Our expertise

TOTAL EXPERTISE IN INDUSTRIAL ENGINEERING

From design to commissioning, Fives has the resources and means to offer customers high-performance solutions and services based on innovative and sustainable proprietary technologies, on multisector and international expertise, and on recognized know-how.

Design and integrate
Fives designs and supplies equipment, machines, systems and services that are integrated into operational industrial production lines. Fives also supplies lines and complete plants including key process equipment.

Develop high added-value proprietary technologies
Fives owns a wide portfolio of proprietary technologies. For the last three years Fives has been in the top 50 for registering patents in France, with 45 new patented inventions and a portfolio of 2,032 patents in force covering all of its areas of activity.

Since its creation, Fives has been a trailblazer in a long list of industrial sectors. Today, the Group is continuing with its exploration of the factory of the future, to identify and offer technologies that herald the next development, particularly for additive manufacturing and composites. For several years, we have devoted a significant portion of our investments to developing technologies with high energy and environmental performances.

Managing production and assembly
The key elements of the Fives offer, as well as its proprietary technologies, are produced and assembled at the Group’s own manufacturing sites, which consist of more than a third of their facilities around the world.

Fives uses subcontracting for the rest of its manufacturing activity, with an international network of highly qualified and experienced machining and assembly workshops in Europe, the Americas and Asia. The Group also includes operational subsidiaries that handle its production activity in Brazil, China, India and Russia.

A COMPLETE SERVICE OFFER
Fives provides full support to its customers throughout the entire lifecycle of the equipment installed.

Three ranges of service:
– service for start-up and operational phases, aiming to maintain the equipment’s initial performance levels (“Operation” service range);
– support for customers to maximize the efficiency of production processes (“Optimization” service range);
– a response to the need to align equipment and production processes with new uses, through retrofitting and rebuilding offers (“Evolution” service range).

Fives’ structure enables each of its subsidiaries to provide a dedicated service organization for each market and to work closely with its customers.

TOLERANCE

EXPERIENCE

INNOVATION

From design to commissioning, Fives has the resources and means to offer customers high-performance solutions and services based on innovative and sustainable proprietary technologies, on multisector and international expertise, and on recognized know-how.

Design and integrate
Fives designs and supplies equipment, machines, systems and services that are integrated into operational industrial production lines. Fives also supplies lines and complete plants including key process equipment.

Develop high added-value proprietary technologies
Fives owns a wide portfolio of proprietary technologies. For the last three years Fives has been in the top 50 for registering patents in France, with 45 new patented inventions and a portfolio of 2,032 patents in force covering all of its areas of activity.

Since its creation, Fives has been a trailblazer in a long list of industrial sectors. Today, the Group is continuing with its exploration of the factory of the future, to identify and offer technologies that herald the next development, particularly for additive manufacturing and composites. For several years, we have devoted a significant portion of our investments to developing technologies with high energy and environmental performances.

Managing production and assembly
The key elements of the Fives offer, as well as its proprietary technologies, are produced and assembled at the Group’s own manufacturing sites, which consist of more than a third of their facilities around the world.

Fives uses subcontracting for the rest of its manufacturing activity, with an international network of highly qualified and experienced machining and assembly workshops in Europe, the Americas and Asia. The Group also includes operational subsidiaries that handle its production activity in Brazil, China, India and Russia.

A COMPLETE SERVICE OFFER
Fives provides full support to its customers throughout the entire lifecycle of the equipment installed.

Three ranges of service:
– service for start-up and operational phases, aiming to maintain the equipment’s initial performance levels (“Operation” service range);
– support for customers to maximize the efficiency of production processes (“Optimization” service range);
– a response to the need to align equipment and production processes with new uses, through retrofitting and rebuilding offers (“Evolution” service range).

Fives’ structure enables each of its subsidiaries to provide a dedicated service organization for each market and to work closely with its customers.
A DIFFICULT ECONOMIC ENVIRONMENT

Group order intake in 2016 totaled €1,465M, down on 2015 (€1,708M), in an environment marked by the virtual absence of major projects, with the key industrial order-makers putting back their investment decisions because of a particularly volatile economic, political and institutional context. Commercial activity held up in Europe and North America, thanks to the favorable trend in the equipment sector for the automotive and logistics industries, which was able to balance the low performance from energy and general industry; whereas Asia, the Middle East and Africa, with more exposure to major projects and the metals and cement sectors, saw a slowdown.

With order intake of small- and medium-sized orders holding up well through the year, alongside a high opening backlog (more than €1.5 billion), the Group was nevertheless able to post turnover of €1,779M, slightly up (+2%) at constant scope and exchange rate. EBITDA at €116M is also up at constant scope and exchange rate (+3%).

After two complicated years, marked by the fall in oil prices (and raw materials generally), as well as historically low levels of industrial investment worldwide, 2017 is looking much more promising. A very good first quarter order intake performance (more than €600M) has bolstered the order book, which should increase from €1,247M at end-December 2016 to around €1,450M at end-March 2017, thereby ensuring that 2017 will see activity levels at least comparable to 2016. At the same time, the Group’s initiatives around optimizing costs undertaken over the last two years should lead to improvements in EBITDA and cash-flow in 2017.
HUMAN RESOURCES

BREAKDOWN OF EMPLOYEES BY GEOGRAPHICAL AREAS

At end 2016, Fives numbered nearly 8,400 employees, a workforce that remained stable across all geographical areas.

INNOVATION

RESEARCH & DEVELOPMENT

Fives continues to invest in R&D, with a 15% increase in the budget assigned to research and innovation. Particular emphasis is placed on developing new products and processes. Fives has continued to develop partnerships and has joined forces with major industrial groups within institutions and research programs (CEA, IRT Jules Verne, SOFTA, etc.)

€36.7M spent on R&D in 2016
611 patent families
2,032 current patents

Fives has accumulated a portfolio of 611 patented inventions, covering all areas of their market and activities. They are protected by 2,032 patents in force in numerous countries. For the last three years, Fives has been in the top 50 for registering patents in France. (Source: INPI - the French National Institute of Industrial Property).

10 products have been awarded the Engineered Sustainability® in 6 business lines*

In 2016, the Engineered Sustainability® brand was awarded to three new products, selected for their strategic character in their market: the Lineos pitch fumes treatment system (Aluminium), CTD Flex+, a coal for distillation (Chemtec), and the FCB Horomill® grinding mill for its cement application (Cement | Minerals). Significant results were obtained in terms of reducing their environmental impact.

* Aluminium, Cement | Minerals, Chemtec, Intralogistics, Steel

SAFETY/ENVIRONMENT

WORK ACCIDENTS

The Group overall frequency rate has been reduced by a factor of three in six years. The frequency rate target set in 2013 was achieved in 2016, at constant scope, but there has been a set-back this year. New measures have been implemented to return to past positive progress.

ENVIRONMENTAL CERTIFICATION

In 2016, two additional industrial sites achieved ISO 14001 certification.

73% of Fives’ industrial sites are ISO 14001 certified

2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Frequency Rate</th>
<th>Severity Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012*</td>
<td>0.207</td>
<td>77</td>
</tr>
<tr>
<td>2013</td>
<td>0.135</td>
<td>55</td>
</tr>
<tr>
<td>2014</td>
<td>0.166</td>
<td>64</td>
</tr>
<tr>
<td>2015</td>
<td>0.182</td>
<td>55</td>
</tr>
<tr>
<td>2016</td>
<td>0.27</td>
<td>64</td>
</tr>
</tbody>
</table>

Additional information:

Employees + temporary employees lost-time accidents
Employees + temporary employees accident frequency rate
Employees + temporary employees accident severity rate

QUALIFICATION AND TRAINING

Group personnel profiles are more and more qualified. For two years the proportion of engineers, managers and technicians has grown by 2% a year. Training remains at a high level, with extra emphasis in 2016 on management training and the launch of the Group’s first worldwide training program, the Fives Leadership Factory.

454 employees have had a Starter meeting
56% of employees have been seen by CEDRE career management committees

69% of headcount are engineers, managers or technicians
73% of employees attended at least one training course
**EVENTS**

**November**
**RESEARCH PARTNERSHIP**
Through AddUp, Fives has teamed up with manufacturers and academic institutions to launch SOFIA, an applied research program in the field of metal additive manufacturing. The goal is to continue to contribute to the development of this technology by promoting convergence of skills between the various partners.

**December**
**ACQUISITION: DAISHO SEIKI CORPORATION**
Fives has added to its grinding technology offer and consolidated its presence in the Japanese and Korean markets with the acquisition of the Daisho Seiki Corporation, a company specializing in designing and building disc grinding and bar peeling machines for the automotive and other industries.

**August**
**AUTOMOTIVE**
GMCH paid tribute to the performance of the first grinding machines supplied by Fives for its Grand Rapids (Michigan) site in the United States. Designed and developed by the Group following the acquisition of the Bryant patents, these grinding machines have delivered better performance than any others on the site.

**July**
**AEROSPACE**
In the US, Fives delivered two Liné Machines Powermill V systems to Boeing, for profiling and drilling wing components of the new Boeing 777X at the Everett (Washington) plant. In Japan the Group also installed several composite laying systems for the Boeing 787 program for Fuji Heavy Industries and Mitsubishi Heavy Industries.

**RESEARCH AND DEVELOPMENT**
For three consecutive years, Fives has been in the top 50 for patent registration in France (ranked by the INPI French National Institute for Industrial Property). In 2016 the Group moved up the rank of 32. Fives continued to push patent registration, with 45 new inventions registered making a total of 611 (protected by families of patents). These patents cover all areas of activity and are protected by a total of 2,032 patents current in the countries where it operates.

**FIVES INNOVATION AWARDS**
Since the introduction of the Fives innovation competition in 2012, the number of ideas submitted has doubled: from 252 to 528 ideas entered in 2016. This annual internal event bears witness to the enthusiasm and commitment of employees for proposing ideas to improve products, processes and methods.
**ASIA AND OCEANIA**

**China**
- Flat steel: new stainless steel production line
  - Foshan Chendge Stainless Steel Co., Ltd.
  - Selected Fives to build its new cold annealing and pickling line, with an annual capacity of 500,000 tons.
- Automated production systems: Fives supplies a new plant in Liuhe, Guangxi province.
  - Shanghai Automobile Gear Works (SAGW, a SAIC group subsidiary) chose Fives for the design and supply of production lines, respectively for mechanical and structural tubes as well as carbon steel tubing and component for the automotive industry.
- **The United States**
  - **Automated production systems**
    - General Motors awarded Fives a new order for the supply of an assembly line for different sub-assemblies as part of its 10-speed A13B automatic transmission program. The installation, with an annual production capacity of over 250,000 transmissions, will be delivered in November 2017.
- **Aerospace**
  - The Group will deliver two Liné Machines Powermill V high rail multi-axis profilers capable of machining large-scale parts: one for profiling and drilling wing components of the new Boeing 777X at the Everett (Washington) plant, and the other for special tooling to machine the ribs of the 737 and 747 at the Fredericksen (Washington) plant. The machines will add up to the ten machines previously delivered to these two sites.
  - **Iron ore pelletizing project**
    - Cliffs Natural Resources (Minnesota) chose Fives to supply and install a new combustion system. Once the project is commissioned, the pellets produced will supply one of the largest blast furnaces in the USA.
- **The United States and Mexico**
  - **Grinding**
    - A 3-year contract with General Motors in 2015. The delivery is scheduled until 2018.

**EUROPE**

**France**
- **Nuclear sector: new contract with EDF**
  - For the fourth time running, Fives and its piping design consortium partners Endel, Boccad, and SODM, won the design framework contract from EDF (for DIDPE division). This five-year contract, which includes an optional one-year renewal, covers dimensioning studies and piping production for the entire French nuclear fleet.
- **Sugar sector: new partnership with Tereos**
  - Fives designed a new “100% stainless steel” version of its Call & Fletcher ZUKAP batch centrifugal for Tereos. The client first order for its Chevrières site in the Oise region, was so satisfactory that it was followed by five more for its plant in Escuadas cov in the North of France. Tereos also worked with Fives Sugar Consulting to improve its production approach and optimize its northern site’s performance.
- **Germany**
  - **Filling sector**
    - Damliner chose Fives to replace its multi-fluid filling systems on its Düsseldorf production site. This is the first site where Damliner has implemented its new “Integri” automation standards, which suppliers will have to master to continue working with this client in the future.

**THE MIDDLE EAST AND AFRICA**

**Egypt**
- **Cement production burners**
  - CDI, a subsidiary of Chinese engineering firm Sinomas, selected Fives to supply complete combustion systems for the six clinker burning lines it is building for the Egyptian government.
  - This order includes, in particular, some thirty Pillard NOWFLAM® and Pillard PRECAFLAM® burners.

**North Europe**
- **Logistics: a long-term partnership**
  - PostNord selected Fives to automate the Herning and Aarhus postal terminals in Denmark, and to supply a sorting system in Trondheim (Norway) for parcels and large letters. PostNord also chose the Group to upgrade the sorting systems during the renovation in its postal centers in Goteborg and Malmo (Sweden) whose lifespans will be extended by five to ten years.
- **The United Kingdom**
  - **Gas and fume treatment**
    - Fives has been selected for the supply of three Enhanced All Dry systems (EAD™) in the United Kingdom. These systems will reduce particle emissions from the gasifiers, designed to process waste wood and recycled solid combustibles.
  - **Logistics: two decades of partnership**
    - TNT chose Fives with a new contract for the automation for its new site in Dartford, England. The solution includes a cross-belt sorter to sort parcels weighing up to 50kg to 79 destinations. The system will enable TNT to sort up to 11,000 packages per hour.
FIVES’ GOVERNANCE

Fives is headed by an Executive Board overseen by the Supervisory Board. The Executive Board has two 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 seven members: Philippe Reichstul, Jacques Lefèvre, Dominique Gaillard, Lise Fauconnier, Antonio Marcegaglia, Jean-Georges Malcor and Laurence Parisot.

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 conducting a broad dialog on the strategies to implement within the Group, as well as the operational priorities and cross-cutting policies to focus on, for each geographic zone. They define the methods for implementing these topics in the various subsidiaries.

In addition to the members of the Executive Committee, they are made up of Chief Executive Officers (or equivalent positions), 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 Italy, and the Chairman of the Executive Board for France.

THE EXECUTIVE COMMITTEE

(From left to right, top to bottom)

- Daniel Brunelli-Brondex: Country Director - India
- Sylvain Duboë: Country Director - North America
- Frédéric Bonaud: Country Director - Italy
- Michelle XY Shan: Country Director - China
- Bruno Carbonaro: Head of the Automotive Business Line
- Alain Cardonanier: Head of the Cement Business Line
- Guillaume Mahlman: Head of the Steel and Glass Business Lines
- Terry Moody: Head of the Aerospace Business Line
- Luigi Buzin: Head of the Combustion and Hydrogenics Business Lines
- Hugues Vincent: Head of the Aluminium Business Line

- Suresh Abye: Group Chief Financial Officer
- Xavier Becquey: Head of Group Operational Performance
- Jean-Marie Caroff: Head of Group International Development
- Arnaud Lecœur: Group General Counsel
- Yannick Leprêtre: Head of Group Innovation and Digital
- Paule Viallon: Head of Group Human Resources

Corporate governance bodies
In 2016, Fives implemented numerous projects and initiatives aimed at supporting the subsidiaries more effectively.

Xavier Becquey,
Head of Group Operational Performance

FIVES IS CONTINUING ITS POSITIVE TRANSFORMATION: IT SYSTEM CONVERSIONS, ROLLING OUT LEAN AND REDesign TO COST, STRENGTHENING PROJECT AND PURCHASE MANAGEMENT, ETC. OUR ROLE IS TO PROVIDE RESOURCES AND KNOW-HOW TO BETTER SUPPORT THE CHANGES AT EACH OF THE SUBSIDIARIES.

A common reference
In 2016, Fives increased its efforts to build a joint reference-base for improved sharing by all of the Group’s entities around challenges, best practice and expertise.

The Group:
– launched the SAPHIR project, a Group ERP based on the most recent technology from SAP, S/4HANA.
With SAPHIR, all of the subsidiaries will benefit from the most advanced solutions in production-data management, project management, purchasing and finance,
– formalized a common project management reference-base for the whole Group,
– created an operational performance reference-base (maturity assessment), which the subsidiaries can use to evaluate the quality of their operational performance approach with respect to known best practice, and so define their improvement plans,
– helped the subsidiaries to define and/or deploy transformation initiatives and plans, implemented as part of the FivesWAY global enterprise project.

Expertise serving subsidiaries’ performance
With the aim of sharing best practice, cross-disciplinary teams support the subsidiaries by proposing methodologies to accelerate the roll out of lean (lean manufacturing and lean engineering), to implement proven methods for redesign to cost and to establish advanced project management procedures.

Launched in 2015 in North America, a customized project management support plan for subsidiaries is ongoing in the region, and in 2016 was rolled out to Europe for complex projects.

Particular attention has also been paid to strengthening purchasing performance, with training cycles introduced in France and Italy, as well as support for subsidiaries in setting up the supplier and negotiations plan for complex projects.
SUPPORTING THE COMPANY’S STRATEGY

Fives has deployed a human resources organization tailored to the Group’s growth and its new geographic and operational dynamics.

Paule Viallon, Head of Group Human Resources

OUR MISSION IS TO SUPPORT ALL OUR SUBSIDIARIES TO DEVELOP THEIR ACTIVITY, BY WORKING UPSTREAM TO MOBILIZE SKILLS AND TALENTS.

Helping organizations to grow

Implementing the strategic plans requires work in each company to align the organization, the processes and the resources. In 2016, Fives continued to deploy its strategic workforce planning which addresses this need. Every steering committee works collectively to identify key skills and establish a target organization. Then, they work in close collaboration with the human resources teams to formulate individual and collective development plans, for the immediate and medium-term, which will amend and strengthen the existing structure.

Establishing new resources and structuring the organizations

To support the increasing internationalization and remain as close as possible to the operations, the human resources organization has changed, streamlining the corporate functions by delegating certain aspects to the HR teams in the various countries and divisions. Country HR Directors now exist in North America, China, France, India and Italy. They promote the Group’s HR policy within their geographical zone and ensure that the related processes are properly deployed, coordinate actions to facilitate synergies between the various entities in the country and develop career paths. They also support each division’s HR Directors with their assignments in these countries.

Fives has also integrated the new digital challenges into its HR practices and has digitized its HR processes by introducing a global management system: Fives&Me. This system, which considers regional specificities, is a facilitator and open to all (employees, managers, HR), should make it easier to share and use information. The advantage of the tool due to updated information and its interactivity, foster the identification of new career development opportunities.

Supporting the development of talents

Fives has continued to deploy the training program designed for its managers and directors: the Fives Leadership Factory. Building on the three modules that make up the program, the Group aims to develop a managerial culture with common values for directors worldwide, which takes into account local specificities. The ramp up of the Manager@Fives program in the Group’s main zones, i.e. North America, China, Italy, India and the United Kingdom has also contributed to the development of the teams, by their managers, and even the organizations. In 2016, we also deployed the first session of the BusinessManagement@Fives module, in partnership with INSEAD, focused on Strategy and Leadership skills.

Resources Pooling

In 2016, Fives strengthened its resources and skills pooling program. Created nearly ten years ago, this process shares resources between the subsidiaries and the divisions by offering temporary mobility to address economic uncertainties in the divisions and retain talents. This program addresses all of Fives’ professions, including engineers in design offices, R&D, projects, sales, etc.

2016, RESOURCES POOLING IN FIGURES

164 staff loans
19 “source” subsidiaries in France, Spain, Italy and the United Kingdom
29 “recipient” companies in the Group in France and China
4 external “recipient” (partners/customer)
6.7 months is the average duration of a staff loan

www.fivesgroup.com

MORE DETAILS
OUR COMMITMENTS p. 50
INDICATORS p. 62