ACRP Report 59 Information Technology Systems at Airports – A Primer

http://www.trb.org/ACRP/Blurbs/166592.aspx

Presented By
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Introduction

Develop an easy-to-read primer targeting mutual understanding of IT between:

- Airport's Executive Manager
- IT Professional

Faith Group	HAS Development Corporation	Convergent Strategy Consulting	ACRP Panel	TRB Staff
John Purnell	Robert White	Jim Willis	John Newsome	Mike Salamone
Ruth Hough	Sandra Gonzalez	Gerard de Grandis	Frank Barich	Joe Brown-Snell
Faith Varwig	Frank Haley	John Walfish	Jim DeLong	Eileen Delany
	Matt Hyde		Dom Nessi	Doug English
			Carl Remus	Tom Parmerlee
			Dave Ruch	
			Paul Friedman	
			Matt Griffin	

IT and System Planning

- Was not the focus of the Primer, but…..
- IT helps improve air system capacity
  - NextGen – CNS/ATM
  - Common Use Systems
  - Flight information evolving to mobile
- The Primer offers a common approach to IT Systems Planning

Work Plan

The primary research included:

- Two workshops at AAAE
- On-line surveys of CEO, CIO and one Stakeholder
- On-site interviews CEO, CIO, and one Stakeholder

Developed a draft for panel review

- Substantially rewritten based on panel comments

Key Findings

Communication issues revealed in:

- Planning
- Implementation
- Operation

Lack of a common understanding of IT systems

- IT jargon – “Geek Speak” -
- Inconsistent understanding of roles of IT systems

Lack of a common process for IT systems

Lack of a common evaluation system

Key Findings

Triangle of Communication

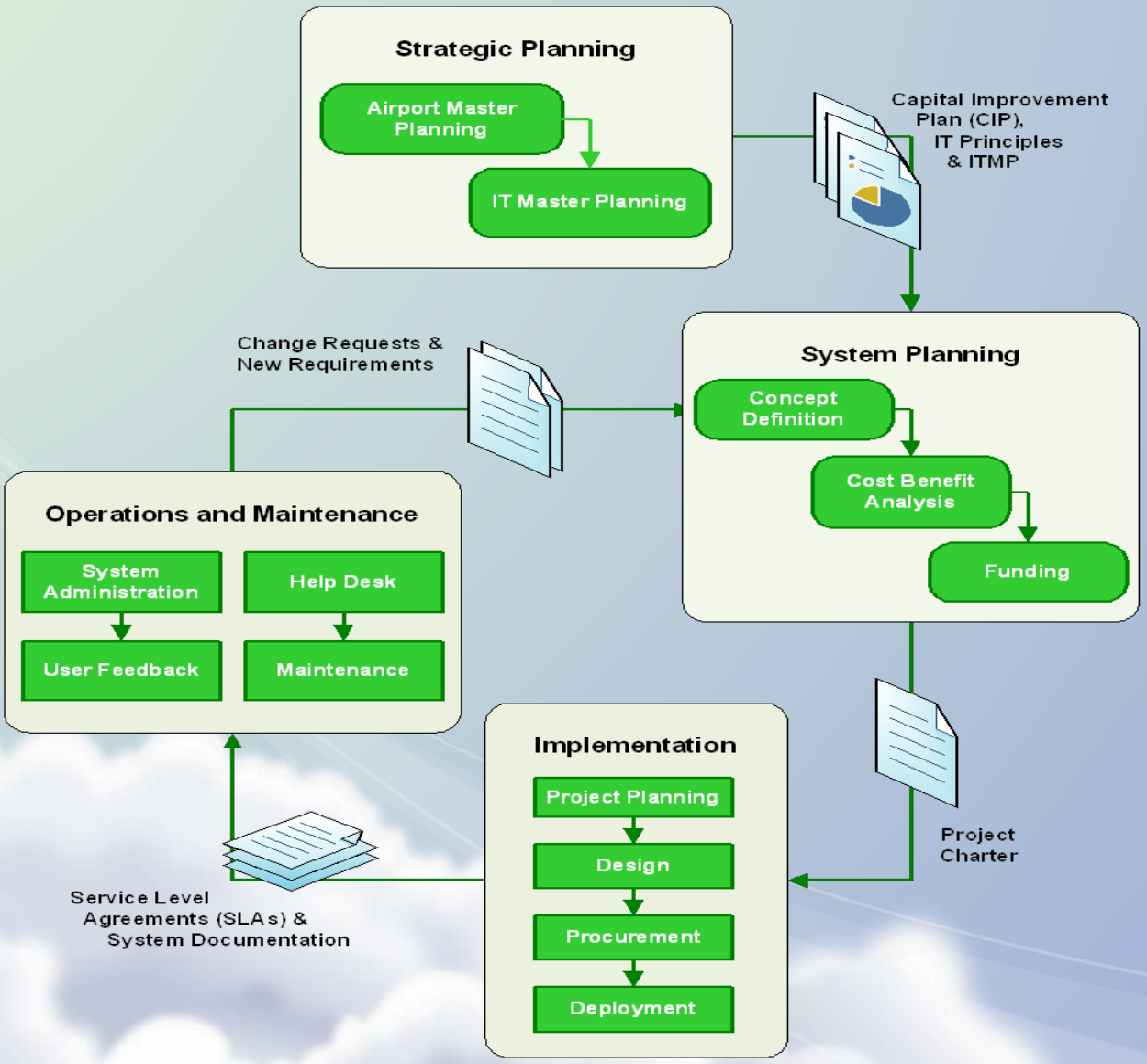
IT System Architecture

A Common Understanding

Systems Integration						Integration Layer
Airside Systems	Landside Systems	Passenger Processing	Business & Finance	Safety & Security Systems	Facilities Mngmt.	Application Layer
LAN, WAN, & Wireless Communications						Networking Layer
Cable & Fiber Infrastructure						Physical Layer

IT System Lifecycle

A Common Process



Sample Checklist

A Common Decision Tool

SYSTEM PLANNING PHASE CHECKLIST		
ITEM	**QUESTIONS For SYSTEM PLANNING PHASE**	☑
1	Does the project support airport strategic goals?	
2	Does project fit into Airport Master Plan?	
3	Has a *System Definition* and *Concept of Operations* been written?	
4	Have project responsibilities for funding, implementing, and operating been assigned?	
5	Have all stakeholders been identified and been included?	
6	Have potential impacts been identified (e.g., other systems, projects, staffing, contracts, etc.)?	
7	Has the *Value Proposition* been presented (budget, ROI, benefits)?	
8	Have funding sources been identified?	

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Project Evaluation Sheet

A Common Decision Tool

Project Name	Sample Project
Advocate(s) Name	CIO and Stakeholder
Project Description	Describe the project here
Expected Benefits	Describe benefits here
Risks	Describe risks here

		Evaluation Norms			Score	Weight
Non-Financial Evaluation	2.6	a **1** means:	a **3** means:	a **5** means:		
Is this a regulatory necessity?		Not really	It could become a problem	Imminent Danger of being shut	**2**	25
Does this support the Airport Master Plan?		No	Somewhat	Yes	**1**	0
Was this in the IT Master Plan?		No	Somewhat	Yes	**2**	10
Is there community goodwill to be gained?		None	Somewhat	Lots	**1**	15
Is this a green initiative?		Spends Significant	Neutral	Saves Significant Energy	**3**	15
Is customer service improved?		No	Somewhat	Yes	**4**	15
Does it increase airport capacity?		It decreases it a little	Somewhat	Significantly	**3**	10
Does it attract air carriers to operate here?		Unlikely	May factor into their decision	Significant draw potential	**2**	10
Will it reduce errors and improve efficiency?		No	Somewhat	Yes	**3**	10
Will it make the airport safer?		Less safer	A little safer	Much more safe	**2**	15
Will it make the airport more secure?		Less Secure	A little more secure	Much more secure	**2**	15
Does it diversify revenue sources?		All revenue comes from air	Mixed revenue sources	No air carrier revenue	**5**	10
Will implementation disrupt operations?		No effect on Operations	Some impact, but it won't be	Impacts tenants & operations a	**4**	10
How risky is the project?		Very Risky	There is risk, but it is manageable	No risks	**2**	10
Financial Evaluation	4.5					
Internal Rate of Return	**8.8%**	Below 3%	around 6%	Above 8%	**5**	50
Net Present Value	**$ 9,799**	Negative	near zero	Positive	**4**	30
Breakeven Point (years)	**3.8**	Above 5	Around 4	Below 3	**4**	20

Project Evaluation

Financial Evaluation Form

	Example Analysis	One Time	Recurring (Annually)						
			1	2	3	4	5	6	7
1	Project Direct Capital Costs	$ (100,000)							
2	Project Labor Costs	$ (25,000)							
3	Outside Funding	$ 50,000							
4	Net Change to Revenue		$ -	$ -	$ 5,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
5	Net Change to Direct O&M Costs		$ 4,000	$ 7,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000
6	Net Change to O&M Labor Costs		$ 2,000	$ 3,000	$ 3,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
7	Interest on Capital Avoidance		$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500
8	Net Cash Flow	$ (75,000)	$ 12,500	$ 16,500	$ 20,500	$ 24,500	$ 24,500	$ 24,500	$ 24,500
9	Cumulative Cash Flow	$ (75,000)	$ (62,500)	$ (46,000)	$ (25,500)	$ (1,000)	$ 23,500	$ 48,000	$ 72,500
10	**Net Present Value**	**$ 9,799**							
11	**Internal Rate of Return**	**8.8%**							
12	**Break-Even Point**	**3.8**	**years**						

Assumptions:

Evaluation Period is	**5**	**Years**
Assumed Cost of Money is	**4.50%**	

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Definition of Costs

	Direct Costs	Indirect Costs
One-Time Project Costs (Cap-X)	Capital cost of hardware	IT labor to run the project
	Capital cost of software	Stakeholder labor to prepare data for conversion to the new system
	Vendor labor cost to design, test, and cut over the system	Costs for disposal of old system components
	Travel costs incurred by IT and stakeholders during the project	Stakeholder labor cost to support system testing and acceptance
	Installation costs of telecommunications channels	Stakeholder labor for training
		Cost of airport facilities required or made unavailable for project staging and deployment
		Security badges for vendor's workers
Recurring Expenses (Op-X)	Costs for telecommunications channels required by the system	Stakeholder labor to operate the system
	Preventative hardware maintenance	IT labor cost to operate the system
	Restorative hardware maintenance	Travel and labor costs to attend user group meetings
	Vendor help desk support	Membership costs of user groups
	Software maintenance	Ongoing training costs
	Consumables	Ongoing labor for training and retraining

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Summary

- The Primer offers the industry
  - A chance for CIOs, CEOs and Stakeholders to understand one another
  - An description of a common language, understanding, processes and decision tools
  - A training resource to bring technical staff up to management level

Any Questions?

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