-R20 companies. If there is a single graph it will be for the R20 companies.

If the goal of a company is to grow and show decent profits while doing that, we should start with understanding the growth of the two groups, the R20 group and the non-R20 group.
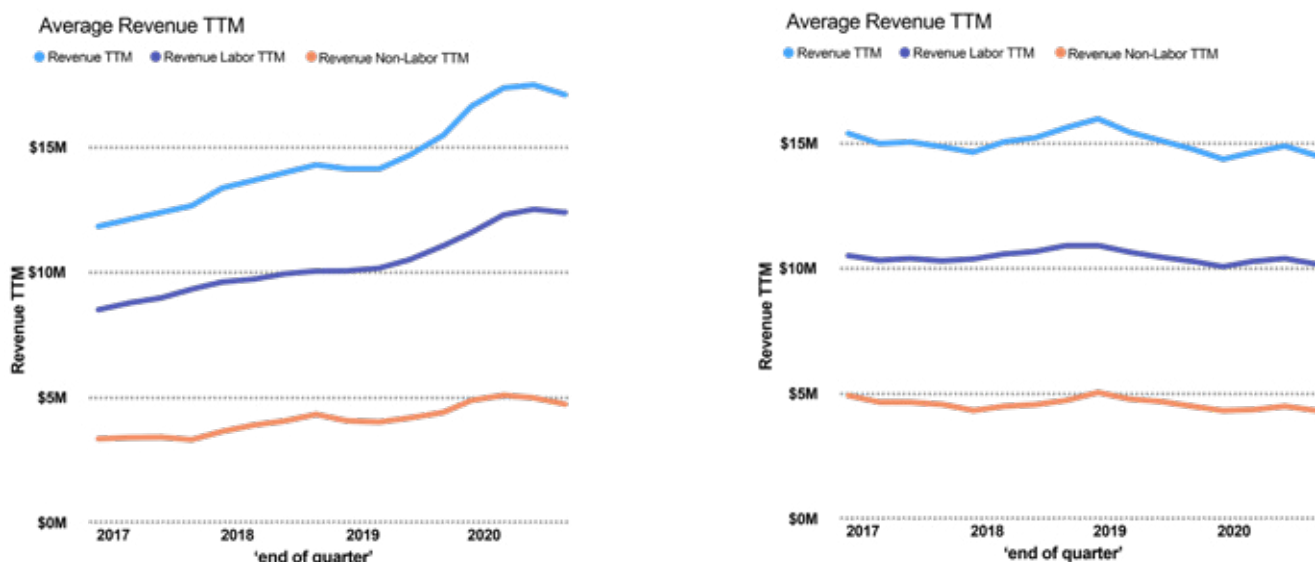

Figure 5 - Average TTM revenue for R20 (left) and non-R20 (right)

The R20 companies went from an average of $11.9 million to a peak of $17.6 million before dropping off in the pandemic to $17.13. The non-R20 companies on the other hand went from $15.4 to 14.5 with a little bit of a peak in the middle of 2018 of $16.0 and demonstrated a downward slope on non-labor revenue.

Not only was the revenue growth significantly different. The EBITDA curves for both groups looks similar but at markedly different levels.
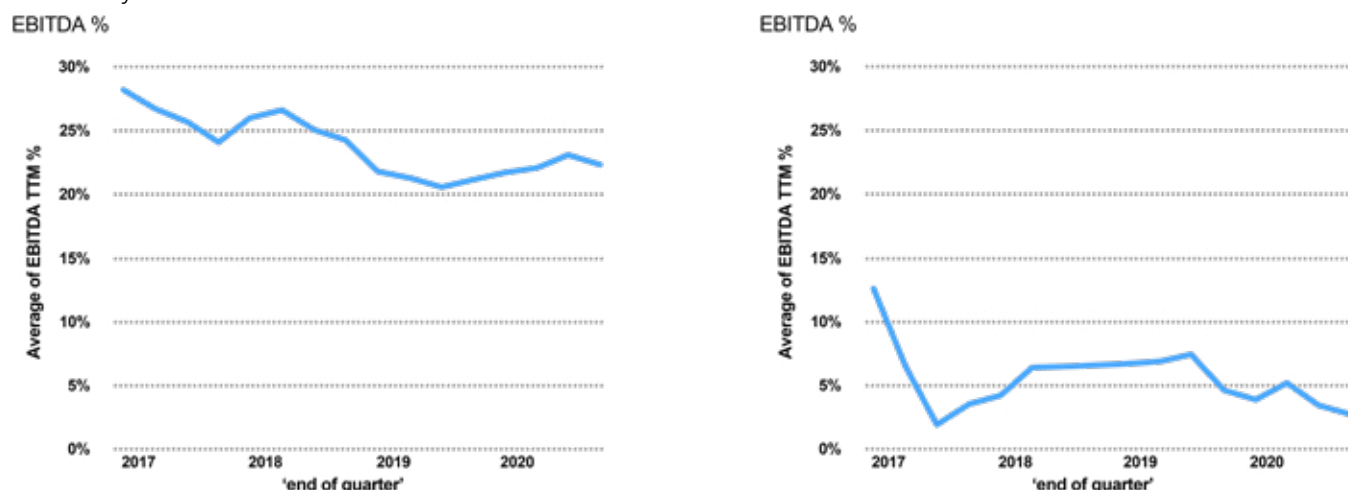

Figure 6 - Average TTM EBITDA % for R20 (left) and non-R20 (right)

The R20 group went from an average EBITDA of 26.7% down to an EBITDA of 22.3% whereas the non-R20 went from 12.6% down to a mere 2.7%.

Not only did the R20 group grow at a significantly faster rate they did it with much better profits. How can that be?

Revenue by Labor Sales

There are two revenue streams tracked here, labor and non-labor. Looking at the labor revenue first and the Effective Billing Rate (EBR is calculated by taking the rolling average labor revenue divided by the rolling average project hours for the quarter) of each group as a starting point and comparing that to the labor cost to produce that revenue (calculated by taking the rolling average billable labor cost divided by the rolling average project hours for the quarter).
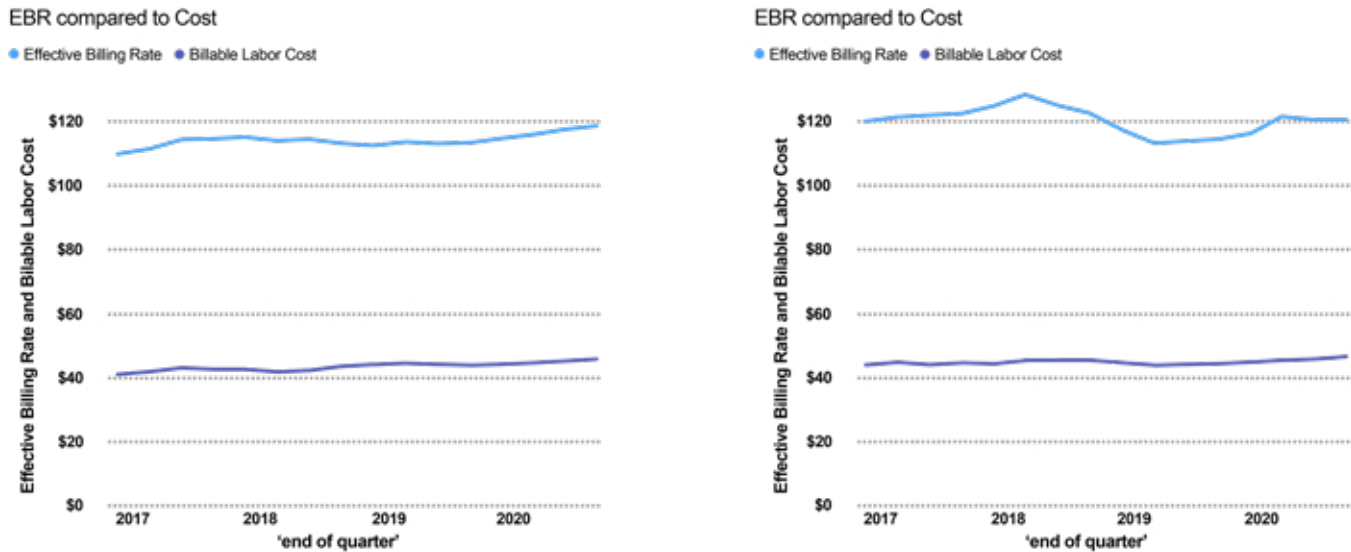

*Figure 7 - Effective billing rate and labor cost for R20 (left) and non-R20 (right)*

To assist in interpreting these graphs, Table 1 shows a numerical summary.

		2016Q3	2020Q2	Delta $	Delta %
R20	Effective Billing Rate	$110.14	$118.67	$8.53	7.7%
	Billable Labor Cost	$ 41.00	$ 45.80	$4.80	11.7%
Non-R20	Effective Billing Rate	$120.10	$120.57	$0.47	0.4%
	Billable Labor Cost	$43.83	$46.69	$2.86	6.5%

Table 1 - Comparison on billable rates and labor costs for R20 and non-R20

Interestingly the non-R20 group has a higher EBR starting at $120.10 and inching up to $120.57 whereas the R20 group started at $110.14 and climbed to $118.67. Even more important is the cost for those billable hours. The non-R20 went from $43.83 to $46.69, an almost $3 increase in cost with only a $0.47 increase in selling rate. The R20 group on the other hand saw the labor cost go from $41.00 to $45.80, almost a $5 increase in cost offset with a $8.53 increase in selling rate. The R20 have improved their selling rate faster than their cost but as the next graph shows, not fast enough.

Average of Labor Multiplier
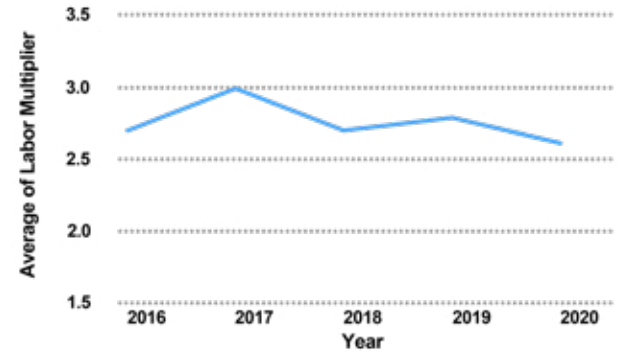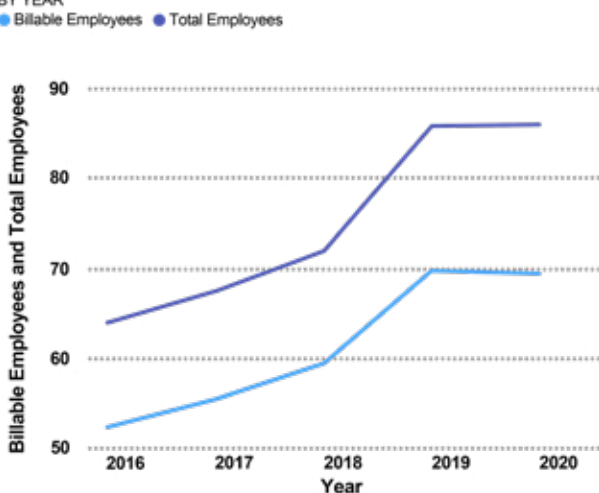BY YEAR
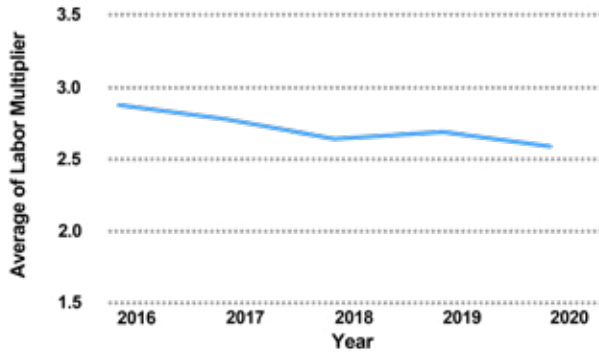
Average of Labor Multiplier
BY YEAR

Figure 8 - Average Labor Multiplier for R20 (left) and non-R20 (right)

For the R20 companies, a focus on the labor multiplier would be a good idea. The non-R20 companies improve or at least protect those rates and get some junior folks in at a lower cost.

The secret to the growth from labor revenue is not just in the rates but in the volume of labor revenue. The volume increase is reflected in the number of employees and their utilization. EBITDA is impacted by the ratio of billable to non-billable employees.

Looking at the number of employees, both billable and non-billable we start to see some significant differences.

Billable Employees, Total Employees
BY YEAR
● Billable Employees ● Total Employees

Billable Employees, Total Employees
BY YEAR
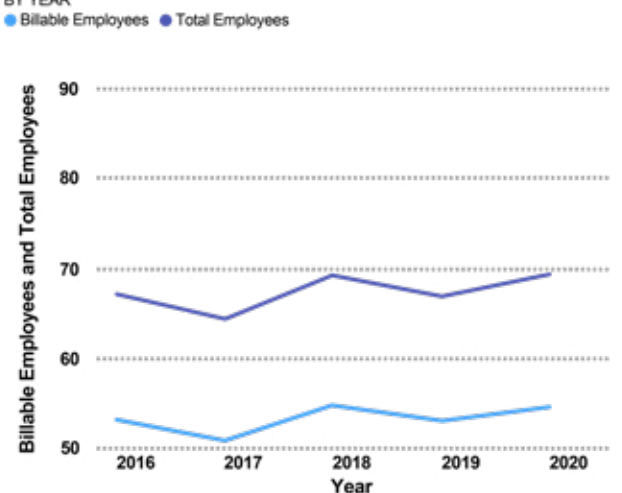● Billable Employees ● Total Employees

Figure 9 - Average billable and total employees for R20 (left) and non-R20 (right)

The R20 companies had a remarkable growth in number of employees from 64 to 86 with the billable number growing from 52 to 69. The non-R20 did not see the growth in employees, with totals starting at 67 and ending at 69. There are two aspects of the non-R20 billable employee count that are a problem, the meager growth from 53 to 55 and the ratio of billable to non-billable people as shown below.
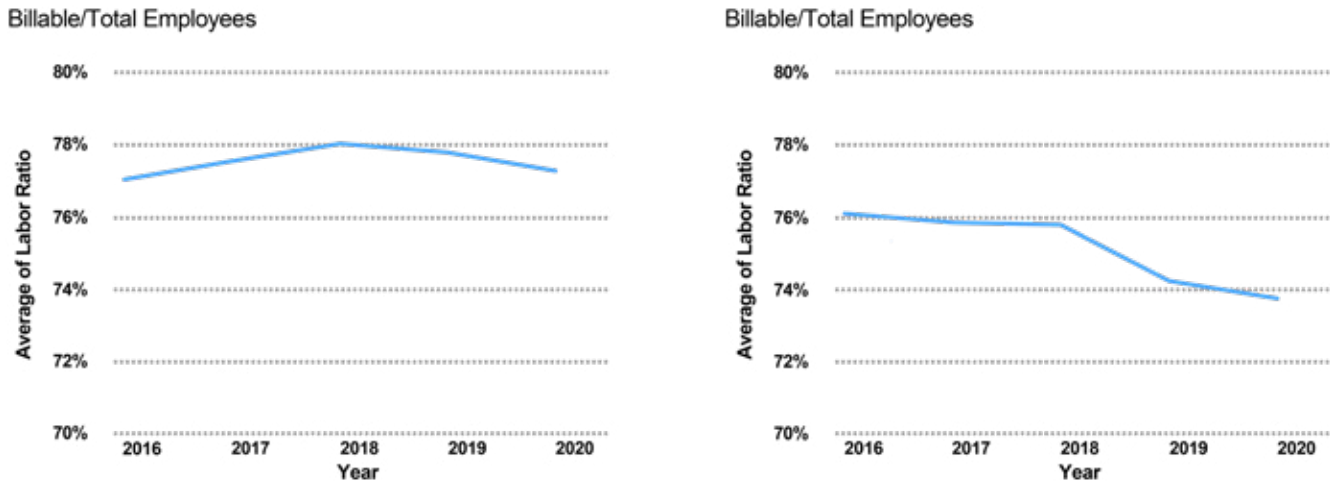

Figure 10 - Average ratio of billable to total employees for R20 (left) and non-R20 (right)

Not only did the R20 companies maintain their ratio between 77% and 78% but they were higher than the non-R20 companies that dropped from 76% to 74%. The R20 companies improved with size but the non-R20 plateau after getting to $20 milion in revenue.
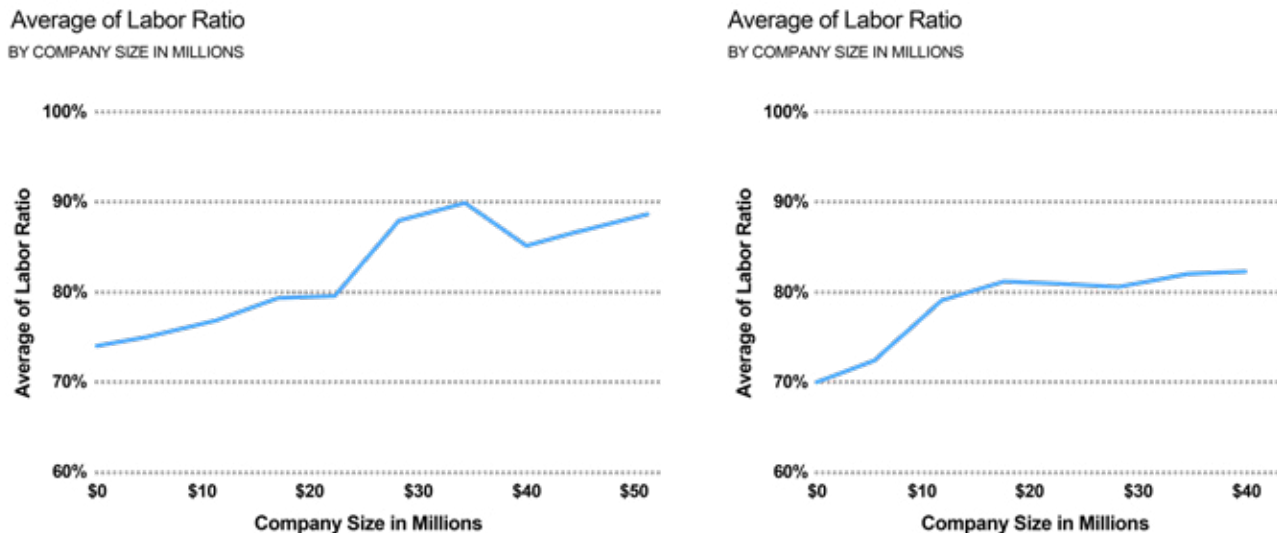

Figure 11 - Average ratio of billable/total versus company revenue for R20 (left) and non-R20 (right)

Looking at it another way, how much labor revenue did each group make per employee. The R20 group held steady with $177,660 per billable and $136,489 per total employees increasing slightly to $179,544 and $136,882. The non-R20 group did not fare as well going from $208,939 per billable and $155,633 per total employees down to $190,709 and $134,742 respectively.

		2016Q3	2020Q2	Delta $	Delta %
R20	per billable	$177,660	$179,544	$1,884	1.06%
	per total	$136,489	$136,882	$ 393	0.29%
Non-R20	per billable	$208,939	$190,709	$(18,230)	-8.73%
	per total	$155,633	$134,742	$(20,891)	-13.42%

Table 2 - Average per person revenue for billable and for all total employees
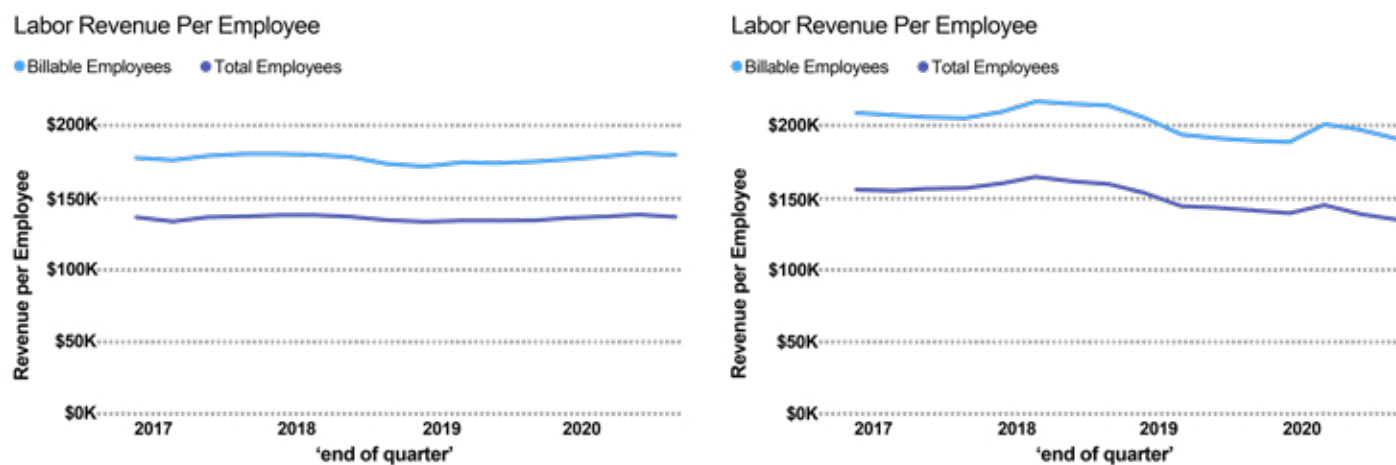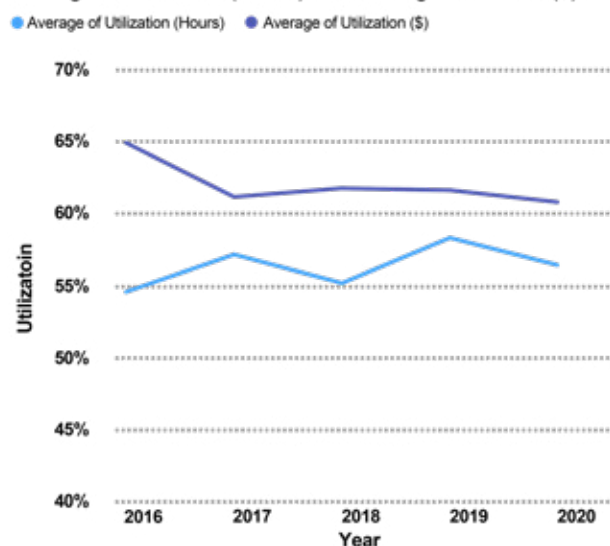

Figure 12 - Labor revenue per billable and all employees for R20 (left) and non-R20 (right)

Of course we need to look at the utilization rate of those employees to tie these numbers all together. The R20 group has seen a modest decline in dollars utilization from 64.9% down to 60.83% remaining fairly flat the last three years, and a very slight improvement in hours utilization from 54.6% to 56.4%. The non-R20 group didn't fare so well here either with a drop in both dollars and hours utilization from 63.3% and 59.13% down to 59.13% and 52.41% respectively, and a steady decrease in both utilizations over the past 2 years. The drop in labor revenue, likely caused by non-productive billable engineers, is a signification cause of this drop for non-R20 companies.
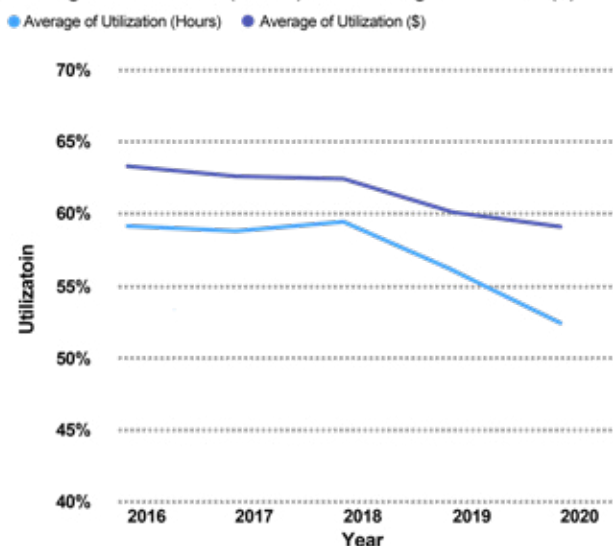

Figure 13 - Average utilization in $ and hours for R20 (left) and non-R20 (right)

Revenue by Non-Labor Sales

The other half of the revenue stream is from the non-labor sales. The best way to look at that is by examining the Labor to Material mix. There is a dramatic difference in how the two groups handled the non-labor portion of their business. The R20 group increased the non-labor revenue percent of their business from 26% to a peak of 34% in 2019 before settling back to a pandemic level of 29%. Keep in mind this is while growing overall revenue. The non-R20 group did the opposite starting at 30% and reducing to a low of 27% before settling in at 28% in the pandemic.
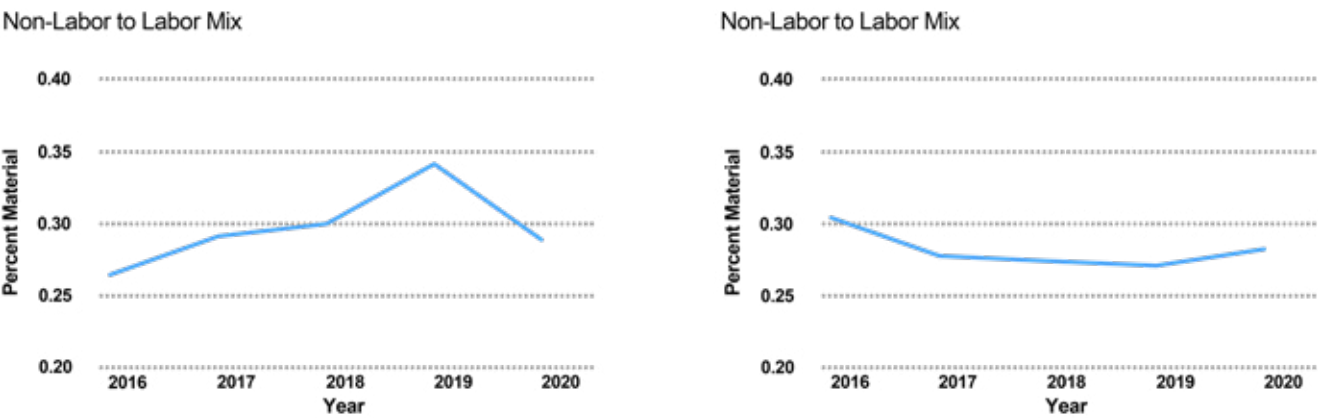
Figure 14 – Average non-labor to labor ratio for R20 (left) and non-R20 (right)

To put that into perspective, the margin on non-labor revenue goes largely to the bottomline making the non-labor margin % an important metric to watch. For the R20 companies a starting point of 16.37% is pretty good but they sacrificed some margin for volume in the middle years dropping to 13% before climbing back up to 16.47%, still with decent volumes. The non-R20 group started slow at 12.17% dropping to 10.64% before climbing to 18.18% unfortunately on lower volume.
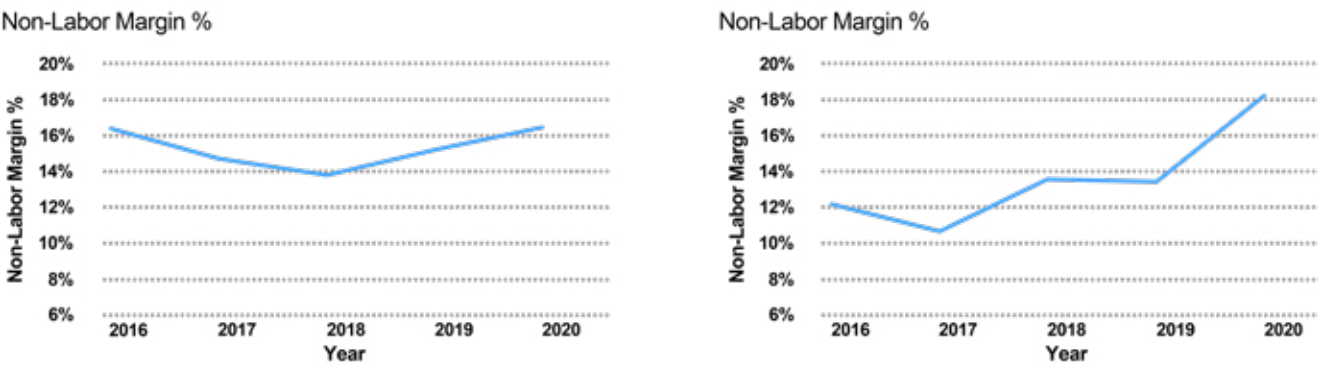
Figure 15 - Average non-labor margin for R20 (left) and non-R20 (right)

When we look at the non-labor margin compared to EBITDA it shows that selling material makes sense for the bottomline. For R20 companies it pulls EBITDA down a bit but still keeps it at a respectable level. For the non-R20 companies increasing the non-labor portion of revenue would actually pull EBITDA up.

Non -Labor Margin % and EBITDA TTM %

● Average of Non-Labor Margin % ● Average of EBITDA TTM %
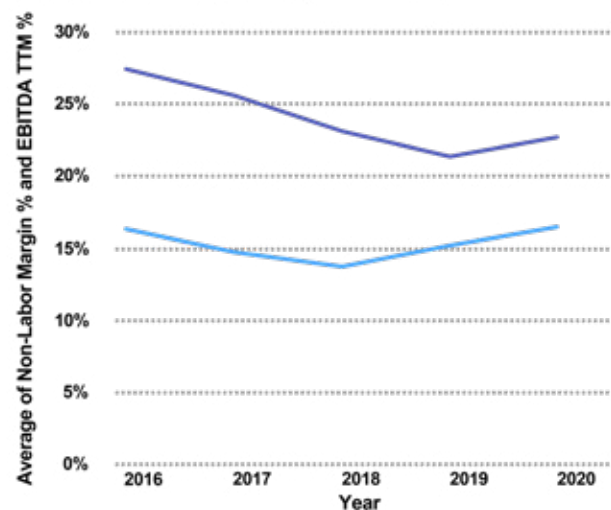
Non-Labor Margin % and EBITDA TTM %

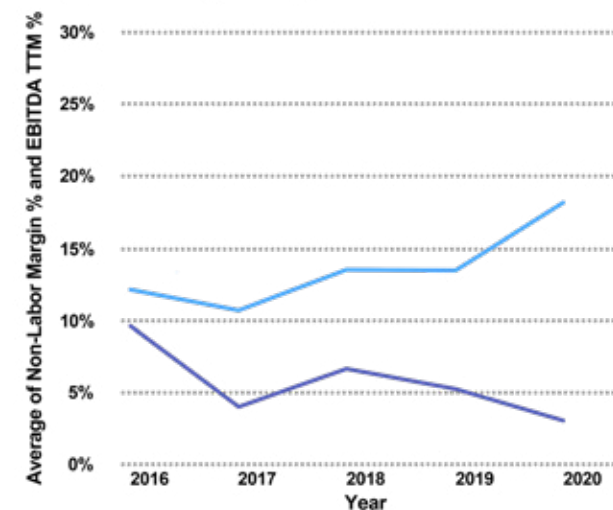● Average of Non-Labor Margin % ● Average of EBITDA TTM %

Figure 16 - Average non-labor margin and EBITDA for R20 (left) and non-R20 (right)

Recommendations

The Benchmarking Committee has a few recommendations and considerations for improving the performance of CSIA member companies, based on the findings of this report.

Achieving R20 Performance Level

- Improve or at least protect those rates and get some junior folks in at a lower cost. But see the comment below about recruiting and retaining new employees.
- Improve the ratio of billable to non-billable people especially for the larger companies.
- Figure out why the revenue per employee has continued to drop.
- Get utilization back up a point or two. This could have a huge impact.
- Figure out how to drive more non-labor revenue. If the margin % is higher than the EBITDA then it doesn't even dilute.

Regarding recruiting and retaining new employees, the SI business is built around knowledgeable people. If SIs can recruit fast to meet demand, they will be able to grow. A major challenge can be recruiting. Some SIs have taken the challenge seriously by developing their own recruitment machines, showing up year-after-year at their selected schools, promoting their workplace environment, and so on. Being competitive in salaries and benefits is critical, of course, and CSIA's Talent Retention Toolbox can help with these offerings.

Sustaining R20 Performance Level

The companies in the R20 have some room for improvement and a big need to protect the gains already made.

- A focus on the labor multiplier would be a good idea.
- Smaller companies should emulate the larger companies and get their billable to non-billable ratio higher. For example, focus on efficiency in management and administrative roles to reduce non-billable headcount.
- Continue to work on increasing the utilization.
- Continue to drive non-labor revenue but keep an eye on the ratio to make sure budgeting and cash flow approaches are still correct.

Hopefully, this report was useful and will spur interesting conversations during planning seasons. The pandemic is not done with us and the next two quarters will likely change these numbers dramatically. It is only through the dedication of the CSIA members that submit their numbers every quarter that we can generate this type of analysis. Please do your part and contribute your data to Pulse.

Below is a list of all the metrics we are currently looking at. Obviously, there are a lot more we could report on if the members would like. Additional metrics, different analyses, and other comparisons can be done. CSIA encourages members to ask questions to help their companies improve. This report is unique to our industry and all CSIA members can request that new or different data be surveyed to enhance its utility to our members.

Special Thanks

CSIA Benchmarking Committee — A passionate group driving quantitative analysis for the improvement of the SI businesses, as well as the SI industry overall.

Jim Campbell — Past Chair and relentless driver of this committee over many years.

Bryan Powrozek — Main data cruncher for this project.

Don Roberts — Key data interpreter helping make sense of it all.

Jeff Winter — CSIA Benchmarking Committee Chair.

Rockwell Automation — Financial sponsor of this paper.

Appendix A

INDEX	NAME		INDEX	NAME
1	Certification status		30	Gross Margin
2	Member of Rule of 20		31	Gross Margin %
3	Project Hours		32	Labor Margin
4	Total Hours		33	Labor Margin %
5	Billable Labor Cost		34	Labor Margin all companies
6	Total Labor Cost		35	Labor Margin all companies %
7	Billable Employees		36	Labor Ratio billable/non-billable
8	Total Employees		37	Labor Revenue
9	Employee Based Labor Revenue		38	Labor Revenue all companies
10	Cash		39	Margin all companies
11	Available Line of Credit		40	Margin all companies %
12	Average Daily Spend		41	non-labor Margin
13	Total Revenue		42	non-labor Margin %
14	Non-Labor Revenue		43	non-labor Margin all companies
15	Cost of Materials		44	non-labor Margin % all companies
16	Cost of Reimbursable Expenses		45	Revenue Growth Qtr over Qtr
17	Backlog		46	Revenue Growth Qtr over Qtr %
18	Utilization (Hours)		47	Revenue Growth TTM
19	Utilization ($)		48	Revenue Growth TTM %
20	Revenue per Billable Employee		49	Revenue TTM
21	Revenue per Employee		50	Billable Labor Cost average previous 4 qtrs
22	Days Cash on Hand		51	Labor Revenue average previous 4 qtrs
23	Labor Multiplier		52	Labor Revenue per Billable average 4 qtrs
24	Labor Material Mix Based on Rev		53	Labor Revenue per Employee average 4 qtrs
25	Hours Per Day		54	Revenue average 4 qtrs
26	Days in Backlog		55	Effective Billing Rate average previous 4 qtrs
27	EBITDA		56	Project Hours average previous 4 qtrs
28	EBITDA %		57	Total Spend TTM
29	EBITDA TTM			

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Summary

This report is an analysis of key metrics of 26 companies over the period Q3 2016 to Q2 2020 inclusive. It is designed to convey a sense of what "good" looks like across the industry of Control SIs.

CSIA offers its financial benchmarking program, CSIA Pulse, to its members. CSIA Pulse is designed to provide easy access to relevant member-wide metrics to help business owners and management set realistic targets for their efforts to improve company operations. CSIA Pulse calculates utilization Based on Hours and Dollars, Revenue per Billable Employee, Days Cash On-hand, Labor Multiplier and Days in Backlog. Most of the financial data is uploaded from spreadsheet form for easy access for anyone within the SI company. Analytic dashboards, financial reports and industry trends are shared. This program is administered by CSIA and the data is managed by a third party in a secure and confidential repository.

Who is CSIA?

The Control System Integrators Association (CSIA) is a global, non-profit trade association with a mission to advance the practice of control system integration to benefit our members and their clients. It was founded in 1994 and has over 400 system integrator members and over 100 vendor partner members. While the majority of its members are headquartered in the United States, over 120 of its members reside outside the U.S.

CSIA provides methods and opportunities to improve SI company operations. The CSIA Best Practices Manual is a guide for running a successful company. Our events (in-person annual Executive Conference and regular Virtual Events), members-only online community and other services are forums for our members to network, collaborate and learn.

CSIA also runs the CSIA Industrial Automation Exchange, an online community where integrators, industry suppliers and end-user clients connect with one another, integrate new ideas and improve as businesses, together.

www.controlsys.org ● www.csiaexchange.com