

System Thinking Case



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1. Ferrovial Group.

1.1. The Group in figures.

Ferrovial is one of the world's leading infrastructure operators, dedicated to developing sustainable solutions. The company is committed to the highest level of operating excellence and innovation while creating value for society and our shareholders, investors and employees.

The main figures of the group are presented in the following graphic.



Figure 1. Ferrovial Group in figures (2017 Fiscal year).

1.2. Vision and Values

The vision and values of Ferrovial have evolved adapting to the current times and to the culture of the various organizations within the group.

The vision addresses three questions about its activity:

- Why? Shaping the future through the development and operation of sustainable infrastructures and cities
- How? Committing to the highest level of safety, operational excellence and innovation
- What? Creating value for society and for our customers, investors and employees

The company fulfill its mission through the constant application of the following values:

- Collaboration: Teamwork, Cooperate and Share.
- Innovation: Progress Transform and Inspire.
- Excellence: Efficiency, Results and Reliability.
- Integrity: Ethics, Transparency & Responsibility.
- Respect: Safety, Care and Protect.

In the words of its Chairman, Rafael del Pino:

“Ferrovial has distinguished itself, above all, for its excellent professionals. Hard work and creativity centered on performance, have allowed us to overcome complex challenges and to take advantage of opportunities, transforming individual skills into collective success.

Ferrovial, as a leading developer and operator in the infrastructure and services sector, will continue to shape the future of society with a continuous focus on talent, integrity, safety, excellence and innovation.”

1.3. Strategic Pillars

Ferrovial's strategy revolves around four pillars:

- Profitable growth, by combining organic growth and selective acquisitions to reinforce the competitive position and add capabilities.
- Internationalization, which has led Ferrovial to consolidate a significant stable presence in five geographic regions: Spain, USA, UK, Canada and Poland. The goal is to further develop its activities in these countries and develop new markets with adequate risk management, leveraging current capabilities and establishing alliances with local partners.
- Operational excellence and innovation, as a key lever for managing complex operations and seeking differential solutions for its clients. Promoting employee talent and centers of excellence and innovation help improve the competitive position in the different markets. All this under the best practices of project management and safety for people. Commitment to the environment, with society and employees are key factors to the development of operational excellence and innovation, hallmarks of Ferrovial.
- Financial discipline, diversifying sources of funding and liquidity management has led to improved credit ratings and strengthening corporate solvency. Ferrovial aims to maintain a low level of indebtedness for debt exclusion projects, which enables it to sustain an "investment grade" rating.

1.4. Company structure.

Ferrovial contributes to every stage of the infrastructure life cycle. It creates maximum value by combining the capabilities of four divisions and experience to provide integrated business solutions worldwide to design, finance, build, operate and maintain assets.

1.4.1. Divisions:

The company business is organized in the following divisions¹

¹ Data 2017 fiscal year.

- CINTRA².Toll Roads: One of the world's leading private toll road developers. It operates the 407 ETR in Toronto and the NTE and the LBJ express managed lanes in Texas. It manages 1.193 mi. of toll roads and did an investment of \$24,1bn in 2017.
- Ferrovial Airports³: One of the largest private investors in airports managing Heathrow, Aberdeen, Southampton, Glasgow and a 34 year contract to remodel and operate Denver International Airport's main terminal. With a volume of more than 93M passengers to 390 destinations, it served more than 137 airlines. In 2017 it generated a HAH EBITDA of \$2.3bn.
- Ferrovial Agroman Construction⁴: With more than 55 years of international activity in more than 50 countries, Agroman manages construction projects in civil engineering, building, industrial and water infrastructures. It has built 323mi of tunnels, 12.300mi of roads and 3.168 of railroads.

Last 2017 generated a total revenue of \$5.5bn and an order book of \$13.4bn. Its main assets are the Farrington Station in London, the Grand Parkway in Texas and the I-66 Managed Lanes in Virginia.

- Ferrovial services⁵: It provides municipal and environmental services including Infrastructure maintenance with and special focus on Smart cities, waste recycling and energy efficiency.

In 2017 it generated a revenue of \$8.5bn and an order book of \$25.1bn with an operating cash flow of \$470m. Its main assets are in Qatar, UK, and Spain.

1.4.2. Main geographies:

In 2017 Ferrovial Group had a global presence with an adequate distribution of revenue and services provided.

Geography	Revenue share	Operating Divisions			
		Toll roads	Airports	Construction	Services
UK & Ireland	23%				
Spain	23%				
Australia	21%				
USA & Canada	14%				
Poland	13%				
Rest of the world	6%				

1.5. Ferrovial in the USA.

The footprint of Ferrovial in the USA is quite significant. In 2017 it generated a revenue of 1.634M € and managed over 6 Public Private Partnership projects.

² <https://www.cintra.es/en/>

³ <https://www.ferrovial.com/en/business-lines/airports/>

⁴ <https://www.ferrovial.com/en/business-lines/construction/>

⁵ <https://www.ferrovial.com/en/business-lines/ferrovial-services/>

It has presence through different companies as Ferrovial Agroman US, Cintra US, Webber, Ferrovial Services. The group has offices in Chicago, Dallas, Austin, Houston, Charlotte, Atlanta and Los Angeles. It employed over 3.600 professionals in 2017.

The historic milestones of Ferrovial in the USA are:

2005: Chicago Skyway, 10 mi, \$1.8bn. Toll road in operation until 2015.
 2006: Indiana Toll Road (Indiana), 157 mi, \$4.0bn. Constructed by Ferrovial Agroman.
 2008: SH 130 5&6 (Texas), 39 mi, \$1.3bn. Constructed by Ferrovial Agroman.
 2009: North Tarrant Express (Texas), 13 mi, \$2.1bn. Constructed by Ferrovial Agroman.
 2010: LBJ Express (Texas), 17 mi, \$2.7bn. Constructed by Ferrovial Agroman.
 2012: US Route 460 (Virginia), 54 mi, \$1.4bn. Design-Build and Finance Ferrovial Agroman.
 2013: NTE Managed Lanes 3A-3B (Texas), 10 mi, \$1.35bn. Under construction by F. Agroman.
 2014: I-77 Managed Lanes (North Carolina), 25 mi, \$700m. Under construction by F. Agroman.
 2015: I-285 & SR 400 (Georgia), 10 mi, \$460m. Under construction by F. Agroman.
 2016: CA High Speed Rail CP 4 (California), 22 mi, \$444m. Under construction by F. Agroman.
 2017: Great Hall Terminal (Denver Airport). Construction by F. Agroman, operated by F. Airports.
 2018: IH35 expansion (Texas), \$340m; H-10 and FM-156 expansion and the construction of a bridge and an underpass on the IH-35 (Texas) , \$360m; SH 146 and IH-10 expansion (Texas), \$309m

In terms of market presence in the US Ferrovial is positioned the sixth among the competitors

3		UNITED STATES	
RANK		Top 10 Revenue: \$49,312.0 Mil.	
2018 2017		Sector's Revenue: \$60,141.4 Mil.	
1	1	ACS, ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIOS SA	
2	2	HOCHTIEF AKTIENGESELLSCHAFT	
3	3	SKANSKA AB	
4	**	LENDLEASE CORP. LTD.	
5	4	OBAYASHI CORP.	
6	9	FERROVIAL	
7	7	BOUYGUES	
8	8	SALINI IMPREGILO SPA	
9	6	KAJIMA CORP.	
10	5	ORASCOM CONSTRUCTION LTD.	

In accordance with the Sustainability strategy of the Group, Ferrovial has taken a special care to engage the local community, through a clear methodology:

- Communications: Timely, transparent and effective communication.
- Community: Engage with local businesses and community-based organizations.
- Connections: Build and foster relationships with MBE/WBEs.
- Commitment: Fully embrace the MBE/WBE community.

This social strategy has been recognized with several awards as the “Small Business Advocate of the year” in 2013 by the Texas Department of Transportation, “General Contractor of the Year” in 2014 by the Regional Hispanic Contractor Association, the “MBE DBE Best Practices” in 2014 and 2015 by the Dallas Fortworth Minority Supplier Development Council and the “Gemini Teaming Partner” by the Asian American Contractors Association.

2. Ferrovial Airports.

2.1. The Company in figures.

Ferrovial Airports integrates all airport management activities and is one of the world’s leading private airport investors, developers and operators. Part of the aviation industry since 1998, it provides more than 20 years’ experience of investing, developing and operating 34 airports around the world. It offers in-depth understanding and a solid track record building solid relationships with its partners and stakeholders.

KEY FIGURES 2017		Passengers	93M
Revenues	1.1bn	EBITDA	653m
Investment	13.8bn	Dividends	284m
ATMs	687,011	Airlines	137
Employees	89,200	Destinations	420

Airports key figures:

	HEATHROW	GLASGOW	ABERDEEN	SOUTHAMPTON		DENVER
Share owned	25	50	50	50		80
Revenues	3,9m	165m	75,7m	41,9m		650m
EBITDA	2,379	78,4	29,7	14,8		Concession: 34 years
Airlines	81	30	19	7		Refurbishment: More than 70.000sqm
Traffic	78M pax	9.9M pax	3.1M pax	2,1M pax		61,4M pax

2.2. Mission Vision and Values.

Mission:

Make good airports great. Support people’s commitment to operational excellence and innovation. All delivered with financial flexibility.

To achieve this mission, Ferrovial invests and manages airports to create value for communities, customers, investors and employees, and utilizes the skills and expertise from across the Group.

Vision: Become a global leading airport investor and operator.

Values: Those of Ferrovial Group.

2.3. Business model: Integrated service and public-private partnerships.

Ferrovial participates in the entire airport infrastructure life cycle with an integrated approach, taking advantage of the synergies between its business divisions.



Ferrovial has more than 50 years' experience establishing and managing P3 Infrastructure construction and operation projects. It is one of the companies that has developed most P3 Projects in the US.

The collaboration between the public and private sectors allow governments the opportunity to execute large and complex infrastructure projects years in advance while reducing risks for taxpayers. Public-Private partnerships offer economic, innovative and efficient solutions that improve mobility and stimulate economic development.

2.4. Success Case Studies:

Ferrovial Airports excels in the main pillars of company strategy. As an example we present the following facts.

PEOPLE: London Living Wage.

Heathrow is one of the more than 3.600 leading organizations that have voluntarily adopted the London Living Wage, becoming the first airport in the United Kingdom to be accredited Living Wage Employer.

Heathrow will guarantee the Living Wage to more than 3.200 employees aged over 18 years until at least 2020, including subcontracted personnel. To extend these good practices, Heathrow will also encourage the adoption of the measure to airport concessions and to companies that are part of its supply chain. In addition to incorporating Living Wage into its salary policy, Heathrow leads a project aimed at phasing out zero-hour contracts.

CAPITAL INVESTMENT: The Queen's Terminal.

The project was one of the largest construction contract financed with private funds in the United Kingdom. It involved the creation of 35,000 jobs and was a challenge for the management team of the airport that culminated 5 years of work without impacting the day to day operation of the airport.

SUSTAINABILITY: Commitment to sustainability.

As one of the leading airport operators in the world, Ferrovial is committed to leading the efforts to guarantee growth and, at the same time, reduce the emissions generated by the activity.

The areas of action to do so include: Reduction of elements that may affect climate change, prevent or reduce the adverse effect of noise, increase recycling, manage water consumption and protect biodiversity.

COMMUNITY: Development of local economies.

Ferrovia airports contribute to the economic improvement of the communities located near its airports by:

- Improvement of the national economy.
- Support of local businesses.
- Employment and training opportunities. Around 24% of Heathrow's workforce lives in its nearby communities.
- Investment in the community and donations. Through their Community Funds, our airports donate around 1 million pounds per year to social and educational projects.
- Consultation processes and open communications with the Community.

INNOVATION.

Ferrovia is continuously developing and implementing technology initiatives aimed at improving operational efficiency and increasing passenger satisfaction. It is the only operator integrated in the first Airports Excellence Center to identify trends and innovation solutions in the airport sector.

PROTECTION AND SECURITY: Work every day to create risk-free spaces.

The construction of Terminal 2 at Heathrow Airport set a national safety record in a construction project in the United Kingdom, since more than 5 million hours were carried out without a single accident.

Ferrovia exceeds regulatory requirements and establishes the benchmark for the industry best practices by implementing state-of-the-art security systems at each of our airports.

3. The Challenge: Attracting and developing DBE to the Great Hall Project in Denver International Airport.

3.1. The Great Hall Partners⁶

Great Hall Partners (GHP) is a joint venture consisting of Ferrovia Airports, one of the leading global airport operators, Magic Johnson Enterprises / Loop Capital and Saunders Concessions.

The team was selected by Denver International Airport (DEN) leadership as the developer for the Great Hall project⁷, an investment that will transform Levels 5 and 6 within DEN's 1.5 million square-foot Jeppesen Terminal. The renovation project envisions expanded and enhanced security capacity, the update of aging terminal systems and technology, improved passenger flow and a vastly expanded and optimized overall passenger experience.

Together, DEN and GHP leadership share a vision to bring DEN's vision of transforming the airport into America's favorite connecting hub to reality. They expect to take the airport to the next level as the traveler's gateway of choice.

3.2. DBE⁸ consideration in the Department of Transportation.

⁶ <https://www.greathallpartners.com/>

⁷ https://www.youtube.com/watch?v=WHbxv_Wgedk

⁸ Disadvantaged Business Enterprise

The Great Hall Project must follow the regulation defined by the DOT in order to support the development of DBE⁹ in all types of federally-assisted contracts.

Each financial assistance agreement signed with a DOT operating administration (or a primary recipient) must include the following assurance: The recipient shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of the Federal Regulations

Companies are not eligible to receive DOT financial assistance unless DOT has approved the DBE program. A signed and dated policy statement that expresses the commitment to the DBE program, states its objectives, and outlines responsibilities for its implementation must be issued. Additionally the statement must be circulated throughout the organization and to the DBE and non-DBE business communities that perform work on the DOT-assisted contracts.

Recipients are primarily state highway, transit, and airport agencies that receive funds subject to Title 49 Code of Federal Regulations part 26 (49 CFR 26). A similar program (49 CFR 23) for airport concession DBEs (ACDBE), is mandated by 49 U.S.C. 47107(e). The ACDBE program was originally enacted in 1987 and most recently amended in 2012.

3.3. Airport Concession DBE in Denver International Airport¹⁰.

DBE Goals are set by Airports as a percentage of gross revenues/ receipts and participation of any kind is calculated as such. The aspiration goal at DEN is 13.25%.

Goals can be met:

- Concession owner / operator ACDBE certified
- Non-certified owner obtaining goods and/or services from ACDBE certified firm: Letters of Intent with description and annual \$ amount of goods/services must be submitted
- Agreements entered into by two or more firms (Joint ventures, management agreements, etc)

Must be ACDBE certified in the State of Colorado at the time of proposal by either CDOT or the city & County of Denver (out of state firms must be certified in home state prior to applying for certification in CO). Certification must be updated annually and renewed every three years.

Recent audit proposes a mentorship program and a loan program to help small businesses open their doors at the airport.

The report said that “the high concentration of ownership and low graduation rate suggests that, despite the success some firms have experienced, concession opportunities remain elusive for many smaller ACDBE firms”.

3.4. Ferrovial Airports ACDBE Strategy.

Ferrovial Airports, in coherence with its corporate values of collaboration, integrity and respect and following its strategy of Social Responsibility builds strong communities with the stakeholders involved

⁹ The objectives of this regulation can be consulted in https://www.ecfr.gov/cgi-bin/text-idx?SID=23cd4af7c155c2b8e4dd5be72faac630&mc=true&node=se49.1.26_11&rgn=div8

¹⁰ <http://business.flydenver.com/bizops/documents/acdbePresent-2015.pdf>

in all the projects where it participates. That's why the company is willing to go beyond the minimum requisites defined by the DTO regarding this type of Enterprises.

Considering the concerns expressed by the internal audit Ferrovial Airports wants to support the smaller ACDBE firms in order to allow them to access to the concession as part of the Great Hall Project's team.

Some of the initiatives already put in place are based on the successful experiences that the company has already had in the project of Heathrow Airport. One of those initiatives is the creation of the Great Hall Training Center.

The Center will offer training opportunities on a wide variety of subjects relevant to a range of stakeholders:

- Employers/Owners includes subcontractors working on the construction and development of the Great Hall, and the concessionaires (retail, F&B, other services) that will occupy it.
- Concessionaire employees working for any of the concessionaires (retail, F&B, other services) found within the Great Hall.
- College internship students include 4th and 5th year college students from Metropolitan State University and The Colorado School of Mines.

In order to attract ACDBE to the project Ferrovial has already organized several information meetings where, already certified enterprises and potential ones, have known in depth the project. Beside the description of the Great Hall Project and the business opportunities that it offers, the participants have learnt about the conditions to become a certified ACDBE and the administrative processes to be followed.

4. Conclusions.

Ferrovial Airports & Great Hall Partners (GHP), in coherence with its corporate values of collaboration, integrity and respect, and following its strategy of Corporate Social Responsibility, builds strong communities with the stakeholders involved in all the projects where it participates.

The company is willing to go beyond the minimum requisites defined by the DOT (Department of Transport) regarding these types of enterprises.

Ferrovial Airports & GHP are committed to support the smaller ACDBE firms and willing to provide them with support, so that they can participate in the concessions activities of the Great Hall Project. In addition, Ferrovial Airports & GHP would like to explore and implement strategies to expand the base of eligible ACDBEs companies to work at the Denver Airport. Ferrovial Airports & GHP has also a vested interest in supporting the ACDBEs who are selected to work in the concessions to be successful.

Concessions opportunities are challenging for ACDBEs, due to the type of activity, experience and resources required for airport's activities.

This intention to find, vet and support successful ACDBE firms in their government-supported Projects leads to the need to address the following issues:

1. Understand and communicate the requirements to be complied with by ACDBE firms; set goals in order to exceed minimum performance standards, consistently with Ferrovial strong corporate values.
2. Evaluate Ferrovial Airports & GHP current efforts to meet the requirements of ACDBE participation in the Denver Airport project.

3. Develop and implement strategies to support the business and economic success of all DBEs selected to be partners in the Denver Airport project.
4. Develop and implement strategies to expand the number and quality of eligible ACDBE firms. (The pool could be smaller than desirable; this could be due to many reasons, including reluctance of potential firms from seeking and achieving certification, the complexity of the US public contracting process and procedures, lack of information on the benefits of achieving certification, ...)
5. Explore ways to expand the impact of this program deeper into the organization. These ways may include designating it as one of Ferrovial's Success Case Studies and taking the ACDBE Denver program as the reference for future Public Private Partnerships to be undertaken by Ferrovial Airports.

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