SIP/2004-WP20
Business case

Special Implementation Project

Business Case Methodology

(Presented by Chaouki Mustapha
Economist, ICAO)

Workshop on the development of business case for the implementation of CNS/ATM systems
Cairo, 6–9 September 2004

Outline

- Background
- Options for the implementation of CNS/ATM systems
- Business case
- Economic assessment
- Financial Analysis
- Risk Analysis and Management

Background

- World-Wide CNS/ATM systems implementation Conference (Rio 1998)
- 32nd Session of the Assembly (Resolution A32-12)
- 33rd Session of the Assembly (Resolution A33-19)

Options for the implementation of CNS/ATM systems

- The planning of air navigation systems, including CNS/ATM, has to respond to the identified operational requirements and ATM objectives
- Existence of a multitude of options that achieve these goals:
  - ✓Operational options
  - ✓Technical options
  - ✓Institutional options
  - ✓Financial options

Options for the implementation of CNS/ATM systems

- Decision makers need to be able to compare implementation options, rank them and choose among them
- What type of criteria?
  - ✓Operational
  - ✓Technical
  - ✓Economic
  - ✓Financial

Business case

Definition of a business case

- A business case is a substantiated argument for a public project, a policy or a program proposal requiring a resource allocation and/or investment, often including a financial commitment
- A tool supporting planning and decision-making

Content of a business case

- A business case sets out the context of the problem or situation being addressed
- It provides a thorough description of the proposal, the rationale for its selection among other alternative options and a comprehensive assessment of its benefits, costs and risks
- It takes cost benefit analysis a step further

Content of a business case

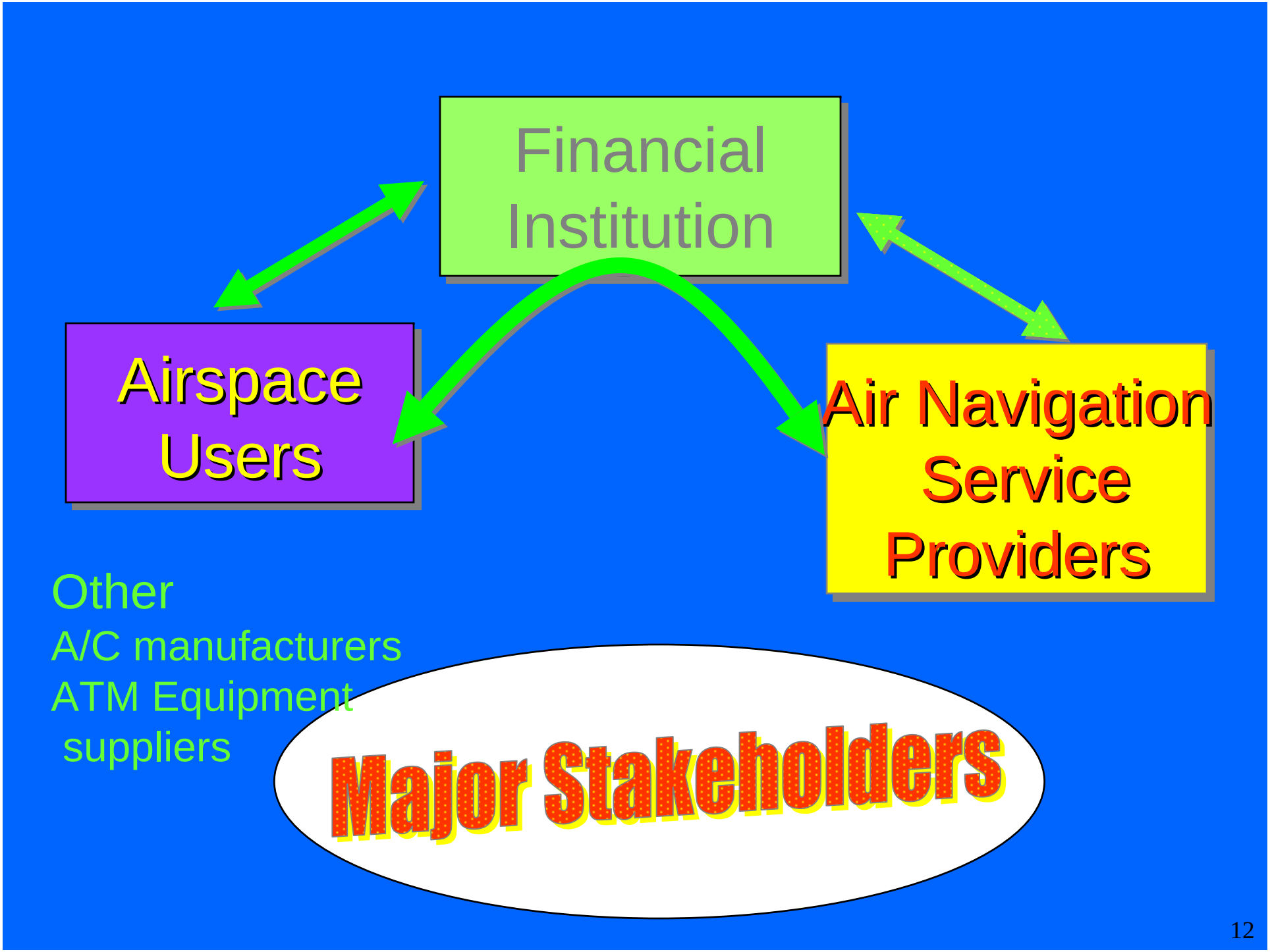
- The main sections of a business case are:
  - ✓Description of the proposal
  - ✓Identification of the stakeholders / partners
  - ✓Cost-benefit analysis
  - ✓Financial analysis
  - ✓Risk analysis and management

Need for a business case for CNS/ATM

- Slow implementation of CNS/ATM Systems
- Reluctance towards adoption of new technology
- Disagreement among stakeholders
- Lack of funding

Partners/Stakeholders

- Need to identify all partners/stakeholders
- Costs, benefits and risks should be identified and evaluated for each partner/stakeholder
- Integrated business case


Financial Institution
Airspace Users
Air Navigation Service Providers
Other
A/C manufacturers
ATM Equipment suppliers
Major Stakeholders

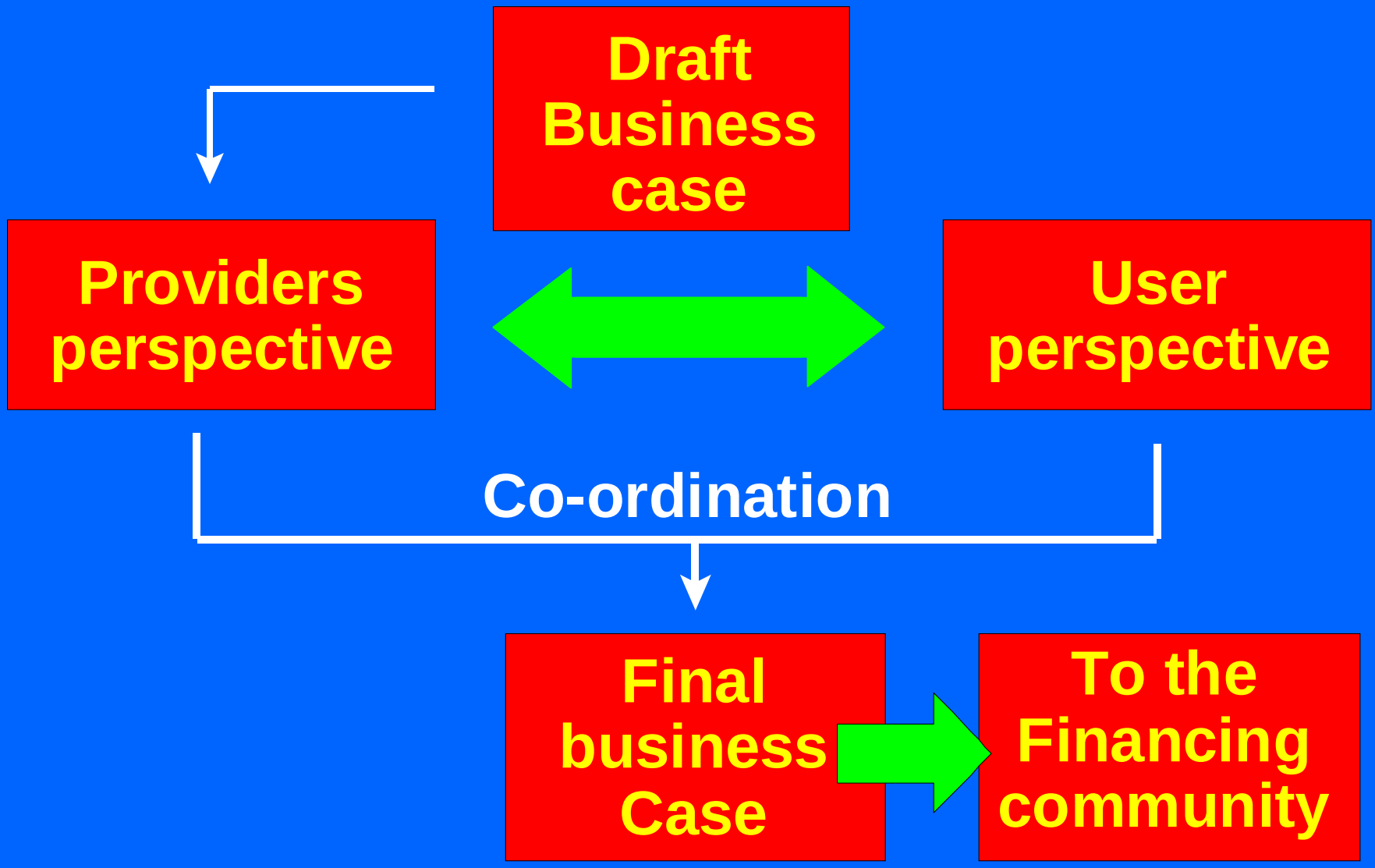
Analysis Process

Provider/User

Business case

- **State**
- **Sub-regional**
- **Regional**

Stages of the Business Case



Prerequisites

- Homogeneous ATM area clearly defined (State/service provider, group of States, sub-region, region, etc.)
- Consultation and coordination between service providers with adjacent areas of responsibility
- Consensus among stakeholders/partners on the need for the new technology

Prerequisites (cont'd)

- Availability of the new technology's facilities and equipment
- Expected costs of equipment and operations established with an acceptable margin of uncertainty
- Recognition and awareness of international cost recovery policy for air navigation services (ICAO's Policies on Charges for Airports and Air Navigation Services, adopted by the Council in December 2000 and published as Doc 9082/6)

Prerequisites (cont'd)

- Existence of an effective cost and revenue accounting system
- Sound and agreed methodology for determining the cost basis for charges
- An effective mechanism for the collection of charges

Data requirements

- Traffic
  - ✓ Traffic densities and traffic flows
  - ✓ Traffic forecasts
- Current configuration
  - ✓ Cost of operations of the service providers
  - ✓ Inventory and costs of current air navigation systems'equipment and facilities:
    - ✓ Communications (Air/Ground, Ground/Ground and avionics)
    - ✓ Navigation (En Route, Terminal and Approach and Avionics)
    - ✓ Surveillance (En route, Terminal and avionics)
    - ✓ ATM
  - ✓ Level of user charges

Data requirements (cont'd)

- Future configuration
  - ✓ Operational requirements
  - ✓ Cost of new air navigation systems' equipment and facilities:
    - Communications (Air/Ground, Ground/Ground and avionics)
    - Navigation (En Route, Terminal and Approach and Avionics)
    - Surveillance (En route, Terminal and avionics)
    - ATM
- Transition pattern and cost of transition
- Facilities, equipment and avionics costs

Main impediments

- Lack of coordination and consultation among service providers with adjacent areas of responsibility
- Lack of coordination and cooperation among stakeholders
- Non homogeneity of areas selected and redundancy of facilities and equipment
- Ambiguous institutional or legal format
- Lack of financial guarantees
- Unavailability or inaccuracy of data required

Economic assessment

Methods and techniques

- Cost benefit analysis
- Cost effectiveness analysis
- Least cost approach
- Snapshot approach
- Value analysis
- Others

Uses of cost benefit analysis

- Gives an indication of the total economic welfare effects of a project;
- Covers all costs and benefits, both quantitative and qualitative including external costs;
- May serve for the financial analysis which has a narrower scope

Financial Analysis

Uses of the financial analysis

- Tool to provide:
  - ✓Investment information
  - ✓Capital needs
  - ✓User fee structure
  - ✓Cash flow requirements
- Tool to quantify the financial risks and bring service providers and financial organizations to reach consensus

Output of the financial analysis

- Profitability of the project
- Cash flow profile
- Financing requirements
- Required level of user charges
- Cost recovery period

Evaluation of Implementation Options

- Institutional arrangements
- Existing equipment
- Traffic density & growth
- Equipment cost
- Pricing policies
- Timing of the transition process

Risk Management

Objectives of risk management

- Not to eliminate risks
- But, to identify them and minimize their effects through:
  - ✓improved awareness of their likelihood of occurrence and potential impact and;
  - ✓development and implementation of appropriate mitigation plans

Risks for the implementation of CNS/ATM systems

- Exchange rates
- Schedule, extended transition
- Traffic growth
- Rate of return
- Efficiency rates
- Systems integration failure
- Resistance to change

Guidance Material

- New Circular
- In preparation phase

- Guidance material including software


ICAO • OACI • ИКАО
国际民航组织 • ايكاو