Airports and Air Navigation user charges workshop

13 & 14 March 2023
Dakar

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- The building block principle and what it means.
- Operational cost.

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The Concept of Building Blocks in Aviation Charges, Part 1 – contd.

- Traffic forecast and information.
- Best practice consultation.

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The Concept of Building Blocks in Aviation Charges – Part 2

- Cost of capital
- Charges structure & benchmarking.
- Investments and depreciation.
- Lessons from Covid.

13 March - Session 3 – 15:15 – 16:15

The Concept of Building Blocks in Aviation Charges, Part 1

- The building block principle and what it means.
- Operational cost.

ICAO charges policies are framed with 4 key principles

ICAO recommends that the four principles should be incorporated into national legislation, regulation or policies (…) to ensure compliance.

- Non-Discrimination.
- Cost Relatedness.
- Transparency.
- Consultation.

ICAO Council, States are encouraged to incorporate the four key charging principles of non-discrimination, cost-relatedness, transparency and consultation with users into their national legislation, regulation or policies, as well as into their future air services agreements, in order to ensure compliance by airport operators and air navigation services providers (ANSPs).

Cost-relatedness is the link of the company's cost to its revenues

In simple terms, the company should be able to recover its reasonable and efficient running cost and be able to pay for its investments.

In this sense, the cost to run the business would have to be recovered with revenues – such as aeronautical charges or commercial activities.

As a first step, the total cost base has to be identified and subsequently revenues calculated and planned.

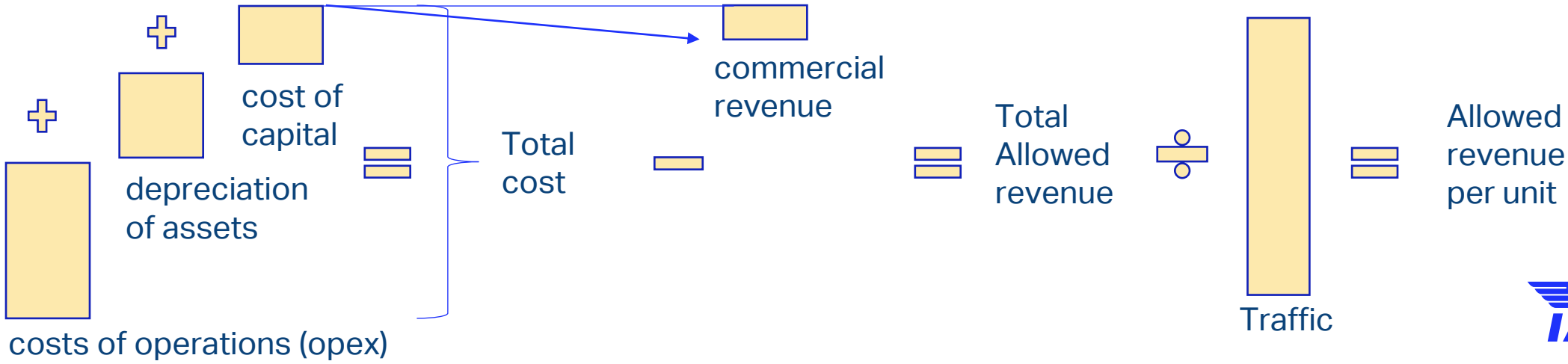
Revenues (charges) are directly linked to traffic development:
More traffic – more revenues
Less traffic – less revenues

ICAO's Building Blocks define the standard model

The concept is the method of building blocks to determine the charges level (not the charges structure).

Charges should be the full cost for providing airport or ANSP services.

Building blocks essentially are:

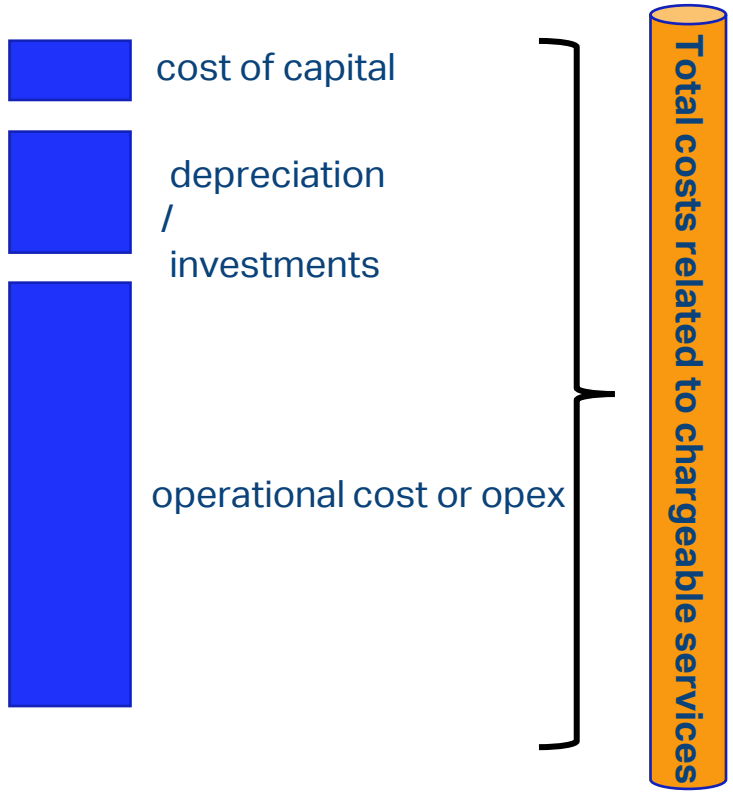


Building Blocks: What is being built?

- The building blocks are the determining elements of the total charges level.
- They add up all the different cost elements to a total cost, which may include a reasonable profit.
- In the calculations an allowed profit is treated as a cost element if the model is not cost recovery of reasonable costs.
- When the building blocks have built the total cost base, the result is seen in perspective to the forecasted traffic.
- Ultimately, the total (planned) cost is set into perspective to total (forecasted) traffic and then defined per unit (PAX, Overflight) resulting in a charge per unit.
- The development of that unit price (cost) from one year to the next defines the percentage change over the existing charges level.

Building blocks build the cost base

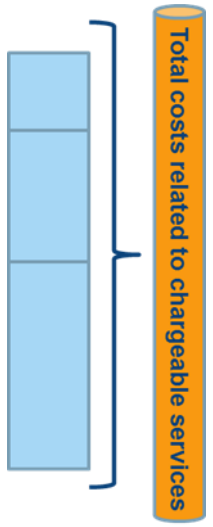
- The building blocks define the total cost of the company related to chargeable services.
- This concept is applied by many regulators when determining the overall charges level.
- The company needs to be able to recover its reasonable cost and generate cash flow for investments.



The concept follows business logic

- To run the services the company has operating costs: staff, maintenance, utilities etc. (OPERATING COST OR OPEX)
- The company needs to invest to have the infrastructure in place with which to deliver the services. (DEPRECIATION)
- In a for profit company, owners/shareholders expect a return for the capital they have invested / shares they have bought. (COST OF CAPITAL OR WACC)

→ The result is the total allowable revenue or total cost for the provision of aeronautical services for which charges can be levied.



From costs and traffic to charges

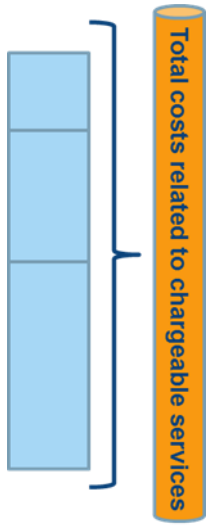
Typically, charges are set for a period's traffic in relation to the estimated total cost.

The total of all building blocks defines the total cost which needs to be recovered to be able to finance the services.

Total cost is set in perspective to estimated / forecasted traffic development in that same period.

Total cost divided by total traffic results in a charge per unit.

This is where many "problems" begin.



Contentious debates about costs and traffic

Why we often see too little transparency: moral hazard

The building blocks accumulate the company's cost and divide that by the units of traffic.

The result is a charge per unit (e.g. cost per overflight or landing charge at airports).

In simple terms:

Total cost = 10,000,000 USD

Total traffic = 500,000 flights

Charge per unit: 20 USD

This simple as it looks approach can give rise to contentious debates and a certain level of "mutual distrust" – this is not necessary.

Open, fair and transparent consultations are possible

Why do simple building blocks can cause problems?

What happens:

- The higher the cost and the lower the traffic, the higher the unit charge.
- Both sides can prepare their arguments for an endless discussion.
- The solution lies in a **transparent**, **open** and **fair** consultation process – with agreed resolution mechanisms.

Total cost = 10,000,000 USD

Total traffic = 500,000 flights

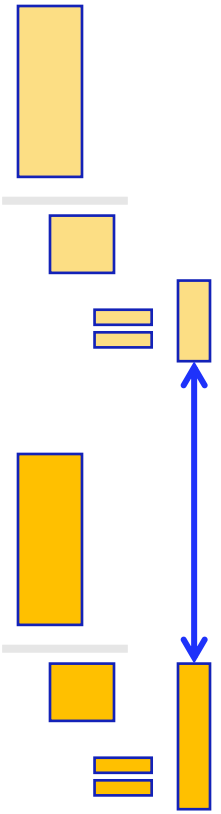
Charge per flight: 20 USD

Total cost = 12,000,000 USD

Total traffic = 450,000 flights

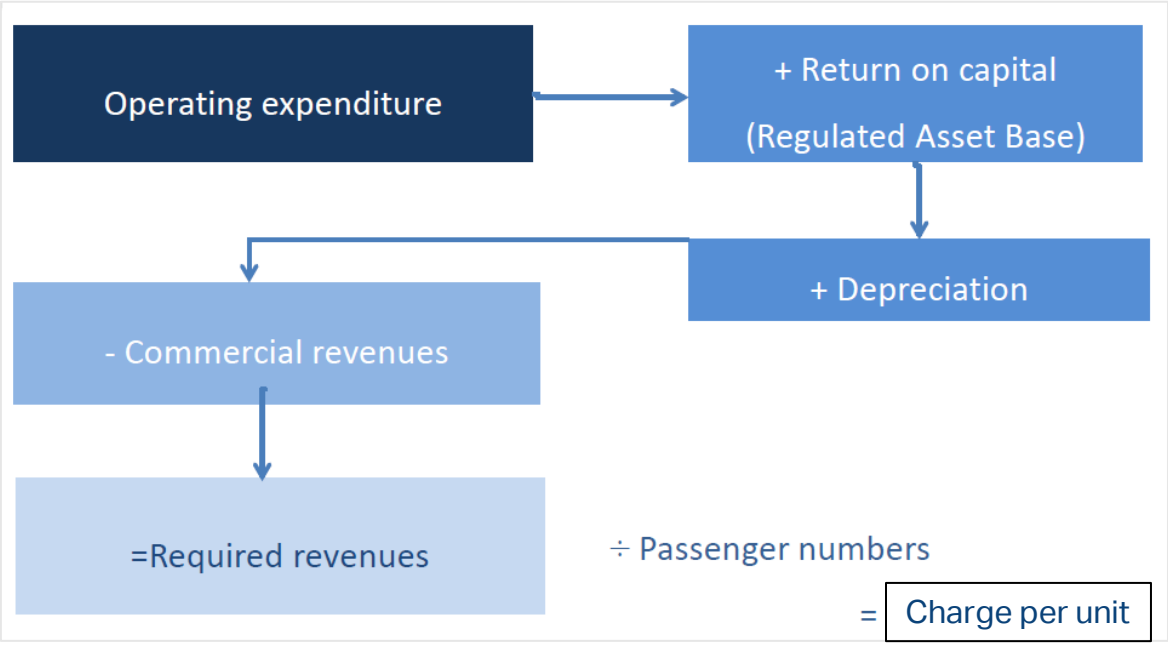
Charge per flight: 26.7 USD

+ 35%



Standard approach at many airports

The building block methodology is applied around the world in various jurisdictions, often applying an incentive-based approach



What is opex?

- Managing the company requires resources: staffing, telecommunications, consulting, maintenance, utility supplies (electricity, water), equipment rentals, marketing and many others.
- Smaller items are consolidated into larger groups: Staff cost comprises salaries, social security payments (pension, health) and insurance.
- In another perspective: if the car is your asset which depreciates, every cost you have to pay to use your car, i.e. insurance, petrol, maintenance, spare parts, toll fees or speeding tickets etc. is your operational cost or opex, resulting from managing your infrastructure (capex), i.e. driving your car.
- It is often a reflection of the company's chart of accounts!

The time perspective on costs

The (future) planned cost is connected to its historical or actual cost development.

An understanding must be built how and why cost has developed in the past.

If past developments are understood, current or present costs can be discussed.

Based on an understanding of actual (historic) and current cost, the future cost can be understood and discussed as it forms the base for future charges.

Staffing levels are a key cost driver in opex

Some cost are interdependent with other costs:

Cost relatedness of staff: What other costs are linked to staff numbers?

- ↗ Travel expenses – airfare, accommodation: no staff – no travel.
- ↗ Training expenses – same logic: no staff – no training.
- ↗ Admin cost, e.g. computers, workstations, software etc.

But caution: outsourcing versus staff cost development.

Opex and capex links

Some opex is also directly linked to capex:

For example, maintenance cost for equipment is typically linked to the asset base (to capital investments):

Investment in infrastructure equipment requires regular maintenance

However: Maintenance is linked to the date of installation.

Therefore:

↗ Maintenance is low or zero in the first years (new equipment).

Variances actuals over plan

No plan is never 100% precise.

Budget plans can vary overall and vary in individual accounts.

For charges, a common observation is a tendency for cost over planning:

→ In reality, actuals are lower than the original plan, i.e. cost had been planned higher and was managed to be lower.

The charges had been determined on the planned cost, i.e. on the higher plan instead of the lower actual.

→ Why is this important and what does it mean?

Actuals should be reviewed with the original plan

If this over planning is an individual event, the magnitude of the variance needs to be reviewed and analyzed.

But if such variances are recurring, the planning process can be questioned.

Any cost over-planning results in a charges over-determination: customers paying more than justified.

Transparency is key to reaching an agreement.

Conclusion: Opex development should be reasonable and it should be openly discussed

Airlines understand that charges must allow to recover its costs.

But cost need to be reasonable and charges need to be cost related (as per ICAO guidelines).

In order to establish a trusted partnership, the approach towards cost should be openly discussed.

Airlines must have the opportunity to ask questions and also to challenge positions they do not understand or cannot support.

This is not interference but legitimate interest – in both ways.

Exchange rate fluctuations impact the financial situation

When the local currency is volatile on foreign exchange markets, revenues will also fluctuate due to exchange rate variations.

What can happen

- Revenues are received in a currency other than the home currency.
- Costs are still primarily paid in local currency.
- If the local currency fluctuates, the revenue exchanged from foreign to local currency fluctuates as well.
- Volatile home currencies often devalue against a stronger foreign currency.
- Should this happen over the charges period, the result is positive for the company.
- No change is seen when charging and home currency is the same.

The impact of the exchange rate should be regularly reviewed

A company may not have changed charges for a long time.

We regularly observe that after a long time and no consultations, charges are declared to rise.

An argument we often hear is that the charges had been stable for a long time and that is why they now need to increase.

This is to be regarded with caution: This argument alone does not provide justification for a charges increase.

Charges may not have changed over a long time

Why should a charges increase be evidenced after no changes were made over a long time?

The company's cost may have risen over time and from there comes the reasoning to increase charges in order to compensate.

But most often we also see higher revenue:

- Revenue from traffic growth.
- Revenue from non-aeronautical / commercial activities.
- Cost may have increased but cost usually does not rise proportionally.

In addition, revenue could have increased due to a weakening in the exchange rate (if charges are not collected in the national currency).

Charges may not have changed over a long time

In retrospect, we often even can conclude that

- → In previous periods, due to the above effects, charges should actually have been lowered.
- → The reason nothing happened is that there had been no consultations.
- → Consultations should take place annually and not only when the provider wants to increase the tariffs.
- → In hindsight, we have evidenced that such arguments under closer inspection have actually shown the need to lower charges.

Inflation is given too much importance in charging schemes

In many regulations inflation is overvalued.

In many regulated environments, the tariff formula uses inflation.

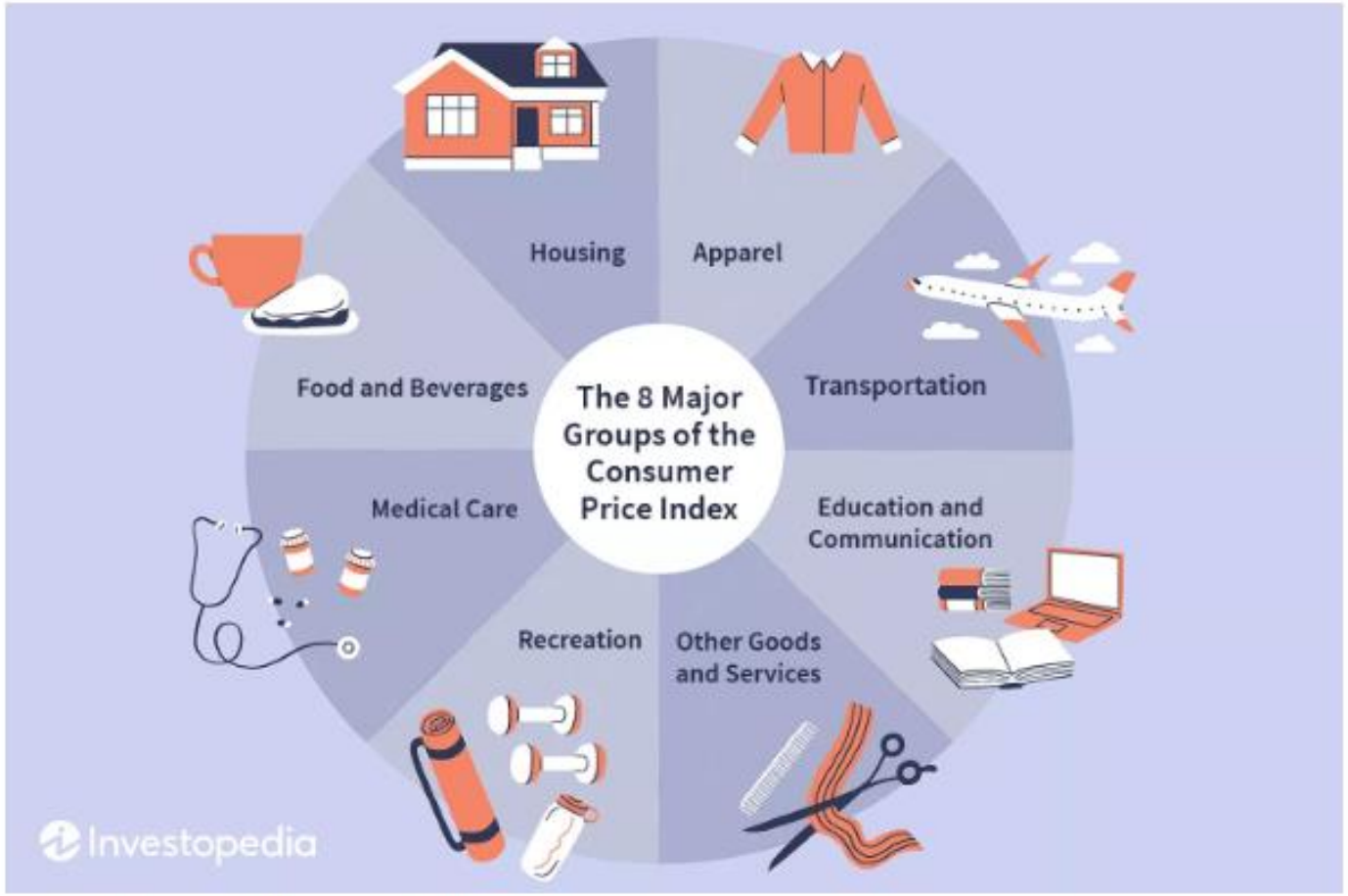
Why such a focus on inflation?

Inflation is in simple terms a definition for the price development of a basket of goods and services, which is defined by typical consumer goods and services habits.

It is expressed as a percentage development (increase or decrease over the previous year).

What exactly is inflation?

The CPI represents the cost of a basket of goods and services across the country on a monthly basis. Those goods and services are broken into eight major groups:



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What do we see?

The composition of this basket bears no resemblance with what an airport purchases.

The cost base of an airport is not aligned with what CPI measures.

Only salaries and related in the opex base is influenced by inflation.

How to address inflation in charges?

The best approach to address the concept of inflation in a charges calculation is

→ Not To Do It.

Instead: Make a realistic plan and forecast.

- Investments can not be planned with a simple inflation adjustment.
- The country's inflation rate measures a basket of goods and services – these are mostly irrelevant for the company. The only valid component is staff cost.
- A realistic plan shall address all relevant parameters to plan the development of future cost for: Staff, Maintenance, Utilities, Consulting, Efficiencies etc.
- No budget is typically planned by adding inflation.
- The company has large bargaining powers to get better prices.
- That is the *value added of the procurement department*.

14 March - Session 1 – 09:30 – 10:30

The Concept of Building Blocks in Aviation Charges, Part 1 – contd.

- Traffic forecast and information.
- Best practice consultation.

Traffic forecast and user charges

Charges are paid for the use of aviation infrastructure.

Charges multiplied with traffic determines the total aeronautical revenue.

As per building block approach, the charge is determined as a unit cost e.g. per PAX. Multiplying all PAX throughout the fiscal (charges) year with the traffic should result in the defined revenue.

Any structuring of charges must result in the same revenue amount. Structuring the charges should be reviewed and decided together with airlines, never alone.

Quantitative modeling

Structuring defines the cost for each block of infrastructure:

Cost for aircraft related infrastructure such as runway cost, boarding bridge, etc.

Cost for passenger related infrastructure such as terminal buildings, security checks etc.

- → Each cost block can define its own charge, establishing cost relatedness for defined services.
- → The total of all revenue streams must result in the determined revenue. For this, a quantitative model must be developed.
- → Quantitative modeling is based on experience. If experience does not exist, we can start by applying cost-relatedness and then fine tune in discussions with airlines.

Traffic forecasting in practice

The relationship between traffic and user charges is direct.

Investments are being driven and determined by traffic development, but once infrastructure is in place and traffic declines, the cost for the investment is shared by the remaining passengers/airlines.

Long term traffic forecasting is difficult but essential.

Brand new or greenfield infrastructure starts with a burdensome level of charges based on the building block methodology.

Traffic growth will alleviate this problem but the start remains difficult if no support is given.

Starting point: a review of traffic data

The company's traffic forecast often tends to be very conservative.

But if the traffic turns out to be higher than planned, charges then have been set too high.

How this can be approached?

- Validating the traffic forecast with airline data.
- Checking the surrounding area for traffic patterns.
- Interpreting current traffic trends.
- Checking potential economic development: economic growth always correlates with increased traffic.

Starting point: a review of traffic data

- Identifying “neutral” sources of information such as from the regulator or ministry.

- Check historical data versus existing forecasts: how accurate has been the past forecasting? If traffic forecasts were often different from actual developments, a correction factor based on historical variances could be applied.

Key messages for the traffic forecast

- Traffic development is important for charges and infrastructure development: it needs the right level of attention!
- Bringing in experts from previous meetings to collect as many information as possible.
- Trying to find the best acceptable traffic forecast solution for an agreement.
- Be aware that any charges agreement for a multi-year period means that forecast accuracy tends to be less accurate towards the end of the period.
- In a five-year period for the setting of charges, the first years for any figure (cost as well as revenue forecast) are more accurate than for the later years towards the end of the period.
- The traffic forecast translates directly into revenue.

Operational expenses must be aligned with traffic

- Contrary to previous claims, airports had been able to reduce their non-capital expenses in significant ways during the Covid crisis.
- Operational costs (opex) had been reduced in response to the crisis, at some airports reaching over 35%. Even staff numbers, often claimed at being a fixed cost component, had been cut significantly.
- Opex cuts have trailed traffic drops as cost cannot be reduced as quickly as traffic went down.
- In consequence, traffic must resume first before opex can go up again.
- With the same time lag, opex increases can only follow traffic increases in a symmetrical approach.

Which information is required?

The building block information needs accurate determination.

Depreciation

Opex

Cost of Capital
(if applicable)

Cost

Traffic Forecast

Commercial Revenue

Revenue

Investments

Dimensions of information

In order to comprehend and agree to the figures, these have to be looked at from different dimensions:

1: Segmentation of costs – cost structure (**What**).
2: Value for each cost element (**How much**).
3: Development of cost over time – time dimension (**When**).
4: Comparison of cost development over time – plan versus actuals (**What difference**).

→ The time dimension is important and needs to be made available from reporting systems.

Difficulty of information management

All companies around the world at some point have difficulties in understanding their own information. Why?

1. Information systems, ERP (enterprise resource planning) and databases are only as good as they have been implemented and as they are fed with information.
2. Inaccurate data in – inaccurate data out.
3. System changes or enhancements can bring a break with historical data.
4. Retrieval routines are default settings with customization afterwards.
5. Organizational changes are not always reflected in information management systems.

→ Even good information management systems can not always deliver what is expected!

Information towards opex: Chart of accounts

Where to start?

Information regarding costs and revenues is always available – it is part of the annual auditing process.

The best way to start is to review the chart of accounts and budget plans.

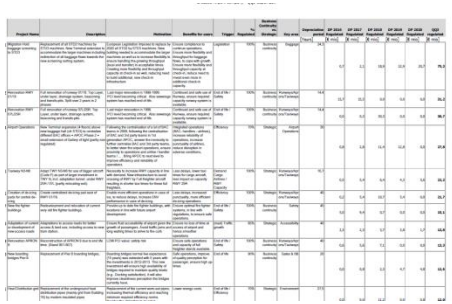
Information about investments

- Name and description
- Purpose and risk
- Total cost
- Completion Year
- Funding sources
- Years of use
- Opex cost impact
- Impact on charges

Information is easily displayed in an Excel file.

→ The file can be send in advance before the consultation.

→ Content to be discussed during the consultation.



A collaborative approach will yield the best result for all sides

Why is this information relevant:

→ To understand historical cost developments.

→ To know the reasons why.

→ To discuss how cost development can be optimized.

→ To understand trends and plan future cost and staffing.

In addition, the staffing development needs to be shown and explained.

It is essential that airlines understand charges and that discussing the approach towards them is indicator of a trusted partnership.

Confidential information can be addressed via a *Non Disclosure Agreement*.

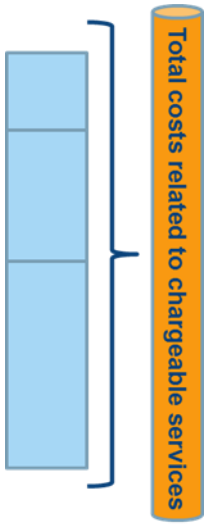
How to calculate a reasonable return

The concept of WACC approaches capital returns from different sides.

It looks at what return is adequate or justified in a specific market environment.

It calculates for shareholders to receive a return on their invested capital.

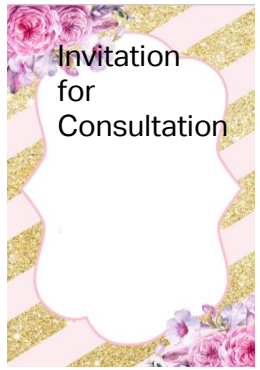
There are big differences between state owned and private companies.



Criteria of best practice consultation

1) Invitation to the consultation.
2) Participants of the meeting(s).
3) Consultation language.
4) Information presentation and transparency.
5) Methodology of charges determination.
6) Consultation backup material.
7) Consultation instead of information.
8) Consideration and responsiveness to comments.
9) No discrimination.
10) Involvement of the regulator.
11) Timeline.
12) Decision making process and appeal mechanism.

Invitation, meeting participants, language



The invitation for a consultation meeting has to be sent out well in advance to allow the parties to make arrangements for attendance. Good practice is to announce the meeting at least three months in advance.

The invitation should be sent to all airlines present at the airport as well as to organizations such as IATA to be able to represent airlines who cannot participate.

Aviation is an international business. The language of the consultation meeting must be English to allow all participants to build an equal understanding of the content and the discussion.

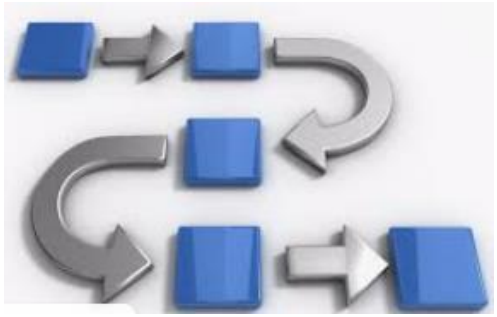
Information presentation and transparency

What is transparency?

Transparency can be seen as by how much does the provided information enable the participants to understand the proposal. This requires information about:

- Planned cost.
- Cost development.
- Investment planning.
- Traffic forecasting.
- Revenue forecasting.
- Bad debt management.
- Actual versus planned costs.
- etc.

Methodology of charges determination



The Building Block methodology is the standard model to determine user charges.

The relevant reference is Doc 9082, Section II para 2 i.
The concept of building blocks is to determine the charges level (not the charges structure). ICAO building blocks are defined as:

Charges should reflect the full cost of providing airport or ANSP and essential ancillary services

= ((costs of operation, management and administration, maintenance (opex),
+ depreciation of assets,
+ cost of capital or WACC (if applicable),
- non aeronautical revenue.))
/ Traffic forecast.

Consultation backup material

Material used in consultations must follow accepted standards.

For instance, academic studies on the cost of capital determination should be internationally recognized, peer reviewed studies instead of consulting work paid for by one party.

Traffic forecasts should use generally accepted sources, e.g. airline data, regulator or government sources and should demonstrate a maximum level of practical applicability.

Consultation instead of information

Definition:

Consultation is *the act of exchanging information and opinions about something in order to reach a better understanding of it or to make a decision*.
(Cambridge Dictionary)
https://dictionary.cambridge.org/dictionary/english/consultation

→ **Exchanging information.**
→ **Reach a better understanding.**

Consultation cannot be a mere information session or a lecture by the provider as is sometimes observed.

A good consultation can be defined as one where information is presented, discussed and questions are being answered: Responsiveness to questions and comments from the users.

No discrimination, Timeline, Regulator and appeal.

A consultation meeting must not discriminate against any users: all must be allowed and provided with sufficient time to raise questions and request answers.

ICAO requires four months notice prior to a revision of charges with one month notice before the final decision.

Established good practice:

- Meeting invite is sent at least 3 months before the (first) meeting.
- Consultation can be one or several meetings.
- Final decision six weeks before new scheme becomes effective.

The regulator attends all meetings.

The provider explains and justifies its final decision to the users – he does so if requested in a separate meeting for Q&A.

The result can be appealed against under existing regulation.

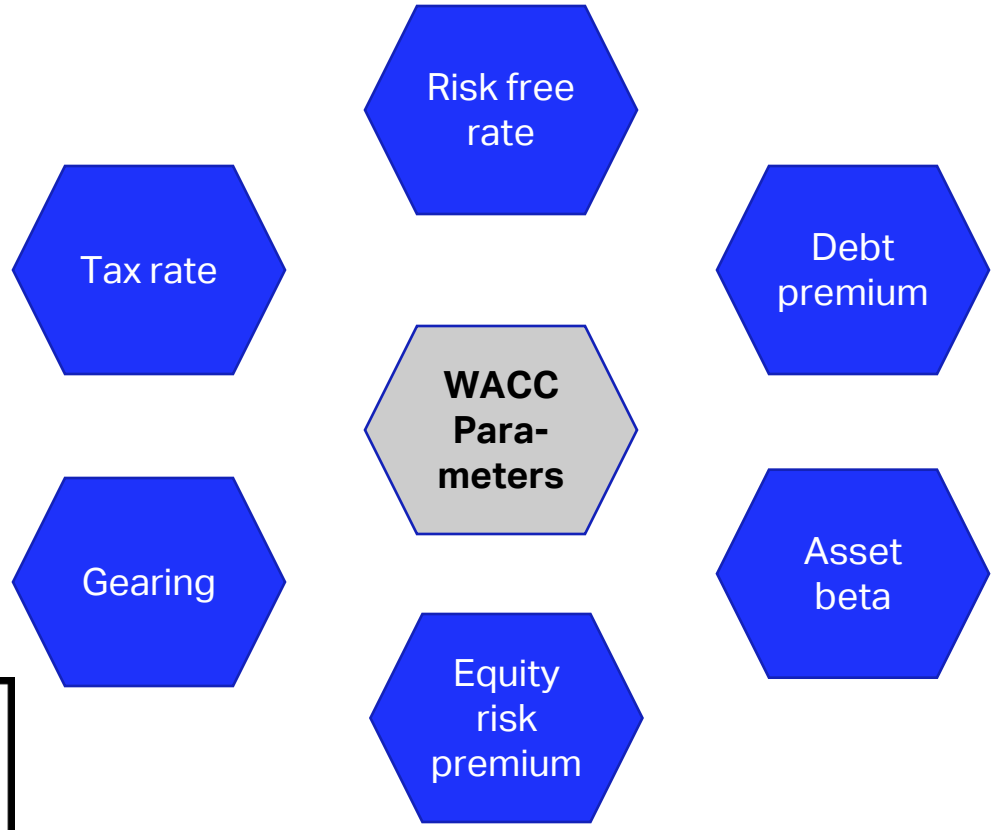
Session 2 – 10:45 – 12:30

The Concept of Building Blocks in Aviation Charges – Part 2

- Cost of capital
- Charges structure & benchmarking.
- Investments and depreciation.
- Lessons from Covid.

The components of the WACC

Different parameters need evaluation: The concept of weighted averages.



Cost of equity Cost of debt

$$WACC = \frac{E}{D+E} \cdot K_e + \frac{D}{D+E} \cdot K_{d,\,after\ tax}$$

The problem in multi-year periods Example

Staffing plans can have completely changed during a fixed period.

At the start of the new period consultations, staffing levels are much higher than planned.

This sets the base for the new period – what to do?

Example:

Staffing levels in a five-year charges period

End of the current 5-year period plan: 802 FTE

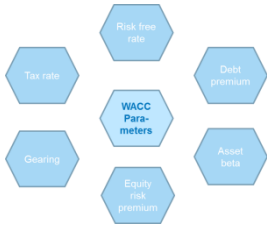
End of the current 5-year period expected actual: 1,116 FTE

End of the new 5-year period, planned staffing levels: 1,156 FTE

End of the current 5-year period total unfilled but counted staff: 116 FTE!

Proposal: The 40% increase over the committed plan must be kept down to a 24% as a start by not hiring for the unfilled positions !

From basics to struggle

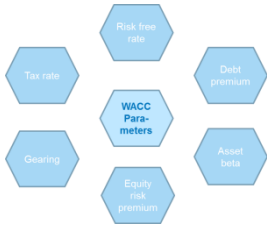


The smallest change in the WACC can have a profound impact with a large asset base.

The determination of the value for each WACC parameter is therefore often highly contentious:

- ❑ Which maturity for the RFR? Which period? Spot rate? Negative yield?
- ❑ Which gearing? Optimal capital structure?
- ❑ What beta? Problem of not many listed airports.
- ❑ In hybrid/dual till: clear separation of assets.
- ❑ MRP determination – geometric or arithmetic?
- ❑ Debt premium – most recent bond issuances?

Further considerations



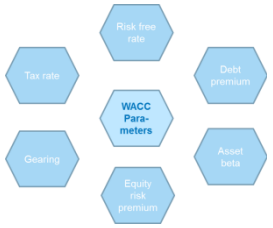
Companies which are state owned can rely on the government as a lender of last resort – this reduces the risk exposure.

Airports which run a network express a portfolio risk approach – this helps reducing the risk exposure.

Listed airports are often owned by a few large shareholding companies – there is little free float.

Market return expectations depend on general market developments and perceptions of risk.

Back to investments



The WACC percentage is levied on the average invested capital:
(Asset Base at 01 JAN + Asset Base at 31 DEC) / 2.

In perspective:
3,700 Mio USD asset base
5% WACC = Total profit: 185 Mio USD
4.5% WACC = Total profit: 166.5 Mio USD
4.95% WACC = 183.15 Mio USD.

→ A difference of 0.05 % is equivalent to 1.85 Mio USD.
→ This represents airport profit and airline cost.

Example of calculating charges

Calculating the overall charges level

The incorporation of all relevant charges determination aspects drive the calculation of an annual charges level:

Total reasonable cost.
Total traffic estimates.
Total revenues.
Expected exchange rate development.
= Charge per unit (can be broken down into a structure of charges).

Proof: The multiplication of the charge per unit with the forecasted traffic units should result in the total cost of the company – which it should finance.

Financial Modeling will determine %-changes of that base for every year in a multi-year agreement.

Comparing with previous periods

Application of the charges level

The calculation is done to cover three years:

1x for the last available period with actual data (last year).
1x for the current year.
1x for the next year's charges period.

The revenue of the company as per building block methodology is compared with the effective revenue generated in each year.

A percentage difference is calculated to reflect any potential difference.

The development of revenue per PAX as a percentage is applied on the future charges level considering any deviation of actual to allowed revenue.

Live -Example how to calculate the level

For the next period, the total cost is set into perspective to the total traffic to calculate a revenue per PAX.

Based on actual data, forecast and plan, the calculation shows that overall charges levels should fall by 0.61% in the next period to reach the required revenue.

YEAR	2022	2023 Forecast	2024 Plan
Opex	1,355,000,000	1,370,000,000	1,420,000,000
Depreciation	450,000,000	465,000,000	480,000,000
Cost of capital	26,000,000	27,000,000	30,000,000
Total cost	1,831,000,000	1,862,000,000	1,930,000,000
Other Revenue	(12,000,000)	(14,000,000)	(18,000,000)
Allowed Revenue	**1,819,000,000**	**1,848,000,000**	**1,912,000,000**
Total PAX	12,350,000	12,680,000	13,200,000
Revenue per PAX	147	146	145
in %		-1.05%	-0.61%

Transforming the calculated unit charge into the structure of charges

This document sets out Manchester Airport Plc's Terms & Conditions of Use ('the Terms') and the Charges that will apply from 1 April 2018 to 31 March 2019 ('the Period') unless the users are notified otherwise by Manchester Airport Plc. This edition replaces the 2017/2018 edition.

The provisions in Sections 1 to 12 inclusive are strictly subject to the Terms contained in Sections 13 to 16 inclusive.

Contents

The total calculated allowed revenue per PAX (or any other unit) shows the percentage difference over the previous period. In other words, with the new percentage applied over the previous value, the result is a new revenue per PAX which in multiplication with the forecasted number of PAX yields the allowed revenue.

The percentage can be applied over all charges and a detailed revenue calculation then shows if fine-tuning is necessary.

https://live-webadmin-media.s3.amazonaws.com/media/2711/man-fees-and-charges-booklet-2018_19.pdf

Structure of charges – Tariff Scheme

The charges for aeronautical services must be cost related, i.e. the fee shall pay for the cost of the specific service.

The charges determination approach determines the overall total allowable revenue from charges.

These total revenues are then typically collected from a scheme of different charges such as passenger (PAX) related charges, landing and take off (LTO) charges, passenger security charges and cargo related charges.

Other charges are as well service specific such as boarding bridge charges, utility charges, check-in desk charges etc. – provided these services are delivered by the airport.

Purpose of the scheme

A tariff scheme shall connect the cost of different services and infrastructure use to the fee for using it.

The overall principle stays in place: the total collected revenue from this scheme must not exceed the determined total allowed revenue.

The tariff scheme determines the cost per service following the building block methodology.

The details of the structure need to be discussed with the airline community, which is paying for it.

Establishing and changing the structure requires a thorough consultation process.

Charges benchmarks

Some applications allow to model a benchmark, comparing charges at different airports.

Such models typically compare the cost for a standard aircraft turnaround at different airports.

The airport presenting the benchmark always scores best – just not when this is done by its neighbor.

Benchmarks cannot be used to argue for charges development – they are completely disconnected from the cost base.

Why benchmarks don't work

The turnaround cost for a typical aircraft cannot be compared to what it costs at another airport – the cost relatedness is not established.

Further considerations:

- ❑ Capex investment cycle.
- ❑ Definition of standard aircraft.
- ❑ Which cost to include? All comparable?
- ❑ Type of traffic / load factors.
- ❑ Airport congestion.

Investments are the ultimate starting point

The invested capital (asset base) is where all costs come from.

It is of overall importance to present the investment plan to airlines and openly discuss these plans.

Discussions must start before final decisions are made – even well before at a time when the plans can still be adjusted.

Investments must align with current and future traffic.

Charges are the consequence of investments – this is why investments need at least the same attention as charges discussions – actually they need more attention!

Key aspects of investment discussions

- Infrastructure should keep up with traffic growth.
- Airlines support investments and need to be consulted upon.
- The investments in airport infrastructure often requires large amounts of capital which is then returned via depreciation in the charges calculation.
- Today's investments define tomorrow's depreciation and therefore tomorrow's cost base.
- Investments serve a purpose and cannot be just nice-to-have: gold plating serves no value added purpose.

- Investments in infrastructure are long term decisions.
- The cost comes as a cash out at first.
- Depreciation then calculates the cost to be repaid via charges by including it as a building block.

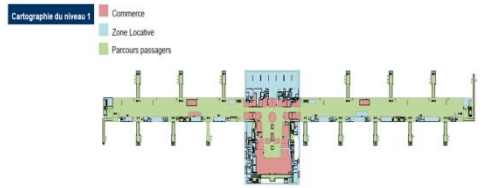
Analyzing and consulting on investments is essential

The impact of investments is felt over many years: once they are there, they impact depreciation and cost of capital.

It has to be clear

- if an investment is actually needed,
- if the full scope of it is needed,
- if it is needed but not now,
- if it can be delivered at a lower cost.

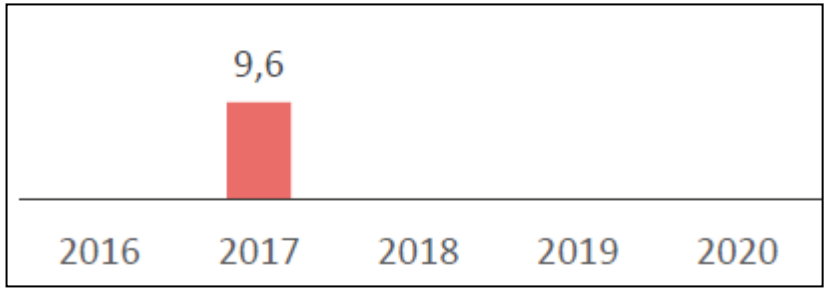
Today's investments are tomorrow's assets!



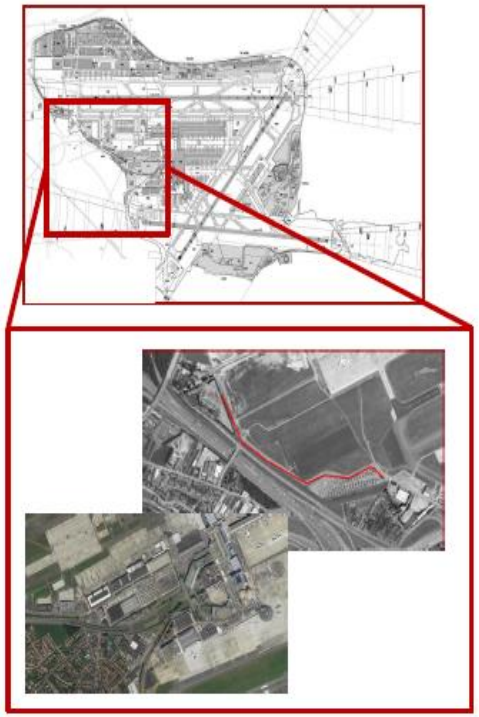
What needs to be known about planned investments

As investments define the asset base, the company should always provide detailed information on its planned investments:

- Description.
- Justification.
- Alternatives.
- Amount & financing.
- Asset life.
- Spending period.
- Planned and actual user engagement.
- Trigger for investments.



Annual investment review meeting (Name of investment)



Benefit for users	(Text)
Description	(Text)
Motivation	(Text)
Current Status	(Text)

Timing Review	(Text)	Budget Review	(Text)	Charges Impact	(Text)

What shall be achieved

Consultation with stakeholders should:

Enable planners to take the needs of these groups into consideration.

Enable planners to benefit from the different perspectives that can be provided.

Identify key issues that planners may have overlooked.

Provide the opportunity to receive feedback on concepts, the scale and the pace of development.

Investments impact charges directly

Each investment has a direct impact via the following elements:

Operational cost impact.
Efficiency gains.
Depreciation of infrastructure.
Base for cost of capital application.

Charges can reach a critical level due to large scale investments.

If the charges forecasts are critical, investments or funding sources have to be reviewed.

Investment review

Categorizing investments facilitates a thorough review.

Absolutely needed investments or replacements.	Necessary investments but not at the defined scope.	Necessary investments but not current priority.	Investments not needed now or in the near future (“nice-to-haves”)

The cost of each investment in the list and its estimated impact on future charges must be determined to facilitate the decision making.

Long term impact of investments

Infrastructure must be carefully balanced for future traffic.

Once infrastructure is in place, an identified block of cost is irrevocable: depreciation on assets and (where applicable) cost of capital.

Operational cost (opex) development can be undergoing efficiency initiatives – capex can not.

Adjusting opex to mitigate the charges impact from infrastructure is possible to a certain extent before it gets difficult to implement cost cutting further w/o hitting service levels.

Payment for use of infrastructure

Charges are set for the use of aviation infrastructure.

Payment shall only be made when the infrastructure is used – not before.

Any charges collected before or collected for assets under construction determine pre-financing.

While not explicitly prohibited by ICAO, if pre-financing is pursued then strict control mechanisms have to be applied.

Countries with sufficiently developed capital markets do not need to ask for pre-financing.

Problems with pre-financing

The concept is wrong in itself: why should someone pay for services they receive only in the future?

If pre-financing is allowed, the asset is fully paid in advance. In consequence, the building block depreciation for this particular asset cannot apply: it has already been paid, there is nothing to recover.

Airlines who pay in advance may not be the same ones who can ultimately benefit from what they have paid for:

- Some airlines might have changed their operations.
- Other airlines might have gone out of business.

Depreciation pays for infrastructure

Investments are paid for by including the cost in the charges calculation.

Users are not charged for the investment at once but will pay with depreciation over the determined period. Operators have to finance investments first (loans or cash reserves).

The company recuperates its investment in form of the depreciation values it includes in the charges calculations.

It is important that the estimated amount for investments is as accurate as possible.

ICAO's guidance on airport asset depreciation

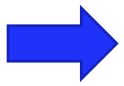
Examples of range of depreciation periods	
Buildings (freehold)	20–40 years
Buildings (leasehold)[3]	Over the period of the lease
Runways and taxiways	15–30 years
Aircraft parking areas	15–30 years
Furniture and fittings	10–15 years
Motor vehicles	4–10 years
Electronic equipment (including Telecommunication equipment)	7–15 years
General equipment	7–10 years
Computer equipment	5–10 years
Computer software	3–8 years

From assets, all invested money is returned

The depreciation guarantees that the entire amount is returned over the lifetime of the asset.

In addition, any interest rate payments in case investments have been financed by loans are taken up in the charges calculation.

If the shareholder is allowed to make a profit, this is given by the capital cost (or WACC).



In conclusion: All invested money is returned with "interest" over the lifetime of the investment.

Example calculation

New asset cost: 10 Mio USD
Usage: 10 Years
Bank loan to finance the asset for 10 Mio USD
Amortization period: 10 years
Interest rate per annum: 3%

→ 1 Mio depreciation per annum (10 Mio / 10 years) – in building block depreciation
→ 0.3 Mio interest payments – in building block opex
→ 1 Mio amortization payable to the bank.

<u>Conclusion:</u>

1) The loan is fully paid back after 10 years from charges (in which each year one million depreciation is included).
2) Interest payments are covered annually in the opex building block.

Full return of invested money

The example calculation shows why pre-financing is not necessary.

Though situations may exist where a certain form of pre-financing could be agreeable.

Large scale infrastructure investments, all completed at the same time (new airport or terminal) hold a heavy impact on charges.

Capacity enhancements are build for current and future capacity, it could for a certain time be over-dimensioned.

At the completion date, charges could jump through the roof, increasing ticket fares extraordinary.

Conclusion: The building block depreciation pays for investments

- Every year, investments age and get older until the full period of depreciation is complete.
- As of then, no more depreciation must appear in the calculation as the invested money has been returned.
- The asset can still be used (at no depreciation cost) as the length of depreciation is based on accounting standards.
- Investments and the depreciation rates should always be subject to the annual auditing process.
- Old assets over time disappear from the depreciation list while new ones are being added.

Lessons from Covid: Charges in crisis

Airports provided assistance for airlines such as free parking, reduced charges and other government supported initiatives.

Charges increases during the crisis had little to no effect – there was simply no traffic.

Market power abuse by monopolistic structures had no effect.

Since 2021/22, airports are careful to raise charges even if they struggle themselves financially. But this is changing drastically!

Cash injections from the owner and/or dividend freezes help to keep charges frozen.

Difference between privately owned and state-owned airports.

Charges in crisis: previous and current issues

Pre-crisis issues:

- Insufficient infrastructure for growth.
- Lack of pilots.
- Congestion at airports.

Current issues:

- Underutilized infrastructure.
- Staffing issues to get people back to manage demand.
- Inflationary pressures.
- Charges increases dampen the recovery.
- Pressure from investors.

Regulatory stress tests

Has regulation been up to the tasks?

- Some airports try to achieve loss-recovery for the past years.
- Imagine airlines would ask the travelling public for the same idea.
- Regulation has to deal with unseen challenges: some airports try to abuse their market power by raising charges levels once they can.
- Regulation must restrain such attempts - navigating the different interests.
- Some thought has been given in this context by a group of regulators in Europe.
- Difficulties remain in long-term charges models or where CPI is a charges component.

Observations on solutions

Regulation in Austria paused: CPI plus traffic component would have led to a significant charges reduction (with cap downwards).

Some countries forego dividend payments to the owners.

Extension of long-term contract periods.

Loss recovery attempts to be decided by regulatorsB).

EU group of regulators provided guidance on how to approach airport charges in crisis with a view on

- Investments
- Cost of capital
- Traffic forecasting
- Regulatory powers

Thessaloniki Forum Papers (aviationreg.ie)

Conclusion from Learned Lessons

Setting up a robust regulatory framework is a key requirement to manage crises.

Concepts and guidance material exists and can be used.

Every country will need an approach that fits its market.

The workload to set up a robust and consistent framework can be intense – IATA is available to provide assistance via workshops and dedicated sessions.

Thank you