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TO PROVIDING COMPRESSED AIR AS A SERVICE

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Do Good. Do Better.

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**ATLAS COPCO:  
FROM SELLING COMPRESSORS TO  
PROVIDING COMPRESSED AIR AS A SERVICE**

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The Atlas Copco Group is a world leader when it comes to providing industrial productivity solutions. For over a century, the group has maintained its leadership position by designing and offering pioneering industrial tools and equipment, characterized by a very high level of quality and efficiency.

The origins of the Atlas Copco Group date back to 1873 where it started to manufacture and sell railway equipment. In the years that followed, it became the largest manufacturing company in Sweden. In the 1950s, Atlas Copco Group started to focus on compressed air and

embarked on a journey toward global leadership in this area. In the decades that followed, a number of strategic acquisitions paved the way for a broader range of products and larger markets. By the 2010s, the group consisted of four established business areas: Compressor, Construction and Mining Equipment, Industrial Tools and Vacuum Solutions. All five units had an outstanding track record in product innovation and obtained leading market positions as a result.

While the tradition of innovation dates back to the group's founding, in recent years, the Atlas Copco Group has extended its innovation strategy from technology and product design to services and solutions. More specifically, Atlas Copco has evolved from a product business model to a service platform and then to a solution business model. This business model transformation was underpinned by the design and delivery of a range of new physical and digital services that complement the products and, when deployed together, better satisfy needs of Atlas Copco's customers.

The following section discusses the business model transformation towards services and solutions by Atlas Copco's largest unit, and an international leader in compressor industry, Atlas Copco Compressor Technique.

## 1. MOTIVATION: THE BEGINNING OF A TRANSFORMATIONAL JOURNEY

A compressor is a device that converts power into potential energy by forcing air into a smaller volume and thus increasing pressure. The energy produced by a compressor is indispensable in a wide range of applications, such as textile production, plastic bottle manufacturing or even medical applications. One could state that every industrial entity uses compressed air.

Investment in compressors is an important decision for several reasons. Most variants of compressors represent complex pieces of machinery that customers consider as an investment good and use for well over five years. They are indispensable for the functioning of applications powered by compressed air and most production units stop without a compressor. Finally, they are highly energy-intensive, meaning they require a lot of electricity to produce compressed air and well-managed compressors consume much less than the poorly managed ones. Due to their critical role, high level of investments and energy spend, compressors need on-going care and servicing.

Traditionally, these service jobs were not perceived as highly valuable and ended up being performed by customers' (generalist) technicians who would also care for other facility equipment. Product manufacturers employed a number of specialist technicians who would come to help the customer's technician, in case they could not resolve a problem on their own. Back in the days, this was often considered a part of goodwill, a free support that would come with buying the equipment.

At a certain point, Atlas Copco's management started considering professionalizing this service and turning it into a service business. But should a compressor manufacturer be in a business of compressor servicing? For a manufacturing company that achieved unparalleled global success thanks to its excellent product business model, a shift toward the development of a service business may have seemed like an unnecessary risk back in the early 2000s. The growth opportunities from the emerging markets were promising at the time, and the enduring focus on product innovation and efficiency was keeping the profit margins high. Why tamper with a system that works so well?

At the same time, the economic environment was clearly changing. Global competition from the low-cost countries was starting to threaten a disruption of the competitive landscape in the form of commoditization and price declines. Some market segments, particularly those demanding smaller compressors, had already been feeling the heat. Product innovation and quality were still a strong source of differentiation, but the technology was fairly stable, and radical innovations in the near future were unlikely. The existing business model was likely to be under threat five or even 10 years down the road.

One way to protect the Atlas Copco Compressor Technique (hereafter simply referred to as "Atlas Copco") against such a potential strategic threat would have been to join the commodity players/low-cost entrants and focus on offering cheaper compressors. Another way was to create even greater value for the customers – going even beyond innovative product features and functions. Because it was very important for customers to have a compressor that functions well throughout its use life, offering services that ensure such reliability was a way of providing superior value. For instance, estimates indicate that the initial purchase of the compressor is only a small amount (10%) of the total lifecycle cost, while servicing represents about 20% and energy 70% of the costs. Costs associated with potential production disruption are an additional expense. Offering services and solutions that help reduce energy cost and the threat of disruption creates a big potential for customer value creation.

Delivering superior value to the customer was consistent with Atlas Copco's overarching strategy. The move in the direction of services helped Atlas Copco better address client needs with a better targeted solution. Thus, while the shift from a product to a solution business model may have been a radical change from the perspective of what and how Atlas Copco operated, it was consistent with the company's century-long strategic orientation to put the customer first. Atlas Copco management decided to embark upon the journey.

## 2. FRONT-END ADAPTION: FROM SELLING EQUIPMENT TO TAKING OVER THE COMPRESSOR ROOM

Atlas Copco first transformed from the product to the service platform business model. As a part of this step, the one-off sales of compressor was complemented by a range of services that offered frequent interaction with the customers throughout the useful life of a compressor (e.g. installation, maintenance, monitoring). In a following step, Atlas Copco transformed from a service platform to a solution business model. This step consisted of a shift from a portfolio of

transactional and standardized products and services towards a portfolio of long-term solutions centred on the desired customer outcomes.

At the time when Atlas Copco's service journey began, the business mantra was that equipment manufacturers would be more competitive if they focused on the production of equipment and left all their downstream activities, such as customer contact and service, to the distributors or retailers. However, Atlas Copco had decided to focus on good service and to interact with customers directly, instead of through the distributors. This meant establishing a network of direct salesmen and service technicians that operated through a global infrastructure of customer centres and gradually converting indirect channels into direct channels.

*“We wanted to make sure that we own the relationship with the customers,”* emphasizes Ronnie Leten, the former President of the Compressor Division (Atlas Copco) and the former CEO of the Atlas Copco Group. *“So, while on the side of the supply chain we were relying substantially on the collaboration with our suppliers, our downstream business model was turning out to be quite vertically integrated with the customers. This ‘close contact’ with the customers stands in stark contrast to [the approach of] our competitors, who had a less forward integrated business model and operate through distribution channels.”*

Once the subsidiary infrastructure was there, the service business started to grow gradually through customer pull. Customers were demanding services, and Atlas Copco started by responding to the customer's service requests. These were requests for simple, transactional service activities, provided on ad hoc basis, such as the delivery of replacement spare parts, oil exchange or repairs of broken compressors.

As these simple service encounters accumulated, Atlas Copco started to gain experience in the delivery of ad hoc services. The first aspect of this was the customer experience; i.e. Atlas Copco subsidiaries learned how to train a crew of technicians to deliver professional technical service. The second aspect concerned service operations; i.e. over time, Atlas Copco subsidiaries reached experience and scale for more sophisticated service operations, including planning and scheduling the technicians. As a result of these experiences, the service organization developed fundamental capabilities to deliver a basic service portfolio.

As experience in answering customers' ad hoc service requests accumulated, the service offering started to grow. The service portfolio started off as a modest collection of spare part plans, regular check-ups and repairs. This portfolio was sufficient to proactively initiate service relationships and move beyond waiting for the customer to call. And customers responded to Atlas Copco's offer; having access to professionally executed service operations instead of doing-it-yourself offered several benefits for the customers. First, it was more efficient and, second, the quality of the service was higher; unlike customer who had a handful of compressors to manage, Atlas Copco benefited from the economies of scale and scope that allowed them to hire and train specialized technicians and cross-leverage experience and resources across the customers.

Another part of the value captured for the customer was perhaps harder to quantify but is equally tangible. Having a closer relationship with the customer meant that Atlas Copco was continuously in sync with customers' changing needs. Regular contact meant the company was the first to recognize that the customer may require additional products or services. This relationship also started to yield new insights into a diverse range of customer needs. Product and service innovations that address those needs started to emerge as well. Thus, customer knowledge and intimacy – combined with continuous innovation – meant that it was very hard for competitors to come in and take over the business.

As a result, the service range expanded and evolved. Ad hoc and reactive offerings, such as spare parts and ad hoc maintenance, gave way to more sophisticated and proactive maintenance plans where Atlas Copco focused on preventing problems, such as equipment breakdowns, rather than waiting for them to emerge. Furthermore, Atlas Copco expanded their perspective from servicing one compressor to offering service for the entire compressed air system. This led to the creation of services such as optimization and monitoring, which were focused directly on the desired customer outcomes, rather than on the compressor performance. For example, Atlas Copco has launched optimization services that consist of analysis, optimization and monitoring of the air flow, with the objectives to remove air loss and accomplish real energy savings. Furthermore, the remote monitoring services were launched to offer digital visibility of the compressor performance to the customers and, as a result, help them avoid disruption and improve their production planning.

These new services started creating even more value for the customer and for Atlas Copco. The shift towards prevention has reduced servicing costs over the compressor lifetime and decreased the risk of having a costly disruption of customer's production process. Shifting the focus from a single compressor to the entire compressed air system as well as from compressor performance towards real customer outcomes (e.g. energy saving) represented a major breakthrough in the shift towards the solutions. For example, consider again that compressed air energy costs represent 70% of the compressor lifecycle costs and – at the same time - amounts to 12% - 40% of the total production plant energy bill. Atlas Copco's optimization service can help customers tap into this significant savings potential.

The experience in providing services focused on the customer outcomes and the entire compressor room, led Atlas Copco gradually to the final frontier of the solution business model – compressed air as a service. At the time that this book went to press, Atlas Copco has launched and started delivering a service called AIRPlan, whereby customers are invited to leave the compressed air equipment in the hands of Atlas Copco and pay only the air they have consumed.

AIRPlan indeed, represents a culmination of the focus on the quality, efficiency and customer outcome. And not just one, but multiple customer outcomes. For instance, by opting for AIRPlan that offers customers to simply pay for compressed air they consume, without owning or managing the compressor, a customer's operations manager does not need to worry about managing the compressor and can instead focus on its business, leaving it to Atlas Copco to manage the compressor on their behalf. Furthermore, this outcome-based service caters to

the needs of the customer's financial manager and general manager by eliminating upfront investment and transferring the ownership risk from the customer to Atlas Copco.

### 3. BACK-END TRANSFORMATION: FROM A PRODUCT- CENTRIC STRUCTURE TO AN INTEGRATED ACTIVITY SYSTEM

While designing new services and solutions offers tremendous potential for value creation, this potential only materializes if the transformation of the activity system that delivers these services and solutions is also successful. And behind the transformation of the activity system, there is substantial foresight, investment and effort in execution.

Alongside with their front-end transformation, Atlas Copco's also gradually transformed the back-end of their business model. The first back-end transformation that supported the service was the creation of the service organization within the subsidiary network. Atlas Copco subsidiaries, headed by the General Manager, increasingly started to appoint Service Business Line Managers to head the service activities. The first focus of the Service Managers was the quality of the service delivery. Hiring qualified technical teams and training them was the first milestone. It made no sense to have the business evolve toward more sophisticated services if it was not possible to maintain a broad, good-quality basic service presence. For example, interviews with customers in the shipping business suggest that one of the main reasons they would contract Atlas Copco equipment and services was the confidence they had in the global service network; they were sure that they can rely on a skilled Atlas Copco technician at every port.

Once confidence in the ability to offer basic services in a professional and technically skilled manner was established, subsidiary management started to focus their attention on developing and selling more sophisticated services or on moving up the service ladder. A dedicated service sales force was instrumental in achieving this goal. Having service salesmen sell services was important for the design of appropriate customer incentives as well as for customers' education about the intangible but substantial benefits of servicing. Subsequently, as the volume of service jobs started to grow, the operational efficiency became more important. The previous focus on sales and marketing was becoming balanced with a focus on standardization of service processes, an increase in the use of performance measurement, and ERP systems that supported and quantified the processes. As Ronnie Leten pointed out: *"When you make the decision to be vertically integrated toward the customers, operational efficiency is very important. That means logistical and IT systems and big data capabilities."*

In the early 2000s, the global headquarters was mostly observing and enabling the progress of the service business model transformations that were happening at the subsidiaries. The responsibility of the subsidiary oversight was designated to the service Vice Presidents (VPs) and their staff. The main objective of the service VPs was to professionalize services and create a service and solutions business out of what had traditionally been regarded as a support

function. For the front-line transformation, their efforts were focused on formulating the service portfolio and shifting the portfolio from basic to more advanced or climbing the service ladder. On the back-end, their efforts were focused on supporting the development of the service business on the subsidiary level by developing service KPIs, exchanging best practices, benchmarking service performance across the subsidiaries and providing guidance to the service managers at the subsidiaries.

These were the first efforts to formulate a service strategy. The global headquarters started promoting the importance of achieving a high service presence, measured by the aspirational one-to-one ratio of compressors and service contracts. Furthermore, the concept of the 'service ladder' was developed to capture the progression from the basic service offering (e.g. spare parts) to more sophisticated services (total responsibility service plans). The VPs used all these concepts, which were grounded in experiences from the best-performing subsidiaries as well as academic research, to promote service best practices across all the subsidiaries.

While service VPs efforts and successes were notable, the reporting structure on the headquarters level created some limitations for the development of the business model. More specifically, the fact that the service Vice Presidents reported to the product Presidents sent a strong signal that services were still a support function and an add-on to products. On the headquarters' level this had hampered research allocation to the service projects, decisions where interests between the products and services would diverge would be more likely to be taken in favour of products and managerial talent would opt for careers in product rather than service organizations due to the lack of top service positions. The reporting structure on the headquarters level had implications on the product-service relationship in the subsidiaries as well. For instance, General Managers were more inclined to support and invest in products than in services, because they would themselves be more recognized for it.

The lack of equality between products and services was creating several limitations. First, by lacking visibility and status, the service business struggled to attract top talent and investments. Second, if product and service organizations experienced conflicts (e.g. a dilemma to service the old compressor or sell a new one), the lack of equality would mean that products were more likely to win the argument, which was seen as unfair and created resentment in the service organization. In the long run, this product-centric thinking was often not in the best interest of the customer and Atlas Copco as a whole. For instance, as products and services were subject to synergies (e.g. service success made customers more likely to repurchase products), shrinking on the service development had a long-term negative effect on products.

Ronnie Leten was fully conscious that giving more power to services is necessary if Atlas Copco wants to seize the opportunity. However, Atlas Copco's excellent performance again presented itself as an impediment to making a change. Furthermore, in the mid-2000s, there was very modest understanding of such service business models and also the academic literature contained little information about best practices, strengths and weaknesses, which added to the challenge.



*“We prepared thoroughly. We started by engaging a Doctoral Candidate from KU Leuven to better understand the role that services play in driving our performance and best practices that our subsidiaries developed in transforming their business models toward services. The results of the study represented an input into how we decided to transform our business model globally and gave me the confidence to move forward. It was a very well thought through process. We innovated our business model, though we may not have realized it at the time. We were ahead, that’s why we are where we are today,”* Leten remembers.

Thus, despite the inert forces and the uncertainty that were favouring the status quo, Leten decided to make a bold move by creating a separate division to host services on the headquarter level. The service division – labelled Compressor Technique Services (CTS) – was to take charge of the service performance across the entire Atlas Copco Group and had the freedom to raise resources and invest them in service development. Having a division, responsibility and resources signalled the importance of services for Atlas Copco.

With this signal in place, Leten managed to attract one of Atlas Copco’s top experienced professionals – Nico Delvaux – to head the CTS division. Building on the milestones that the service VPs had set up, Delvaux formulated a compelling service strategy and assembled a strong team to help him execute it. The successes that followed bear witness to the effectiveness of the decisions taken. Service performance across the subsidiaries continued to rise ever since. Emphasis on measuring market success became coupled with focus on customer satisfaction. Management of service operations was professionalized as well. Subsidiaries were increasingly investing and implementing ERP systems that allowed them to plan and schedule service visits more efficiently and track operational service metrics, such as the percentage of service interventions where the solution is found during the first visit of the technician, known as “first time fix”.

On the headquarters level, CTS formed their teams and started hiring service marketing, technical and operational experts, internally as well as externally. Several new service products (e.g. monitoring and optimization) were developed or re-launched soon after the formation of the service division and, later on, teams in the CTS will focus on the boldest service step in the world of compressors – the shift to “compressed air as a service”. Besides new services, the new service concepts were developed to facilitate service process innovations on the subsidiary level (e.g. service sales force training, service plan price calculator, “Formula 1 technician training”). The new services would often start as pilots tested within the individual subsidiaries, and those that would succeed locally would be adopted and further developed by the headquarters teams.

The latest steps in the evolution towards the compressed air system and focus on the customer outcomes could not have happened without the formation of the CTS either. For example, shifting the focus from a single compressor to the entire compressed air system was led from the CTS and enabled by the acquisitions of the specialized service organizations that had the capabilities to perform service on competitors’ compressors in mixed compressed air systems. Furthermore, the advanced services such as optimization and remote monitoring were

developed by CTS and enabled by their investments in the sensor infrastructure and software. Finally, CTS became a hotbed for the development and training of data scientists, who were becoming crucial experts in the delivery of the digital and digitalized services, such as remote monitoring services, optimization and later on AIRPlan.

*“It all starts from the fundamentals – recognizing that service is a business. Anybody can perform the service, the technical part, but they cannot make a business out of services,”* says Ronnie. *“You have to measure, follow up and attract the top people. To ensure this, we created a separate division, because there is a big difference in how you get business and operational excellence in a product and a service environment. Nowadays at Atlas Copco, professional service is fully expected. Totally different league,”* he adds with pride.

#### 4. MONETIZATION MECHANICS: FROM PRODUCT MARGINS TO CUSTOMER VALUE

The gradual shift from a product to a service platform business model starts by creating customer value and continues by sharing this value between the customer and the service provider. The key to gaining a bigger share of the customer’s pocket is to first make those pockets deeper by creating more customer value. As the previous sections suggest, Atlas Copco grew its offering by keeping customer value in mind. Moreover, by capitalizing on the economies of scale obtained through a large installed base of compressors, it performed services more efficiently than an individual customer, which resulted in good margins. Beyond the cost savings, the knowledge of compressor technology meant that Atlas Copco could also perform services better than both the customer and a specialized service provider. As Ronnie Leten puts it: *“Let’s imagine that the customer can service her machine for 100 euros an hour. With our economies of scale and expertise, we can do it better and faster – probably for about 60 euros an hour. We will then share this gain with the customer.”*

By bundling together products and services and moving towards more sophisticated solutions, Atlas Copco also offered convenience and a one-stop-shopping facility to the customer, reduced the time it takes to sign the contract and allowed customers to focus on their own core business. By making this shift, the interests of Atlas Copco and its customers to keep the product safe and the service efficiently performed were much better aligned. Some of the most advanced contracts – such as compressed air as a service – also allowed customers to shift asset ownership risk to Atlas Copco. This ‘peace of mind’ value was something that an increasing number of customers are interested in.

The value-creating and value-capturing potential of these sophisticated services was even higher than the aforementioned efficiency gains reached through the shift toward professionalization of services that was achieved at the outset. There are several reasons for this. Compressors tend to be mission-critical pieces of equipment and prevention of breakdowns means avoiding (very expensive) disruptions of operation. Furthermore, regular servicing

ensures that the electrical energy needed to power the compressors is used as efficiently as possible. This means that – thanks to the service – energy savings are made, and customers' energy bills are reduced. *“For example, an unnecessary pressure drop of 1 bar reduces energy efficiency by 7%. Pressure drops can be caused by clogged filters, for example. Therefore, performing timely maintenance and installation monitoring (e.g. for potential leak detections) are crucial for energy efficiency,”* said Pieter Colen, Operations Manager. These more individualized solutions resulted in an increase in the value per customer and allowed for higher margins/willingness to pay, as well as higher customer loyalty.

Finally, offering services brought financial stability for Atlas Copco. As with all durable goods businesses, the compressor business is highly susceptible to the ups and downs of the business cycle. More specifically, customers buy compressors either to develop the additional production capacity or to renew existing production capacity (by replacing the old compressors). During a downturn, customers will hold off on investments to increase their production capacity and instead postpone renewing the existing equipment. However, the servicing of existing capacity will remain almost intact. While customers can reduce the ad hoc services somewhat, they cannot avoid them completely. They are equally unlikely to terminate long-term contracts and face penalties. Moreover, a decision to postpone the renewal of the existing equipment may even mean more servicing of the old ones.

## 5. LESSONS LEARNED AND OUTLOOK: PRODUCTS AND SERVICES AS EQUAL PARTNERS TO DELIVER THE BEST CUSTOMER SOLUTION

The emphasis on the ‘downstream business’ and growing the subsidiary network was the first milestones in the transformation of a traditional product company into a service platform business model. Later on, the creation of the service division has created the milestone for the shift from basic services to more sophisticated solutions.

While the creation of the service division created equality or a power balance between the product and service businesses, it led to some tensions between the product and service representatives who had to apply this new equilibrium in their daily decisions. This process of readjustments did not happen overnight and headquarters as well as subsidiaries invested years in learning how to manage conflicts in a constructive and synergistic manner. General managers at the subsidiary level had a very active role to play in resolving first conflicts. Through trials and errors, the general managers at the most successful subsidiaries managed to isolate a constructive approach of resolving product-service conflicts. This conflict resolution approach was centred on evoking the goal that was shared by both sides- the customer satisfaction. Though resolving each conflict from a perspective of a common goal, general managers gradually shifted the product-service relationship from frequent conflicts and hostility to atmosphere of trust, collaboration and synergies.

While challenging, the task of combining products and services and generally transitioning toward a solution business model generates substantial synergies. To start with, it allowed Atlas Copco to continue proposing well-targeted, customized solutions to the client's

needs. In the long run, constructive relationship between products and services allowed for a substantial innovation potential. More specifically, the insights from servicing allow Atlas Copco to design compressors that are easier to service. For instance, one of the recently designed compressors takes 50% less time to service than its predecessor. Moreover, insights from the service delivery are used to design better compressors, particularly by leveraging big data from sensors and other data collection tools. Finally, latest solutions, such as digital platforms for remote monitoring and “compressed air as a service”, cut across the product and service divide and would not be possible without a strong collaboration between the product and service organizations on the subsidiary as well as headquarters’ level. By collaborating to create a digital platform, Atlas Copco is set up to successfully transcend the next frontier in the technological competition – digitalization.

Inspired by the vision to be ‘First in Mind – First in Choice’ ® of their customers and powered by continuous innovation in their wide range of products and services, Atlas Copco Group has had many successes. For instance, it offers products, services and solutions to customers in more than 180 country markets, aims for 8% annual growth, accomplishes 22.2% operating margin (2018 figure) and contributes to seven of the 17 Sustainable Development Goals defined by the United Nations. Last but not least, Atlas Copco Group maintains the ambition is to distribute about 50% of earnings as dividends to shareholders. The yearly dividend during the last five years amounted in average to 59% of basic earnings per share.

When asked about the future pathway for the company, Leten emphasizes: *“At the end of the day, we should move toward that which is best for our customer – whether it is a product or a service. This is the most logical way to resolve the product vs. service organizational paradox and also a sound long-term strategy. The General Manager of every subsidiary is there to assure that we apply this principle in the field. On the headquarters’ level, we make sure that we continue investing in product innovation while professionalizing and improving our services. And these must go together; we must be brutally efficient and provide the best service experience to our customers and at the same time have the latest, most innovative products to offer them. You always have to do both; otherwise it is not sustainable.”*

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