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MODERN AIRPORT, MODERN TOOLS: Improve the Financial Management of Your Airport in 5 Easy Steps

Introduction

Airport accounting departments are typically asked to do the impossible: with ongoing budgetary constraints on new information systems, they nonetheless face increasing demand for information from management. The tools they have to work with? Often, it's the basic accounting packages not designed specifically for airport financials, like Simply Accounting, QuickBooks or similar packages. These solutions are based on generic technology that do not include critical dimension functionality (a term we'll discuss later in this article). Existing aeronautical billing systems or other central airport information systems are rarely integrated with the accounting system. Furthermore, these accounting systems probably don't have the capability to store and cross-reference non-financial data — such as the number of landings or number of passengers.

The result? Accounting staff are burdened every day with these challenges, struggling to prepare meaningful financial statements and reports that can be used by management to streamline and

operate their airport more effectively.

Lack of Integration With Other Systems

At a typical airport, there may be several disparate information systems managing and tracking areas like accounting, billing, leasing and concessions, maintenance and others. Each has a profound impact on efficiency, profitability, safety and decision-making. Often, a single weak link in operations can trickle down to many others without anyone realizing it. Lack of integration means that data must be manually entered into the accounting system from these other systems in order to create a complete picture. Small accounting packages simply do not have the capability to design import routines to bring in complex and dynamic data from other systems.

Lack of Analysis ("No Dimensions")

Most accounting packages today use a segment approach to the chart of accounts. Many modern organizations require their accounting system to support basic concepts of natural account

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organization as well as more advanced aspects of chart of account organization to support reporting requirements. This segment-based approach, unfortunately, leads to the development of complex structures of account coding with, typically, thousands of accounts in the Chart of Accounts.

A "natural" account is used to collect revenues and expenses by type (e.g., revenue, salaries, rent, office supplies). A typical organization may only require between 250 and 350 natural accounts in their Chart of Accounts to fully categorize the different elements of revenues, expenses, assets and liabilities, depending on the complexity and scope of the business.

In addition to the natural account, a company may also need to report by one or more organizational or responsibility units. Examples of these reporting requirements include:

- Department

- Sector

- Market

- Cost Center

A segment-based accounting system combines the natural account with the organizational reporting segments to concatenate the codes as per the following example:

Natural Account Number - Department - Sector - Market - Cost Center

XXXX – XXX – XXX – XXX - XXX

When a new code is created, it is linked to each account-code combination that may require

this code. If, for example, a new Department is created and attached to 50 natural accounts, and also has to be linked to ten Divisions and ten Cost Centers, this will result in the creation of 5,000 new account combinations! It is easy to see why such a system typically results in the creation of thousands of accounts in the Chart of Accounts.

The disadvantages of such a system are obvious. Apart from the complexity of maintaining thousands of accounts, the learning curve for new accounting staff is unnecessarily long. As new accounts are added, the financial reports need to be maintained; it can take a long time at month-end to update the various financial reports so they balance. Coding purchase invoices also becomes as a process that's over-complicated — and prone to errors. As a result, many companies try to minimize the number of new account codes they create, in an effort to minimize the resulting negative consequences. This leads to a reduction in the usefulness of such a structure, and achieves the precise opposite of the original objective.

The modern solution to this problem is to leverage "dimensions" to track the segment codes. In the above example, there are four dimensions in addition to the natural account number. These dimensions are: Department; Sector; Market; and Cost Center. New accounting systems (called "multi-dimensional") facilitate complex reporting structures with a simple chart of accounts. Each dimension is an independent field, separate from the natural account code and the other dimensions. If a new department code is added as per the above example, just one code is added to the department dimension

and no other codes are required. If an expense is entered into the accounting system, the expense can be posted to any natural account, and if that account requires the department dimension, then the department code is added when the expense is posted. The requirement for each account to require or not require a dimension is set up in the Chart of Accounts by assigning a simple flag to each dimension. Once set, this structure requires little or no maintenance.

Multi-dimensional accounting systems use relational database concepts, rather than the old hard-coded segment structure. As such, they are both simpler and more powerful in their reporting and analysis capabilities. Naturally, this combination is exactly what an accounting team needs.

Ability to Store Metrics

Metrics are defined broadly as operational, non-financial data. Examples of metrics include:

- Total passengers (PAX)
- Total aircraft movements (ACM)
- Cargo aircraft movements

Metrics can be combined with financial data to produce Key Performance Metrics (KPMs) or Key Performance Indicators (KPIs). (Note: Some companies refer to KPMs while others call them KPIs. As the upshot is the same, in this article we will call them KPMs.)

KPMs can provide meaningful and relevant data that can be analyzed using modern data visualization software. Tools like Microsoft PowerBI produce information that can identify trends that might not otherwise be obvious — or even observable. Of course, these trends may be positive or negative,

but regardless, need to be identified so that further action can be taken to continue/improve/re-steer the trend. Stunning graphics can be incorporated into a dashboard to provide you with powerful data visualization as shown above.

With all the data being compiled and analyzed, this reporting interface is the "final mile". It's how that data becomes meaningful. If your accounting system does not provide this kind of core capability, you need to look into upgrading your system.

Chart of Accounts Needs to be Redesigned

Does your chart of accounts need to be redesigned? Was it designed years ago when your airport was a different operation, perhaps much smaller than it is today? If your airport has expanded and added new revenue streams, it may be time to redesign your chart of accounts. If you are considering implementing a new accounting system, this is a great time to redesign your chart of accounts.

New Technology: Time to Upgrade

Cloud computing is a shift in traditional, local-server computing that offers businesses on-demand access to a variety of online software and services, while giving IT a shared pool of configurable computing resources at the platform, infrastructure and application layers. When done right, Cloud computing helps businesses do more, faster, by letting them tap into the power of massive remote data centers and IT services without having to build, manage or maintain them.

Understanding and comparing Cloud computing offerings is a challenge, as companies talk about

their particular Cloud services using different terminology. However, one thing is certain: Cloud computing is the way of the future. Microsoft's vision for the future is highly focused on Cloud computing; they have invested approximately $15B dollars in their Cloud data centers thus far. As a matter of fact, some of their new business software only works in the Cloud. Other companies like Amazon, Google and IBM are following the same path.
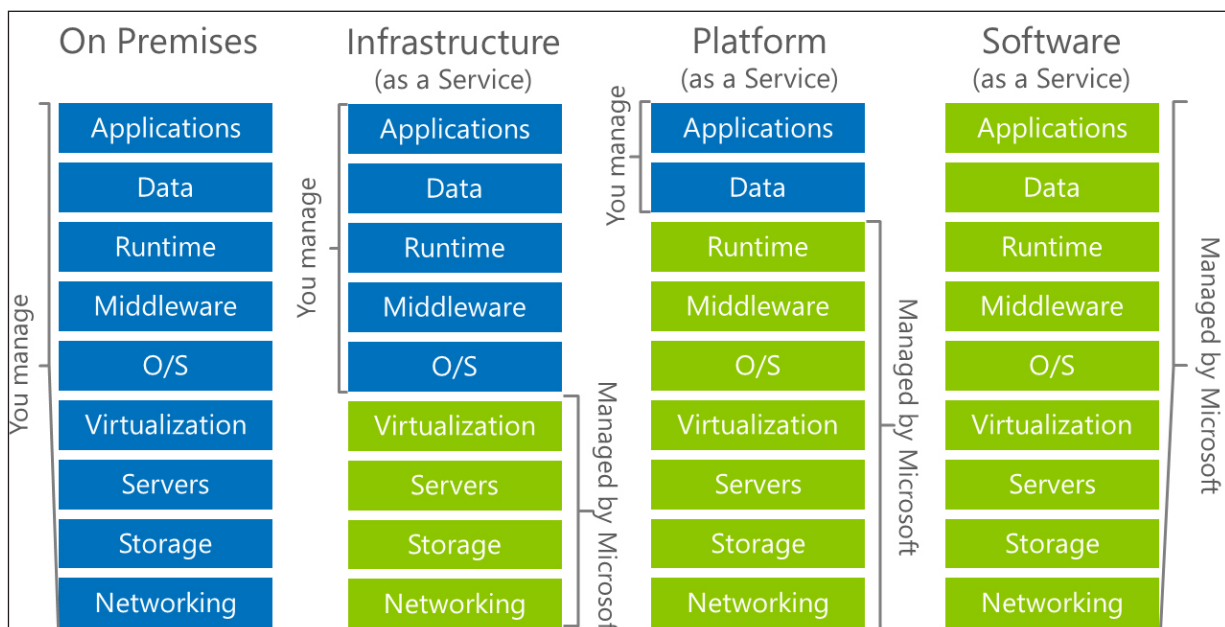
The following diagram shows the three different types of Cloud computing paradigms, according to Microsoft. The blue-shaded boxes indicate on-premise computing and the green boxes indicate Cloud computing. In the right-hand bar, labelled "Software as a Service (SaaS)", all the services are on the Cloud. For an airport using SaaS solutions, you would not need any local servers — just workstations or laptops on a local network with a connection to the internet. In this case, you would typically not need substantial, full-time IT staff to

manage the software, and could out-source any IT support that might be needed to support your local network and computers.

In order to decide whether a shift to Cloud services is economical and makes sense, you would need to look at the cost-benefits of Cloud versus on-premise over the next five years, taking into account the cost of your on-premise IT environment, including hardware, software, support contracts and IT labor costs.

Among the many benefits (in addition to cost) of moving your IT environment onto the Cloud:

- Built-in backup services

- Quick-response disaster recovery

- Geo-replication, which enables you to configure secondary databases which are available in the case of a data center outage or the inability to connect to the primary database. This allows you to achieve real business continuity.

On Premises	Infrastructure (as a Service)	Platform (as a Service)	Software (as a Service)
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

On Premises: You manage (all)
Infrastructure (as a Service): You manage (Applications, Data, Runtime, Middleware, O/S); Managed by Microsoft (Virtualization, Servers, Storage, Networking)
Platform (as a Service): You manage (Applications, Data); Managed by Microsoft (Runtime, Middleware, O/S, Virtualization, Servers, Storage, Networking)
Software (as a Service): Managed by Microsoft (all)

■ Database tuning

■ Automatic sizing of the environment to meet your immediate needs, and scaling up thereafter.

To be realistic, the decision for Cloud versus on-premise does not have to be exclusively one way or the other — it can be a mix of both. For example, you could keep some of your airport operational software on premise and use the Cloud for your accounting software. Other considerations also need to be taken into account, for example, the reliability of internet service. In some countries this could be a deciding factor to keep your applications on-premises; in the U.S. and Canada this should not represent a high-risk factor.

Conclusion

Step 1: Implement a new multi-dimensional accounting system with an improved chart of accounts and dimensions designed for your airport operations.

Step 2: Integrate your new accounting system with other systems or data sources, to reduce re-keying of data.

Step 3: Start capturing key statistical data that can be combined with financial data to form Key Performance Metrics to provide critical information about the operation of your airport.

Step 4: Implement a new data visualization product like PowerBI to produce clear, practical, attractive, graphical representations of the key performance metrics.

Step 5: Take advantage of new Cloud technology where it will improve the cost-effectiveness of your IT environment and the security of your data.

About the Author

Paul Fernandez is a qualified accountant with accounting designations from the United Kingdom and Canada. He has over 20 years of accounting and finance experience working in many companies, both large and small, private and public. During his career he has been a Cost Accountant, Controller, VP Finance, Director of Finance, Treasurer, and CFO. He formed his own consulting firm in 2001 and implements accounting software for companies across North America. His company is now part of the Velosio. Paul can be contacted at: PFernandez@Velosio.com