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07

**Corporate
Social
Responsibility**



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Corporate Social Responsibility



Photo by France Grenot

The travel and tourism industry comprises diverse and interdependent sectors which together represent 9% of global GDP and employment worldwide¹⁷. Connecting the complex ecosystem of sellers and buyers of travel, Amadeus is in a privileged position to drive Corporate Social Responsibility (CSR) activities, leveraging underlying technology capabilities, expertise and stakeholder relations.

While the number and quality of **CSR projects** driven by Amadeus continued to grow, 2012 was also a year of review and self-assessment. We examined Amadeus CSR strategy since its formal establishment in 2008. Our goal was to evaluate the results and impact of our existing programme and thereafter determine how we would continue to grow our contribution. The outcome of this evaluation indicated that while the Amadeus CSR programme was based on a strong foundation, there was significant margin for improvement and more focused growth.

In the reshaped approach, project work is grouped under six programme areas:

Under Corporate Citizenship:

1 Knowledge and skills transfer

› Training and educational projects

2 Technology for good

› Selected components of Amadeus technology deployed in social projects

3 Community support

› Local community projects and volunteering

Under Environmental Sustainability:

1 Environmental Management System

› To measure, evaluate, improve and follow up on energy and resources used in operations

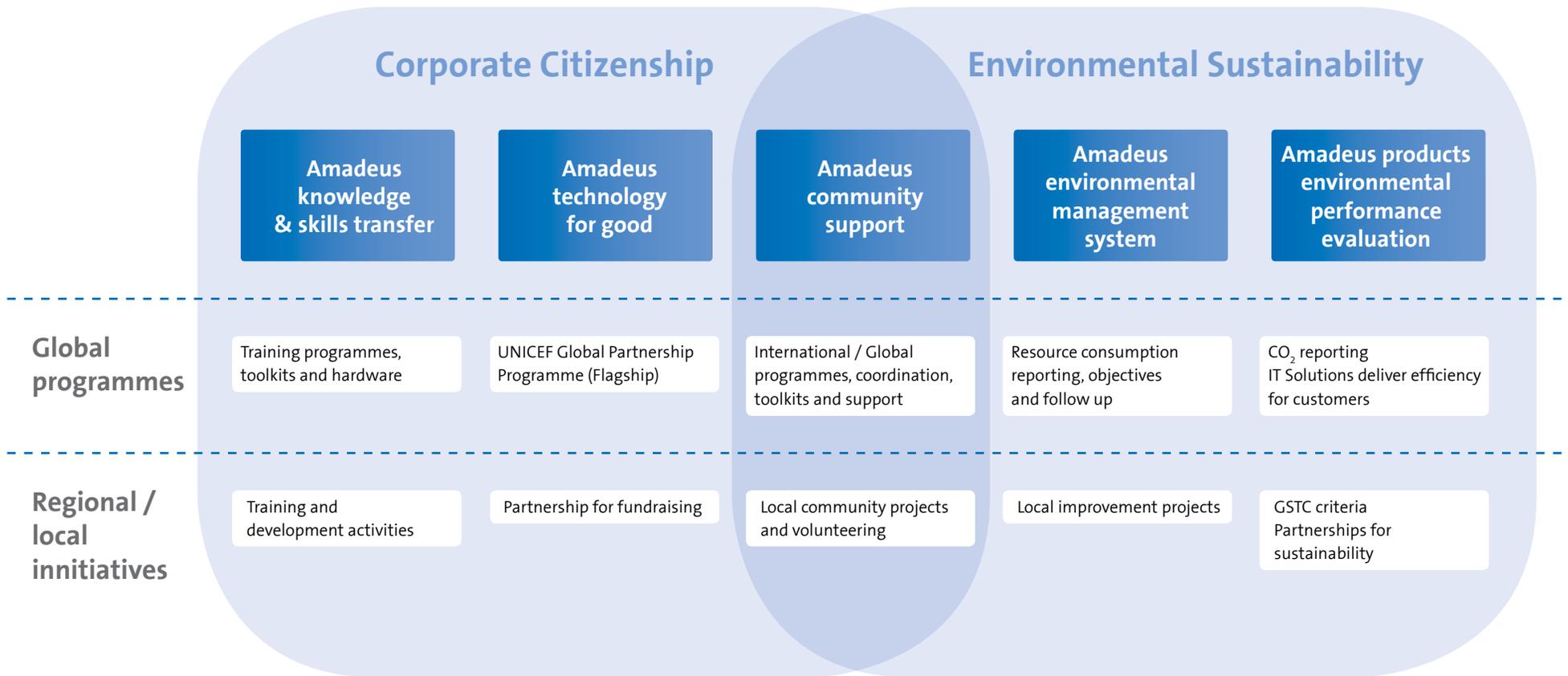
2 Evaluation of environmental performance of Amadeus products

› Identify and maximise environmental benefits of our products

3 Partnerships for sustainability

› Work in cooperation with other industry players in joint sustainability projects

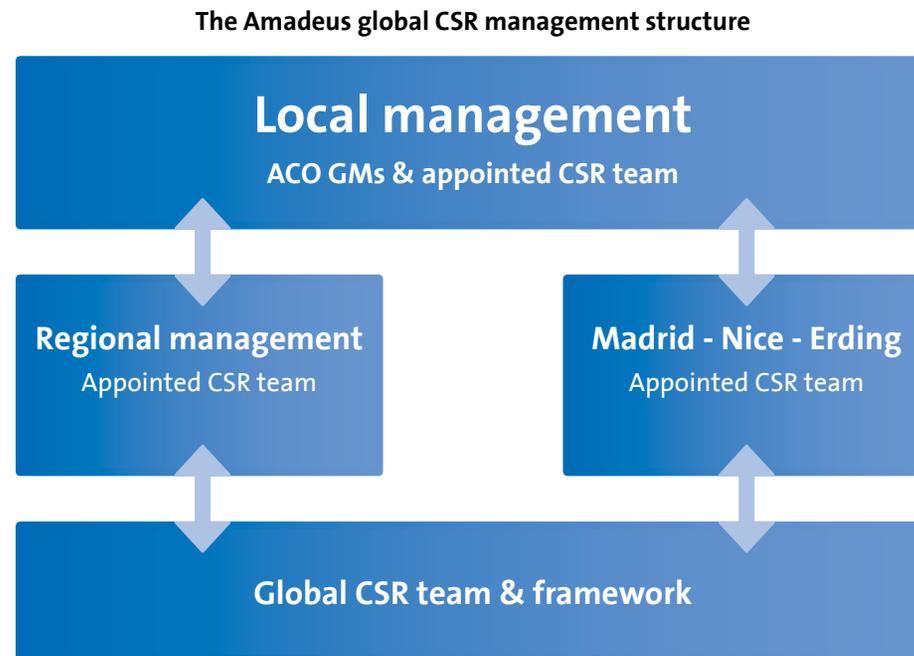
New Amadeus global framework for Corporate Social Responsibility



Through a combination of opt-in global programmes and local or regional initiatives in these six areas, we are able to implement CSR in a flexible and relevant way to suit the contexts and needs of diverse markets worldwide.

A reinforced management structure

To drive the new CSR programme, a reinforced, senior-level management structure has been set up, that decentralises control and facilitates full involvement of the Amadeus community, local ownership and management of projects. This structure will ensure the bottom-up engagement that is necessary to increasing qualitative geographic reach of our CSR programme and a common, more focused approach across the Amadeus group of companies.



Corporate Citizenship

Our ambition is to gradually but visibly, improve our contribution to society by engaging the resources that make Amadeus unique:

- 1 Our **people** and their **talent**
- 2 Our **technological capabilities**
- 3 Our **expertise** in the global travel industry

The Amadeus Corporate Citizenship programme arises from a desire to ensure our contribution to society goes beyond purely commercial expansion. As a global, corporate citizen, we have a **duty to interact in a responsible way from a business, social and environmental perspective**. In this context, one of the questions Amadeus aims to answer is: how do our activities improve living standards in the communities we work in?

In addition, it makes business sense in the long-term. When managed well, Corporate Citizenship can also facilitate achievement of strategically important goals for Amadeus:

- › Involvement in project work that tackles real challenges in our communities is a way through which we can increase **staff engagement**, loyalty and **pride**

- › Through collaboration in projects we can improve the **dynamism of relationships** with our partners and customers
- › As a consequence of positive outcomes from our Corporate Citizenship activity, we can enhance Amadeus' **reputation** among key stakeholders globally

Amadeus Corporate Citizenship programme addresses real social challenges

Shortage of local skilled manpower in the travel sector in developing countries

Amadeus **knowledge & skills transfer projects** benefiting vocational students, university graduates and industry professionals in 22 countries. The professional skills training projects aim to bridge the gap between mainstream academia and real-life business needs

“While the number of extreme poor has dropped in the past 3 decades... there are still more than a billion people living in extreme poverty.”
(source:UNDP: Fast Facts: Poverty Reduction. January 2013)

Amadeus **community support** initiatives raised more than 150,000 EUR in cash donations, covering basic needs for various communities worldwide

In 2012, every day 19,000 children died from preventable causes
(source:UNICEF)

Amadeus' **global partnership with UNICEF** to request donations from consumers when they buy travel services online. The contributions pooled together will help fund projects for disadvantaged children around the world



Amadeus Global Leadership Conference 2012: Amadeus market heads in CSR Workshop, assessing impact of CSR strategy and activity worldwide

The journey to reshape our Corporate Citizenship programme

From the results of our social projects and feedback from our project partners, we have confirmed our belief that our unique set of **skills** and **technology**, plus the reach of our **business network**, together, translate into sustainable resources of considerable value to **drive social change** in many local communities, where we have a presence. In this context, we have laid out the foundation to move forward with manageable, visible steps – starting in 2013 – to ensure **bottom-up engagement**, steadily **increasing geographical reach** and a **common approach** across the Amadeus Group worldwide.

The first step: Assessing our approach and activity

As a first step, evaluation of our Corporate Citizenship programme involved internal analysis of the type of activity carried out until 2012, and its results. During the six-month process, Amadeus management at all our country offices, project partners around the world and the Amadeus Executive Committee provided their appraisal of the impact of the overall approach and on-going projects.

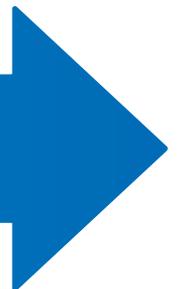
In 2013 – 2014 we will extend the review process to incorporate more views from our key external stakeholders.

2012

Reengineering CSR strategy

2013

Start executing the strategic plan



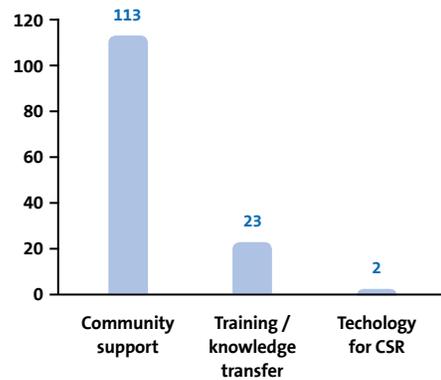
**The second step:
Establishing a common set of
guidelines across the company**

To ensure the right level of coordination and high standards of outcome, a set of common and flexible guidelines are made available for the Amadeus community through a dedicated CSR community site. These guidelines, together with the CSR framework support the development of the company's Corporate Citizenship policy worldwide. Additionally, coordination is being carried out through twice yearly meetings of the global CSR management network, as well as quarterly progress review meetings between the central organisation and each region CSR management.



The Amadeus Corporate Citizenship community site

Corporate Citizenship projects in 2012



Key Performance Indicators	2012
No. of countries with projects on-going	45
No. of active partnerships (projects & initiatives)	138
No. of staff involved	1,628
Local/site CSR management	84
Staff volunteers	1,544
Registered volunteer hours	4,670
Investment in community initiatives (value in EUR)	
In-kind donations	194,880
Cash donations	156,083

Outcome of Amadeus Corporate Citizenship in 2012

Amadeus Corporate Citizenship covers all the social projects and initiatives in which the Amadeus community is involved in, projects that foster social development, skills capacitation and humanitarian support in the local communities. A full picture of the scope and reach of activity in 2012 is available at www.amadeus.com/csrmapp

In 2012, Amadeus people once again demonstrated their continuing commitment to make a contribution towards alleviating social challenges in their local communities. A total of 138 initiatives were developed in 45 countries, that is 62% of Amadeus country offices worldwide.

Amadeus community support programme

Our community support programme covers the social projects that Amadeus offices and people carry out in their locations, for the benefit of, and in partnership with, their local communities. Today, a combination of multi-country programmes and single market projects shape this activity across the Amadeus group of companies.

In 2012, more than 80% of activity in our Corporate Citizenship programme was centred on community support coinciding with the company's 25th anniversary, during which various markets opted to share the celebration with the disadvantaged, in their communities. During the week-long celebrations in October, Amadeus people across the globe chose to make CSR a real and visible part of the company's anniversary.

Staff at over 20 sites representing over 80% of our workforce went out to make a personal contribution in their local communities. The resulting activities delivered quality time and material donations including food, school kits, clothing and toys to people in need.

“Our 25th anniversary celebration was less about ourselves and more about what 25 years of success can inspire us to achieve for others...”



US Miami staff clearing woodland



Thailand staff sharing celebrations with the Child Protection and Development Centre



Ivory Coast. Donation to childrens' non-profit organisation AREÉA-La Page Blanche



Hong Kong community service ceremony



UK staff during 25th anniversary fundraising buffet for Children in Need



South Africa. Plane ride and day out for St Lawrence Children's Haven

Besides the activity around the anniversary celebration, our longer-term community support projects continued to flourish.

Some examples are:

Latin America: The second edition of the Latin America Volunteer Day, in which **12 Amadeus country offices** across the region organised and coordinated employees who wanted to volunteer and contribute to the development of local communities in need. A new and key addition to this edition was the participation of customers alongside Amadeus volunteers.

North America: The official handing over of the Amadeus Haiti Orphanage project to non-profit Great Commission Alliance.

In 2010, **Amadeus North America** and Great Commission Alliance (GCA) joined forces to build an orphanage for 100 children. Amadeus staff raised \$194,000 to build the first floor of the orphanage. On completion, the GCA assumed the day to day running and future development of the orphanage.

Results of the Amadeus Haiti Orphanage Project

To finance building of the orphanage which was initiated in 2011, Amadeus North America in close coordination with local staff established a fundraising sponsorship level program and an employee payroll deduction donation program. To further boost these efforts, employees participated in fundraising events and established a customer and employee raffle. Continued fundraising was required to cover additional costs of construction, due to price increases after the earthquake.

The GCA/Amadeus House of Hope Orphanage has a complete staff of quality individuals who provide a loving and caring home environment. House of Hope staff includes Director, Assistant Director, House Moms, kitchen, laundry, housekeeping, and full time security.

The funds needed to operate the GCA/Amadeus House of Hope Orphanage is \$175 per child per month (\$50 for care, \$100 for food – 3 meals a day, \$25 for education). The GCA aims to solicit these funds through its “Sponsor an Orphan Program”. In the meantime, GCA is covering the costs directly thanks to annual fund raising events that cover administrative costs.



Haiti Orphanage

Europe: A monthly donation of foodstuff by staff in Madrid to non-profit Caritas. In the first week of every month Amadeus staff bring, non-perishable, varied foodstuff, including baby food and diapers. The donations are collected by Caritas volunteers who then deliver it to families in need, within Madrid. In the first six months of the project, over 2000 kilogrammes of food were donated to over 400 families.

abandoned children in Kenya, Malaika Babies Home in Uganda, SOS Village in Cameroon, Dzorwulu Special school in Ghana, Fondation Espoir in Ivory Coast and Village Pilote Centre in Senegal.

Asia-Pacific: Amadeus Cares: a 3-pillar programme at **Amadeus Asia-Pacific**, our Bangkok-based regional office, which reaches out to the most vulnerable members of the community in Thailand.



Africa: Activity focused mainly on sponsorship and support for homeless children. Amadeus staff and management worked closely with local charities and institutions including St.Laurence Haven in South Africa, Mnazi Mmoja Primary School in Tanzania, Angels Centre for



SOS Douala instructor and children with Amadeus team in Cameroon



Solidarity day in Ivory Coast: leisure activity with children of Bingerville orphanage at Doraville centre

**Amadeus Cares:
A growing focus on Corporate Social
Responsibility in Asia**

At Amadeus Asia-Pacific, Corporate Social Responsibility is a strategic tool, which aims to support social and economic development in underprivileged communities.

“Amadeus Cares is the umbrella theme under which we are developing our social responsibility activity, with a special focus on education and children”

Under Amadeus Cares, we have three project areas that mirror our global corporate framework for CSR: Build to give, Run to give, and Educate to give. The aim of these projects is to provide support to local underprivileged communities particularly in Thailand.

Build to give is undertaken in partnership with non-profit Habitat for Humanity who identified local families in need of new homes. To date more than 100 Amadeus employees from the regional office – working with professional builders - have

helped lay foundations, put up and paint walls of homes for the beneficiaries. In 2012 staff in Bangkok helped paint and clean up a school hit by floods. This is the third edition of Build to give and each year the number of employees increases.

Run to give was designed as a charity event in which Amadeus employees from the regional office were encouraged to take part in charity races to raise funds for the education of students in Thailand that do not have financial resources. In 2012 proceeds went to fund a computer lab in the International Support Group Foundation and grants for university students. In this case also, the number of employees increases year on year.

Educate to give focuses on improving the education of children in underprivileged areas of Bangkok. In 2012, in collaboration with non-profit WorldVision and travel insurance provider ACE Travel, 40 staff volunteers spent a weekend away with 100 children from very poor areas in Thailand, enjoying different educational activities. On a second occasion, 30 Amadeus staff took 100 children to visit the Planetarium in Bangkok.

Extracts from staff feedback

“It was such a memorable weekend spending time with the kids and I was so glad to be a part of it, to brighten up their smiles. I will not miss the next one!!! GREAT JOB”

Ploy Srirathum

“Thank you very much for the great activity we had together. The overall activity was just great and a wonderful memory. I would like to have this kind of activity more often so we can get along with the kids and get to know each other...”

Korakod Sangmala

Other activity around the world included sports races and marathons in which staff participated to raise funds for preferred charities in diverse markets such as the UK, Germany, Thailand or Australia.

Charity bazaars were also a popular means of fundraising with examples such as Amadeus Italy's Charity Village. The project in collaboration with non-profit Telefono Azzurro Onlus, aims to gather funds through staff efforts and skills such as making and selling foodstuff, used books etc.



Italy staff run Charity Village sales to raise funds for multiple community initiatives

Amadeus technology for good programme

In our commitment to step up our role as a global actor in social development, Amadeus has entered into a global partnership with UNICEF to improve the lives of children worldwide through travel.

Through this global programme we will put our technology to work for UNICEF, by deploying a donation engine solution on commercial travel websites. This will give travellers worldwide the possibility to donate to UNICEF projects when making online travel bookings.

To realise our goal with the programme, Amadeus and UNICEF will reach out to travel sellers in selected markets, to engage them in the global initiative,

in order for them to facilitate traveller donations on their commercial websites.

Amadeus technical teams will support, host and maintain the donation engine solution at no cost to UNICEF or the travel sellers.

This partnership aims at setting the foundation for a wider collaboration using technological innovation and engaging the global travel industry and travellers, to make small, individual contributions, that when pooled together, can translate into a significant and sustainable source of funds for children's projects around the world.



Solidarity day in Senegal: Amadeus team at Village Pilote Centre in Sangalkam.
Photo by Mariatou Ouattara

Amadeus knowledge and skills transfer programme

The projects under the Amadeus knowledge and skills transfer programme also continued to grow in 2012, providing much needed skills and insight into the world of travel, to graduates and industry professionals in 23 countries. The professional skills training projects aim to bridge the gap between mainstream academia and real-life business needs – with courses ranging from travel reservation, general business management down to basic IT skills. Amadeus Tourism Observatory projects are also providing useful insight on tourism traffic flows to ministries of tourism in Argentina, Cuba, Uruguay and Chile.

Collaboration in the Americas through Business Corps

In a multi-market collaborative approach to build up professional skills in non-profit organisations, Amadeus North America and Amadeus Brazil, helped improve business management processes in three non-governmental organisations (NGOs) -Bola Pra Frente, Saude Crianca and CDI. The project was a pilot of Business Corps, a multi-company partnership led by a network of private-sector partners of which Amadeus North America is a founder member and sitting chair in 2012-2013. The contribution of Amadeus Brazil on the ground, along with DOW Chemical, HP and IBM, working directly with the three NGOs is a tangible result of Business Corps' goals.



Amadeus professionals in planning session with executives of CDI non-profit organisation in Brazil

Extracts from the results achieved with the three NGOs:

“...All of CDI’s staff in Rio and São Paulo were migrated onto a single email system, which improved organisational efficiency by 200% and increased disc space by 25,500% (100MB to 25GB). Additionally, CDI’s account limit increased from 200 to 300 accounts, and the new system is more stable and less restrictive for users. The time required to configure and fix accounts has also been greatly reduced, which has streamlined the IT department’s operations and is saving them an additional 4 hours per month...”

“...30 documents were translated into Spanish for Saúde Criança, which has allowed them to reach a wider audience throughout Latin America. Development has also started on a new online

donations platform, which is increasing program awareness and facilitating the receipt of international donations...”

“...for Bola Pra Frente, an institutional IT systems assessment was completed and an email migration process carried out. Amadeus collaboration also included an IT server and software backup project which is expected to improve organisational efficiency, security and communications. Bola Pra Frente also received professional skills support in Business Planning and Marketing strategies for their events and fundraising activity. More information is available in the [Rio Impact Report](#) published by Business Corps”



Bola Pra Frente

**AmadeusFans:
Bridging the gap between graduate
school learning experience and
labour market requirements**

AmadeusFans is a non-profit association founded by Amadeus Egypt staff with the objective of developing graduate skills to meet the required knowledge and experience then referring them as candidates for job vacancies to travel agencies and airlines in Egypt. The training programme offered to these young jobseekers serves to bridge the gap between their learning experience and labour market requirements.



AmadeusFans training programme for job seekers in Cairo and Alexandria regions

“...In July 2011 AmadeusFans was registered with the number 8200 with the Ministry of Social Solidarity. Our goal is to develop the skills of graduates and job seekers in order to help them find good jobs in the travel and tourism industry. AmadeusFans aims to give 100 Egyptian university graduates each year a full training scholarship. We started our first batch of training in March 2012. Since then, 24 students have completed their scholarship which included training in customer service, selected components of global travel distribution and airline basics. AmadeusFans also offers subsidised training to improve the skills of local travel agents.”



Travel distribution training with the Aga Khan Foundation and non-profit OM Habiba in Aswan region

Building on this success, in 2012, Amadeus in Egypt extended agreements with the Aga Khan Foundation non-profit, Om Habiba and the Egyptian Travel Agents Association to provide training licences for certified training in global travel distribution, in 8 different governorates - Cairo, Alexandria, Mansoura, Aswan, Luxor, Zagzig, Sharm El Sheikh, Hurgada. Computers will also be donated in the 2-year collaboration. The goal is to support the travel agencies in each location through skills capacitation.

Among sponsors of AmadeusFans are local travel industry players Carlson Wagonlit, Thomas Cook, East West, Red Sea Tours, Astra Travel, Excel and Blue Sky.

To facilitate higher learning for students from underprivileged backgrounds, Amadeus staff also participated in sports for charity events. A notable example of this was the Bangkok Post Marathon where 130 staff in Bangkok participated to raise funds for university grants for students in need.

PC donations

In relation to the knowledge and skills transfer projects, demand for Amadeus PC donations also continued to grow to facilitate online training and establishment of computer labs in schools. More than 250 computers were donated to set up computerised classrooms in various countries, including Jordan, Ukraine, Germany, France, China, Malaysia, Cuba, Philippines, Panama and Tanzania.



UAC Ukraine orphanage children with PCs



Staff refurbishing computers



Inauguration of computer training room at Universidad Camaguey

Environmental sustainability

Amadeus has enjoyed continuous growth and provided economic and social benefits to employees, shareholders, customers and partners for more than twenty years. On the other hand, compared with other industries, Amadeus has a relatively low direct environmental impact. Nonetheless, with more than 10,000 employees, presence in more than 190 markets and operating in a high energy intensity industry, we acknowledge our responsibility to minimise the company's environmental impact and at the same time help the travel industry in its efforts towards sustainability

Under the reviewed CSR programme, Amadeus' environmental initiatives can be divided into three main areas of activity/contribution. **Firstly**, our direct and most clear responsibility is to address the **environmental impact of our operations**. Our **Environmental Management System** measures our resource consumption, identifies areas for improvement, implements specific actions and reviews results achieved. During 2012 our principal progress in this area has been an improved reporting system for resource consumption of our top 10 sites worldwide by number of employees; which resulted in

more accurate information being reported. In some cases this exercise required the correction of previously reported figures, and this has been indicated in the pertinent section. Generally, efficiency has been improved for all items (electricity, paper, CO₂ emissions, water and waste). More detailed information is included in the following paragraphs and images.

As in previous years, we find frequently common economic and environmental interests that facilitate action in reducing resource consumption and environmental impact. In many cases, actions to reduce consumption do not require any or very little investment (like initiatives encouraging behavioural change) and in most cases, return on investment takes place in less than a year (like the replacement of incandescent light bulbs for LEDs).

Secondly, we are keen to continuously evaluate and identify **environmental benefits** that our **innovation** and **technological capabilities** bring to our customers and the industry in general. In this respect, the improved fuel efficiency demonstrated by our solution Altéa Departure Control System Flight Management (DCS FM) for airlines⁽¹⁸⁾

has been expanded; by the end of 2012, 58 airlines had already implemented the solution and 104 more carriers have contracted Altéa DCS and will be implementing the product in the near future. In 2013, we plan to review the potential environmental benefits of products that will be launched during the year. The chapter dedicated to R&D and innovation provides further information regarding the areas in which Amadeus is investing in R&D projects.

Greenhouse gas emissions and climate change are a principal concern in the travel industry, particularly due to the high energy intensity of means of transport in general. The **risks associated to climate change for Amadeus** are principally linked to the demand for travel. This is due in part to the fact that incremental environmental costs translate with some delay into increased economic costs; and, all other things being equal, an increase in costs leads to a reduced demand for travel. Besides, consumers, in order to avoid negative environmental impacts, may look for alternatives to travelling.

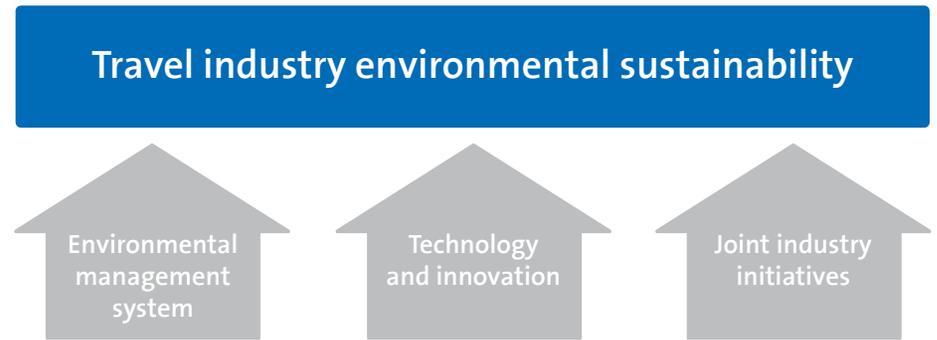
On the other hand, **regarding opportunities** linked to climate change, we are in Amadeus in a privileged position

¹⁸ See Amadeus Corporate Responsibility Report 2011, page 102. More than 300 tonnes of CO₂ emissions were saved by one single airline after Altéa DCS FM implementation. More detailed information can be provided upon request.

to help raise environmental awareness in the industry. We need to bear in mind that Amadeus is involved in one way or the other in the travel of more than one million passengers every day. Environmental services included in our distribution platforms and/or IT Solutions are a way in which Amadeus can improve customer loyalty, reputation in the travel industry, contract new customers and retain current ones, improve our network and relationship with industry stakeholders and, importantly, play our part in the contribution to industry sustainability.

Thirdly, we work together with other industry stakeholders to address environmental challenges for the whole industry. For example, since 2009, Amadeus and the International Civil Aviation Organisation (ICAO) reached an agreement by which Amadeus uses ICAO's carbon calculator in our corporate booking tool, so that corporations and travellers can be informed about greenhouse gas emissions released in their trips. ICAO's carbon calculator brings the benefits of neutrality, a global approach and legitimacy, since ICAO is the United Nations agency regulating civil aviation.

Amadeus' environmental programme contribution to the sustainability of the travel industry



ICAO & Amadeus partnership



Carbon calculator

- > Legitimacy
- > Neutrality
- > Global Reach

Improved industry environmental awareness

Travel industry reach

- > +400 Million air bookings
- > Operating in +195 countries



Environmental key performance indicators

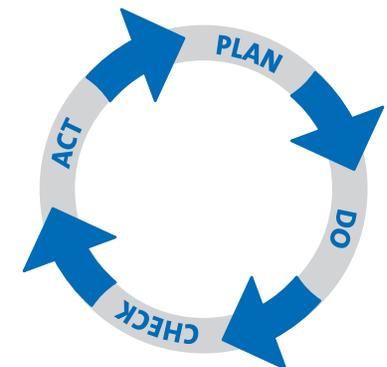
Amadeus' Environmental Management System (EMS) monitors energy and resource consumption at our top 10 sites by number of employees, which in 2012 represented 75% of the total workforce. Amadeus sites included in the reporting are:

1. Amadeus S.A.S. Sophia Antipolis (France)
2. Amadeus Data Processing GmbH Erding (Germany)
3. Amadeus North America, Inc. Miami (USA)
4. Amadeus IT Group, S.A. Madrid (Spain)
5. Amadeus Germany GmbH. Bad Homburg (Germany)
6. Amadeus Services Ltd. London (UK)
7. Amadeus Asia Ltd. Bangkok (Thailand)
8. Amadeus IT Pacific Pty Ltd. Sydney (Australia)
9. Amadeus France SNC. Paris (France)
10. Amadeus Soluciones Tecnológicas, S.A. Madrid (Spain)

Items included in the EMS are electricity consumption, CO₂ emissions, paper, water and waste. We have an on-going process for continuous improvement based on measuring consumption, identifying best practices, implementing actions for improvement and following up on results.

In addition, for 2013 we will implement more specific targets both in absolute and efficiency targets, that can be adjusted depending on company growth. Also in 2013, we will use our central reporting database to share best practices and encourage active involvement from all sites.

The following paragraphs provide an overview of our performance, explanation of the main measures taken and our plans and objectives for the future.



Electricity consumption

Electricity consumption represents our **main direct environmental impact** and therefore deserves special attention. Approximately half of Amadeus electricity consumption comes from our Data Centre in Erding (near Munich, Germany).

In 2012, more than 400 million travel bookings and over 550 million passengers boarded were processed in the Amadeus Data Centre. Reliability and energy efficiency are critical objectives

In 2012, Amadeus Data Processing GmbH, **renewed the energy efficiency certification from TÜV SÜD** initially obtained in 2010. The certification process involves an in-depth review of the Data Centre operations, as well as recommendations for improvement. In addition, we continued our regular environmental audits, carried out three times a year by Bureau Veritas, in which security, safety and maintenance checks are performed.

During the year, the new energy annex building became fully operational, providing almost double capacity of

power and cooling for the three firecells of the Data Centre, increased free cooling capacity and reduced cost by optimising the use of cold water provisioning from our own well.

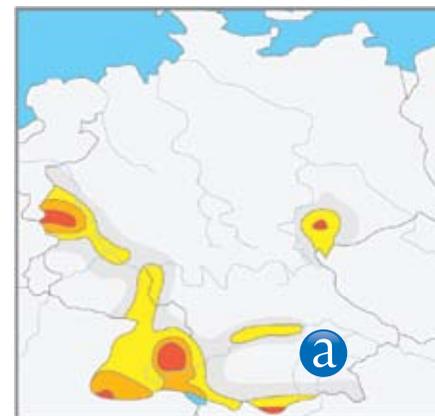
Other measures to improve efficiency implemented or recorded in the year include the replacement of the two oldest cooling machines, serving the Operational Bridge in the Data Centre Building. On the other hand, the change from fluorescent to LEDs lamps in the three fire cells of the Data Centre (approx. 700 lights) resulted in energy savings of more than 270,000 kWh per year.



Amadeus Data Centre, Erding, with the new energy annex for improved cooling
Photo by Stefan Halmagyi-Fischer



TÜV SÜD renewed energy efficiency certification



Safe location with very low risk of natural disasters and high hydropower generation, for reduced CO₂ emissions

“The average Power Usage Effectiveness (PUE)* for the Data Centre in 2012 was 1.39”

* Power Usage Effectiveness is defined as follows: $PUE = \text{Total Facility Power} / \text{IT Equipment Power}$. Total Facility Power: This includes everything that supports the IT equipment load such as:

- Power delivery components such as UPS, switch gear, generators, PDUs, batteries, and distribution losses external to the IT equipment.
- Cooling system components such as chillers, computer room air conditioning units (CRACs), direct expansion air handler (DX) units, pumps, and cooling towers.
- Computer, network, and storage nodes.
- Other miscellaneous component loads such as data centre lighting.

On the other hand, IT equipment power includes the load associated with all of the IT equipment, such as computer, storage, and network equipment, along with supplemental equipment such as KVM switches, monitors, and workstations/laptops used to monitor or otherwise control the data centre.

Amadeus Data Centre energy efficiency evolution

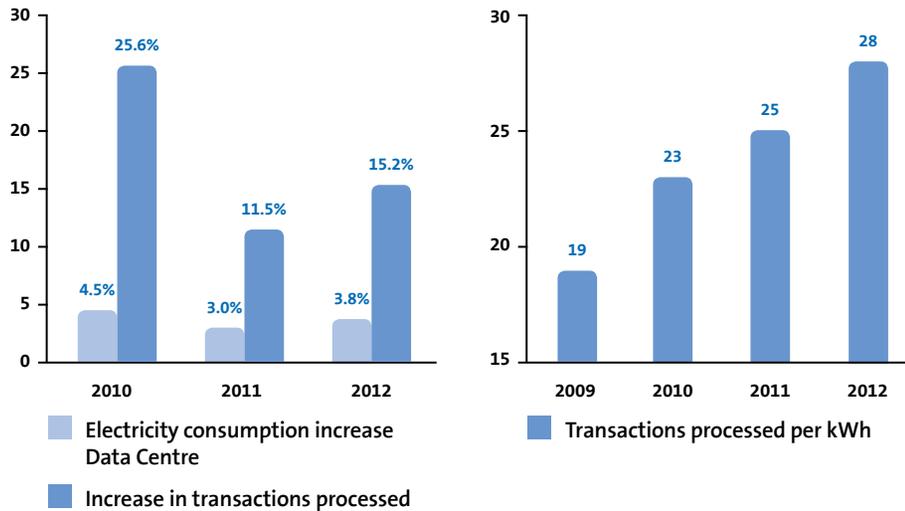


Photo by Joachim Raffin

The figures on the left show the results achieved. Total electricity consumption growth was significantly lower than the increase in total business transactions processed¹⁹. Amadeus has therefore managed to continuously improve energy efficiency by processing increasing number of transactions per kWh.

It is also important to take into consideration that the methodology for calculating transactions remains constant, although the complexity per transaction keeps continuously growing,

since technological advances permit dealing with increasing amounts of data per transaction. In other words, efficiency gains are in effect larger than what is depicted in the graph.

Apart from the Data Centre, the other sources of electricity consumption are our office buildings across the world. We measure and monitor our consumption in our top 10 sites, both in absolute numbers, as well as in efficiency ratios of electricity per employee, as per graphic on facing page.

¹⁹ Business transactions processed are identified as basic operations linked directly to our business, like bookings or passengers boarded processed.

Below are some examples of specific local initiatives implemented during 2012, in order to optimise performance:

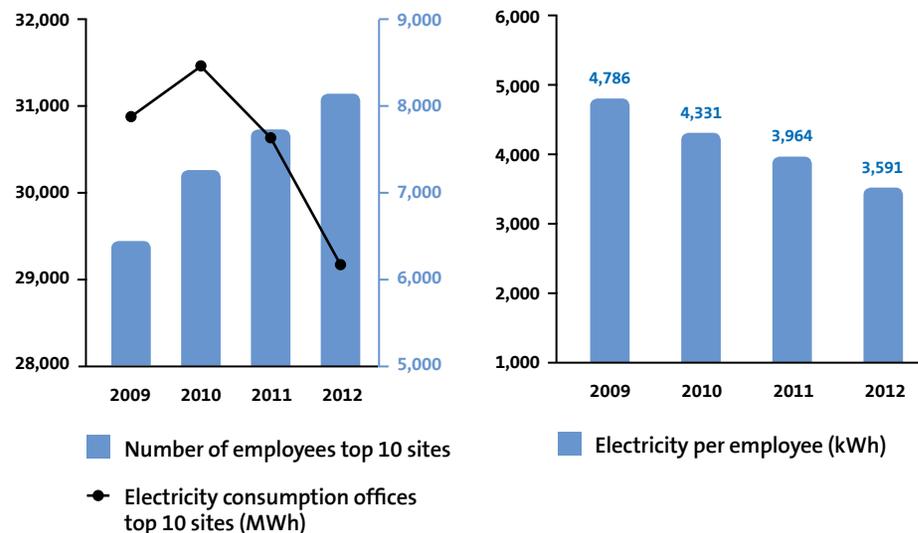
> **London, UK.** During 2012 a new contract was implemented with our energy provider, in which consumption reductions were committed.

> **Nice, France.** Replacement of heat pumps with more efficient equipment, and operating with a refrigerant gas with no impact on the ozone layer. Implementation of experimental efficient lighting in cooperation with provider. Entered into contract with energy provider to identify actions to reduce energy consumption and exchange results with other companies for mutual benefit.

> **Miami, USA.** The construction of the new office space was based on efficiency. We created open spaces for natural light to penetrate the building from one end to the other as one example. In addition, we chose efficient indirect lighting, occupancy sensors in every office and open area. Bathrooms also have occupancy sensors and motion sensor toilets and faucets.

> **Sydney, Australia.** We entered into an agreement with the landlord to meet certain commitments drawn from the Green Lease Schedule and received a Sustainability Incentive to fund energy saving lighting controls.

The table on the right summarises electricity consumption and the trend over the last years of Amadeus' operations worldwide, including our premises worldwide, and our Data Centre.



Electricity consumption	2009	2010	2011	2012
Number of employees top 10 sites	6,452	7,265	7,728	8,130
Electricity consumption offices top 10 sites (GJ)	111,166	113,275	110,276	105,086
Electricity consumption per employee and year (GJ)	17	16	14	13
Electricity consumption Data Centre (GJ)	125,438	131,057	135,044	140,113
Number of transactions processed by Data Centre (Millions)	676.7	849.9	947.6	1,091.3
Energy required per 1 Million transactions (GJ)	185	154	143	128
Total Electricity Consumption top 10 sites, including Data Centre (GJ)	236,604	244,332	245,320	245,199

Electricity generation	Energy content per type of fuel used (GJ)*						Total
	Coal	Fuel oil	Natural gas	Biomass	Waste	Other**	
Top 10 Amadeus sites	59,879	5,555	50,264	4,364	2,413	64,542	187,018
Data Centre (Erding)	171,298	7,598	62,185	16,351	6,076	49,957	313,466

* Source: International Energy Agency and Amadeus' EMS. Data calculated per country.

** Includes: nuclear, hydropower, geothermal, photovoltaic, solar thermal, wind power and tidal power.

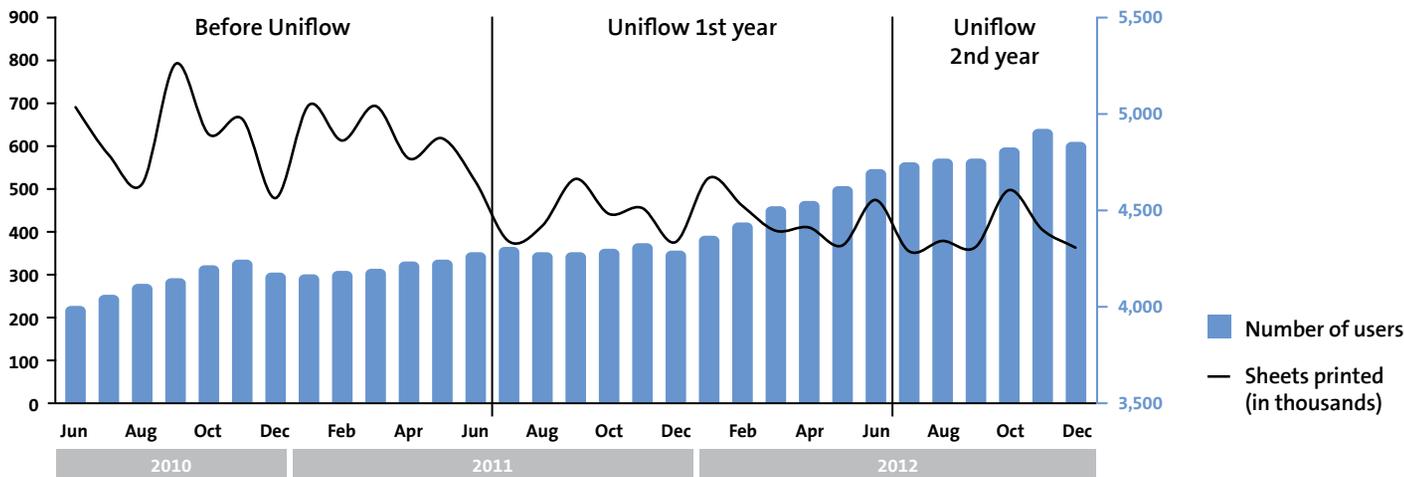
Paper consumption

During 2012, the Uniflow printing solution continued to be deployed in our main site in Sophia Antipolis, France.

Uniflow is a badge-based printing system by which users send a print job to a queue; and the job is only printed when the user goes to the printer and confirms the printing job. This reduces the amount of paper used by eliminating the need of printing cover pages, as well as avoiding printing documents that have not been confirmed.

The results are very encouraging since we are seeing not only a **decline in the amount of paper** printed before and after the implementation, but also a **behavioural change** by which, even after one full year of implementation, and despite the increase in number of users, total paper consumption keeps decreasing.

Paper consumption evolution before and after implementation of Uniflow solution in Amadeus SAS Sophia Antipolis



Number of printed pages significantly reduced with Uniflow in first year, and continues to decrease in second year

Since our site in Sophia Antipolis represents more than half of the total workforce, the Uniflow system implementation in that site has had a very significant positive impact on the overall consumption of the top 10 sites. In addition, each site continues with its own improvement measures.

Furthermore, in our efforts to continuously improve the accuracy of the data gathering process, we have identified previous errors in the information reported in some sites, particularly in Madrid, where the data included for previous years was incorrect due to an error detected in the aggregation of information, and we have now included the right data. This explains the difference in the reported data in previous years from the data included in the table below.



Photo by Stanislav Fajkus

Paper consumption	2009	2010	2011	2012
Paper consumption top ten Amadeus sites (kg)	116,595	118,928	118,997	106,436
Number of employees top 10 Amadeus sites	6,452	7,265	7,728	8,130
Paper consumption per employee (A4 sheets / working day)	16.4	14.9	14.0	11.9

Fossil fuels	2009	2010	2011	2012
Natural gas (GJ)	22,553	23,517	19,959	22,287
Trend Natural gas		4%	-15%	12%
Diesel (GJ)	1,713	1,802	1,743	1,239
Trend Diesel		5%	-3%	-29%

All figures in tonnes of CO ₂ emissions unless otherwise indicated	2009	2010	2011	2012
Scope 1. Direct emissions (fossil fuels)	1,310	1,367	1,175	1,263
Scope 2. Indirect emissions from purchased electricity	18,493	19,470	18,924	18,291
Scope 3. Indirect emissions from other sources	3,642	4,043	5,192	5,493
Natural gas (m ³)	590,185	615,416	522,307	583,221
Diesel (L)	44,388	46,673	45,147	32,087

Fossil fuels and CO₂ emissions

Regarding fossil fuels, our offices in Erding, Frankfurt and London use diesel and natural gas for heating and guaranteeing uninterrupted power supply in the Data Centre. During 2012, one of the diesel tanks in the Data Centre was replaced and regular testing was therefore altered, this explains the significantly lower diesel consumption in 2012 compared to previous years. On the other hand, winter 2012 was significantly colder than in 2011 in the south of Germany, and this is the main reason for the increase in natural gas consumption observed in 2012.

Following Greenhouse Gas Protocol standards, we include below an explanation of the scope for each category:

- > **Scope 1** includes diesel and natural gas used in our premises in Frankfurt, Erding and London for heating and for uninterrupted power supply guarantee.
- > **Scope 2** includes purchased electricity from our top 10 sites worldwide, including the Data Centre in Erding⁽²⁰⁾.

> **Scope 3** includes estimated emissions from paper used and aircraft emissions from business trips managed from our top seven sites across the world. For the estimations of aircraft emissions we have used the International Civil Aviation carbon calculator, which, as explained briefly above, provides a neutral, global and precise estimation of CO₂ emissions per passenger, and customised for any city-pair covered by civil aviation.

During 2013, our office in Paris will be running a pilot project to offset emissions from normal operation.

Water

The main change in water consumption is due to increased use of water from our well in Erding to provide cooling power. The increase in well water is in direct correlation to the introduction of our energy annex, which houses another two cooling machines of 3000 kW capacity in total. The increased water consumption is partly compensated by the energy efficiency gains. The additional cooling system is in operation as expected

²⁰ To estimate CO₂ emissions from kWh, we conform to the following process:

> When the electricity provider includes information in their invoice about CO₂ emissions per kWh we use this figure

> Otherwise we use the average of the last three years available published for all countries by the International Energy Agency. (<http://www.iea.org/co2highlights/co2highlights.pdf>) (Pages 111 onwards). During 2012, our provider in our largest consumption site has recently informed us that the way in which the emissions are estimated have changed, (according to German regulation §42 EnWG) resulting in significantly different estimations. We have therefore for 2012 and 2011 applied the new conversion factor provided, i.e. 274 g. of CO₂ per kWh, as opposed to the 171 g. of CO₂ per kWh reported last year. For this reason, the figures of this report do not match what was reported last year.

and energy efficiency results are very promising, although a full year is not yet available for comparison. The current performance figure, i.e. comparison of power energy provided to cooling energy gained, is 6.09 compared to 5.52 in 2009.

Despite the overall increase explained above, some offices have seen significant improvements, like our new building in Miami, where the total consumption decreased by more than 50%, thanks to new technologies in the new building, like sensor faucets and minimal irrigation. Our office in Sydney has also seen significant improvement due to the new environmentally friendly measures implemented during the year, like water saving shower heads in the shower blocks.

Waste

In our efforts to improve resource consumption reporting, we have now included waste, since we consider important to monitor and improve performance. Even though data provided from some sites, like London or Bangkok, are based on estimations, we still consider

it valuable information to establish benchmarks and objectives.

Our main sites have recycling containers in place for plastic, paper, organic material and glass. In addition all floors in our premises in Madrid have battery containers so employees can dispose hazardous waste safely without the burden of looking for specific containers outside the office. Our North American branch has joined the new programme created by the city of Miami called **“Single stream Waste Management”**. This programme allows occupants to discard all items into their traditional waste basket. The basket is then retrieved by the cleaning crew and placed in a container provided by the city. The city collects the container and takes it to a new state-of-the-art separation process where a combination of manual and automated process classifies waste for recycling.

Water consumption	2009	2010	2011	2012
Water consumption top 10 Amadeus sites (m ³)	180,202	180,818	168,869	191,799

Waste	2009	2010	2011	2012
Total estimated waste top 10 Amadeus sites (kg)	169,228	189,500	181,996	177,357