FINANCIAL CASE STUDY OF A CONSULTING ACTUARIAL FIRM

James A. Kenney

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BY

JAMES A. KENNEY

BIOGRAPHY:

Mr. Kenney is a Principal with Coates Kenney, Inc. in Berkeley, California. Prior to joining CK, he was a mathematical researcher for CNA in Chicago. He received a BA in Humanities from the University of Chicago in 1968. He became an Associate of the CAS in 1976, and a Fellow of the Society of Actuaries in 1979. He is the author of a Call Paper, "A Theory of Loss Development" presented at the CAS annual meeting in 1978.

ABSTRACT:

One out of five casualty actuaries is a consultant. Increasingly large numbers of casualty actuaries are practicing in small, independent consulting firms. The finances of these firms are based on the repetitive performance of technical work and are potentially predictable. A case study of a decade of income and expense data confirms their stable nature in aggregate, while revealing significant variation by source. Particular emphasis is given to analyzing expenses. Compensation is the major expense in these firms, followed by rent, office maintenance, insurance and professional services.

Productivity is measured in compensation per hour worked and may be analyzed from the perspective of both owners and staff. Productivity varied significantly in the decade examined. An extended period of rising productivity indicates that budgeting and careful management can have a positive effect on productivity in small consulting firms.

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Introduction

This paper presents a case study of a consulting actuarial firm. The first part examines the income of the company over a ten year period, the second part examines expenses, and the third part attempts to measure the company's profitability during the period.

Although the firm under study specialized in pension and profit sharing plans rather than a casualty actuarial practice, the principles which underlie its economic results apply to any enterprise whose income derives from the repetitive performance of technical tasks. Whether it be conducting an actuarial valuation of a pension plan or certifying to loss reserves, the essence is the cyclic nature of the tasks that must be performed.

The accounting requirements of the modern economy have created a niche for consulting firms. Such firms tend to have a stable client base of companies with an ongoing need for the performance of technical calculations on an annual or quarterly basis. It is generally more economical for such companies to engage the services of a consulting firm rather than employ a professional to perform the work in-house. Even companies large enough to engage a professional on a full time basis often prefer to have the work done by a consulting organization.

Typically, the professional consultant employs a staff of trained assistants who perform routine aspects of the work. The professional trains, supervises and reviews the work of these

assistants, as well as doing the more demanding aspects of the work personally. The professional may also manage the operations of the consulting firm, and recruit new clients.

Because the work to be performed is generally recurrent in nature, it is possible to predict a consulting firm's finances, at least in principle. This in turn allows development of reasonably accurate budgets, which can indicate problems before they occur. This is an important advantage of operating a consulting organization. Careful exploitation of this advantage can lead to significant increases in profitability.

Currently, 22% of the members of the Casualty Actuarial Society are consulting actuaries. Of these, one-third are independent or work for smaller consulting firms, typically owned by the senior actuaries involved. The proportion of consultants among CAS members has doubled in the last decade. It is likely that the proportion of consultants among CAS members will continue to increase over the next decade, as proliferating government regulations and requirements create greater opportunity for consultants. Thus, the financial history of a pension consulting firm may help those casualty actuaries who are or will become managers of their own firms.

Analysis of Income

The financial history for the ten year period of study is shown in Chart 1 (all figures are in thousands):

CHART 1

TEN YEAR HISTORY OF FINANCIAL RESULTS

YEAR	GROSS REVENUE	EXPENSES	PROFIT
1983	$ 1,088	$ 1,039	$ 49
1984	1,009	1,030	<21>
1985	1,153	1,151	2
1986	1,668	1,661	7
1987	1,656	1,629	27
1988	1,667	1,679	<12>
1989	1,542	1,539	3
1990	1,436	1,433	3
1991	1,520	1,523	<3>
1992	1,550	1,548	2

These figures show a sizable increase in income in 1986, with a fairly stable economic situation thereafter. As is generally the case in professional corporations, any amounts remaining at the end of the year were distributed as bonuses among the professionals to avoid double-taxation of income; thus, the above figures do not provide an adequate assessment of the company's profitability. In addition, the apparent economic stability during the period 1986-1992 is misleading, as may be seen from Chart 2:

CHART 2

BREAKDOWN OF GROSS REVENUE

YEAR	MAJOR CLIENTS	OTHER CLIENTS	NON-CLIENT REVENUE	% OF REVENUE DUE TO MAJOR CLIENTS
1983	$ 246	$ 740	$ 102	22.6
1984	273	622	114	27.1
1985	292	709	152	25.3
1986	761	760	147	45.6
1987	786	805	65	47.5
1988	580	1001	86	34.8
1989	568	950	24	36.8
1990	759	667	10	52.9
1991	953	562	5	62.7
1992	836	707	7	53.9

Here a very different picture emerges. The noticeable increase in corporate income in 1986 derived primarily from the firm's major accounts. In 1985 and 1986 three of these accounts experienced complex transactions in connection with corporate restructuring, which required extensive actuarial work. This work was completed in 1987 and the income declined again. This decline was exacerbated by the 1987 stock market crash, which led several accounts to impose strict controls on expenses, including actuarial fees.

In 1990, work associated with the delayed effective date of the Tax Reform Act of 1986 led to a significant increase in income from several of these accounts.

On the other hand, income from the firm's other clients was relatively stable during the first half of the period under study. A pattern of modest growth can be observed from 1984 through 1987. In 1988, however, the income from these clients increased nearly $200,000, or 24%. This increase was coupled with a decrease of the same amount in revenue from the firm's major accounts with the result that the difference in gross revenue between the two years was negligible. Only by examining the income by source can one detect the major change that occurred in 1988.

The percentage of total income represented by major clients is shown in the right most column. This ratio, which began the decade at 23% and ended it at 54%, is one measure of the risk involved in consulting actuarial work.

Many mid-size consulting firms have one or several major accounts which form the backbone of their practice. Loss of one of these accounts can be a major blow to the consultancy firm involved.

The repetitive nature of the work performed can lead to a lack of emphasis on marketing. Firms easily reach a steady state, where the recurrent revenue supports a given level of personnel, and new business is obtained by referral. This cycle is disrupted when a major account terminates, and thus the proportion of income generated by such accounts is a measure of the company's risk. In this case, however, the real danger lay with the firm's mid-size accounts, as will be demonstrated shortly.

Before considering this point, it is important to restate the firm's income on an accrual basis. Chart 3 shows the process by which this is accomplished. The change in accounts receivable is added to the cash basis income for each of the years in question. On an accrual basis, the income spike of 1986 is considerably more pronounced than on a cash basis. Analyzing income on an accrued basis also makes apparent the swift fall in that income the next year, which is disguised on a cash basis. Finally, the smooth growth in other client revenue from 1984 to 1987 is seen to be an illusion, with accrual income rising 21% in 1986 only to fall back 12% the next year.

CHART 3

CLIENT INCOME RESTATED ON AN ACCRUAL BASIS

- CASH REVENUE -			- INCREASE - ACCOUNTS RECEIVABLE		-ACCRUAL INCOME-	
Year	Major Clients	All Other Clients	Major Clients	All Other Clients	Major Clients	All Other Clients
1983	$ 246	$ 740	52	<72>	$ 298	$ 668
1984	273	622	<38>	<63>	235	559
1985	292	709	<14>	< 8>	278	701
1986	701	760	252	88	1013	848
1987	786	805	<142>	<59>	644	746
1988	580	1001	<25>	<17>	555	984
1989	568	950	11	22	579	972
1990	759	667	86	<30>	845	637
1991	953	562	< 1>	28	952	590
1992	836	707	0	0	836	707

CHART 5

BREAKDOWN OF EXPENSES BY CATEGORY

YEAR	COMPENSATION	TIME-SHARING SERVICES	OFFICE MAINTENANCE	RENT	OTHER
1983	$ 502	$ 86	$ 87	$ 179	$ 185
1984	503	64	72	180	211
1985	576	80	75	255	165
1986	861	108	91	261	340
1987	854	68	96	271	340
1988	928	49	113	292	297
1989	784	13	84	249	409
1990	865	6	75	117	370
1991	977	6	78	96	366
1992	1,114	0	58	101	275

As may be seen, the largest category of expense is compensation, which ranged between 50% and 75% of total expenses during the decade.

This is not unusual for a consulting firm where highly trained labor commands a premium. Equipment needs are modest, and the current price of personal computers makes it possible to provide one to every worker. This increases productivity but also the skill level required, which in turn increases the emphasis on wages as the primary category of expense.

The variability of the compensation expense during this period is due partly to changes in the company's workforce, and partly to payment of year-end bonuses designed to zero-out the company's profits for the year.

Reviewing Chart 5, we see that the expense for computer timesharing disappears during the period of this study, due to the introduction of powerful microcomputers based on the 386 chip. During the first four years, timesharing averaged 7% of total expense. Thus, the elimination of this category of expense had a significant impact on the company's profitability.

The third category of expense, office maintenance, was relatively level during this period, averaging 5% of revenue. Included in this category are phone, postage, supplies, maintenance and amortization/depreciation. The large increase in 1988 was due to a write-off of lease-hold improvements associated with the bankruptcy of a subtenant.

The fourth category of expense is rent, which amounted to 14% of total expenses throughout this period. Rent ranged from a high of 17% in 1988 to a low of 6% at the end of the decade.

As can be seen, the amount paid for rent increased 42% in 1985. This increase was due to the backloaded nature of the 1982 lease, a feature which gave an initial cushion against the expenses of moving and remodeling. Rent increases after 1985 were modest, amounting to less than 5% per year until 1988, when the original contract was renegotiated.

This analysis of rental expense fails to disclose the impact of sublease income on company profitability, which reveals a startlingly different picture:

CHART 6

YEAR	GROSS RENT	SUBLEASE INCOME	NET RENT
1983	$ 179	$ 102	$ 77
1984	180	114	66
1985	255	152	103
1986	261	147	114
1987	271	65	206
1988	292	86	205
1989	249	24	225
1990	117	8	109
1991	96	0	96
1992	101	0	101

On a net basis the 1985 increase in rent was 56% rather than 42%. More importantly, net rent increased 81% in 1987, while gross rent increased only 4%. This increase in the company's net expense for rent was caused by expiration of one sublease and default of the other. Similarly, although gross rent declined 15% in 1989, the company's net rent increased nearly 10%. Chart 6 demonstrates the dangers of being a landlord. Renting more space than necessary and relying on sublease income to produce a lower overall rent proved to be a very risky strategy, entered into without recognition of the risks involved.

Returning to Chart 5 we can see that the last category of expense, "other" expense, was relatively stable, amounting to approximately 19% of total expense per year, except for the years 1989-1991 during which it rose to 25%. Chart 7 shows a breakdown of these "other" expenses.

CHART 7

BREAKDOWN OF "OTHER" EXPENSES BY CATEGORY

YEAR	-INSURANCE- E&O	HEALTH	PROF. SERVS.	-BENEFITS- STAFF	OWNERS	PAYMENTS TO FORMER OWNERS	MISC
1983	$ 7	$ 26	$ 47	$ 9	$ 48	$ 0	$ 48
1984	7	23	27	11	48	60	35
1985	12	28	38	15	56	0	16
1986	21	35	70	35	128	0	51
1987	38	33	102	40	17	40	70
1988	48	42	42	27	26	52	60
1989	27	40	79	18	2	162	81
1990	29	35	61	52	15	100	78
1991	27	59	73	40	4	100	63
1992	27	58	28	39	13	63	47

The column of E & O insurance expense illustrates the magnitude of the "malpractice crisis" in the mid-1980's. As can be seen, E & O premiums increased almost 600% between 1984 and 1987, an extraordinary 62% per year. In 1988, the company switched insurance carriers, and premiums decreased almost 50% and have remained stable since. One can also see a similar increase in health insurance premiums, which doubled during the decade.

The expense for professional services averaged $40,000 per year, or 2.5% of total expense, except during the peak years of 1986, 1987, 1989 and 1991. A breakdown of expenses for three of these years is given in Chart 8.

CHART 8

PARTIAL ANALYSIS OF PROFESSIONAL SERVICES

Year	Legal	Management	Recruitment	Software Development	Other
1986	$ 11	$ 8	$ 8	$ 0	$ 43
1987	16	1	0	49	36
1989	23	16	32	0	8

The legal, management, and recruitment expenses in 1986, 1987 and 1989 were associated with changes in ownership. The founder of the firm retired in 1987, and another owner left in 1989. Professional expenses connected with the founder's retirement amount to $ 34,000; similar expenses in 1989 amounted to $ 71,000. This is an indication of the high costs of ownership changes.

The column "payments to former owners" (Chart 7) is further proof how expensive ownership changes can be. Each owner had a deferred compensation account, payment of which began upon termination of service. One owner terminated in 1984 and was paid in one lump sum. In 1987, the founder retired and began receiving payments over a five year period. In 1989, a third owner left and began receiving payments over a five year period, in addition to a partial

lump sum payment. A total of $577,000 in deferred compensation was paid to former owners during this period.

Analysis of Profitability

Measuring profit in a consulting environment is not an easy task. As mentioned above, any profit remaining at year-end is usually distributed to avoid double-taxation of income. Typically, such year-end bonuses amount to a sizable proportion of total compensation for professional employees. Owners often draw less-than-market salaries during the year, in order to minimize corporate borrowing needs and consequent interest charges.

The very concept of profit has a limited application in a service or professional context, where what is sold is time rather than a physical object. Firms generally calculate a "billable ratio" for each employee, equal to the hours that employee worked on client-related tasks, divided by the employee's total hours. This ratio is regarded as a measure of the employee's productivity. A similar ratio can be calculated for the firm as a whole.

This approach ignores the impact of expenses on a firm's operation. When the only measure of productivity is the employee's billable ratio, there is little incentive to spend time on corporate management, even if such time would result in lower expenses. Some way of incorporating expenses is needed if a true assessment of the firm's profitability is desired.

Another measure often used to gauge productivity is the firm's total revenue divided by total hours worked. This method also ignores expenses and may therefore provide a distorted view of the actual profitability of the firm.

One measure of profitability which does consider expenses is the compensation paid to owners, since they receive whatever is left over after all expenses are paid. A second measure is the compensation paid to staff, which represents their return on labor performed. Presumably, the more productive they are, the greater their return, and vice versa.

Both these measures are usually expressed in the form of hourly rates. Owners' compensation may be on a cash basis or converted to an accrual basis by including the change in the accounts receivable during the year.

Chart 9 shows the history of the company's profitability during the decade under study. Three measures are shown, based on the staff compensation method, and the owners' compensation method on both a cash and an accrual basis. Compensation used includes tax-deferred profit sharing contributions, health insurance premiums and FICA taxes paid by the company on behalf of the employees. The hourly rates have been converted into indices using 1983 as a base year, by dividing each rate by the appropriate ratio for 1983. This has been done to facilitate comparison between the various methods. In addition, the effect of inflation since 1983 has been removed by dividing the indices for each year by the cumulative change in the CPI since 1983.

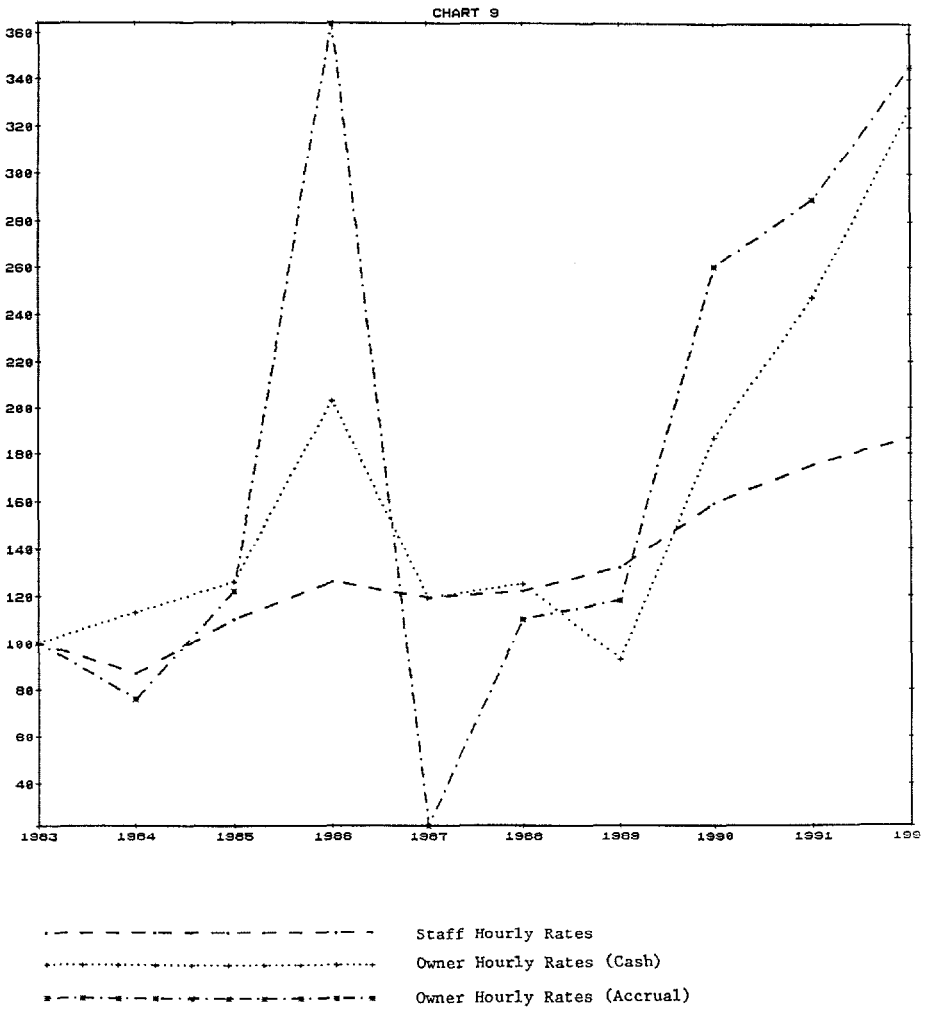
CHART 9
360
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1983
1984
1985
1986
1987
1988
1989
1990
1991
Staff Hourly Rates
Owner Hourly Rates (Cash)
Owner Hourly Rates (Accrual)

One clear feature of this chart is the spike in profitability that occurred in 1986, when the company's income increased 50%. Another feature is the decline in 1987, which is reflected by all methods except the staff compensation method. When owners' compensation is determined on an accrual basis, the decline in profitability during 1987 was quite dramatic. This decline is due to the retirement of the firm's founder in that year, together with the bankruptcy of a subtenant and the beginning of a major investment in computer software development. Finally, the chart demonstrates the continuous improvement in profitability after 1988, with staff compensation increasing at a 16% annual rate and owner compensation increasing at a 38% annual rate on an accrual basis.

This is an indication that careful attention to a company's finances can have a significant impact on profitability in a consulting environment.