What affects profit most in a Professional Services business?

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Introduction

The key drivers behind profitability for a professional services business are utilization and average rate. If more time is billed at a higher rate then more profit will be generated. But what impact do these factors actually have? Is it better to hold out for a contract with a higher rate or to keep consultants as busy as possible by discounting?

This paper will look to answer this perennial problem.

An Example Business

An example business will be used to illustrate the impact of different factors. It's easier to understand real numbers than calling things x, y and z. The numbers may not be the same as yours, but the way in which they are affected will be the same.

Our business has 100 billing consultants, with a target utilization of 182 days per year and a target average rate of \$800 per day. This is a 70% utilization (182 billable days divided by 260 weekdays in the year). It's a simplified example that doesn't account for variable targets by grade, but again, the impact works in the same way.

The budget for the business shows a 40% gross margin and a 10% net margin so the summary budget numbers are:

Original Budget						
Total Days	260					
Days Billed	182					
Utilization	70%					
Average Rate	\$800					
Consultants	100					
Revenue	\$14,560,000					
COGS	\$8,736,000					
Gross Margin	\$5,824,000					
GM%	40%					
S,G&A	\$4,368,000					
Net Margin	\$1,456,000					

10%

NM%

Utilization

Let's first look at how the business performance changes with utilization:

Utilisation Variance											
Days Billed	177	178	179	180	181	182	183	184	185	186	187
Utilisation	68.1%	68.5%	68.8%	69.2%	69.6%	70.0%	70.4%	70.8%	71.2%	71.5%	71.9%
Revenue	\$14,160,000	\$14,240,000	\$14,320,000	\$14,400,000	\$14,480,000	\$14,560,000	\$14,640,000	\$14,720,000	\$14,800,000	\$14,880,000	\$14,960,000
COGS	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000
Gross Margin	\$5,424,000	\$5,504,000	\$5,584,000	\$5,664,000	\$5,744,000	\$5,824,000	\$5,904,000	\$5,984,000	\$6,064,000	\$6,144,000	\$6,224,000
GM%	38.3%	38.7%	39.0%	39.3%	39.7%	40.0%	40.3%	40.7%	41.0%	41.3%	41.6%
S,G&A	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000
Net Margin	\$1,056,000	\$1,136,000	\$1,216,000	\$1,296,000	\$1,376,000	\$1,456,000	\$1,536,000	\$1,616,000	\$1,696,000	\$1,776,000	\$1,856,000
NM%	7.5%	8.0%	8.5%	9.0%	9.5%	10.0%	10.5%	11.0%	11.5%	11.9%	12.4%

In the table, utilization varies from 68.1% to 71.9%. This is equivalent to billing between 5 days per year less than budget to 5 days per year more than budget. This affects revenue, because a different number of days are billed, but not COGS assuming, for simplicity, that a utilization bonus is not being paid. Overheads, also, do not change. The impact on gross and net margins can be seen. Because the \$ impact on each of these is the same, the % impact is least on revenue and greatest on net margin; if overheads remain the same, any change in revenue flows directly through to net margin and has a much greater impact at this level.

In the table, if average billable days per consultant can be increased by just 1 day per year, it will add over 5% to the net profit; in this example \$80,000. An increase of 5 days per year, to a utilization of 71.9%, increases net profit by over 27%, \$400,000 in this example.

So an increase in utilization can have a great impact on profit, but note that it's a linear relationship and a decrease in utilization hurts profits to the same extent. In this, and later, charts, the blue line shows the variance and the red line shows the budget.



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Average Rate

The impact of average rate on business performance works in the same way:

Rate Variance											
Average Rate	\$750	\$760	\$770	\$780	\$790	\$800	\$810	\$820	\$830	\$840	\$850
Discount/Premium	-6.3%	-5.0%	-3.8%	-2.5%	-1.3%	0.0%	1.3%	2.5%	3.8%	5.0%	6.3%
Revenue	\$13,650,000	\$13,832,000	\$14,014,000	\$14,196,000	\$14,378,000	\$14,560,000	\$14,742,000	\$14,924,000	\$15,106,000	\$15,288,000	\$15,470,000
COGS	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000
Gross Margin	\$4,914,000	\$5,096,000	\$5,278,000	\$5,460,000	\$5,642,000	\$5,824,000	\$6,006,000	\$6,188,000	\$6,370,000	\$6,552,000	\$6,734,000
GM%	36.0%	36.8%	37.7%	38.5%	39.2%	40.0%	40.7%	41.5%	42.2%	42.9%	43.5%
S,G&A	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000
Net Margin	\$546,000	\$728,000	\$910,000	\$1,092,000	\$1,274,000	\$1,456,000	\$1,638,000	\$1,820,000	\$2,002,000	\$2,184,000	\$2,366,000
NM%	4.0%	5.3%	6.5%	7.7%	8.9%	10.0%	11.1%	12.2%	13.3%	14.3%	15.3%

Again, revenue is affected by a change in average rate but costs are not. If you are able to increase your average rate by 5% then net profit increases by 50%, over \$700,000 in this example. But look at the downside and if you extend the table and the rate achieved is 10% lower than targeted, net profit will go down to zero! It's logical if you think about it; budgeted net margin was 10%, so if rates and therefore revenue decrease by 10%, all other things being equal, net profit will be wiped out.



Headcount

Finally we'll look at the impact of shrinking or growing consultant headcount whilst overheads remain the same:

Headcount Variance											
Consultants	95	96	97	98	99	100	101	102	103	104	105
Revenue	\$13,832,000	\$13,977,600	\$14,123,200	\$14,268,800	\$14,414,400	\$14,560,000	\$14,705,600	\$14,851,200	\$14,996,800	\$15,142,400	\$15,288,000
COGS	\$8,299,200	\$8,386,560	\$8,473,920	\$8,561,280	\$8,648,640	\$8,736,000	\$8,823,360	\$8,910,720	\$8,998,080	\$9,085,440	\$9,172,800
Gross Margin	\$5,532,800	\$5,591,040	\$5,649,280	\$5,707,520	\$5,765,760	\$5,824,000	\$5,882,240	\$5,940,480	\$5,998,720	\$6,056,960	\$6,115,200
GM%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
S,G&A	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000
Net Margin	\$1,164,800	\$1,223,040	\$1,281,280	\$1,339,520	\$1,397,760	\$1,456,000	\$1,514,240	\$1,572,480	\$1,630,720	\$1,688,960	\$1,747,200
NM%	8.4%	8.8%	9.1%	9.4%	9.7%	10.0%	10.3%	10.6%	10.9%	11.2%	11.4%

In this case COGS also changes because the number of consultants is different. With 5 more billable consultants (a 5% headcount increase) and overheads remaining the same, net profit increases by 20%, which is just over \$300,000 in this example.



Calendar Effects

When measuring these Key Performance Indicators (KPIs) on a monthly basis then calendar effects need to be taken into account. Average rate is not affected; headcount changes have a proportional impact depending when in the year the headcount numbers change; but utilization can change significantly from month to month. Public/ national holidays, vacation, company meetings etc. can all impact utilization. The budget and monthly targets should take these things into account, and it also makes sense to measure Year to Date values. As well as averaging the performance over the months, this also gives a useful trend indicator - whether this month is ahead of or behind the YTD average. If your financial year is calendar year then beware that utilization in December is usually very low and ensure your budget and monthly targets reflect this and other seasonal utilization impacts.



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Why are average rate and utilization both important?

Both average rate and utilization have an impact on revenue and profit and can work together or in opposite directions depending on whether you have a positive or negative variance against target. It is important therefore to consider them together. It is interesting to see what positive variance is required in one to counteract a negative variance in the other:

Constant Profit varyi	ng rate and util	isation									
Days Billed	194	192	189	187	184	182	180	178	175	173	171
Utilisation	74.7%	73.7%	72.7%	71.8%	70.9%	70.0%	69.1%	68.3%	67.5%	66.7%	65.9%
Average Rate	\$750	\$760	\$770	\$780	\$790	\$800	\$810	\$820	\$830	\$840	\$850
Discount/Premium	-6.3%	-5.0%	-3.8%	-2.5%	-1.3%	0.0%	1.3%	2.5%	3.8%	5.0%	6.3%
Revenue	\$14,560,000	\$14,560,000	\$14,560,000	\$14,560,000	\$14,560,000	\$14,560,000	\$14,560,000	\$14,560,000	\$14,560,000	\$14,560,000	\$14,560,000
COGS	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000
Gross Margin	\$5,824,000	\$5,824,000	\$5,824,000	\$5,824,000	\$5,824,000	\$5,824,000	\$5,824,000	\$5,824,000	\$5,824,000	\$5,824,000	\$5,824,000
GM%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
S,G&A	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000
Net Margin	\$1,456,000	\$1,456,000	\$1,456,000	\$1,456,000	\$1,456,000	\$1,456,000	\$1,456,000	\$1,456,000	\$1,456,000	\$1,456,000	\$1,456,000
NM%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%

This table shows how utilization and average rate must vary to maintain target revenue and profit e.g. if average rate is 6.3% below target, utilization needs to be 4.7% above target.

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Revenue Per Head

Another way of looking at the effects of utilization and average rate is to look at revenue per head. This is a combination measure that shows the combined impact of variances in both. In the above example, because utilization and average rate variance cancel each other out, the revenue per head is always \$145,600. In the example below where only the rate varies, the revenue per head also changes:

Revenue per head											
Average Rate	\$750	\$760	\$770	\$780	\$790	\$800	\$810	\$820	\$830	\$840	\$850
Discount/Premium	-6.3%	-5.0%	-3.8%	-2.5%	-1.3%	0.0%	1.3%	2.5%	3.8%	5.0%	6.3%
Consultants	100	100	100	100	100	100	100	100	100	100	100
Revenue per head	\$136,500	\$138,320	\$140,140	\$141,960	\$143,780	\$145,600	\$147,420	\$149,240	\$151,060	\$152,880	\$154,700
Revenue	\$13,650,000	\$13,832,000	\$14,014,000	\$14,196,000	\$14,378,000	\$14,560,000	\$14,742,000	\$14,924,000	\$15,106,000	\$15,288,000	\$15,470,000
COGS	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000	\$8,736,000
Gross Margin	\$4,914,000	\$5,096,000	\$5,278,000	\$5,460,000	\$5,642,000	\$5,824,000	\$6,006,000	\$6,188,000	\$6,370,000	\$6,552,000	\$6,734,000
GM%	36.0%	36.8%	37.7%	38.5%	39.2%	40.0%	40.7%	41.5%	42.2%	42.9%	43.5%
S,G&A	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000	\$4,368,000
Net Margin	\$546,000	\$728,000	\$910,000	\$1,092,000	\$1,274,000	\$1,456,000	\$1,638,000	\$1,820,000	\$2,002,000	\$2,184,000	\$2,366,000
NM%	4.0%	5.3%	6.5%	7.7%	8.9%	10.0%	11.1%	12.2%	13.3%	14.3%	15.3%



Common Reasons for Variance

When reviewing revenue and profit each month it is important to understand what is affecting the numbers so that any required action can be taken. Some common reasons are:

	Positive Variance	Negative Variance		
Utilization	 Lower Vacation Resource committed to fixed price project Overtime worked 	 Bench time Higher Vacation Internal projects All Company Meeting Sickness Training Pre-Sales 		
Average Rate	 Projects sold at a higher rate Fixed price contingency released Fixed price project ahead of schedule 	 Projects sold at a lower rate Fixed price overrun Time written off 		

A very common cause of variances - usually higher utilization combined with lower average rate - is lack of control over fixed price projects resulting in a higher level of effort being required to finish the project when it nears completion with insufficient revenue remaining to cover this effort. Beware of situations where higher utilization is hiding overrunning fixed priced projects.

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Should I hold out for a higher rate or start now at a discount?

So what is the answer to this perennial problem? Well, it depends! If the choice is to start now at a rate 10% lower or wait 2 weeks for a higher rate then it depends how long the work will last. After 100 days, the revenue (and profit) will be the same. So if the work will last longer than this you will be better off waiting for the higher rate. If it will be shorter then it is better to start straight away. The sums are the same if you're deciding whether to offer a 10% discount or 10 free days. You need to look at the discount level and number of unbilled days in each case though if you adopt the strategy of providing 10 free days, as opposed to giving a 10% discount, you are more likely to maintain the higher rate for follow on work and protect your future margin.

If in doubt, always think of the proverb, 'A bird in the hand is worth two in the bush'.

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Definitions

Utilization is:

Billable Days 260

Average rate is:

Revenue (excluding re-billed or included expenses) Billable Days

Revenue per Head is:

Revenue (excluding re-billed or included expenses) No. of Consultants

About the Author

Steve Anderson is an experienced and successful company director and entrepreneur who has worked in start-up, growth and multinational companies in the technology sector. His experience includes starting, growing and exiting IT businesses twice and working in senior roles in US and Japanese multinationals. He now works as a Managing Partner at Capitalise, in a non-executive, advisory capacity for a number of technology businesses, and has a track record of investing in technology start-ups.



