



Financial Planning

Istanbul Technical University
Air Transportation Management, M.Sc. Program
Aviation Economics and Financial Analysis
Module 4
November 2014

Outline

- A. Introduction to financial planning**
- B. Working capital management**
- C. Investment appraisal and financial evaluation**

Introduction to financial planning



Purpose

- **Provide a numerical analysis of strategies to achieve an airline's corporate goals**
 - Market growth forecast
 - Market share forecast
 - Resources required
- **Can be short-term or long-term**

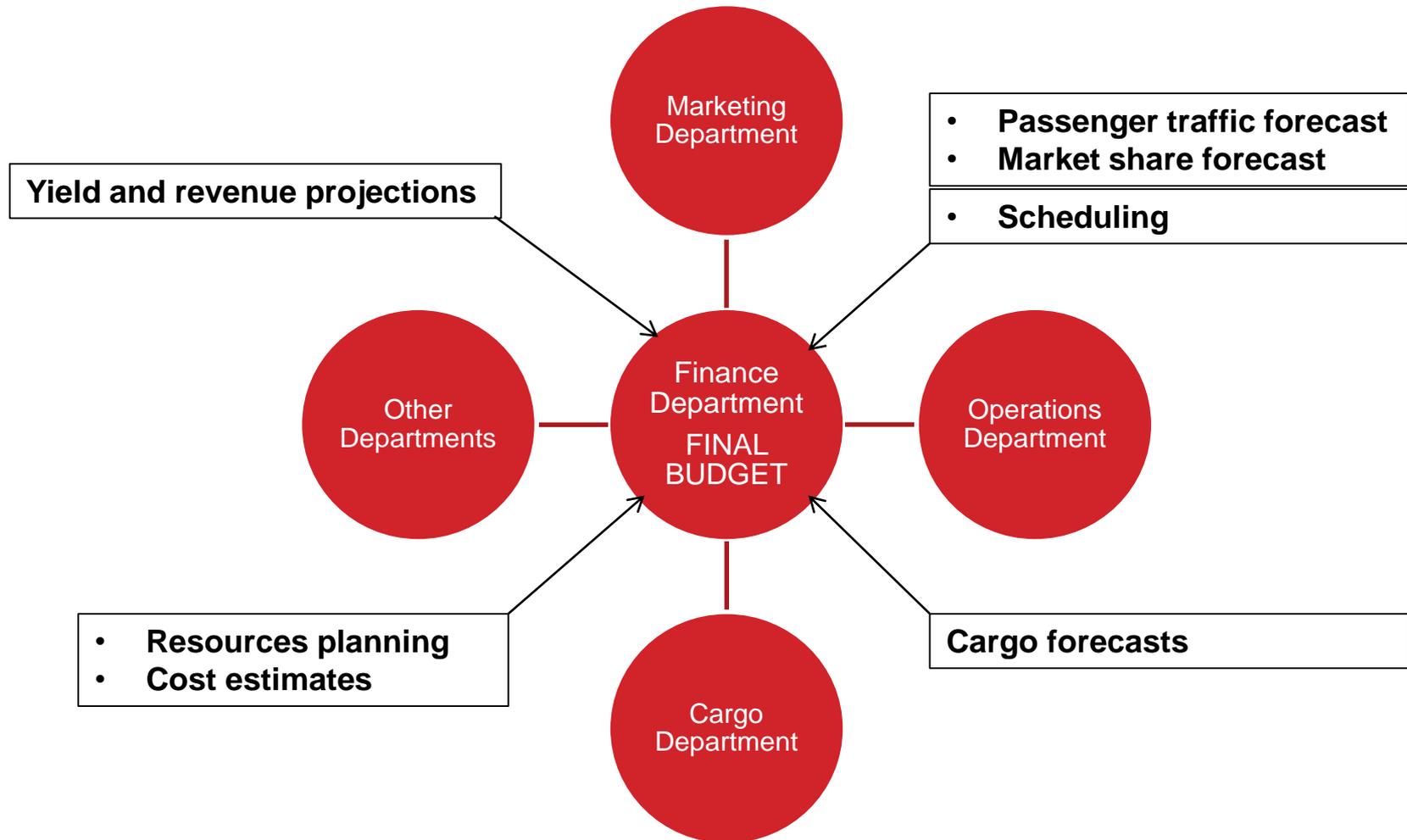
Short-term vs. long-term planning

- **Short- and medium-term planning**
 - Annual budget
 - Cost control
 - Improved resource utilization
- **Long-term planning**
 - Evaluate future financial conditions
 - Estimate requirements for airline finance
 - Often done in conjunction with fleet planning or acquisitions

What is a budget?

- **Budget quantifies an airline's short-term plans.**
 - Prepared annually, quarterly or monthly.
 - Expectation of revenues, cash costs, non-cash costs (depreciation), profits
 - Flexible budgets take into account different scenarios of traffic forecast, prices/yields, costs and aircraft utilization.
- **Cash budgets are created to avoid cash shortages or surpluses.**
- **Must be aligned with a longer-term strategic plan and fleet planning.**

How to prepare a budget?



Budget: example

Table 8.2 Typical airline management accounts – Budget 2006

	March 2005	March 2006		
	Actual	Actual	Budget	Variance
Passengers carried	28,520	21,547	21,124	423
Passenger-km (000)	4,363	3,306	3,718	-412
Seat-kms (000)	6,601	5,654	5,767	-113
Passenger load factor (%)	66.1	58.5	64.5	-6
Average stage kms	320	345	350	-5
Aircraft hours/day	7.5	7.3	8	1
Passenger yield (cents)	45	55	50	5
Cost per seat-km (cents)	29.7	33	30	3
Breakeven load factor	66	60	60	0
Operating ratio (%)	100.2	97.5	107.5	-10.0pts
<i>Expenditure by department (\$m)</i>				
Marketing		9.1	9.3	-0.2
Operations		13.5	12	1.5
Engineering		4	3.5	0.5
Personnel		6.5	6	0.5
Other		3.3	3.7	-0.4
Total		36.4	34.5	1.9
<i>Expenditure by type (\$m)</i>				
Staff costs		23.2	20	3.2
Depreciation		4.7	4.7	0
Aircraft rentals		0.5	0	0.5
Agent commissions		3.9	4.1	-0.2
Fuel costs		3.5	4.2	-0.7
Other materials/services		0.6	1.5	0.9
Total		36.4	34.5	1.9

Source: Morrell (2007), p. 154.

Example (cont.)

- **Variance analysis:**
 - Total expenditure by all departments:
 - + \$1.9 million or 5.5% higher than budgeted
 - Marketing department expenditures down by 2.2%
 - Operations department expenditures up by 12.5%
 - Engineering department expenditure up by 14.3%
 - Personnel expenditures up by 8.3%
 - Other department expenditures down by 10.8%
- **Variance analysis can also be done by principal types of expenditures**
 - fuel, labour, aircraft lease, etc.

Performance indicators

- **Performance indicators allow to compare actual and planned productivity and service quality levels**
 - On-time performance
 - Regularity of flights (planned versus operated)
 - ATK capacity per employee
 - Fuel cost per ATK
 - Airport fees per aircraft arrival/departure
 - Average flying hours per pilot or crew member
 - Payroll cost per employee
 - Reservation/sales cost per employee, etc.

Working capital management



Working capital requirements

- **The level of working capital is determined by the levels of current assets and current liabilities**
- **Current assets:**
 - Cash, marketable securities, accounts receivable
- **Current liabilities:**
 - Overdrafts, short-term borrowing, accounts payable, sales in advance of carriage, payments due on debt
 - The airline industry is one of the few industries where customers pay for the service, in full, well before provision of the service

Current assets – debtors and receivables

- **Airlines typically sell on credit**
 - E.g. Sales by travel agents
 - Under the IATA Bank Settlement Plan, when a ticket is sold via a travel agency, the airline receives funds on the 17th day after the month of sale
 - Direct sales on credit cards
- **Credit sales incur costs, including**
 - The cost of administration and costs paid to credit company
 - The opportunity cost of tied up funds
 - The potential cost of unpaid debts
- **But the benefit is increased sales**

Current assets – cash and marketable assets

- **Cash**

- includes petty cash and current account balances, or
- quasi cash – short-term bank deposits earning an interest
- overdraft – is a form of covering cash shortages but it is expensive

- **Marketable securities**

- liquid assets that can be converted into cash relatively easily and quickly

Current liabilities

- **Creditors and accounts payable**
 - Shareholders (dividends)
 - Governments (taxes)
 - Suppliers
 - (free grace period with interest charged on a subsequent late repayment)
 - Short-term loans
- **Sales in advance of carriage**
 - Booked travel
 - Frequent flyer liabilities

Investment appraisal and financial evaluation



Cash flow forecasts

- **Cash flow forecasts require projections for “cash in” and “cash out”.**
 - Cash in:
 - traffic, yield and revenues projections
 - proceeds from asset sales
 - Cash out:
 - operating cost projections
 - input price projections
 - capital expenditure projections
 - future dividend and tax payments

Net cash receipts

- **Net Cash Receipts are subtracted from the initial cash balance to determine cash surplus or shortage.**
 - **Net Cash Receipts =**
 - = Cash Receipts – Cash Disbursements
 - = “Cash In” – “Cash Out”
- **Cash flow forecasts are used to project profits and losses and impact on the balance sheet.**

Investment appraisal

- **The purpose of an investment appraisal is to identify, compare and evaluate different investment options**
 - E.g. the purchase of a used A330-300 for \$115 million or a new B777 for \$138 million.
- **Financial statements typically required for investor appraisal**
 - Investment schedule
 - Cash flow statement

Investment appraisal: example

Table 8.4 Aircraft investment appraisal cash flow forecasts (US\$ million)

<i>A330-300</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>
Capital cost (incl. spares)	-115					
Residual value						69
Cash operating revenues		24	28	30	32	35
Cash operating costs		9	9.5	9.9	10.4	10.9
Cash operating result		15	18.6	20.1	21.6	24.1
Net cash flow		15	18.6	20.1	21.6	24.1
PV cash flows @ 8%	124.9					
NPV @ 8%	9.9					
IRR - %	10.4					
<i>B777-200</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
Capital cost (incl. spares)	-138					
Residual value						89.7
Cash operating revenues		26	30	35	35	42
Cash operating costs		10	10.5	11	11.6	12.2
Cash operating result		16	19.5	24	23.4	29.8
Net cash flow		16	19.5	24	23.4	29.8
PV cash flows @ 8%	149.1					
NPV @ 8%	11.1					
IRR - %	10.2					

Source: Morrell (2007), p. 161.

Investment appraisal: example

- **The quantification should also incorporate**
 - taxes and tax exemptions
 - as taxes may impact cash flow and investment decisions

- **The final selection of aircraft or investment option should also take into account relevant non-quantifiable factors.**

- **There are three main approaches to compare and rank different investment options:**
 - Accounting rate of return
 - Pay-back period
 - Discounted cash flow
 - Internal rate of return (IRR)

Accounting rate of return

- This approach measures the rate of return on the initial investment.**

Table 8.5 Example of accounting rate of return

US\$ (000)	Project A	Project B	Project C
Investment	10,000	10,000	10,000
Annual profits:			
Year 1	4,000	1,000	2,500
Year 2	3,000	2,000	2,500
Year 3	2,000	3,000	2,500
Year 4	1,000	4,000	2,500
Year 5	0	0	2,500
Total profits	10,000	10,000	12,500
Average annual profit	2,500	2,500	2,500
Return on investment %	25	25	25

Source: Morrell (2007), p. 162.

Pay-back period

- This approach measures the length of time required to recoup the initial investment.**

Table 8.6 Example of payback period

US\$ (1,000)	Project A	Project B
Investment	10,000	10,000
Net cash flows:		
Year 1	4,000	1,000
Year 2	3,000	2,000
Year 3	3,000	1,000
Year 4	0	1,000
Year 5	0	3,000
Year 6	0	3,000
Pay-back period	3.0 years	5.7 years

Source: Morrell (2007), p. 163.

Discounted cash flow

- **This approach measures the discounted value of future cash flows, taking into account variations in project duration and the timing of cash flows.**
- ***Net Present Value*** =
$$\sum_{t=0}^n \frac{\text{Net Cash Flow at time } t}{(1+i)^t}$$
 - *i* – discount rate or cost of capital
 - *n* – project duration in years
- **The discount rate represents the cost of capital to airlines and can be based on historical cost of capital data.**

Internal rate of return (IRR)

- **This approach estimates the discount rate required to ensure that the initial investment is equal to the discount present value of future cash flows.**
- $$0 = \sum_{t=0}^n \frac{\text{Net Cash Flow at time } t}{(1+i)^t}$$
 - *i* – discount rate or cost of capital
 - *n* – project duration in years
- **We need to solve this equation for *i* in order to determine the IRR.**

Which approach should be used?

- **The evaluation approaches based on the**
 - accounting rate of return and
 - pay-back period

do not measure the time value of money.

Which approach should be used?

- **The evaluation approaches based on the**
 - net present value and
 - internal rate of return

take into account the value of money and are widely used in the industry.

Risk and uncertainty

- **The key idea is that future traffic, revenues and costs are uncertain.**
- **Therefore, the rate of return for each investment option is also uncertain.**
- Scenario analysis can also be presented instead of a single estimate
 - it will identify a range of values under the “worst” and the “best” case scenario
- Sensitivity analysis can be conducted to determine how the ranking of options will change if key assumptions are changed.



Thank You!

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