

AIRBUS'S SUPPLIER PORTAL: CHANGING A BUSINESS PARADIGM

Dominic Baumann, Erik van Raaij and Jan van den Ende wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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In early 2009, Guus Dekkers, chief information officer at Airbus S.A.S., was sitting in his office in Toulouse, France, preparing for one of his most important meetings since he had joined the company only a few months before. He was to meet with Airbus's top management to reach a mutual agreement regarding the further development or replacement of Airbus's supplier portal. Dekkers recalled:

It was shortly after I came on board here. We had a solution which we used to connect to our suppliers, which was called eSupplyChain. And this was based on very outdated technology It was clear that we had to start doing something to make this sustainable in the long term and to adjust to the evolving industrial operating model.

In 2003, Airbus had successfully implemented eSupplyChain, at that time an innovative IT tool that facilitated communication and collaboration between Airbus and its suppliers around the world. Airbus's new strategy called for a decision regarding the further development or replacement of this system over the coming years. Dekkers was torn between possible solutions: maintaining an in-house solution by further developing and updating eSupplyChain — a system everyone at Airbus's IT department was very proud of — or implementing a software as a service (SaaS) solution similar to what he was familiar with from his experience in the automotive industry prior to joining Airbus.

COMPANY BACKGROUND¹

Airbus, a European Aeronautic Defence and Space (EADS) company, was a leading aircraft manufacturer offering one of the most modern and efficient passenger aircraft families in the 100-plus-seat market. Its military division, Airbus Military, was a global leader in military transport aircraft, tanker aircraft and surveillance airlifters with payloads ranging from three to 45 tonnes.

Over the last 40 years, customer focus, commercial know-how, technological leadership and manufacturing efficiency had brought Airbus to the forefront of the industry. In 2008, Airbus consistently captured about half of all commercial airliner orders.

¹ Adapted or taken directly from Airbus corporate documents.

Airbus's comprehensive product line comprised highly successful families of aircraft that had from 107 to 525 seats: the single-aisle A320 family, including A320neo, which became the bestselling aircraft in aviation history; the wide-body, long-range A330 family, including the freighter and Multi Role Tanker Transport (MRTT); the all-new next-generation A350 XWB family; and the double-deck A380. Across all its aircraft families, Airbus's approach had ensured that aircraft shared the highest commonality in airframes, on-board systems, cockpits and handling characteristics. This had significantly reduced operating costs for airlines.

The military division of Airbus designed, developed and produced a comprehensive range of highly versatile products for military and civic/humanitarian missions. Airbus Military was responsible for the A400M program, the MRTT and further military derivatives based on Airbus civil aircraft.

By July 2008, Airbus had sold over 8,900 aircraft to more than 285 customers, which included airlines (operators), aircraft leasing companies and private customers, and had delivered around 5,200 aircraft from its service inception in 1974 to the end of 2012. Dedicated to helping airlines enhance the profitability of their fleets, Airbus also delivered a wide range of customer services in all areas of support, tailored to the needs of individual operators all over the world.

Headquartered in Toulouse, France, Airbus was a truly global enterprise of around 56,000 employees, with fully owned subsidiaries in the United States, China, Japan and the Middle East, and spare parts centres in Hamburg, Frankfurt, Washington, D.C., Beijing and Singapore. Airbus Military was headquartered in Madrid, Spain. Airbus also had training centres in Toulouse, Miami, Hamburg and Beijing, as well as a training centre in Seville for Airbus Military, and had more than 150 field-service offices around the world. Airbus also relied on industrial co-operation and partnerships with major companies all over the world and a network of 1,500 direct suppliers in 30 countries. An overview of Airbus's procurement organization is shown in Exhibit 1.

Airbus drew together the skills and expertise of 16 sites in France, Germany, Spain and the United Kingdom. Each site produced a complete section of the aircraft, which was then transported to the Airbus final assembly lines in Toulouse or Hamburg. Airbus' industrial network had been expanded to include a regional design office in North America, a joint venture engineering centre in Russia and further engineering centre in China.

Sensitive to its position as an industry leader, Airbus strove to be a truly eco-efficient enterprise. To that end, Airbus was the first aeronautics company in the world to have earned the ISO 14001 environmental certification for all production sites and products for the entire life cycle.

STRATEGIC FOCUS ON THE ROLE OF ARCHITECT AND INTEGRATOR

In 2008, Airbus looked back at a very successful decade. The company had achieved an equal footing with Boeing and reported the highest ordering backlog ever in 2008. Moreover, 2008 was another record-breaking year in terms of deliveries (483 aircraft) (see Exhibit 2).

At the same time, Airbus identified four major challenges to the company. First, the continued weakness of the dollar was affecting the company's financial results. Second, Airbus still had to recover from the financial impacts of the delays encountered during the industrialization phase of the A380. Both higher development costs and penalties for late deliveries had caused major challenges for the company. Third, the development of the A350 and a new short-range aircraft in the near future, together with the need to shift from metallic to composite technologies, had created a demand for a high level of investment over

the upcoming years. Finally, Boeing's recent reorganization had enhanced its competitiveness versus Airbus. In 2005 and 2006, Boeing had radically adjusted its company portfolio by selling various parts of the company and making acquisitions. A general tendency to focus on core activities and therefore sharpen the profile of the company could be identified in the Boeing strategy.²

In 2007 Airbus's top management came to the conclusion that it needed to adjust its current business model in order to successfully address those challenges, and thus it initiated the "Power8" program, which consisted of four main elements:

1. Airbus should focus on aircraft architecture and integration activities as its core activities.
2. The company should further develop a strong network of long-term partners.
3. Lighter, more cost-efficient processes should be implemented throughout the company. This included the elimination of redundancies and the harmonization of business processes.
4. In order to succeed, Airbus should become a more integrated company, in particular with transnational, product-oriented Centres of Excellence, the grouping of similar deliverables, and a review of national responsibilities. This, for example, included harmonizing purchasing processes throughout the entire portfolio of Airbus locations and divisions.

In the context of supply management, the first two elements were particularly interesting, as they were to fundamentally change the way Airbus worked with its partners and suppliers. For example, to focus on core activities included carving out and selling entire manufacturing sites. Moreover, sharing risks with Tier 1 suppliers required integrating them further in the entire product development and lifecycle process (see Exhibit 3).

Exhibit 3 illustrates Airbus's decision to focus on the pre-assembly (major component assemblies) and final assembly (*Assembly*) of its products. The company completely relied on suppliers for building elementary parts for its aircraft and outsourced a large part of the sub-assembly to Tier 1 suppliers. This approach heavily increased the need for Airbus to have an efficient and reliable way of communicating and collaborating with its suppliers.

HISTORY OF SUPPLY MANAGEMENT AT AIRBUS

Until 2003, Airbus maintained individual relationships with each of its suppliers around the world. In many cases, different Airbus factories signed independent contracts with suppliers, leading to situations where multiple Airbus companies would have different contractual agreements with the same supplier. As a result, Airbus's relationships with its suppliers mainly used different communication models, including different part numbers for the same product used in different locations. Moreover, from an internal point of view, Airbus coded the same supplier differently, depending on the different factories and locations. Different communication models resulted in completely different working methods, including various transportation providers, as well as different organizational structures. Moreover, the multiple tiers of the supply chain were not clearly visible, as it was difficult or sometimes impossible to keep track of the different supplier relationships within Airbus's global network.

In 2003, Airbus introduced a new supply management tool, eSupplyChain, as part of its Sup@irworld program, which shifted the focus of Airbus's supply management from communication to collaboration. All factories and aircraft programs, as well as the complete supplier network for direct goods, were migrated to a new, coherent way of working, supported by the newly developed, unique tool called

² "History," Boeing, 2013, www.boeing.com/boeing/history/chronology/chron18.page, accessed January 20, 2013.

eSupplyChain (see Exhibit 4). eSupplyChain covered five phases of the procurement process of direct goods, as well as the elements Direct Shipment and Vendor-managed Inventory (see Exhibit 5).

2008: REASONS TO CHANGE

In 2008, it became obvious to Airbus's information and communications technology (ICT) and procurement directors that eSupplyChain needed either large investments or a replacement in the near future. The underlying reasons could be divided into internal and external factors. According to Deborah Carder, Air Supply project manager, "We had to do something to replace eSupplyChain. It had to be done. We couldn't stay with the current platform."

Internal Reasons to Change

- While eSupplyChain had been built on state-of-the-art technologies at the time of its creation, the platform had become obsolete. Interviews with various employees at Airbus showed a mutual understanding that eSupplyChain required either large investments or a replacement in the near future.
- An analysis performed by Airbus showed a need for extending the functionalities of the existing solution (e.g., integrating spare parts into the supply portal).
- The eSupplyChain platform was entirely developed, hosted and maintained by Airbus in-house, which was not in line with Airbus's ICT governance calling for a full-buy model (software as a service). "Airbus's core business is to produce aircraft, not software applications for managing suppliers," Guus Dekkers is well known for saying.
- Airbus had its roots in Germany, France, Spain and the United Kingdom, which was still reflected in the different business processes throughout the company. Standardization and harmonization were therefore a key part of Airbus's strategy at the time.

According to Matthias Naumann, EADS representative for the BoostAeroSpace initiative, "Big Tier 1 suppliers . . . were complaining a little bit. They mentioned the difficulty [due to how] the big OEMs [original equipment manufacturers] have their own supplier portals and are more or less forcing their Tier 1 suppliers to go through their supplier portal."

External Reasons to Change

- In 1908, the French Aerospace Industries Association, or GIFAS (Groupement des industries françaises aéronautiques et spatiales), was created. Members included the most powerful and important original equipment manufacturers (e.g., Airbus), as well as the most relevant suppliers of the industry. In 2008, suppliers were raising their voices regarding the many different systems and processes they had to deal with for each customer they served. This was a major problem for suppliers who provided very specific equipment in small quantities to different customers.
- With supply chains becoming more complex and vertically disintegrated, the part of the supply chain that customers like Airbus could control directly had become smaller. While Tier 1 suppliers could be well managed, problems at Tier 2 suppliers had started to increase and this called for a solution to strengthen the relationship between Tier 1 and Tier 2 suppliers.
- The Tier 2 supply base historically consisted of a large number of small companies, which were significantly undercapitalized and lacked both the capital and intellectual maturity to implement multiple sophisticated ICT environments (one for each customer).

INDUSTRY TREND

The commercial aircraft manufacturing supplier base was wide and multi-tiered. At the same time, the aerospace and defence industries had, due to the huge capital investment and high requirements of technological maturity, very high entry barriers compared with other industries. As a result, the number of qualified suppliers was limited, and it was common that different aircraft manufacturers purchased corresponding parts from the same suppliers. In order to design a competitive supply chain platform, it was therefore essential to get an overview of supply management trends in the aerospace and defence industries. The following solution was of particular interest in this context.

Exostar

Exostar was founded in 2000 to support the supply chain and security requirements of the aerospace and defence industries, primarily in North America. The main actors involved were BAE SYSTEMS, the Boeing Company, Lockheed Martin Corp., Raytheon Co. and Rolls-Royce. Airbus declined participation in the solution in favour of its Sup@irworld program. Exostar's workspace featured secure, multi-enterprise information sharing, collaboration and business process integration through the extended value chain. The company behind Exostar, E2open, developed and supported a portfolio of products and services deployed in a trusted workspace environment and connected to a secure network of over 70,000 companies worldwide. E2open's major aerospace and defence customers comprised upwards of 50 per cent of the industries' entire business volume.

E2open offered a wide range of products in the areas of supply management, demand management, multi-tier management, multi-enterprise integration, business intelligence and multi-enterprise foundation. In the area of supply management, E2open provided similar solutions as eSupplyChain, with three distinct differences:

1. Focus on collaboration: Rather than interpreting collaboration primarily as part of the purchase order process, Exostar included collaborative supply planning (similar to the forecast function in eSupplyChain) and collaborative inventory management (similar to vendor-managed inventory, or VMI) as collaborative parts in its product portfolio.
2. Multi-tier integration: Exostar supported and enhanced the management of multi-tier networks.
3. Logistics visibility: Rather than just notifying firms when goods were shipped, Exostar included transport service providers in order to provide real-time updates from carriers.

THE BOOSTAEROSPACE INITIATIVE AND THE AIRSUPPLY PROJECT

Based on the discussions in the GIFAS board and current trends in the industry, the idea to create a European hub, providing secure collaboration solutions and business process integration throughout the extended value chain of the aerospace and defence industries, was formed. In mid-2008, under the name BoostAeroSpace, a concept with three main strategic elements was developed:

1. Establish best practices for the industry: Certain cross-company processes and systems throughout the aerospace industry should be harmonized and standardized. This should strengthen all actors in the different supply chains and minimize transaction costs.

According to Naumann, "One of the strategic approaches was a desire of the big Tier 1 suppliers not to have individual customer-developed and customer-hosted supplier portals."

2. Enable multi-tier usage: The BoostAeroSpace hub should facilitate both interactions between original equipment manufacturers and Tier 1 suppliers, as well as connections between Tier 1 and Tier 2 suppliers (see Exhibit 6).

According to Naumann, "A strategic wish of Klaus Richter, EADS/Airbus's procurement executive vice-president, was to put something in place which can be cascaded. Cascaded means [that] an important Tier 1 supplier can play both roles — the supplier role of Airbus and the customer role of their suppliers."

3. Provide software as a service (SaaS) model: As the service was targeted to be mutualized among multiple players who were even partially competitors, it was clear from the beginning that the solution needed to be neutral, hosted on "neutral grounds," and have a payment model reflecting the actual usage of the service by each individual partner. It was therefore decided that all parts of the hub solution should be run in a cloud and that customers and suppliers should be charged through an SaaS model.

According to Naumann, "Also, it was a trend in the IT community to more and more use . . . software as a service and host the software in the cloud because it has been proven that it's a good way to materialize an application on one platform."

The BoostAeroSpace hub consisted of three solutions (see Exhibit 7) — AirDesign (led by Dassault Aviation), AirSupply (led by Airbus) and AirCollab (led by Thales). AirDesign focused on product lifecycle management (drawings, 3D models and configurations); AirSupply provided a solution for ordering and supply chain management (forecast and purchase orders, and deliveries); and AirCollab addressed challenges in direct collaborations (documents, projects and e-meetings). BoostAeroSpace served as a framework for these three projects.

Airbus was one of the founding partners of the BoostAeroSpace initiative. Based on its experience with its in-house solution, eSupplyChain, Airbus took charge of the AirSupply project. Following the strategic goals of BoostAeroSpace, AirSupply was designed in a way that would radically change the supplier structure in the European aerospace and defence industries (see Exhibits 8 and 9).

The functional scope of AirSupply was similar to the functionalities of eSupplyChain. It included orders (forecast and purchase orders) and shipments (dispatch advice and stock movements), as well as vendor-managed inventory (see Exhibit 10).

Forecast

Over the weekend, the enterprise resource-planning (ERP) system of the customer (e.g., Airbus) ran automatically and created medium- and long-term forecasts. On Monday, the ordering officers of the customer checked the forecasts' relevance, based on exception management (tolerances), and confirmed the final forecast data. On Tuesday, the approved forecast information was automatically published to suppliers, who then analyzed the forecasted quantities. Until Wednesday evening, suppliers committed to the forecasts or suggested different quantities or a different timing of deliveries. During Thursday and Friday, Airbus analyzed the suppliers' commitment in order to come to a final agreement between customers and suppliers. Over the weekend, the forecast process started again.

Purchase Order

Purchase orders from the customers were created in the customers' ERP systems and automatically entered into AirSupply. Suppliers then had the option to accept the purchase order without any changes or request to change the purchase order (e.g., different quantity or delivery date). If a supplier suggested a change to the purchase order, a notification to the customer was created, and the customer could then either accept the changes or make a new proposal. This process continued until a mutual agreement between customer and supplier had been achieved. AirSupply also offered the ability to request changes after a purchase order had been accepted. This triggered a similar process between the involved parties until a mutual agreement had been achieved.

Despatch Advice

As soon as a purchase order had been accepted by the supplier and the good was ready to be shipped, the supplier created a dispatch advice in AirSupply, which was automatically transferred to the ERP system of the customer. At the same time, the supplier printed the dispatch advice label, which he or she put on each box shipped to the customer.

Stock Movements

As soon as the customer received the goods from the supplier, they scanned the dispatch advice label. Then, if goods were accepted, the process in AirSupply was closed. Otherwise, if goods were not accepted, suppliers could be notified by the customer whether the goods would be sent back or disposed of.

Vendor-managed Inventory and Self-billing Process

AirSupply also supported a VMI process. In this case, the customer and the supplier agreed on a minimum and maximum stock level at the customer's premises. The customer's ERP system transferred demand and stock information to AirSupply, based on which the supplier planned deliveries based on the agreed limits. When a dispatch advice was entered into AirSupply by the supplier, goods showed up in the inventory as "in transit." Goods were then booked into the system by the customer upon delivery. However, the transfer of property from the supplier to the customer was only done on goods consumption, which then created a self-billing invoice or credit note in AirSupply.

SUPPLYON AS A POTENTIAL PARTNER

While Airbus could build on its experience with eSupplyChain when developing the concept and functionalities of AirSupply, the main challenges were considering the coordination of the different expectations among the members of BoostAeroSpace, as well as establishing a framework capable of handling multiple customers and suppliers on the same platform. While the representatives at BoostAeroSpace took charge of the first element, it was Dekkers's team at Airbus that evaluated the options for the implementation and, in this context, various potential service providers.

Airbus's procurement executive vice-president, Klaus Richter, as well as Dekkers, had previously worked in the automotive industry and therefore knew SupplyOn as the software service provider for the German

automotive sector. It followed a business model similar to Airbus's in terms of supply management. The decision to evaluate SupplyOn as a partner for this project was therefore taken without any hesitation.

SupplyOn was founded in 2000 by an alliance of international automotive supply companies (including Robert Bosch GmbH, Continental AG, the Schaeffler Group, ZF Friedrichshafen AG and Siemens VDO Automotive AG). The idea was based on the vision of automotive suppliers to increase efficiency when working together with different customers. The company was located near Munich, Germany.

The automotive industry was characterized by short innovation and product cycles, large quantities, very high quality standards and cooperation with a variety of partners worldwide. Therefore, processes supported by the SupplyOn platform, as of 2008, had originated from practical applications in this environment and covered the following two core areas:

- Supply Chain Management (SCM): This module was designed to support and facilitate seamless procure-to-pay processes and consumption-controlled concepts such as "vendor-managed inventory" or Kanban.
- Supplier Relationship Management (SRM): Adding to the functionalities of the SCM module, this tool was designed as a basis for active supplier relationship management.

Since its creation, SupplyOn had become an industry standard with 75 per cent of the world's top 100 automotive suppliers using its platform.

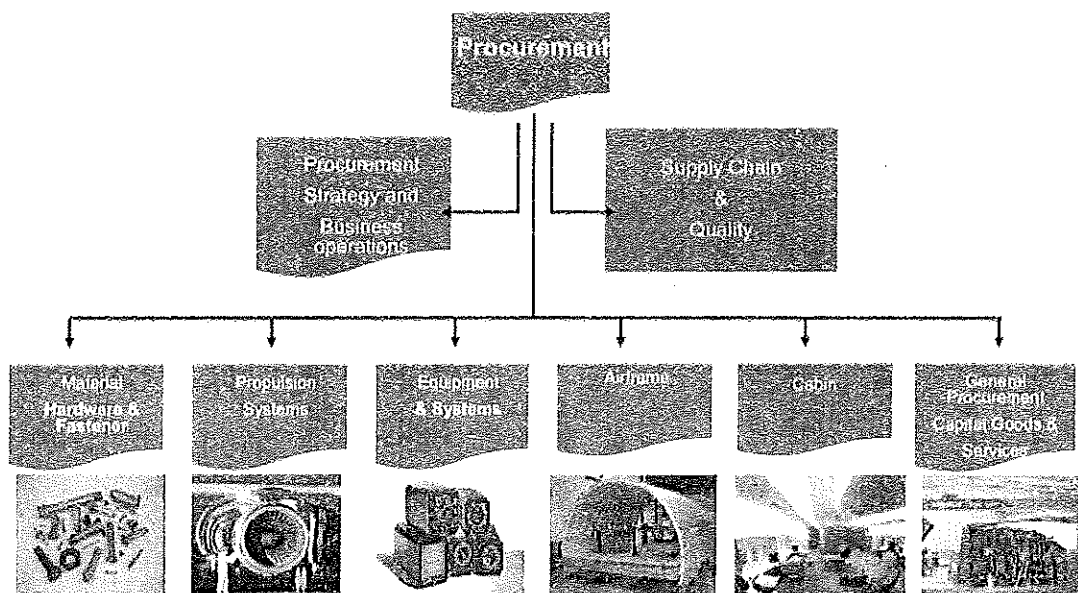
WAY FORWARD AND ANTICIPATED FUTURE CHALLENGES

Dekkers was convinced that SupplyOn was able to provide a framework capable of dealing with the target supplier structure in the aerospace and defence industries (various suppliers and customers connected to the same platform). The company had successfully demonstrated in the automotive industry that it was capable of building such a platform and, moreover, was backed by powerful and well-known shareholders. According to Dekkers, "I know SupplyOn from my automotive background, for a long time. So I said: 'Come on guys, in the end it's exactly the same functionality, why are we not copying this?'"

However, there was one major difference between the founding of SupplyOn eight years earlier and the potential creation of AirSupply. While the initiative to create SupplyOn had been taken by suppliers, the initiative to create an industry hub for the aerospace and defence industries had been taken by a group of customers. In order to convince the members of BoostAeroSpace and, more importantly, his colleagues at Airbus, Dekkers needed to present a clear business case for Airbus. Otherwise, it would be very difficult to justify the large investments for this project.

Moreover, Dekkers was looking ahead. With a potential start of service in less than three years, the platform had to be capable of dealing with the anticipated future challenges of Airbus and its partners. In this regard, the market forecasts as well as the already existing backlog of orders concerned Airbus's top management. With procurement volume determining 75 to 80 per cent of Airbus's costs, increasing production volumes also meant growing the entire supplier network. Dekkers wondered how AirSupply would further evolve after entering into service in order to support Airbus's future development.

EXHIBIT 1: AIRBUS PROCUREMENT ORGANIZATION



Source: "Procurement Situation in Airbus and Supply Chain Policy," Airbus presentation, November 2010.

EXHIBIT 2: OVERVIEW OF AIRBUS RESULTS, 2002-2008

Year	2002	2003	2004	2005	2006	2007	2008
Aircraft orders	300	284	370	1,111	824	1,458	900
Value of orders (USD billions)	24.3	24.3	34.4	95.9	75.1	181.1	112.2
Cumulative orders	4,632	4,886	5,252	6,307	7,097	8,438	9,215
Aircraft deliveries	303	305	320	378	434	463	483
Turnover (EUR billions)	19.5	19.3	20.2	22.2	26.0	25.2	N/A
Cumulative deliveries	3,127	3,432	3,752	4,130	4,564	5,017	5,500
Order backlog	1,505	1,454	1,500	2,177	2,533	3,421	3,715
Number of customers	191	186	204	225	271	287	306
Number of operators	188	210	232	249	250	286	310

Source: Airbus corporate website, December 2012.

EXHIBIT 3: DEVELOPMENT OF WORKING STRUCTURE BETWEEN AIRBUS AND ITS SUPPLIERS AND PARTNERS

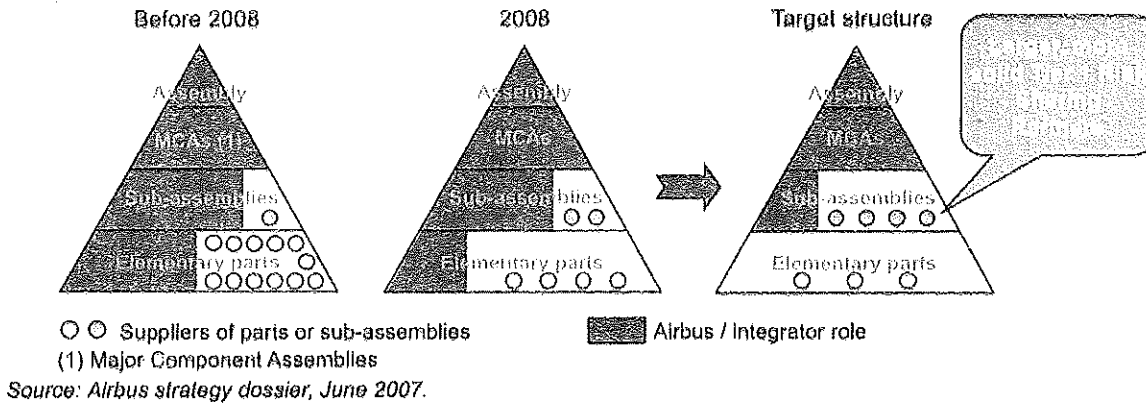
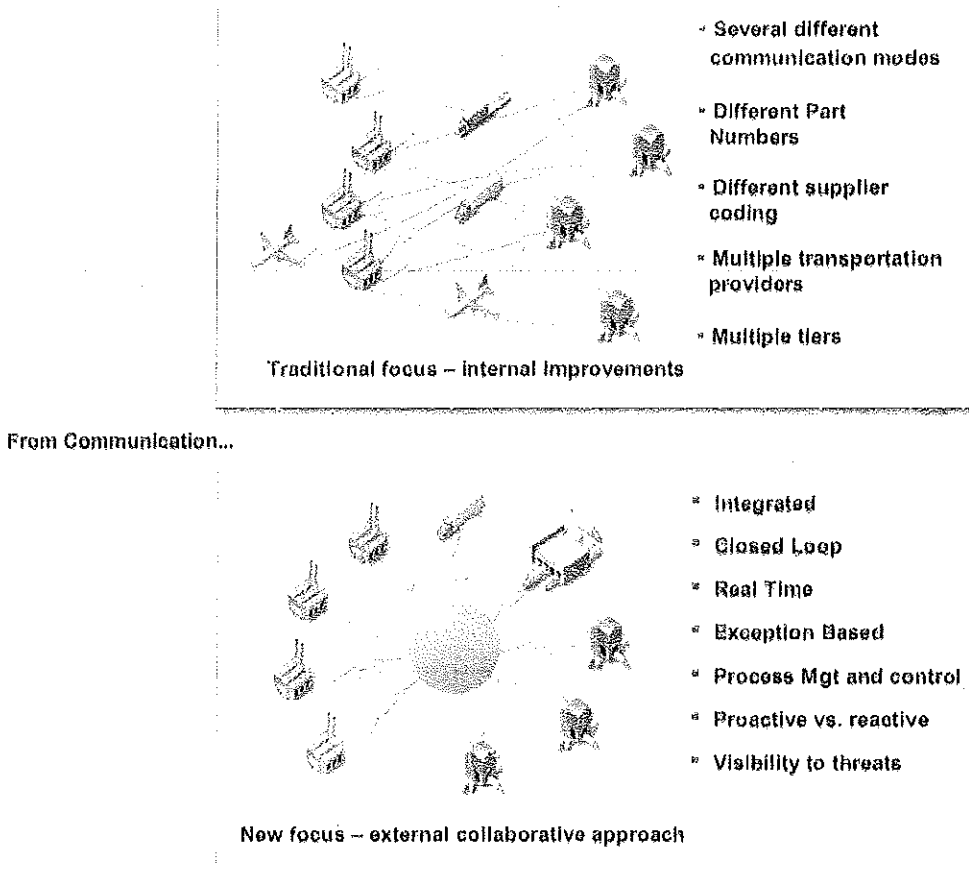
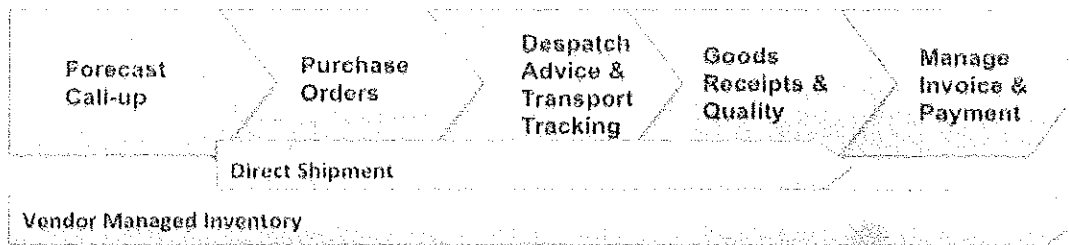


EXHIBIT 4: CHANGES IN SUPPLY CHAIN COLLABORATION AT AIRBUS IN 2003



Source: Internal Airbus presentation, 2008.

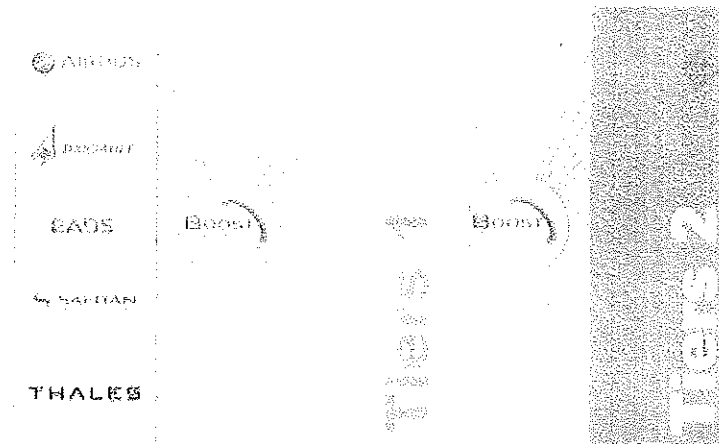
EXHIBIT 5: OVERVIEW OF THE FUNCTIONALITIES OF ESUPPLYCHAIN

*Explanation of eSupplyChain Collaboration (Direct Goods)*

1. Forecast Call-up: Suppliers received regular updates from Airbus on the expected demand in the upcoming weeks or months (depending on the product and specifications). This enabled suppliers to plan and, where necessary, adjust their production processes and pass on forecast information to Tier 2 suppliers.
2. Purchase Orders: The legally binding order was placed via eSupplyChain. Suppliers had the ability to react by accepting the order or proposing a different quantity or timing in case they were unable to meet Airbus's request.
3. Dispatch Advice & Transport Tracking: Suppliers printed a dispatch advice, which they put on the boxes/goods shipped to Airbus. This automatically triggered a notification at Airbus that the product had been shipped.
4. Goods Receipts & Quality: Airbus checked all goods received and confirmed the receipt via eSupplyChain. In case of quality issues, it was possible to reject goods and enter the respective information into the system.
5. Manage Invoice & Payment: Invoice and payment control could be done via eSupplyChain, as all information needed for invoicing was available in the system (type of good and quantity).
6. Direct Shipment: eSupplyChain supported shipments to a different entity/factory than the one that a good was ordered from.
7. Vendor-managed Inventory (VMI): A supplier and Airbus could agree that the supplier should manage inventory at Airbus's warehouses themselves after agreeing on a minimum and maximum stock level.

Source: Internal Airbus presentation, 2008.

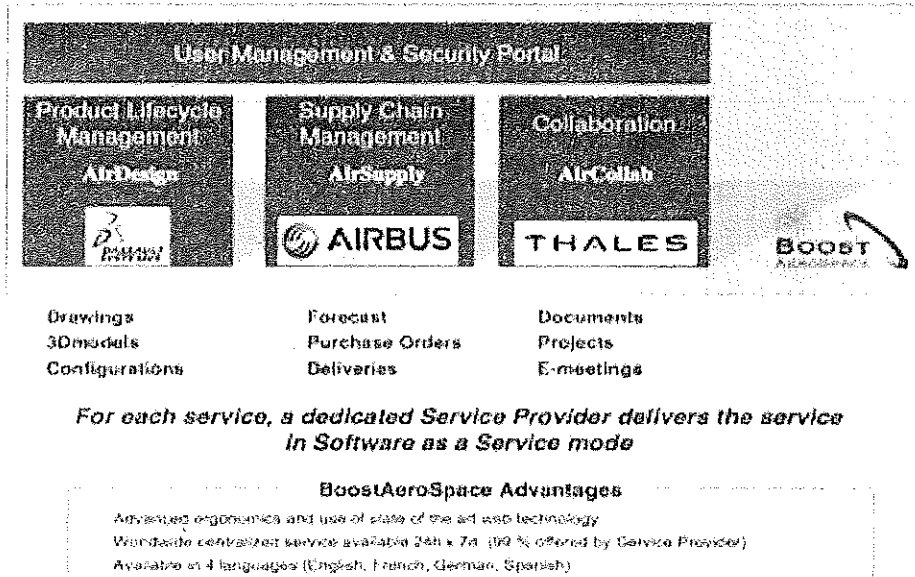
EXHIBIT 6: ROLE OF BOOSTAEROSPACE



Source: BoostAeroSpace website, 2012.

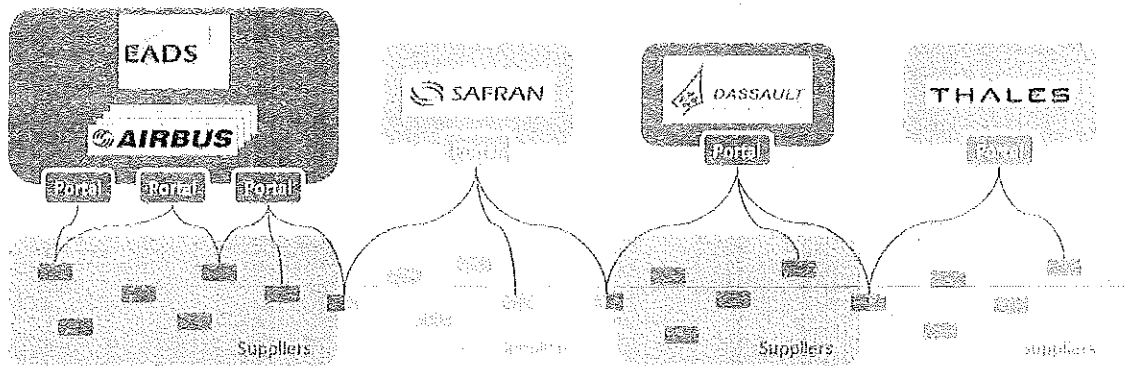
EXHIBIT 7: FUNCTIONALITIES OF BOOSTAEROSPACE

Overview of BoostAeroSpace Services



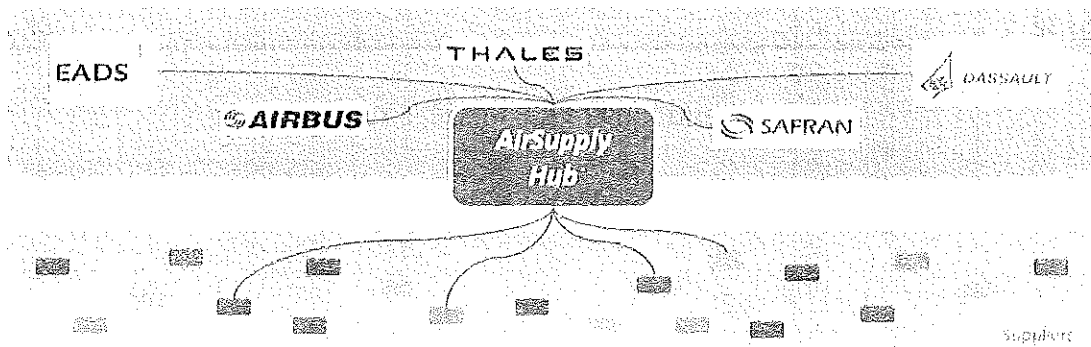
Source: Internal Airbus presentation, 2012.

EXHIBIT 8: SUPPLIER STRUCTURE IN 2008



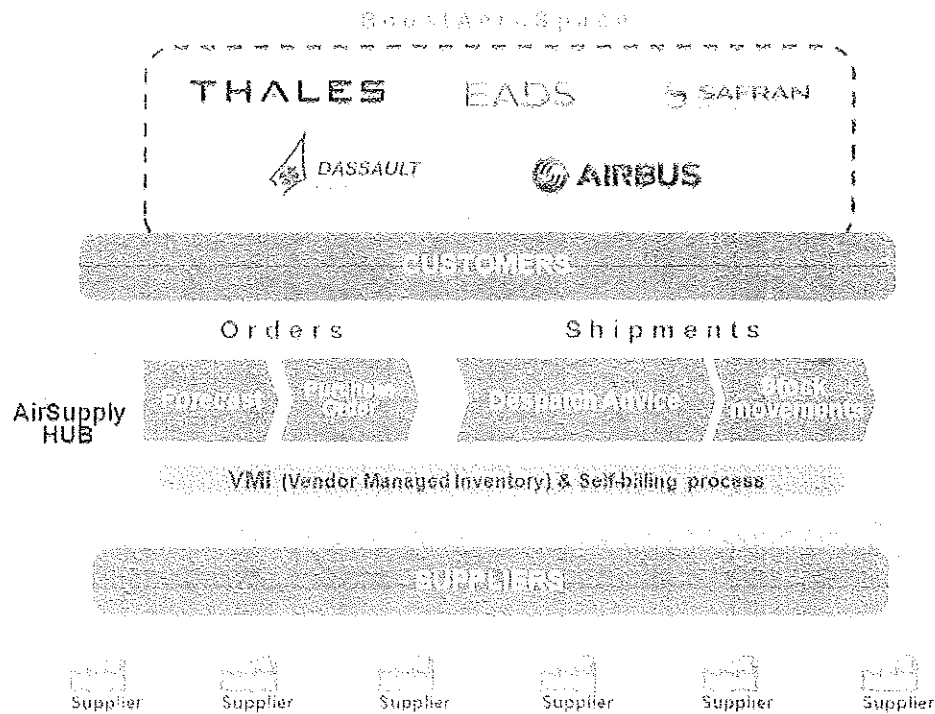
Source: AirSupply Deployment summit presentation, 2012.

EXHIBIT 9: TARGET SUPPLIER STRUCTURE



Source: AirSupply Deployment summit presentation, 2012.

EXHIBIT 10: FUNCTIONAL SCOPE OF AIRSUPPLY



Source: AirSupply Deployment summit presentation, 2012.