Environmental Report 2008|2009

arvato
BERTELSMANN

Rolf Buch, CEO of arvato AG (r.), and Andreas Henrichs, Environmental Officer of arvato AG

“An emphatic Yes! to the environment”

Dear Readers,

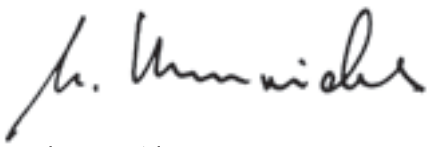
One topic dominated the year of 2009 like no other: the global financial and economic crisis. Every company was required to respond correctly to the wide impact of the crisis. It was a difficult task. But it was also a task that created opportunities as everything was placed under microscopic scrutiny. More than ever before, it was up to companies to get back to the basics. To realize what the company represents, what makes it special and what forms its strengths.

At arvato, we began to closely examine things we had long taken for granted. For instance, we asked ourselves whether it was appropriate to think about environmentally conscious production methods in times when securing jobs had to have the highest priority. We answered this question with an emphatic “yes.” First, because responsible entrepreneurial behavior has a fixed place in our values and our daily work. Second, because we saw practical business reasons. Conserving energy, recycling materials and optimizing the use of resources do not just help the environment. Such actions also have a direct impact on costs.

Over the past two years, we have taken numerous steps around the world. Altogether, these actions have produced impressive results. We achieved improvements in virtually all key performance indicators and have measurably cut the use of energy per ton of product weight or per employee. This is a success that can be largely traced back to the energetic efforts of our employees.

We would also like to express our gratitude to our customers, service providers and partners. Over the past two years, many people have provided constructive and critical support. In the process, they helped bring our environmental guidelines to life. We are glad to know that we will continue to take this approach and invite you to join us in our effort.

Rolf Buch
Chief Executive Officer of arvato AG,
Member of the Bertelsmann AG
Executive Board



Andreas Henrichs
Environmental Officer of arvato AG

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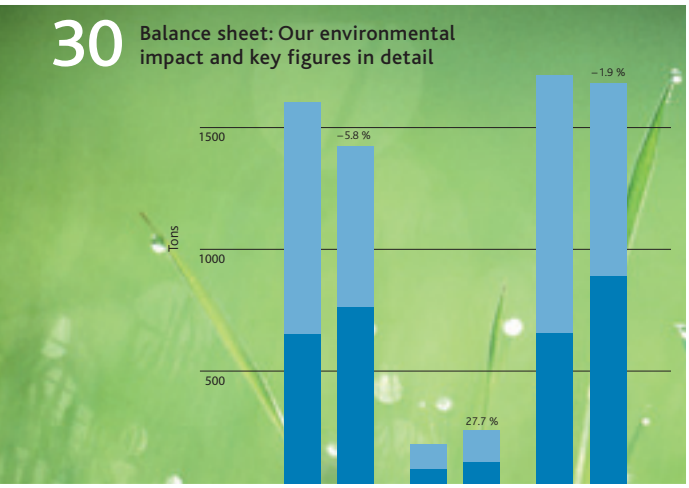

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FROM THE BUSINESS WORLD

ENVIRONMENTAL BALANCE SHEET

Individual solutions, global presence

arvato: the service provider on the customer's side

arvato is a member of the international media company Bertelsmann whose exceptional content is generated by the RTL Group, the No. 1 in Europe's radio and television business; by Random House, the world's largest book-publishing group; and by Gruner + Jahr, Europe's strongest magazine publishing company. arvato delivers media and communication services, and the Direct-Group is a global leader in the operation of book and music clubs.

We are committed to offering our customers integrated packages of solutions offered from a single source that exactly meet customers' individual needs. Thanks to our network of business sites, we are located in the very places where our customers need us. Delivering the very services that are required. Provided by creative, dedicated employees who measure their own performance in terms of our customers' success.

On behalf of each customer, we can draw on the comprehensive services provided by seven specialty areas to produce a tailored package for him or her:

1 **Supply Chain Management** arvato offers broad solutions in the area of supply chain management to meet today's and tomorrow's challenges. Our services include order management, warehousing, dispatch, transport and returns management as well as repair services. By providing modern services extending along the entire SCM chain, we ensure that every job is performed quickly and smoothly – and enable our customers to concentrate completely on their core business.

We offer our network of expertise in a strong alliance consisting of our four divisions – services, print, digital services and systems – with a total of 60,000 employees around the world.

2 Print The print service providers at arvato offer packages of solutions that extend far beyond the simple printing process. Our service range includes an array of solutions extending along the entire value chain related to print production: from extensive design and pre-press services through complex personalization options to processing and customized packing services. Distribution and fulfillment services neatly round out the portfolio.

3 Finance We understand the complexity of global trade and provide sector-specific, individually tailored billing and finance solutions. Our services range from risk management through billing & rating, borrower and lender management, factoring, central regulation and payment solutions to customer-specific collection services in B2B and B2C.

4 CRM & customer care Our employees around the world are experts in managing end-customer relationships. We offer effective solutions for all challenges posed by the area of customer communications, from the systematic acquisition and use of qualified addresses through the handling of customer communications by service centers to the development and implementation of open and closed customer-loyalty programs. With an individually trained team that can be reached at any time: by telephone, mail, fax or e-mail.

5 Data With our data services, we help our customers maximize their potential and minimize risks. We offer comprehensive, holistic solutions designed to attract and retain customers as well as support both marketing and risk-oriented decisions throughout the customer life cycle: by providing target-group and credit-history data in combination with analysis services, including the development of scorecards as well as the automation of customer-management systems. In the process, we closely adhere to all applicable data-protection regulations.

6 IT On behalf of our customers, we conceive, develop and operate powerful IT systems that they can use to sustainably reduce development and operational expenses. We exclusively use state-of-the-art technologies that are both innovative and future proof. The basis of this work is proven standard software as well as component-based individual software.

7 Replication At our production and replication locations, we reproduce our customers' content – superbly, quickly, reliably and very individually. Of course, we also offer extensive digitalization services, pre-press assistance and the online distribution of content in every required format and in consideration of the highest security standards. Upon request, our services include the processing and restoration of images, archiving as well as packing, fulfillment and distribution assistance. ✻

Refinement and internal momentum

In the two years that have passed since we issued our last arvato Environmental Report, we have moved forward in our effort to turn the company into a provider of comprehensive, integrated services and production support. We have also increased our international market presence. Not only by expanding our global activities, but also by tapping new markets in the more than 30 countries where we do business. As a result, the international network that plays a critical role in our global range of services has been strengthened. We have also expanded our service portfolio and our customer base. This three-dimensional growth is a pillar of our success.

The other pillars are our philosophy; the provision of complete solutions – and not just individual components – to address our customers' challenges; and a combination of qualities that we believe make avarto unique: people, performance, innovation and customer focus. We also stand for decentral organization and a company environment that provides entrepreneurial people with the freedom they need to take the initiative.

Our employees also use this freedom for projects that support the environment. In subsidiaries around the world, this topic has been increasingly taking on a life of its own for some time now. Within this conceptual framework formed by our environmental guidelines, numerous initiatives that improve our environmental impact have been and are being launched. We present some of them in our third Environmental Report. They are designed to show that it only takes a good idea to accomplish much – and to further motivate our employees to promote environmental protection in our companies. ✻

The environmental guidelines at arvato AG serve as a compass for all arvato companies. A systematic, company-wide environmental reporting system ensures systematic implementation and documentation – and the balance sheet of past years makes one point clear: We have taken the right course.

1 Responsibility A key part of the corporate philosophy at arvato AG is that each employee feels responsible for the company in terms of both environmental protection and striving towards economic success. One important condition for this is continuous training of our workforce whom we actively encourage and develop. We oblige ourselves and our employees to act in an environmentally oriented manner without merely restricting ourselves to adhering to environmental laws and guidelines. Part of this responsibility also includes the introduction and maintenance of an effective environmental management system in all relevant corporate areas.

2 Acting for the future arvato AG observes the social standards and values as well as the personality of each individual employee. We keep our employees and interested members of the public informed about the environmental effects of our activities, down to individual plants. We attach great importance to the sustained development of our business. This includes analyzing and evaluating all environmental aspects prior to launching new products and processes, which in turn enables us to offer our customers innovative technologies and tailor-made solutions in all our divisions without neglecting our high requirements as regards protection of the environment.

3 Together with customers and suppliers What applies for our employees within the framework of internal processes is also transferred to our relationships with customers and suppliers. We work closely with them to develop solutions to problems which are equally economically successful and environmentally friendly. The environmental benchmarks applied in our company are also applicable when selecting contract partners and suppliers. Environmental aspects are increasingly gaining in importance when it comes to advising our customers.

4 Precautionary measures It is the declared objective of our company management to optimize the consumption of raw materials, energy, and water ensuing from our activities and to minimize pollution in the form of emissions, sewage water, and waste. Executive management at arvato AG and all of its associated companies also undertake every effort to prevent emissions that result from on-site accidents. If, however, such an event should occur, our employees are well prepared to deal with it, and the appropriate rules of conduct ensure minimum effect on the environment.

5 Transparency and dialogue Cooperation with the authorities and community groups is something we do on a day-to-day basis at arvato AG and at all our companies. Both now and in the future, we will continue to design our working methods in a transparent manner and discuss openly with our partners. This willingness to maintain dialogue is a key component of our corporate philosophy. Furthermore, we offer each of our member companies the opportunity to have their environmental activities and performance surveyed within the framework of a neutral certification process.

6 Commitment and permanence These guidelines are binding for each employee at both arvato AG and its member companies. If parts of these guidelines should prove insufficient or inapplicable in practice, they will be reworked as required by those responsible within the framework of regular revision.

Conclusion The activities performed by arvato AG and its member companies will continue to be characterized by the objective of constantly improving environmental protection. Protection of our environment and natural resource management will also continue to play a significant role in discussions and negotiations with our customers and suppliers. We reach out to our partners to ensure their support for environmental protection. Our efforts to protect resources and the basic necessities of life extend far beyond statutory requirements. With this, we are not only complying with our own idea of sustained development. We are also working toward the greater goal of preserving the earth for future generations and passing on to them a positive place in which to live. ✻

Initiatives from the entire world

Since the arvato Environmental Report 2006/2007 was released, numerous projects have once again been successfully implemented or launched in our subsidiaries around the world. On the following pages, we introduce some of them to you.

Mexico: Efficient use of electricity and water

A program in Mexico demonstrates that environmentally conscious behavior pays off in many ways. The Mexican government promotes the sustainable use of energy and gives lower electricity rates to companies that efficiently consume energy. Inefficient users face penalties.

To boost energy efficiency, arvato digital services has installed a system of reactive-power compensation at its Mexico City location. Reactive power – or idle current – is created by the operation of inductive users, including three-phase-electric-power and alternating-current motors. In contrast to real power, it is not directly utilized by the consumer. Rather, it oscillates between the producer and user. With the help of capacitors installed near the user, reactive power can be compensated for.

If such a system is not employed, generators in the power plants must perform this task. As a result, the power stations produce less real power or must provide more total power than is required for productive work. This creates a burden on both the environment and the technical infrastructure because feed lines must be larger when compensation is not utilized. "First, our reactive-power-compensation system is having a positive effect on the environment. Second, the company can take full advantage of the lower rates offered by the Mexican government," says Samuel Morelos, Chief Operating Officer of arvato digital services Mexico.

Water consumption cut markedly In terms of fresh-water consumption, the company is also striving to optimally use resources. With the goal of cutting usage by at least 20 percent, a cross-divisional team was set up and various steps were taken. Initially, an information campaign was conducted to show how water can be saved on the job and at home. A drawing contest on the topic was also conducted for employees' children. "This competition was more than a fun event," Morelos says. "The drawings that the children enthusiastically created clearly showed us how important it is to responsibly use natural resources."

During the second phase of the project, conservation opportunities were identified in every area and then implemented. As a result, the use of ultra-pure water in mastering was reduced by 15 percent. Washing processes during production were streamlined and shortened, and the purification process used to produce ultra-pure water was converted from an ion-exchange system to reverse osmosis. The reduction in the use of ultra-pure water has had a major impact because several liters of fresh water are needed to produce one liter of ultra-pure water – depending on water hardness.

The third step was the introduction of a water recycling program. Water left over from the production of ultra-pure water is stored in a tank and is used as rinsing and cleaning water. Samuel Morelos: "Thanks to this major commitment and the good ideas of all employees, we quickly reached our conservation goal of 20 percent of fresh water and even exceeded it slightly."

USA: Small steps, big impact

In Weaverville, the entire lighting system at the arvato digital services' location has been technically overhauled: All lighting fixtures in the production buildings have been equipped with highly efficient electronic ballasts, and the fluorescent lamps in the production facilities were replaced with more efficient versions. Also, motion-sensitive light switches are used throughout the facility, from the front offices to the high-bay warehouse, where fluorescent lamps have replaced halogen fixtures. About 1.4 million kWh of energy are saved annually as a result.

Annual savings of about 180,000 kWh were achieved by optimizing the compressed-air supply system in the packing lines. At the same time, all pipes were inspected for leaks that could hardly be felt during daily operations but that resulted in a permanent loss of pressure and thus a loss of energy. As a consequence, compressor output could be cut by 18 kW without much effort. In all areas that are not temperature critical, the room temperature was raised by 1 degree Celsius in the summer months and lowered by 1 degree in the winter months. This action has lowered energy consumption by an additional 100,000 kWh a year.

More recycling, less waste Thanks to a recycling-expansion program, the amount of trash has been reduced by 54 percent. All employees have received extensive training about correctly separating and accumulating recyclables and have direct access to the appropriate collection containers. In addition, small "recycling centers" for paper, plastic, aluminum, metal, glass and cardboard have been placed around the site. Posters inform people in an easy-to-understand manner about which materials can be recycled. External service providers have been integrated into the effort as well. For instance, reusable containers made of plastic are being used in place of cardboard cartons in shipments of large printing jobs. And the cafeteria uses only recyclable food packaging.

Peter Schaper, Vice President of Operations, is proud of the location's actions: "In retrospect, many of the steps we implemented in recent months are relatively minor on their own. But because they were well coordinated and every employee made a contribution, we could produce a considerable overall result."

Colombia: Voluntary commitment to improvement

In 2008, printer colombiana signed an agreement on environmentally conscious production methods called APL (Acuerdo de Produccion mas Limpia) that the Colombian government has introduced in the capital district of Bogotá. The voluntary agreement is designed to simplify and promote the working relationship between the public and private sectors in order to draw up new strategies for sustainable business practices within the framework of current environmental regulations. Furthermore, the arvato print subsidiary has joined a program called PREAD (Programa de Excelencia Ambiental Distrital). The program, which is aimed especially at the market leaders in individual industries, includes regular training sessions and meetings that promote a dialogue between experts and environmental officers of other companies.

"As a market leader, we do not just want to focus on national requirements," says Juan Guillermo Giraldo, President of printer colombiana. "Our goal is to fulfill international standards that extend far beyond them. The government's program can help us in this effort." printer colombiana is introducing an environmental management system based on ISO 14001 and an occupational-safety program based on ISO 18001.

Austria: Annual review

At the logistics location in Schwechat, Austria, arvato services has submitted itself to the extensive certification process according to ISO 9001 and 14001 – and passed with flying colors in July 2008. While ISO 9001 standardizes quality-relevant processes, ISO 14001 applies to the environmental impact of company procedures.

The audit preparations were performed in a dedicated team effort carried out in conjunction with daily business operations: Documentation had to be assembled, processes reconsidered, legal regulations reviewed and the management system implemented. The jointly created management system for quality and the environment will now be continuously refined to address customers' growing quality and environmental demands on the basis of this success.

"Our certified environmental and quality management system ensures that we comply with all applicable requirements in both areas – and that these activities are reviewed annually by external, independent certifiers," says Berthold Jelleschitz, the location's Environmental Officer. The documents put together while the system was being created also form a critical starting point for the further optimization of processes and procedures, and serve as training material for new employees.

Ireland: Environmental payoffs as clear as “glas”

In Ireland, arvato finance services, a provider of complex and tailor-made billing and payment processing services worldwide, has launched an environmental initiative called “glas.” The name represents not only transparency in environmental issues that is a goal of the team behind the initiative, but also the Irish word for “green.” Since the beginning of 2009, employees at the Dublin office have been voluntarily working to reduce the company’s environmental impact.

A big and important step was the switch of energy providers. A large share of the electricity used at the location comes from wind power, cutting CO_2 emissions by more than 50 percent. arvato finance services also voluntarily submitted itself to a review conducted by Sustainable Energy Ireland (SEI), Ireland’s national energy agency. Its goal is to promote the sustainable use of energy. When the review is completed, a report details potential areas of improvement that are then addressed. In one reflection of these changes, the light switches at the site now bear a traffic-light color code. Red for example represents the most energy-intensive form of lighting, one that should be used only when absolutely necessary.

Good ideas for protecting nature To further reduce the carbon footprint, the company is applying a model created by the Irish government: In this program, arvato pre-finances employee bicycles that are purchased using a portion of their pay. Thanks to tax breaks, the employees save up to 40 percent on the actual purchase price.

Various other campaigns have been initiated to increase environmental awareness. The aim of the program called “Can't see the wood for the trees” is to cut paper consumption. The appeal to “Drink responsibly” encourages employees to consider sustainability by using the thermal mugs handed out to them instead of throw-away cups when they go to the company cafeteria. And the slogan “It's good to switch off” reminds them not only to mentally unwind at the end of the workday, but also to turn off all equipment and lights.

“We live and work in Ireland, a country with beautiful natural surroundings that is not known as the ‘green island’ for nothing,” says Andrea Kaminski, President of arvato services Ireland. “We simply want to contribute a few ideas that will help preserve these natural surroundings and give an added shade of green to our jobs.”

“‘Tús maith, leath na hoibre,’ the Irish proverb tells us that a good start is half the work. The ideas generated in the first few months of the ‘glas’ initiative mean that we have achieved great progress in making arvato finance services a greener place to work and allow all of our employees to contribute directly to ensure we tread lightly on the earth.”

Rónán Gallagher, coordinator of the “glas” initiative

France: Taking the right turn

By slightly turning down the thermostat, arvato services France has achieved tremendous energy savings at the Bussy St. Georges location, which has had ISO 14001 certification since 2001: To lower gas consumption in the chilly months of October through April, the room temperature has been set at a maximum of 18 degrees Celsius in the picking and warehouse areas. This is a reduction of up to 2.5 degrees.

At the same time, the periods in which the heating level is lowered at night were extended by several hours. As a result, the heating system does not reach its peak operational level until an hour before the first employees arrive. This change has produced a 15 percent reduction in gas consumption at the location. "As a result, we saved nearly 180,000 kWh of gas compared with last year – that is the equivalent of more than 32 tons of CO_2," says Jacques Caurant, the Maintenance Manager of arvato services France. "Other energy savings were achieved through such steps as lowering compressor pressure by one bar and installing modern machinery," adds Séverine Noyer, the Safety & Environmental Officer at arvato services France who is responsible for continuous improvement of the environmental impact under ISO 14001.

The recycling program has also been expanded: In addition to normal resources, employees collect plastic bottle caps. These caps are then sold, and the money is donated to an organization that helps integrate disabled children.

Mexico: Sustainable customer service

Environmentally conscious activities are playing an increasingly important role not only in production, but also in comprehensive customer support. This development is reflected by the newest location of arvato digital services in Monterrey, Mexico. The site that primarily advises, assists and supports customers in the game-console sector quickly and energetically introduced a comprehensive environmental program in the weeks that followed its opening at the beginning of 2008.

As a result, the branch complies with the stringent international environmental management standard ISO 14001. A system developed by the company ensures transparent, seamless oversight of the impact that all services and production processes have on the environment. A precise understanding of these facts forms the basis for the continuous easing of the company's environmental impact.

"From the very start, we wanted to implement arvato's directive and respond to the ever expanding commitment to the environment in America," says Bob Fletcher, Executive Vice President of Customer Service North America. Beckmann says it was essential for the new branch in Monterrey to meet the strictest environmental standards. Tony Souza, the head of the location, offers some specific examples: "The entire building is equipped with environmentally friendly furniture and fixtures. Our energy-consumption levels are also extremely low."

Major commitment by the team But employees' attitudes play a much more important role in efficient environmental protection on the job than construction or technical steps do. And the attitude of the arvato team in Monterrey is exemplary. In a reflection of this commitment, 70 percent of employees have agreed to use public transportation, form car pools or take advantage of car-sharing services to get to work. In addition, the environmental commitment at the site is the result of the initiative of the "Green Team," which was formed by employees and even honored the best environmental-protection ideas.

In addition, environmental conferences are held in Monterrey. Tony Souza: "The objective of these conferences is to show our employees how they can work in their private lives to actively protect the unique region of Monterrey." The city in northeastern Mexico, one of the largest and most important industrial sites in Latin America, is surrounded by mountain chains.

USA: Optimizing the recycling process

In March 2008, arvato digital services created a six-person team at the company's location in Louisville to further optimize the recycling process at the site. The goal of the experts from the areas of production, administration and warehousing was to use Lean Six Sigma methodology to boost the recycling quota, reduce waste and introduce additional material to the recycling chain.

Lengthening the recycling chain The results of this work are eye catching: Cartons, corrugated cardboard and packaging material made of plastic are immediately reused – for instance as lining for shipments to be delivered – or are directly sorted on site, collected and turned over to a recycling company as compressed units. Collection points for paper have been set up throughout the location. In addition, employees can use containers for drink bottles and cans that have been placed in all office areas and the cafeteria. Used ink cartridges, batteries and light sources are optimally recycled or disposed of.

In the spring of 2009, an energy-conservation program was introduced in Louisville. In a first step, a maximum room temperature of 20 degrees Celsius was set for the winter and a minimum of 22 degrees Celsius for the summer. Further measures in production and administration are being reviewed and continuously implemented. All employees have been integrated into the program and receive regular training about using resources sparingly and responsibly.

UK: Real environmental protection thanks to virtuality

By introducing virtual server hardware, arvato government services in Great Britain has managed to achieve significant energy savings. The company provides outsourcing services to the public sector in the UK, and maintains public-private partnerships with local authorities, including the East Riding of Yorkshire Council and Sefton Metropolitan Borough Council. Since its establishment in 2005, the arvato services subsidiary has grown consistently, a development that has led to more and more demands being placed on the technical infrastructure, including the network of servers.

When the decision was made to expand the server system, arvato's ICT team opted to employ virtual servers instead of installing new server hardware that would consume additional energy. For the user, each of these virtual servers acts like a stand-alone hardware server, but relies on an especially powerful "real" server along with the other virtual units. Server performance is distributed to the virtual systems as and when needed. As all servers – whether real or virtual – hardly ever have to work at full capacity all at the same time, the available hardware can be used much more efficiently. Also, the size of the cooling systems for the servers can be reduced, generating further energy savings. "By using virtual servers, we can save about 200 tons of CO_2 a year," says Lee Kirk, arvato government services Project Manager. "That equals approximately the annual CO_2 output of 66 cars."

Energy-conserving initiative arvato government services has also implemented an environmental initiative titled the "Big Switch Off," the aim of which is to encourage in staff the responsible use of resources. As part of the scheme, a regular review is conducted every three months to determine whether employees are turning off their PCs and other equipment before they go home. If not, a sticker is placed on their desk to serve as a reminder. "This little note works very well," explained Lee Kirk. "And should people continue to waste energy, we can have a chat with them. Generally speaking, it is not hard to act environmentally responsibly." Staff also have come up with some bright ideas to show how simple it can be to cut energy use – for example, adjusting the energy saving settings on PCs so that they go into hibernation mode more quickly and equipping computers with "Y" power cables, that is, with one male connector and two female outlets. This cable ensures that the monitor is also turned off when the computer is shut down. ✻

FSC alliance expanded rapidly around the world

When arvato released its first global environmental report at the end of 2005, two printing facilities of the business group had been certified according to the stringent standards of the Forest Stewardship Council (FSC). Today, four years later, 11 subsidiaries have obtained this certification and may display the FSC logo, a symbol of responsible and sustainable forest-management and manufacturing practices, on products.

Print products bearing the FSC logo have been examined by independent certifiers in an assessment process that covers the entire production chain – from procurement of materials to delivery.

These arvato companies now have FSC certification:

1 arti grafiche, Bergamo, Italy
2 arvato services, Frankfurt/Main, Germany
3 coral graphic services, Louisville, United States
4 eurogravure, Treviglio, Italy
5 eurohueco, Castellbisbal, Spain
6 GGP media, Pößneck, Germany
7 Mohn media, Gütersloh, Germany
8 printer portuguesa, Rio de Mouro, Portugal
9 printer industria gráfica, Barcelona, Spain
10 topac, Gütersloh, Germany
11 vogel druck, Würzburg, Germany

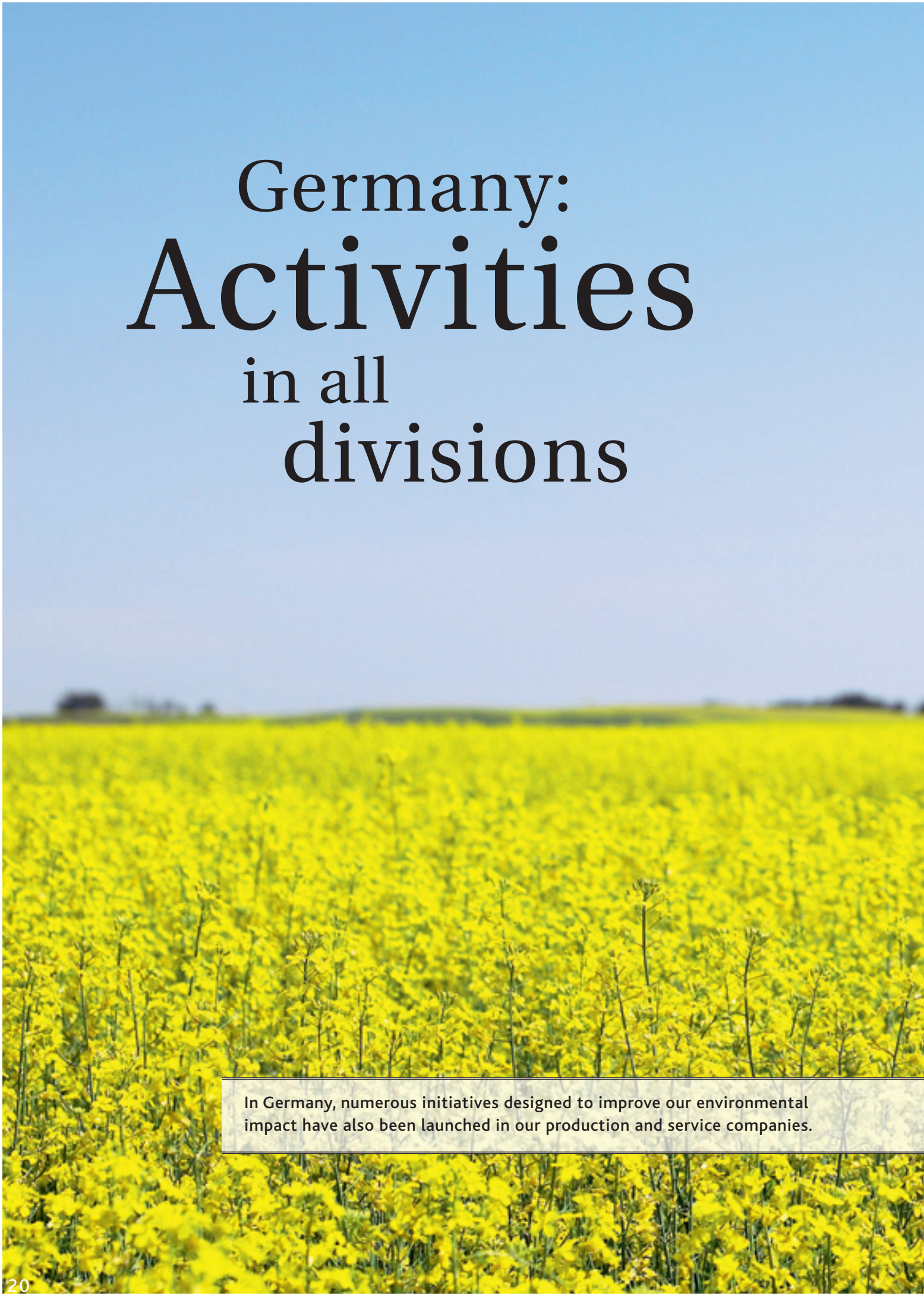
"This development demonstrates that we are serious about linking business success to environmentally conscious actions. This commitment is also underscored by our membership in the WWF Wood Group," says Andreas Henrichs, the Environmental Officer at arvato AG.

The WWF Wood Group is a voluntary initiative of companies that have reached separate agreements with the World Wide Fund for Nature (WWF). The members observe and promote forest and wood certification based on principles and criteria laid down by a demanding system that meets WWF specifications like that of the FSC. The aim of the WWF Wood Group is to rapidly expand the number of wood products bearing a credible certificate and reach the level of 100 percent as quickly as possible. In each case, the agreement includes specific benchmarks and implementation measures beginning with actions to raise awareness of the issue and training programs.

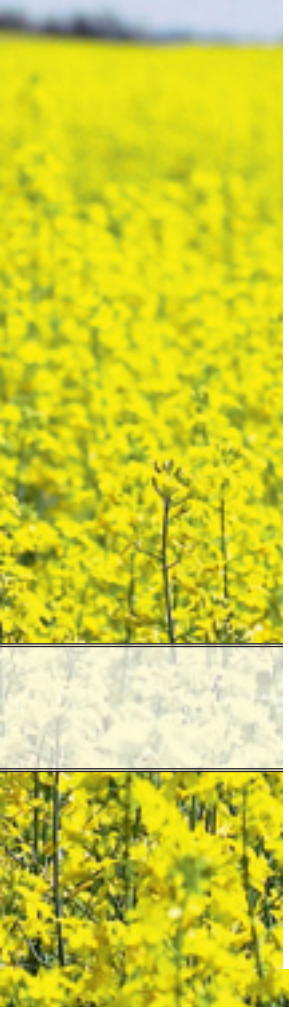
arvato joined the WWF Wood Group in 2005 because the issue of forest management directly affects the company, one of the world's leading providers of print services. ✻

The aim of the WWF Wood Group is to rapidly expand the number of wood products bearing a credible certificate and reach the level of 100 percent as quickly as possible.

Germany: Activities in all divisions



In Germany, numerous initiatives designed to improve our environmental impact have also been launched in our production and service companies.



Outstanding commitment For nearly 20 years, the arvato subsidiary Mohn media has been strategically positioning itself in the area of environmentally conscious print production. In recognition of this commitment, the company was named the "Environmentally Conscious Company of the Year" at the "Druck & Medien-Awards" presented in Berlin in November 2008. In addition to the systematic implementation of environmental thinking on the industrial level, the jury praised the clearly defined goals of the multifaceted projects and their good documentation.

"This award demonstrates that we have taken the right course – and simultaneously serves as an inducement to become even better," says Markus Schmedtmann, the CEO of Mohn media and a member of the Executive Board at arvato AG. The aim of this work is to continue to systematically lower the use of energy and resources even as production is continuously expanded.

Mohn media has been issuing an environmental balance sheet since 1990. An energy center for the environmentally friendly simultaneous production of electricity, heat and air conditioning from natural gas was erected in 1994. In 2003, the company became one of the world's first printing plants to be certified according to the strict FSC criteria. It is also ISO 14001 certified.

Higher output, fewer emissions Three gas turbines power Mohn media's block heat-and-power plant that uses cogeneration to produce electricity and heat in an environmentally conscious way. In 2009, all three turbines were replaced with more efficient models that produce higher electrical output. As result, significantly more power can be produced from the same amount of natural gas – about 2.5 million kWh per turbine each year.

The new equipment is also outfitted with "Dry Low NO_x" combustion systems. Thanks to the use of special gas combustors in the turbines, significantly less nitric oxide (NO_x) is formed without additional water having to be injected into the combustion process. This step was necessary in the past to lower NO_x levels. Thanks to cutting-edge technology, nitrogen emissions are about 60 percent below the levels released by the older generation of equipment. A convincing piece of evidence showing that improved environmental impact does not have to result in lower output – quite the contrary.

Teamwork for the environment At the Dortmund location, one of the largest arvato service centers in Germany, Andreas Jung and his IT team have taken a number of steps to reduce energy usage. The initiative called "think green – save energy" focuses on the IT systems as well as the ventilation and lighting systems, building-services engineering and windows. The comprehensive concept has served as a template for other German customer service centers.

By putting high-quality thermal foil on windows, the average room temperature on warm days was lowered by 2 to 3 degrees Celsius, enabling the output of the air-conditioning system to be reduced. In many areas, motion sensors ensure that lights operate only when they are needed. Computers and monitors automatically go into the hibernation mode when they are not in use, just as printers, fax equipment and copiers do. They are automatically shut down at the end of the work day as well. The IT department also employs virtual servers in order to use hardware more efficiently and save energy. For systems that cannot be replaced with virtual servers, the utilization level of processers and hard discs is automatically checked in order to systematically shut them down when usage is low.

"One other important concern to us was to draw employees' attention to environmental protection and conscious behavior," says Andreas Jung, the head of IT. "To do this, we took a number of steps, including the use of our location's intranet, installation of screen savers with the ›think green‹ logo and distribution of mouse pads imprinted with the logo." Overall, the "think green" initiative will save about 200,000 kWh of electricity annually at the Dortmund site.

Top-quality products, sustainably produced With its top-green line, the arvato digital services subsidiary topac has developed an environmentally conscious product line in the area of multimedia packaging. The packaging consists entirely of recycled or recyclable material, is produced in an environmentally friendly manner, and is printed with inks and lacquers that are free of petroleum and solvents. In introducing this line, topac is part of a trend related to the rising demand for environmentally conscious products in this area.

In June 2009, topac was also certified according to the stringent rules of the Forest Stewardship Council (FSC). The FSC logo and topac's certification according the environmental standard ISO 14001 stand for environmentally friendly and sustainable production. "For us, FSC certification represents the logical progression in the establishment and continued operation of an environmental management system according to ISO 14001 and our other efforts in this area," says Sven Deutschmann, CEO EMEA Manufacturing of the topac parent company arvato digital services. "Environmental considerations are becoming increasingly important to our customers. We are also seeing this in new business activities that we are progressively entering."

Optimizing compressed-air supplies Optimization is particularly beneficial in the area of capital equipment. The delivery of compressed air is a good example of this. In DVD production, a vacuum is used to hold the stampers – that is, the masters used in CD and DVD replication – in the DVD injection molding machine to the equipment. In the past, this was done at arvato digital services in Gütersloh with Venturi nozzles using compressed air. In a Venturi nozzle, a gas or a liquid flows through a constricted section of pipe to which an outlet tube is attached. The flow speed increases at the constricted area, creating negative pressure in the outlet pipe.

In this process, 68 liters of compressed air were used at each stamper-equipped production line per minute – regardless of whether the equipment was running or not. Mike Buchholz of the service team promoted the concept of using the central vacuum system to which the production facilities are connected to supply the negative pressure. This central vacuum system does such tasks as hold matrixes in place or drive pumps.

"By connecting the injection molding machines to the central vacuum system, only one vacuum is required to secure the stamper," Mike Buchholz says. Once the master is held in place by suction, the closed circulation system prevents the vacuum from filling again and the negative pressure from decreasing. In the past, the negative pressure had to be continuously maintained in order to keep the stamper in place. As part of the conversion, new lines were laid from the central vacuum system to all DVD lines and new valves were installed. A straightforward investment that is paying off: As a result of the connection to the central vacuum system, arvato digital services is saving about 175,000 kWh of electricity annually.

Optimal energy efficiency in IT The service subsidiary arvato distribution works to conserve resources by relying on "green IT." One critical aspect of this effort is using IT equipment – computers, monitors, printers, servers, network components, etc. – that optimally use energy. "Reduced electricity consumption has a direct positive impact on the environment and helps our company by lowering the power bill," says Jörg Schartner, Director of IT infrastructure at arvato distribution. "Electricity-saving PCs use nearly two-thirds less energy than 2-year-old computers. Considering the approximately 1,400 PCs used by arvato distribution, there is substantial savings potential to tap." Energy-saving hardware also produces less heat. As result, the use of air conditioning in the server room can be cut back.

Other central goals of the subsidiary's green IT initiative include environmentally conscious, resource-conserving production practices and consumption as well as good recyclability. Mercury and other harmful substances are not to be used in the manufacturing process. Packaging is selected on the basis of environmentally conscious criteria, and recycling is energetically practiced.

6,000 tons of CO_2 savings

At just one location in Germany, arvato saved nearly 6,000 tons of CO_2 by using new energy technology. That is just about as much carbon dioxide as is generated by 100 cars over 25 years.

arvato distribution purchases only IT end devices bearing silver or gold ratings from EPEAT (the Electronic Product Environmental Assessment Tool). The EPEAT rating provides information about the environmental attributes of computers and monitors. The team led by Jörg Schartner also relies on virtual servers. "Instead of just buying more hardware, we design the use of hardware much more efficiently, which also has a positive impact on our environmental balance sheet."

Overall energy usage reduced At the beginning of 2009, an energy-management system (EMS) overseen by Michael Tigges, Department Head of Central Services, and Matthias Knoblich, Director of Technology, was launched in the building area DMD 1 of arvato services' location in Gütersloh. The objective was to pinpoint existing potential for improving energy efficiency and cutting the costs for the print and letter shop.

An implementation concept was initially worked out under project coordinator Stephan Voigt and in cooperation with Facility Management. This concept was based on the requirements of DIN EN 16001, a draft of which was available at that point. At the same time that the energy-efficiency study was being conducted, representatives from other departments were consulted in order to bundle both users' points of view and experiences with building-specific energy distribution and usage as well as the green IT expertise at the location. To further supplement know-how, external specialists were also called in. As a result, an initial energy audit was conducted in March 2009 with the assistance of experts from the regional energy provider.

An in-depth analysis pinpointed optimization potential: In the audit, all energy consumers, including the air-conditioning system, lights, production technology and the IT infrastructure, were evaluated under real-world operating conditions. As a result of the work, the team was able to identify numerous organizational and technical areas that were then examined in terms of feasibility, usefulness and amortization time. Ten measures have already been implemented, including an automated hall lighting system with Luxsensor timing switches and the needs-based optimization of the sleep modus in the print shop. The annual savings potential of these 10 measures totals 242,000 kWh, which amounts to a reduction of total energy usage by 9 percent with simultaneous amortization within a year.

"With this voluntary energy-efficiency study, we have laid the foundation for efforts to systematically and continuously reduce our own energy usage," Michael Tigges and Matthias Knoblich say in positively assessing the work.

Significantly reduced emissions All of these steps have generated significant results around the world. At just one location in Germany, arvato saved nearly 6,000 tons of CO_2 by using new energy technology. ✻

Statements from our partners

The constructive dialogue with our stakeholders is a critical element in our work to continuously and sustainably improve our impact on the environment. For this reason, we asked some of our partners to contribute to this Environmental Report.

"arvato AG has been part of the Global Forest and Trade Network of WWF since 2005. In this function, the company, with its extensive network of printing plants, has actively worked to establish the FSC standard in the marketplace. As part of its work, it has provided expert and comprehensive information about FSC certification and its background to interested customers.

The company has successfully achieved every goal set when the WWF and arvato began their partnership, including the certification of all printing plants. We will now sit down and talk about further projects and new goals." ❊

Johannes Zahnen, Forestry Expert, World Wide Fund for Nature

"The protection and enhancement of the environment together with the sustainable use and ongoing development of resources are necessary to enable future generations to benefit from an acceptable living environment. RDA has therefore made a commitment to consider the environment in its business decisions, and to act in an environmentally responsible manner.

As a global publisher of multiple print products, RDA uses a global supply base, including the paper it uses in its direct marketing efforts and products. Our suppliers are required to comply with the laws and regulations in their countries of operations, including environmental laws and regulations. RDA embraces an environmentally friendly paper policy and takes a responsible approach to its obligations, especially with regard to its paper products. We support sustainable forestry management and the use of chlorine-free bleaching process." ❊

Albert L. Perruzza, Senior Vice President Global Operations,
Information Technology & Business Redesign, Reader's Digest Association

“Recycled paper – climate protection and resource conservation on every page”

Sönke Nissen, Director of the Berlin office of the Initiative Pro Recycling Paper

IPR – Initiative *Pro* Recyclingpapier

The Initiative Pro Recycling Paper was set up in August 2000 by companies from an array of industries to further increase the acceptance of recycled paper in business and government. Today, it has 23 well-known members – including the arvato company Mohn media. Unlike just about any other product, recycled paper serves as a model for efficient energy- and resource-related business practices. In equal measure, it stands for climate, resource and species protection. During the production of recycled paper, large amounts of water and energy are saved and CO_2 emissions avoided. “Just six pages of recycled paper save a liter of water,” says Sönke Nissen, who heads the economic alliance’s Berlin office. “Our initiative works to promote the increased exploitation of this savings potential. We want to change people’s attitudes and achieve more sustainability in the use of paper.”

In times of climate change and increasingly scarce resources, sustainability is becoming critically important. But paper usage continues to climb. For this reason, recycled paper, with its array of environmental strengths, plays a critical role in sustainable business practices. The use of recycled paper as part of a holistic sustainability strategy in companies represents a clear commitment to preserving valuable resources and, as a result, is a credible expression of sustainability in practice.

The Initiative Pro-Recycling Paper conducts a continuous dialogue with important interest groups in the business, scientific, political and environmental communities to raise the awareness level of the public as well as political and business leaders about the benefits of recycled paper. This work is complemented by Germany-wide information campaigns and projects that further strengthen people’s motivation to use recycled paper. The environmental savings potential can be comprehensively exploited by companies because the quality of today’s recycled paper enables it to be easily used in the widest variety of areas.

“We believe that the goals can be reached jointly with other innovative companies that are already intelligently combining environmental and business practices,” Sönke Nissen says. ❊

Green business models – a win-win-situation

Susanne Trentmann and Timo Reis from the arvato innovation team

In addition to many challenges, the development of environmental business models will create an array of opportunities for new business ideas. The arvato innovation team tracks new trends and markets. It then takes a closer look at the most important ones.

The objective is to develop new business models that address such trends as sustainable business activities for arvato customers and to turn them into economic successes. Susanne Trentmann and Timo Reis provide details in the following interview.

Where is the interface for arvato in terms of business growth and environmentally conscious action?

Trentmann: In those places where we offer our customers added value by coming up with new innovative ideas, things like optimizing their processes, reducing their costs or improving their environmental consciousness. A responsible approach to nature is an important topic, and sustainability is a megatrend that is becoming increasingly important to our customers. For this reason, "green" business models have become a top priority on our agenda.

How do you come up with your ideas?

Reis: It is a multi-step process. First, a detailed analysis is made of such green industries as solar power and recycling, the needs of our customers in terms of sustainability and legal regulations. In workshops with employees, students and subject-matter experts, the results are used to identify and evaluate potential business fields for arvato. Then, the integration into specific business models is carried out. An important factor is whether a business approach fits into arvato's product and service portfolio.

What is more important in evaluating business models – environmental concerns or revenue potential?

Reis: I do not think this is a question of either/or. If a "green" business model has extensive revenue-generating potential, it will also have a very positive impact on the environment as a result of its characteristics. Environmental issues are becoming an increasingly critical factor in the awarding of contracts and bidding. In other words, the need is there and is growing.

How can arvato respond to this need?

ST: Right now, we are working on a plan that involves such issues as CO_2 compensation, energy efficiency and recycling. A good example of how one of our companies took advantage of its core skills and expanded its product range is the topgreenline packaging at topac.

For us as service providers, there are many ways to link business growth and sustainable action to each other – this is a very special win-win situation and will have a major impact on the development of new business activities in the future". ✻

People's interest in sustainability and responsible use of resources is growing. "Green" services are viewed by people like the U.S. sociologist and economist Jeremy Rifkin as a "third industrial revolution," that will become as important as the traditional automotive industry by 2020. An Internet-like development of environmental business models seems likely.

Closed circuit

Recycling conserves resources and lowers costs

Recycling – the reprocessing of previously used raw materials, substances or products – plays an important role in the protection and conservation of natural resources. Against the backdrop of constantly rising prices for raw materials, the commitment to using recycled materials pays off in economic terms as well. After all, supplies of many natural resources are limited or endangered, even though they are renewable resources: Reserves of crude oil will eventually run out or can no longer be economically tapped. Through the global use of wood, forests are cut down faster than they can grow back. And many products contain materials that cannot be separated in a natural process or pose a threat to the environment unless they undergo further processing.

One of the challenges posed by recycling is separating the individual elements of a product. CDs, DVDs or Blu-ray discs, for instance, are integrated products consisting of plated functional layers, protective coatings and more than 90 percent of valuable polycarbonate. There are two ways to recycle

these data-storage devices. The first method is a chemical process in which the components are separated using caustic soda. But when this process is completed, the polycarbonate still contains traces of lacquer and metal. As a result, it cannot be used to produce new discs. But it can be utilized by the automotive and computer industries to make bumpers, dashboards or monitor housings. The second method is the mechanical peeling of the disc with cutters. This process yields very pure polycarbonate that can be directly used in the production process. Both recycling processes leave behind fragments of lacquer and metal that must be professionally disposed of.

Material-specific recycling Generally speaking, plastics can be reused thanks to material or raw-material recycling. In material recycling, plastics are sorted and ground into granules that can be used to produce new products. By contrast, raw-material recycling breaks down plastics into their basic elements. These elements are then turned into new plastics or petrochemical products. If remnants of plastics cannot be reused any longer, they can serve as an alternative energy source to crude oil.

Paper, the recycling of which conserves forests, water and energy, cannot generally be reused without processing. Plain paper residues resulting from the paper-making process can be easily recycled. For printed paper, though, more than half of the ink must be removed from the paper fibers in a process known as deinking. As the extent and the number of colors rise, it becomes increasingly difficult to achieve this goal. Waste containing problematic glues or surface-refinement products can only be used to produce graphic recycling paper in an elaborate process. Multicolor copies produced by digital laser printing can only be thermally recycled. But, the regular introduction of virgin fiber paper into the recycling chain is an essential requirement for recycled paper. This is because paper fibers as a natural resource cannot be recycled over and over again.

Industry and consumer responsibility There are many other areas in which recycling processes have not reached the standard that they could have, including assorted technical equipment that contains toxic substances and heavy metals. If these substances are disposed of improperly, they could enter the atmosphere or groundwater. But it is not just business and industry that have been justifiably called on to do their part to create the longest possible recycling chain – by incorporating the use of environmentally conscious materials into the development of new products. All individual consumers must make their own contribution as well. After all, they can assure that used devices are introduced into a regulated recycling process and are not improperly disposed of. ✻

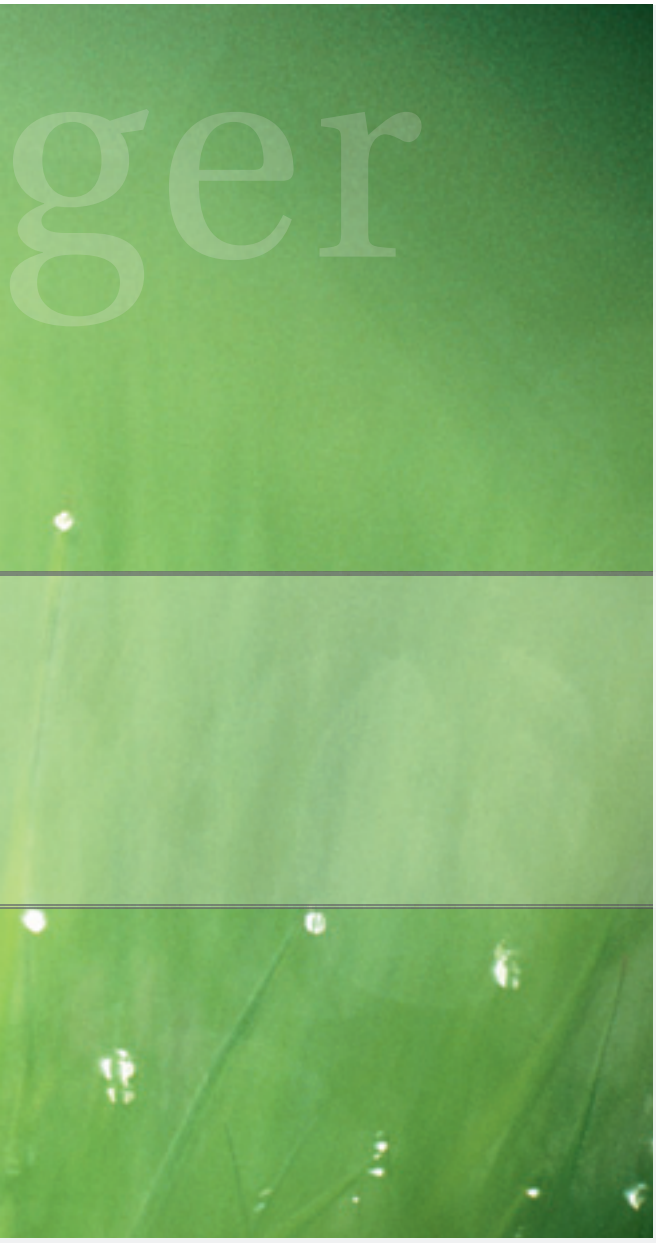
The global environmental balance sheet

This third environmental balance sheet issued by the arvato group has been enhanced and expanded in several ways since the first two balance sheets were issued for the years of 2004 and 2006. In one reflection of these changes, data collection has been systematically refined and augmented by key disclosures defined by the Global Reporting Initiative (GRI). As a result, business travel by arvato member companies was for the first time included to the greatest extent possible in the balance sheet. Furthermore, the impact on biodiversty and efforts to increase efficiency and to conserve energy were determined and evaluated.

None of the surveyed arvato membership companies directly or indirectly borders on protective areas. As a result, no impact on biodiversity was reported. Many companies in the arvato group have taken extensive steps in the past to conserve energy or are in the process of introducing them. During the reporting period, a multitude of efficiency-boosting projects was carried out as well. In a separate section of this Environmental Report, we take a close look at interesting projects, their introduction and their outcomes.

Breakdown into production and services In the reporting year 2008, more than 60,000 people worked for the group in over 30 countries. The range of jobs is highly diversified: It extends from traditional production, including the creation of various printed products by the arvato print division and the manufacture of digital storage media by the arvato digital services division to the manifold services and logistics activities offered by arvato services and arvato systems. These services include the operation of service centers for companies doing business in the widest assortment of sectors, the provision of IT services in the company's own computing centers, and the sale of products and digital content.

The producing companies in the arvato print and arvato digital services divisions primarily manufac-



ture printed products and storage media. They print on paper and cardboard, creating books, catalogues, magazines, calendars and brochures, or turn plastics – mainly polycarbonate and polystyrene – into CDs, DVDs, Blu-ray discs and other storage media. Both divisions consume the most natural resources at arvato, as well as have high usage levels of heat, electricity and water.

On the other hand, the employees of the more than 100 subsidiaries in the divisions of arvato services and arvato systems primarily perform office jobs that are carried out with significant IT support and produce only a limited number of products and goods. As a result, the use of materials, heat, electricity and water is lower here. To address the distinct features of these business activities, we have divided the divisions into the segments of production and services. As in previous reports, the respective environmental balance sheets and key figures will be shown separately.

INPUT	2006 arvato	2008 arvato
RAW MATERIALS, TOTAL (t)	1,330,407	1,453,474
Paper/cardboard	1,270,439.7	1,370,627.5
Inks/lacquers	23,778.9	28,509.6
Plastics (PC, PS, PE etc.)	35,751.3	47,604.0
Other raw materials	437.2	6,733.0
AUXILIARY MATERIALS, TOTAL (t)	90,626	115,483
Glues	6,871.7	6,635.7
Binding material/plastic films	21,765.4	10,033.8
Packaging	61,988.9	98,813.6
OPERATING MATERIALS, TOTAL (t)	7,447	14,005
Chemicals	1,827.2	2,626.3
Cleaning agents	375.5	559.1
Solvents	2,796.2	4,417.6
Lubricants	920.9	109.2
Other operating materials	1,527.3	6,293.3
FRESH WATER, TOTAL (m^3)	1,507,966	1,711,886
ENERGY SOURCES		
Electricity (MWh)	633,937.3	659,002.8
Thermal and process heat (MWh)	632,829.0	538,067.3
Natural gas/LPG (MWh)	204,827.2	167,213.5
Fuels (l)	3,571,933.3	1,184,049.7
BUSINESS TRAVEL		
Flight kilometers	–	30,404,705.3
Rail kilometers	–	6,072,879.0
Rental-car kilometers	–	22,578,948.2
OUTPUT		
PRODUCTS, TOTAL (t)	9,456	8,796
Print products	7,021.6	5,592.4
Mailings/shipments	142.0	1,080.4
Storage media	2,292.3	2,123.0
WASTE, TOTAL (t)	280,878	294,417
Waste for recycling	256,837.4	261,524.2
Waste for disposal	24,040.8	32,892.9
Share requiring special monitoring among both types	4,657.6	2,654.0
WASTEWATER, TOTAL (m^3)	1,040,547	1,019,049
EMISSIONS (t)		
Carbon dioxide, fossil	627,298.7	752,116.4
Carbon monoxide	384.7	750.9
Nitrogen oxides	937.9	1,269.5
Sulfur dioxide	1,059.2	794.5
Dust/particles	119.5	66.7
VOC, total	1,704.9	1,637.0

print & digital services

In 2008, arvato print and arvato digital services produced 8.8 billion products from 1.435 million tons of raw materials – primarily paper, ink and plastic. Material usage rose 8.3 percent above the level of 2006, while the number of manufactured products dropped slightly during the same period. The amount of printed products fell, just as the total for storage media did. More than 2.1 billion storage media like CDs, DVDs and Blu-ray discs were made by the production facilities. Music cassettes and records – in contrast to earlier reporting years – no longer had any appreciable share of the sound storage media that were produced. While the number of printed products declined around the world, the amount of printed paper climbed 6 percent to a total of 1.34 million tons since the last reporting year. This is an indication that more extensive products like books and catalogues instead of brochures and pamphlets were made. The use of plastics to produce the large number of data storage media climbed by 13,058 tons to more than 47,600 tons. Other production raw materials included inks and lacquers, which are used to make both printed products and data storage media. A total of 28,508 tons of these materials was used throughout the company.

The use of packaging materials more than doubled, rising to 81,664 tons. With a share of 83 percent, packaging materials made up the largest portion of the 98,252 tons of auxiliary materials that were used. Other important auxiliary materials included more than 6,550 tons of glues and 10,033 tons of binding materials. The amount of operating materials rose as well. Such materials are not part of the products themselves, but are needed to make them. With a total volume of 13,557 tons, solvents (4,406 tons) and other chemicals (2,626 tons) had the largest shares. Significantly more cleaning agents were also used, rising to 526 tons from 365 tons two years earlier. Consumption of fresh water climbed by 7.1 percent to nearly 1.33 million m³.

But the usage of grid- and pipeline-delivered energy sources fell slightly in spite of increased production and additional use of materials. A total of 498,890 megawatt hours (MWh) of electricity was used, 3.2 percent less than in 2006. The reduction in consumption was even more pronounced for thermal and process heat as well as natural gas, both of which fell more than 18 percent. Together, arvato print and arvato digital services used 605,644 MWh of heat. Nearly 19 million m³ of natural gas were also directly used, primarily in the drying and afterburner units used by web presses. Fuel usage by the company's own vehicles, consisting of forklifts, trucks, delivery vehicles and cars, rose by 28 percent to 3.6 million liters.

Expansion of the balance sheet As part of the expansion of the balance sheet done on the basis of the GRI guidelines, business travel was considered for the first time. Although complete information is not yet available for all international companies, a reporting system for this purpose was introduced throughout the company in fiscal year 2009. At about 12.4 million flight kilometers, 0.8 million rail kilometers and 3.1 million rental-car kilometers at arvato's production companies, emissions caused by business travel made up less than 1 percent of the company's carbon footprint, that is, to the emission of climate-relevant harmful gases.

As a result of the initial inclusion of business travel in the balance sheet, air emissions rose during the period under review. Because of this addition to the balance sheet, no comparison of the emission burdens can be made with the results from the previous two reporting periods in 2004 and 2006. But it should be noted that the transport-related shares of nitrogen oxides and carbon monoxide were bigger contributors to emissions than dust and sulfur dioxide. Another reason that prevents the latest figures from being compared with those of the past is the adjustment in global emission factors involving the production of electricity that was made for this report. They were adjusted from the reported information from 1999 through 2001 to the production situation in 2004 through 2007. As a result of improvements in power-plant technology and power-plant parks, significant reductions were achieved in levels of sulfur dioxide and dust/particulate matter.

In a reflection of the approximately 8 percent rise in material usage, the amount of waste rose 9.7 percent during the reporting year of 2008. arvato's production companies around the world generated 277,720 tons of waste. Of this amount, 246,855 tons, or nearly 89 percent, were recycled, and only 30,864 tons had to be disposed of. In comparison with 2006, a significantly lower amount of hazardous waste was produced with a total of only 1,205 tons in 2008. The amount of waste water fell by 14 percent to 0.69 million m³. Because of its relatively low pollution levels, this waste water could be introduced into the public treatment system.

INPUT	2006 **print** and **digital services**	2008 **print** and **digital services**
RAW MATERIALS, TOTAL (t)	1,325,147	1,426,643
Paper/cardboard	1,266,395.3	1,343,799.9
Inks/lacquers	23,778.9	28,507.6
Plastics (PC, PS, PE etc.)	34,546.4	47,604.0
Other raw materials	426.1	6,731.2
AUXILIARY MATERIALS, TOTAL (t)	56,992	98,252
Glues	6,721.7	6,555.1
Binding material/plastic films	21,765.4	10,033.4
Packaging	28,505.2	81,663.7
OPERATING MATERIALS, TOTAL (t)	7,406	13,557
Chemicals	1,827.2	2,626.3
Cleaning agents	365.1	526.3
Solvents	2,791.5	4,405.6
Lubricants	920.9	108.6
Other operating materials	1,501.5	5,889.8
FRESH WATER, TOTAL (m³)	1,237,514	1,325,840
ENERGY SOURCES		
Electricity (MWh)	513,422.1	498,890.4
Thermal and process heat (MWh)	535,021.1	438,430.8
Natural gas/LPG (MWh)	204,827.2	167,213.5
Fuels (l)	2,817,061.7	3,599,907.8
BUSINESS TRAVEL		
Flight kilometers	–	12,427,106
Rail kilometers	–	785,582
Rental-car kilometers	–	3,057,212
OUTPUT		
PRODUCTS, TOTAL (t)	9,456	8,796
Print products	7,021.6	5,592.4
Mailings/shipments	142.0	1,080.4
Storage media	2,292.3	2,123.0
WASTE, TOTAL (t)	253,234	277,720
Waste for recycling	232,794.8	246,855.3
Waste for disposal	20,438.7	30,864.4
Share requiring special monitoring among both types	4,509.2	1,205.4
WASTEWATER, TOTAL (m³)	803,268	694,052
EMISSIONS (t)		
Carbon dioxide, fossil	531,520.8	624,295.8
Carbon monoxide	347.4	671.6
Nitrogen oxides	800.0	1,092.0
Sulfur dioxide	953.1	660.3
Dust/particles	109.9	55.1
VOC, total	1,436.4	1,310.2

services & systems

The divisions of arvato services and arvato systems, which fall under the balance-sheet column of services, had about 38,000 employees around the world during fiscal year 2008. As a result of the establishment and expansion of international companies as well as the growth of multifaceted service activities, the workforce climbed by approximately 10,000 since the reporting year of 2006. Among other jobs, the companies operate computing centers; perform order, shipping and return processes for various customers and product groups; as well as provide telephone and written customer assistance on behalf of other companies. In addition, all sorts of product groups were warehoused and distributed for numerous industrial customers. It is still not possible to provide information about production totals for these divisions like those provided for arvato's production operations. The energy and material totals are significantly lower for these companies despite the bigger workforce.

Usage of raw materials climbed by nearly 10 percent to 26,831 tons. This largely resulted from the use of office paper (26,828 tons) and represented less than 2 percent of raw materials used by the arvato group. By contrast, the share of auxiliary materials that were used rose (15 percent). A total of 17,231 tons was needed here. More than 99 percent of this total was packaging materials. Compared with the total from 2006, the amount of packaging decreased by nearly half, a development that primarily resulted from the restructuring of arvato services' America companies into the arvato digital services division. The usage of operating materials, primarily chemicals, cleaning agents, solvents and lubricants, climbed to nearly 450 tons. A total of 386,047 cubic meters of fresh water was used, primarily for sanitary and drinking-water purposes.

Energy usage rose during the reporting year compared with the previous period. Electricity usage rose by more than 41,000 MWh to 162,112 MWh. The rise in heat usage was considerably lower at only 2 percent and totaled 99,637 MWh. Fuel use by the company's vehicles climbed 17 percent in 2008 to 844,142 liters of gasoline and diesel.

Rise in air emissions, drop in waste As a result of the rapidly rising number of employees and companies as well as the first-time consideration of business travel in the arvato environmental balance sheet for 2008, emissions also increased markedly. Because of system-related factors, information about business travel for arvato companies outside Germany could not be completely collected. The reported total of 18 million flight kilometers, 5.3

million rail kilometers and 19.5 million rental-car kilometers generated 7,887 tons of carbon dioxide emissions. This represented 6.2 percent of the 127,821 tons in total emissions of this greenhouse gas. In contrast to the 0.6 percent share of CO_2 emissions for business travel at the production companies, this is more than a marginal amount. For the service companies as well, no comparison with previous years could be made as a result of the adjusted and expanded data base. In general terms, the totals for CO_2, CO und NO_x rose – primarily because of the enlarged balance-sheet framework – while the amount of sulfur dioxide, dust and VOCs decreased as a result of technological advances.

In contrast to trends among other materials in use, the amount of waste significantly fell once again. At nearly 16,700 tons, this figure was below the level of 2004. Nearly 90 percent (14,669 tons) could be recycled and only slightly more than 2,000 had to be disposed of. At more than 8 percent, the total of 1,450 tons of hazardous waste produced in fiscal year 2008 represented a larger share of overall wastes than in the previous reporting years. Similar to fresh-water consumption, the amount of waste water rose by 37 percent, reaching a total volume of nearly 325,000 cubic meters. ✻

INPUT	2006 **services** and **systems**	2008 **services** and **systems**
RAW MATERIALS, TOTAL (t)	5,260	26,831
Paper/cardboard	4,044.4	26,827.6
Inks/lacquers	–	2.1
Plastics (PC, PS, PE etc.)	1,204.9	–
Other raw materials	11.1	1.8
AUXILIARY MATERIALS, TOTAL (t)	33,634	17,231
Glues	150.0	80.7
Binding material/plastic films	–	0.4
Packaging	33,483.7	17,149.9
OPERATING MATERIALS, TOTAL (t)	41	449
Chemicals	–	–
Cleaning agents	10.4	32.7
Solvents	4.7	12.0
Lubricants	–	0.6
Other operating materials	25.8	403.5
FRESH WATER, TOTAL (m^3)	270,452	386,047
ENERGY SOURCES		
Electricity (MWh)	120,515.2	162,112.4
Thermal and process heat (MWh)	97,807.9	99,636.5
Natural gas/LPG (MWh)	–	–
Fuels (l)	754,871.6	884,141.9
BUSINESS TRAVEL		
Flight kilometers	–	17,977,599
Rail kilometers	–	5,287,297
Rental-car kilometers	–	19,521,736
OUTPUT		
WASTE, TOTAL (t)	27,645	16,697
Waste for recycling	24,042.6	14,668.9
Waste for disposal	3,602.1	2,028.5
Share requiring special monitoring among both types	148.4	1,448.6
WASTEWATER, TOTAL (m^3)	237,279	324,996
EMISSIONS (t)		
Carbon dioxide, fossil	95,777.9	127,820.6
Carbon monoxide	37.3	79.3
Nitrogen oxides	137.9	177.8
Sulfur dioxide	106.1	134.2
Dust/particles	9.6	11.6
VOC, total	268.5	326.8

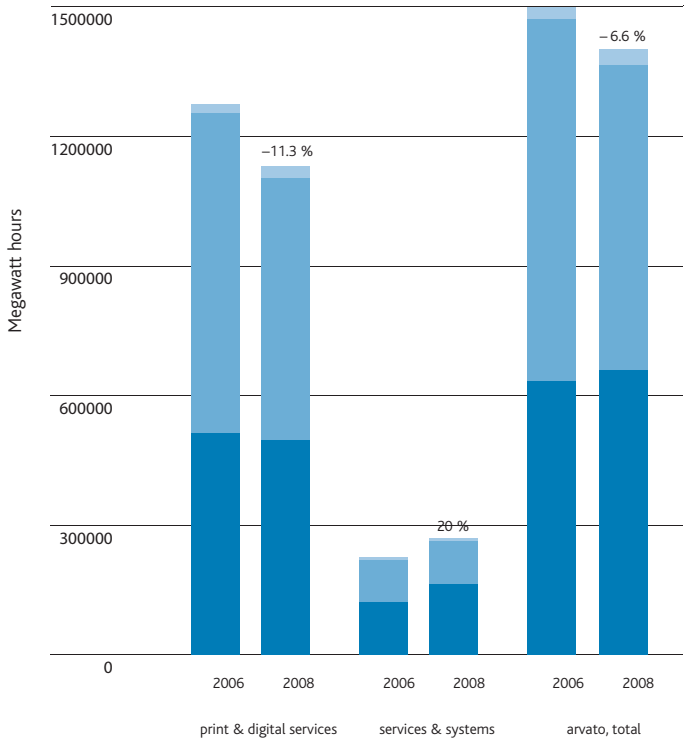
Key figures

In fiscal year 2008, we once again used a system of key figures to report on our environmental activities. But no comparisons can be made between the first two environmental reports and the latest one because of the first-time inclusion of business travel in the emissions category and of the reorganization of the services division. During this restructuring, the service and distribution locations in the United States and Canada were removed from arvato services and integrated into arvato digital services at the end of 2007. The key figures for the production divisions that are included in this environmental balance sheet also use product weight in tons as a benchmark. The product weight is based on the material used in the product (raw and auxiliary materials) minus recycled waste. The key figures in the service divisions once again are calculated on a per-employee basis.

In 2008, product weight increased by 127,000 tons to 1.25 billion tons since 2006 (+11.3 percent). The raw-material needs in this regard rose to 1.22 tons of raw materials per ton of product. At the same time, energy usage fell to 0.91 MWh per ton of product weight. As

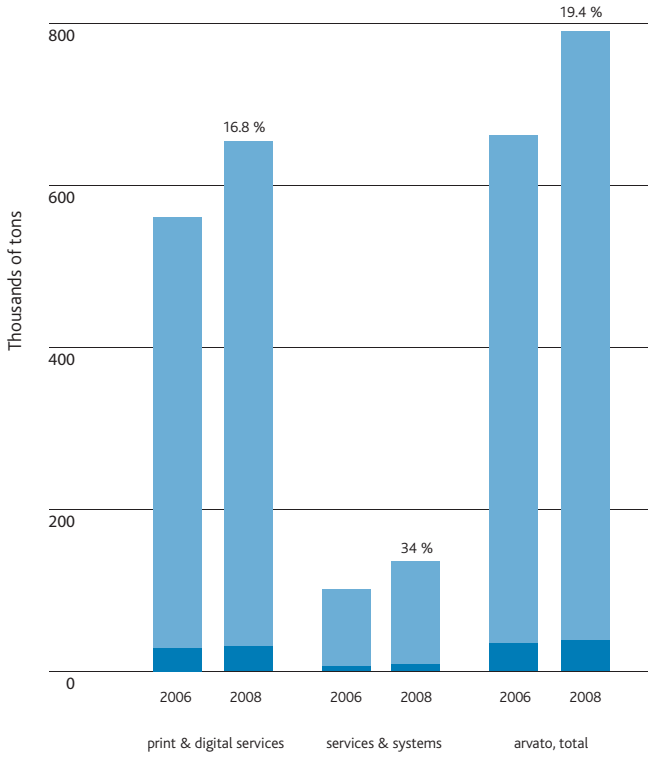
KEY FIGURES print and digital services (per ton of product weight)

	2006	2008	DIMENSION
1. Energy usage	1.13	0.90	MWh
2. Raw-material usage	1.22	1.22	t
3. Water usage	1.10	1.06	m³
4. Greenhouse effect	0.50	0.52	t CO_2 equivalent
5. Summer smog potential	0.38	0.38	kg ethene equivalent
6. Acidification potential	1.34	1.13	kg SO_2 equivalent
7. Eutrophication potential	0.09	0.11	kg PO_4 equivalent



Energy usage in megawatt hours

Fuels Heat Electricity

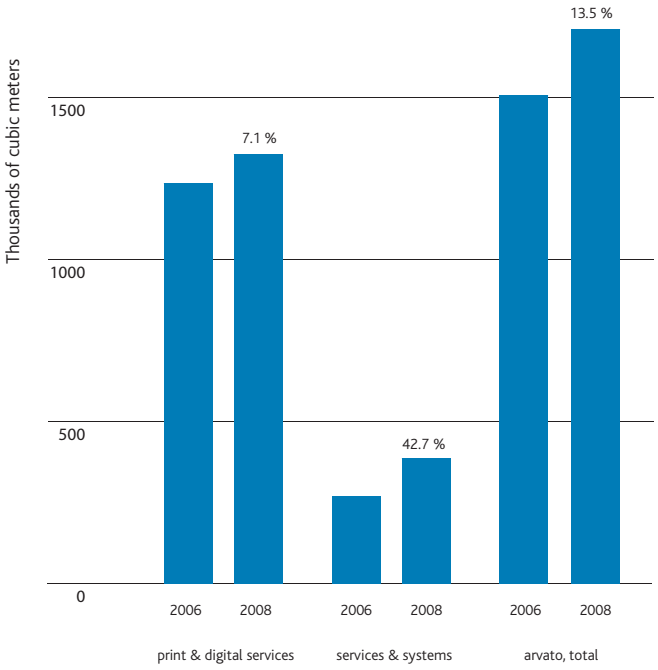


Greenhouse effect in CO_2 equivalents

Carbon dioxide Methane

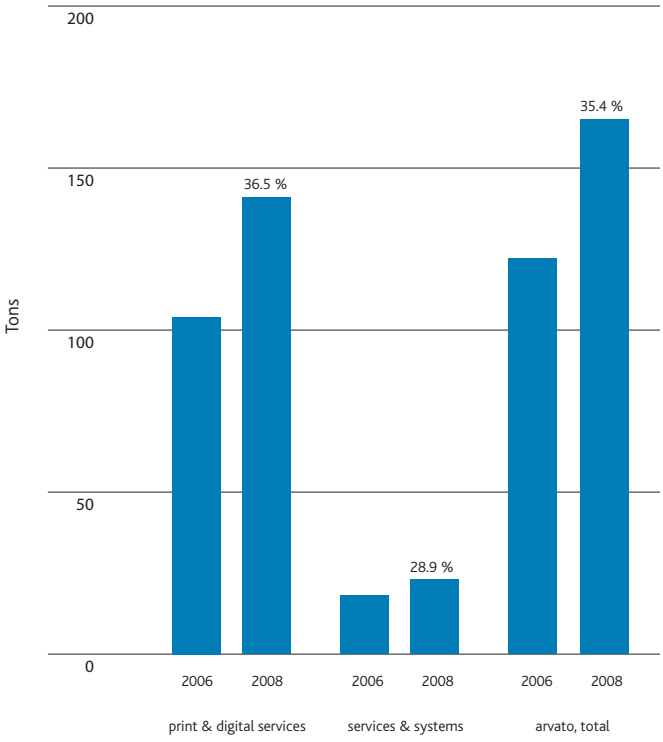
KEY FIGURES services and systems (per employee)	2006	2008	DIMENSION
1. Energy usage	10.00	7.02	MWh
2. Water usage	12.00	10.06	m³
3. Greenhouse effect	4.50	3.54	t CO_2 equivalent
4. Summer smog potential	0.63	0.48	kg ethene equivalent
5. Acidification potential	8.99	6.74	kg SO_2 equivalent
6. Eutrophication potential	0.80	0.60	kg PO_4 equivalent

"With this Environmental Report, arvato has taken additional forceful steps to transparently report its energy consumption and environmental performance: For the first time, business travel is included and evaluated in the company's energy and emission statement in accordance with the Global Reporting Initiative (GRI)." ✻ Dr. Achim Schorb, IFEU Institute for Energy and Environmental Research, Heidelberg



Water usage in cubic meters

Water

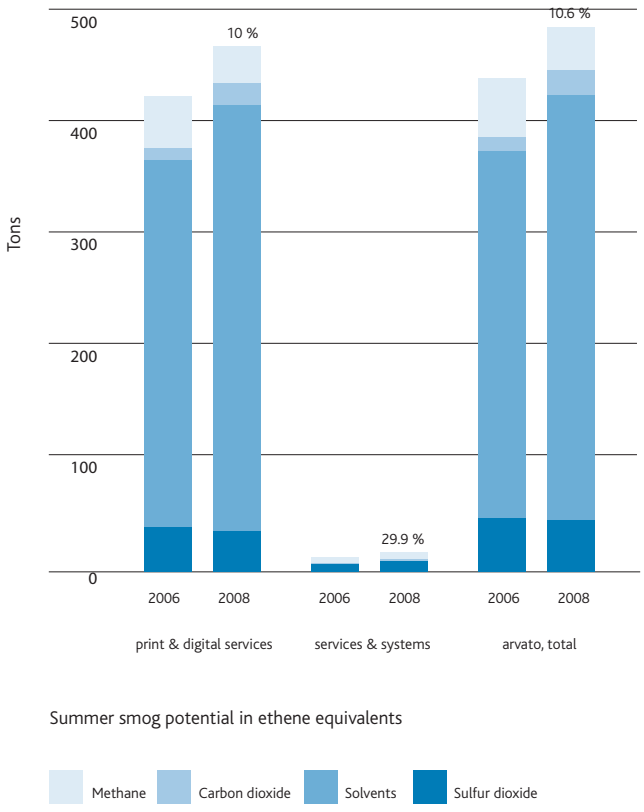


Eutrophication potential in PO_4 equivalents

Phosphate equivalents

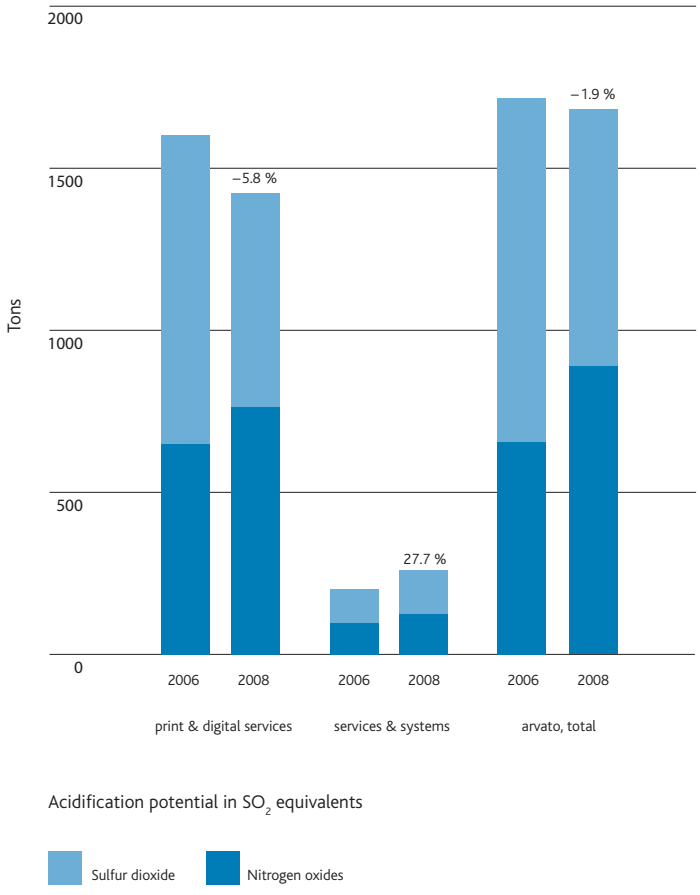
a result of the inclusion of business travel, emissions of noxious gases that affect the climate rose by 6 percent to 0.53 tons, but the total was nearly 230 kilogram below the levels of 2004. The total for summer smog potential was virtually unchanged. But the gauge for the excessive concentration of chemical nutrients in soil and bodies of water (eutrophication potential) rose slightly. Thanks to the continuing trend toward the use of low sulfur fuels and propellants, the acidification potential fell to 1.15 kilogram of sulfur dioxide equivalent per ton of product weight. Water use decreased slightly once again, totaling 1.08 cubic meters per ton.

The employment totals of the strictly service divisions increased to 38,372. In 2008, energy consumption totaled more than 7 MWh per employee, and water consumption slipped to 10.1 m³. As a result of the restructuring associated with the establishment of arvato digital services and the increased data collection, it is not possible to compare the key figures to the levels reported in previous environmental balance sheet for the production or the service companies. Nonetheless, we report the figures in the tables shown. ❊



Summer smog potential in ethene equivalents

Methane
Carbon dioxide
Solvents
Sulfur dioxide



Acidification potential in SO_2 equivalents

Sulfur dioxide
Nitrogen oxides

Glossary

Acidification potential Describes the degree of acidification of soil and bodies of water. Also known as "acid rain." Calculated in SO_2 equivalents.

Carbon dioxide (CO_2) Gas produced by the complete combustion of fossil fuels (gas, oil, coal, etc.). A key cause of the greenhouse effect.

Carbon footprint The amount of carbon dioxide that a person, company or country produces during a particular period

Carbon monoxide (CO) Colorless, toxic gas created by incomplete combustion.

Environmental guidelines An organization's overarching environmental goals and principles for action.

Environmental management system Voluntary instrument of preventive environmental protection used to systematically document and avoid environmental impacts at a company.

Eutrophication potential Excessive concentration of chemical nutrients in soil and bodies of water, caused by such things as phosphates and nitrogen oxides (NO_x). Is calculated in phosphate (PO_4) equivalents.

FSC (Forest Stewardship Council) International organization based in Bonn that has national working groups in 35 countries. www.fsc.org

Global Reporting Initiative (GRI) A joint initiative set up in 1997 by the U.S. nongovernmental organization Coalition for Environmentally Responsible Economics and the environmental program of the United Nations. Objective is to improve the quality and precision of sustainability reporting.

Greenhouse effect Describes the excessive warming of lower levels of the atmosphere by combustion processes employed by humans. It is primarily caused by the release of carbon dioxide (CO_2) from fossil sources and substances from the group of volatile organic compounds (VOC). Is calculated in CO_2 equivalents.

kWh Kilowatt hour; 1,000 kWh equal 1 megawatt hour (MWh).

Lean Six Sigma A combination of the quality-management system Six Sigma and the principles of lean management.

Nitrogen oxides (NO_x) Arise primarily from combustion processes through the oxidation of atmospheric nitrogen, a cause of "acidification" and "eutrophication."

Sulfur dioxide (SO_2) Produced during the combustion of sulfuric fuels, particularly coal. It is harmful to human health and vegetation, plays a role in acidification ("acid rain").

Summer smog potential Describes the formation of ground-level ozone through the chemical reaction of volatile organic compounds in the air exposed to heat and solar energy and with nitrogen oxides (NO_x) acting as a catalyst. Is calculated in ethylene equivalents.

VOC (volatile organic compounds) A cause of "summer smog," individual substances of it help create the "greenhouse effect."

WWF (World Wide Fund for Nature) Environmental organization active in nearly 100 countries. www.panda.org

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