Planning a Migration Strategy

Advanteks consultants have participated in migration (or initial implementation) of many airline systems over the past 17 years. They include Maintenance Systems, Flight Planning Systems, Crew Planning and Crew Pairing systems, and many others. Also included in that experience is 3 major Reservation systems migrations – the first one, moving Canadian Airlines International and Canadian Regional Airlines from Gemini to Sabre was considered at the time (1994-1995) to be the largest migration of PNR's in aviation history. The part we played in all these projects gave us some insight into some of the issues that surround migration to new systems – especially in the area of large, mission critical systems.

This document may not answer all these questions but at the very least it raises them and identifies some potential issues that may lead you in one direction or another while considering them.

Deciding to migrate

So your current contract for your RES system is expiring. What are some of the things you need to consider before even deciding that you need to move to a new system?

- Does your current system have all the functionality you need? Are there other issues? Support? Enhancements? Cost? Maybe this is a opportunity to give your current vendor a chance to come to the plate with you and meet your expectations?
- If you do decide to migrate, remember that there are many systems out there. Although we always hear about the big ones (Sabre, Shares, Worldspan etc) there are many others that may in fact fit your needs. Attending conferences and talking to the industry consultants who know about products on the market is a good way to make sure you know what's out there.
- Here are some questions to ask that can fuel your migration discussions:

    1. Make a 1st pass at mapping out your current business process, how well the current system works
    2. Do a Gap Analysis of where you are now and where you want to be. Include functional review (features), non-functional review (architecture, support etc) and try to estimate with your business units what your needs will be 5-years out.
    3. See if there is a fit with your current supplier – begin negotiations to see if they are willing to work with you to make it worth your while to re-new. Use your innovation and your business as a tool to leverage a better deal – cost, support, enhancements etc).
    4. If you determine you want to investigate other options, keep your current supplier informed.
    5. Go back to Step 1 above and put more details into your requirements
    6. See what's on the market
    7. Do an RFI – get more info from all the vendors. You may find that your current vendor is actually still a best fit.

Functionality

- Get input from your users (Res Agents, Check-in Agents etc). They may not know what you need down the road but they know what works right now and what doesn't.
- Map out current functionality – add in the "must have" (don't just make your new system a mirror image of the old one) but don't get bogged down in adding tons of new functionality. Savre "good to have" stuff for a later release.

- Keep the check-in process as simple as possible. You'll need an agent sign-in with tons of complex functionality for your Customer Service desk – to handle special needs passengers – but 80% of your check-In can be done with 20% of the full functionality. (Locator number and seat preference and you're done.

Interfaces

- Identify all your current interfaces and document them. Make sure you understand them all completely – what triggers them (a business process?), what data format (XML, TXT), what transfer protocol (FTP, File Copy, MSMQ/MQ/JMS)?
- Build a Service Oriented Architecture – don't build Point-to-Point interfaces. When you have to change things later you'll be happy you did.
- Check out Advanteks ideas on how the Service Oriented Architecture can work for you outlined in a series of documents on their web site titled "Enterprise Data Bus" at http://www.advanteks-inc.com/Downloads/Downloads.htm
- Do you use Kiosk or Web Checkin? If so it's probably a separate module – possibly even written and supported by a 3rd party. Needs to be migrated.

Data Migration

- Data Mapping – you need to map every field in your existing system over to the new data structures.
- Historical data – find out how much you need to keep. Is the hardware/software that your historical data is on going to continue to be supported? If so, maybe you can just leave your historical data where it is and access it from there. Migrating your historical data (especially if you've been in business many years) may be a long and hard job.

Some architectural thoughts

- Using a Booking Engine that maintains the Open System architecture is very important if you plan on doing some of your own software development. Many "engine" vendors are reluctant to let clients write software that accesses that data directly. This is a good thing. What you really want to do is access the back-end via web services or API's (Application Programming Interfaces) which allow you to build secure interlocking modules at your own speed.
- Design the architecture early – your Res system vendor can help with some "Best Practices" but in most cases will leave the design to you. Leave room to re-engineer it – your requirements might change as you go down the road to implementation.

Cut-Over

- Have some good open discussion amongst yourselves and with your RES system supplier about migration methods. The two main ones each have their points and the real answer may be some-where in the middle of the 2 options.

1. Knife-edge migration – this solution allows you to spend 100% of your time preparing for an over-night cutover.

   PROS
   o It's easier to prepare for 1 night of complete cutover then to prepare for 5 or 6 nights of partial migration.
   o It's easier to fallback if you're reversing a knife-edge cutover then it is to reverse a phased cutover.

   CONS
   o Everything has to work by cutover night. Although you may be able to do a partial fall-back all systems must be "GO" on that night.

2. Phased migration – this solution allows you to migrate parts of the business (or parts of the product)

   PROS
   o Can your business be split to allow you to manage separate migration paths (Domestic/International - Scheduled/Charters etc)?
   o Likewise, can the product be split (Res/Departure Control etc)
   o You'll have to keep your old system running until the very end. This may be the ultimate it risk mitigation as you can always fall back to it.

   CONS
   o Spreading your migration out to multiple cutovers will take a lot of planning and resource management
   o Keeping 2 systems running at the same time will prove difficult as it will require twice the time from your IT group to support both of them.
   o If you have many interfaces, it will be a challenge to feed both systems. As well, in the other direction, if your RES system feeds your Dispatch/Flight Following they need to be in synch and parallel.
   o As well as the input (Interfaces) the reporting from dual systems may be difficult. Departments like Maintenance and Accounting typically want to see data for a whole days flying – if its on 2 systems that may be difficult to accomplish.

Your choice of a vendor and/or product may influence your choice of cutover methodology. While it may be safe to say that knife-edge migration is a valid choice when migrating to a know system that already has customers. However, if you're a launch customer (the dreaded Version 1.0) you may find that a phased migration gives you a much higher comfort level that you've managed the risk as well as you can.

- Training – everyone needs to be up-to-speed on the new system at cutover time. But don't train them too early – if they have to go back to their old system for 3 months after they get training on the new system – they'll probably forget all they learned.
- Support – have ultra-trained support people at every airport on cut-over night. The rest of your staff will feel better if there's an "expert" there.
- Hire some consultants who have done this before. It'll be money well spent if you get the right ones.

Overall strategy

- Try to get commitment from Management to give you Business People – and you need them from the project start to project end. This will be difficult because you want their best people and chances are they need their best people.
- Although teams need to work a lot on their own make sure they cross-pollinate at regular intervals to share progress and issues. They can help each other out.
- For the first few iterations of the "learning" process you'll find that your requirements from your employees will cycle from Technical to Business. You'll gather data from the Business side and then need technical people to document and design it.

Strategy – Innovation - Integration

Advanteks, Inc. **is a Canadian consulting firm specializing in aviation technology and the strategy involved in implementing emerging technology solutions.**

Advanteks consultants have over 20 years experience working with airlines and airports at solving technology problems and using innovation to implement a wide range of solutions.

Walt Akerley – Technology/Integration Specialist

Phone: (877) – 730-6449

Email: walt@advanteks-inc.com
Web: www.advanteks-inc.com