

American Airlines VoIP Analysis, Design & Implementation

Introduction

In 2004, American Airlines approved an ambitious plan to replace the separate voice and data networks around the globe with converged VoIP telecommunications systems. The airline had selected Nortel Networks and AT&T as the hardware and network providers for that architecture. The blueprint called for appropriately configured Nortel Networks IP-PBX systems connected to an AT&T Multi Protocol Label Switching (MPLS) network.

In order to undertake such an enormous task, American engaged telecommunications consultant Mr. Richard F. English, to provide financial and technical analysis, design and implementation for systems across North America, the Caribbean and the Hawaiian islands. Mr. English was the principal consultant on the design and implementation management for the following airports –

ATL - Atlanta Hartsfield	ORD - Chicago O'Hare
JFK - New York Kennedy	MIA - Miami
SJU - San Juan	IAH - Houston Bush
DCA - Washington D.C.	BWI - Baltimore
CLE - Cleveland	BNA - Nashville
IND - Indianapolis	EWR - Newark
HNL - Hawaiian Islands	DTW - Detroit
MCO - Orlando	SDF - Louisville
MSP - Minneapolis	

Financial Analysis

Prior to deploying any systems at a particular airport, Mr. English conducted a thorough financial analysis of the current and future configurations. Current costs for hardware and network services were determined, and a gap analysis was performed on the proposed new configuration. After a satisfactory ROI was determined, the project was given approval for implementation.

Design & Engineering

Mr. English led an engineering team that conducted site reviews of the various airport facilities around the country to determine project scope and definition. Every location required a thorough understanding of the IP networking infrastructure and necessary upgrading, to implement a satisfactory, end-to-end Quality of Service (QoS).

Additionally, an analysis of the traffic handling capacity of the WAN and necessary provisioning of services from AT&T was required to support traffic requirements. American had an existing VPN in place with MCI that would be replaced by the new converged network after implementation of IP trunking at the hub sites was completed.

Risk Assessment

Several operational parameters required evaluation before a project of this magnitude could be undertaken.

Mitigation of risk was paramount. The level of risk impacting business continuity and disaster recovery by transitioning to a converged network required a balanced approach to end-user instrumentation.

The large hub sites incorporated distributed, survivable nodes, with diverse telco entrance facilities to support the business continuity requirements.



Implementation

Although implementation planning for a large site required significant effort, even smaller sites were challenging, given the facilities operate nearly 24 hours a day/7 days a week. Standardized methods of procedure were established, regardless of airport size. Parallel systems were maintained and an after-hours cutover was performed after all aircraft had landed at each airport for the night. Once a site had been implemented, an assessment of the cost efficiency and performance of the system was conducted with respect to the original objectives established.



Henry Rosin is Executive Vice President and Chief Information Officer of ConsultEdge.

Prior to founding ConsultEdge, Mr. Rosin was the Senior Account Manager at a major New Jersey systems integrator, where he managed several large accounts in the telecommunications and data services divisions.

Mr. Rosin also served for several years as National Account Manager at Phonexpress, an independent reseller of telecommunications systems and services. His work history includes project and operations management involving voice, data and facilities build-outs in commercial property management. He also holds numerous certifications in a wide range of products and technologies, including: Partner, Legend, Definity, Intuity and Call Center; Avaya IP telephony; Cisco LAN/WAN equipment; and Paradyne, Adtran and Kentrox network termination equipment.

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