Airports and Air Navigation user charges workshop

28 - 30 October 2025
Dakar

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The Concept of Building Blocks in Aviation Charges, Part 2

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Day 1:
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- The building block principle and what it means
- Operational cost & the determination of the correct revenue level

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Regulation of airports and ANSPs

Economic regulation is both necessary and desirable to constrain this market power and to deliver continuous improvements in cost efficiency and quality of service to airlines and their passengers adjust the market. The goal is to prevent or to compensate for the detrimental effects of a lack of competition of efficiency.

(…) regulation can be seen as the use of legislation and rules with the aim to control certain players. This can be obtained by imposing certain obligations (…)

Source: website of the Belgian regulator
https://www.regul.be/en/our-service/

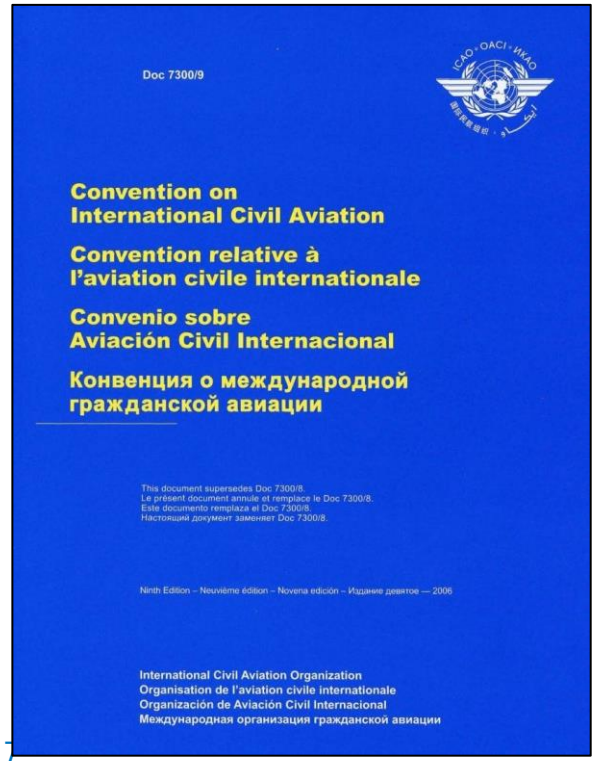
Regional regulatory variations

- Regulatory Oversight and ownership models vary around the world.
- Europe has regulations and directives for the countries of the European Union.
- Governance models in North America are different when setting charges and deciding on infrastructure projects.
- AFI, MENA and Asia are often less regulated with limited means to oppose unilateral charges decisions.
- China’s charges determination is not known to follow the consultative approach

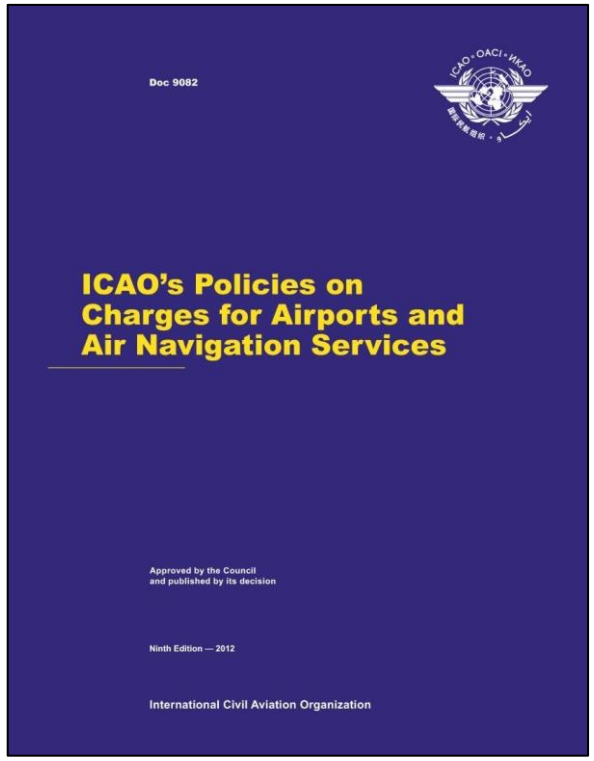
The hierarchy of things

The Chicago Convention, signed by member states, is the foundation and is binding for all signatories.

Chicago Convention (7300)



ICAO Policies (9082)

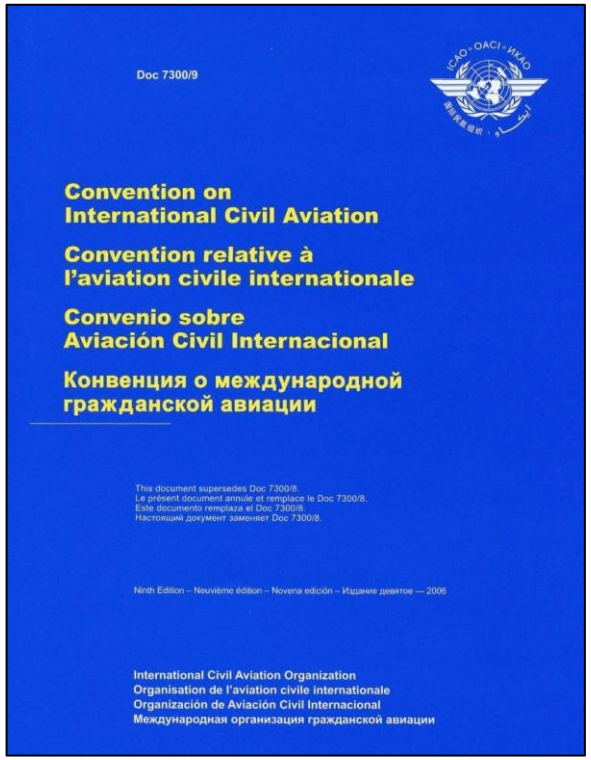


ICAO Manuals (9562/9161)

The ICAO approach towards the determination of charges

Article 15 of the Chicago Convention represents the foundation of the charges framework and has been signed by all ICAO member states

Every airport in a contracting State which is open to public use by its national aircraft shall likewise, subject to the provisions of Article 68, be open under uniform conditions to the aircraft of all the other contracting States. The like uniform conditions shall apply to the use, by aircraft of every contracting State, of all air navigation facilities, including radio and meteorological services, which may be provided for public use for the safety and expedition of air navigation. (etc…)



This is then detailed in policy documents
→ The ICAO policies have been endorsed by all member states.

ICAO charges policies are framed with 4 key principles

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

1. *ICAO's Policies on Charges for Airports and Air Navigation Services* contain the recommendations and conclusions of the Council resulting from ICAO's continuing study of charges in relation to the economic situation of airports and air navigation services provided for international civil aviation. The policies, which are intended for the guidance of Contracting States, are mainly based on the recommendations made in this field by the various conferences on the economics of airports and air navigation services, which are held regularly by ICAO. The last such conference took place in Montréal from 15 to 20 September 2008 (*Report of the Conference on the Economics of Airports and Air Navigation Services (CEANS)* (Doc 9908) refers). As per a recommendation adopted by CEANS and endorsed by the 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).

Although the wording of the document is "encouraged", the meaning is not diminished as all ICAO member states have endorsed the policies – setting the standards to be complied with.

Non-Discrimination Principle

ICAO:

Non-Discrimination requires the application of uniform conditions, to all users from any Contracting State, for the use of equivalent airport or air navigation services.

In particular, charges must not discriminate between foreign and domestic users, as well as between two or more foreign users, engaged in similar operations.

Cost-Relatedness Principle

ICAO:

Charges should reflect the cost of facilities and services provided to the users. The allocation of costs should be determined on an equitable basis, so that no users shall be burdened with costs not properly allocable to them according to sound accounting principles.

The resulting charges should also be determined on a sound accounting basis and may reflect economic principles to the extent that the resulting charges are in conformity with Article 15 of the Convention on International Civil Aviation and principles in the present policies.

IATA:

Cost should always mean efficient cost – inefficiency cannot be paid for.

Transparency Principle

ICAO:

Sufficient, accurate and appropriate information should be exchanged between the service providers and users in a timely and efficient manner with the objective to identify the connection between the provision of facilities and services and charges to enable users to understand, among others, charging methodologies and their administration.

What IATA understands:

Transparency means how much the provided information enables the users to understand the company's charges proposal with regards to cost planning, cost development, investment planning, traffic forecasting etc.

Consultation Principle

ICAO:

Service providers and users should participate in constructive engagement before introducing new or changes in charges. Such engagement should include, but not be limited to, discussions of performance, capacity development, and investment plans.

Transparent and relevant information relating to the proposed changes should be provided and proper consideration to the views of users should be given during the process.

If the market can't set prices… how are they determined?

If airports and ANSPs do not have effective competition, they do not receive price signals from the market. So then how are prices (charges) be set?

Benchmarking (looking at other markets)

Formulaic (Inflation etc)

Arbitrary levels

Cost-based (Building Blocks)

Benchmarking, formulas and arbitrary levels often are unfair:

- High profits.
- High losses.
- Inflexible.
- Not adapted to local circumstances.

ICAO policies therefore point to the building blocks as the best way to set cost-related charges

ICAO Doc 9082, Section II para 2 i.

Building Blocks: What is being built?

- The building blocks are the determining elements of the total charges level in many regulations and as per ICAO recommendation.
- 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.

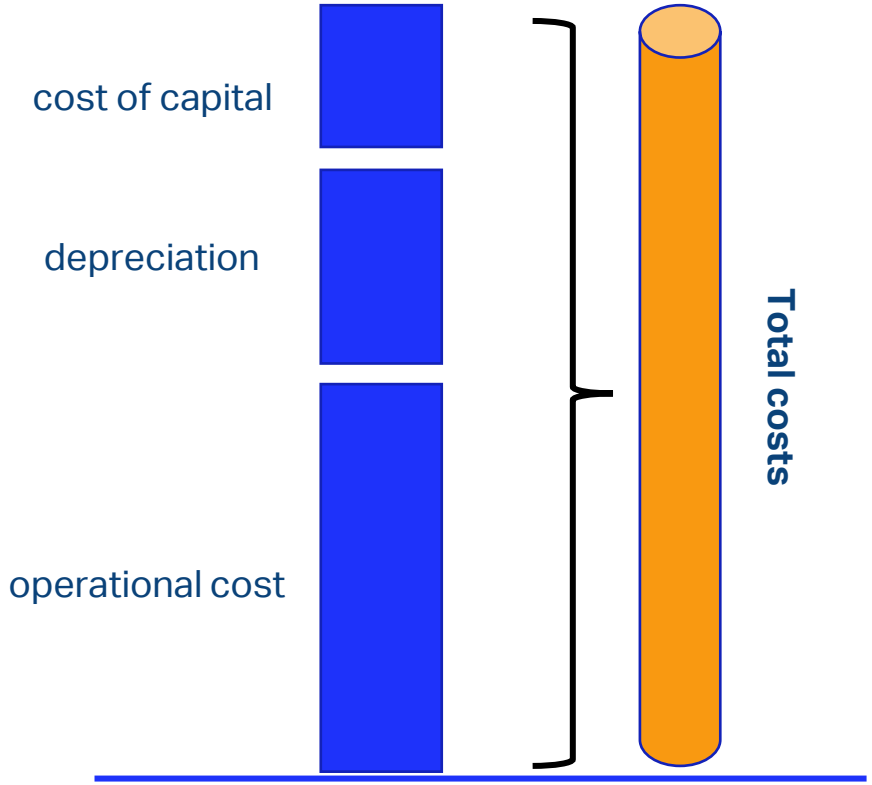
All businesses have building blocks

Some revenue goes towards **profit** – paying for **debt and equity investment** from owners/shareholders.*

The company needs to invest to have the **infrastructure** in place with which to deliver the services which is paid for over time

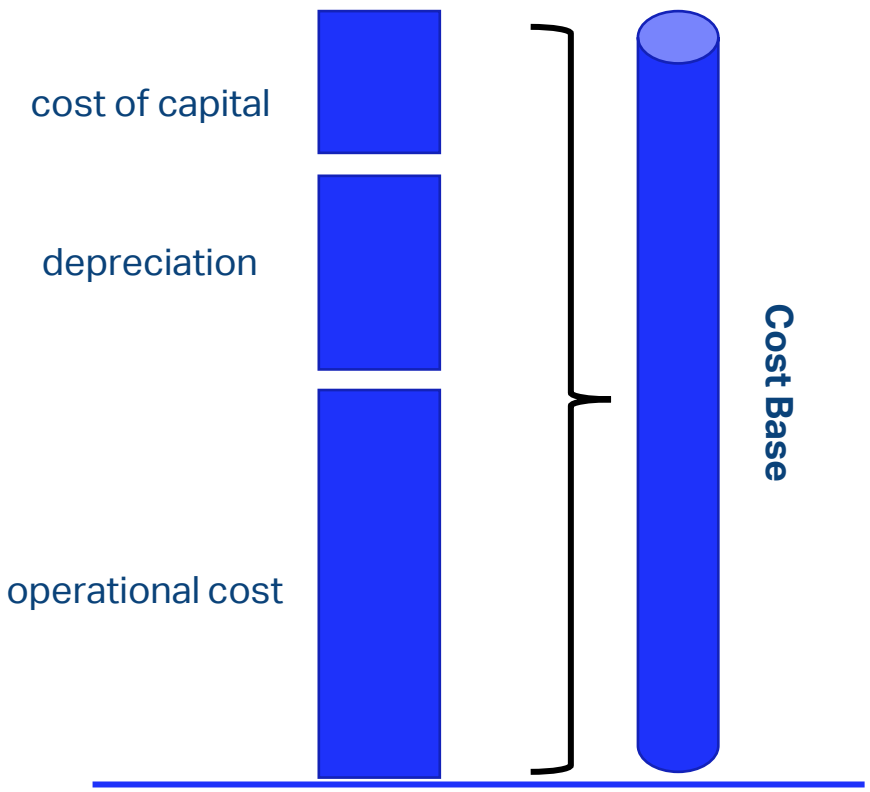
To run the services the company has **operating costs**: staff, maintenance, utilities etc.

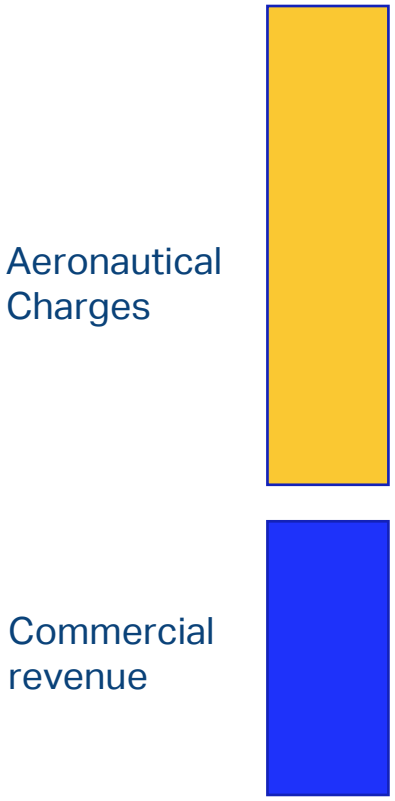
*When firms are regulated, the profit is set and not determined by the market



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

You aim to cover your costs with revenue





These prices (charges) are set

Prices in commercial activities are not "set" or regulated

$$Charge\ Revenue = \frac{Opex + Depreciation + Capital\ Costs - Commercial\ Revenue}{Traffic\ Volume}$$

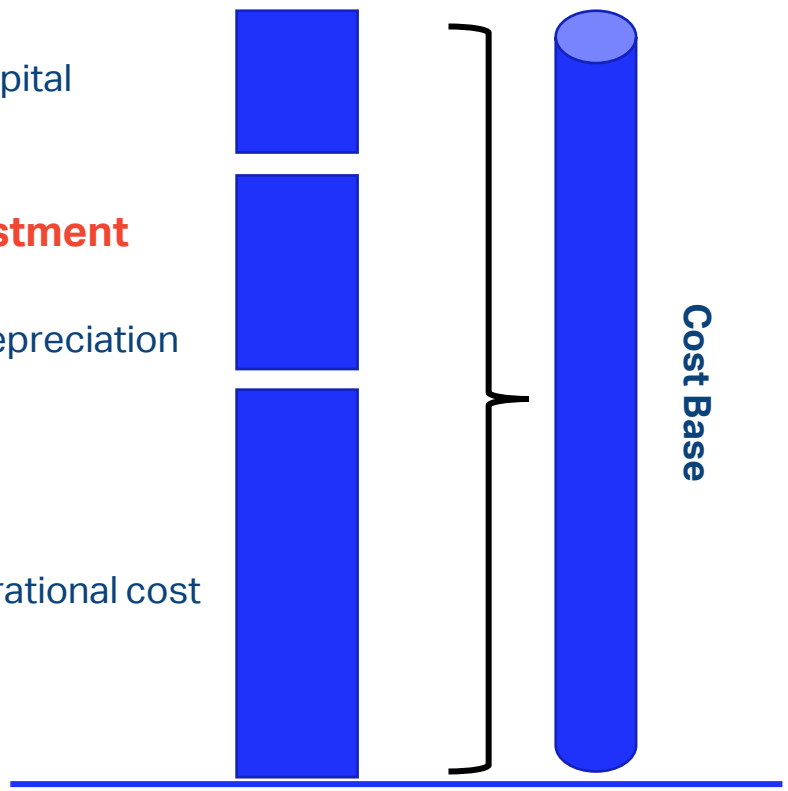
Regulators then (can) step in

Regulatory Interventions

Fair cost of capital

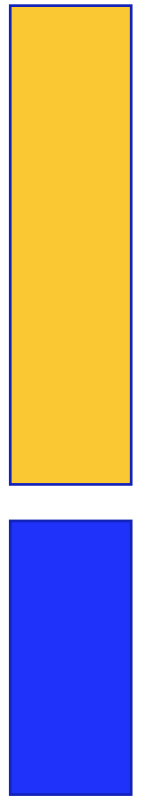
Efficient investment Yielding reasonable depreciation

Efficient operational cost



Aeronautical Charges

Commercial revenue



Regulators set how
These prices (charges) are set

Prices in commercial activities are not “set” or regulated

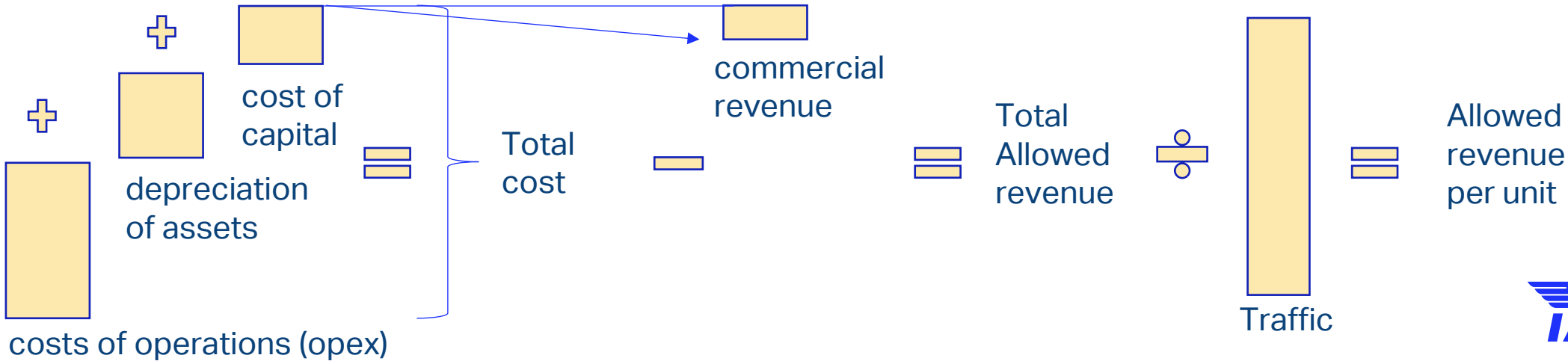
Some regulations may exclude (partly/fully) commercial activities and related costs.

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:



Income Statement

(CHF million)	Notes	2022	2021
Aviation revenue	(2)	491.1	240.6
Non-aviation revenue	(2)	532.4	439.4
Total revenue		**1,023.5**	**680.0**
Personnel expenses	(3)	–196.9	–171.3
Police and security		–105.3	–84.7
Energy and waste		–34.2	–22.2
Maintenance and material		–38.8	–27.9
Other operating expenses	(4)	–50.1	–45.2
Sales, marketing and administration		–43.2	–34.0
Capitalised expenditure and other income	(5)	21.0	17.8
Expenses for construction projects as part of concession arrangements	(5)	–16.8	–10.6
Other expenses	(5)	–3.6	–2.7
Earnings before interest, tax, depreciation and amortisation (EBITDA)		**555.6**	**299.2**
Depreciation and amortisation		–295.3	–280.2
Earnings before interest and tax (EBIT)		**260.2**	**19.1**
Finance costs	(6)	–42.2	–32.1
Finance income	(6)	22.2	3.0
Share of result of associates		0.0	–3.7
Result before tax		**240.3**	**–13.7**
Income taxes	(7)	–33.3	3.6
Consolidated result		**207.0**	**–10.1**
Result attributable to shareholders of Flughafen Zürich AG		207.0	–10.1
Result attributable to non-controlling interests		0.0	0.0

Aeronautical Charges

Commercial Revenue

Operational Cost

Depreciation

Return

**Zurich Airport Income Statement*

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 USD

Total traffic = 500 Units

Charge per Unit: 20 USD

Total cost = 12,000 USD

Total traffic = 450 Units

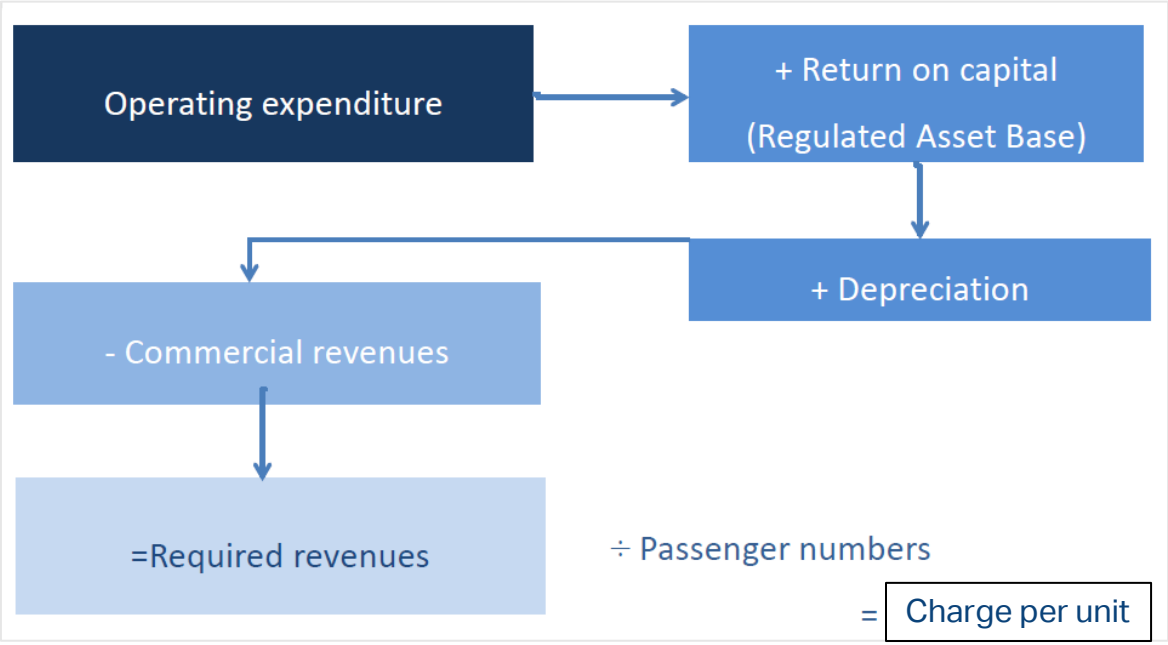
Charge per Unit: 26.7 USD

in '1000)

+ 35%

Standard approach at many airports

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



Day 1:
28 October - 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 & the determination of the correct revenue level

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.
- It is typically a reflection of the company's chart of accounts!
- Opex is linked to delivered quality!

Examples of what defines opex:

7.2 CONSUMPTION OF RAW MATERIALS AND CONSUMABLES

(Thousands of euros)
Fuel and lubricants
Electricity, gas and water
Consumables, spare parts and various materials
TOTAL CONSUMPTION OF RAW MATERIALS AND CONSUMABLES

7.3 SERVICE COSTS

(Thousands of euros)
Maintenance
Renovation of airport infrastructure
External services
Construction services
Cleaning and pest control
Professional services
Fire prevention and fire-fighting services
Other costs
Remuneration of directors and statutory auditors
TOTAL SERVICE COSTS

7.4 PERSONNEL EXPENSE

(Thousands of euros)
Wages and salaries
Social security charges
Post-employment benefits
Other costs
TOTAL PERSONNEL EXPENSE

7.5 OTHER OPERATING COSTS

(Thousands of euros)
Concession fees
Lease payments
Accruals to (uses of) the provision for renovation of airport infrastructure
Accruals to (Re-absorption of) provisions for risks and charges
Other costs:
Accruals to (Re-absorption of) loss allowances
Indirect taxes and duties
Sundry charges
TOTAL OTHER OPERATING COSTS

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.

Key opex cost component: staffing

Staffing levels are the main cost in opex for airports.

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

- Social security, pension, health care.
- Travel expenses – airfare, accommodation: no staff – no travel.
- Training expenses – same logic: no staff – no training.
- Admin cost, computers, workstations, software, office facilities etc.

But caution: outsourcing versus staff cost development.

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 !

The trickiness of planning staff cost

- The plan for staff numbers typically indicate the staffing level the company intends to have.
- But in practice, not every position is always filled.
- More often, many positions are vacant and not filled.
- And if staff plans show an increase, this increase does not happen immediately.
- Too often though charges are being calculated on a full staffing level.
- This is why transparency means to see actual staffing levels compared to plan – for the current year's forecast and previous years plan versus actuals.

Calculations should consider vacant positions.

A vacancy rate adjustment is a compromise approach

Airlines should not pay for empty seats.

Cost interdependencies

These interdependencies important:

A change in one category is logically accompanied by a change in another.

If any of the staff cost related categories rises out of proportion of the staff number development (up and downwards), it requires an explanation.

These discussions should be fully open and transparent: they are linked to levels of service for which airlines are prepared to pay the necessary amount.

→ But most often, the opex information we get is not very detailed and does not even tell us about staffing levels.

Opex and capex link - Maintenance

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).

Utilities cost

Utility costs:

- ❑ Utilities are generally electricity, water, gas etc.
- ❑ Increases can be explained by general price increases per unit or by increased consumption or both.
- ❑ What has changed? Price, consumption or both?
- ❑ Is the price change reflected in world markets (e.g., oil)?
- ❑ What is the cause for a consumption increase?

- ❑ Are the provided arguments convincing?
- ❑ Why was cost planned higher than it actually was? (Over planning)
- ❑ Is the new plan realistic based on these experiences?

Professional fees

Professional Fees:

- Consulting and outsourced IT services usually comprise professional fees.
- What are these services needed for? If consulting – then for what?
- In one case, consulting was planned for a business review.
- But that company had just undergone a restructuring in years before.
- What justifies this consulting now?

Admin & Overhead

Admin cost:

- In some cases, admin cost could summarize several categories – including bad debt.
- The development of the total amount for admin cost can not be understood without its constituting elements.
- Need for information on details for such summary cost positions.
- Often we may actually receive this only upon asking.
- Analysis of this information with the same method:
  - Plan
  - Actuals
  - Time.

Variance analysis: 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, cost actuals are often lower than the original plan i.e., cost had been planned higher and was managed to be lower. Concept of incentive regulation – but tendency to rise at the end of the period!

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: airlines paying more than justified.

Transparency is key to reaching an agreement.

Jumping Costs can often not be explained

- This phenomena is observed in multi-year charges periods.
- There we sometimes see that costs of the past years have been developing moderately.
- Then for the start of a new period, costs are increasing significantly.
- We see this rise only in the last year before the start of a new charges period.
- After this strong increase, planned future costs then look moderate again.
- Such jumping costs are very often difficult to explain and should be reviewed before they are being planned.
- Airlines will always challenge jumping costs and very often they turn out to be not justified.
- A moderate approach should be discussed instead.

Checklist: Comprehensive variance analysis

How to look at variances?

Variances should be looked at from several dimensions:

- → Actuals over plan.
- → Year over year.

To understand and accept cost developments, variances should be reviewed, and the following questions answered:

- → What do we see?
- → How do we explain?
- → What do we need to know to understand the differences?

Users would like to understand what they are paying for (infrastructure, service levels and services) and why a certain amount.

Opex Benchmarking

Cost benchmarking can be useful but needs to be done in the right way

- Benchmarking of cost components vs. national/regional averages can provide insight into specific lines (wage increases vs. national average, energy prices, material costs…)
- High level (Opex/Pax) type benchmarking of the airport over time can be very useful (or benchmarking within an airport or between airports in the same group)
- Opex/Pax-type comparisons between airports is notoriously difficult because airports are very different and can argue (and do in some cases) have specific situations
  - Approaching this professionally requires an econometric model or other approaches

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

Airlines understand that charges must allow to recover its costs (but not losses or missed revenues – as is often heard after Covid!).

But costs 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.

Day 2:
29 October - Session 3 contd.
09:00 – 10:30

The Concept of Building Blocks in Aviation Charges, Part 2

- Operational cost and its dependencies
- Traffic forecast
- Information management
- Best practice consultation

Exchange rates can have a profound impact

The company's cost base is fundamentally in the country's currency.

Most expenses are paid in local currency apart from some foreign purchases e.g. investment goods.

The company needs to have its funds in sufficient local currency to pay its expenses.

The financial reporting is usually also done in local currency.

The cost and revenue situation of a company can be profoundly different if each is calculated in different currencies.

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.

<u>What can happen</u>

- 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.

Positive effects of currency fluctuations

Example: Charging scheme in USD, local currency devalues

Exchange rate 1 USD to 1 LEP (Lemurian Peso) = 2.5.

For 1,000 USD the company receives 2,500 LEP.

Now the USD gains in value: 1 USD buys 3.5 LEP.

The 1,000 USD revenue are now suddenly 3,500 LEP – without anything else.

With regards to foreign exchange (forex), the revenue of the company increases due to the increase of the USD.

While revenue in LEP has increased, the cost in LEP is unchanged.

Negative effects of currency fluctuations

But there is no free lunch anywhere.

If one currency rises, the other currency has fallen.

If your currency has fallen, this makes your imports or debt payments (if in foreign currency) more expensive:

Imported machinery or other investment goods.

Utilities such as energy and commodities - oil is traded in USD.

Currency fluctuations can be contained by using financial instruments such as hedging.

However, there is generally always a net benefit out of such a situation!

Charging currency implications

If the currency of the charging scheme is identical with the country's own currency, there is generally no dispute.

Problems arise when there is a difference. The impact of windfall profits MUST be taken into consideration.

Changes from the country's currency to e.g. the USD are not recommended: they lead to unnecessary distortions and discussions in the charges consultations. The desired gain will have to be considered in the discussions.

If the charges currency is different from the national currency, there are implications for the WACC calculations, namely in the determination of risk-free rate, cost of debt and market risk premium.

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 – so what?

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.

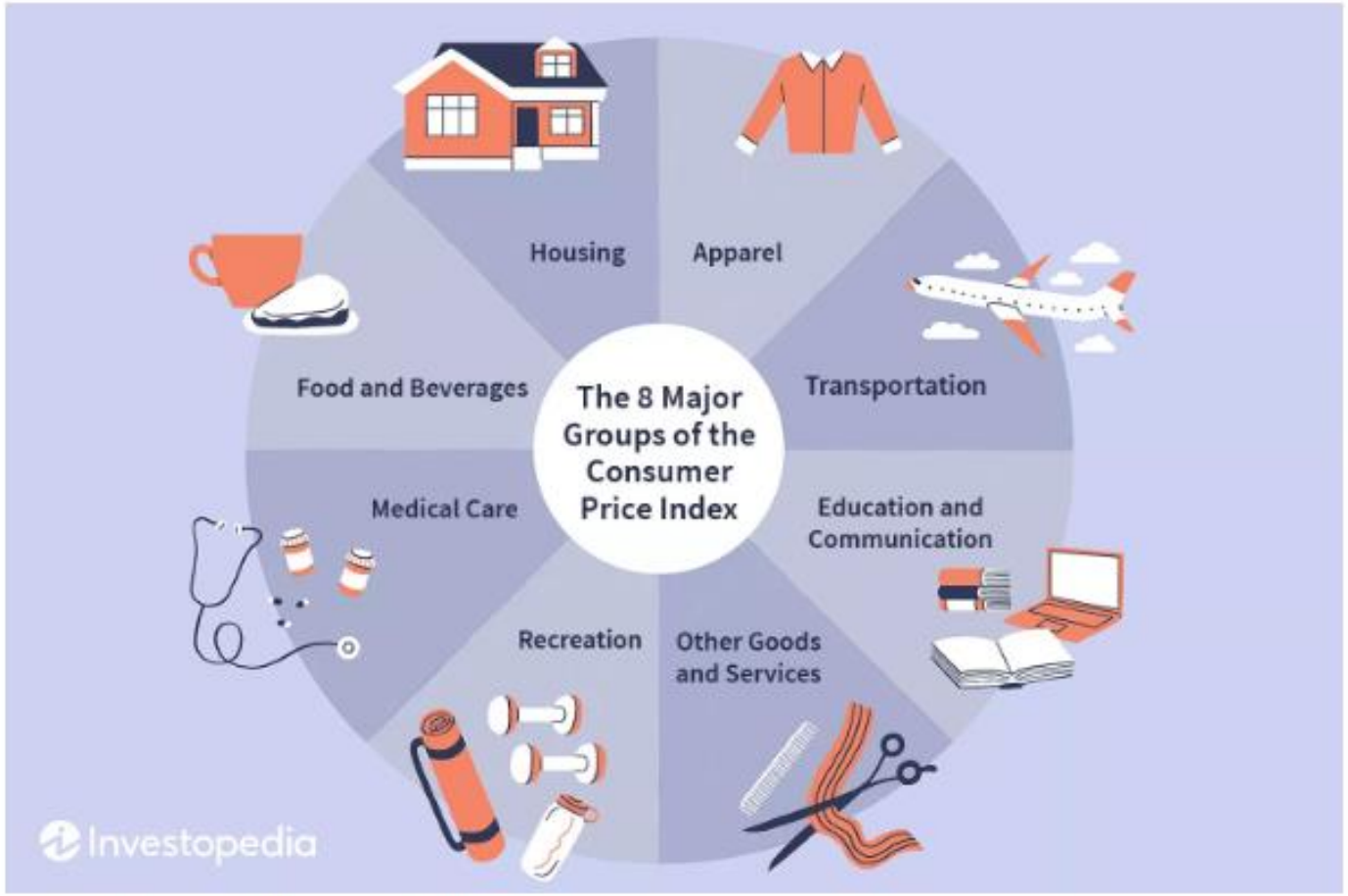
Why such a focus on inflation?

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.

What is missed in the discussion?

- Suppose there were … a fully independent market expert on capex, opex and macroeconomic forecasting – could we get a figure which is acceptable?
- Inflation is and cannot be ignored – but its impact must be measured.
- Knowing where costs go in the future is one thing, the other is that some cost can be influenced.
- A knowledgeable market expert could provide input on cost development for opex and capex.
- Such input – like an audit – could deliver an adjustment for opex and capex price developments, especially in long term agreements – considering the airport and ATC specifics.

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.

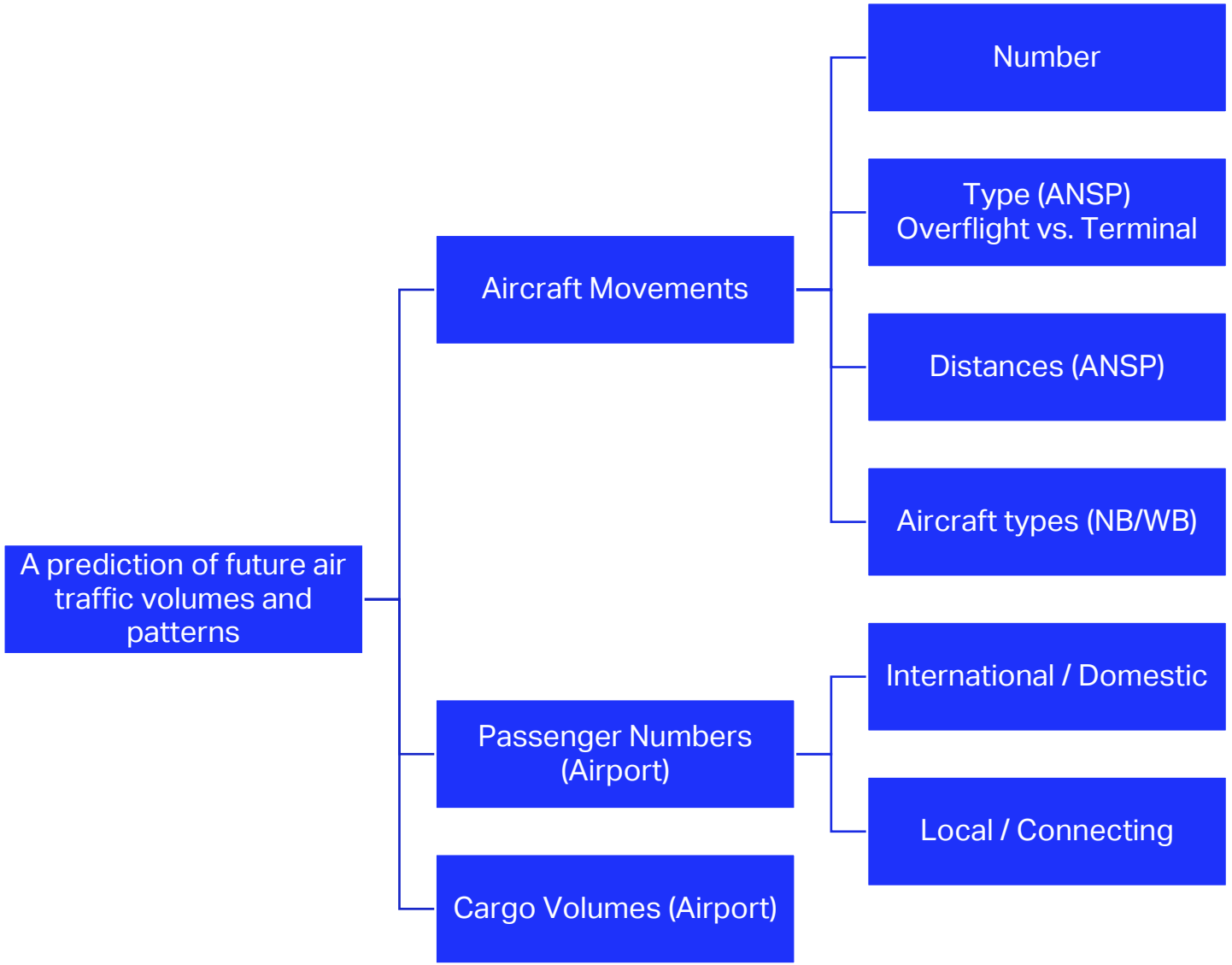
- Investments can not be planned with a simple inflation adjustment.
- The country's inflation rate measures a basket of goods and services – these are mostly irrelevant for the company. The only valid component is staff cost.
- A realistic plan shall address all relevant parameters to plan the development 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*.

Day 2:
29 October - Session 3 contd.
09:00 – 10:30

The Concept of Building Blocks in Aviation Charges, Part 2

- Operational cost and its dependencies
- Traffic forecast
- Information management
- Best practice consultation

What is a traffic forecast



The forecast is critical for many reasons … and hard to get right

Directly influences

- Investment plans (what, when, costs)
- Some operating expenses (and hiring requirements)
- Charges and Commercial Revenues

Complex because:

- Airlines are in competition and can't foresee all market developments
- Aviation is international and macroeconomic factors have a strong effect
- Traffic is rarely constant (across the year and during the day)
- There may be no history (New "Greenfield" airports)
- Long term view is essential (Terminal buildings and runways last decades)

Different forecasting perspectives

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. (Airport costs do not “linearly” increase with traffic)

Who is doing the forecast?	Methodology	Values & Accuracy
• Airport / ANSP • Consultant • Government / Regulator • IATA / ACI	• Bottom-up • Top-Down • Assumptions • Model • Scope / level of detail (National vs. local)	• Inputs & Outputs • Accuracy over time (Consistent bias)

Traffic forecast is one of the most important building blocks

- The higher the traffic, the lower the unit cost.
- The higher the total cost of all three building blocks, the higher the unit cost.
- High traffic can compensate for high cost.
- High traffic can hide an unreasonable cost development.

- Underestimating traffic brings incentives to the airport: if traffic turns out higher, the charges have been determined on a lower level → they are thus determined as too high.
- In multi-year periods with inaccurate lower forecast the effect multiplies – creating an unbalanced situation.

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.

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 /1

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 /2

- 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

- The traffic forecast translates directly into revenue.
- 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.
- 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: resulting in contingency planning!

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.

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The Concept of Building Blocks in Aviation Charges, Part 2

- Operational cost and its dependencies
- Traffic forecast
- Information management
- Best practice consultation

Difficulty of information management

All companies around the world may 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!

The approach 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.

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

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.

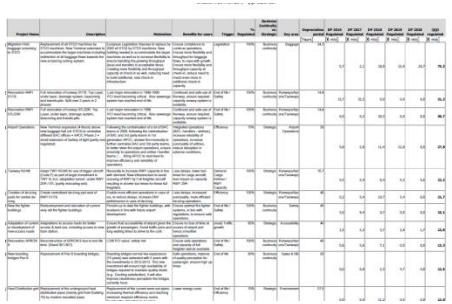
Information about investments

- 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:

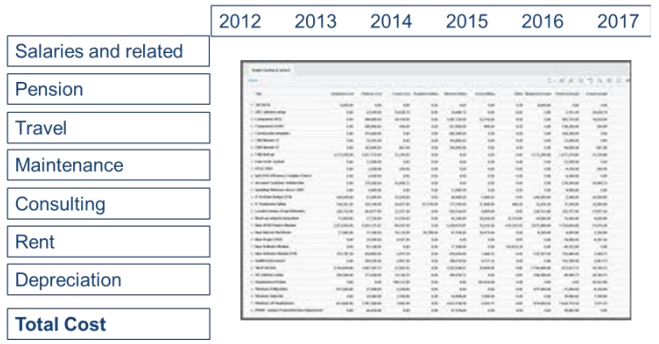
→ To understand historical cost developments.

→ 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*.

Day 2:
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The Concept of Building Blocks in Aviation Charges, Part 2

- Operational cost and its dependencies
- Traffic forecast
- Information management
- Best practice consultation

Criteria of best practice consultation

1. Invitation to the consultation / pre-meeting
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

Criteria of best practice consultation

Who	What	When	Where	How
• Participants of the meeting(s) • Involvement of the regulator	• Information presentation and transparency • Methodology of charges determination. • Consultation backup material • Consultation instead of information	• Timeline • Decision making process and appeal mechanism	• Physical or virtual	• Invitation to the consultation/Pre-meet • Consultation language • Consideration and responsiveness to comments • No discrimination

The framework matters

- A consultation on the proposals is important but so is consultation on the framework for consultation
  - How will the process work?
  - What are the roles and responsibilities?
  - What are pre-set elements and what is up for discussion?

There are numerous poor examples of frameworks:

- Countries where most parameters are pre-set in regulation
- Countries where there is no recourse
- Concession agreements where private actors are granted the “right” to impose on airlines

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, planning a pre-consultation even before that time.

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. (Ensure the knowledgeable people are invited!)

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.

What should be consulted?

Cost

- Depreciation
- Opex
- Cost of Capital (if applicable)

Revenue

- Commercial Revenue
- Charges

- Investments
- Quality
- Traffic Forecast

Information presentation and transparency

Transparency can be seen as by how much does the provided information enable the participants to understand the proposal.
This notably requires information and justification of **historical, forecast, current and planned**:

- Costs
  - Opex (including efficiency initiatives)
  - Cost of capital
  - Bad debt
- Investment
- Revenue
- Traffic & Capacity
- Quality of service

As well as

- Structure of charges
- Description of services & infrastructure provided

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.
→ In addition, cost comparison provides complementary information.

Examples from a tested regulatory environment

The EU Airport charges directive (ACD) or the UK's airport charges regulation provide a framework for regulators.

Article 7

Transparency

1. Member States shall ensure that the airport managing body provides each airport user, or the representatives or associations of airport users, every time consultations referred to in Article 6(1) are to be held with information on the components serving as a basis for determining the system or the level of all charges levied at each airport by the airport managing body. The information shall include at least:

(a) a list of the various services and infrastructure provided in return for the airport charge levied;

(b) the methodology used for setting airport charges;

(c) the overall cost structure with regard to the facilities and services which airport charges relate to;

(d) the revenue of the different charges and the total cost of the services covered by them;

(e) any financing from public authorities of the facilities and services which airport charges relate to;

(f) forecasts of the situation at the airport as regards the charges, traffic growth and proposed investments;

Effective consultation goes beyond charges

Airlines need to understand what they are paying for (what the passenger is paying for). Generally, charges are paid for services delivered with capital intensive infrastructure. The EU ACD addresses these elements in Article 8 and 9.

Article 8

New infrastructure

Member States shall ensure that the airport managing body consults with airport users before plans for new infrastructure projects are finalised.

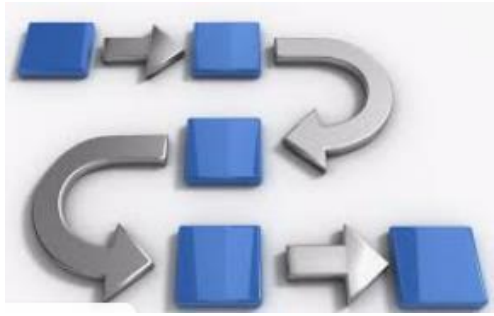
Article 9

Quality standards

1. In order to ensure smooth and efficient operations at an airport, Member States shall take the necessary measures to allow the airport managing body and the representatives or associations of airport users at the airport to enter into negotiations with a view to concluding a service level agreement with regard to the quality of service provided at the airport. These negotiations on service quality may take place as part of the consultations referred to in Article 6(1).

2. Any such service level agreement shall determine the level of the service to be provided by the airport managing body which takes into account the actual system or the level of airport charges and the level of service to which airport users are entitled in return for airport charges.

Methodology: How are the charges determined?



The Building Block methodology is the standard model to determine user charges. Is it applied?

The relevant reference is Doc 9082, 10th edition, chapter 2, 2.1.2: The concept is to determine the charges level (not the charges structure):

The cost to be allocated is the full cost of providing the airport and its essential ancillary services, including appropriate amounts for cost of capital and depreciation of assets, as well as the costs of maintenance, operation, management and administration. Consistent with the form of economic oversight adopted, these costs may be offset by non-aeronautical revenues.

opex + WACC + depreciation − Commercial revenue

Keep in mind:

- Building blocks could be applied at an overall level or for each individual charge
- Different (even conflicting) regulations may apply

Justify your work – and arguments

Transparency implies justifying figures and proposals.

Justification should be in writing and preferably justified using third-party information or evidence.

The ideal is that such information is independently verified (or peer-reviewed) by a third party. When that third party is appointed by a regulator – even better!

Examples: WACC calculations, traffic studies, cost reviews, etc…

Providing data in useable form (e.g. Excel) also helps build trust – providing a "non-readable" PDF just gives the impression that it's done on purpose to make analysis difficult

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: User requests are taken into account and a clear responsiveness to questions and comments from the users.

No discrimination, Timeline, Regulator and appeal

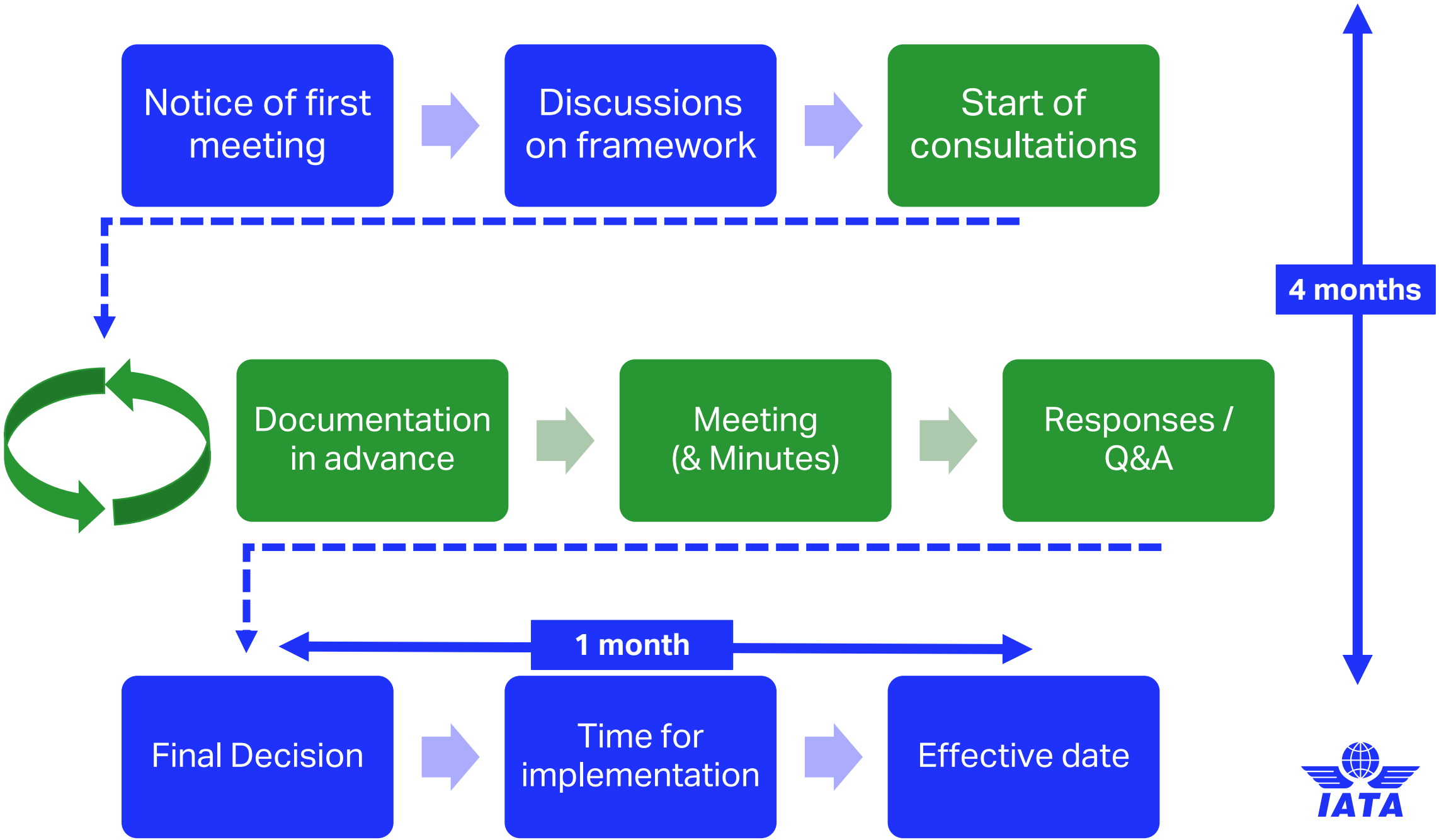
A consultation meeting must not discriminate against any user: all must be allowed and provided with sufficient time to raise questions and request answers.

The regulator should generally attend all meetings

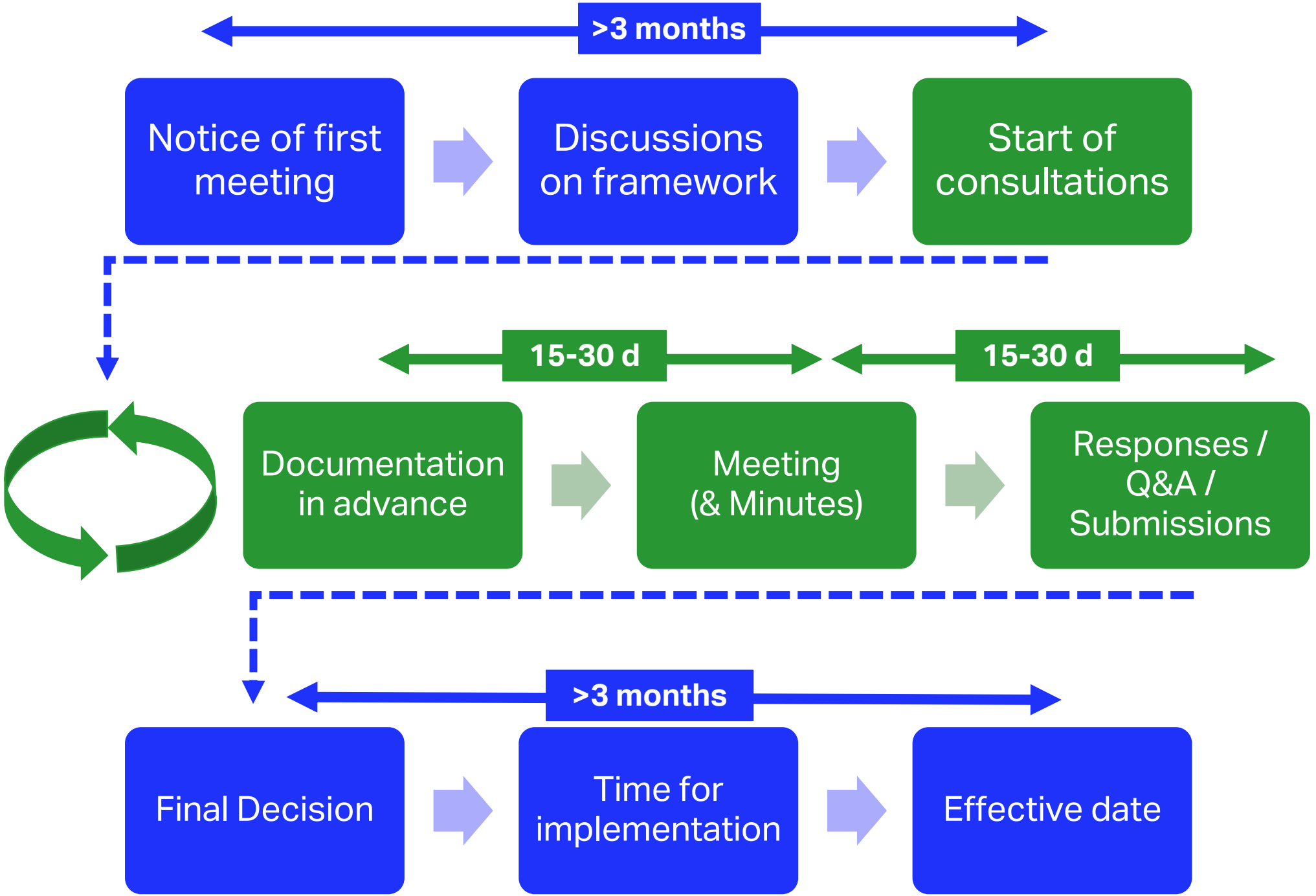
The provider explains and justifies its final decision to the users – he does so if requested in a separate meeting for Q&A.

The result can be appealed against under existing regulation.

ICAO Timelines



IATA Recommendation



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The Concept of Building Blocks in Aviation Charges, Part 3

- Investments at the beginning
- Cost of capital

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.

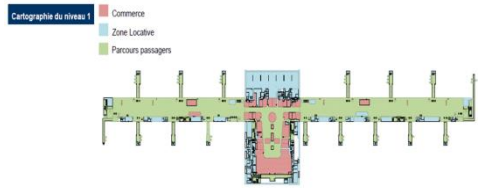
Analyzing and consulting on investments is essential

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

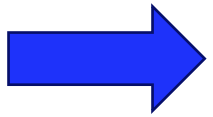
As investments define the asset base, the company should always provide detailed information on its planned investments:

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

Information is easily displayed in an Excel file.

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

→ Content to be discussed during the consultation.



The financial trigger to report on investment should be as of above 1 Mio USD to provide sufficient granularity and to avoid focusing on less relevant items.

Regular reviews are necessary

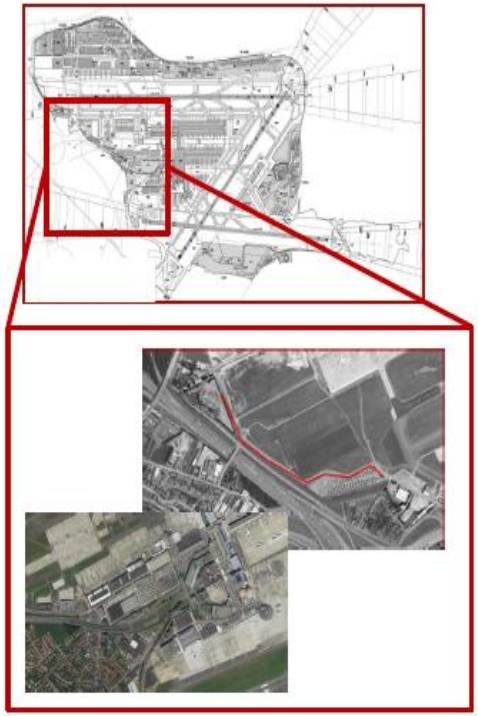
The importance of investments requires regular reviews to identify if they are (still) on track.

Changes to the overall plan need to be consulted early.

Many airports have started to formalize the investment consulting engagement, using easy to read templates and regular engagement meetings.

The most important part of the consultation is to have an understanding of the investment's impact on future charges development.

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)

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 have to be reviewed.

Investment review

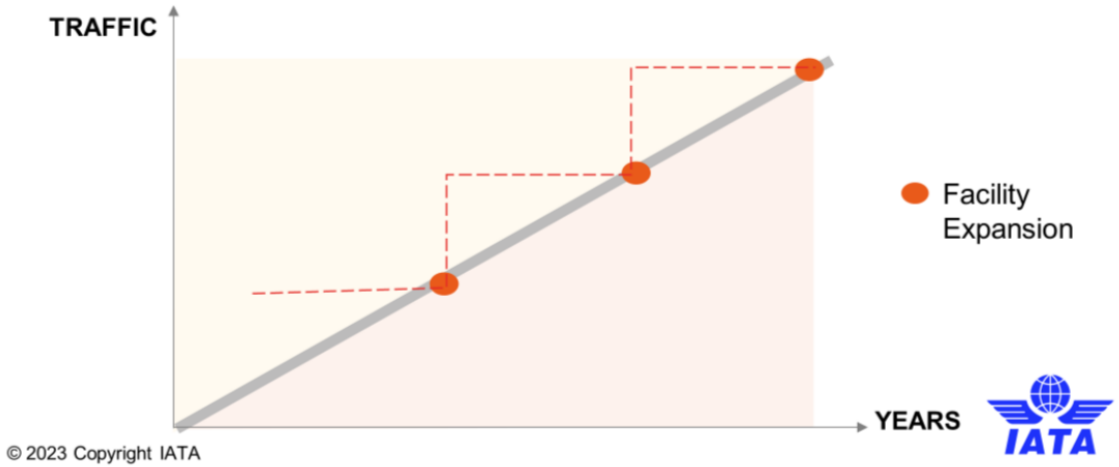
Categorizing investments facilitates a thorough review.

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

Designing for Optimum does not mean the facility will always be at Optimum!



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.

Infrastructure must be carefully balanced for future traffic.

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 useful life of the asset. 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.

How is depreciation applied: Example

Car purchase: 50,000 USD. Applied years of usage before replacement: 4 years. Annual depreciation: 50,000 / 4 = 12,500 USD. Purchase January 2015.

End of 2015 asset value = 50,000 – 12,500 = 37,500 USD
End of 2016 asset value = 37,500 – 12,500 = 25,000 USD
End of 2017 asset value = 25,000 – 12,500 = 12,500 USD
End of 2017 asset value = 0

(Simplified, depreciation starts the month after purchase, which should here be in 12/2014).

When is the asset ready for use

Depreciation for the charges period is calculated based on existing and new investments being completed during that period.

New investments are based on an investment plan – indicating amongst other items completion date and cost.

The completion date of the investment should indicate the date when it can be used by airlines.

As of that date, depreciation is typically included in the charges calculation as well as the cost of capital.

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

Determining depreciation is simple

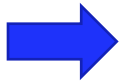
- All assets of a company are generally listed in an asset register.
- An asset register is a simple list of all assets such as buildings, installations, cars etc.
- The register lists the date of purchase, the price, the lifetime in years and it shows the current value.
- If a new investment becomes an asset, the cost impact towards charges can be calculated by dividing the purchase price by the number of years it can be used (starting the month following the beginning of its use).
- The lifetime is normally based on accounting rules but should always be properly reviewed.
- Lifetime extension (e.g., also refurbishments) is useful and reduces cost.

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.

Conclusion:

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.

Mitigating sudden charges spikes

As per building block logic, new infrastructure is paid for when it is being used.

A whole new terminal will increase charges – the old one was largely depreciated, the new one *hits the books*.

A gradual adapted increase could be discussed, smoothening the effect of such a sudden increase.

Government assistance in form of financial aid or equity is another option.

Other ways to deal with depreciation exist, e.g. annuities.

Problems with pre-funding

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

If pre-funding 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.

Disincentivizes the delivery of projects on time and on budget (as all is paid upfront).

ICAO 9082: Pre-funding

1.8 PRE-FUNDING OF PROJECTS

Pre-funding of projects through charges should not be used to fully recover costs in advance of the commissioning of new airport or air navigation facilities or infrastructure but may be accepted in specific circumstances, after having allowed for possible contributions from non-aeronautical revenues, where this can assist in financing long-term, large-scale investment, provided that strict safeguards are in place, including the following:

a) **effective and transparent economic oversight** of charges and the related provision of services, including performance management;

b) **comprehensive and transparent accounting**, with assurances that resulting charges are, and will remain, earmarked for civil aviation services or projects;

c) **advance, transparent and substantive consultation** by providers and, to the greatest extent possible, agreement with users regarding significant projects being pre-funded;

d) application for a **limited period of time** with users benefiting from lower charges and from smoother transition in changes to charges than would otherwise have been the case once new facilities or infrastructure are in place; and

e) where pre-funding is applied, **ring-fencing mechanisms** should be put in place to ensure that the funds collected are only used for identified projects.

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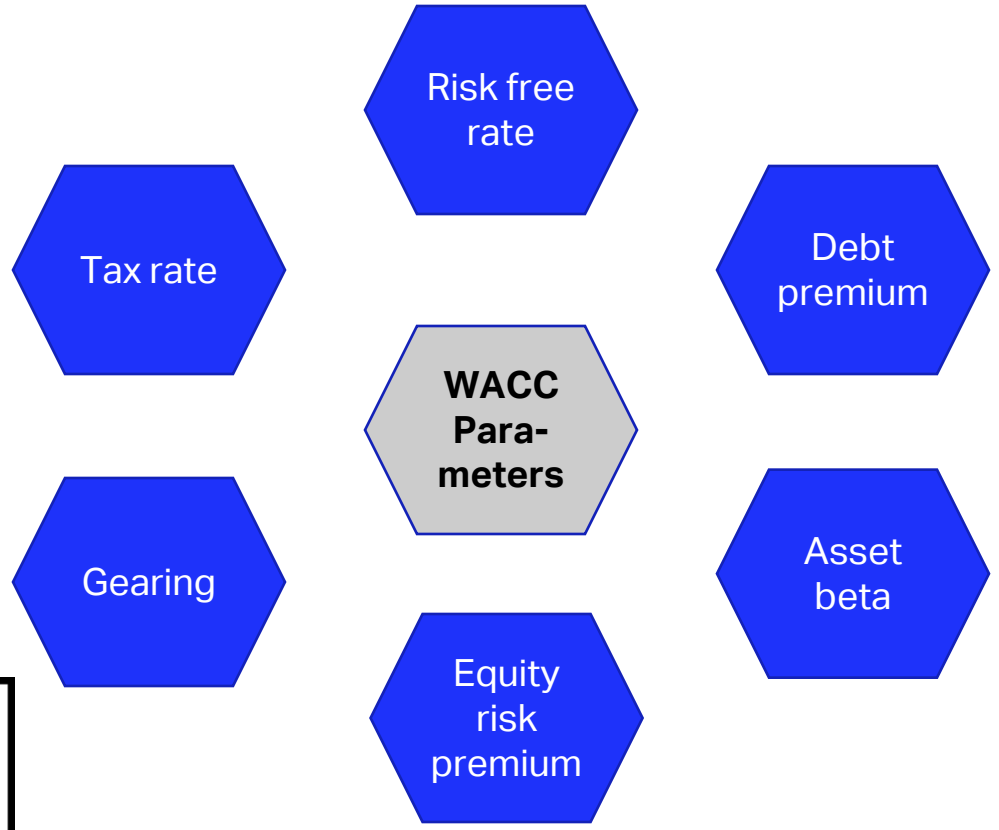
The Concept of Building Blocks in Aviation Charges, Part 3

- Investments at the beginning.
- Cost of capital.

The components of the WACC

Different parameters need evaluation: The concept of weighted averages.



Cost of equity Cost of debt

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

How to finance investments

Aviation infrastructure is expensive and requires large amounts of capital investment.

The financing for infrastructure can be received from two different sources.

Debt:
They have to be amortized and typically bear interest.

Equity:
Buying a share of an airport aims to receive a return on the invested capital – this is why the stake is bought at all. (Equity also includes retained earnings)

The cost of debt and equity is linked to the level of associated risk

Risk and return

Risk and return are two related concepts that influence how investors choose their investments and how they set asset prices.

Risk refers to the uncertainty or volatility of the return, while return refers to the gains or losses made from an investment.

There is a positive correlation between risk and return, meaning that higher risk is associated with higher potential return, and vice versa.

Risk rewards

Historical data and credit ratings demonstrate that airports are generally significantly less risky than airlines.

Hence why pension funds prefer investing in airports rather than airlines!

All investment involves risk (even government bonds) but some are higher than other (and therefore include a higher potential reward.)

To estimate risk relative to the market, the WACC uses a parameter known as “beta” that shows how much a firm’s performance moves with the market.

Risk-reducing mechanisms (traffic) should also reduce the reward component.

A firm's **Cost of Capital** is the **reward** (return on capital) for investors and lenders

The cost of capital determination contains the beta value as the risk elements related to the business segment risk of the company.

When determining the cost of capital for an airport, the beta value must be comparatively low – as can be observed from listed airport companies.

Competition and regulation

Generally speaking, profit maximization is nothing bad but a natural market force.

In competitive markets, profits are constrained by competition.

In monopolistic markets (demand or supply side monopolies), competitive constraints are not working.

Without constraints, market power abuse is possible, which is why monopolies are regulated companies.

Regulation replaces what competition would normally achieve.

Expectations of return will vary based on the model

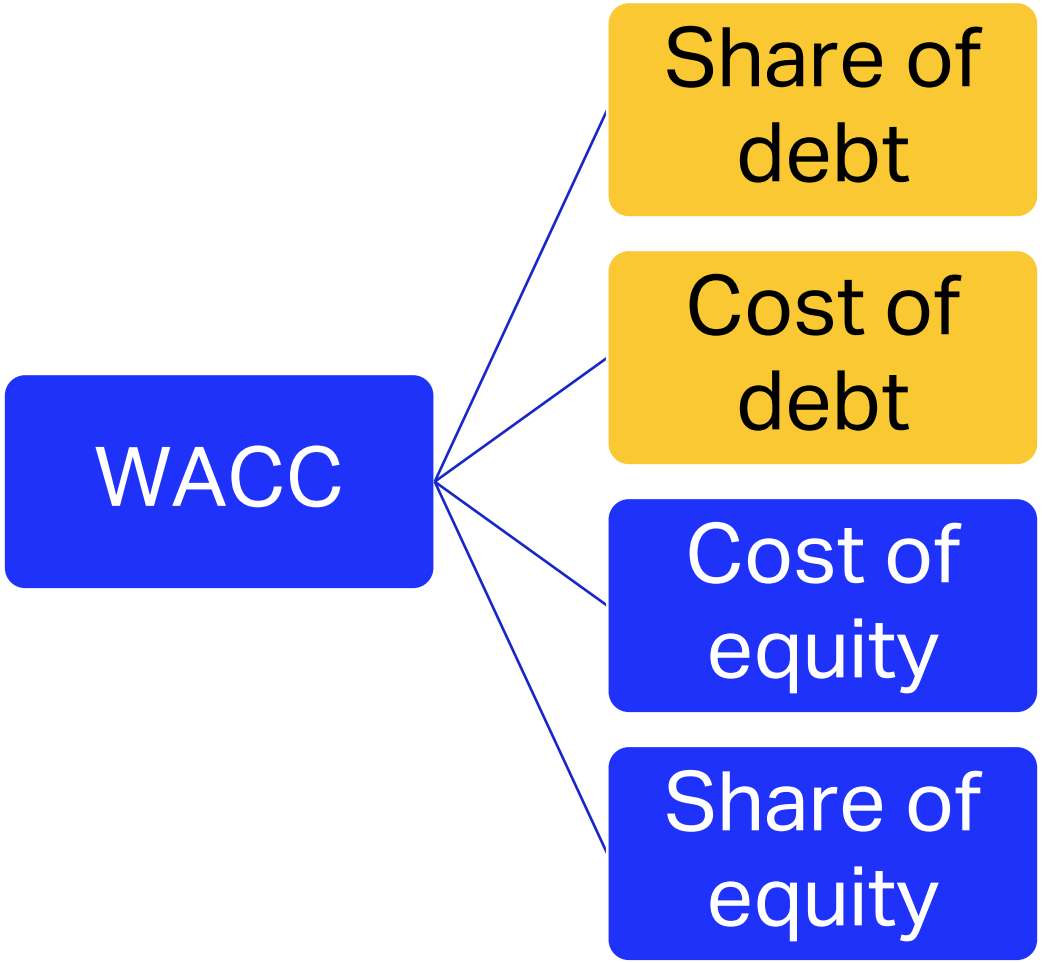
Stock-market listed airports	Critical industries with State participation	Zero-equity airports	State support for industry
Investors expect maximum returns	States consider infrastructure as critical and so opt to recover costs with a lower return	No return on equity	Subsidies/grants for airports (the return comes from higher economic activity)

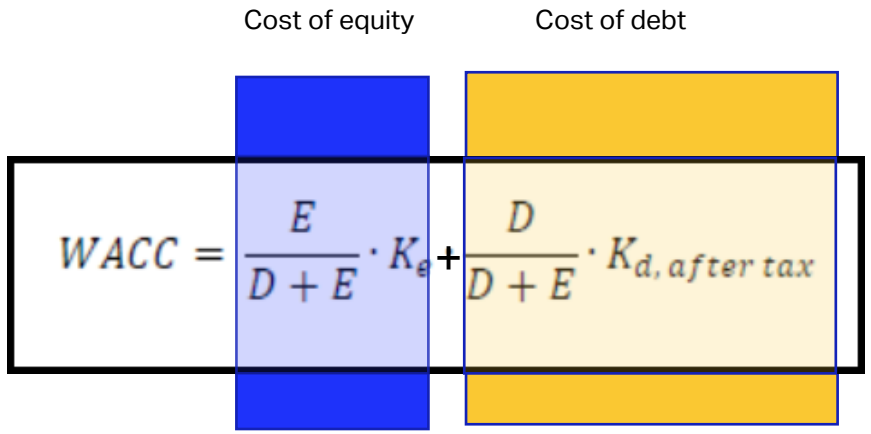
The components of the WACC

The WACC is calculated with several parameters

Not everyone agrees on their definition

Parameters can be observed, calculated or set as targets





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 (multiplied) 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.
→ **At a 2% profit margin, this represents over 90 Mio USD in revenue!**
…now go and sell those tickets …

Day 2:
29 October - Session 3 contd.
13:30 – 15:00

The Concept of Building Blocks in Aviation Charges, Part 4

- Charges structure & calculation
- Charges benchmarks and lessons learned

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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 at least 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

Each charge type has its own suite of charging units

Type of charge	Examples of charging units
Landing charges	Weight (e.g. MTOW), fixed charges
Passenger Service Charge, Security charges	Number of passengers (O&D, transfer), pax screened
Parking	Time, Aircraft size, MTOW
Boarding bridge	Time, fixed
Noise	Noise certificate (e.g. cumulative margin)
NOx	LTO Cycle
ANS charges (enroute, Terminal, Oceanic)	Weight, distance, fixed

In some places, some charges are “modulated” (e.g., landing charges based on weight but then modulated based on noise factors)

General Principles (Doc 9082)

- The structure of charges should be:
  - Simple
  - Not discourage use of facilities related to safety
  - Determined using sound accounting/economic principles
  - Non-discriminatory
  - Introduced on a gradual basis
  - Flexible in terms of invoicing
  - Consolidated for invoicing purposes (when various entities exist)

- 9082 also include some more specific principles regarding certain specific charges (e.g. charging drivers, what type of activities costs could be included, etc.)

Complications

- There is no uniform set of tariffs at airports
- These are not the only charges that exist at airports. There are way more, for example:
  - Baggage, Check in, Centralized infrastructure, Terminal, Electricity, Bus, Push back, Safety, among others
  - Not all these are charged at all airports. Some decide to disaggregate charges, others don't.
- There are also other complications, such as incentives and charges modulation
- On ANSP charges,
  - there is no common understanding on what constitute an overflight/terminal charge (e.g. "pure overflight" vs "enroute").
  - there is no common rule to allocate costs between overflight and terminal navigation charges.

Extra care is therefore needed when analyzing the structure of charges. Benchmarking of individual tariffs will, in most cases, lead to wrong conclusions.

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.

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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.
- ❑ Regulatory framework

Thank you