Objectives of Project Management

Why do we need project management in aviation?
Challenges of the Civil Aviation System

Key Challenges in Aviation

- Safety
  - Harmonization of projects, efforts and regulations
  - Operational efficiency – smooth aviation, ATM
  - Alignment, partnerships

- Security
  - Automation, modernization
  - Sustainability
  - Diversification – change to survive
  - Ensuring connectivity in air transport

- Sustainability
  - Improving safety
  - Adaptation
Challenges of the Civil Aviation System

**ICAO Council President Quote** – 10 Feb 2014 – Singapore – Our greatest challenges on a sector-wide basis over the coming triennium, and indeed over the coming decades, virtually all derive from *how aviation will need to evolve in order to manage the doubling of capacity* now being projected through 2030. All of our current goals, whether **tactical** or **strategic**, **political** or **economic**, will be magnified significantly by this expansion – as will the implications of the **actions we take to address near- and longer-term connectivity challenges** in terms of:

- Increased airspace and airport **congestion** and the risk to the **safety** and **efficiency** of air transport operations in general;
- The need to balance stringent **security measures** with facilitation; and
- Growing **environmental pressures** relating to greenhouse gas emissions, local air quality and noise around airports.
Challenges of the Civil Aviation System

Secretary General Of ICAO
Quote – “The vision of ICAO is for a global air transport system consistently and uniformly operating at peak efficiency, providing optimum safety, security and sustainability. I am truly excited by the prospect of being able to support the growth of a robust and sustainable air transport system. And I am confident that the changes at ICAO will be apparent in improved outcomes for all parties.”

Raymond Benjamin

Director General of The UAE General Civil Aviation Authority
Quote – Speaking to aviation business magazine
I agree that in order to accommodate more traffic, the only solution is to have sophisticated systems capable of handling more traffic in this small congested airspace. But we have worked very closely with ICAO in the Middle East region to introduce a new procedure in order to enhance our capabilities to handle more traffic.

The drivers of congested airspace extend beyond the UAE’s borders so collaboration on a global scale is a prerequisite for the UAE becoming the international hub it justifiably aspires to be.

H.E. Saif Al Suwaidi
How do projects originate?

**GCAA Mission**
To regulate and oversee aviation safety, security and environment, deliver air navigation services and facilitate air connectivity through international collaboration in order to serve the general public and the civil aviation industry in a responsive and cost effective manner.

**GCAA Vision**
A leading, safe, secure and sustainable civil aviation system.

1. **Vision**
2. **Mission**
3. **Corporate Strategy and Objectives**
4. **Initiatives**
   - Management of on-going operations
     - Producing Value
5. **Activities**
   - Management of authorized programs and projects
     - Activities classified as Projects
     - Increasing value production capability

**Organizational Resources**
How do projects originate?
How do projects originate?
A GCAA Example ...

**Vision** – A leading, safe, secure and sustainable civil aviation system

**Mission** – To regulate and oversee aviation safety, security and environment, deliver air navigation services and facilitate air connectivity through international collaboration in order to serve the general public and the civil aviation industry in a responsive and cost effective manner

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**Objective 2:** Improved safety, efficiency and service standards of ANS

- Improve Stakeholder Satisfaction
- Enhance Airspace Efficiency
- Optimize ANS Operational Efficiency
- Improve Safety & Quality Performance

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**A total of:** 6 Objectives 60 Initiatives 130 Activities and 30 Projects
How do projects originate?
A GCAA Example … Sample Strategy Form

Some of these activities translate into projects managed under the Portfolio Management Office (PMO).

A total of: 6 Objectives 60 Initiatives 130 Activities and 30 Projects
How do projects originate?

**Other drivers**

Beside the strategy fulfillment driver, there are other drivers that may require the initiation of projects, for example:

- New or amended international or local aviation regulations
- New or amended government requirements
- The need to resolve certain operational issues or enhance operational efficiencies
- Management requests
- The need to conduct certain studies to support decision making
- etc ....
How do projects originate

Team Activity 3

Each team to give examples of projects from their organization’s strategy / operational plan or other projects conducted by your organization
Project Constraints

**Cost** – This is the estimation of the amount of money that will be required to complete the project. Cost itself encompasses various things, such as: resources, labor rates for contractors, risk estimates, bills of materials, etc ... All aspects of the project that have a monetary component are made part of the overall cost structure.

**Time** – This refers to the actual time required to produce a deliverable. Which in this case, would be the end result of the project. Naturally, this is directly related to the amount of requirements that are part of the end result (scope) along with the amount of resources allocated to the project (cost).

**Scope** – These are the functional elements that, when completed, make up the end deliverable for the project. Scope is generally identified up front so as to give the project the best chance of success. The common success measure for the scope aspect of a project is its inherent quality upon delivery.

Balancing (trade off) among all to deliver a successful project
Understanding the nature of projects

The Project Environment

- Projects are affected by multiple factors which represent the environment in which the project is being conducted.

- The factors can be:
  - Political
  - Economic
  - Social
  - Technical
  - Legal
  - Environmental

Successful project managers are those who maintain good visibility of the project environment and possible changes in it throughout the life cycle of the project, which leads to project success.
Understanding the nature of projects

Team Activity 4 - The Project Environment

Each team to provide examples of some of the mentioned project environmental factors and list them on a flip chart.
Understanding the nature of projects

**Project Management Knowledge Areas**

- Nine (9) knowledge areas are necessary for a project manager to successfully manage a project.
Module 1: Introduction to Project Management

Understanding the nature of projects

**PM Knowledge Areas – Processes**

### Project Integration Management
- Develop project charter
- Develop project management plan
- Direct and manage project execution
- Monitor and control project work
- Perform Integrated change control
- Close project or phase

### Project Scope Management
- Collect Requirements
- Define Scope
- Create WBS
- Verify Project Scope
- Control Project Scope

### Project Time Management
- Define Activities
- Sequence Activities
- Estimate Activity Resources
- Estimate Activity Durations
- Develop Schedule
- Control Schedule

### Project Cost Management
- Estimate Costs
- Determine Budget
- Control Costs

### Project Quality Management
- Plan Quality
- Perform Quality Assurance
- Perform Quality Control
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Understanding the nature of projects

*PM Knowledge Areas – Processes*

- **Project Human Resources Management**
  - Develop Human Resource Plan
  - Acquire Project Team
  - Develop Project Team
  - Manage Project Team

- **Project Risk Management**
  - Plan Risk Management
  - Identify Risks
  - Perform Qualitative Risk Analysis
  - Perform Quantitative Risk Analysis
  - Plan Risk Responses
  - Monitor and Control Risks

- **Project Procurement Management**
  - Plan Procurements
  - Conduct Procurements
  - Administer Procurements
  - Close Procurements

- **Project Communication Management**
  - Identify Stakeholders
  - Plan Communications
  - Manage Communication
  - Manage Stakeholder Expectations
  - Report Performance
Project Success Factors

• Ten (10) main reasons for project success*

*The Standish Group
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Project Success Factors

Why do projects fail - Facts and Figures (IT Projects)

1. Only 40% of projects met schedule, budget and quality goals.
2. Best organizations are 10 times more successful than worst organizations.
3. Biggest barriers to success listed as people factors: Changing mindsets and attitudes – 58%. Corporate culture – 49%. Lack of senior management support – 32%.
4. Underestimation of complexity listed as a factor in 35% of projects.

IBM survey in the success / failure rates of “change” projects finds:

Source: United States Government Accountability Office
Type of survey: Review of federally funded technology projects
Date: 31 Jul 2006

Study finds 413 of 840 (49%) federally funded IT projects are either poorly planned, poorly performing or both.

Project Railhead provides a good example of the types of problems involved. In the Railhead case the completion of a $500M investment is in jeopardy.
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Project Success Factors

Why do projects fail
Module 1: Introduction to Project Management

Project Success Factors

Reasons Projects Fail - IAG Consulting (IT Projects)
Throughout the lifecycle of the project, a set of processes have to be followed.

Different groups of processes are used based on the phase through which the project is going through, such as initiation, planning, execution and closing and overall monitoring and controlling.
PMO is an organizational unit, to centralize the management of projects/programs for achieving the organization’s strategic objectives by implementing and utilizing tools, resources, knowledge, and management systems.

**PMO’s role in an organization**
- Portfolio management
- Project support
- Project management process/methodology
- PM training, mentoring, and support
- Overall Progress tracking
- Interdependency management
- Overall risk and issue reporting
- Management reporting
- PMO software tools

How can the organization guarantee that all its portfolio of projects are fulfilling their objectives?
Portfolio Management Office (PMO)

Objectives and activities

**PMO Objectives**
- Enable successful completion of selected group of projects within budget and time constraints
- Identify and resolve barriers to implementation
- Maintain awareness of program status
- Ensure effective execution of cross-project and cross-business projects

**PMO Activities**
- Lead/oversee projects design & implementation
- Approve project plans, targets and integration requirements
- Identify critical path, coordinate changes across projects and manage risks
- Coordinate the resolution of cross-project issues and intra-program dependencies
- Escalate and communicate across project teams and to senior management
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Portfolio Management Office (PMO)

Enterprise Project Management

PMO

PM1

PM2

PMn

Project 1

Project 2

Project n

Mission
Vision
Goals
Objectives

Enterprise Resources

Functional Unit 1

Functional Unit 2

Functional Unit n

Project Management System
Module 1: Introduction to Project Management

Portfolio Management Office (PMO) Enterprise Project Management
Module 1: Introduction to Project Management

Portfolio Management Office (PMO)
The GCAA Example … PMO Benefits

**PMO Reference Manual**

**Portfolio Management Office - Benefits**

**Challenge Area**
- Planning
  - Projects do not meet deadlines / gates
  - Lack of standardized reports and reporting frameworks for all projects
  - Implementation procedures in organization are not realistic, missing or unknown
  - Drift from strategic objectives or operational plan

- Monitoring & Control
  - Lack of a clear process for escalating risks to senior management
  - Project mission and tasks are poorly defined
  - Ineffective enforcement of project controls and policies
  - Fragmentation of external suppliers in the project
  - Insufficient reporting to support top-management decisions

**Challenge Characteristics**

**Benefits of PMO**
- Has complete oversight on all the projects
- Improves the management of business processes
- Increases efficiency in tracking progress of projects and programs
- Integrates project plans for all dependent projects

- Improves monitoring and control of projects
- Identifies gaps in realization of strategic objectives
- Escalates current risks and identifies potential risks earlier
- Mediates issue resolution
- Ensures proper communications to relevant stakeholders
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Portfolio Management Office (PMO)
The GCAA Example … PMO Governance

Steering Committee

Reviews overall status and provides direction and guidance

Working Committee

Oversees the proper execution of the project portfolio against the objectives and raises recommendations to the steering committee

PMO Manager

PMO Coordinator

PMO Coordinator

PMO Coordinator

Project 1

Project 1

Project 1

Project X

Project X

Project X

Three levels of Projects:
• Level 1
• Level 2
• Level 3

Strategy & International Affairs
Portfolio Management Office (PMO)

The GCAA Example … Project Levels

Project Level 1
- PMO leads the project through internal or external resources

Project Level 2
- In addition to the oversight role, the PMO provides guidance and advise on the content
- Project is led by an operation function / unit

Project Level 3
- Oversee project progress
- Review risk and issues
- Review inter-dependencies
- Monitor execution though KPIs

Project Level Classification Form
Portfolio Management Office (PMO)
The GCAA Example … Portfolio Planning Process

Module 1: Introduction to Project Management

Process Map
Portfolio Management Office (PMO)
The GCAA Example … Portfolio Planning Sample

### Portfolio Plan

<table>
<thead>
<tr>
<th>Sector</th>
<th>Project Code</th>
<th>Project Name</th>
<th>CR Description</th>
<th>PMO Level of Excellence</th>
<th>PMO Key Account Manager</th>
<th>Overall Target For 2020</th>
<th>Expected Start Date</th>
<th>Expected End Date</th>
<th>Budget</th>
<th>Key Interdependencies</th>
<th>External Contractors Required</th>
<th>Project Manager</th>
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**Approvers:**

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Portfolio Management Office (PMO)
The GCAA Example … PMO Process and Tools
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Portfolio Management Office (PMO)
The GCAA Example … Portfolio Monitoring

Process Map

1. Review project progress reports and prepare monthly portfolio health check.

2. Consolidate and assess overall portfolio health check report.

3. Review overall portfolio progress and determine health of overall portfolio.

4. Determine if any new or future projects need to have their status changed with project sponsor.

5. Review relevant risk and interdependency and estimate if need to roll forward.

6. Conduct meeting with concerned project/program managers to discuss and resolve mitigates interdependencies/risk.

7. Upload approved Progress Report on EPM tool and inform all relevant stakeholders.

8. Log risks/interdependencies and corresponding mitigation and resolution measures.

9. Prepare portfolio progress reports to be discussed with PMO Working and Steering committee.

10. Review portfolio progress and forward to PMO Working and Steering committee if found satisfactory or make changes.

11. Review portfolio progress reports and provide recommendations on relevant decisions/project status.

12. Revision required?

13. Review progress reports and send private decision recommendations of working committee.

14. Minutes of Meeting
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Portfolio Management Office (PMO)
The GCAA Example … Portfolio Health Check

<table>
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<th>Portfolio Health Check</th>
<th>Project Details</th>
<th>Project Status</th>
<th>Time Status</th>
<th>Financial Status</th>
<th>Milestone Status</th>
<th>Interdependency and Risks Status</th>
<th>Overall Status</th>
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Module 1: Introduction to Project Management

Portfolio Management Office (PMO)
The GCAA Example … Working & Steering Committees Reporting – Portfolio Progress Report
The Project Life Cycle

**Initiation Stage** – Define project objectives, business case, solution options, justifications, major deliverables, timeline, participating work groups.

**Planning Stage** – Plan the steps necessary to meet the project objectives. Define project tasks and resources. Define project constraints, risks, quality plan and acceptance criteria.

**Execution Stage** – Put the project plan into motion. Continuously monitor progress and adjust as appropriate. Manage the project within the defined constraints and ensure completion of project milestones as planned. Most of the project time is spent in this phase.

**Closure Stage** – Deliver project deliverables and hand over to the business users. Terminate supplier contracts and release project resources. Document lessons learnt and close the project. Communicate project closure to all stakeholders.
The Project Life Cycle

*Why divide a project into stages or phases*

- Facilitate transfer or handoff of work product at the end of each stage (exist criteria, milestones, gates)
- Type of effort, different type of organizations or skill sets
- More management and control
- Assess: risks, go or no-go decision
The Project Life Cycle

Cost and Staffing Build Up

Initiating the project
Planning and preparing
Executing the work
Closing the project

Project Charter
Project Management Plan
Accepted Deliverables
Archived Project Documents

Project Management Outputs Over Time
The Project Life Cycle

Project Risk (Uncertainty)

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