Logistics traditionally does not present large difficulties in the steel business, compared to other industries. The companies often can avoid high transportation costs by choosing a favourable location. Transportation costs explain why most of the steel plants in the world are located on the waterways, where ships can deliver raw materials and pick up finished products, with no transshipment operations and no cargo handling. Companies can take advantage of the scale-efficiency of maritime transport and, at the same time, minimise cargo transfer.

The situation of Duferco is far from optimum. As a result of the peculiar growth pattern undertaken by the group, none of its steel plants is on the seaside and, moreover, facilities are geographically dispersed. This means that both raw materials and finished products are always transferred on trains or trucks for at least a portion of their voyage. Sometimes, as is the case for Italy, semifinished products are transferred to another location to complete the transformation process, with additional transshipment and transport costs.

The Italian case therefore represents a challenge to the Duferco logistics department. In this market, the concentration of constraints delineates a real "logistics paradox", perhaps a deviation from any theoretical model. Resolution of this paradox is key to the success of this local system. The remainder of this article will describe the nature of the circumstances facing Duferco and how the group approached its logistics problems.

The history of Duferco and the reasons for a "logistics affair"

At its birth in 1979, Duferco was an independent steel trader based in the United States. During the 1980s, the company, aiming to exploit the advantages of emerging markets, began creating a network of relationships with steel producers in South America, beginning in Brazil. Subsequently, the network expanded into North America and Europe. By the early 1990s, Duferco relied on a wide sales network stretching from the United States to Europe (East Europe, above all) and to the Far East.

A range of related trading operations (e.g., in coal, coke, and iron ore) at that moment accompanied the original activity of steel trading. The main advantage of this diversification was the creation of deep contacts with the biggest steel producers through the world. The company remained focused on the steel business and did not intend to diversify into trading of different commodities.

The incipient process of concentration involving European steel industry offered an opportunity to
Duferco. The process has revealed the financial weakness of many small steel producers. This process, allowed the timeliest operators to get into the steel production business under favourable economic conditions. Duferco, through several acquisitions in Belgium, Italy, and East Europe, was becoming a producer.

This contextual restructuring of the Italian steel industry released into the labour market many steel professionals who were highly skilled but relatively young and immediately available. This conjuncture of financial weakness of small steel producers and availability of skilled professionals allowed Duferco to develop its new business with a ready and experienced team.

The acquisition/participation process begun in 1996 has led to the present situation. The company, with its head office in Switzerland, has plants in Belgium, Italy, Russia, Macedonian, the United States, Guatemala, and South Africa, for the production of both flat and long products. The process described below illustrates Duferco’s path toward deeper vertical integration: Duferco believes that its participation in the different segments of the steel value chain - raw materials, shipping, logistics, production, transformation, trading, and distribution - can provide a unique understanding of the fundamentals of the business. The group’s business as of 2005 was distributed between production, trading, and distribution activities, with production accounting for almost 25% of the total sales volume. According to the company’s stated intentions, its presence among the different steps of the value chain represents a way to increase the competitiveness of internal operations. At the same time, part of the productive capacity can be used in the external market.

The outlined development of the business gives rise to the particular structure of the productive network of the company, in turn generating some peculiar logistics issues. Duferco entered the industrial business quite late in its lifetime. The company made the decision to enter this business at a particular moment in the European steel business cycle, and the operation relies on specific assessments. The productive network was not designed and implemented ex novo, but instead developed on an incremental basis through successive acquisitions. The structure grew when and where interesting opportunities emerged. Management generally has paid more attention to small and medium-sized enterprises that appear relatively healthy in their structure (product quality, brand image, social and political environment) but face severe financial troubles.

An economic focus has guided the process and driven the acquisition decisions. Other critical aspects - among these, logistics - often have been highlighted, but their solution has been postponed until operations have taken place. In several cases, logistics immediately appeared as the main reason for the weakness of the acquired activity. Location disadvantages sometimes were both the origin of the financial hardships for the acquired company and the source of economic convenience for the acquiring company. Beyond the financial aspects, a business could fully reveal its convenience only after a logistics solution could be found to fill the positioning gap.

Designing an efficient logistics solution from scratch is a hard job, and trying to adapt and to manage an existing situation can be even harder, with the difficulty rising with the number of constraints to which the decision maker is subject. In the case of Duferco, the logistics strategy did not grow side by side with the corporate strategy, in an integrated and synergetic process. From a certain point of view, the newest and most rational guidelines and the principles of supply chain management appear to have been disregarded. This does not mean that the role and the importance of logistics have been forgotten entirely; rather, management now faces the difficult task of resolving the inefficiencies generated by the supply chain structure by developing innovative operating solutions. This process relies strongly on logistics to find original solutions for the many trade-offs involved and to maintain the strategic focus on cost efficiency.

The Duferco Group in Italy

Duferdofin is the Italian branch of the Duferco Group. The company was created in 1996 through acquisition of the assets of Ferdofin, a private enterprise facing financial distress engendered by a rash development policy. After the acquisition, the assets regarded as nonstrategic were soon sold. During the first stage of activity, the structure included a steel plant in San Zeno (in the district of Brescia - BS) and two rolling mills, in Pallanzeno (Verbania - VB) and in Giammoro (Messina - ME). In 2003, Duferco decided to sell the Pallanzeno mill and 49.9% of the San Zeno plant shares to the Arcelor Group. The ownership shift did not entail any substantial change for the supply chain network structure because the two organisations remained firmly linked by a supplying relationship. In December, 2006, Duferco acquired full control of both plants.

The steel plant produces billets and blooms, the semifinished products for the rolling mills. In the rolling mills, billets and blooms are transformed into beams, to be used in the construction industry. Rolling mills are expected to be near steel plants, so that the semifinished product, still hot, can be transformed immediately into the final product. In this case, however, the San Zeno plant is 120 km away from Pallanzeno and 1,250 km away from Giammoro (see Figure 1).

The outlined layout creates a double disadvantage: It generates costs for the cooling and the subsequent heating of the semifinished products as well as transportation costs. Furthermore, the finished output has to be carried to the final destinations. Part of the production is carried, mostly by sea, to international markets (France, Switzerland, Austria, Germany, the United Kingdom, Greece, the United States, and the Far East). The remaining portion is destined for the national...
market, centred in the north of the country (Piemonte, Lombardia, Emilia Romagna, and Veneto). From a logistics perspective, this situation is obviously suboptimal: The raw materials are carried to the steel plant; then, after the first transformation phase, the semifinished products are cooled and transferred to the rolling mills, where they are heated and transformed into the finished products. Following production, a sizable amount of the product is carried back to near the steel plant, where a 3PL-managed warehouse lies, to be finally distributed to customers.

The company, leveraging the experience developed in its trading activity, has made a steady and intense effort to overcome this unfavourable positioning. Logistics undoubtedly played a role in initial attempts to provide original and convenient solutions to these suboptimalities. These solutions rely strongly on rail transport. For steel producers, rail - where it’s usable - represents an almost compulsory choice among inland transport modes, for both economic and operational reasons. The alternative is road transport, which often is more expensive and is subject to serious road congestion problems.

The railway transport business: The Rail Italy adventure

In the beginning, Duferco decided to manage the logistics between San Zeno and Pallanzeno by calling on the market. With respect to rail transport, this solution of calling on the market was somewhat forced by the market structure: At that time, rail transport service was entirely provided from Trenitalia, Ferrovie dello Stato Group, the exclusive Italian public provider. The road transport market was in a phase of price cutting resulting from extremely pulverised structure on the supply side and the consequent strong competition between providers. Purchasing transport services under favourable economic conditions therefore was not a problem, and Duferco could settle on convenient supply agreements annually with the carriers.

After a few years, the beginning of railway transport liberalisation in Europe seemed to introduce a new opportunity. The Duferco management looked at this institutional reform with real enthusiasm. The end of the rail transport monopoly could offer an affordable, reliable, flexible, and self-tailored service. The rail transport reorganisation in Italy, with the introduction of competitive and market features, is a recent phenomenon, and the process continues slowly.

The laws applying the European directives 91/440, concerning the development of the Union railways, and 95/18 - 95/19, concerning licensing to operation of railways, allocation of infrastructure capacity and charging of infrastructure fees, are quite recent (respectively Decreto Presidente della Repubblica 277/98, effective since July 8, 1998, and Decreto Presidente della Repubblica 146/99, effective since March 16, 1999). The liberalisation of the railway market applied at first to international freight/passenger transport services only; law 388/2000, effective since December 23, 2000 established the possibility of extending the right to provide service to national transport. The new regulations establish separation between the infrastructure company (RFI - Rete Ferroviaria Italiana) and the train operation companies, formally giving the green light to providers willing to enter the rail transport business.

The aim of the institutional change is basically to promote the use of this mode of transport, as a means of ameliorating road congestion, by emending the existing inefficiencies. According to ministerial data referring to 2004, in Italy only 12% of the goods moving distances of more than 50 km traveled by railroad (10% in EU-25), while road freight transport accounted for 65% (44% in EU-25); this proportion has been substantially unmodified since 1990.

Duferco, as a big user of logistics services and, among these, of rail transport, looked at the liberalisation as an opportunity to improve service quality to its customers and to reduce the cost of transport, a very important cost component in heavy businesses such as steel. With these new conditions in mind, Duferco in November, 2000, became the majority shareholder of the brand-new transport provider Rail Italy. Rail Italy, could count on a significant captive market in the freight transport business, and Duferco could commit a big part of its logistics operations to a reliable partner. Advantages were expected on the economic side (improving product competitiveness through integration) as well as in the service quality (more flexibility, tailored services, just-in-time delivery, greater efficiency, and fewer mistakes).

The project began with a break-in phase during 2001. The company hoped to increase its national traffic share
and to extend its activity to international transport from its Italian plants to the Belgian ones.

The San Zeno steel plant supplies the still mill in Pallanzeno with 400,000 tons/year. Trains (seven trains/week, corresponding to 5,000 tons total/week) carry 250,000 tons. The rest of the materials are carried by road (150,000 tons/year). After the milling, the finished products are distributed to customers by road.

The cargo lots are very different in the two cases: Each train can carry 700 tons (with 14 wagons), while a truck can carry only 30 tons. Despite the different efficiencies of the two modes, however, the cost for each ton carried, under full-load conditions, was almost the same following the depression in the road transport market. In this particular case, the traffic volume carried by train doesn’t ensure by itself a competitive cost. The company tried to exploit the real economic advantage of rail transport by acting on investment policy (secondhand locomotives) and on labour costs (atypical contracts). It soon became clear that success in the railway transport business - particularly for a low-cost service - depended on many conditions, the main ones being business scale and traffic volume.

The beloved and farsighted idea of a “tramp train" - a non-linear train available according to needs - unfortunately seems a utopia, compressed between the natural rigidity of the railroad system and the chronic market imbalance.

With these factors and other strategic aspects in mind, in 2003 Duf erco decided to take a convenient offer and sell Rail Italy to SBB, the Swiss railway company. The logistics solution based on a dedicated railway service is still working, however: SBB, with its division SBB Cargo Italy, is now providing a service with the same features attending the Pallanzeno rolling mill.

Up and down the Boot: The shuttle solution

The San Zeno/Giammoro system represented an even greater logistical challenge because of the long distance between the two sites. The solution developed by Duf erco to face the problem represents a big success, but it embodies at the same time a real “aberration" against every logistics paradigm. The Giammoro steel mill transforms semifinished products coming from several steel plants (see Figure 2). Much of the semifinished material is carried by sea from the international supplying areas (CSI, Ukraine, and Romania), while the rest arrives from the San Zeno plant.

After the milling process, the final products have different destinations: About 27% of the output goes to the southern Italy market, 35% goes by sea to the international market (Mediterranean countries, Portugal, the United Kingdom, Holland), and the remaining part goes back to San Zeno, where it is stocked until delivery to final customers in the surrounding region or beyond the Alps (France, Switzerland, Austria, Germany).

The traffic from/to San Zeno altogether accounts for almost 300,000 tons/year. About 146,000 tons of billets are produced in the steel plant, transferred to the rolling mill 1,250 km away, and transformed. Then, 144,000 tons of beams are carried back to San Zeno, 1,250 km away. Of course, if the steel plant and the rolling mill were adjacent, the cycle could take place without any disruption, without handling, and without transfer of semifinished products. Duf erco purchased the entire complex as a system, however, and finding the best operating solution for this “steel touring" instance became unavoidable if Duf erco was to be able to offer a competitive output. The additional cost for the transport of semifinished products is an ineluctable fact, but the company’s management had to do something to try to reduce this cost.

The company explored different options (maritime transport, rail transport, and road transport) and compared the relevant costs. Road transport immediately emerged as the more expensive option. Moreover, because of conditions of national law, road transport is not suitable for long products (24-meter beams). In the first proposal from Trenitalia, rail transport cost effectively equaled maritime transport cost. Rail transport does not entail the inconvenience of transshipment operations. So, the first proposal of Trenitalia was quite convenient compared to alternative modes of transport, but it wasn’t enough to fully recover the location disadvantage. Management had to reduce the transport cost as much as possible, due to the fact that the existence of an inter-operational transport represents a weakness by itself. The company therefore undertook long negotiations with Trenitalia, looking for a solution convenient for both parties. In 1998, an agreement was signed for the arrangement of a shuttle train.
According to the contract, five trains/week (to be expanded to seven trains/week) carry the billets from the steel plant to the rolling mill, and five trains/week (also to be expanded to seven trains/week) carry the beams back to San Zeno. When the beams arrive in San Zeno, they are unloaded and conserved by a third party managing a warehouse next to the steel plant, until the moment they are delivered by truck to the final customers. More than 60% of the stocked product is destined to the national market, while the rest is forwarded to the border countries (France, Switzerland, Austria, and Germany).

During the negotiation stage, the Duferco management leveraged on the contribution of this system to the balance of Trenitalia traffic. The company emphasized the efficient use of the freight wagons, traveling under full-load conditions in both directions. This was an unusual condition for the Italian railway company, which has been steadily afflicted by an overbalance of traffic from the north to the south and which has to periodically reposition wagons, thus incurring costs for ballast trips.

With a guaranteed freight for the return trip, the utilisation rate of the assets widely exceeds the average figure. This aspect convinced Trenitalia to accept a deal under which it offered service at a price appreciably lower than that in the initial proposal and with greater convenience than alternative transportation modes. Costs were lower on average fare for both short and long products (see Figure 3, comparing the carriage cost per kilometric ton on the route San Zeno-Giammoro).

The train travels every day according to scheduled timetables (see Chart 1). A unit train provides the service, with the same wagons being emptied of billets and refilled with beams within a few hours. For this reason, flatcars, fitting both cargoes, are used. A train, consisting of 16 freight cars, carries 730 net tons of billets or 720 net tons of beams. (The beam cargo load is lower because of the product shape.) The total traffic volume approximately amounts to 140,000 tons/year in each direction, representing 36% of the incoming traffic and 38% of the outgoing traffic of the rolling mill (see Figure 4).

The initial contract with Trenitalia had a length of 3 years but established an annual fare settlement. Because of the fare obtained from Trenitalia, Duferco could sell its products on the final market at a
Recovering Supply Chain Cost Efficiency Through Original Logistics Solutions: A Case in the Steel Industry

competitive price, effectively eliminating its severe positioning gap relative to its competitors through innovative use of logistics.

Analysis and conclusion

In many industries, smaller companies can achieve a cost advantage through minimising overhead and through operating with cheaply acquired assets (Grant, 2002; Porter, 1985). This model is quite suitable for Duferco: Born as a steel trader, the company entered and grew into the steel production business via favourable acquisitions all around Europe. The group cannot count on achieving cost efficiencies matching those of the market leaders, above all economies of scale and input costs. On the contrary, the company's acquisition policy, mainly driven by unique one-time circumstances, engendered incremental development and was the source of heavy location disadvantages.

The single parts of the Duferco productive system are today mostly modern and efficient, but the linkage between the components and with the supply/sale markets often represents a problem. The development pattern of the company heavily affects the supply chain structure, so that optimising and co-ordinating the flows and the interdependencies between the system components becomes a great challenge. The main arena of this challenge is logistics, a critical driver of performance and, therefore, an essential strategic lever.

Logistics is a complex combination of physical assets, organisational routines, people skills, and knowledge (Min & Keebler, 2001). The multiple links among the different elements and goals leads to numerous trade-offs. The problem of trade-offs in logistics has been recognized since the 19th century and has been deeply studied since the early 1960s (Drucker, 1962). Logistics costs and goals are often in conflict with one another, a situation normally resolved by finding a compromise solution, aimed to produce an acceptable outcome, balancing cost and quality.

Duferco understood the importance of managing logistics and logistics trade-offs to recover the weaknesses linked to the structure of its productive network. In Italy, Duferco decided to employ rail transport because of structural constraints (the hinterland positioning doesn't allow or discourages the use of maritime transport), economic motivations (railway transport, over medium and long distances, is more convenient than road transport), and operational reasons (road transport is subject to normative restrictions and to road congestion).

With regard to the system San Zeno-Pallanzeno, taking advantage of rail transport liberalisation, the company tried to arrange transport service by itself, at least in part, and decided to face the long preparatory and operating process of an operator entering the rail transport business. This process soon revealed some problems concerning both organisation and economics.

Throughout the preliminary procedures, the applicant for entering the rail industry must endure long waiting times and a complex bureaucratic iter. A license and a safety certificate are mandatory, and to be granted these, the company must demonstrate its reliability, its ability to meet financial requirements, and its technical and operational expertise (Decreto Legislativo188/2003, implementing the European directives 2001/12, 2001/13, and 2001/14). Then, the operator must organise the service in a practical manner. This includes buying the locomotives and the freight wagons, training staff, and defining train timetables.

Acquiring railroad assets, though not difficult, may be very expensive. A locomotive can cost up to 7-9 billion Euros, and a private operator, without a large purchasing volume, cannot get the same favourable conditions as can the former public provider. Acquiring properly skilled workers in adequate numbers is another critical aspect. Because of the longtime government monopoly, the only way to train new locomotive drivers is through the assistance of the ones retiring from the former public corporation. In addition,
both the new drivers and the ones coming from Trenitalia must obtain a specific license for every different line on which they are supposed to work. The last problem is schedule planning (timetables). This activity necessitates an accurate calculation of the internal transport needs and/or of the market opportunities. The line engagement at a certain time and on a certain day may in fact be settled only twice a year, when RFI edits the national timetables.

The outlined portrait represents a business that is capital intensive, inflexible, and - for these reasons - hazardous and rarely profitable. From the economic point of view, the essential condition for operating profitably is full-load traveling. From the operating point of view, the main condition is planning capacity. Duferco accomplished the entire process, a difficult but stimulating task. The company succeeded in obtaining all the required authorisations and in organising the rail service on a particular line. The experience was brief, for several reasons, but it reveals remarkable courage and, in a way, a pioneer spirit. In Italy, the liberalisation is still beginning, and the role of the former public subject is definitely large. Like many private start-up companies, Duferco soon decided to sell its new business, in this case to a foreign railway company.

For Swiss, French, Austrian, or German railways, the control of one or more services in the Italian territory can be a way to supply a fully self-managed international route to customers. Customers have the advantage of interact with a unique counterpart and the rail company has the entire liability over the service, without worrying about any possible disservice from Trenitalia. These providers usually enter the Italian market through strategic alliances with Italian companies, then directly move onward as independent operators to control the international railroad traffic from/to Italy.

Swiss and German providers are quickly growing in the market, their interest being centred mainly on the massive north/south traffic in Europe. French and Austrian providers are instead focused on service quality, and they try to develop efficient and competitive solutions. Most of the above-mentioned problems don’t afflict these subjects as much as they do newcomers. The role and the experience gained in national markets guarantee a better access to tangible and intangible assets, entail a stronger market positioning, ensure a wide assistance network, and provide other advantages. In short, a foreign specialised provider faces lower costs and fewer operating restrictions than any start-up company.

A more realistic analysis of the issues related to the reform law complexity and of organisational and economic problems would have averted Duferco from this experience. Firmness and enthusiasm were the project mainsprings, but - in our opinion - also a weak point: A more disillusioned approach perhaps would have revealed at the beginning the real importance of the organisational difficulties and, especially, the operating and economic costs of in-house delivery of transport services.

With respect to the San Zeno-Giammoro system, the preference went again to rail transport, but the seaside location of the rolling mill gives place to some “what if” reasoning. The eventual positioning of the whole system in Giammoro would be extremely convenient from the perspective of transport costs. Raw materials could arrive directly at the plant by sea, and the finished products could leave in the same manner, avoiding overland transport. This is the case, for instance, of raw materials coming from Ukraine. According to a joint venture signed in 2005 with the Industrial Union of Donbass, the semifinished products of the Dneprovsk steel plant are carried by sea to the Giammoro mill. The steel plant location on the Dnepr River allows immediate freight loading on oceanic ships and carriage through the Black Sea and the Mediterranean Sea to Sicily. This solution would allow a full exploitation of the maritime transport economies of scale and would avoid any inter-operational transfer during the production cycle. The real disadvantage of this hypothetical layout would be the distance from the national output market, concentrated in the north of the country. Joining the system in San Zeno, on the contrary, could represent the best solution under the distribution point of view, but it would entail some diseconomies related to the distance of the site from the sea.

Any reasoning about these issues, though merely theoretical, can better illustrate the structural disadvantages of the real situation. Duferco, as already stated, purchased the entire complex as a system, and the company, trying to adapt its organisation to the existing productive structure, decided to use rail transport. Through the Rail Italy experience, Duferco became aware of the problems and of the operating and economic rigidity of a dedicated railway company, so, when facing the need to find a logistics solution for the San Zeno-Giammoro system, the management decided to address to Trenitalia. Moreover, the company’s need for regular service in the north/south direction met the traffic balance requirements of Trenitalia and represented the crucial factor in the service fare definition. In this case especially, the company demonstrated its organising and negotiating skills. By leveraging the right arguments, the company, even though a small customer for the service provider, received a competitive freight rate for a self-tailored service. The imminent expansion of the service gives evidence of its success and of the mutual satisfaction of the two partners.

The company’s dependence on rail transport, resulting from its network structure and the nature of its output (which includes long products), seems to delineate a situation of little unbalance. Duferco is managing a long negotiation to achieve full control over a harbour terminal in Giammoro; the terminal, once upgraded, would allow better exploitation of maritime transport, not only for import but also for export. This fact can be considered a real opportunity, but it can also be viewed as a strategic move, aimed at restricting the rail carrier’s bargaining power and at giving a steady order to the relationship.
Supply chain design, as shown in this article, is highly related to a company’s growth pattern. This industrial area (steel) exhibits high dispersion resulting from historically low concentration: When the annual production was about 1 billion tons worldwide, the top ten producers represented only 325 million tons. Even now, the top ten steelmakers represent 35% of the steel business, whereas the top ten car makers account for 90% of the automobile business.

Concentration via successive mergers or acquisitions is slowly modifying the picture - as an example, Sollac and Cockerill-Sambre combining into Usinor, Usinor plus Arbed and Aceralia building together Arcelor, then Arcelor/Mittal. Arcelor produced about 50 million tons a year; Arcelor/Mittal produces 118 million tons, or 10% of the worldwide output.

As a result of industry concentration, customers could be served from a wider geographical perimeter. In reality, however, even if a steel mill is close to the customer, material travels over large distances to be delivered to the customer. This is simply because steel is not a commodity: There is a huge product variance, and each steel specification is allocated to a limited number of producing mills. In addition, the same steel specification must be supplied to a car maker in its different facilities, from north to south in Europe and from the West to Eastern countries. Arcelor was even required to deliver overseas to its usual customers in North and South America, South Africa, and Asia.

Of course, steelmakers reorganize and transfer production to factories closer to main customers, but these results in capability issues and capacity balancing issues. Indeed, we have a situation where logistics must compensate geographical dispersion.

Even if not a “big trouble,” logistics in the steel industry is not simple, for at least three reasons:

1 - The product can be heavy, expensive, and fragile. A coated steel coil for the automobile industry is the price of a small car and is as fragile as the automobile body.

2 - It requires specific equipment, such as special handling devices (cranes), specific warehouses (humidity and temperature controlled), specific trailers (cradle trucks), specific rail cars for steel coils, specific containers (heavy tested), and specially equipped barges and ships (mostly in cases of full-time or part-time chartered vessels).

3 - High volumes need to be transported: Very often, the automotive industry considers full trains or full barges when not full vessels. As an example, an automotive customer in Spain was receiving 270,000 tons in a year (2004) from Arcelor facilities, which represented the equivalent of 270 full trains (15 to 18 wagons) or 11,000 truckloads.
Once the appropriate logistics route has been designed, the related logistics costs sometimes cannot simply be transferred to the customer, a result of the heritage of the ECSC (European Coal & Steel Community) period. Signed in Paris in April, 1951, the treaty establishing the ECSC entered into force on July, 23, 1952, and the unified market was open for steel in May, 1953. The goals included providing an area for free movement of coal and steel products and ensuring equal access to the sources of production. This included determination of fixed transport prices to avoid any discrimination. The Treaty ceased on July 23, 2002. Transport prices are now subject to commercial negotiations, but in some cases, transport prices based on parity points still apply.

Italy is a good case study for steel coils logistics. Multiple sourcing and multiple logistics routes to customers are used from Anceolor (2004):

Asturias, Vizquia, and Sagunto areas deliver to Italy with ocean vessels via several ports (e.g., La Spezia and Salerno). From Piombino, part of shipments is made by rail through Desio or Avellino, but the main part is sent by truck. From Fos, two main solutions are used: shuttle service by sea for deliveries to Piombino, and rail mode for deliveries to Torino, partly the through transshipment platform in Avigliana or directly to several rail stations or rail-connected customers through Savona.

The main route from Gent uses a multimodal solution (barge + train) to Milano. Bremen uses the same logistic route for a part of its deliveries; the other main part is delivered by ocean vessel. From Milano, final deliveries are made by truck.

From Florange, the main logistic route uses rail to Torino (partly through the Avigliana platform). A large part of products from Rouen is grouped with Florange volumes, and the rest is directly delivered to Torino by rail.

From the north of France (Dunkerque, Mardyck, Desvres) and also from Montataire, the main tonnage is delivered to Torino (partly through Avigliana). Then, from Avigliana, final deliveries are made by truck.

Charleroi is using rail for deliveries to Torino. The rest of the tonnage (the major part) is loaded into swap-bodies. Complete trains are constituted from Basse-Indre to the Parma area.

Arcelor works for rail transport with the national companies (SNCF, B-Cargo, Trenitalia, DB-Cargo). The main platforms, used for transshipment (and sometimes for storage), are located in the north of Italy in Torino, Desio, and Parma, or in Piombino and Salerno for maritime shipments.

Final deliveries from the platforms to customers are mostly performed by truck.

South Italy remains the key issue. Despite the length of the route, truck transport was less expensive and more flexible than rail, even if both the supplier and the customer were rail-connected (this was true for single wagons or grouped wagons, but also for full trains, because delivering down the boot with specific railcars for coils meant empty trips back). This held true until the new regulations for traffic by truck in Italy, which had negative impacts on costs and capacities offered on the market.

This example shows how complex logistics can be, how numerous and original are the potential solutions to be studied, and how quickly the context can change.

Just the usual challenges a logistics manager has to face!