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Chapter XI

Success and Failure in Building Electronic Infrastructures in the Air Cargo Industry: A Comparison of The Netherlands and Hong Kong SAR

Ellen Christiaanse
University of Amsterdam, The Netherlands

Jan Damsgaard
Aalborg University, Denmark

EXECUTIVE SUMMARY

Reasons behind the failure and success of large-scale information systems projects continue to puzzle everyone involved in the design and implementation of IT. In particular in the airline industry very successful (passenger reservation) systems have been built which have totally changed the competitive arena of the industry. On the cargo side, however, attempts to implement large-scale community systems have largely failed across the globe. Air cargo parties are becoming increasingly aware of the importance of IT and they understand the value that IOS could provide for the total value chain performance. However, whereas in other sectors IOSs have been very successful, there are only fragmented examples of successful global systems in the air

cargo community, and the penetration of IOS in the air cargo industry is by no means pervasive. This case describes the genesis and evolution of two IOSs in the air cargo community and identifies plausible explanations that lead one to be a success and one to be a failure. The two examples are drawn from Europe and from Hong Kong SAR. The case clearly demonstrates that it was the complex, institutional and technical choices made by the initiators of the system in terms of their competitive implications that were the main causes for the systems' fate. The case thus concludes that it was the institutional factors involved in the relationships of the stakeholders that led to the opposite manifestations of the two initiatives, and that such factors should be taken into account when designing and implementing large-scale information systems.

BACKGROUND

Time is the single most important factor in an industry where the distribution of goods moves close to the speed of sound. In the mid-1990s the average shipment time for airfreight was six days. Ninety percent was spent on the ground "waiting" for transport. The need to coordinate and optimize all the ground-based activities in the air cargo community was clear.

Based on weight, air cargo only accounted for 1% of total general cargo transport. However, based on the market value of goods, the share amounted to approximately 25%. Of the total US$200 billion in world-scheduled airline operating revenues, the air cargo industry represented a relatively small share at around US$30 billion.

Just as in other sectors, there was a growing interest in IT in the air cargo community. While most in-house functions had become IT supported and re-engineered in the 1980s and in the early 1990s, the air cargo community was looking beyond organizational boundaries to identify further improvements. Air cargo parties were becoming increasingly aware of the importance of inter-organizational information systems (IOS) and, increasingly, they understood the value that IOS could provide for the total value chain performance.

In the 1990s, many industries had undergone dramatic changes as a result of IT both within organizations and across. However, whereas in other sectors IOS had scored big successes, there were no real signs of deep penetration of IOS in the air cargo community. Although a large number of attempts had been made to automate air cargo processes across stakeholders, there was still no dominant or widely accepted design of an IOS for the air cargo industry that also would satisfy and align the varying demands of the parties involved in air cargo processes.

SETTING THE STAGE

As early as 1975, the International Air Transport Association (IATA[1]) concluded that for 78% of its total travel time, air cargo was at the airport "waiting" for transport and there were no clear signs that there had been much improvement since. According to IATA, this inefficiency was caused mainly by the lack of communication and integration of administrative processes on ground. It was expected that technological innovation such as the development pre-defined open document standards would reduce the waiting time and speed up the time-consuming and error-prone processes such as manual