Capital budgeting of major lodging chains

by James W. Damitio and Raymond S. Schmidgall

The long-term performance of the lodging chain is highly dependent on the use of the most effective techniques for evaluating capital projects. This study provides information on the critical aspects of lodging chains' capital budgeting practices and compares current ones with those used by chains in 1980 and 1990.

A lodging chain's capital budgeting practices are crucial to the long-term performance of the entity. Capital expenditures not only entail investment risk due to the large dollar amounts usually involved, but also uncertainty risk due to the long-term horizon involved in such decisions.

Several studies of capital budgeting practices of non-hospitality firms have been conducted over the last 40 years. In general, the use of discounted cash flow (DCF) models has increased significantly.

Istvan conducted a study of the capital budgeting practices of large non-hospitality corporations and found that only 10 percent of the companies surveyed used the more sophisticated DCF models at that time.[1] Eleven years later Klammer studied 184 large industrial firms and found little change, with few firms using the DCF techniques.[2]

Fremgen found in his study that significant changes in capital budgeting practices were occurring when he surveyed the financial executives of 250 non-hospitality business firms. He found that about 57 percent of the respondents' firms were using net present value or internal rate of return methods of capital budgeting.[3] Other studies were done by Farragher and Gitman and Forrester that also showed increased use of the DCF methods by non-hospitality firms.[4]

Chen did a study of the capital budgeting practices of 599 publicly-held manufacturing firms. The study involved three types of investment projects: equipment replacement, expansion of existing

products, and expansion into new products. He found that discounted cash flow (DCF) models were more important than either the payback or accounting rate of return for all three types of investments.[5]

A study of the capital budgeting techniques of 118 U.S. manufacturing firms conducted by Chadwell-Hatfield, Goitein, and Webster found that Internal Rate of Return (IRR) was the most important capital budgeting technique in determining project acceptance.[6]

Bailes and Nielsen surveyed 87 U.S. forest products companies and found there had been a significant increase in the use of the more sophisticated DCF models, IRR and Net Present Value (NPV).[7]

Studies reveal growth

Studies of capital budgeting practices of hospitality firms over the past 20 years reveal a growth in the use of the more sophisticated DCF models.

Eyster and Geller compared the capital budgeting practices of hospitality firms in both restaurants and lodging for 1975 and 1980. They found a modest increase in the use of DCF models. Payback appeared to be the preferred technique at the time.[8]

Schmidgall and Damitio studied capital budgeting practices of lodging chains to determine if there were significant changes in the techniques used since the Eyster and Geller 1981 study. They found significant increases in the use of IRR and NVP models.[9]

Two additional studies have been conducted regarding capital budgeting in the hospitality sectors. Schmidgall, Damitio, and Singh reported on how lodging financial executives discern between capital and revenue expenditures. The majority of respondents to the survey in that study believe that guidelines need to be developed to assist executives in the capital budgeting area.[10] Wilson, Nussbaum and Sheel reported on the capital budgeting techniques used for hotel renovations. They found that when major hotel chains consider large-scale renovations, they are less likely to use DCF models.[11] All of these studies provide valuable insights into the capital budgeting practices of hospitality firms.

New study needed

More than 10 years have passed since the Schmidgall and Damitio 1990 study which revealed significant increased use of DCF capital budgeting models compared to the 1981 study by Eyster and Geller. In the late 1980s and early 1990s, the lodging industry was experiencing overall industry financial losses. By the late 1990s, record annual lodging profits were realized each year. In addition, there had been significant consolidations as a few firms held a number of well-known brand names. Therefore, it is appropriate to restudy the use of capital budgeting models in the hospitality industry as firms move from the 20th century to the 21st. Primarily, the authors wondered if the trend of increased use of DCF models noted

in the 1990 study by Schmidgall and Damitio had continued, reached a plateau, or possibly decreased.

Rather than ask what type of capital budgeting models were being used for all capital projects in general, as had been done by previous studies, the survey was focused on the following four types of investment projects: replacement, renovation, expansion, and acquisition. Respondents were also asked to relate the Maximum Allowable Payback Period they used with the estimated life of the investment, a topic which previous research had not addressed.

Questions in the survey were organized around the following themes:

- Is a formalized cost/benefit study conducted prior to acquiring property and equipment? The authors knew from prior studies of hospitality capital budgeting practices that formalized cost/benefit studies are not always conducted prior to acquisitions of property and equipment.
- How is the "riskiness" of an acquisition considered in the capital budgeting process?
- What dollar amount must an expenditure be for it to be considered major?
- Who is the final capital budgeting decision maker? Only lodging chain financial executives were surveyed, so this question focused on whether these decisions were made at the board level, the corporate level or the hotel level, and, in the latter two instances, by whom.

If the capital project is the construction of a new hotel, who conducts the feasibility study? It was expected that all individually-owned hotels surveyed would indicate that feasibility studies, when done, were conducted by external parties. In contrast, it was expected that large lodging chains would have their own real estate experts perform the feasibility study.

A survey questionnaire was developed and mailed to the financial executives of the 150 largest U.S. lodging firms; 43 usable responses were received, a response rate of 28.7 percent. The first part of the survey questionnaire dealt with general information such as the respondents' annual revenues and the number of rooms owned, leased, or managed. The second part dealt with the actual capital budgeting practices of the lodging chains.

Respondents profiled

Table 1 reveals that the majority of respondents generated less than $250 million in annual revenue. As shown in Table 2, number of rooms owned, leased or managed by respondents varied greatly from 1,000 to 318,000.

Respondents were asked to indicate their firm's approximate annual capital expenditures for 1997-99. Table 3 below shows that the smallest annual capital expenditure

Table 1
Respondents classified by revenue

<$250 million	26	60.5 %
$250 - $499 million	9	20.9 %
>$750 million	7	16.3 %
No reply	1	2.3 %
Total	43	100.0 %

by a single firm in any year was $14,855, while the largest was $671,500,000.

Respondents were asked whether they undertook a formalized cost/benefit study prior to acquiring property and equipment; 14 percent indicated they did such a study for all capital acquisitions, while 65.1 percent of respondents did a study only for major acquisitions. The remaining (20.9 percent) respondents indicated no formal cost/benefit study was undertaken. This latter percentage may seem surprising, but several companies are primarily franchising companies and have few or no owned hotels in their portfolios.

Twenty-eight respondents defined what they meant by a major expenditure (see Table 4).

The decision as to who makes the final decisions on capital budgeting varied greatly. Nearly one fourth (23.4 percent) listed other; but one fifth (20 percent) listed the CEO, followed by owner, 17.6 percent; board of directors and budget committee, 11.9 percent each; executive committee, 8.8 percent; and COO, 5.9 percent.

Some responses indicated that the level and size of the investment were determined by who made the investment decision, i.e., the board of directors, the CEO, the CFO, or the COO. Capital budgeting decisions overwhelmingly appear to be made at the corporate level rather than at the property level. Since the surveys were sent to the corporate level, there are no indications that decisions were made at the property level.

Budgeting techniques vary

Several techniques are used by lodging firms when making their investment decisions. Only 34 of the 43 respondents (79 percent) indicated the capital budgeting technique that they used to determine the viability of a capital

Table 2
Respondents classified by rooms owned, leased, or managed

1,000 – 3,600	11	25.58 %
3,600 – 7,600	11	25.58 %
7,800 – 13,000	11	25.58 %
13,000 – 318,000	10	23.26 %
Total	43	100.0 %

Table 3
Annual capital expenditures for 1997-99

	1997	1998	1999
Bottom 1/3 of companies	$56,581-$4,200,000	$44,557-$6,000,000	$14,855-$6,000,000
Middle 1/3 of companies	$7,928,000-$18,000,000	$6,900,000-$22,230,000	$10,000,000-$30,000,000
Top 1/3 of companies	$20,000,000-$633,300,000	$26,887,000-$671,500,000	$31,000,000-$600,000,000
Mean	$63,627,370	$68,256,730	$60,186,024
Median	$13,500,000	$15,000,000	$20,000,000

project. Some non-respondents to this question indicated they were strictly franchisors, while others revealed they were management companies. Since neither franchisors nor management companies own the assets, in both of these cases the respondents implied that they did not make investment decisions.

Still others of these 10 indicated they were privately-owned companies, and though they were making capital investments, they chose not to reveal their capital budgeting techniques. Many firms used more than a single technique for making capital decisions. The most popular was the Internal Rate of Return (IRR), followed closely by payback, then Net Present Value (NPV), and the Accounting Rate of Return (ARR). The last column (1999) in Table 5 shows the results of this study and compares its results with several prior studies. It is evident that the order of frequency of the most popular capital budgeting techniques did not change since the 1990 study; however, there was a small reduction in the use of the techniques overall, and a fairly significant reduction in the use of NPV.

Respondents were requested to indicate the capital budgeting technique used for four types of investment decisions, replacement, renovation, expansion, and acquisition. Of the 34 firms that revealed techniques used, seven indicated they used various techniques for all investments but did not specify by

Table 4
Respondents' definition of "major" expenditure

>$10,000	5	17.9 %
>$50,000	**10**	**35.7 %**
>$100,000	4	14.3 %
>$250,000	**4**	**14.3 %**
>$1,000,000	3	10.7 %
Other	**2**	**7.1 %**
Totals	**28**	**100.0 %**

Table 5
Use of capital budgeting techniques

	Hospitality firms 1980	Service firms 1984	Lodging chains 1990	Lodging chains 1999
IRR	33 %	82 %	74 %	70 %
Payback	71 %	63 %	66 %	65 %
NPV	36 %	67 %	55 %	41 %
ARR	N/A	N/A	32 %	29 %

type of investment decision. Respondents from the remaining 27 firms did provide this detail (See Table 6).

Techniques used for replacement investment decisions were indicated by 18 firms. Clearly payback is the most common, as 12 respondents (67 percent) used this technique. The IRR was the most popular technique used by respondents' firms for renovations, expansion, and acquisitions. NPV was second most popular for expansion and acquisition investment decisions.

Prior research had noted the Maximum Allowable Payback Period (MAPP) in general, but not based on expected life of the capital item. To explore this theme, in this survey respondents were requested to reveal the MAPP classified according to the various life expectancies of capital investments. Table 7 classifies responses according to seven different investment life categories, the range of years, and median number of years for each category. Only a small number of those surveyed responded to this question.

Thirty-one respondents provided a description of the hurdle rate used by their firms. More than one half (51.6 percent) of these respondents indicated that the "weighted average cost of capital" was the hurdle rate used, followed by "current borrowing rate" (25.8 percent), "cost of equity" (9.7 percent), and "other" (12.9 percent). The most common hurdle rate used by respondents for NPV or IRR was 15 percent, while the rates by all

Table 6
Capital budgeting techniques by type of investment

		Techniques used				
Type of Investment Decision	**Respondents***	**Payback**	**IRR**	**NPV**	**ARR**	**Other**
Replacement	18	12	3	2	1	2
Renovation	20	9	10	4	2	1
Expansion	23	6	18	9	2	1
Acquisition	26	4	18	11	5	2

*Some respondents reported using more than one technique for a specific type of investment.

Table 7
Maximum allowable payback period

Expected life of item (Years)	Respondents	Range (Years)	Median (Years)
3	8	1-2	1.0
5	8	2-3	2.25
7	7	2-5	3.5
10	6	3-7	5.0
15	4	3-8	6.0
20	3	5-12	10.0
<20	4	5-15	10.5

respondents ranged from 9.75 percent to 25 percent.

As for the "riskiness" of a project, the largest group of firms (38.2 percent) dealt with it on an informal basis; 29.4 percent used a risk-adjusted discount rate and 20.6 percent applied expected values to cash flows. Expected value is determined by multiplying the probability of each outcome by its payoff and then summing the products. The rest (11.8 percent) used other techniques.

Respondents were also asked if the capital project were the construction of a new hotel, who conducted the feasibility study. Of the 29 respondents answering this question, 39 percent indicated that feasibility studies are conducted internally, while 21 percent indicated external consultants are used. The remaining 40 percent indicated that both internal and external studies were conducted.

Few changes made

Major lodging firms appear to have made few changes in determining the viability of capital projects since the 1990 Schmidgall and Damitio study. The internal rate of return continues to be the most popular approach, as do the IRR and NPV, both DCF methods, presumably because they are more useful than the older methods, which fail to consider the timing of project cash flows. One surprising revelation, even though this is a small sample, is that DCF methods, both IRR and NPV, are being used less now than in 1984 or 1990. The upward trend in use of DCF methods seems to have been broken. This is especially true of NPV, which, as Table 5 indicates, has fallen from being used by 67 percent of respondents in 1984 to 41 percent in 1999.

Payback continues to be a popular approach but is clearly used more often when considering replacements and renovations, suggesting that a DCF rate of return was calculated for the replaced asset when originally purchased. The two DCF approaches are most commonly used by the majority of respondents when making expansion and acquisition decisions. As expected, the

maximum allowable payback period increases with the expected life of the capital item.

This study is based on 43 responses (28.7 percent) out of the 150 largest lodging firms in the United States. Though a larger response would yield more definitive results, these results suggest what a more extensive response from lodging firms might confirm. Future research opportunities include surveying other segments of the hospitality industry, especially food service. Also, future research within the lodging industry might study the capital budgeting approaches used by various sub-segments within the lodging industry segment itself.

References

[1] Donald F. Istvan, "Capital Budgeting Decisions: How They are Made in Large Corporations," *Indiana Business Report* 33 (Bloomington: Indiana University Bureau of Business Research, 1961.)

[2] Thomas Klammer, "Empirical Evidence of the Adoption of Sophisticated Capital Budgeting Techniques," *Journal of Business* 45 (July 1972): 387-397.

[3] James M. Fremgen, "Capital Budgeting Practices: A Survey," *Management Accounting* 56 (May 1975): 19-25.

[4] Edward J. Farragher, "Capital Budgeting Practices on Non-Industrial Firms," *Engineering Economist* 31 (Summer 1986): 293-302; Lawrence J. Gitman and John R. Forrester, Jr., "A Survey of Capital Budgeting Techniques Used by Major U.S. Firms," *Financial Management* (Fall 1997): 66-76.

[5] Shimin Chen, "An Empirical Examination of Capital Budgeting Techniques: Impact of Investment Types and Firm Characteristics," *Engineering Economist* 30, no. 2 (Winter 1995): 145-170.

[6] Patricia Chadwell-Hatfield, Bernard Horvath Goitein, and Allen Philip Webster, "Financial Criteria, Capital Budgeting Techniques, and Risk Analysis of Manufacturing Firms," *Journal of Applied Business Research* 13, no. 1 (Winter 1996/1997): 95-104.

[7] Jack Bailes, James Neilsen, and Stephen Lawton, "How Forest Product Companies Analyze Capital Budgets," *Management Accounting* 80, no. 4 (October 1998): 24-30.

[8] J. Eyster, Jr., and N. Geller, "The Capital Investment Decision: Techniques Used in the Hospitality Industry, *The Cornell Hotel and Restaurant Management Quarterly* (May 1981): 69-73.

[9] Raymond S. Schmidgall, and James W. Damitio, "Current Capital Budgeting Practices of Major Lodging Chains," *Real Estate Review* 20, no. 3 (Fall 1990): 40-45.

[10] Raymond S. Schmidgall, James W. Damitio, and A. J. Singh, "What Is a Capital Expenditure? How Lodging-Industry Financial Executives Decide," *Cornell Hotel and Restaurant Administration Quarterly* 38, no. 4 (August 1997): 28-33.

[11] Robert H. Wilson, Eric Nussbaum, and Atul Sheel, "Hotel Renovations: A Capital Budgeting Problem," *Journal of Hospitality Financial Management* 1, no. 4 (1995/96): 43-53.

***James W. Damitio** is a professor in the School of Accounting at Central Michigan University and Raymond S. Schmidgall is Hilton Professor of Hospitality Financial Management at Michigan State University.*