



TOPSIM-Planspiele

Learning business by doing business

TOPSIM – GAMS

Participants Manual

Version 2.45

Table of Contents

	Page
1.	General Introduction 4
1.1	Starting Position 4
1.2	Aim of the Game..... 4
1.3	Simulation Rules 4
1.4	Summary 5
1.4.1	Marketing 5
1.4.2	Fleet: Planning and Assignment..... 5
1.4.3	Personnel 5
1.4.4	Finance 5
1.4.5	Accounting 5
1.4.6	Coordination 5
1.4.7	Decision fields 6
2.	Marketing 7
2.1	Market Conditions..... 7
2.2	Target Groups 7
2.3	Marketing-Mix Instruments 8
2.3.1	Product Policy 8
2.3.2	Price 9
2.3.3	Advertising 9
2.3.4	Sales Promotion 9
2.3.5	Sales representatives 9
2.3.6	Service 9
2.3.7	Corporate Identity (PR expenses) 9
2.3.8	Image..... 9
2.3.9	Frequent Flyer Program 10
2.3.10	Carry-Over-Effect 10
3.	Fleet: Planning and Assignment..... 10
3.1	Route Policy 10
3.2	Fleet..... 10
3.2.1	Aircraft model 10
3.2.2	Aircraft Purchases 10
3.2.3	Depreciation 11
3.2.4	Sale to Instructors 11
3.2.5	Fleet movements between the companies 11
3.2.6	Suspension of Operation 12
3.2.7	Modernisation..... 12
3.2.8	Retirement of aircraft..... 12
3.2.9	Code list for fleet planning 12
3.2.10	Checks 12
3.3	Spare Parts 13
3.3.1	Purchase / Deployment..... 13
3.3.2	AOG Transport (AOG = Aircraft on Ground) 13
3.3.3	Emergency Delivery..... 13
3.4	Likelihood of Failure 13
4.	Personnel 14
4.1	Crews..... 14
4.2	Sales Representatives 15
5.	Finance 16
5.1	Internal Financing 16
5.2	External Financing..... 16
5.2.1	Loans 16
5.3	Debt Limit..... 16

5.4	Bonds.....	16
5.5	Cooperation Acquisition	17
6.	Other Costs	17
6.1	Administration Costs.....	17
6.2	Stations costs.....	17
6.3	Commission.....	18
7.	Accounting	18
8.	Standard Reports	18
8.1	Market Report.....	18
8.2	Aircraft Assignment	18
8.3	Aircraft: Spare Parts	18
8.4	Personnel.....	19
8.5	Route Results.....	19
8.6	Profit and Loss Account / Balance Sheet.....	19
8.7	Cash Management Accounting.....	19
8.8	Competition - Information.....	19
9.	Management Tools	19
9.1	Market Research Reports	19
9.1.1	Market Research: Demand	19
9.1.2	Market Research: Competition.....	20
9.2	Test Marketing	20
9.3	Cost-estimating Model (Precalculation).....	21
9.3.1	Sources of Information.....	21
9.3.2	Suggested Planning Procedure per Period	22
Annex 1:	Decision Forms	23
Annex 1.1	Decision Form 'Market 1'	23
Annex 1.2	Decision Form 'Market 2'	24
Annex 1.3	Decision Form 'Aircraft	25
Annex 1.4	Decision Form 'Personnel'	26
Annex 1.5	Decision Form 'Others'	27
Annex 2:	Business Reports	28
Annex 2.1	Market Report.....	28
Annex 2.2	Aircraft Assignments.....	30
Annex 2.3	Aircraft: Spare Parts	31
Annex 2.4	Personnel.....	31
Annex 2.5	Route Results.....	32
Annex 2.6	Profit and Loss Account.....	35
Annex 2.7	Balance Sheet.....	36
Annex 2.8	Statement of Cash Balance	37
Annex 2.9	Special Report.....	38
Annex 2.10	News and Information.....	38
Annex 3:	Management Tools	39
Annex 3.1	Market Research Report - Market Potential (Sample).....	39
Annex 3.2	Market Research Report - Competition	40
Annex 3.3	Testmarketing (Sample).....	41
Annex 3.4	Precalculation (Necessary input).....	41
Annex 4:	External Data	42
Annex 4.1	Aircraft: Configuration and Expenses	42
Annex 4.2	Actual demand	42
Annex 4.3	Checks-Information	44
	Information concerning the latest checks performed	44

1. General Introduction

1.1 Starting Position

GAMS is a computer simulation of several similar airlines in a competitive market. The model allows participants to make many of the management decisions required to run a modern airline (without the risk of costing millions of dollars). The simulation is designed to reflect the following situation:

A number of similar airlines have been competing on the same routes in the market for several years. Their business aim has been to transport passengers and cargo in both directions between a central base and four regional markets.

Up to now, the airlines have proved to be successful competitors in the international environment. Looking back on recent business years, however, it has become apparent that the overall situation in the market is changing. Competing for market share is now becoming more difficult, and in addition, new airlines have been trying to enter the market.

1.2 Aim of the Game

Each team takes over route management functions and responsibilities for one airline, competing against the other airlines. To perform successfully it is important to define the „systems“ that allow an effective decision making.

Each airline is a public limited company with an initial share capital of 100 million Euro.

Dividing management functions for the routes among the team members has proven to be a useful solution in many cases. A route manager can be assigned to each single route and take over full decision powers and responsibilities for that route.

In this way, the separate decision-making authorities are established, leading to a well-defined authority structure. Although route managers are capable of operating routes independently from each other, there are also decisions which will require a joint effort of the management team. Communication within your team, therefore, will be an important factor for your success. As an alternative, the role of the functional manager should be considered (dividing the tasks into finance, marketing, personnel etc.). For both alternatives a high degree of communication is essential.

1.3 Simulation Rules

GAMS extends of a minimum of 8 business periods; each period represents half a year, a season or 180 days. The winter season is from October to March and the summer season from April to September. The game starts at the beginning of a winter season. After working out the route policies for a period, the appropriate decision data is entered into forms on the screen. For each period, each airline team records their decisions on a separate disk. The decisions are made in the categories market, aircraft, finance and personnel. After each period, the instructor collects each team's disk containing the new decision data. He enters the data in the system and returns the disks with the updated market business reports to the participants. The reports provide detailed information for all categories and reflect the performance of your airline in the market. With the help of additional market research reports you can also review the results of competing airlines.

After analysing the results of the last business period, you continue the simulation by making decisions for the next period (Annex 1 - Decision Forms). Not all decisions (for example aircraft purchases, personnel decisions) are immediately effective in the period they are initiated. Therefore, you need to plan the business policy for several periods in advance.

Your overall performance is the result of all the decisions you make. Give the best of your management skills, so you can hand over a strong airline to your successor.

In the international airline industry many transactions occur in US\$, for example aircraft purchase and fuel. Your airline in GAMS will use Euro as the base currency, an approximate rate of 1,-- US\$ = 1,-- Euro. Exchange and interest rate fluctuations will have an effect on your airline.

GOOD LUCK !!!

1.4 Summary

Throughout the simulation the following operations have to be carried out:

1.4.1 Marketing

Decisions concerning marketing-mix instruments: sales promotion (e. g. direct mail, company discounts), prices, advertising, employment of sales representatives, service, P.R., Frequent Flyer Program, decisions concerning market research.

1.4.2 Fleet: Planning and Assignment

Acquisition of aircraft, availability of crews, assignment of aircraft to the four routes, control over maintenance level and maintaining the station stocks of spare parts.

1.4.3 Personnel

Planning crew personnel: hiring, firing, retraining and payment.
Planning of sales representatives: hiring, firing, training and payment.

1.4.4 Finance

Maintenance of the financial stability of the company by providing own equity or loans; decisions concerning cooperations and bonds; cash management.

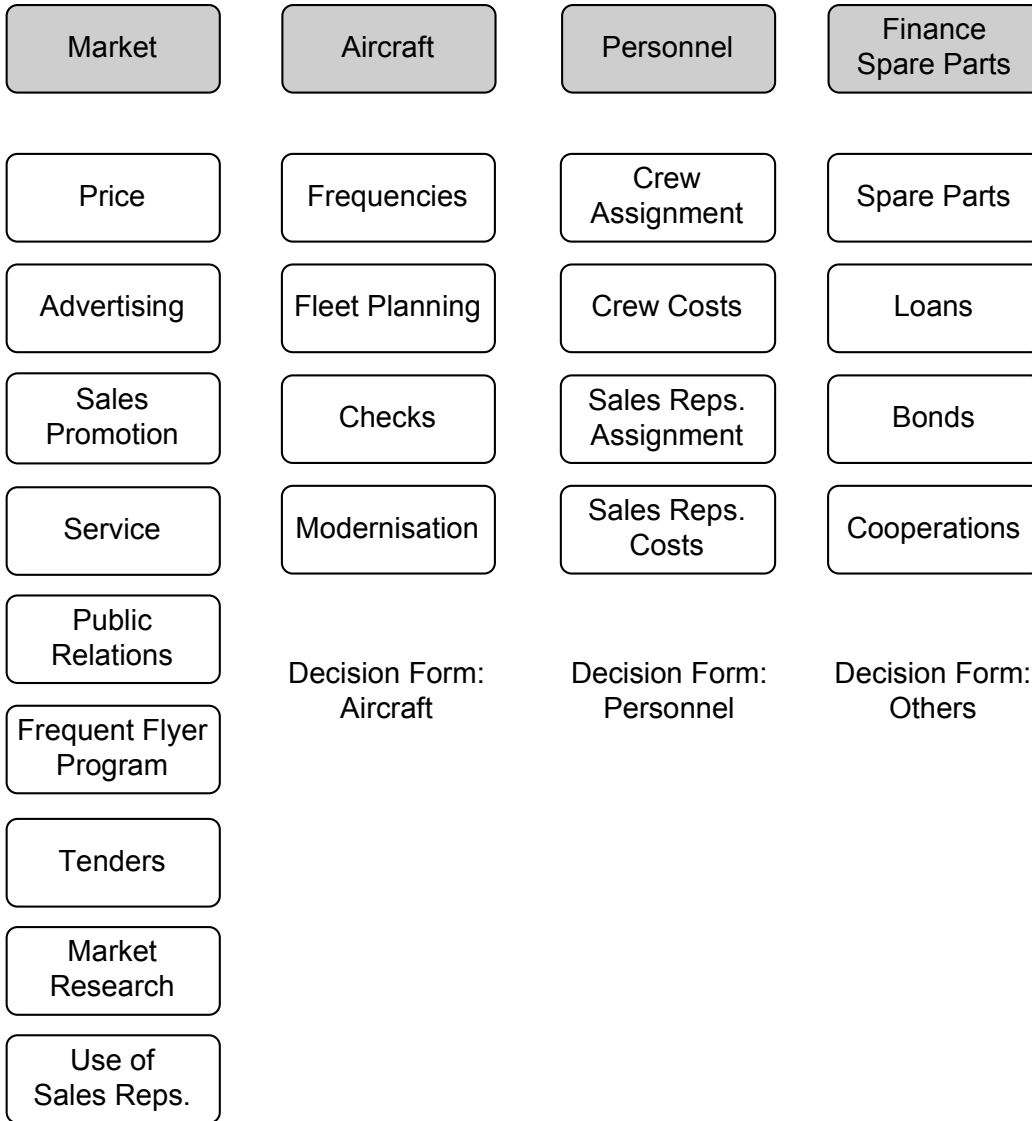
1.4.5 Accounting

Analysis and planning of route profitability results, profit & loss account, balance sheet and cash flow accounts.

1.4.6 Coordination

The different areas of management must maintain contact to avoid bottlenecks or surpluses. This requires an optimised flow of information and planning schedules.

1.4.7 Decision fields

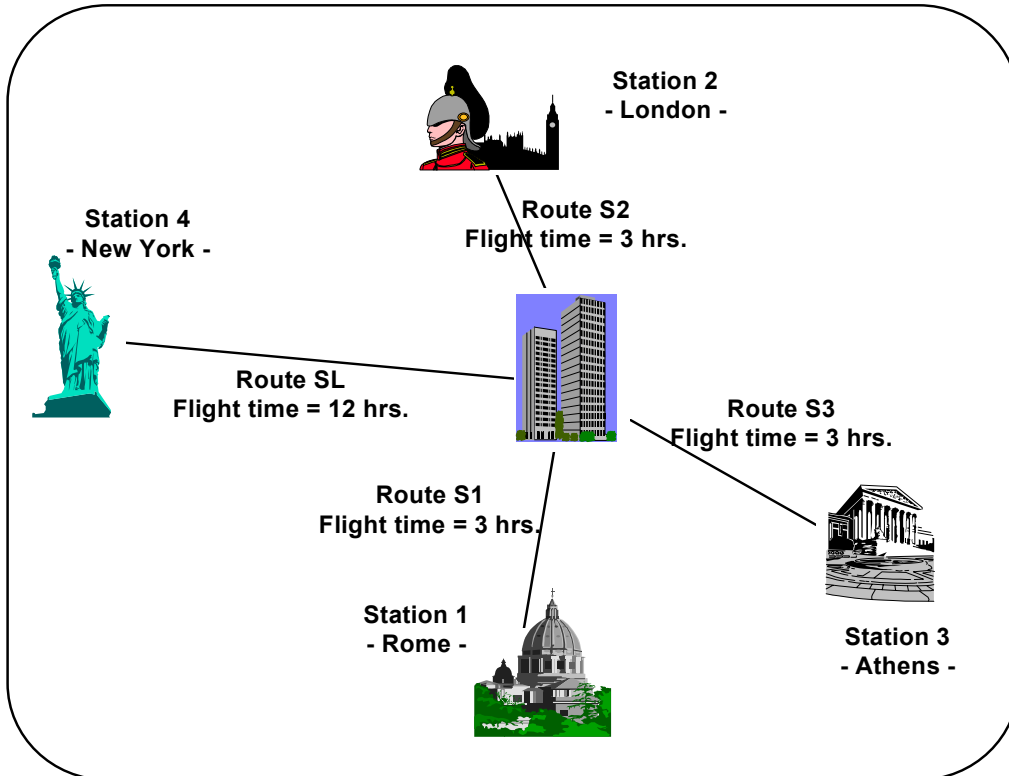


Decision Forms:
Market 1 + 2,
Others

2. Marketing

2.1 Market Conditions

The medium haul flights (S1, S2, S3) and one long haul (L) represent five regional sub-markets - base (B) and stations (M1, M2, M3, ML).



Each sub-market consists of a certain level of demand for business, private and tourist travel as well as cargo. The demand generated from base is identical to that in the sub-market so any one frequency has an equal seat load factor for the outbound and return flight.

The potential demand for each route depends on how much has been invested in marketing-mix instruments which can be distinguished between the regional markets and routes. Each regional market has different target groups. The structure of these target groups has to be evaluated.

2.2 Target Groups

Each regional (sub-market) has a separate demand for

- business travel, highly schedule dependent,
- tourist travel, most price sensitive,
- private travellers, less price sensitive than tourists.

These different groups require the marketing-mix to be adjusted accordingly.

2.3 Marketing-Mix Instruments

To manage your airline you must make the following market decisions in each period.

2.3.1 Product Policy

The number of frequencies and the seat capacity determine the actual product you offer on the market. A different combination of frequencies and aircraft should be planned for different target groups and routes (e. g. business travellers prefer a large number of frequencies).

At the beginning of each period, aircraft are assigned by specifying the number of frequencies on each route. The resulting offer of seats has an influence on the demand for flight tickets; the demand will decrease, for example, when the total seat offer is too small.

If the number of seats offered on a route is smaller than the demand for flights, an overbooking of passengers is the result. These passengers will be transported by the other airlines.

The total number of seats offered on a route can be utilised up to a maximum of 80 %. With the help of yield control software (see computer booking system), however, you can achieve a better outbound / return flight coordination; hence, you can increase the maximum utilisation up to 100 %. This software recognises passenger priority (in descending order: business, private traveller, tourist) and „bumps off“ accordingly.

If all airlines together are not able to satisfy the demand for flights for more than one period, an additional competing airline may emerge on the market.

Additional product offers are:

Group Ticket Sales Offers - Call for Tender

Group ticket sales offers are announced by customers, who are willing to purchase a large quantity of flight tickets on a certain route. Details are provided by the instructors at the beginning of a period (see „News and Information“).

To participate in group ticket sales offers, you submit a price offer for the quantity of flight tickets that is demanded. The airline with the cheapest offer will obtain the contract.

Airlines whose offers are accepted, will be notified at the beginning of the next period that the tender was announced ($x + 1$). The conditions of the tender come into effect the next period ($x + 2$).

Passengers obtained through these group sales offers must be transported with priority.

Open tenders (Fixed price offers)

Customer can also ask for a large number of flight tickets through open tenders. Unlike group sales offers, open tenders also specify the ticket price. To participate in an open tender, you submit an offer on how many passengers you are willing to transport for that price.

Open tenders come into effect in the period following the announcement. Passengers obtained through open tenders must be transported with priority.

2.3.2 Price

The price for flight tickets (roundtrip) must be determined separately for each route and passenger category. Prices have a varying influence on sales.

Cargo requires a one way price in Euro per kg.

Although the price does generally have a direct effect on demand, its effect varies depending on the target group and on the price in comparison to the competitors.

If the price is zero, this indicates that no offer is available for that specific target group.

Products	Segments	Prices
Passengers	Business	Return ticket
	Tourists	
	Privat travellers	
Cargo		one way

2.3.3 Advertising

Advertising expenses are decided separately for each sub-market and target group (Decision Form 'Market 1'); they help to increase the demand in the appropriate categories on the selected routes. The extent of the effect of the advertising budget depends on the respective amounts invested by competitors and the saturation level of the markets.

2.3.4 Sales Promotion

Sales Promotion is decided separately for each sub-market and target group (Decision Form 'Market 1'). Sales Promotion has an effect on demand similar to advertising and is short term.

2.3.5 Sales representatives

Sales representatives (Decision Form 'Market 1') represent your airline on the market. Their objective is to enhance the number of customers through sales promoting activities. Sales representatives are distinguished by their focus; they can either address customers directly or through agents (e. g. travel agencies) and they can change their focus after each period. The sales representatives specialize in either passengers or cargo.

Sales representatives promoting a specific sub-market can increase the demand on all selected routes.

2.3.6 Service

Service expenses are determined separately for each route and can be distinguished between cargo and passenger. The effect is determined by the average amount invested per offered seat - assuming a booking of 80 % - or per offered cargo ton in comparison to that invested by the competitors.

2.3.7 Corporate Identity (PR expenses)

Expenses for public relations (Decision Form 'Market 2') are determined for the entire company; they improve the image of the airline and, hence, help to increase the demand on all routes.

2.3.8 Image

The sum of all marketing instruments and the degree of punctuality determine the image of a company. The degree of punctuality (Annex 2.3) ist determined as follows:

Punctuality degree	=	100,0 %
	./.	0,5 % per AOG transport
	./.	1,0 % per emergency delivery
	./.	Failure rate in %

The references mentioned above are explained in more detail in chapters „Spare Parts“ and „Likelihood of Failure“.

2.3.9 Frequent Flyer Program

The use of the 'Frequent Flyer Program' enables your customers to collect miles on each flight. They receive a membership card and free tickets as soon as they have collected a particular number of miles. You are free to decide on the use of the frequent flyer program in every period anew. The offer of the frequent flyer program has an effect on your demand. The costs for the program are variable (1 % of turnover).

2.3.10 Carry-Over-Effect

The image effects pay off in the current and to a certain extent in following periods. The carry-over-effects vary from instrument to instrument.

3. Fleet: Planning and Assignment

3.1 Route Policy

The product the airlines offer is the return journey for passengers and the oneway transport of cargo between the central base and the four stations. There are five regional markets, four routes and two main products (Annex 2.1).

The medium haul routes S1 to S3 have the same length (total three hours for the return journey). The long haul route L is four times as long (twelve hours flighttime for the return journey). During one period a long haul aircraft can be assigned to both medium and long haul routes.

3.2 Fleet

3.2.1 Aircraft model

A number of aircraft models are available to be assigned on routes (P100A, P140A, P180N, P220A, P350A, F15A, F100A). The first five are passenger only (P) and the last two cargo only (F). Transporting cargo in the bellies of the passenger aircraft is not possible. The description of the aircraft reveals the seat or ton capacity of the aircraft. The last letter of the description reveals whether the aircraft is and old (A) or a new (N) version. The checks were carried out at the last possible opportunity (Annex 2.2). The technical and economic data are available in Annex 2.2. The aircraft model C220A is a combi version which can carry both passengers and cargo simultaneously.

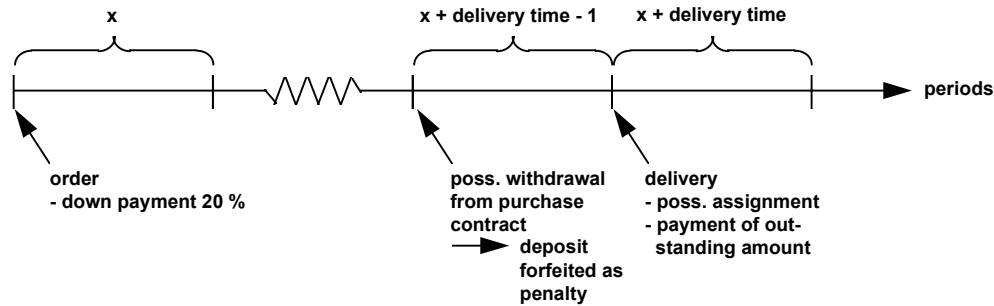
Annex 4.1 is a summary of information concerning which aircraft are available on the market.

3.2.2 Aircraft Purchases

Purchasing new aircraft must be indicated in Decision Form 'Aircraft'. The available aircraft types are listed in the right hand block. Just fill in the appropriate number of aircraft you want to purchase. In the next period the aircraft automatically receives a registration number and the purchase can clearly be seen by the abbreviation NK in the column „Code“.

Upon ordering a new aircraft a deposit of 20 % of the purchase price must be paid. This amount appears in the balance sheet under the heading „Down Payments“. The residual amount is to be paid on delivery. Finally the total amount will appear in the balance sheet under „Aircraft“. The final payment is converted at the current US\$ exchange rate.

The aircraft is ordered at the beginning of a period (x) and delivered at the beginning of the period (x + delivery time) and can be assigned immediately. If the aircraft is not accepted in the delivery period (withdrawal from purchase = RK in the column „Code“), the deposit is retained as a penalty. The decision to withdraw from the purchase has to be made before delivery.



3.2.3 Depreciation

The economic life of both old and new aircraft is ten periods. The depreciation time is linear (10 % of purchase price per period) down to a residual value of 0,-- Euro. If the US\$ exchange rate changes during the delivery period the rate at the time the payment is due is relevant. The depreciation is calculated based on the sum of these payments. The technical life of an aircraft is 16 periods.

3.2.4 Sale to Instructors

The sale of aircraft to the instructors (GV in column „Code“, 0 in column „Team No.“ and no reference to sales price) must be declared at period begin and is actualised immediately. The aircraft is not available for this period. To give the instructors an incentive to buy the old aircraft the price is 50 % of the residual book value. (Please note: 50 % of the residual book value will also be booked in „Other expenses“ in the profit and loss account = loss in book value.) If you sell aircraft to the instructors please do not fill in the column „TEuro“. The price is calculated automatically by the system.

3.2.5 Fleet movements between the companies

The teams can approach each other to negotiate the purchasing, selling and chartering of second hand aircraft. Sub-chartering and giving away of aircraft is not permitted. Prices and terms are to be negotiated between the teams involved and declared at the beginning of the period in Decision Form 'Aircraft'. For the sale / purchase of an aircraft a minimum symbolical price of 1,-- Euro is to be fixed. The transactions come into effect at the start of the same period so that the aircraft can be used by the new operator immediately.

The company number of the business partner and the price in TEuro are entered in the columns „Team No.“ and „TEuro“ respectively. In the case of chartering the duration of the agreement has also to be declared.

The company chartering out is responsible for the checks and incurs depreciation as well as the fixed technical costs. The company chartering in the aircraft is responsible for current costs (insurance, service costs, indirect material expenses and landing fees ...). The latter must also ensure that crews and spare parts are available.

3.2.6 Suspension of Operation

When an aircraft is no longer to be operated, it has to be declared at the beginning of the period (ST in the column „Code“) and comes into effect immediately; this has no effect on depreciation and fixed costs. Insurance costs for this period are not incurred. During the „rest period“ (suspension of aircraft) the remaining technical life remains constant but the maintenance level deteriorates.

3.2.7 Modernisation

The technical condition of an aircraft can vary between 1 to 9 points (see report „Aircraft: Maintenance - Assignment“) and falls each period by one point. It can be improved by two points by modernising measures, thus improving the condition within the period by one point. This affects to varying degrees the level of punctuality and likelihood of cancellation.

The modernising program costs 40.000,-- Euro. The decision is recorded at the beginning of the period (MO in the column „Code“). The aircraft can be scheduled in the new modernised version immediately. Modernising cannot be carried out during a „rest period“ or whilst being chartered.

3.2.8 Retirement of aircraft

When an aircraft has residual bookvalue of 0 and remaining technical availability of 0 periods, it automatically retires. The scrap value is equal to the costs of disposal.

3.2.9 Code list for fleet planning

Code	Activity	Comments
NP	New acquisition	<ul style="list-style-type: none"> Automatic entry
SS	Second hand sale to	
	<ul style="list-style-type: none"> other companies 	<ul style="list-style-type: none"> „Team No.“ depending on contract partner Price: equal by both parties
	<ul style="list-style-type: none"> instructors 	<ul style="list-style-type: none"> „Team No.“ = 0 No recording of sales price; sales price automatically 50 % of the residual book value
SP	Second hand purchase	See Chapter 3.2.5
CI	Chartering in	See Chapter 3.2.5 <ul style="list-style-type: none"> Price per period Additional duration in periods
CO	Chartering out	See Chapter 3.2.5 <ul style="list-style-type: none"> Price per period Additional duration in periods
GR	Suspension of operation (Grounded)	<ul style="list-style-type: none"> Saving of insurance premiums Technical residual value constant, technical condition falls one point per period
MO	Modernisation	<ul style="list-style-type: none"> Improves technical levels by two points taking natural reduction into consideration equals + one point Influences likelihood of cancellation Costs: 40.000,-- Euro
WD	Withdrawal from purchase	See Chapter 3.2.2 <ul style="list-style-type: none"> Downpayment retained as penalty

3.2.10 Checks

For each aircraft model checks will be due after a specific number of periods or cumulative flight hours. The „rest periods“ are included. Checks can be carried out during a „rest period“. Should one of the limits be reached during a period, a check must be carried out; during a check the aircraft cannot be used. The

checks are principally carried out at the end of a period. Checks must be declared in Decision Form 'Aircraft' in column „Checks“.

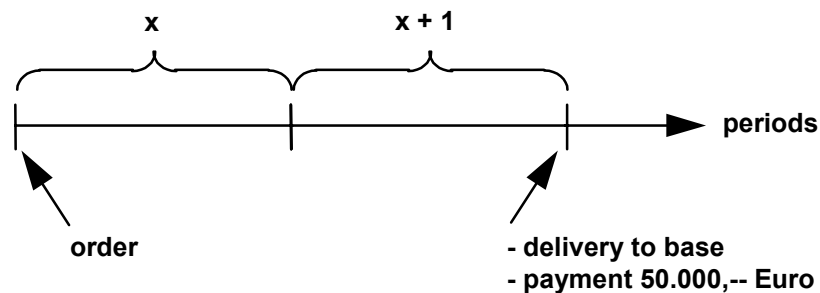
The **D-check** is an extensive detailed control of the aircraft frame, cabin and systems including new installations or changes made to fittings.

If a company fails to plan a check in time, the check will automatically be carried out at the beginning of a period. This forced check results in the aircraft not being available for use for twice the normal time required (Annex 4.3).

3.3 Spare Parts

3.3.1 Purchase / Deployment

In order to maintain flight operations it is advisable to store spare parts at base and at the four stations (Decision Form 'Others'). The spare parts can be used for all the aircraft models. If repairs are necessary, the replacement package costs 50.000,-- Euro, is delivered to base and is to be paid in the delivery period. The delivery time is two periods, it is ordered at the beginning of a period (x) and delivered at the end of the following period (x + 1).



The place of delivery is always base. The installation of replacement parts can either be at base or at one of the stations. The stock of spare parts is recorded and can be found in Annex 2.3.

The storage costs for spare parts which are in storage at the end of a period are 5.000,-- Euro per package. At the beginning of a period they can be reshipped at will free of charge. Restorage from station to base follows when a negative number is entered by the respective stations. The defect parts are scrapped. The costs for scrapping are equivalent to the scrap value.

3.3.2 AOG Transport (AOG = Aircraft on Ground)

If a replacement parts package is urgently required at a station or at base then it will be transported to the required location at AOG transport costs. The spare parts from base will be removed first and then those from the stations 1 to 4. The AOG transport costs are 20.000,-- Euro per trip.

3.3.3 Emergency Delivery

If a spare parts package is required and cannot be transported from either base or one of the stations then a new spare parts package must be obtained from the manufacturers at a cost of 100.000,-- Euro. It is delivered directly to the appropriate station or base and incurs no storage costs. These spare parts packages do not appear on the balance sheet.

3.4 Likelihood of Failure

The likelihood of a flight cancellation depends on the following:

- aircraft model,
- age of aircraft,
- maintenance level,

- checks undertaken,
- flight frequencies,
- number of accumulated flight hours.

4. Personnel

4.1 Crews

Crews for aircraft are distinguished between training categories I, II and III (Annex 2.4). Check in the report „Aircraft: Configuration and Expenses“ (Annex 4.1) for information what number and category of crews are required for each aircraft model.

The minimum crew salary is 160.000,-- Euro per period and can be increased by multiples of 1.000,-- Euro. Additionally, the company is obliged to pay at least 70 % of health insurance, unemployment insurance, pension and social security benefits. This is referred to in decision forms and reports as special benefits. Decreasing or increasing the salary leads to higher or lower personnel fluctuations. For instance, more crews will give notice of termination at the beginning of a period when you decrease their salary and level of benefits or fail to offer adequate retraining chances.

After recruiting, crews must be trained on the job for two periods. Training expenses for a crew amounts to 50.000,-- Euro per period (in addition to the salary of the crew). Recruiting costs are 10.000,-- Euro per crew.

Crews already in the job can be retrained into another category. Retraining takes one period, in which the crew is not available for assignments. Expenses for retraining amount to 50.000,-- Euro (in addition to the salary). The crew can then only be assigned to the new aircraft category.

Crews may give notice of termination to the company at the beginning of a period; they leave the company at the same time.

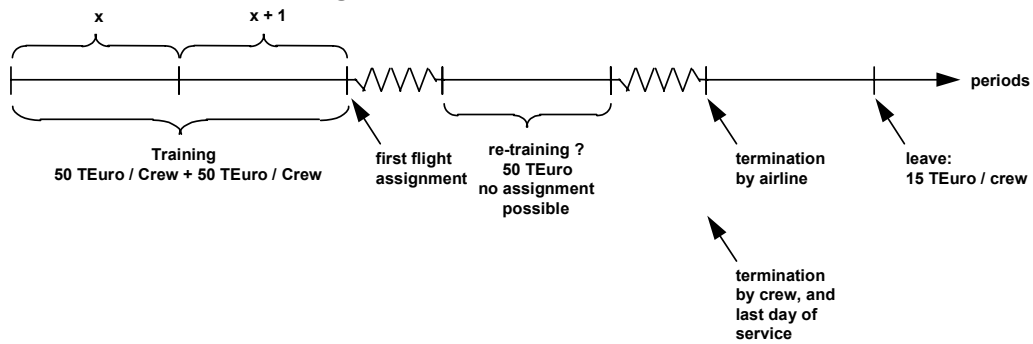
The company may recruit (max. 5 crews per period per category) or dismiss crews (also max. 5 crews) at the beginning of a period. Dismissed crews will leave the company at the beginning of the next period (costs 15.000,-- Euro per crew, to be paid in the following period).

Initially, the following number of crews is available:

Category	Number
I	22
II	15
III	49

If not enough crews are available for flight assignments, you can order overtime work. Overtime hours require an extra 25 % payment bonus. The overtime work load must not exceed 20 % of the regular work load, otherwise crews will be chartered automatically. Chartered crews expenses amount to 500.000 Euro per period.

Timeline Crew Planning



4.2 Sales Representatives

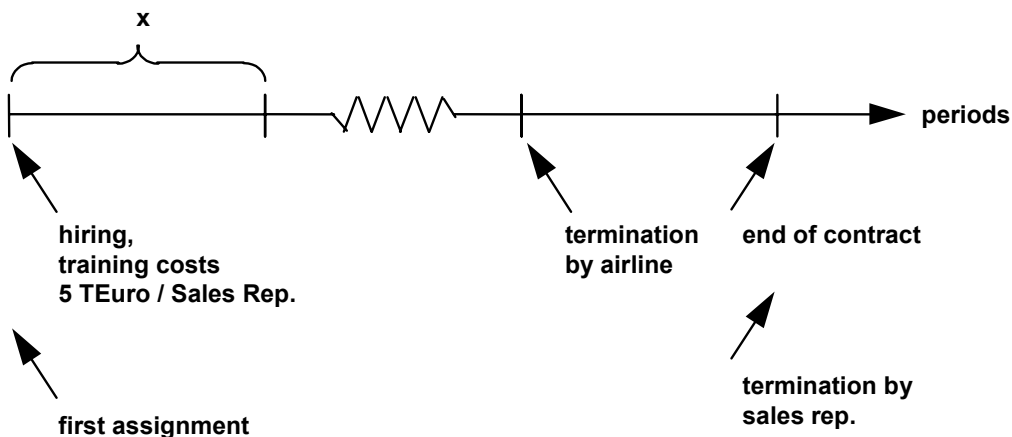
To keep accounting simple, all sales representatives receive a uniform salary. The minimum salary is 28.000,-- Euro plus benefits of at least 70 %. Increases in multiples of 1.000,-- Euro are possible. Social benefits may also be increased.

Decreasing or increasing the salary may influence personnel fluctuations. For instance, more sales representatives will give notice of termination at the end of a period, when their salary or benefits have been decreased.

After recruiting (max. hire of 20 per period), sales representatives can immediately be set to work; no training is required. Recruitment costs are 5.000,-- Euro plus wage. Training is available, however, and tends to increase contentment.

Sales representatives may give notice of termination to the company at the end of a period; they leave the company at the same time. Fluctuations correspond to the level of motivation which is influenced by the same factors as by the crews.

The airline may recruit or dismiss sales representatives at the beginning of a period. Dismissed sales representatives will leave the company at the end of the same period (costs 5.000,-- Euro).



5. Finance

5.1 Internal Financing

Internal Financing can be achieved by the retention of profit.

5.2 External Financing

5.2.1 Loans

Every company can acquire loans of varying maturity periods up to a certain limit (Decision Form 'Others'). The application is made at the beginning of a period. The loan is available to the company in the same period and incurs therefore interest. Varying fixed interest rates are applicable according to the maturity of the loan. Initially the rates are as follows:

<u>Maturity in periods</u>		<u>Fixed interest rate per period</u>
Short term	1	5 %
Medium term	4	6 %
Long term	8	7 %

Loans are repaid at the beginning of the period (x + maturity), hence, interest is not incurred for this period. It is neither possible to repay the loan before maturity nor in installments.

If finances have not been adequately disposed, resulting in a cash balance of less than 250.000,-- Euro at the end of a period then a back-dated overdraft will automatically be taken out to stock up the cash balance to 250.000,-- Euro.

5.3 Debt Limit

Should the sum of liabilities exceed the debt limit then the company will be insolvent and register bankruptcy. The debt limit is calculated by adding up the following positions:

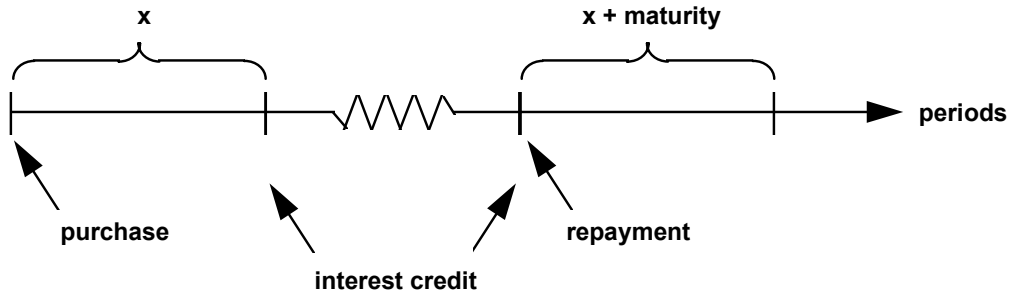
- 100 % down payments,
- 75 % residual book value of aircraft (100 % for new aircraft),
- 75 % value of available spare parts,
- 75 % value of other current assets,
- 100 % bonds,
- 100 % cash balance.

5.4 Bonds

At the beginning of a period Euro or US\$ bonds with varying maturities can be purchased in any amount. The US\$ bonds bought are calculated at the current exchange rate. The initial interest rates for the bonds are:

<u>Maturity in periods</u>	<u>Interest rate per period</u>	
	<u>Euro-Bond</u>	<u>US\$-Bond</u>
1	4 %	4 %
2	5 %	5 %
4	6 %	6 %

The interest rates are fixed for the term for which they are bought. The bonds are repaid at the beginning of the period (x + maturity). No interest is paid for this period. Profits made on US\$ bonds are realised when the bond is repaid; losses in the period they are incurred.



In order to lessen potential surprises of the US\$ exchange rate, US\$ bonds may be purchased at the time an aircraft order is made for the duration of the delivery time.

5.5 Cooperation Acquisition

You have the possibility to enhance the service for your passengers by cooperating with external service companies. The following companies can be purchased at some future date:

- hotel company,
- car rental,
- credit card and
- booking system.

Cooperation contracts are possible only in certain periods (information will be given in the „News and Information“ paper). The participation can result in dividends but also in losses.

Providing additional services makes your airline more attractive for customers; hence you may be able to increase the demand for flight tickets.

You also have the possibility of investing in a booking system, in order to achieve a better outbound / return flight coordination. The maximum utilization will be increased to 100 %.

6. Other Costs

6.1 Administration Costs

Semi-fixed costs are incurred depending on passengers / freight to be transported. To enable a common unit of measurement, a passenger is calculated with 100 kg. Following costs are produced per route for the combination of cargo and passengers:

Passenger and cargo (tons)	Administration costs
up to 9.999	10,0 mil. Euro
between 10.000 and 19.999	12,5 mil. Euro
20.000 and more	15,0 mil. Euro

6.2 Stations costs

Each of the four routes incurs fixed station costs depending on the frequency of flights:

Flights per period	Fixed Station Costs
up to 300	2,5 mil. Euro
between 301 and 500	4,0 mil. Euro
between 501 and 1.000	7,5 mil. Euro
1.001 and more	10 mil. Euro

6.3 Commission

The commission for sales agents is 8 % of tickets sold.

7. Accounting

In each period the following accounts have to be analysed:

- Profit and Loss Account,
- Balance Sheet,
- Cash Management,
- Route Profitability.

In order to determine the value of spare parts, a comparison of the current book value with current acquisition price is necessary. For the balance sheet the final stock is valued at the lower of these two values. The balance sheet value of aircraft is the original price minus the depreciation to date (10 % per period).

Profits are taxed at 36 % corporation tax, 50 % are then retained as revenue reserves + 50 % paid out as dividends.

In order to analyse the stock market price the following has to be considered:

- ratio of equity to incorporated share capital,
- the amount of the dividend in relation to the equity,
- market share
- economic situation.

Possible losses can be set off against reserves at the end of the accounting year whereby the free profit reserves are to be dissolved first. Profits cannot be carried forward for more than the accounting year.

8. Standard Reports

After each period every team gets a number of business reports without additional costs which are to be analysed. The aim of the team should be to filter out the important data for the strategic decisions of the airline and the decisions for the next period.

8.1 Market Report

Provides detailed information about the generated and transported demand for the different routes offered. The report gives the initial results as to the effectiveness of your marketing-mix decisions. This report also indicates if your airline obtained the contract for tenders.

8.2 Aircraft Assignment

The report shows your decisions concerning the aircraft and number of frequencies offered on the individual routes. The logbook provides information of the rise in cumulated flight hours in the last period and the actual situation of the fleet regarding age, maintenance level, status, depreciation, remaining technical life, residual book value.

8.3 Aircraft: Spare Parts

A summary of material planning and use according to quantity, costs and average punctuality on the individual routes - taking cancellations into consideration.

8.4 Personnel

This report gives all information concerning the level, fluctuation and expenses of personnel in your airline.

8.5 Route Results

Of utmost importance for your decisions is the Route Results report. It allows you to see the effectiveness of your flight planning. With this report you gain insight into the cost structure (break-even analysis) of your airline. With the help of a step-by-step calculation the profit contribution levels are revealed.

8.6 Profit and Loss Account / Balance Sheet

In reality Profit and Loss Account and Balance Sheet are only drawn up at the end of the year and serve as a basis for decisions concerning the use of profits. At the end of the odd periods the Profit and Loss Account is drawn up - result before taxes - and carried into the Balance Sheet as balance carried forward.

8.7 Cash Management Accounting

In the Cash Flow Accounts the payings in and out for the previous period are presented and added to the cash balance at the beginning of the period. The result is final cash balance and must correspond to the figure in the Balance Sheet. The level must be at least 250.000,-- Euro but should not be much more, as it would make sense to invest the excess cash more profitably.

8.8 Competition - Information

After each period the teams receive information about the competition in the form of a „Special Report“ which contains details of transported passengers / cargo, load factor, fleet size and orders per model. After every even period the balance sheets of all airlines will be published according to legal requirements.

9. Management Tools

9.1 Market Research Reports

As well as the aforementioned information about the competition you will also receive free of charge a market research report showing the market demand divided into routes, target groups and teams for the last period.

Additional market research reports can be purchased (Decision Form I).

Between the actual figures and forecasts a difference of +/- 10 % may occur (uncertainty of forecasts).

9.1.1 Market Research: Demand

The following reports are available to analyse the demand for the next periods. All reports contain separate information for passengers and cargo.

No.	Content	Price Euro
1	Demand for the next period, subdivided by route (passenger categories are not distinguished)	75.000,--
2	Demand for the next five periods, subdivided by period	100.000,--
3	Demand for the next three periods, subdivided by period and passenger category	150.000,--
4	Demand for the next three periods, subdivided by period and route	150.000,--
5	Demand for next period, subdivided by route and passenger category	250.000,--

9.1.2 Market Research: Competition

The following reports are available to determine the decisions of other airlines. They refer to the previous period.

No.	Content	Price Euro
1	Price decisions of the competing airlines, subdivided by route and passenger category	25.000,--
2	Market share of competing airlines (all routes together)	25.000,--
3	Total industry communication expenses, subdivided by advertising, sales promotion, sales representatives, service expenses and corporate identity	150.000,--
4	Communication expenses, subdivided by company, advertising, sales promotion, sales representatives, service expenses and corporate identity	150.000,--
5	Degree of punctuality, subdivided by company	250.000,--

9.2 Test Marketing

The effect of marketing-mix instruments can be examined in that the change in demand (for the individual routes) is analysed for an increase / decrease of the pledged amount by 10 % for an instrument and in market segment.

For example it can be determined how the demand of the previous period for the business class, subdivided into the four routes, would have differed with a 10 % increase or decrease in advertising expenses if the decisions of the other teams had remained unchanged.

The analysis of ones own sales promotion instruments is not totally reliable as a 10 % deviation is possible. The costs for such a test marketing action are 6.000,-- Euro per instrument and market segment.

Example: Prices

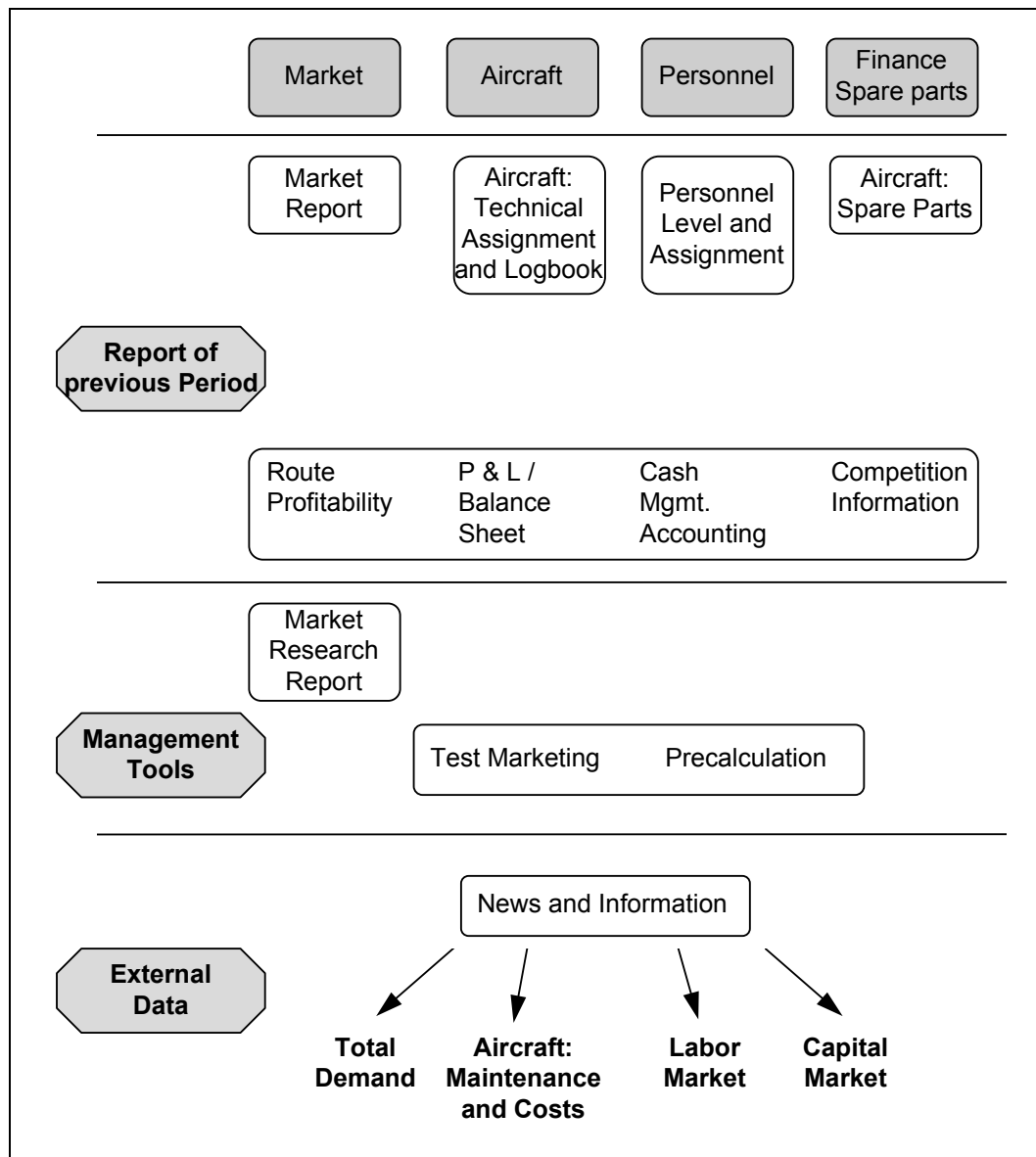
Demand Business Travellers	S1	S2	S3	SL
Decision to date	9.044	17.734	11.560	31.659
Decision + 10 %	8.677	17.021	11.101	30.297
Decision - 10 %	9.531	18.680	12.166	32.645

9.3 Cost-estimating Model (Precalculation)

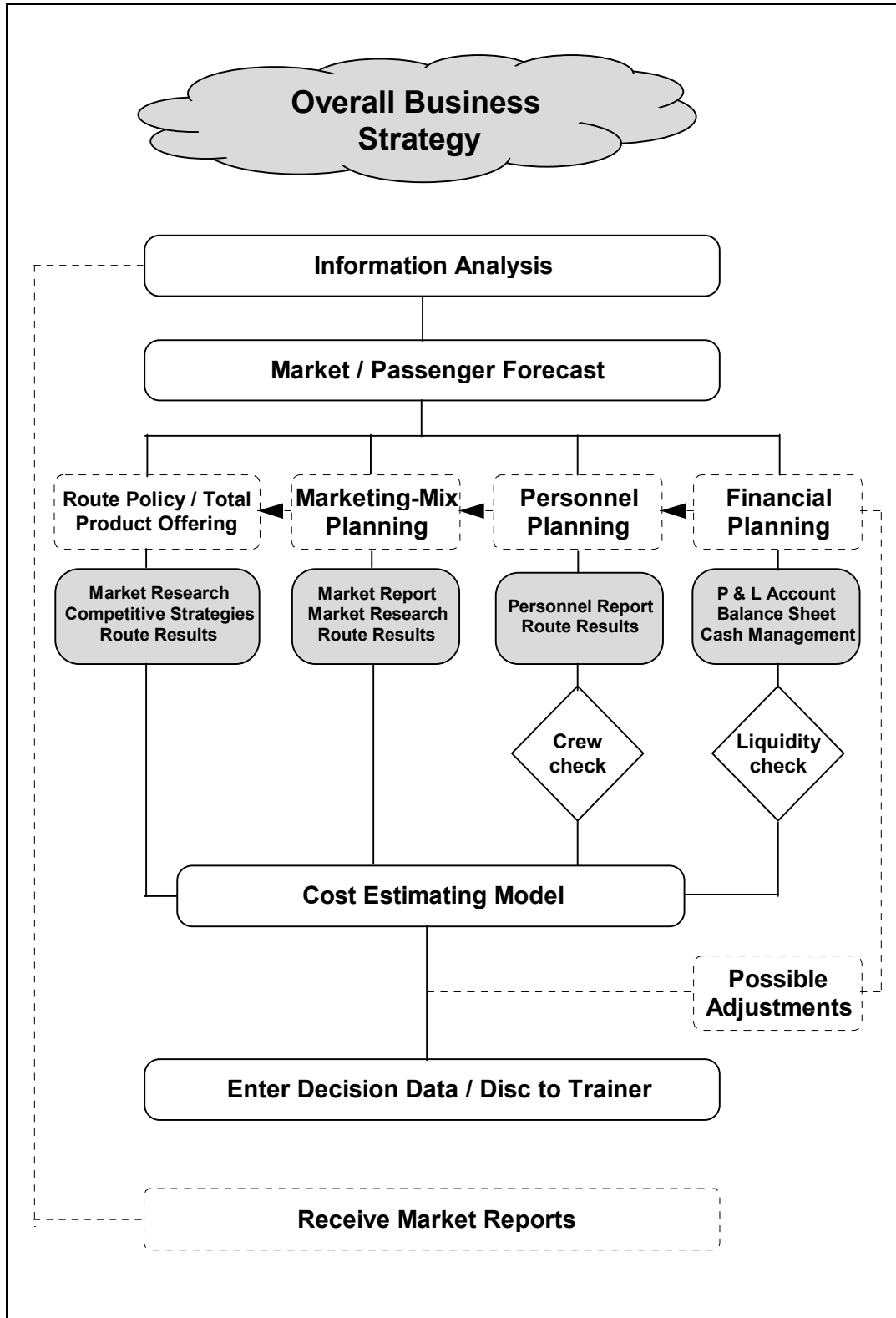
The cost-estimating model is a powerful decision-making tool. Before making your final decisions, your team can analyse the cost and profit effects of the decisions made for the next period.

In order to use the model you must forecast the demand for each route and target group for the next period. Using this information as a basis, the model estimates the route results for the next period under the market conditions (e. g. the decisions of the competitors) of the previous period.

9.3.1 Sources of Information



9.3.2 Suggested Planning Procedure per Period



Annex 1: Decision Forms

Annex 1.1 Decision Form 'Market 1'

GAMS - Decision Data											
Market 1		Market 2		Aircraft		Personnel		Others			
		Base	M 1	M 2	M 3	L					
ADVERTISING (TEUR)	Business	300	50	150	50	150				OK	
	Tourist	250	125	125	150	100				Cancel	
	Private travellers	250	100	25	25	100				Help	
	Cargo	250	50	50	100	100				Print	
SALES PROMOTION (TEUR)	Business	150	30	100	30	100				Protocol	
	Tourist	150	75	75	100	75				Team 1	
	Private travellers	150	75	15	15	50				Per. 0	
	Cargo	150	25	25	60	50				Standard	
SALES REPS CUSTOMERS/ AGENTS (No. Bodies)	Business	CU	AG	CU	AG	CU	AG	CU	AG	CU	AG
	Tourist	4	4	1	1	1	1	1	1	1	1
	Private travellers	4	4	1	1	1	1	1	1	1	1
	Cargo	4	4	1	1	1	1	1	1	1	1
MARKET RESEARCH REPORT		No. 1	No. 2	No. 3	No. 4	No. 5					
Market potential		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Competitors		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

- Advertising** Expenses for advertising in 1.000,-- Euro, subdivided by market (base, stations 1 to 4) and passenger categories
- Sales promotion** Expenses for sales promotion in 1.000,-- Euro, subdivided by market and passenger category
- Sales** Assignment of sales representatives, subdivided by function representatives: (to address customers or agents), market and passenger category
- Market research** Enter Y(es) to order a market research report. If you order reports: a report, the data will be available at the beginning of the next period

Annex 1.2 Decision Form 'Market 2'

GAMS - Decision Data

Market 1 | **Market 2** | Aircraft | Personnel | Others

		Routes	S 1	S 2	S 3	L
PRICES (EUR/Pax, Return)	Business		1150	1150	1150	1900
	Tourist		850	850	850	1050
	Private travellers		950	950	950	1400
	Cargo (EUR/kg, One way)		0,90	0,90	0,90	1,65
SERVICE (TEUR)	Business		750	850	750	2000
	Tourist / Private travellers		0	0	0	0
	Cargo		35	35	75	110
PUBLIC RELATIONS (TEUR)			2500			

CALL FOR TENDERS	No.	Price offer
	0	0
	0	0
	0	0
	0	0
	0	0

OPEN TENDERS	No.	No. of passengers
	0	0
	0	0
	0	0
	0	0
	0	0

Team: 1
Per.: 0
Standard

OK
Cancel
Help
Print
Protocol

- Price** Price in Euro for flight tickets, subdivided by route (S1 to S3, L) and passenger category (business, tourists, private travellers) and cargo.
- Service** Service expenses in 1.000,-- Euro, subdivided by route (S1 to S3, L) and passenger category (business, tourists / private travellers) and cargo.
- Public Relations** Public Relation expenses effecting the entire airline.
- Call for tenders** Group sales offer. To participate in a group sales offer (call for tender), enter the number of the offer and price offer.
- Open tender** To participate in an open tender, enter number of tender and seat quantity offer.

Annex 1.3 Decision Form 'Aircraft

REGISTRATION	CHECKS				CODE	TEAM NO.		DURATION	TEUR
	FREQUENCIES					DURATION			
	S 1	S 2	S 3	L					
DAAAA	270	0	0	0	D	0	0	0	0
DAAAB	270	0	0	0		0	0	0	0
DAAAC	0	225	0	0		0	0	0	0
DAAAD	0	225	0	0		0	0	0	0
DAAAE	0	0	180	0		0	0	0	0
DAAAF	0	0	180	0		0	0	0	0
DAAAG	0	0	0	180	D	0	0	0	0
DAAAH	0	0	0	180	D	0	0	0	0
DAAAI	360	0	0	0		0	0	0	0
DAAAJ	0	55	125	90		0	0	0	0

Type	No.
P100A	0
P100H	0
P140A	0
P140H	0
P180A	0
P180H	0
P220A	0
P220H	0
P350A	0
P350H	0
C220A	0
F15 A	0
F100A	0

Frequencies Enter frequencies to assign aircraft on routes. Make sure you stay below the limits for flight assignments.

Code, Team No., Duration, TEuro Entries for the activities below. Enter code, team no., duration and TEuro
 Duration Time interval of hiring out / chartering
 TEuro Price

Code list for fleet planning

Code	Activity	Comments
NP	New acquisition	Automatic entry after delivery of a new aircraft
SS	Second hand sale to <ul style="list-style-type: none"> other companies instructors 	<ul style="list-style-type: none"> „Team No.“ depending on contract partner Price: equal by both parties „Team No.“ = 0, No recording of sales price; sales price automatically 50 % of the residual book value
SP	Second hand purchase	See Chapter 3.2.5
CI	Chartering in	See Chapter 3.2.5. Enter registration of aircraft you charter, price per period, additional duration in periods
CO	Chartering out	See Chapter 3.2.5 Price per period, Additional duration in periods
GR	Suspension of operation (Grounded)	Saving of insurance premiums. Technical residual value constant, technical condition falls one point per period
MO	Modernisation	Improves technical levels by two points taking natural reduction into consideration equals + one point. Influences likelihood of cancellation Costs: 40.000,-- Euro
WD	Withdrawal from purchase	See Chapter 3.2.2, Downpayment retained as penalty

Annex 1.4 Decision Form 'Personnel'

The screenshot shows the 'Personnel' tab in the 'GAMS - Decision Data' application. It features two main sections: 'CREWS' and 'SALES REPRESENTATIVES'. The 'CREWS' section includes a table for recruiting, dismissal, and retraining across three categories (CAT 1, CAT 2, CAT 3), along with salary and social benefits input fields. The 'SALES REPRESENTATIVES' section includes input fields for recruiting, dismissal, training expenses, salary, and social benefits. On the right side, there are control buttons for OK, Cancel, Help, Print, and Protocol, as well as dropdown menus for Team and Per. and a Standard button.

CREWS				of category	
	CAT 1	CAT 2	CAT 3		
Recruiting (No.)	3	3	3	Salary per crew (TEUR)	160
Dismissal (No.)	0	0	0	Social benefits (%)	70,0
Retraining to CAT 1		0	0		
CAT 2	0		0		
CAT 3	0	0			

SALES REPRESENTATIVES			
Recruiting (No.)	0	Salary per sales representative (TEUR)	28
Dismissal (No.)	0	Social benefits (%)	70,0
Training (TEUR)	15		

Crews:

- Recruiting** Number of crews to be recruited, subdivided by training category I, II, III
- Dismissal** Number of crews to be dismissed
- Retraining** Number of crews to be retrained to another category
- Salary** Salary per crew in 1.000,-- Euro; minimum salary is 160.000,-- Euro
- Social benefits** Social benefits for crews in per cent; minimum is 70 %

Sales representatives:

- Recruiting:** Number of sales representatives to be recruited
- Dismissal:** Number of sales representatives to be dismissed
- Training:** Training expenses for recruited sales reps. in 1.000,-- Euro
- Salary:** Salary per sales rep. in 1.000,-- Euro ; minimum 28.000,-- Euro
- Social benefits:** Social benefits for sales reps. in per cent; minimum is 70 %

Annex 2: Business Reports

Annex 2.1 Market Report

MARKET REPORT							
		R O U T E S					Total
		S 1	S 2	S 3	Sum S	Long	
PASSENGERS							
Generated demand (number)	Business	6864	18656	8976	34496	31680	66176
	Tourist	15400	14960	23320	53680	7920	61600
	Private travellers	11880	3740	3564	19184	13200	32384
	Total	34144	37356	35860	107360	52800	160160
Overbooking (number)	Business	0	0	0	0	0	0
	Tourist	0	0	0	0	0	0
	Private travellers	0	0	0	0	0	0
	Frequent flyer	0	0	0	0	0	0
Total	0	0	0	0	0	0	
Actually transported (number)	Business	6864	18656	8976	34496	31680	66176
	Tourist - R	15400	14960	23320	53680	7920	61600
	Tourist - I	0	0	0	0	0	0
	Private travellers	11880	3740	3564	19184	13200	32384
	Frequent flyer	0	0	0	0	0	0
Total	34144	37356	35860	107360	52800	160160	
Seat capacity (100% - utilization)		54000	63000	64800	181800	85500	267300
Passenger load factor (%)		63,2	59,3	55,3	59,1	61,8	59,9
Turnover (TEUR)	Business	7894	21454	10322	39670	60192	99862
	Tourist - R	13090	12716	19822	45628	8316	53944
	Tourist - I	0	0	0	0	0	0
	Private travellers	11286	3553	3386	18225	18480	36705
Total	32270	37723	33530	103523	86988	190511	
CARGO							
Generated demand (Tons)		6600	6248	14256	27104	10384	37488
Overbooking (Tons)		0	0	0	0	0	0
Actually transported (Tons)		6600	6248	14256	27104	10384	37488
Capacity (Tons)		10800	11000	25000	46800	18000	64800
Load factor (%)		61,1	56,8	57,0	57,9	57,7	57,9
Turnover (TEUR)		5940	5623	12830	24394	17134	41527
PASSENGERS AND CARGO	Turnover (TEUR)	38210	43347	46361	127917	104122	232038
	Load factor (%)	61,9	57,8	56,6	58,3	59,1	58,5
Acceptance of tender no.: 0, 0, 0, 0, 0							

- Demand:** Demand is a direct result of the marketing mix of your airline compared to the other airlines
- Overbooking:** Number of passengers that were not transported because the seat offer was too small
- Actually transported:** Number of transported passengers on route
- **Tourism - R:** Passengers booked through the standard channels
 - **Tourism - I:** Passengers obtained through group sales efforts (call for tender) or open tenders
 - **Frequent flyer:** Number of passengers transported free of charge
- Seat Capacity:** Flight frequencies x Number of seats per aircraft (added over all flights)
- Load Factor:** Ratio of sold capacity to offered capacity in %
- Total Load Factor:** Ratio of total sold capacity to total offered capacity in % (passengers and cargo)
- Turnover:** Appropriate ticket price (added over all categories) x Number of transported passengers
- Acceptance of Tender:** Indicates number of tenders obtained by your airline. Acquired

tenders come into effect in the following period.

Annex 2.2 Aircraft Assignments

AIRCRAFT: ASSIGNMENTS												
AIRCRAFT ASSIGNMENTS (number of frequencies)												
Aircraft type	no.	ROUTES					Total	Crew Requirement				
		S 1	S 2	S 3	Sum S	Long						
P100A	2	540	0	0	540	0	540	9				
P100N	0	0	0	0	0	0	0	0				
P140A	2	0	450	0	450	0	450	10				
P140N	0	0	0	0	0	0	0	0				
P180A	0	0	0	0	0	0	0	0				
P180N	2	0	0	360	360	0	360	6				
P220A	1	0	0	0	0	150	150	9				
P220N	0	0	0	0	0	0	0	0				
P350A	1	0	0	0	0	150	150	9				
P350N	0	0	0	0	0	0	0	0				
C220A	0	0	0	0	0	0	0	0				
F15 A	1	360	0	0	360	0	360	6				
F100A	1	0	55	125	180	90	270	10				
Total	10	900	505	485	1890	390	2280	59				

AIRCRAFT LOGBOOK												
Type	Regis- tration	Flight hours		Age Per.	Maint. level	Check Per.	Status code	Purchase price TEUR	Depreciation TEUR		Remaining technical avail.Per	Remaining bookvalue TEUR
		Period	cumulative						Per.	cum.		
P100A	DAAAA	810	14310	13	3	D	25000	0	25000	3	0	
P100A	DAAAB	810	14810	14	3		25000	0	25000	2	0	
P140A	DAAAC	675	11675	12	4		35000	0	35000	4	0	
P140A	DAAAD	675	10675	12	4		35000	0	35000	4	0	
P180N	DAAAE	540	2540	3	8		45000	4500	13500	13	31500	
P180N	DAAAF	540	2540	3	6		45000	4500	13500	13	31500	
P220A	DAAAG	1800	17800	11	4	D	60000	0	60000	5	0	
P350A	DAAAH	1800	11800	7	4	D	100000	10000	70000	9	30000	
F15 A	DAAAI	1080	9080	9	4		30000	3000	27000	7	3000	
F100A	DAAAJ	1620	11620	7	4		100000	10000	70000	9	30000	

No.	Number of aircraft in service (excl. resting and chartering out)
Flight hours	Number of flight hours flown in last period
Status code	Status corresponding to code in Decision Form 'Aircraft'
Routes	Number of actual flight frequencies of aircraft. If this number is smaller than your assignment in Decision Form 'Aircraft', see if you have disregarded the flight assignment limits.
Crew requirement	Crew requirement for aircraft x Number of flight frequencies / Maximum number of flight frequencies.

Annex 2.3 Aircraft: Spare Parts

Reduction in the value

of spare parts:

In case the actual opening stock price requires an adjustment.

AIRCRAFT: SPARE PARTS						
DEMAND ON SPARE PARTS	BASE	M1	M2	M3	LONG	TOTAL
Opening stock	175	50	30	20	25	300
Reshipments	0	0	0	0	0	0
Usable parts	175	50	30	20	25	300
Failure	72	32	18	9	13	144
Deficiency	0	0	0	0	0	0
Surplus	103	18	12	11	12	156
Aog transports	0	0	0	0	0	0
Emergency delivery	0	0	0	0	0	0
Delivery to base	0					0
New opening stock for next period	103	18	12	11	12	156
Ordering to base	100					100
COSTS IN TEUR						
Planned costs	3600	1600	900	450	650	7200
Aog Transports	0	0	0	0	0	0
Emergency delivery	0	0	0	0	0	0
Storage costs	515	90	60	55	60	780
Total costs for spare parts	4115	1690	960	505	710	7980
PUNCTUALITY		S1	S2	S3	SL	AVER- AGE
Degree of punctuality (basis: 100)		92,9	92,9	96,3	93,3	93,8

Annex 2.4 Personnel

This report gives all information relevant to personnel. Explanations are included in the report. Crew requirements are calculated according to the report „Aircraft: Configuration and Expenses“.

PERSONNEL: AVAILABILITIES AND ASSIGNMENTS				
CREWS	Category I	Category II	Category III	Total
Initial number of crews	22	15	50	87
- Fluctuation	1	1	2	4
- Dismissal (former period)	0	0	0	0
+ Recruiting	3	3	3	9
= Number of crews	24	17	51	92
- Training (available in 1 period)	0	0	0	0
- Training (available in 2 periods)	3	3	3	9
- Retraining	0	0	0	0
= Available crews	21	14	48	83
Demand on crews	15	6	38	59
Utilization (%)	71,43	42,86	79,17	
Overtime (%)	0,00	0,00	0,00	
Charter crews	0	0	0	0
PERSONNEL EXPENSES FOR CREWS (TEUR)	Category I	Category II	Category III	Total
Salaries	3840	2720	8160	14720
Social benefits	2688	1904	5712	10304
Overtime	0	0	0	0
Charter crews	0	0	0	0
Recruiting / dismissal	30	30	30	90
Training / retraining	150	150	150	450
Total	6708	4804	14052	25564
SALES REPRESENTATIVES	Personnel expenses (TEUR)			
Initial number	64	Salaries		1736
- Fluctuation	2	Social benefits		1215
- Dismissal	0	Recruiting / Dismissal		0
+ Recruiting	0	Training		15
= Available sales reps	62	Total		2966

Annex 2.5 Route Results

ROUTE RESULTS										
	ROUTES								TOTAL	
	S 1		S 2		S 3		LONG			
	TEUR	%	TEUR	%	TEUR	%	TEUR	%	TEUR	%
TURNOVER	38210	100,0	43347	100,0	46361	100,0	104122	100,0	232038	100,0
. Passengers	32270	84,5	37723	87,0	33530	72,3	86988	83,5	190511	82,1
. Cargo	5940	15,5	5623	13,0	12830	27,7	17134	16,5	41527	17,9
- TRANSPORT SALES RELATED COSTS	3057	8,0	3468	8,0	3709	8,0	8330	8,0	18563	8,0
. Comissions	3057	8,0	3468	8,0	3709	8,0	8330	8,0	18563	8,0
. Other	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
- CHARTER COSTS	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
- FLIGHT RELATED COSTS	2460	6,4	3106	7,2	3669	7,9	15052	14,5	24286	10,5
. Fuel	1679	4,4	2212	5,1	2360	5,1	13084	12,6	19336	8,3
. Landing fees	780	2,0	893	2,1	1309	2,8	1968	1,9	4950	2,1
. Other	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
= PROFIT CONTRIBUTION I	32693	85,6	36773	84,8	38983	84,1	80740	77,5	189189	81,5
- DIRECT OVERHEAD	19476	51,0	15543	35,9	20642	44,5	41916	40,3	97577	42,1
. Maintenance	6951	18,2	3337	7,7	2642	5,7	11753	11,3	24683	10,6
. Personnel expenses, crew	6055	15,8	5724	13,2	4815	10,4	8970	8,6	25564	11,0
. Service expenses	785	2,1	885	2,0	825	1,8	2110	2,0	4605	2,0
. Depreciation	5000	13,1	5012	11,6	7072	15,3	14167	13,6	31250	13,5
. Interest	360	0,9	244	0,6	4876	10,5	4000	3,8	9480	4,1
. Insurance	325	0,9	341	0,8	413	0,9	917	0,9	1995	0,9
. Other	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
= PROFIT CONTRIBUTION II	13218	34,6	21230	49,0	18341	39,6	38824	37,3	91612	39,5
- STATION OVERHEAD	7500	19,6	7500	17,3	4000	8,6	4000	3,8	23000	9,9
= PROFIT CONTRIBUTION III	5718	15,0	13730	31,7	14341	30,9	34824	33,4	68612	29,6
- Public Relations	412	1,1	467	1,1	499	1,1	1122	1,1	2500	1,1
- Market research expenses	58	0,2	65	0,2	70	0,2	157	0,2	350	0,2
- Advertising	498	1,3	546	1,3	535	1,2	921	0,9	2500	1,1
- Sales promotion	304	0,8	327	0,8	325	0,7	544	0,5	1500	0,6
- Sales representatives	615	1,6	648	1,5	667	1,4	1036	1,0	2966	1,3
- Frequent Flyer Program	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
= PROFIT CONTRIBUTION IV	3832	10,0	11677	26,9	12244	26,4	31043	29,8	58796	25,3
- ADMINISTRATION COSTS	12500	32,7	10000	23,1	12500	27,0	12500	12,0	47500	20,5
= ROUTE RESULTS	-8668	-22,7	1677	3,9	-256	-0,6	18543	17,8	11296	4,9

Turnover: Number of transported passengers x Appropriate ticket price
(added over all categories)

Tons of cargo transported x Ton price

Commissions: Agents receive an 8 % commission of ticket sales

Charter costs: Costs for chartered aircraft (flight hours equation)

Flight hours equation:

Flown frequencies of aircraft x Flight hours per route
on the route frequency

Flight hours of aircraft on all routes

Fuel: Fuel expenses = Fuel expenses per flight hour x Number of flight hours (added over all aircraft)

Landing fees: Landing fees per frequency x Number of frequencies (added over all aircraft)

Direct overhead: Direct overhead expenses are distributed over all routes. The share for each route is a result of the number of flight frequencies on that route.

• **Maintenance:** (Fixed technical costs + Modernising + Checks)
Maintenance expenses per frequency x Number of flight

frequencies + Share of maintenance facility overhead

• Personnel expenses crew:	Total personnel costs are distributed over all routes.
• Service expenses:	Service expenses were decided in Decision Form I
• Depreciation:	per period:Purchase price of aircraft / Economic life
• Interest	Calculatory Interest. Calculated with the interest rate for medium term loans Interest: from remaining book value.
• Insurance:	Calculation based on flight hours equation
• Other	Being influenced by the instructor
Station overhead:	Station overhead expenses are a result of the number of flight frequencies.
Public Relations:	PR expenses x Route Revenue /Total Revenue
Market research:	(Marketing costs of the route + Marketing costs bases) x Route Revenue/Total Revenue
Advertising:	Same calculation
Sales promotion:	Same calculation
Sales representatives:	Same calculation
Frequent Flyer Program:	Calculated from turnover
Administration costs	

For details on :

Material costs:	See report „Aircraft: Configuration and Expenses“
Landing fees:	Same
Insurance:	Same

Difference in results between Route results and P&L-Report:	<ul style="list-style-type: none">• No other operating revenue• Calculatory interest rates instead of balance sheet interest rates• Aircraft which have been suspended from operation are not considered
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Annex 2.6 Profit and Loss Account

PROFIT AND LOSS ACCOUNT			
(TEUR)	Prev. Period	Period	Dev. (%)
Turnover	225000	232038	3,1
- Sales commission and others	18000	18563	3,1
+ Other income	0	0	0,0
= Net revenue	207000	213475	3,1
+ Other operating earnings	0	0	0,0
- Charter costs	0	0	0,0
- Material expenses	25000	26536	6,1
. Fuel costs	17500	19336	10,5
. Spare parts	7500	7200	-4,0
- Personnel expenses	28000	28530	1,9
. Crews	25000	25564	2,3
. Sales representatives	3000	2966	-1,1
- Fixed tech. overh. (without maint./rep.)	5000	5010	0,2
- Depreciation	38000	32000	-15,8
- Other operating expenses	102000	101373	-0,6
. Insurance	2000	1995	-0,3
. Landing fees	5150	4950	-3,9
. Maintenance	3000	2973	-0,9
. Checks	10000	9500	-5,0
. Advertising	2500	2500	0,0
. Sales promotion	1500	1500	0,0
. Service	5000	4605	-7,9
. Public Relations	2500	2500	0,0
. Frequent Flyer Program	0	0	0,0
. Market research	350	350	0,0
. Administration	47500	47500	0,0
. Station overhead	22500	23000	2,2
. Other expenses	0	0	0,0
= OPERATING RESULT	9000	20026	122,5
+ Cooperation result	0	0	0,0
+ Income from bonds	0	0	0,0
+ Profit / loss from exchange of bonds	0	0	0,0
- Interest payments for loans	0	25	0,0
= RESULT OF ORDINARY ACTIVITIES	9000	20001	122,2
+ Extraordinary income	0	0	0,0
- Extraordinary expenses	0	0	0,0
= RESULT BEFORE TAX	9000	20001	122,2
- Retained loss from last period	0	0	0,0
- Taxes	0	7200	0,0
= PROFIT / LOSS	9000	12801	42,2

Other income	Income from hiring out aircraft
Other operating earnings	Includes earnings from aircraft sales; profits made on US\$ bonds due to exchange rate fluctuations
Spare parts	Consumption; AOG-Transportation; Emergency deliveries; Value depreciation of spare parts (see report „Aircraft: Spare Parts“)
Fixed technical costs	Fixed technical costs; Modernising costs; Storage costs for spare parts (see report „Aircraft: Configuration and Expenses“)
Depreciation	10 % linear depreciation
Maintenance costs	See report: „Aircraft: Configuration and Expenses“
Checks	Costs for D-Checks
Other expenses	Costs for test marketing; Penalties for withdrawing from purchase of aircraft; Residual book value at the sale of aircraft (to instructors)
Taxes	Taxes for the previous period netted off against tax allowances

Annex 2.7 Balance Sheet

BALANCE SHEET					
ASSETS (TEUR)			EQUITY AND LIABILITIES (TEUR)		
FIXED ASSETS		156500	EQUITY (TOTAL EQUITY)		152301
Aircraft		126000	Subscribed capital		100000
Down payment		0	Capital reserves		25000
Tangible assets		30500	Revenue reserves		14500
Cooperations		0	Profit / loss		12801
CURRENT ASSETS		8050	LIABILITIES		12249
Spare parts		7800	Long term loans		0
Bonds (4P)		0	Medium term loans		0
Bonds (2P)		0	Short term loans		500
Bonds (1P)		0	Overdraft		11749
Cash		250	Special loans		0
BALANCE		164550	BALANCE		164550
USD EXCHANGE RATE 1,000					
BOND SYNOPSIS					
MATURE	TEUR	TUSD	MATURE	TEUR	TUSD
Period 0	0	0	Period 5	0	0
1	0	0	6	0	0
2	0	0	7	0	0
3	0	0	8	0	0
4	0	0	9	0	0
			TOTAL	0	0
			TOTAL (TEUR)		0

Aircraft	Initial value minus depreciation
Tangible assets	Constant 30.500.000,-- Euro
Spare parts	Stock „Cost of market whichever-is-lower-method“
Cash balance	See „Statement of Cash Balance“
Capital reserves	Stock discount = Positive difference between issue value and face value of the shares by an increase of share capital
Retained income	Undistributed profits
Net income profit / loss	If positive: amount to be distributed
Special loan	To be guaranteed by instructors

Annex 2.8 Statement of Cash Balance

STATEMENT OF CASH BALANCE		
(TEUR)	Current period	Planning for next period
OPENING CASH BALANCE	500	
INPAYMENTS:		
Inpayments from sales	232038	
+ Other earnings	0	
+ Inpayments from other operating earnings	0	
+ Cooperation results	0	
+ Interest from bonds	0	
+ Cashing of bonds	0	
+ Other interests and similar earnings	0	
+ Extraordinary income	0	
+ Sale of aircraft	0	
+ Long term loans	0	
+ Medium term loans	0	
+ Short term loans	500	
+ Overdraft	11749	
+ Special loans	0	
= TOTAL INPAYMENTS	244288	
DISBURSEMENTS:		
Purchase of spare parts	0	
+ Sales commission and others	18563	
+ Charter costs	0	
+ Material costs	19336	
+ Personnel expenses	28530	
+ Fixed technical overhead	5010	
+ Other operating expenses	101373	
+ Repayment of long term loans	0	
+ Repayment of medium term loans	0	
+ Repayment of short term loans	60000	
+ Repayment of overdraft	0	
+ Repayment of special loans	0	
+ Interest payments	25	
+ Purchase of second-hand aircraft	0	
+ Down payment for aircraft	0	
+ Remaining payment for aircraft	0	
+ Purchase of bonds	0	
+ Purchase of cooperations	0	
+ Taxes	7200	
+ Dividend payment (prev. period)	4500	
+ Extraordinary expenses	0	
= TOTAL DISBURSEMENTS	244538	
CLOSING CASH BALANCE	250	

Other earnings	Income from chartering out of aircraft
Other operating earnings	As Profit & Loss, but without revenue for sale of aircraft
Cooperation results	Dividends or losses (negative value)
Sale of aircraft	Total sales price
Purchase of spare parts	Expenses for normal spare parts deliveries
Material costs	Indirect fixed costs (see report: „Aircraft: Configuration and Expenses“); Modernising costs; Storage costs for spare parts
Other operating expenses	See Profit & Loss disregarding residual book value by the sale of aircraft and penalties for withdrawal from purchases
Taxes	Only in the winter period for the previous accounting year

Annex 2.9 Special Report

SPECIAL REPORT						
FRANKFURT DAILY NEWS ECONOMIC SITUATION						
BALANCE SHEET (TEUR)	AIRLINES					
	1	2	3	4	5	
ASSETS						
Aircraft	126000	126000	126000	126000	126000	
Down payment	0	0	0	0	0	
Tangible assets	30500	30500	30500	30500	30500	
Cooperations	0	0	0	0	0	
Spare parts	7800	7800	7800	7800	7800	
Bonds (4P)	0	0	0	0	0	
Bonds (2P)	0	0	0	0	0	
Bonds (1P)	0	0	0	0	0	
Cash	250	250	250	250	250	
BALANCE	164550	164550	164550	164550	164550	
EQUITY AND LIABILITIES						
Equity	152301	152301	152301	152301	152301	
Long term loans	0	0	0	0	0	
Medium term loans	0	0	0	0	0	
Short term loans	500	500	500	500	500	
Overdraft	11749	11749	11749	11749	11749	
Special loans	0	0	0	0	0	
BALANCE	164550	164550	164550	164550	164550	
MIXED						
Passengers	160160	160160	160160	160160	160160	
Pass. load factor (%)	59,9	59,9	59,9	59,9	59,9	
Cargo (to)	37488	37488	37488	37488	37488	
Cargo load factor (%)	57,9	57,9	57,9	57,9	57,9	
Available aircraft (no.)	10	10	10	10	10	
Dividend (MEUR)	6,4	6,4	6,4	6,4	6,4	
Own share price (EUR)	110	110	110	110	110	
NEW ORDERS IN THE CURRENT PERIOD AND TOTAL NUMBERS OF AVAILABLE AIRCRAFT						
P100A	0/ 2	0/ 2	0/ 2	0/ 2	0/ 2	
P100N	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	
P140A	0/ 2	0/ 2	0/ 2	0/ 2	0/ 2	
P140N	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	
P180A	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	
P180N	0/ 2	0/ 2	0/ 2	0/ 2	0/ 2	
P220A	0/ 1	0/ 1	0/ 1	0/ 1	0/ 1	
P220N	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	
P350A	0/ 1	0/ 1	0/ 1	0/ 1	0/ 1	
P350N	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	
C220A	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	
F15 A	0/ 1	0/ 1	0/ 1	0/ 1	0/ 1	
F100A	0/ 1	0/ 1	0/ 1	0/ 1	0/ 1	

Annex 2.10 News and Information

The upper half of the box contains information relevant to all companies (change in aircraft costs, interest rates, US\$ exchange rate etc.).

The lower half is for your company only.

NEWS AND INFORMATION
<p>Period 1 = Winter season</p> <p>- No additional News</p> <p>!!! Good luck !!!</p>

Annex 3: Management Tools

Annex 3.1 Market Research Report - Market Potential (Sample)

MARKET RESEARCH REPORTS - MARKET POTENTIAL							
REPORT 1 FORECAST FOR THE NEXT PERIOD:	NUMBER / TONS	Routes				Total	
		S1	S2	S3	Long		
	Passengers						
	Cargo						
REPORT 2 FORECAST FOR THE NEXT FIVE PERIODS:	NUMBER/TONS	Period +1	Period +2	Period +3	Period +4	Period +5	
	Passengers	852182	832382	756095	635852	586246	
	Cargo	194980	197277	174329	147877	137280	
REPORT 3 FORECAST FOR THE NEXT THREE PERIODS:	NUMBER / TONS	Period +1	Period +2	Period +3			
	Business						
	Tourist						
	Private travellers						
	Total Passengers						
	Cargo						
REPORT 4 FORECAST FOR THE NEXT THREE PERIODS:	NUM./ TONS	Period +1 Passeng.	Cargo	Period +2 Passeng.	Cargo	Period +3 Passeng.	Cargo
	S 1						
	S 2						
	S 3						
	Long						
	Total						
REPORT 5 FORECAST FOR THE NEXT PERIOD:	NUMBER / TONS	S1	S2	S3	Long	Total	
	Business	52548	100220	65550	209108	427426	
	Tourist	42905	51486	64358	85810	244559	
	Priv. travellers	64358	21453	17157	77229	180196	
	Total Passengers	159811	173159	147064	372148	852182	
	Cargo	36708	30987	59590	67695	194980	

Annex 3.2 Market Research Report - Competition

(Sample with 5 competing companies)

MARKET RESEARCH REPORT - COMPETITION								
REPORT 1 PRICE:	ROUTE	EUR/PASSENGER- EUR/kg	COMPANIES					
			1	2	3	4	5	SC
	S1	Business	2300	2300	2300	2300	2300	0
		Tourist	1700	1700	1700	1700	1700	0
		Priv. travellers	1900	1900	1900	1900	1900	0
		Cargo	1,80	1,80	1,80	1,80	1,80	0,00
	S2	Business	2300	2300	2300	2300	2300	0
Tourist		1700	1700	1700	1700	1700	0	
Priv. travellers		1900	1900	1900	1900	1900	0	
Cargo		1,80	1,80	1,80	1,80	1,80	0,00	
S3	Business	2300	2300	2300	2300	2300	0	
	Tourist	1700	1700	1700	1700	1700	0	
	Priv. travellers	1900	1900	1900	1900	1900	0	
	Cargo	1,80	1,80	1,80	1,80	1,80	0,00	
Long	Business	3800	3800	3800	3800	3800	0	
	Tourist	2100	2100	2100	2100	2100	0	
	Priv. travellers	2800	2800	2800	2800	2800	0	
	Cargo	3,30	3,30	3,30	3,30	3,30	0,00	
FREQUEN- CIES (No.)	S1	900	900	900	900	900	0	
	S2	505	505	505	505	505	0	
	S3	485	485	485	485	485	0	
	Long	390	390	390	390	390	0	
REPORT 2 MARKET SHARES:	VALUES IN %		COMPANIES					
			1	2	3	4	5	SC
	MEDIUM DIST.	Passengers	20,0	20,0	20,0	20,0	20,0	0,0
		Cargo	20,0	20,0	20,0	20,0	20,0	0,0
LONG DIST.	Passengers	20,0	20,0	20,0	20,0	20,0	0,0	
	Cargo	20,0	20,0	20,0	20,0	20,0	0,0	
REPORT 3 COMMUNICATION TOTAL:	VALUES IN TEUR		TOTAL EXPENSES					
	Advertising Sales promotion No. of sales represent. Service expenses Public Realations		25000 15000 347 46025 25000					
REPORT 4 COMMUNICATION PER COMPANY:	VALUES IN TEUR		COMPANIES					
			1	2	3	4	5	SC
	Advertising		5000	5000	5000	5000	5000	0
	Sales promotion		3000	3000	3000	3000	3000	0
	No. of sales reps		62	62	62	62	62	37
	Service expenses		9205	9205	9205	9205	9205	0
Public Relations		5000	5000	5000	5000	5000	0	
REPORT 5 PUNCTUALITY:	(Basis = 100)		COMPANIES					
			1	2	3	4	5	SC
	Degree of punctuality (%)		93,8	93,8	93,8	93,8	93,8	100

Annex 3.3 Testmarketing (Sample)

MARKET RESEARCH REPORT - TESTMARKETING					
TEST 1: PRICE					
Demand:	Business (no.)	S1	S2	S3	L
Decision (actual)		6864	18656	8976	31680
Decision + 10 %		6378	17336	8341	29941
Decision - 10 %		7620	20711	9965	34388

Annex 3.4 Precalculation (Necessary input)

Routes	S 1	S 2	S 3	L
Business	4628	12122	6653	21833
Tourist - regular	11186	18071	22405	3176
Private travellers	8666	3647	2377	7791
Cargo (to)	5100	5100	7803	7104

Annex 4: External Data

These reports are provided automatically and free of charge at the beginning of each period.

Annex 4.1 Aircraft: Configuration and Expenses

This report gives an overview of availability of the aircraft in the next period. All necessary explanations are included in the report.

AIRCRAFT: CONFIGURATION AND EXPENSES													
VALUES FOR PERIOD 1													
Aircraft type code	P100A	P100N	P140A	P140N	P180A	P180N	P220A	P220N	P350A	P350N	C220A	F15 A	F100A
Purchase price (Mill.USD)	25,0	30,0	35,0	40,0	40,0	45,0	60,0	60,0	100,0	110,0	100,0	30,0	100,0
Delivery-time (Periods)	2	4	2	4	2	4	2	4	2	4	2	2	2
Seat capacity (Seats)	100	100	140	140	180	180	220	220	350	350	220	0	0
Cargo capacity (Tons)	0	0	0	0	0	0	0	0	0	0	50	15	100
Effective life technical (Periods)	16	16	16	16	16	16	16	16	16	16	16	16	16
Effective life economical (Periods)	10	10	10	10	10	10	10	10	10	10	10	10	10
Maintenance level at delivery	7	9	7	9	7	9	7	9	7	9	7	7	7
Crew requirement at max. utilisation	Number 6	6	8	6	8	6	10	10	10	10	10	6	10
	Categorie	1	1	3	2	2	3	2	3	2	3	1	3
Insurance costs (TEUR/per.)	100,0	125,0	150,0	155,0	180,0	160,0	250,0	250,0	400,0	400,0	400,0	125,0	400,0
Fixed tech. overhead (TEUR/per.)	210,0	210,0	315,0	315,0	360,0	360,0	535,0	535,0	820,0	820,0	820,0	265,0	840,0
Maintenance costs (EUR/freq)	850,0	700,0	1100	900,0	1350	1100	1900	1500	2500	1975	2500	800,0	2500
Fuel costs (EUR/h)	650,0	525,0	1255	1070	1415	1095	2280	1810	3105	1900	3130	580,0	3140
Landing fees (EUR/freq)	935,0	765,0	1320	1105	2180	1745	4405	3520	5445	3629	5445	765,0	5445
Max. number of frequencies/day	Medium distance 2	2	2	2	2	2	2	2	2	2	2	2	2
	Long distance	0	0	0	0	0	1	1	1	1	1	0	1

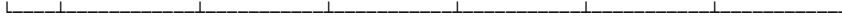
Annex 4.2 Actual demand

This report provides information about the actual demand for all airlines in the last period. All necessary explanations are included in the report.

MARKET RESEARCH REPORT: ACTUAL DEMAND (PERIOD)						
		S 1	S 2	S 3	Long	Total
C0	Business	0	0	0	0	0
	Tourist	0	0	0	0	0
	Private tr.	0	0	0	0	0
	Total	0	0	0	0	0
	Cargo	0	0	0	0	0
C1	Business	6864	18656	8976	31680	66176
	Tourist	15400	14960	23320	7920	61600
	Private tr.	11880	3740	3564	13200	32384
	Total	34144	37356	35860	52800	160160
	Cargo	6600	6248	14256	10384	37488
C2	Business	6864	18656	8976	31680	66176
	Tourist	15400	14960	23320	7920	61600
	Private tr.	11880	3740	3564	13200	32384
	Total	34144	37356	35860	52800	160160
	Cargo	6600	6248	14256	10384	37488
C3	Business	6864	18656	8976	31680	66176
	Tourist	15400	14960	23320	7920	61600
	Private tr.	11880	3740	3564	13200	32384
	Total	34144	37356	35860	52800	160160

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	Cargo	33000	31240	71280	51920	187440
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Annex 4.3 Checks-Information

Aircraft maintenance intervals and expenses				
Aircraft Type	D-Check			
	After periods	After flight hrs.	Duration/Days	Costs/TEuro
P100A	12	12.000	30	2.000
P100N	12	16.000	30	2.000
P140A	12	12.000	30	2.500
P140N	12	16.000	30	2.500
P180A	12	12.000	30	3.000
P180N	12	16.000	30	3.000
P220A	12	12.000	30	3.500
P220N	12	16.000	30	3.500
P350A	12	12.000	30	4.000
P350N	12	16.000	30	4.000
C220A	12	12.000	30	4.000
F15A	12	12.000	30	2.000
F100A	12	12.000	30	4.000

Information concerning the latest checks performed

Registration	Last check	in period	in flight hrs. cum.
DXXXA	D	0	14.310
DXXXG	D	0	17.800
DXXXH	D	0	11.800