



LATEST TECHNOLOGIES

Strengthening the Air Cargo Business Structure

Air cargo, carried aboard passenger aircraft and dedicated freighters, is an integral part of many businesses as well as the civil aviation structure itself. Smooth and secure movement of air cargo is not only essential for the growth of the aviation industry but also for the development of global economies. In this time of continuing political unrest and threat of terrorism, security in air freight business is as important as speedy, effective and profitable operations. The air freight industry is continuously developing technologies to counter security threats, illegal shipments, theft, loss, mishandling etc, ranging from air cargo screening technologies, packaging and storage technologies and ground handling technologies to information technologies, aimed at strengthening the air cargo business structure.

- Nisha Young

Air cargo technological solutions are all across the globe and range from the most basic technological approach to some of the most sophisticated solutions that have been developed. What is different today, however, is that the range of the sophistication of these solutions does not run from the highly developed nations to the third world countries, but ranges from the most simplistic to the most sophisticated within most countries.

There has been a growing tendency within airlines to make the cargo business profitable and a growth engine in its own right and not as an add-on to the passenger business. In some cases, cargo has been separated as a stand-alone business unit. In addition, there has been recognition that cargo revenue is a good hedge for passenger

traffic being less susceptible to external negative events such as SARS, 9/11 and Avian Flu.

This has led to a new attitude towards the cargo business and, as a result, investments are being made to make the business more competitive and profitable, including the upgrading of air cargo systems and technologies.

Scope of Technology in Air Cargo

Airlines are looking for solutions that will actually reduce costs, but more than that they are looking for solutions that will enable the business to operate more effectively. This requires solutions that provide new ways of conducting business with airline customers and partners, and requires full integration of business processes throughout the logistic chain.

"In my opinion, there are tremendous opportunities to meet and exceed the expectations of the supply chain participants. One way to exceed those expectations is by always keeping in mind the needs and requirements of the end user. Ground handling of air cargo shipments is too long, and handling needs to be improved to reduce pilferage and waste," says Luciano Morra, President and CEO, PeriShip, Connecticut, United States.

Perishables are the largest single air cargo commodity, and because of its very unique nature, it requires very special handling throughout the supply chain cycle. Storage and packaging technologies must ensure that the food we eat is safe and, most of all, that handling procedures reflect a commitment to comply with regulatory procedures.

Monitoring temperatures for each product tendered – fresh versus frozen, fish versus meats, cheeses, vegetables, processed vegetables etc – at each handover point requires trained individuals with an understanding of the products characteristics and an infrastructure that supports specialised handling. To sum it up, there is a lot of room to improve air cargo storage handling and packaging technologies," indicates Luciano.

Though perishable cargo is a specialist market, improved air cargo technologies, from screening and ground handling equipments to packaging, storage and Information Technology, is essential to ensure that goods reach the market in pristine conditions.

The IT Edge

At the heart of many large cargo carriers' operations lie IT systems whose original implementation can be traced back to over 30 years. Written on mainframe platforms, these systems first provided the basic functionality for core processes such as



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booking, capacity control, flight schedules and revenue accounting. Larger carriers tended to develop and maintain their own solutions, while others preferred to use hosted solutions from third party providers.

"At first, there were no credible alternatives to these systems, and so, as the air cargo industry grew and evolved, they were either enhanced or surrounded by additional systems to meet new business needs. Typically, such needs included airmail, EDI (Electronic Data Interchange) messaging, customs interfaces, Internet connectivity, revenue management, track and trace and ULD (Unit Load Device) control," conveys Vipul Jain, Managing Director & CEO, Kale Consultants, Mumbai, India.

Internet connectivity is driving everything, from the hosted Internet cargo booking, tracking, and accounting solutions to on-ramp controls and connectivity to tracking containers using GPS (Global Positioning System). New systems by pioneering IT service providers are embracing the dynamics of the industry and providing better technology, superior functionality and augmented delivery options.

These support e-business initiatives, provide tools for the agent to use, offer new and innovative communication methods, support both traditional air waybills and airmail, have sophisticated MIS (Management Information System) systems, and provide easy ways to manage and optimise the space and yield on the aircraft.

Air Cargo Technologies in Emerging Economies

"There is practically no difference between standards of air cargo solutions being used in the developed and the emerging markets. They all follow the same operational process; the variations maybe in terms of regulatory compliance like customs or regional peculiarities, which may put certain demands on the airlines' business processes," declares Vipul.

Earlier, airlines in developed nations, like the US, Germany etc, had more focus on IT, while airlines in emerging markets like the Middle East, Africa, Asia and South America were still either manual or using very basic systems. However, this is fast changing. Airlines in the Middle East and Asia are expanding quickly by

taking the aid of the latest technology and incorporating industry best practices in their business processes.



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"These issues differ from airline to airline. For example, one airline may operate over international routes using wide-bodied aircraft. Such an airline may see management of ULDs as a key issue, whereas another airline operating predominantly on regional routes would tend to use narrow-bodied aircraft and as such ULD management would not be an issue. Similarly, while some airlines put emphasis on products, others, in a desire to simplify the operation, may have elected to move away from a multi-product approach. And finally, selling models are different around the world," Vipul explains.

W Garner McNett Jr, President, Cargo Data Management Corp, Texas, United States, feels there is a difference in the IT solutions used in different regions. "To a degree, but again, the Flat Earth makes most of these solutions available to all regions and then it becomes an economic issue and then motivation and creativity."

The major differences in the technological solutions are not so much because of the difference in regions but due to the variations in airlines' practices and focus.



Each cargo carrier would have its own complex set of problems and opportunities and would want systems and equipment that helps address and provide mitigating solutions to its own particular strategic, operational and technical issues.

Cost Effectiveness

In the last few years there has been an advent of new generation air cargo support systems and equipment. These are flexible and relevant for the present scenario. They simplify the business by replacing the current jungle of technology.

Also, present IT solutions are becoming more acceptable to airlines, which in the past would have required in-house customised systems. All this leads to huge cost savings for cargo carriers in terms of reduction in total cost of operations.

"Many storage and packaging technologies are cost-effective. However, by investing more on the front end of the supply chain you will create an environment where all supply chain stakeholders could benefit. All starts by clearly understanding the segment in which you operate, building relations with the right companies and

really focusing your efforts on providing outstanding service to your customers. When you do that everything will fall into place," states Luciano.

Gamer believes that cost effectiveness is related. "Air cargo IT solutions are cost-effective when they are driven by economics and a cost benefit approach. When they are driven by politics and extreme security concerns then they tend to become less so."

The Support System – Airport

Airports are a critical part of the cargo supply chain as air cargo spends about 85 per cent time on ground and only about 15 per cent in air. This makes it absolutely essential for airports to have state-of-the-art cargo support solutions and airports today have realised the need for this transition.

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strategy or orchestration of re-engineered processes. In addition, the lack of participation and collaboration of cargo value chain participants and lack of integration of the different systems being used at the airport make the overall end-to-end airport systems inefficient and ineffective," comments Vipul.

Gamer elaborates, "In most airports this is usually a reflection of the IT commitment of each carrier rather than the commitment of the airport. Again, this varies from carrier to carrier until you come to a mega cargo airport like Dubai, which is well ahead of the competition. However, to be fair, the airports that have large cargo volumes have real cargo orientation and they will plan and build to enhance that position. Big cargo airports, which are a reflection of the cargo capacity, presence, commitment of their larger carriers will plan and invest to protect this part of their core business. Dubai, Memphis, Narita, HKG are great illustrations."

In fact, it all depends on how far an airport authority or airport operator wants to go – whether the airport is investing in storage facilities that are equipped with different temperature zones or are buying special equipment to properly handle cargo depends also on the role the individual airport wants to play in the region.

Forward Motion

The last decade has seen the air cargo support market evolve and grow. The march of the integrators, increased customer demands and competition from other means of transport has led cargo carriers to re-look at their businesses and their systems and procedures.

"In IT, several cargo carriers built add-on modules around their legacy core, while others freshened up their core system with a new front end. In addition, there were many industry-wide initiatives to streamline the business through improved communication and agreement on common messaging standards," informs Vipul.

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and benefits can really be. Tracking containers is still in its infancy within the industry but will be a great boon to the airlines and a real cost saving once all the players buy into the solution. The technology for the paperless air waybill is available and we have been doing this for the past five years. The holdup is really getting all the international customs entities to agree on how this can be handled without compromising their own internal requirements," points Garner.

Though much needs to be done, the last few years have seen the emergence of new-generation system providers, which support today's dynamic business needs in the most cost-effective and efficient way.

The increasing demands by airline customers and competition will prompt airlines to move towards these systems and adopt strategic decision making tools like CRM (Customer Relationship Management) solutions, Revenue Management etc. This trend will continue and the recent initiative by older solution providers to rebuild their systems on newer technology with augmented features is a sign of the things to come.

The Upshot

The ever changing business scenario and security needs will ensure that the current

breed of technological solutions are constantly evolving and imbibing the various industry changes. There have been a number of IT initiatives in the air freight industry in the past few years, such as Cargo 2000, e-freight and security initiatives both at the industry and state level like IATA's safety audits, US government's C-TPAT etc.

The whole intent of these developments is to improve the safety levels and the quality of air cargo for service providers and customers. Though change has been slow and sometimes painful, the industry players are now more willing and open to such initiatives and are looking at newer ways of doing business.

"In my opinion, there is still a long way to go but there are great companies out there, really working towards finding solutions that will fulfil the need for security, speed and reliability. The future of technological development for air cargo is stringent and mainly driven by security requirements. With emphasis on security, intelligent and tamper free devices will be introduced on a much faster pace into the market," notes Luciano.

The future of technology in air cargo is only going to get better. As the big carriers continuously upgrade their systems they will force the smaller carriers to catch up.



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This will encourage airports to upgrade their technological capabilities.

The perfect example is how the growing air cargo business in India is putting pressure on the infrastructure and the legacy carriers, and how the new Indian carriers and new all-cargo carriers flying into India are, in turn, setting the technical bar higher every day.

Even though there are many differences in airline business practices, there are still a number of generic characteristics that a carrier wants. Adopting newer business practices and technology requires innovative and resilient business processes.

Therefore, it is imperative that the industry collectively strives to improve and enhance its processes to increase productivity and efficiency. The net result are solutions that improve the service to customers, simplifies what has become an overcomplicated operation, and delivers maximum revenue and yield to the airline. ■