Profile
As an industrial engineering group, Fives designs and supplies machines, process equipment and production lines for the world’s largest industrial players in the aerospace, aluminium, automotive, cement and minerals, energy, glass, logistics and steel sectors.
Fives is preparing to become a key player on the technological solutions of the future.

In 2015, Fives once again faced a challenging and volatile global economy. In this difficult situation, while Group turnover was up over 2014 (1,718 million euros, compared to 1,560 million euros in 2014), this increase was essentially due to the contributions from its 2015 acquisitions and the dollar’s rising value against the euro. At constant scope and exchange rate, Group sales increased by only 1%.

In contrast to 2014, the year’s order intake included only one major turnkey contract, for a cement plant in Mexico. The high levels of small and mid-sized orders did, however, bring in satisfactory sales for the year (1,708 million euros in order intake) and consolidated an already significant order book (at 1,556 million euros), which was better balanced at the end of the year. Due to all these factors, the gross operating result dropped (to 116 million euros) for the first time since 2009. Despite these challenges, our solid balance sheet and increased cash and cash equivalents mean that Fives’ future looks bright.

While 2015 saw a number of commercial and operational successes, proof of customers’ trust in the Group’s technologies, solutions and expertise, the most important events of the year were those with a structural impact on the future of Fives.

— In terms of innovation, in September, Fives announced the creation of a metal additive manufacturing joint venture with Michelin, Fives Michelin Additive Solutions. The joint venture will supply metal 3D printing machines and produce parts for applications which are just beginning to emerge. As a result of this new entity and a partnership with BeAM, Fives is diving into the metal additive manufacturing sector, reviving its old pioneering spirit and writing a new chapter in its history. Fives aims to become a key player on the digital technologies, new processes and new materials of the future, by forming new partnerships with both major industrial players and start-ups.

The Group also increased its R&D investments. It continued to release new technologies and solutions and once again filed large numbers of patents, significantly exceeding its objectives and ranking as France’s 36th most prolific patent filer. Fives’ innovation strategy is also more and more open, and the partnerships established with major research institutions such as CEA Tech and IRT Jules Verne are promising.

In 2015, the Group also continued to play a leading role in the French government’s “Alliance pour l’Industrie du Futur” (Alliance for the Industry of the Future). As co-chair of the initiative, alongside Dassault Systèmes, Fives can better anticipate the impacts of the current technological revolution, which has a major effect on economic models and the associated ecosystems. Fives’ involvement also makes it a key player in pilot projects that foreshadow the factory of the future identified by the project’s roadmap. The Group has used the internet of machines and digital production systems to accelerate the development of new solutions and services, and offers its customers ways to record and manage operating data from their installations to optimize their operations and meet their various needs.

— In terms of acquisitions: Contributing to designing and building the factories of the future was also the key motivation behind the acquisition of Lund Engineering (now Fives Lund LLC), which specializes in designing structural elements and composite parts, in late August 2015. Lund Engineering’s excellence and technological edge in the design and execution of high-tech projects as well as its strong relationships with major American clients like Boeing and Google X make it a major asset for the Group. The July 2015 acquisition of ECL (now Fives ECL), which notably designs and installs Pot Tending Machines for primary aluminium plants, also enabled Fives to strengthen its position as world leader on key process equipment in the sector. Fives ECL shares the Group’s high quality standards, strong capacity for innovation, and unique array of service entities in all of the world’s major aluminium-producing countries. The acquisition of Ernst Polack (now Fives Lands GmbH) extended Fives’ geographical presence on the German machine tool market. The opening of a Regional Office in South Africa, with another one soon to come in Iran, also highlights the Group’s drive to support the growth of its markets wherever they are.

— Last but not least, in terms of operational excellence, the Group continued the roll-out of its FivesWAY program throughout 2015, with each subsidiary defining its own priority objectives and a roadmap to achieve them. This program is the practical application of Fives’ objective of continued growth based on its decentralized, fully empowered business model. It also aims to influence all the growth drivers by shifting them into higher gear (People, Customers, Innovation and Operational Excellence) and encouraging transparency and fairness in the Group’s relationships with all of its internal and external stakeholders.

2016 should be another year of transition and consolidation, contrasting with the Group’s forecast a year ago. Better results are expected in 2017 and beyond, thanks to the effects of the major cost-cutting measures implemented in 2015 and 2016 to adjust the Group’s activity levels to meet market needs, and the increased pace of order intake.
Fives is headed by an Executive Board overseen by the Supervisory Board. The Executive Board has three members and it has the most extensive powers to act on behalf of Fives under all circumstances, limited only by the company purpose and powers expressly vested by the Supervisory Board and shareholder meetings. The Supervisory Board exercises permanent control over the management of the company by the Executive Board. It has six members: Philippe Reichstul, Jacques Lefèvre, Dominique Gaillard, Lise Fauconnier, Antonio Marcegaglia and Jean-Georges Malcor.

To support it in its decision-making, the Executive Board has introduced an Executive Committee and five Country Coordination and Steering Committees:

- As the body responsible for consultation, recommendation and implementation, the Executive Committee examines the proposals put forward by the Country Coordination and Steering Committees as well as the Functional Departments, considers issues submitted to it and supports the Executive Board in reaching those decisions that fall within its scope of competence.

  Its members include the members of the Executive Board and the Group’s key operational and functional directors as well as the Country Directors.

- The Country Coordination and Steering Committees are responsible for the broad coordination of Fives’ strategy and situation, as well Group-wide policy for each geographic zone. In addition to the members of the Executive Committee, they are made up of Chief Executive Officers (or equivalent positions) and functional directors for Fives or Country Directors. The Country Coordination and Steering Committees are chaired by the Country Directors for North America, China, India and Italia, and the Chairman of the Executive Board for France.
Milestones

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10 Summary of financial information
12 Summary of non-financial indicators
14 Highlights
16 Highlights and territories
18 Operational performance
**A FULL INDUSTRIAL ENGINEERING OFFER**

**With its worldwide multisector expertise, Fives has the assets and resources required to offer its customers high-performance solutions and services based on innovative and sustainable proprietary technologies from design to start-up.**

**Expertise in design and integration**

Fives designs and delivers equipment, machines, systems, and services which are integrated into operational industrial production lines.

Based on this equipment and its associated process expertise, Fives can also supply full lines or plants as an integrator and project coordinator.

**Innovative and sustainable proprietary technologies**

Fives owns an impressive catalog of proprietary technologies. The Group filed 50 new patents in 2015, bringing its total portfolio of current patents up to 1,948 in all of its sectors of activity. Many of these technologies offering improved energy and environmental performance to help its customers meet their sustainable development objectives.

All of Fives’ technologies constantly strive to provide the best operational performance and cutting-edge innovations in every market where they are applied. Fives is a pioneering group that has always been a trailblazer in a long list of industrial sectors. The Group continues to plan the factory of the future to identify and propose the promising technologies of tomorrow.

**A fully controlled production chain**

Production and assembly of the key elements of Fives’ offers, as well as its proprietary technologies, are done on its own industrial sites, which account for over a third of its sites worldwide.

Fives outsources the rest of its manufacturing to an international network of highly qualified and experienced machining and assembly workshops in Europe, the Americas, and Asia.

Fives also has operational subsidiaries which handle its production in Brazil, China, India, and Russia.

**SERVICE: CONTINUOUS SUPPORT FOR CUSTOMERS**

Fives provides its customers with end-to-end support throughout every stage of the installed equipment’s life. The service offer covers three major activities:

- start-up and operational service activities which aim to maintain the equipment’s initial performance (the “Operational” services range);
- support to help customers achieve maximum efficiency for their production processes with the Optimization Services range (the “Optimization” services range);
- responses to the need to align production equipment and processes with new uses through its revamping, retrofitting and rebuilding services (the “Upgrade” Services range).

Fives’ service organization is centered on service teams, organized by business lines, and have locations near clients.
Summary of financial information

**SALES**
€1,718 M

**ORDER INTAKE**
€1,708 M

**SHAREHOLDER'S EQUITY**
€447 M

**CASH POSITION**
€176 M

**SALES AND EBITDA**

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales</th>
<th>EBITDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>€1,718 M</td>
<td>+10%</td>
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<td>2012</td>
<td>€1,540 M</td>
<td>+6%</td>
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<tr>
<td>2013</td>
<td>€1,276 M</td>
<td>+4%</td>
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<tr>
<td>2014</td>
<td>€1,308 M</td>
<td>+1%</td>
</tr>
<tr>
<td>2015</td>
<td>€1,268 M</td>
<td>+1%</td>
</tr>
</tbody>
</table>

**ORDER INTAKE AND CLOSING ORDER BOOK**

<table>
<thead>
<tr>
<th>Year</th>
<th>ORDER INTAKE</th>
<th>CLOSING ORDER BOOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>€1,708 M</td>
<td>€1,556 M</td>
</tr>
<tr>
<td>2012</td>
<td>€1,845 M</td>
<td>€1,394 M</td>
</tr>
<tr>
<td>2013</td>
<td>€1,227 M</td>
<td>€1,072 M</td>
</tr>
<tr>
<td>2014</td>
<td>€1,324 M</td>
<td>€1,324 M</td>
</tr>
<tr>
<td>2015</td>
<td>€1,379 M</td>
<td>€1,474 M</td>
</tr>
</tbody>
</table>

**BREAKDOWN OF SALES BY GEOGRAPHICAL AREA**

- Africa / The Middle East: 18%
- Asia / Oceania: 31%
- Europe: 30%
- The Americas: 22%

**BREAKDOWN OF SALES BY END MARKET**

- Aerospace and Industry: 14%
- Energy: 19%
- Automotive: 16%
- Logistics: 21%
- Cement: 11%
- Metals: 19%

“In a complex and volatile commercial environment, Fives has proven its resilience.”
Lucile Ribot, Member of the Executive Board, Group Chief Financial Officer

**A DIFFICULT ECONOMIC CLIMATE**

In 2015, the economy was strongly affected by the drop in oil prices, which had a serious impact on industrial investments in the US and limited the availability of financing in the main oil-producing regions (Russia, the Middle East, Africa). More broadly, the drop in commodities prices brought growth in emerging countries to a halt, while in China the lack of financing and structural over-capacity in several industries dragged down investments. However, the major drop in the average value of the euro against the dollar and all of the other currencies used by Group companies had a positive effect on the main aggregate figures for fiscal year 2015.

Consolidated sales reached €1,718 M in 2015, with a scope effect of €47 M and a favorable exchange rate effect of €96 M. At constant scope and exchange rate, consolidated sales were up very slightly (+€15 M) over 2014 (€1,626 M), demonstrating the Group’s resilience in a challenging economic climate.

The 2015 gross margin was down from 2014 due to a less favorable balance between current orders and turnkey contracts in the sales mix and pressure on the margins in the segments which were the hardest hit by the economic situation, particularly in the metals division and energy. General expenses also decreased at constant scope and exchange rate due to the implementation of cost-cutting measures. In these conditions, the EBITDA for financial year 2015 was €116 M, compared to €135 M for 2014.

Consolidated cash and cash equivalents, which stood at €164 M at December 31, 2014 reached €176 M at end 2015 thanks to the positive operational cash flows generated during the course of the year.

The Group ended 2015 with an order book of €1,556 M, up €62 M (with €49 M due to the scope effect) over 2014. The order book is slightly larger at constant scope than at the start of the year and is better balanced between the divisions, so it should ensure a level of activity for 2016 comparable to 2015 on the historic scope.
Summary of non-financial indicators

INNOVATION

Research & Development

- €35.5 million spent on R&D in 2015
- 582 patent families
- 1,948 current patents

The percentage of the R&D budget that is dedicated to new product/process development (44%) and breakthrough research and innovation (13%) continued to increase in 2015, reflecting the Group’s desire to maintain its position on innovative, high-performance technical solutions.

Fives joins the top 50 French patent applicants released by INPI (the French Institute of Industrial Property).

In 2015, three more products combining operational excellence and high environmental performance earned the Engineered Sustainability® brand: The Stein Digiflex® furnace for galvanizing and annealing lines (Steel); the GENI-belt™ for courier, postal & distribution sorting system (Intralogistics); and the North American Regenerative Furnace, a forging furnace (Combustion).

9 products have been awarded the Engineered Sustainability® brand in 5 business lines

HUMAN RESOURCES

Breakdown of employees by geographical area

The number of employees increased by 7% between 2014 and 2015, mainly in Africa, the Middle East, Asia and Oceania.

- 66% Africa, the Middle East, Asia and Oceania
- 22% The Americas
- 12% Europe

470 employees were interviewed during a starter meeting

64% of employees headcount are engineers, managers or technicians

74% of employees attended at least one training course

Employee integration

Fives fosters integration of new employees with the starter interview program. Starter interviews are confidential meetings between each new hire and their Human Resources Division contact for a review, 6 to 18 months after their start date.

“For new hires the starter meeting proves that the company takes care of them and listens to them.”

Elaine Wang, Human Resources Director for China

ENVIRONMENT / SAFETY

ISO 14001 certification

74% of Fives’ industrial sites are ISO 14001 certified

The drive to continue to improve the environment is supported by the Group policy which requires all industrial sites to achieve ISO 14001 certification.

Work accidents

Safety results have been improving continuously since 2009, driven by Group management and thanks to the involvement of all employees.

<table>
<thead>
<tr>
<th>Year</th>
<th>Employees + temporary employees lost-time accidents</th>
<th>Employees + temporary employees accident frequency rate</th>
<th>Employees + temporary employees accident severity rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>79</td>
<td>9.12</td>
<td>7.49</td>
</tr>
<tr>
<td>2013</td>
<td>72</td>
<td>5.86</td>
<td>0.182</td>
</tr>
<tr>
<td>2014</td>
<td>77</td>
<td>5.36</td>
<td>0.207</td>
</tr>
<tr>
<td>2015</td>
<td>55</td>
<td>3.91</td>
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<td>3.91</td>
<td>0.135</td>
</tr>
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</table>

Qualification and training

The teams are increasingly qualified, due to the number of new hires in 2015 who are engineers, managers or technicians, and the increasing hours of and focus on training at Fives.
July
FACTORY OF THE FUTURE

Within the “Alliance Industrie du Futur” (Alliance for the Industry of the Future), a multidisciplinary group responsible for rolling out the French government’s Industry of the Future plan, Fives leads the “Vitrines technologiques industrie du futur” (Industry of the Future Showcases), which has already certified six emblematic technological projects which are nearly mature on an industrial scale.

May
CEMENT

Fives delivered a new grinding plant to Lafarge Republic’s Teresa site in the Philippines. With this grinding plant, equipped with FCB Horomill® technology, Lafarge will be able to produce 850,000 tons of cement per year, bringing the Teresa site’s annual capacity up to 2 million tons.

July/August
ACQUISITIONS: ECL AND LUND ENGINEERING

Fives reinforced its offer in the Aluminium sector with the acquisition of ECL (now Fives ECL). Fives ECL specializes in the design and installation of primary aluminium manufacturing equipment and has also developed a high added-value service offer. Fives enhanced its aeronautics offer with the acquisition of Lund Engineering (now Fives Lund LLC), which specializes in designing composite structural elements and components.

July
CHINA

Baotou signed a 10-year technical assistance agreement with Fives. The Group will provide technological expertise covering all phases of production as well as a full training program, and will assist Baotou in developing and certifying its high-end steels for the automotive industry.

September
ADDITIVE MANUFACTURING

Michelin and Fives announced the creation of the joint venture Fives Michelin Additive Solutions which aimed at developing and marketing industrial machines and production shops on a global scale via “metal additive manufacturing” technology - commonly known as metal 3D printing.

In June, Fives also signed a partnership with BeAM, a start-up that is a top builder of additive manufacturing machines using metal powder deposition technology.

November
COOPERATION AGREEMENT

Fives and JD, one of China’s largest online retailers, signed a cooperation agreement during the visit of French President François Hollande in China. The objective of this new partnership is to develop a new solution that will optimize JD’s industrial facilities and support its rapid growth.

December
SOUTH AFRICA

Fives Southern Africa is part of Fives international network. This new Regional Office will support all Fives companies in their business development in southern Africa.

RESEARCH AND DEVELOPMENT

Fives continued to file patents at an impressive pace in 2015, with 50 new patented inventions. The Group owns a total of 582 patented inventions (patent families) in all of its segments, protected by 1,948 patents in force in the countries where it operates. Fives joins the top 50 French patent applicants (latest ranking list released by INPI, the French Institute of Industrial Property).

Fives also became a "Hi-Tech Enterprise“, a certificate the Chinese government awards to companies that are investing to develop sustainable technologies and with a strong capacity for innovation.

OPEN INNOVATION

Fives became a member of the Jules Verne IRT (French Technical Research Institute), joining research institutions and other major industrial groups. With this partnership, Fives will be able to accelerate the development of new products and production processes, and will collaborate on strategic projects which relate to innovative processes (additive manufacturing) and the processing of new materials (composites).
Africa and the Middle East

South Africa
Cryogenics: Fives’ longstanding partnership with Air Liquide
Air Liquide has selected Fives for the supply of brazed aluminium heat exchangers (BAHE) and Cryomec centrifugal cryogenic pumps for the new air separation unit, the largest ever built, for Sasol in Secunda.

Bahrain
A diversification project for secondary aluminium plants
Gulf Aluminium Rolling Mill Co (Garmco) awarded Fives with a contract for the expansion of the re-melt sector of its rolling mill. With an annual production capacity of 120,000 tons, this complete secondary aluminium cashtouse will allow Garmco to produce slabs from liquid metal, ingots or recycled aluminium.

United Arab Emirates
Supply in record time
Toscelik has placed an order with Fives for three new tube lines for its new plant in the Marmara region, near Istanbul.

The Americas

The United States
Logistics: A renewed confidence
One of the US leaders on the transport and package delivery services market once again selected Fives to automate four new terminals.

Grinding: A diversification outside automotive sector
Fives will supply a Lands L2HWe orbital grinding machine to Ariel Corp for its Mount Vernon, Ohio plant. This large grinding machine is designed for the final machining of crankshafts for large-scale stationary compressors and will guarantee the same standards of precision as for small-scale automotive industry parts.

Asia et Oceania

Australia
Logistics: four cross-belt sorters delivered
Fives delivered two new cross-belt sorters to the Toll group for its sorting centers in Sydney and Melbourne. Two more cross-belt sorters were delivered to TNT Express for its Melbourne and Brisbane sites.

China
Aerospace: A great success for the Group’s latest generation of machines
Fives won several tenders in machining and milling supply. One Forest-Liné MINUMAC was sold to RISAC, and two new Forest-Liné AEROSTAR were sold to Chengdu Aircraft, both of which are entities of the national aerospace group AVIC. Harbin Aircraft Industry Group Co. awarded Fives a contract for two Forest-Liné AEROSTAR, which will be used to machine aluminium helicopter parts.

Europe

France and Spain
Automation: Renault relies on Fives’ expertise
Regarding automated production systems, Renault has selected Fives to automate two crankshaft production lines in its plants in Oézin (France) and Valladolid (Spain).

France
Industrial Maintenance
Fives was awarded multi-year outsourcing contracts for installation maintenance in the transport, courier, defense and aerospace sectors. The SNCF once again selected Fives for the maintenance on over ten “technicentres”, specialized sites which handle rail equipment maintenance, in addition to the six sites where Fives has been present. Fives and the SNCF are also collaborating on digital transformation projects.

The United Kingdom
Logistics: A new hub to automate
One of the top express courier companies has selected Fives to automate its new hub, scheduled for start-up in October 2016. Fives will provide a sorting solution including three cross-belt sorters, each with a capacity of 14,000 parcels per hour.

Flat steel: Fives, a valuable partner for Baosteel
Fives was selected to design and supply two new Stein Digiflex® vertical digital annealing furnaces as part of the new cold-rolling line on Baosteel’s Zhanjiang site, located in Guangdong province.

Automotive: Over fifty fluid filling systems supplied
Fives was awarded major contracts which include an order from Chinese car manufacturer Geely for 37 machines for five different plants, as well as an order for 15 machines from SGA, a joint venture of General Motors and Shanghai Automotive Industry Corporation, which produces and sells cars under the Chevrolet, Buick and Cadillac brands.

South Korea
Flat steel: New contract with Posco
One of the world’s top steel sheet producers for the automotive industry signed a contract with Fives for the design and supply of a high-performance vertical annealing furnace for the seventh hot galvanizing line in its Gwangyang plant.

Japan
Logistics: Several successes in the express carrier sector
Three of the leading Japanese express courier companies, all historic Group customers, once again selected Fives technologies to automate their sorting terminals in Tokyo, Higashi-Matsuyama, and Kanazawa.

India
Flat steel: A contract signed with Primetals Technologies Japan
Fives was awarded a contract for the design and supply of two walking beam furnaces which will be a part of the hot-rolling line located on the SAIL steel production site in Rourkela. This new line will supply rolls of high-quality steel for the SAIL and ArcelorMittal joint venture to supply automotive steel.

Malaysia
Industrial chemicals: Proabd® MSC, a proven technology
Fives was awarded an order for the supply of a methanol production unit for BASF Petronas Chemicals (BPC) as part of its Lemanggrass project in Kuantan. This order marks the success of a long-term phase carried out with BASF, which proved that the Proabd® MSC, to be used in the project, is reliable.

MILESTONES - 2016 ANNUAL AND CSR REPORT - 2015 Financial Year - Fives
Fives’ objective is to ensure profitable growth in its businesses. To achieve that objective, the Group leverages the energy of its subsidiaries, by helping them activate their key operational performance-related development levers.

A program of excellence

With over 100 subsidiaries operating in nearly 30 countries and a worldwide business, Fives is a robust international group and has proven its resilience. Competitiveness, agility, innovation, and quality are at the heart of its development model. In order to maintain and support its growth trends, Fives has gotten all of its subsidiaries involved in FivesWay, a holistic corporate program focused on four priorities: Customers, People, Innovation and Operational Excellence. All of the Group entities apply FivesWay, with a focus on specific areas for improvement which they define on the basis of their activities.

A common, shared vision

Fives’ operational performance depends on each and every subsidiary understanding of:
- Its level of expertise related to design, manufacturing and project management;
- The minimum requirements in all of these areas;
- The best practices inside and outside the Group.

The subsidiaries use this information to define areas for improvement, based on their positioning and business. The objective is to provide optimal performance to customers by managing the business-related risks and adopting a continuous improvement approach for increased efficiency.

Synergies and continuous improvement

Fives, with its wealth of diverse experience and in-depth knowledge of its customers’ processes, also has a vast network of experts who know how to adapt to different markets and make the most of skill sharing to increase efficiency and performance. The Group facilitates close cooperation on innovation, sales, and service development through partnerships between its different subsidiaries and activities.

In 2015, Fives pressed forwards with its continuous improvement. It focussed its efforts on lean management and redesign to cost, measures which increased productivity and cut costs and execution times in many Group subsidiaries.

The Operational Performance Department helps the subsidiaries and their teams improve their execution performance, particularly in terms of safety, purchasing, project delivery and manufacturing. It is tasked with providing and sharing expertise, establishing standards and implementing best practices.

The Operational Performance Department is made up of experts who support and advise subsidiaries on the Group’s major areas for development. Corporate social responsibility, project management and supply chain, information systems and digital technology.

“The Operational Performance Department provides coordination and support to help all subsidiaries make their activities more efficient.”

Xavier Becquey, Head of the Operational Performance Department
Our business

22 Innovation
24 Service
26 Aerospace and industry
28 Aluminium
30 Automotive
32 Cement and minerals
34 Energy
40 Glass
42 Logistics
44 Steel
In 2015, Fives continued to invest in research and development and to stake out its position on innovative and high-performance technologies which meet industrial companies’ needs in terms of productivity, reliability, versatility, people’s safety, ergonomics, the environment, energy consumption, easy maintenance, and more.

Additive manufacturing: A highly flexible production technique
In 2015, Fives entered the field of additive manufacturing, also known as 3D printing, a sector to which it brings its expertise, experience, and ability to innovate on mechanical engineering, automation, and industrial process management. In June, the Group signed a partnership with BeAM, a start-up which is a recognized builder of additive manufacturing machines using metal powder deposit technology. In September, Fives and Michelin announced the creation of a joint venture, Fives Michelin Additive Solutions, with the ambition of becoming a major player in metal 3D printing.

New applications for composite materials
In September 2015, Fives consolidated its aerospace offer when it acquired Lund Engineering (US), which specializes in automated composite part fabrication. Composite materials, which combine lightness and mechanical resistance, are key in the aircraft industry, as well as sectors like renewable energy and biomedical devices. There is also significant potential to develop new uses for these materials.

Connected plants and smart plants
In 2015, Fives continued to combine its process expertise with digital tools to create solutions that facilitate production system and machine management and maintenance, as well as after-sales service offers. New digital offers for increasingly precise management of industrial installations have been developed for a wide range of sectors, including steel and sugar production, logistics, composite material implementation, maintenance, and more.

Technologies for more eco-friendly plants
Fives continued its efforts on designing technologies that combine operational excellence and high levels of environmental performance with its Engineered Sustainability® eco-design approach: three new products in the steel, logistics and combustion sectors earned the brand in 2015. The Group also develops solutions to minimize energy losses in industrial processes such as cement, sugar, steel and aluminum production, and potentially to recover and use that energy via recovery systems that can guarantee continuous production and manage variable energy supplies.
“Our customers’ performance is the core of our mission. Our teams always take great satisfaction in providing services that improve it.”
Denis Bouteille, Service Director

Fives’ global expertise in services
Fives’ first commitment is to help its customers ensure maximum availability of the equipment it provided. The Group puts massive resources into making that happen, including teams totaling over 1,800 people worldwide, stocks of spare parts, dedicated workshops, and industrial-type processes to guarantee consistent service performance. Service is about more than just resources. It is also a state of mind. Fives’ teams are responsive, committed, empowered, and really listen to their customers in order provide them with the support they expect, every day.

Connected services for enhanced performance
Expectations are constantly changing, and Fives’ service businesses are innovating to create modern solutions for new challenges. To provide an effective response to its customers’ performance enhancement needs, Fives is developing a connected service offer based on production data analysis. Thanks to the combination of the teams’ expertise and digital technology, Fives can offer operational industrial companies support, even remotely. These connected services form a link between Fives and its customers, to identify, prevent and respond to anomalies which arise in the installations.

Industrial maintenance: customer recognition
Fives’ service offer includes an industrial maintenance offer for complex systems. Fives handles corrective and preventive maintenance and improvement of production facilities through performance contracts and maintenance engineering support services. In 2015, customers in the transport, courier, defense and aerospace sectors recognized this expertise and signed multi-year outsourcing contracts for maintenance of their installations.

A GLOBAL ORGANIZATION
Fives’ service offer relies on local teams based near the industrial sites they serve. In the aluminium sector, for example, the service-focused Fives subsidiaries are located near major producers in Australia, South Africa and the Gulf States. The teams which serve the aerospace sector are based in North America, Europe and China, near the Group’s major customers and their production and assembly sites. A centralized logistics system, with an optimized stock of spare parts and a quick delivery process also contributes to providing responsive, flexible customer service.

KEY FIGURES
1,800 employees dedicated to services activities around the world
27%: Percentage of the Group’s total sales from services activities in 2015

In all of its businesses, Fives has developed service offers to support its industrial customers worldwide throughout the lifecycle of their equipment.
In the aerospace segment, 2015 saw the confirmation of a large number of investments, leaving major manufacturers’ sub-contractors unable to absorb the volumes required. In France, some industrial decisions were implemented at a very slow pace, while in the US the situation generated a concentration in the sector’s supply chain and the consequent postponement of a number of rank 1 and 2 sub-contractors’ projects until the end of the year. In the industry segment, the businesses which serve the oil and gas industry as well as the mining and heavy machinery industries were hit hard and faced a simultaneous drop in the prices of oil and other key raw materials. For many industrial players, the scale of this correction meant not only halting new investments, but also shutting down certain production sites. However, the industrial maintenance sector continues to develop, mainly in France.

Offer
Metal cutting and machining solutions for large complex parts, as well as composite processing machine tools, designed for the aerospace and heavy manufacturing (primarily in the mining and hydrocarbons sectors) industries.

– High-precision machines and high-performance composite processing systems: Large vertical gantry mills, high-speed machining centers, profilers, stack milling machines, fiber placement and two-layer systems, boring mills and vertical turning machining centers, profilers, stack routing machines, fiber processing systems: Large vertical gantry mills, high-speed cutting systems for large parts, large vertical gantry machining centers that can be applied in various industries, including the aerospace industry.

– Services: Evolution of new production lines, refurbishment and retrofit of machine tools and other services such as: Upgrading, repair, industrial transfer, production support, after-sales, technical assistance and customer support.

Maintenance
Corrective and preventive maintenance solutions with contracts with performance objectives and maintenance engineering support services.

Top aircraft manufacturers prefer Fives technologies
Fives won several large orders during the year, particularly in the Chinese market. For example, the latest generation machines developed by the Group were selected by two entities of Chinese national aviation group AVIC: One Forest-Liné 5-axis machine with a high-speed, high-precision vertical broach with linear motors) was sold to RISC and the first two Forest-Liné AEROSTAR (5-axis machines with a parallelized horizontal broach) were sold to Chengdu Aircraft. Harbin Aircraft Industry Group Co., one of the major Chinese aerospace manufacturer, also awarded Fives a contract for two Forest-Liné AEROSTAR, based on the excellent finished surface quality guaranteed by this high-speed chamfering machine, which will be used to machine aluminium helicopter parts.

In Japan, Fives Heavy Industries once again chose Fives to supply an additional Forest-Liné ATLAS composite tape laying machine and Forest-Liné ACCESS pre-cutting machine as part of its Boeing 787 wing capacity increase. The Group will also deliver the country’s first two aluminium bar machines in Japan. In France, Dassault and Airbus have ordered Forest-Liné ATLAS and Forest-Liné ACCESS machines as part of their drive to increase production of RAFALE and A350 aircraft respectively, while in the US, the American and Canadian teams designed and installed several machine tools for Boeing.

On the industrial equipment market for the mining and oil industries, despite the generally bleak outlook, Fives leveraged the quality of its technologies and its expertise to win several initial contracts, including the first orders for its Digital&Lewis V Series vertical lathes, which were released on the US market during the year.

Fives, a key player on industrial maintenance
In the industrial maintenance sector in Europe, mainly France, Fives won multi-year outsourcing contracts for installation maintenance in the transport, courier, defense and aerospace sectors. Thus, the SNCF once again selected Fives for a five-year contract for the maintenance of its “technicentres”, specialized sites which handle rail equipment maintenance. In addition to the six sites where Fives has been present since the early 2010s, located in northern and western France, Fives’ teams will now be responsible for maintenance on over ten additional sites in the Lyon region, the Provence-Alpes-Côte d’Azur region of southeastern France, the Paris area, and Normandy. Fives and the SNCF are also collaborating on digital transformation projects involving connected sensors, which are currently under way.
In the primary aluminium segment, demand continued to increase modestly in 2015 (3-4%), largely due to the drop in consumption in emerging countries. At the same time, while demand has exceeded the offer in recent years, two factors are leading to a gradual correction: China is now releasing its large surplus on the global market, and the significant drop in energy prices has enabled the majority of producers to stay profitable, encouraging them to keep obsolete smelters running. This led to particularly low aluminium prices in 2015 and made 2015 the third consecutive year in which no large-scale capacity projects were launched.

Our business

ALUMINIUM

Fives designs key manufacturing processes and supplies equipment and integrated solutions for the carbon, reduction and casthouse sectors of aluminium plants.

Raw materials
Coal tar distillation - Liquid pitch marine terminal

Reduction
Gas Treatment Centers (GTC) - Pot Tending Assembly (PTA) machines - Anode rodding shops, anode stacking cranes and anode handling systems - Carbon butts recycling units - Furnace Tending Assembly (FTA) machines - Anode rodding shops, anode stacking cranes and anode handling systems

Casthouse
Handling and melting furnaces - Heat treatment furnaces - Casthouse water cooling systems - Global casthouse solutions

Fives: The partner for secondary aluminium producers
Fives’ expertise in smelter technology and its ability to execute large-scale projects made the difference and enabled it to win a contract with Gulf Aluminium Rolling Mill Co. (Garmco) for the expansion of the re-melt sector of its rolling mill located in Bahrain. This complete secondary aluminium casthouse, with an annual production capacity of 120,000 tons, will allow Garmco to produce slabs from liquid metal, ingots or recycled aluminium.

Numerous equipment commissionings worldwide
Fives’ teams supplied and successfully commissioned several key pieces of equipment for the replacement of the old Soderberg lines at the Rio Tinto Alcan plant in Kitimat (Canada) with a new smelter using AP40 technology. Ten pot tending assemblies and a transfer gantry, as well as three tilting holding and melting furnaces, a green anode plant, a rodding shop, an anode handling system, two furnace tending assemblies, and two stacking cranes.

In the Middle East, as part of the line 2 revamping of the Green Anode Plant for the EGA (Emirates Global Aluminium) plant in Dubai, the Group completed the design and start-up of a latest generation Xelios 2.0 vibrocompactor and a transfer gantry with ECL™ technology in record time. In Russia, Rusal, the national aluminium giant, started to operate its new production unit equipped with Fives’ gas treatment center for its new Boguchansky plant, after put on standby the project for five years. Fives’ dry scrubbing technology on electrolysis pots can reduce up to 99.7% of pot room fugitive emissions.

Fives’ Expertise and customer service
Fives continued to earn more recognition as an expert and service provider, winning contracts with Pacific Aluminium in 2015. The Group upgraded the Level 2 Control System on Tomago Aluminium’s anode baking furnaces at their aluminium smelter with the supply of the new Fives software suite, allowing controlling the three furnaces that are using different technologies on a single redundant machine. Fives also signed audit contracts for the two Pitch Fume Treatment Systems (PFTS) at Boyne Smelter Limited (BSL) and the two Fume Treatment Centers (FTCs) at Tomago, in Australia.

In China, Fives continued to work closely with China Aluminium Rolling Co. (CARCO) for the expansion of its carbide plant located in Yichang. The Group supplied two gas treatment centers for the two new plants, as well as two new anode rodding shops, anode storage area and packaging systems.

In the Middle East, as part of the line 2 revamping of the Green Anode Plant, Fives delivered its AP 40 technology to Tomago Aluminium, which is easy to set up and operate.

MIREA, A PIONEERING SOLUTION TO ENHANCE GLOBAL SMELTER PRODUCTION PERFORMANCE

Mirea (“Mesure Instantanée de la Résistance Électrique des Anodes” or “on-line automatic anode electrical resistance measurement”) is, as its name implies, a process used to test the electrical resistance of anodes in order to assess their quality and the quality of the electrolysis process. This innovation, developed by the AP Technology™ teams, was industrialized by the Fives teams and tested at the Aluminerie Alouette plant in Canada. Mirea, which revolutionizes anode quality control, is a simple, profitable solution which is easy to set up and operate.
AUTOMOTIVE

The year 2015 was successful, largely due to the dynamic US market. The US automotive industry is in excellent shape and is planning the launch of multiple new models in the coming years. The machining sector has also seen a number of new projects, due to the drop in energy prices and updates to high-powered vehicle motors. In this vein, Mexico remains a buoyant market.

In China, the increase in demand generated a wave of capacity-building programs. In Europe, manufacturers are continuing their rationalization programs, which have featured targeted investments in new plants and certain existing sites, mainly for the premium and SUV sectors.

Fives designs, manufactures and installs equipment, machining systems, automated production systems and fluid filling systems primarily for the automotive industry, and related services.

In the grinding sector, the technologies developed by Fives are recognized by major manufacturers for their micron-level precision and speed. Ford has once again selected Fives as a supplier, and General Motors signed a multi-year contract with the Group for the supply of Landis LT2 orbital grinding machines for crankshafts as part of its new Cylinder Set Strategy (CSS) engine project. Fives will deliver 60 machines in the space of just over two years.

In the fluid filling and sealing sector, the Group for the supply of Landis LT2 orbital grinding machines for crankshafts as part of its new Cylinder Set Strategy (CSS) engine project. Fives will deliver 60 machines in the space of just over two years.

In the automated production systems sector, the Fives teams are highly appreciated in both the United States and Europe. In the United States, Eaton selected Fives to supply a state-of-the-art, 12-speed truck transmission assembly line at its San Luis Potosi plant. The Group supplied Chrysler with automated clutch assembly lines as part of the 8-speed transmission program at its Kokomo, Indiana site. Over the Christmas shut-down, it also started process improvements (conveyor solutions, robotic tools) to the cylinder head assembly lines at the Cummins plant in Columbus, Indiana. In Europe, Renault selected Fives and its expertise to automate two crankshaft production lines in its plants in Cléon (France) and Valladolid (Spain). In Italy, Fiat Chrysler Automobiles (FCA) Italy entrusted Fives with an order for the automation of a crankshaft production line, with an annual capacity of 200,000 units, in its Termoli plant. When Fiat made its first automation order, it selected Fives for its recognized expertise in mechanization.

In the fluid filling and sealing sector, the Group benefited from the continued construction of new final assembly plants in China that is now the world’s leading automotive market. Major contracts included an order from Chinese car manufacturer Geely for 37 machines for five different plants as well as an order for 15 machines from SGM, a joint venture of General Motors and Shanghai Automotive Industry Corporation. SGM produces and sells cars under the Chevrolet, Buick and Cadillac brands. Fives benefited from its position as technological leader worldwide. In Germany and Spain, Daimler signed a contract with the Group for the integration of HFO (HydroFluoro-olefin: new refrigerant for air conditioning) modules into the RapidCharge® machines on its Düsseldorf and Vitoria sites. In China, GAC Fiat selected Fives for its Guangzhou site. In the US, Ford purchased RapidCharge® units for its Dearborn and Chicago sites, and also had HFO modules integrated into machines supplied by competitors. In France, Renault selected Fives for a framework agreement for the integration of HFO modules on all of its production sites. In Japan, Toyota Motor selected Fives to supply a new sealing system.
The increasing concentration of the major market players, symbolized by the mergers of Lafarge and Holcim and of Heidelberg and Italcementi, has further contributed to a tendency to "wait and see", leading customers, both the newly merged entities and their major international competitors, to freeze projects planned several years ago, including single equipment orders. Furthermore, the low growth in demand in emerging countries and difficulties in finding financing of certain regions (South America and Southeast Asia and later in Africa and the Middle East due to falling oil prices) are discouraging regional producers from making investments.

Despite the limited number of opportunities, Fives won a turnkey contract for a cement plant in Mexico (one of the few remaining dynamic markets) with a new local player that purchased the old Lafarge assets. Thus, Cementos Fortaleza selected Fives for a turnkey contract to supply a second clinker production line with a capacity of 3,300 tons per day on its Tula site, located in the central Mexican state of Hidalgo. Fives had already supplied the site's first production line several years ago. This new line will feature Fives' latest technologies, providing the customer with optimized energy and environmental performances for both the burning line (FCB Kiln, FCB Zero-NOx Press, FCB Preheater and Pillard NovaFlam® burner) and the grinding plants (FCB Horomill® and FCB B-mill, FCB TSV™ Classifier). The line should start up by the end of 2016.

Proven proprietary technologies

With offers like its FCB TSV™ separation technology, Fives is recognized by all industrial producers for both the performance of its technologies and its ability to implement them. As part of the firing conversion to coal and petcoke, Fives delivered to Suez Cement Co. a new FCB TSV™ Classifier in order to modernize a vertical ball mill and optimize the operation of the solid fuel grinding plant. In Egypt, Fives supplied a new high efficiency separator for the Lafarge Cement Egypt petcoke grinding unit as part of its conversion from open to close circuit. The goal of the project is to relieve the stress on the cement plant due to the energy crisis met in Egypt.

Haldor Topsoe has entrusted Fives with an order for the supply of an FCB Rhodax® in Denmark for iron ore grinding.

Fives, serving major national and international cement producers

Fives commissioned a new grinding plant to Lafarge Republic's Teresa site in the Philippines. With this grinding plant, equipped with FCB Horomill® technology, Lafarge will be able to produce 850,000 tons of cement per year, bringing the Teresa site's annual capacity up to 2 million tons while reducing electricity consumption by 40% compared to conventional plants.
Our business

ENERGY

Offer
Fives designs and manufactures a variety of industrial equipment for the energy sector, primarily in high-performance industrial combustion systems, tube and production finishing equipment, cryogenics equipment for hydrocarbon processing and air separation and bioenergy and sugar industries. Plus, on the nuclear piping segment, the Group is involved in maintenance contracts as well as some new construction projects, mostly in France.

Combustion systems designed for electric and thermal energy production and for industrial processes.

Equipment and complete plants primarily used in sugar and bioethanol production; advice for optimizing production.

Industrial equipment primarily used in energy production:
- Brazed aluminium plate-fin heat exchangers (for air separation units, ethylene production or liquid natural gas)
- Cryogenic piston and centrifugal pumps (for air separation units, hydrocarbon production and distribution of any liquid gas)

High-performance industrial piping:
Engineering, supply, manufacturing and assembly of highly technical piping (new construction or refurbishing)

Tube and pipe solutions:
- Production lines: slitting lines, tube mills, finishing lines, quench and temper
- ERW mills and related equipment
- Finishing equipment
- Automation

Activities linked to oil exploration were hit hard by the dramatic drop in oil prices, which drove oil and gas players to revise their projects, to pressure EPCs* to reduce costs, and even to stop non-profitable units. This situation has had a negative impact on industries which are high energy consumers. However, in the US, aluminium production remained strong, driven by demand from the automotive and aircraft industries, leading producers to continue to invest in new thermal processing units.

In Europe, the market was still driven by the refurbishment of boilers for urban heating networks and sugar plants and efforts to bring them up to code.

In the United States, Superior Aluminum Alloys, based in New Haven, Indiana, which specializes in secondary aluminium, selected the Group to supply an aluminium melting furnace with a capacity of 105 tons. This furnace features excellent structural integrity and is designed for easier maintenance, will be fed by two North American HiRAM® burners. The Group also supplied Essar Steel with a North American Ultra-Low NOx combustion system for its new greenfield pelletization plant in Minnesota. With this system, Essar will be able to produce 7 million tons of pellets per year in optimal environmental conditions, in a location on the edge of a national park where environmental issues are particularly important.

The Group also finalized the development of its North American Tempest® DMC ultra-low NOx technology, which enables metal producers for the aircraft and automotive industries to increase their furnace capacities while maintaining their environmental performance and with guaranteed temperature uniformity.

Against this backdrop, Fives, recognized as a top performer on energy efficiency and environmental quality, won several major contracts worldwide. Fives’ offer is based on Pillard, North American and ITAS technologies.

In the energy business, in Qatar, Nooter Eriksen selected Fives to supply six latest generation 160 MW Pillard InductFlam burners for cogeneration on its Umm Al Houl site.

In South Korea, Samsung, which has committed to reducing the environmental impact of its sites, particularly NOx emissions, selected Pillard technologies for its new boilers.

Main customers


*EPC (Engineering, Procurement, Construction) Companies whose offers include engineering, supply and construction.
Investments remain at low levels as the excellent harvests in Brazil (the world’s leading producer) caused a significant drop in sugar prices. At the same time, in the bioenergy segment, the drop in oil prices makes ethanol production unprofitable.

The Group delivered a set of continuous vacuum pans to the Gardel sugar and distillation plant in Guadeloupe. This investment is part of an ongoing energy savings and equipment replacement project launched in 2012. The different equipment supplied by the Group has helped Gardel become the first French sugar plant to earn ISO 50001 of its Energy Management System from AFNOR. The certification recognizes a process which has led to saving 30,000 tons of water vapor per year since 2014, equivalent to the electricity consumption of 500-600 households.

On the service side, in Chad Somadia has once again proven its trust in Fives’ solution by selecting the Group for a tenth retrofit contract for the modernization of its mill drivers, based on the MultiDrive concept, which offers improved performance and lower installation and operating costs. For Somadia, the long-term objective is to increase sugar production at its CST plant by 25% due to enhanced performance, modernized line operations, and optimized maintenance. In Brazil, the Fives’ teams performed maintenance on over 100 centrifugals for various customers. Fives also completed the “connected” aspect of its equipment range. As a result of Cail & Fletcher SMART Control™ technology, so the operator can stay connected to the Group’s Service teams during sugar production.

The Group has also extended its consulting (Fives Sugar Consulting) on industrial sugar production directly connected in real time to Fives’ teams of experts trained on predictive maintenance. The Group has also extended its consulting (Fives Sugar Consulting) on industrial sugar production optimization from sugar cane (CAMIO™) to beets (BEMIO™). In China, the Group has also been selected to fit out several separation units for refineries.

As part of the development of the world’s biggest Air Separation Unit (ASU), Air Liquide, a leading industrial gas producer, has selected Fives for the supply of brazed aluminium heat exchangers (BAHX) and Cryomec centrifugal cryogenic pumps. With a daily capacity of 5,000 tons of oxygen (equivalent to 5,800 tons at sea level), this new ASU will be dedicated to oxygen production for Sasol in Secunda, South Africa.

The reputation of the technologies developed by Fives enabled the Group to retain a number of projects worldwide despite the difficult economy.

In China, the local Fives teams completed the first drying workshop (Cail & Fletcher multitube dryer-cooler) for the Cofco group’s Caofeidian refinery and set up the fifteenth Fletcher continuous vacuum pan for Mitr Phol, the world’s fourth largest producer, at its Tuo Lu plant. Chinese turnkey contractor CAMCE, which is handling the Welkait project in Ethiopia, selected Fives for two sugar cane distribution installations with a 12,000 tons of daily capacity.

Fives supplied 25 centrifugals for the new PT Sungai refinery in Indonesia. In France, the Tereos group has ordered the first Cail & Fletcher ZUKA® 1750 centrifugal for its Chevrères plant. It will be equipped with Cail & Fletcher SMART Control™ technology, so the operator can stay connected to the Group’s Service teams during sugar production. This will be the Group’s second connected site.

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INDUSTRIAL PIPING

On the high-performance industrial piping segment, in France, EDF’s clear drive to cut costs led to a decrease in the volume of nuclear maintenance orders. The industrial maintenance market remains highly competitive, while on the new construction market it continues to be driven by projects linked to the Flamanville EPR.

Worldwide, Fives is recognized for the quality and performance of its manufacturing and finishing equipment for welded tubes, through their Abbey, Bronx, OTO and Taylor-Wilson brands.

Industrial players from gas extraction and transport were also hit hard by the dramatic drop in oil prices. They froze all of their planned investments. A number of them were even forced to stop several installations which had become unprofitable virtually overnight. However, emerging countries increased their demand in tube and pipe manufacturing for the building and structural applications.

On the new construction side, Fives, the historic partner of the Chinese nuclear market, was selected by CNPEC (Chinese Nuclear Power Engineering Company) to supply nuclear primary coolant piping. The order, which includes both design and fabrication of two units of pressurizer surge lines (PSL), is for the Hangyanghe plant (units 5 and 6), with delivery is scheduled for 2017.

Fives has been present on the Chinese nuclear market since 2008, and has made its mark despite stiff local competition. Moreover, the Group has produced almost all of the PSLs for Chinese CPR1000-type reactors.

On the industrial side, Fives recently won a tender to carry out piping work for GRTgaz, one of the Europe’s largest natural gas transmission system operators. The commission covers the replacement of a switching station and the addition of two sectioning terminals to the Fauville power station (Haute-Normandie, France). The service includes management of the civil engineering works, prefabrication of the piping and its assembly on site. Borealis also selected Fives to replace the collectors in its Ottmarshem plant.

In 2015, the teams in charge of this business also implemented an operational excellence program in order to ensure optimal levels of quality and performance in their workshops and on all customer sites.

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Main customers

- ALSTOM POWER
- AREVA
- ARKEMA
- BOREALIS
- CNPEC
- DRT
- EDF
- GRT GAZ
- MICHELIN
- NING BO ENERGY COMPANY
- STX
- TEMBECA
- TIGF
- TOTAL
- WESTINGHOUSE
- WOLFRAM...
**OUR BUSINESS**

**• 2016 ANNUAL AND CSR REPORT - 2015 Financial Year**

**Fives FLAT GLASS**

The Fives' teams developed new types of “top-rolls” including movable roller heads for thin, ultra-thin and automotive glass shaping. *Prium® Bath TR Edge Control* offers a unique top roller head, with advanced kinematics, for better band control. This ensures enhanced optical qualities and greater operational flexibility.

**The flat and hollow glass markets continued to expand, with up to 3% growth in 2015 over 2014. The increase in demand for high added-value applications (automotive and ultra-thin glass) enabled several producers to confirm their investments, particularly in Southeast Asia, the US, India and Iran. In the specialty glass industry, producers took advantage of the periodic replacement of their installations to choose high energy and environmental performance technologies.**

**GLASS**

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**Our business**

**Offer**

Fives provides specialty glass and flat glass production lines, including all of the equipment for the melting and annealing lehr sections.

**Thermal equipment and production lines for:**
- Flat glass: Melting furnaces, tin baths and annealing lehrs
- Hollow glass and special glasses: Melting furnaces, conditioning equipment, feeders, boosting and ancillary equipment

**Main customers**

ASAHI GLASS COMPANY - CHINA SOUTHERN GLASS – CHINA

**Fives: a technological benchmark for major producers of flat glass...**

In the flat glass sector, the Group’s recognized expertise and skill were the deciding factors in its selection for the supply of lehrs offering high capacities (1,200 tons per day) or extreme formats (0.33 millimeters thick and 5,400 millimeters wide), particularly in Malaysia for Xinyi and in China for Fuyao, both historic Fives customers.

The completed projects include the set-up of the second 800 tons per day float glass line for Turkish glassmaker Düzce Cam and the finalization of start up of an 810 tons per day production line for producer Vivix (CBVP) in Brazil. The unit installed for Vivix features L.E.M.® (Low Energy Melter Technology) combustion air float glass technology that uses 10-15% less energy than standard melters by acting on the three glass melting stages.

**... and specialty glass**

The Fives’ teams commissioned two specialty glass furnaces ordered by SGD, the world leader on pharmaceutical flask production, based in northern France. The first furnace is electric and has a 70 tons capacity. The second, a 55 tons oxy-borosilicate furnace, features HRA (Hot Recovery Area) technology and set a new consumption standard for oxy-combustion on the pharmaceutical market.

**On the service side**

The organization was implemented in 2014 with expert teams based in China, France and the UK. These teams were instrumental in Fives being selected for a number of audit, support and design contracts. On the revamping front, the Fives teams assisted teams from Eurofloat, a joint venture by Saint-Gobain and Riou Glass, with their flat glass line in Salaise (France) and helped International Cookware renovate its table glass line in Châteauroux (France).
Our business

LOGISTICS

The market keeps being driven by the increasing volume of shipped goods due to the growth of e-commerce, where the needs of handling parcel flows and of high throughput are boosting demand for automated sorting centers. In Japan, the market is strong because of the aging population and high density, therefore major logistics industry leaders continued their investment programs. National postal services and major international shipping concerns in northern Europe, the United States and Australia are speeding up multi-year efforts to upgrade their networks.

Offer

Fives designs automated sorting systems for logistics, express parcel, postal and distribution companies.

Design and installation of tailor-made logistics solutions based on proprietary technologies, such as high-speed cross-belt sorters, shoe sorters, flat belt sorters, parcel singulators, pushers and diverters, as well as computerized order fulfillment and robotics solutions.

Design of customized software solutions (real-time, destination servers, WCS, SCADA, etc.).

Customer service, such as system maintenance, 24/7 hotline support, preventive maintenance, full maintenance, as well as retrofit and system upgrades.

Main customers


Fives, an unrivalled international player in the express courier and postal sectors

The performances of the technologies developed by Fives enable it to serve top international customers in the logistics industry. These products include a wide range of sorting solutions such as the cross-belt sorter that can handle extremely heterogeneous packages and has become the benchmark in the market for reliability and productivity.

United States - A leader in the transport and parcel delivery services, and a customer since the 1990s, has again selected Fives to automate four new terminals.

Japan - Three of the leading Japanese express courier companies, all historic Group customers, again selected Fives to automate their sorting terminals in Tokyo, Higashi-Matsuyama, and Kansai.

United Kingdom - One of the top express courier companies has selected the Group to automate its new hub, scheduled for start-up in October 2016. Fives will provide a sorting solution including three cross-belt sorters, each with a capacity of 14,000 parcels per hour.

Australia - In 2014, Fives was awarded a contract by BCS, its local partner, to supply two sorting systems for parcels up to 50kg to leading express road freight business, Tall IPEC, part of Tall Group, in Sydney and Melbourne. As a result of the high-performance achieved with the system installed in 2014, Fives was once more chosen to supply a system to sort envelopes (up to 15 kg) and parcels (up to 30 kg). The new sorting center will be located south of Sydney and is scheduled to open in September 2016. Two more cross-belt sorters with a capacity of 20,000 items per hour were delivered to TNT Express for its Melbourne and Brisbane sites.

Denmark - Fives was awarded a turnkey contract by PostNord Denmark to supply one sorting system for both packages and postal parcels up to 50kg. PostNord Group already entrusted to Fives the supply of three sorting systems in Sweden in 2011, 2013 and 2014. The proposed turnkey solution for the existing postal building located in Aalborg includes one 253 meters long cross-belt sorter, roller cage tippers, telescopic conveyors, one ACCORD® singulator, upstream lines as well as data capture and control systems including WCS (High level management software). When completed in June 2016, the system will provide PostNord Denmark with a sorting capacity of up to 6,300 parcels per hour to 98 destinations.

In the distribution sector, Fives won several contracts for order preparation center automation. Customers include OCP, a French pharmaceuticals distribution company based in Orléans.

The GENI-belt™ - a new cross-belt sorter for automated sorting in postal terminals, courier hubs and distribution centers, is designed to meet the sector’s increasing need for operational flexibility. It features increased precision and exceptional performances and reliability, and offers gentle handling, speed adjustment, sorter cell acceleration, controlled loading and unloading trajectories, and reduced maintenance. It also provides environmental benefits, thanks to energy savings. The GENI-belt™ is an eco-designed Engineered Sustainability® product.

More information on the Engineered Sustainability® eco-design program p. 56-57.
In India, Primatech Technologies Japan awarded the Group a contract for the design and supply of two walking beam furnaces, each with a capacity of 300 tons per hour. These two reheating furnaces will be a part of the new hot strip mill, which has an annual capacity of 3 million tons and will be located on the SAIL steel production site in Rourkela. This new line will supply high quality coils for the SAIL and ArcelorMittal joint venture to supply automotive steel. Stein Digit® Furnace® AT 2.0 technology, which is fitted with the AdvanTek® combustion system and controlled by the level 2 Virtual® Edge-R system, will guarantee optimal slab reheating, thus reducing environmental impact.

Fives’ expertise in process management and operation assistance valued by customers

In addition to its solid range of products and its operation assistance valued by customers. Fives’ teams also work on equipment revamps. Customers for these projects include: ArcelorMittal Etxebarri (AME) – a flat sheet production plant in Spain with an annual capacity of 350,000 tons – entrusted Fives with a project to modernize the annealing furnace supplied in the early 1990s; Wisco (Wuhan Iron and Steel Corp.) also selected Fives for the modernization of two silicon steel rolling mills; Wisco’s project aims to reorient the production into high-permeability electrical steels (HiB) designated for manufacturing of electrical motors and transformers with better electromagnetic performance.

Fives will provide technological expertise for all phases of production. Steel making, hot rolling, pickling, cold rolling, annealing and galvanizing, as well as a full training program. Fives’ teams will also assist Baotou in developing and certifying its high-end steels for the automotive industry, including its latest high-strength steels. Fives and its teams also work on equipment revamps. Customers for these projects include: ArcelorMittal Etxebarri (AME) – a flat sheet production plant in Spain with an annual capacity of 350,000 tons – entrusted Fives with a project to modernize the annealing furnace supplied in the early 1990s; Wisco (Wuhan Iron and Steel Corp.) also selected Fives for the modernization of two silicon steel rolling mills; Wisco’s project aims to reorient the production into high-permeability electrical steels (HiB) designated for manufacturing of electrical motors and transformers with better electromagnetic performance.

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Our commitments

- 48 Fives, a responsible group
- 50 Ethics and governance
- 52 Human resources
- 54 Health & Safety
- 56 Energy and environmental performance
Fives, a responsible group

The Group’s corporate social responsibility program reflects its determination in relation to Ethics, energy and environmental Performance, Health & Safety and Human Resources.

ETHICS
77% of executives attended a business ethics training course

ENERGY AND ENVIRONMENTAL PERFORMANCE
9 products earned the Engineered Sustainability® brand since the Fives eco-design program was launched in 2012
74% of industrial sites were ISO 14001-certified

HEALTH & SAFETY
3.91: The 2015 accident frequency rate steadily declined in the past 7 years
74% of employees attended at least one training course

HUMAN RESOURCES
37% of women are engineers and managers
85% of employees said they were satisfied by the interest of their work

THE UNITED NATIONS GLOBAL COMPACT
In 2011, Fives became an official signatory of the United Nations Global Compact, affirming its membership in a global business community that believes in respect for Human Rights, workplace standards, the environment and anti-corruption.

“We use the United Nations Global Compact to regularly re-assess our commitments, and provide official accountability for our actions.”
Frédéric Sanchez, Chairman of the Executive Board

CSR
4 COMMITMENTS
ENVIRONMENT
Minimizing the environmental footprint of Fives and its customers

ECONOMICS
Promoting fair practices in the marketplace

SOCIAL
Providing a safe and motivating working environment

GOVERNANCE
Incorporating CSR priorities into the organization of all Fives entities

RATING
TOP 2% of the EcoVadis panel with a score of 71 out of 100, representing a 13 points increase since 2012.

5 KEY STEPS
2008: Launch a structured Corporate Social Responsibility (CSR) program
2011: Voluntary decision to publish the first Annual and CSR report
2012: Creation of the Engineered Sustainability® eco-design program and launch of Fives’ ISO 14001 process for industrial sites.
2013: Target frequency rate of less than 4 announced for 2016
2015: Business Ethics program enhanced
Fives has grown while maintaining the commitments and responsibility of its subsidiaries. Its unique culture of entrepreneurship is founded on a set of principles and rules that are shared by all.

The Directives Manual: A resource for Group governance
The Directives and Guidelines Manual, which is based on the Group’s experience and lays out Fives’ policies in all of its areas of activity, is the common framework for all subsidiaries. The Directives clearly define the Group’s requirements, while allowing each subsidiary to meet those requirements in the way that best fits its context.

The Directives Manual is updated regularly and is reviewed annually by each subsidiary to go over its implementation.

Business ethics: A current hot topic
Regulatory changes are increasingly frequent as part of the drive to create a clear ethical framework for business and increase sanctions for violators. In light of these factors, it is important to ramp up efforts to prevent corruption and anti-competitive practices.

The Group’s actions in this area focus on three targets: its subsidiaries, its teams, and third-parties that Fives works with to develop its markets or execute its projects. Attention was previously solely focused on third-parties, with strict regulations governing contracts and selection and monitoring criteria. Those measures have been stiffened since 2014, a trend which continued in 2015 with:
- A new Business Ethics Directive, which defines the Group’s expectations and prohibitions for all countries;
- A training and awareness program, intended to spark a dialog on these sensitive issues and clarify the rules;
- A division-by-division risk analysis process.

The program is based on the three principles of dialog, responsibility, and proportionality between actions and risks. These principles enable a determined roll-out in compliance with the Group’s governance procedures.

An international Code of conduct
The Code of conduct lays out Fives’ fundamental values for all its employees. It is the only Group document which must be distributed to all employees, and has been translated into the 13 languages spoken in the Group. Distribution of the guide is tracked, and increased work on on-boarding will be added to the business ethics program.

“Having clear, consistent guidelines on preventing corruption is extremely helpful for the teams.”
Daniel Brunelli-Brondex, Country Director - India

In 2015, Fives began to roll out its business ethics program to its subsidiaries. During the training session held in India, Country Director Daniel Brunelli-Brondex discussed the topic with managers from all of the Indian subsidiaries. The session provided an opportunity to present clear and decisive rules which provide strong support to the teams in the field. Employees can talk about their practical questions during the meetings held by the subsidiaries.

All job levels are covered by the program, as are all countries, including those where corruption risks are considered minimal or non-existent.

KEY FIGURE
77% of executive managers have taken a training course on preventing corruption.
Fostering trust and developing teams

Building trusting relationships
Listening and dialog are the essence of Fives’ human resources policy. They are a vital ingredient in building trusting relationships with Group employees. In June 2015, Fives ran its third internal opinion survey of employees from subsidiaries worldwide. 5,300 of them took the opportunity to express their vision of the Group. A breakdown of the results shows that employees are satisfied overall (74% are happy to work for their company) and feel strong attachments (84% of employees are attached to their company). They are also generally happy with the quality of their relationships with their colleagues and managers and find their work interesting.

Supporting employee development
Fives has several programs which aim to understand and meet employees’ expectations: annual appraisal interviews, the career management committee (CEDRE), the career booster, and the starter meeting. These programs encourage regular, constructive exchanges. The career booster, which started in 2008, meets with employees looking to change positions and offers them openings in other Fives subsidiaries. In 2015, a local program, the company career booster, was added to help match each subsidiary’s needs with its employees’ career goals.

Retaining skills and talents by pooling resources
In response to the temporary setbacks faced by some of its activities, over the past decade Fives has developed a temporary assignment program which meets certain subsidiaries’ needs for additional staff while helping others cope with a drop in activity. The idea is to allow employees with low workload in their current subsidiary to transfer to another subsidiary which has a temporary or permanent need for a specific skill. This enables them to work to their full potential while allowing the Group to retain talent.

“Fives is going further on supporting all of its employees for the long-term, to reconcile employee well-being and corporate performance.”
Paule Viallon, Head of the Group Human Resources Department
A STRONGER SAFETY CULTURE

Safety culture and practices are progressing year on year in all of the Group companies’ activities. For Fives, however, the real objective is to achieve zero severe accident.

Safety culture and practices are increasingly well-integrated into the subsidiaries’ habits. Progress is particularly visible in the Fives workshops, which accounted for under half of lost-time accidents in 2015, down from two-thirds in 2014. Despite these improvements, 2015 was not a good year: A supervisor passed away in an accident on a work site in China and four other severe accidents occurred during the year.

Improving investigations to prevent accidents
In 2015, safety coordinators in the Group companies were trained to investigate the root causes of accidents. This means teaching entities to identify the right preventive changes to make after each accident, for a long-term impact. This process, along with Fives’ higher standards for incident investigation and better sharing of feedback among the companies, should reduce the number of accidents.

Getting management involved in day-to-day safety
In all of its companies, Fives has rallied out resources and actions to put managers at the heart of safety initiatives. Experience has shown that to improve a company’s safety culture, managers and executives must be directly involved in day-to-day safety measures. Starting in 2016, the measures already in place will be completed with the implementation of a field safety observation and dialog program in the companies. This will help make safety a real part of management practices.

Increased awareness on work sites
Accident cause investigation and management commitment in safety have proven their effectiveness in the Fives workshops. They are also essential to make Fives’ activities on work sites safer. However, due to the wide range of players involved, the weak culture of safety in certain regions, and difficulty of controlling conditions for site supervision activities, additional measures are required for these activities.

Work sites which take safety into account from the earliest stages of the process are also those which are the best managed overall, thus proving that safety tends to reveal a site’s operational performance. Clear ways for the teams on-site to make improvements have been identified, and several initiatives have been or are being implemented to that end.

“We have a collective requirement to continuously make our operations safer. The tragic accident which occurred in 2015 clearly illustrates the risks involved in our activities and the importance of safety, something of which we must be fully cognizant.”

Frédéric Sanchez, Chairman of the Executive Board

SAFETY ON WORK SITES

The turnkey cement plant project in Algeria involves from 100 to 1,000 people depending on the phase. Safety is a core element of coordination on the project, thanks to regular safety awareness activities and HSE events. Constant vigilance is essential if we are to continue making progress. On-site safety challenges allow the involvement of Fives and sub-contracting teams, and closer relationships with the customer.

KEY FIGURES

Fives continued its actions in 2015, leading to a decrease in the number and severity of lost-time accidents.

- 3.91: Lost-time accident frequency rate
- 0.135: Severity rate
- 55 lost-time accidents
- 5 severe accidents including 1 fatal accident

More details p. 56
Indicators p. 58
THE ENVIRONMENT
AS A DRIVER OF
TRANSFORMATION

Environmental performance is now a key criterion in assessing overall industrial performance. Environmental concerns affect Fives on two levels: both directly through its own activities and because it supplies machines and industrial units for long-term use in plants.

Working with all environmental players
Because environmental issues involve purchasing practices, innovation processes and environmental management systems, in 2015 Fives created an ad hoc environmental committee to:
- Organize work on common topics, like compliance with REACH (European regulations that aim to secure chemical manufacturing and usage in European industry);
- Better understand the existing programs in order to contribute to them effectively;
- Assess Fives’ position on emerging and often complex issues, like logistics.
This approach gets everyone involved to ensure that Fives’ environmental efforts are consistent and effective.

From environmental management to energy consumption coordination
After its initial drive to implement management systems on Fives’ industrial sites, the second phase of the program is focused on energy management and greenhouse gas emissions monitoring.
In 2015, eight Group companies performed energy audits of their sites, including industrial sites, testing centers and offices. The feedback from these audits will be used to develop a structured Group-level approach.

Increasing the number of eco-designed technologies
Fives is continuing implementation of its Engineered Sustainability® program, created in 2012, which aims to develop technologies which combine operational excellence and high standards of environmental performance. In 2015, three new projects have been awarded the Engineered Sustainability® brand, including the Stein Digiflex®. This continuous annealing line for steel coils saves an annual average of 1.4 million m³ of gas per site, for a 14% reduction in gas consumption compared to rival technologies.

The principles of eco-design are gradually being applied to the entire Fives offer, starting with products which have a major environmental impact and are strategic on their markets. This process is supported by the development of tools to help the Fives R&D teams learn to use eco-design methods and eco-design training sessions.

Energy and environmental performance

“Improving the environmental and energy performance of our activities requires implementing a collective approach which involves all of our teams.”
Bruno Réaud, QMS HSE Coordinator - Fives ECL

Energy audits provide a key opportunity to bring together people from across the company to make improvements: Optimizing operations systems and thus potentially optimizing production, quickly identifying anomalies and issues as a result of energy and water consumption tracking, spreading best practices and increasing skills in these areas.

KEY FIGURES
37 ISO 14001 certified sites
3 more products have been awarded the Engineered Sustainability® brand this year, bringing the total up to 9
100 people trained on eco-design in 2015, for a total of 250 since the program’s creation in 2012
22% of new patents filed are related to environmental performance

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OUR COMMITMENTS · 2016 ANNUAL AND CSR REPORT - 2015 Financial Year · Fives
Indicators

- Financial indicators
- Non-financial indicators
- UN Global Compact
## Financial indicators

### Sales

<table>
<thead>
<tr>
<th>BY GEOGRAPHICAL AREA</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>€ million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Americas</td>
<td>531.2</td>
<td>450.4</td>
<td>521.1</td>
</tr>
<tr>
<td>Asia and Oceania</td>
<td>457.9</td>
<td>396.4</td>
<td>369.0</td>
</tr>
<tr>
<td>Europe</td>
<td>458.3</td>
<td>547.0</td>
<td>571.6</td>
</tr>
<tr>
<td>Middle East and Africa</td>
<td>178.8</td>
<td>166.7</td>
<td>136.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,626.2</td>
<td>1,560.5</td>
<td>1,718.2</td>
</tr>
</tbody>
</table>

| Contribution from mature economies | 53% | 60% | 58% |
| Contribution from emerging countries | 47% | 40% | 42% |

### By End Market

<table>
<thead>
<tr>
<th>BY END MARKET</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>€ million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive</td>
<td>362.1</td>
<td>356.6</td>
<td>333.0</td>
</tr>
<tr>
<td>Logistics</td>
<td>202.2</td>
<td>146.0</td>
<td>179.2</td>
</tr>
<tr>
<td>Metals (aluminium and steel)</td>
<td>401.5</td>
<td>262.1</td>
<td>277.9</td>
</tr>
<tr>
<td>Energy</td>
<td>386.2</td>
<td>408.8</td>
<td>364.5</td>
</tr>
<tr>
<td>Cement</td>
<td>170.0</td>
<td>150.6</td>
<td>318.5</td>
</tr>
<tr>
<td>Aerospace and industry</td>
<td>104.2</td>
<td>236.4</td>
<td>240.0</td>
</tr>
<tr>
<td>Holding and sourcing co.</td>
<td>5.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,626.2</td>
<td>1,560.5</td>
<td>1,718.2</td>
</tr>
</tbody>
</table>

### Order Intake

<table>
<thead>
<tr>
<th>BY GEOGRAPHICAL AREA</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>€ million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Americas</td>
<td>305.2</td>
<td>408.7</td>
<td>635.9</td>
</tr>
<tr>
<td>Asia and Oceania</td>
<td>330.2</td>
<td>360.3</td>
<td>364.0</td>
</tr>
<tr>
<td>Europe</td>
<td>486.1</td>
<td>539.3</td>
<td>532.5</td>
</tr>
<tr>
<td>Middle East and Africa</td>
<td>105.8</td>
<td>556.7</td>
<td>175.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,227.3</td>
<td>1,865.0</td>
<td>1,707.8</td>
</tr>
</tbody>
</table>

| Contribution from mature economies | 64% | 51% | 62% |
| Contribution from emerging countries | 36% | 49% | 38% |

### Order Book

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>€ million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Americas</td>
<td>269.3</td>
<td>255.3</td>
<td>400.9</td>
</tr>
<tr>
<td>Asia and Oceania</td>
<td>368.4</td>
<td>344.2</td>
<td>399.6</td>
</tr>
<tr>
<td>Europe</td>
<td>364.8</td>
<td>366.2</td>
<td>394.4</td>
</tr>
<tr>
<td>Middle East and Africa</td>
<td>122.7</td>
<td>527.9</td>
<td>401.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,325.2</td>
<td>1,493.6</td>
<td>1,555.9</td>
</tr>
</tbody>
</table>

| Contribution from mature economies | 48% | 40% | 45% |
| Contribution from emerging countries | 52% | 60% | 55% |

### Summary of Consolidated Figures

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>€ million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>1,626.2</td>
<td>1,560.5</td>
<td>1,718.2</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>360.2</td>
<td>393.0</td>
<td>377.4</td>
</tr>
<tr>
<td>General expenses</td>
<td>(244.0)</td>
<td>(277.3)</td>
<td>(294.9)</td>
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<tr>
<td>Other revenue and expenses</td>
<td>(3.1)</td>
<td>(3.5)</td>
<td>7.4</td>
</tr>
<tr>
<td>EBITA</td>
<td>113.3</td>
<td>112.6</td>
<td>90.7</td>
</tr>
<tr>
<td>Current operating profit (EBIT)</td>
<td>104.4</td>
<td>92.6</td>
<td>52.6</td>
</tr>
<tr>
<td>EBITDA</td>
<td>133.0</td>
<td>135.1</td>
<td>111.4</td>
</tr>
</tbody>
</table>

### Contribution from mature economies

- Sales: 53%, 47%, 60%
- Order Intake: 64%, 51%, 62%
- Order Book: 48%, 40%, 45%

### Contribution from emerging countries

- Sales: 47%, 53%, 40%
- Order Intake: 36%, 49%, 38%
- Order Book: 52%, 60%, 55%
The Group’s progress on social and environmental issues, innovation and ethics is monitored year-round for analysis and strategic purposes. Our reporting system is designed so that we can track progress on the Group’s initiatives and keep all Fives stakeholders informed of these changes. The HR (social indicators) and Innovation reports cover the financial consolidation scope. Health, Safety, Ethics and Environmental data, on the other hand, is based on headcount and activity criteria which may lead to differences in scope.

### Social Indicators

**Including the Middle East and Australia**

<table>
<thead>
<tr>
<th>Metric</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workforce at the end of the year from acquisitions completed in the year</td>
<td>1,304</td>
<td>654</td>
<td>641</td>
</tr>
<tr>
<td>Workforce at the end of the year in companies entering the consolidated scope</td>
<td>1,150</td>
<td>966</td>
<td>989</td>
</tr>
<tr>
<td>Number of nationalities</td>
<td>46</td>
<td>53</td>
<td>61</td>
</tr>
<tr>
<td>Number of new hires (all types of contracts)</td>
<td>7,825</td>
<td>7,745</td>
<td>8,298</td>
</tr>
</tbody>
</table>

**Workforce by gender**

<table>
<thead>
<tr>
<th>Gender</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of men</td>
<td>84%</td>
<td>84%</td>
<td>84%</td>
</tr>
<tr>
<td>Percentage of women</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>Percentage of engineers and managers among women</td>
<td>30%</td>
<td>34%</td>
<td>37%</td>
</tr>
</tbody>
</table>

**Share of women in management**

<table>
<thead>
<tr>
<th>Role</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of women among CEOs</td>
<td>-14%</td>
<td>-14%</td>
<td>-14%</td>
</tr>
<tr>
<td>Share of women in Management Committees</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Share of women managers who report directly to a management committee member</td>
<td>13%</td>
<td>14%</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Employees by business sector**

<table>
<thead>
<tr>
<th>Sector</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace and special machines</td>
<td>4%</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>Steel/Glass</td>
<td>16%</td>
<td>16%</td>
<td>14%</td>
</tr>
<tr>
<td>Cement</td>
<td>7%</td>
<td>9%</td>
<td>8%</td>
</tr>
<tr>
<td>Energy</td>
<td>28%</td>
<td>28%</td>
<td>24%</td>
</tr>
<tr>
<td>Logistics and maintenance</td>
<td>8%</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>Automotive and transformation industries</td>
<td>20%</td>
<td>19%</td>
<td>16%</td>
</tr>
<tr>
<td>Aerospace and special machines</td>
<td>13%</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>Others</td>
<td>3%</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Skills and mobility management**

<table>
<thead>
<tr>
<th>Skills and mobility management</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of people who underwent a starter meeting**</td>
<td>-237</td>
<td>470</td>
<td></td>
</tr>
</tbody>
</table>

At end 2015, the Fives group had a total of 8,298 employees, a 7% increase over 2014. Fives ECL and its subsidiaries, Fives Keods, Fives Cinetic Mexico, Fives Lund and Ernst Polack (which became Fives Landis GmbH), boosted the number of employees when they joined the Group’s consolidated scope in 2015. These acquisitions also led to a 6-point increase over 2014 in the Aluminium division.

The inclusion of these companies in the scope did not affect the Group’s gender balance, which remains stable compared to 2014 at 84% men and 16% women. The age and seniority structure also remained stable, with the 50+ age group still accounting for 35% of staff and employees with less than 5 years' seniority making up 36%. The proportion of female employees who are managers and engineers has slightly increased.

The continued rise in the percentage of employees who are managers, engineers and technicians reflects our team's increased level of qualifications, although production remains a very significant part of our activities.

The need to adjust headcount in line with the volume of business while preserving skills led to a decrease in headcount in certain businesses, additional hiring in others, and an increased focus on resource pooling among subsidiaries. In France, staff loans increased by nearly 50%. Fives ECL was the main “source” subsidiary and Fives FCB, in the cement and minerals sector, was the main “recipient”.

**Starter meetings:** Assimilation reports completed 6 to 18 months after new hires arrive.
The Group R&D program saw a renewed emphasis in 2015, with a 7% spending increase on research and innovation. At constant scope (excluding the 2015 acquisitions), R&D spending reached €34.9 million in 2015, a 5% increase.

The roll-out of the Engineered Sustainability® eco-design program, an innovation process which aims to optimize the environmental and operational performance of Fives’ products, continued in 2015 with the selection of Group products with a strong environmental impact which are strategic for the Group’s markets. EY certified the program in October 2013.

The percentage of the R&D budget which is dedicated to new product/process development and breakaway research and innovation continued to increase in 2015, reflecting the Group’s desire to maintain its position on innovative, high-performance technical solutions.

Fives continued to file patents at an impressive pace in 2015, with 50 new patented inventions. The Group has a broad range of 5,827 patented inventions, covering all of its activities and protected by a total of 1,948 current patents in different countries. Fives ECL, which joined the Group in 2015, contributed to these strong results with 7 new patents in 2015 as well as a solid portfolio of 37 patent families and 186 current patents. Fives ECL also brought the number of Group research and test centers up to 28.

In 2015, the changes to the scope were caused by four factors:
- the increase in headcount at an entity in Bahrain, bringing it up to the CSR reporting threshold;
- the integration of Fives iOS, a company in the combustion sector acquired in 2014;
- a policy of rationalizing the Group’s legal entities, which led to the merger or dissolution of five legal entities;
- the creation and closure of sites within the legal entities.

As a reminder, unlike HR and Finance reporting, this reporting excludes companies that had not conducted their business in the Fives group for the full year 2015. Fives ECL and its subsidiaries in the Aluminium division, Ernst-Polack (now Fives Landis GmbH) in Germany in the automotive division, and Fives Lund, a company located on the west coast of the US in the aerospace division, which were acquired in 2015, were not included in the CSR reporting scope.

For the 2015 CSR report, the number of Group research and test centers reached 28, of which 17 are located in the Americas (excl. France), 6 in Europe (excl. France), and 5 in Asia (excl. France). This is an increase of 12% compared to 2014 (25 centers).

The percentage of employees invited to compete for the Group Innovation Award nominated (+18%) and competitors (+16%). These results highlight employees’ drive to contribute to developing innovative solutions. While the number of people invited to participate in the Group Innovation Award increased in 2015 with the selection of Group products with a strong environmental impact which are strategic for the Group’s markets. EY certified the program in October 2013.

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CSR CROSS-SECTIONAL INDICATORS

2013 2014 2015 The Americas France Europe excl. France Asia and Africa
Number of subsidiaries included in the scope of the CSR policy 53 62 59 12 20 15 12
Subsidiaries acquired in the past that entered the CSR scope in n 1 7 1 0 0 7 0
Subsidiaries newly included in the CSR scope 2 1 0 0 0 1 0
Total number of sites 79 92 98 20 42 18 18
Industrial sites 30 27 38 11 15 8 4
Offices 26 29 31 5 13 4 9
Combined sites, test centers and regional facilities 23 26 29 4 14 6 5

CSR Coaching
Number of subsidiaries already embarked on a CSR coaching program 35 38 37 11 17 3 6
Percentage of employees accounted for by these subsidiaries (total and by region) 68% 63% 64% 46% 88% 20% 48%  
Management system
Number of sites with ISO 9001 certification 49 56 61 9 33 12 7
Number of sites with pending ISO 9001 certification 3 7 7 4 0 3 0

Health, Safety and Environment (HSE) community
Number of Group HSE representatives 48 58 59
Number of Group HSE auditors 15 15 20
Number of Group HSE audits conducted 22 22 20
Percentage of companies audited (cumulative) 75% 79% 81%

(*) All of the subsidiaries conducting their own R&D product testing in designated locations are counted.


INTRODUCTION TO THE DATA BY SITE AND THE STATISTICS ON ENVIRONMENT/HEALTH & SAFETY/ETHICS AND GOVERNANCE

Corporate Social Responsibility (CSR) reporting covered all sites with an average workforce of 10 or more in 2015 and all sites with an industrial activity.

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The development of the Group’s Service activities indirectly contributed to the increase in the number of sites, in order to have locations closer to the customer sites. However, industrial sites still account for the largest proportion of Group sites, a proportion which increases every year.

The roll-out of the Health & Safety program continues, with a focus on getting management involved and preventing the main risks of severe accidents within the Group. To support these initiatives, the HSE community, continued to grow in 2015 at both the subsidiary level and the Group-wide Health & Safety coordination level.

The Group HSE audits, which are a key resource for coaching and continuous improvement in the subsidiaries, were carried out in workshops and on customer sites. Several workshop sites were audited in 2015, mainly in the cement and steel businesses. In 2016, the focus will shift to supervision and services sites where the Group operates in order to prevent accidents on these sites over the long term.

The CSR coaching program, which was launched in 2011, was not extended to any new subsidiaries in 2015, in order to prioritize the roll-out of a series of themed programs on environmental issues, ethics, and above all safety. The decrease between 2014 and 2015 is due to the merger of two entities. In 2016, the Group will decide whether to continue or overhaul this program, in light of the Group’s overall transformation program for 2020.

**ETHICS INDICATORS**

The roll-out of the business ethics program, which started in 2014 with training sessions for all Group executive officers, continued. The second phase, launched at the subsidiary level in 2015, aims to provide practical guidelines to the management teams and uses an entity-specific risk analysis process to identify the actions to take in order to improve the corruption and anti-competitive practices prevention measures. The first subsidiaries to apply the approach served as pilots in North America, the United Kingdom and India.

The drop in the number of executive officers who have been trained is due to the Group’s natural turnover. Another session will be held for new arrivals in 2016.

In addition to the work done with the management committees, a more ambitious Code of conduct initiative remains to be carried out to quickly and thoroughly distribute it to all subsidiaries, including the most recently acquired.

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### Environmental Indicators

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>The Americas</th>
<th>France</th>
<th>Europe excl. France</th>
<th>Asia and Africa*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sites with ISO 14001 certification (all types of sites)</td>
<td>21</td>
<td>31</td>
<td>37</td>
<td>8</td>
<td>15</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Objective of ISO 14001 certification for industrial sites</td>
<td>Industrial sites</td>
<td>30</td>
<td>37</td>
<td>38</td>
<td>11</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Number of industrial sites with ISO 14001 certification</td>
<td>16</td>
<td>25</td>
<td>28</td>
<td>8</td>
<td>11</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Number of industrial sites with ISO 14001 certification in progress</td>
<td>13</td>
<td>3</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Percentage of industrial sites with ISO 14001 certification</td>
<td>53%</td>
<td>68%</td>
<td>74%</td>
<td>73%</td>
<td>73%</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>ISO 14001 certification for other types of sites (offices, combined sites, test centers, regional facilities)</td>
<td>Number of non-industrial sites with ISO 14001 certification</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>0</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Percentage of non-industrial sites certified</td>
<td>10%</td>
<td>11%</td>
<td>15%</td>
<td>0%</td>
<td>15%</td>
<td>10%</td>
<td>29%</td>
</tr>
<tr>
<td>Environmental management system</td>
<td>Percentage of sites that have written and distributed an Environment policy</td>
<td>62%</td>
<td>61%</td>
<td>64%</td>
<td>50%</td>
<td>71%</td>
<td>78%</td>
</tr>
<tr>
<td>Number of FTE1 Environment staff in the Group</td>
<td>19.5</td>
<td>20.8</td>
<td>20.0</td>
<td>3.5</td>
<td>10.9%</td>
<td>3.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Energy consumption in GWh</td>
<td>Electricity consumption in GWh</td>
<td>48.7</td>
<td>65.2</td>
<td>63.0</td>
<td>27.9</td>
<td>21.4</td>
<td>71</td>
</tr>
<tr>
<td>Natural gas and heating oil consumption in GWh</td>
<td>56.8</td>
<td>67.6</td>
<td>62.2</td>
<td>32.0</td>
<td>19.4</td>
<td>10.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Total energy consumption in GWh</td>
<td>105.5</td>
<td>126.8</td>
<td>125.2</td>
<td>59.9</td>
<td>40.7</td>
<td>17.3</td>
<td>7.3</td>
</tr>
<tr>
<td>Energy consumption in €000</td>
<td>Electricity consumption in €000</td>
<td>4,604</td>
<td>5,837</td>
<td>6,451</td>
<td>2,359</td>
<td>2,346</td>
<td>1,084</td>
</tr>
<tr>
<td>Natural gas and heating oil consumption in €000</td>
<td>2,018</td>
<td>2,540</td>
<td>2,724</td>
<td>680</td>
<td>877</td>
<td>521</td>
<td>46</td>
</tr>
<tr>
<td>Total energy consumption in €000</td>
<td>6,622</td>
<td>7,997</td>
<td>8,175</td>
<td>3,040</td>
<td>3,023</td>
<td>1,605</td>
<td>907</td>
</tr>
<tr>
<td>Water consumption</td>
<td>Water consumption (industrial sites) in m³</td>
<td>84,739</td>
<td>83,816</td>
<td>89,316</td>
<td>32,533</td>
<td>19,684</td>
<td>14,376</td>
</tr>
<tr>
<td></td>
<td>Water consumption (industrial sites) in €000</td>
<td>190</td>
<td>178</td>
<td>213</td>
<td>108</td>
<td>51</td>
<td>43</td>
</tr>
</tbody>
</table>

(1) FTE: Full-Time Equivalent

* Including the Middle East

The drive in favor of the environment continues, supported by the Group policy which requires all industrial sites to achieve ISO 14001 certification. In 2015, 74% of industrial sites had earned environmental management certification. However, in addition to this policy, other sites are voluntarily getting involved: for example, three non-industrial sites obtained ISO 14001 certification in 2015.

Fossil energy consumption (gas and oil) was roughly the same as in 2014, with variations on different sites mainly due to the weather, with a relative decrease in consumption due to milder temperatures in North America (Michigan, Ohio and Wisconsin, where the Group highest-consumption sites are located) and colder temperatures in Europe. Certain sites have, however, already updated their heating systems, which improves their energy performance. The actual effects of these changes in terms of gas consumption remain difficult to isolate from variations in activity and weather.

The increase in water consumption, in terms of both volume and value, is due to the activity of the Suzhou site in China, the Group’s top water consumer, and the fact that Fives ITAS, a new industrial site in Italy which accounts for 8% of the Group’s water consumption, was included this year.

Electricity consumption (electricity is the Group’s top energy source) dropped 35% in 2015 despite the integration of a new industrial site in Italy. This decrease is mainly due to variations in activity levels (at constant scope the drop is roughly 4%) at the major Aerospace and Energy workshops in Europe and the United States. The opposite trend was seen in Asia, where the top consumer, the Fives Cryo Suzhou plant (Energy division) saw an increase in production in 2015. The relative drop in consumption was not reflected in costs, since the average price per kWh rose.
PROGRESS ON DEPLOYMENT OF THE GROUP CORPORATE SOCIAL RESPONSIBILITY PROGRAM

A yearly assessment of the progress done by the Group in the field of Corporate Social Responsibility is being carried out since 2012. In 2014, Fives decided to publish its annual objectives in addition to the year-on-year changes in order to highlight its priorities for the coming year.

The firm Exfi-Partners has also assessed the Group’s corporate social responsibility process annually since 2013. This analysis is based on a materiality matrix (facing).

Their findings provide information to the Group for talks about priorities and determinations to make across the whole corporate social responsibility program.

The following table (see opposite) details the overall progress made by the corporate social responsibility program of the Group and how that progress relates to the commitment made by Fives to respect and promote the 10 principles of the United Nations Global Compact.

Their correlation with the 10 principles of the UN Global Compact is indicated by “GC1” (Global Compact 1) for the program that corresponds to Principle 1 of the United Nations Global Compact, and so on, as detailed below:

Human Rights
GC1. Businesses should support and respect the protection of internationally proclaimed human rights; and
GC2. Ensure that they are not complicit in Human Rights abuses.

Labor
GC3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; GC4. The elimination of all forms of forced and compulsory labor; GC5. The effective abolition of child labor; and GC6. The elimination of discrimination in respect of employment and occupation.

Environment
GC7. Businesses should support a precautionary approach to environmental challenges; GC8. Undertake initiatives to promote greater environmental responsibility; and GC9. Encourage the development and diffusion of environmentally friendly technologies.

Anti-corruption
GC10. Businesses should work against corruption in all its forms, including extortion and bribery.

External evaluation by Exfi-Partners
For the second year in a row, Exfi-Partners has conducted an evaluation of the Group’s corporate social responsibility program. The evaluation was based on documents, questionnaires and interviews that were used to balance out the evaluation guidelines Fives applies and to measure Fives’ performance against these guidelines.

The materiality matrix above provides an overview of these two working strategies:
– On the x-axis, materiality reflects the significance of each topic in relation to Fives’ business (according to the Global Reporting Initiative®: these are “topics that have a direct or indirect impact on an organization’s ability to create, preserve or erode [...] value for itself, its stakeholders and society at large”)
– On the y-axis, Environmental and Social performance and Governance (ESG) pertains to Fives’ ability to encourage the use of best practices and comparisons of organizations.

According to Exfi-Partners, the key areas of social responsibility for Fives are part of the following Fives programs (detailed on pages 72-75):
2. CSR strategy and risk management: Good practices / Embed the CSR priorities into the organization of each Fives entity (CSR coaching and Fives Directives and Guidelines Manual)
4. Human resources management and 6. Health & safety: Good practices / Provide a safe and motivating workplace
8. Environmental policy and Environmental Management System (EMS): Good practices / Environmental ISO 14001 certification program
13. Responsibility towards clients: Good practices / Engineered Sustainability® eco-design program

The Global Reporting Initiative is an organization that advocates for the standardization of sustainable development reporting practices to encourage the use of best practices and comparisons of organizations.
Commitment

- Promoting fair practices on the marketplace
- Responsible purchasing
- Purchasing Directive updated to require subsidiaries to take CSR criteria into account
- Subsidiaries increasingly integrate HSE and CSR criteria in their bids, with the result that 73% of these consider it a key criterion in their decision-making.

- EcoVadis rating: Confirmed (Gold), 70/100, top 2.5% of the panel of 20,000 businesses assessed by EcoVadis at end 2015.
- Enhance multi-channel internal communications on CSR, Internet, corporate social network, distribution of our customers’ CSR reports.
- Provide sales staff with a document which recapitulates the key events and figures.

- Safety roadmap for 2016
- Move the Group towards a safety culture shared by all.
- In three years, halve the accident frequency rate for employees and temporary staff, with the ultimate goal of removing zero severe accidents.
- Our aim is to reach a maximum accident frequency rate of 4 in 2016 for employees and temporary staff.
- At the end of December 2015, 37 sites had received ISO 14001 certification, including 28 industrial sites (74% of industrial sites) and 8 of the subsidiaries subject to the European Directive on energy efficiency successfully completed the energy audits of their sites.
- Environmental committee involving the Group’s Purchasing, Innovation and CSR departments created. The committee’s objective is to ensure that the Group’s environmental approach is consistent and effective.

- 2015 also saw the internal review of the first Engineered Sustainability® branded product, the Centrispray™ Chamber Washer. Redesign studies have been launched in the context of better meeting the automotive market’s needs. The Centrispray™ Chamber Washer will go in through brand re-approval in 2016.

- 8 industrial sites to be ISO 14001 certified by end 2017.
- Launch the support program for entities which recently joined the Group.
- Assist the subsidiaries in formulating action plans to improve their energy performance.

- Full and satisfactorily deployed
- Comprehensive implementation of the Program’s developable projects.
- 100% of project objectives met.

- 7 products are currently undergoing analysis, and 2 of them will receive the Engineered Sustainability® brand in early 2016. CTD Flex® (coal tar distillation) and Linex (pitch fume treatment for port storage).
- Review the second five Engineered Sustainability® branded product: Shin Digit' Furnace® AT 2.0.
- Implement the eco-design approach even earlier in the project phase and in the design offices, thanks to dedicated resources and guides.

- Train the subsidiaries’ management teams on preventing corruption and anti-competitive practices.
- Remind the directives on distribution of the Code of conduct.

- All subsidiaries present the Code of conduct to new hires before signing their contract.
- Code of conduct distributed in 88% of companies and to 84% of those companies’ employees.
- The number of subsidiaries which hold an annual presentation dropped to 10%.

- Agent management procedures overhaul.
- Second phase of deployment launched 2 pilot sessions on risk analysis in North America and the United Kingdom.

- Make the new Agent management Directive official and distribute it.
- Continue the roll-out of the Business Ethics Directive with training and working sessions in the subsidiaries.

- Harmonize and challenge the employees welfare protection regime in the main domains where the Group has a presence.
- Mostly harmonized progressive social coverage plans, in France, China and India.
- Creation of a Group savings plan in France.

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- Roll out the Group’s Safety Golden Rules.
- Roll out a field safety and observation process: 15% of them consider it the key practice for improving accident prevention on supervision sites.

- 2016 frequency rate target achieved in 2015: 3.9, despite the tragedy of 1 fatal accident and 4 severe accidents.
- Group Health & Safety Coordination team enhanced: North America and Europe.
- Safety community trained to investigate the underlying causes of accidents.
- Targeted actions implemented to increase management involvement in safety.

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### Commitment

Providing a safe and motivating working environment

- Several months.
- Decisions, ranging from several weeks to under-loads and make staff allocation a year, to review the workloads.

- Sharing meetings held two or three times.
- Process existing in France since 2009.

**Group**

- Maintenance of know-how within the company.
  - Local HR community expanded to encourage closer relationships, with the creation of the position of HRD India in addition to the existing positions in France, the US, China and Italy.
  - In France, program finalized or under way for 95% of companies.

- CSR coaching.
  - One-day working meeting with each subsidiary’s management committee, to identify the key CSR challenges and priority improvement areas.
  - Annual tracking of the action plan.

- Training and career path support for promising employees.
  - New employee programs.
  - Ongoing training.
  - Dedicated training for promising employees.

- World employee opinion survey.
  - A total of roughly fifty people have gone through the course over the past two years.
  - Launch of Manager@Fives: 80 people involved in 2015.

<table>
<thead>
<tr>
<th>Program</th>
<th>Achievements at end-2015</th>
<th>2016 goals</th>
<th>Level of maturity</th>
</tr>
</thead>
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<td>Fives Leadership Factory: - Second session of LeadershipRise@Fives. A total of roughly fifty people have gone through the course over the past two years. - Launch of Manager@Fives: 80 people involved in 2015.</td>
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