

2023 Towson University Data Analytics Competition
Kristin Lloyd and Kenneth Asare
Towson University
Student ID's: 0740103 & 0744431

Introduction

SC&H Group is a nationally recognized management consulting, audit, and tax firm. In this data analysis, a data set consisting of employees and client information between 2019 to 2021 is used to derive the best way to determine clients with the highest profitability and employees with the highest utilization to help SC&H Group drive more opportunities.

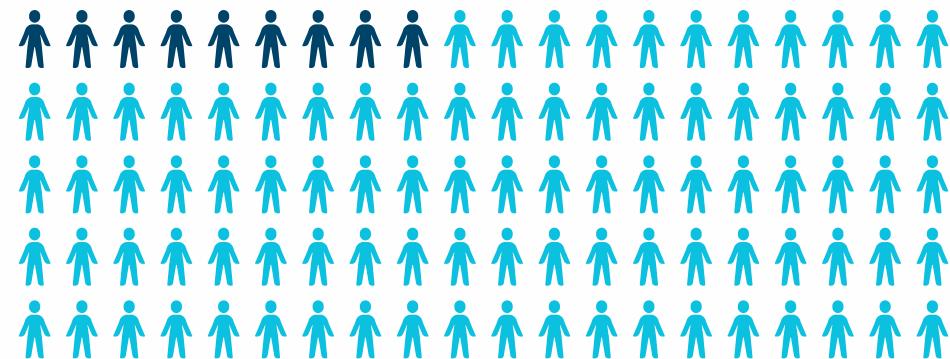
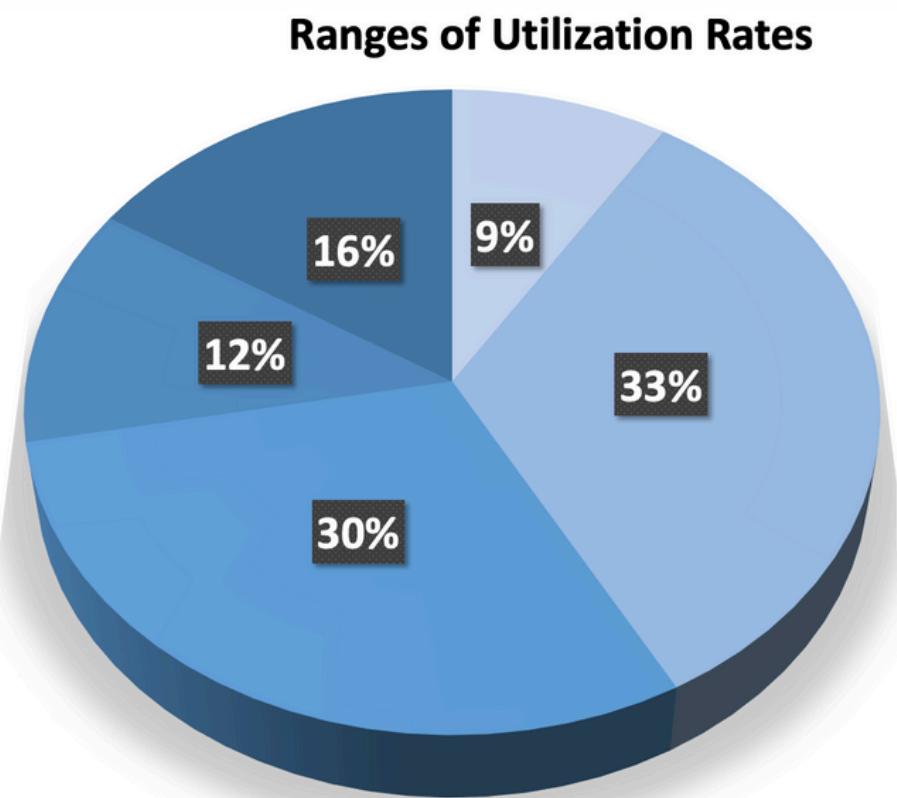


Total Employee Utilization Rate

Utilization Rate = Billable Hours / Total Hours



- Industry standard for utilization rate is 80%
- Only 9% of employees have met or exceeded this standard. We recognize those employees below.
- We recommend SC&H give employees a utilization goal and reward them for meeting it.



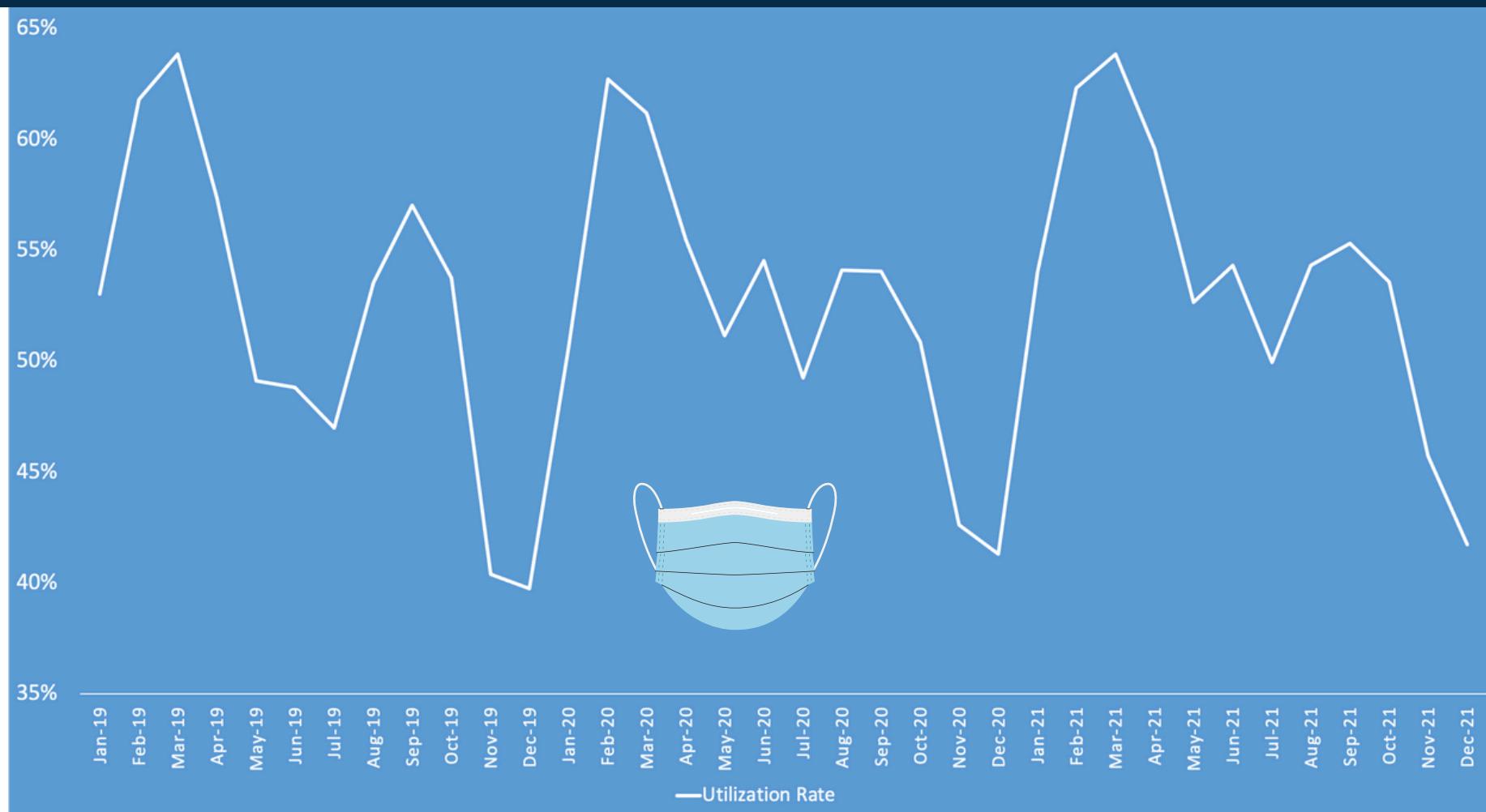
9 out of every 100 employees have a utilization rate over 80%, which is 44 of your employees.

- $\geq 80\%$
- $60 \leq x < 80$
- $40 \leq x < 60$
- $20 \leq x < 40$
- $0 \leq x < 20$

Employee ID			
64	1429	1408	1206
1485	1363	1159	1413
1497	1280	1409	1412
1480	447	1414	1342
1476	1058	1282	1100
807	1219	1504	1085
624	964	1343	1415
1334	691	1148	1119
1325	1233	1418	518
1351	965	1323	1164
1147	1417	1060	1465



How do Total Utilization Rates change over 3 years?



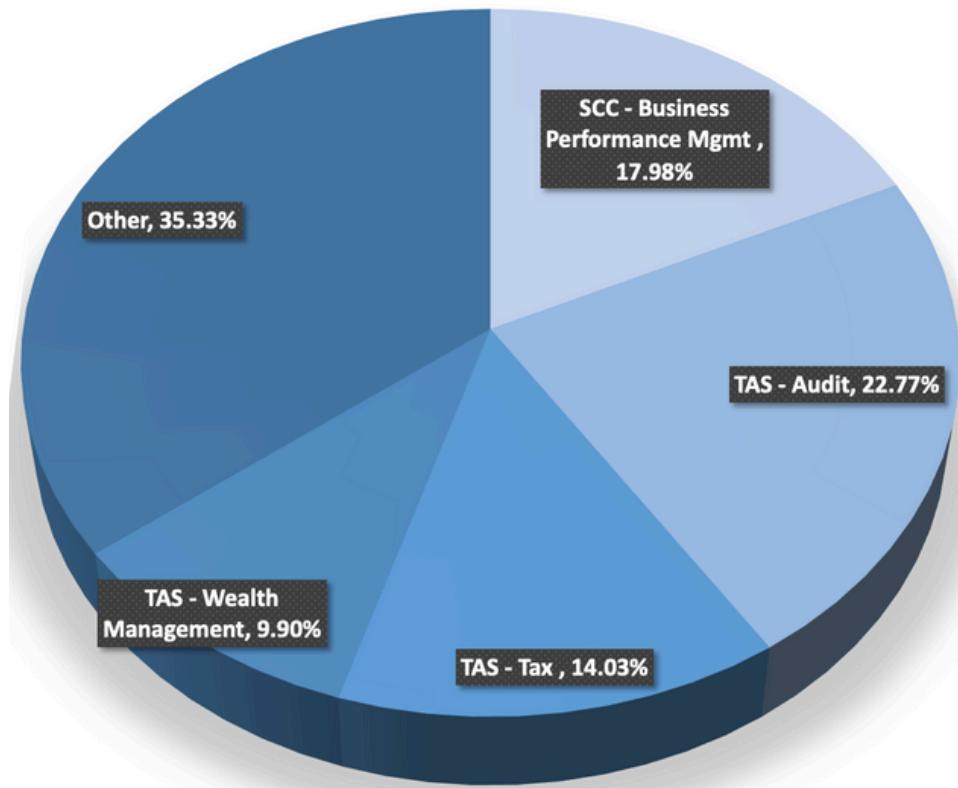
- Similar seasonal pattern every year. No significant difference during COVID.
- Utilization rates are highest during tax season due to more billable hours by tax departments. Rates drop in May perhaps due to employees burned out after tax season or catching up on administrative tasks.
- Utilization rates are lowest during peak vacation/holiday months. Vacation is non-billable.



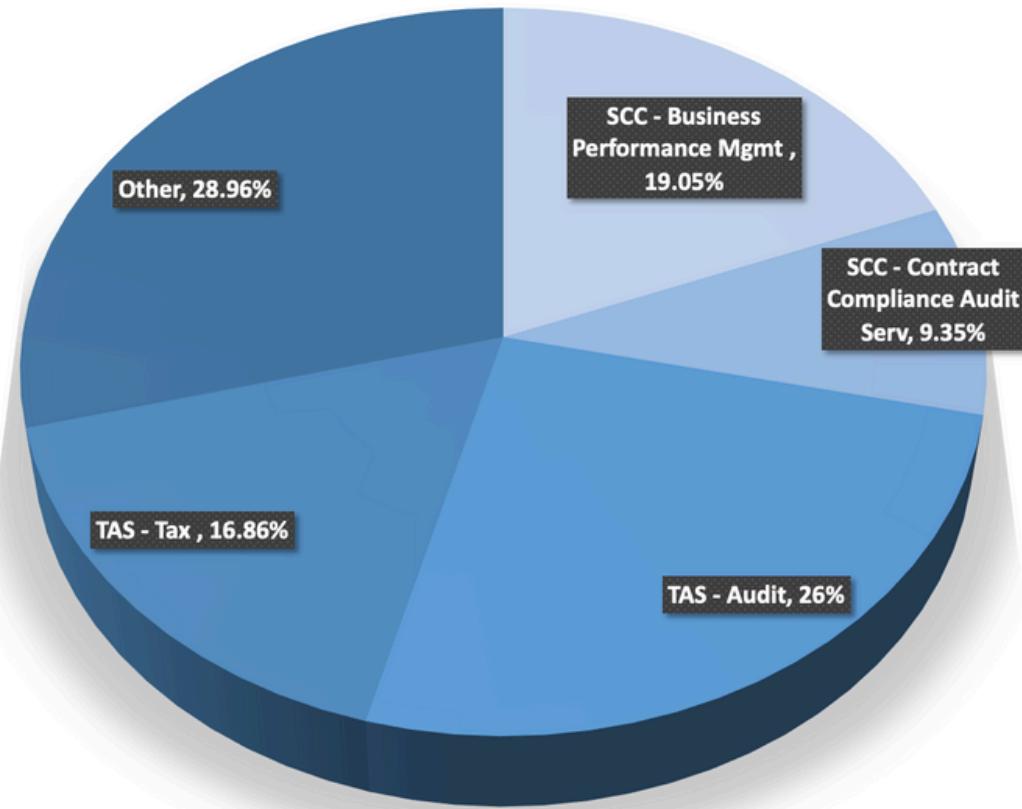
We recommend that SC&H track vacation time in their system so utilization rates can also be calculated with vacation excluded.

Time *is* Money

Percent of Total Hours Allocated by Department



Share of Revenue per Department



The pie chart shows the four departments that make up the largest proportion of each category. Smaller departments are grouped as "Other".



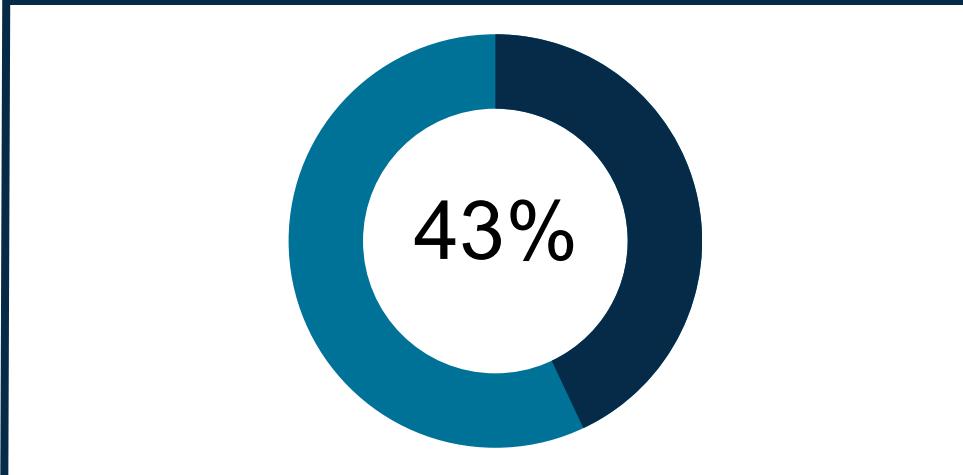
Revenue Produced Given Hours Spent

TAS-Capital Special Situations	174%
TAS - Business Value & Litigation	145%
TAS-Corp Restructuring	132%
TAS- Capital Corp	126%
TAS - Tax	120%
TAS - Audit	113%
SCC - Contract Compliance Audit Serv	107%
SCC - Business Performance Mgmt	106%
SCC - Tech Advisory	97%
SCC - Accounting Solutions	88%
TAS - Affordable Housing - Tax	75%
TAS - Affordable Housing - Audit	68%
SCC - Risk Management	63%
TAS - Wealth Management	34%



The ratio to the left is
share of revenue (%) / hours allocated (%)

A ratio < 100% means the department is
less efficient at generating revenue.

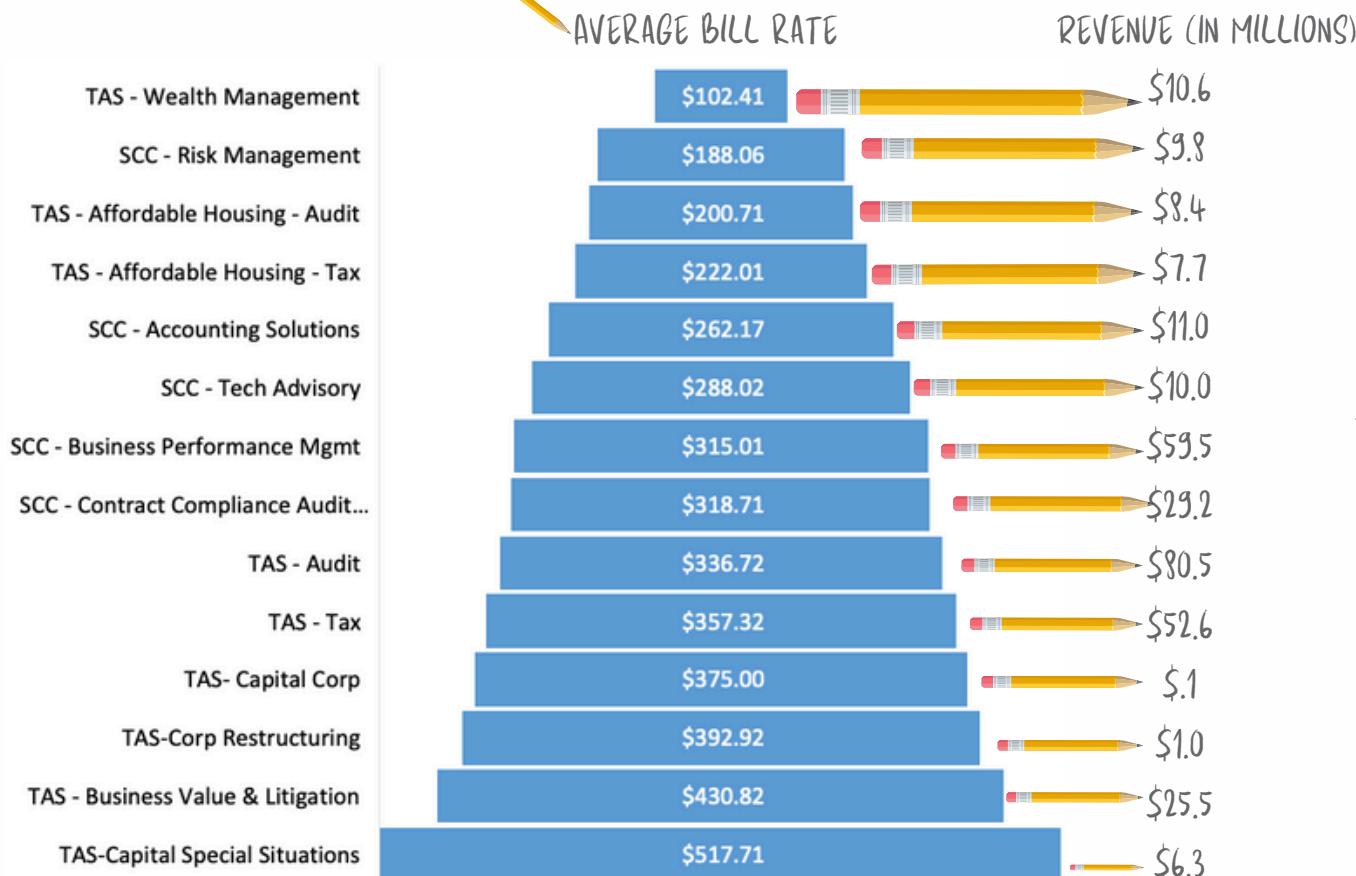
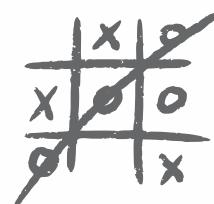


Almost half of your departments are suboptimal.

The suboptimal departments aren't as profitable compared to other departments, so we recommend that you allocate less time to them and more to the optimal departments.

These results agree with average bill rate analysis on the next slide.

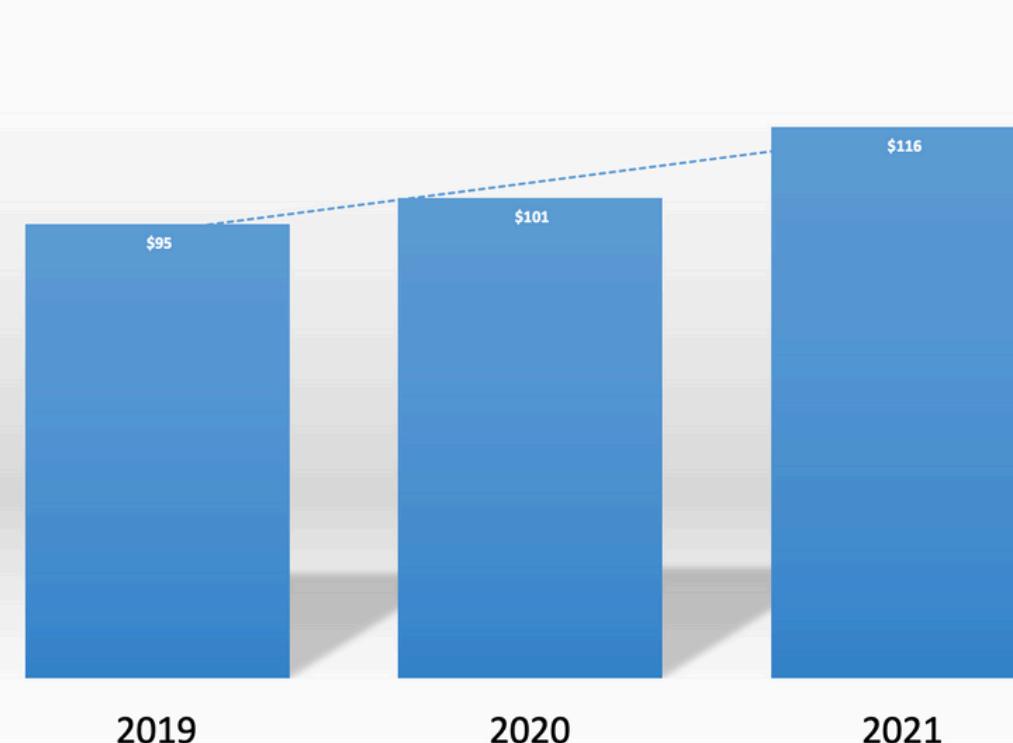
Average Bill Rate and Total Revenue per Department



- Services near the top of the pyramid have a lower bill rate and also generate less revenue. We recommend that you charge more for these services or spend less on time on them.
- Business Performance Management, Contract Compliance, Audit, Tax, and Business Value & Litigation are your best areas as they have good bill rates and generate a lot of revenue. We recommend you continue to spend time on these services.
- There are some services at the bottom of the pyramid with high bill rates, but low revenue. We recommend you spend more time marketing these better or reduce your rate to get more business.

Revenue x Department x Year

Total Revenue 2019 - 2021 (in Millions)



Revenue by Department Each Year



2019

2020

2021

2021

2020

2019

Millions

SC&H Group revenue is increasing from year to year, but that is not the case for some departments.

As can be seen in the graph below:

- Audit, your best revenue generator, has leveled off.
- Capital Special Situations revenue dropped in 2021.
- Capital Corp pulled in no revenue for the last 2 years.

We recommend you try to grow Audit services.

Clients



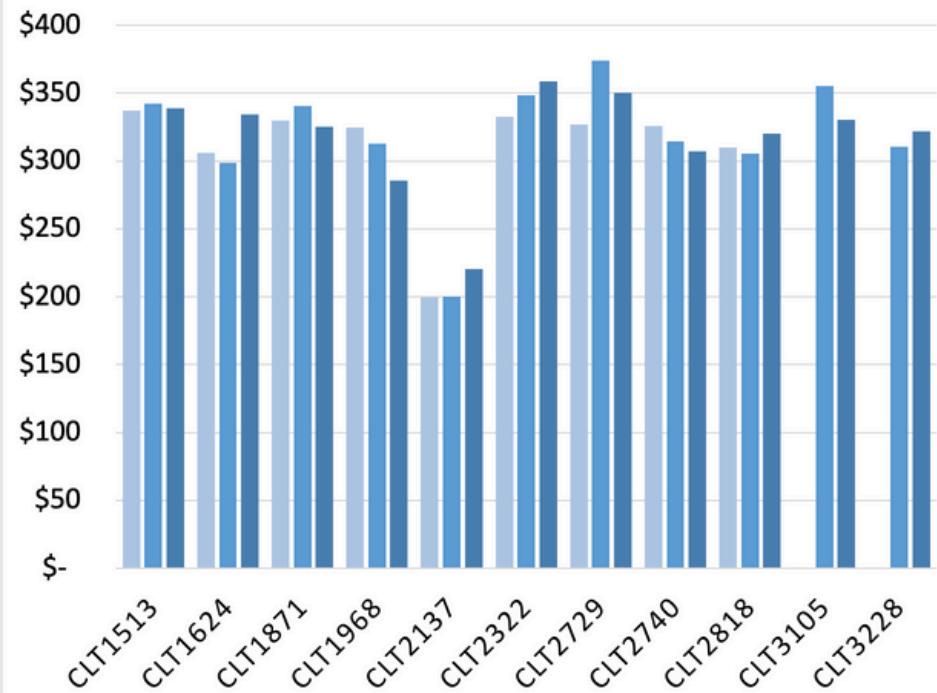
You average a 4.33% increase in clients each year. If this trend continues, you will hit 4000 clients in 2033. It is important to note that your change in clients is increasing. This means your clients are loyal and you are gaining more.

Your Best Clients

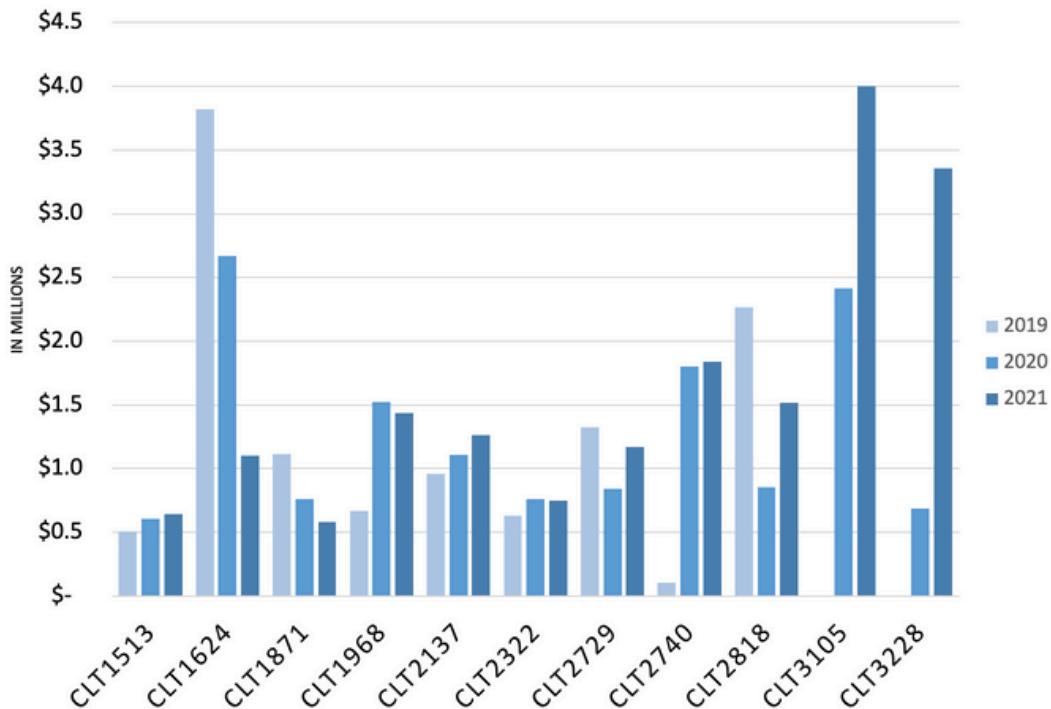
We identified the clients that consistently brought in the most revenue in 2019, 2020, and 2021. The 11 clients below made up 14% of total revenue for the 3-year period. You may want to survey clients whose revenue is declining to find out why they aren't satisfied.



AVERAGE BILL RATE

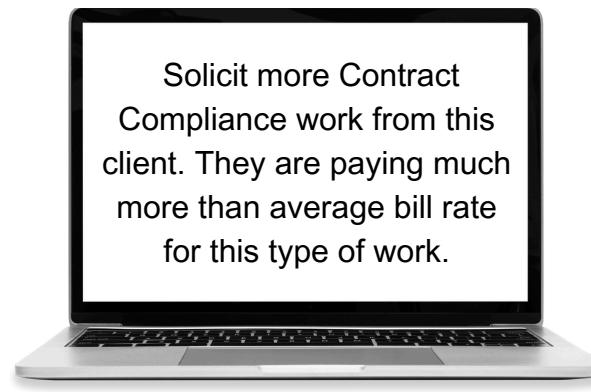
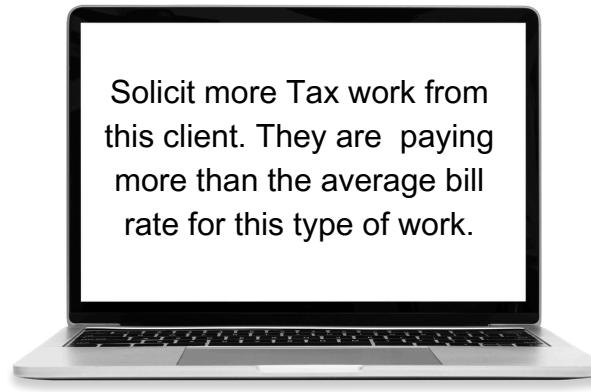
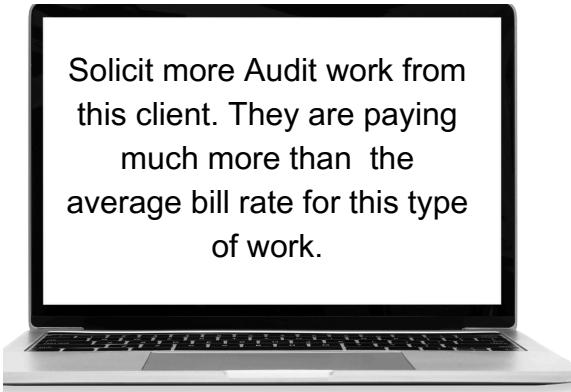


REVENUE



Rates for Services provided to Top Clients

	CLT1513	CLT1624	CLT1871	CLT1968	CLT2137	CLT2322	CLT2729	CLT2740	CLT2818	CLT3105	CLT3228	Grand Total
SCC - Business Performance Mgmt	\$ -	\$ 307.30	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 311.47	\$ 312.24	\$ 339.29	\$ 320.23	\$ 318.04
SCC - Contract Compliance Audit Serv	\$ -	\$ -	\$ 332.24	\$ 303.47	\$ -	\$ -	\$ 345.98	\$ -	\$ 455.82	\$ -	\$ -	\$ 324.94
SCC - Risk Management	\$ 175.19	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 175.19
TAS - Affordable Housing - Audit	\$ -	\$ -	\$ -	\$ -	\$ 198.09	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 198.09
TAS - Affordable Housing - Tax	\$ -	\$ -	\$ -	\$ -	\$ 224.17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 224.17
TAS - Audit	\$ 445.34	\$ -	\$ -	\$ -	\$ -	\$ 335.76	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 342.82
TAS - Business Value & Litigation	\$ 409.18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 409.18
TAS - Tax	\$ 354.27	\$ -	\$ -	\$ -	\$ -	\$ 397.03	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 363.43
Grand Total	\$ 339.44	\$ 307.30	\$ 332.24	\$ 303.47	\$ 207.32	\$ 347.09	\$ 345.98	\$ 311.47	\$ 312.25	\$ 339.29	\$ 320.23	\$ 308.80



Very high rate



Good rate



Low rate

We considered both how high the rates were and also compared the client's rate for the type of service to the average rates on Slide 6.

Since you already have the relationship with these clients, try to sell them on the other services with that have high bill rates, such as Business Value & Litigation.



Conclusion

Improve employee utilization by setting goals.
Reward employees who meet their goal and
work with those who fall short to identify the
cause and how to improve.

Solicit more work
from your top
clients in profitable
services.

Add categories for non-
billable time in the time
keeping system for time off
and administrative tasks.

Focus on services offered by
departments with higher
billable rates.