

2019 REPORT

INDUSTRIAL RELOCATION MARKET

KEY INSIGHTS

In recent years, the world has been changing at an unprecedented pace, driven by megatrends such as climate change, exponential economic growth in developing countries and demographic changes. Enterprises, wanting to keep up with those trends, often decide to implement new cost and production strategies, and the increasing price pressure imposed by customers makes companies want to produce at the lowest cost possible.

Continuous cost reduction strategies in manufacturing can be carried out in various ways – some companies decide to replace their machinery or infrastructure with a more effective one, other firms transfer production to low-cost countries, while others take over their business partners (either horizontal or vertical ones).

All those activities generate demand for dismantling and relocation services. Industrial relocation occurs when, for instance, a coal power plant established in the USA needs to be moved to Australia. Such a process, preceded by a complex planning stage, will begin with the exclusion of such a power plant and its dismantling – each single piece of machinery will have to be carefully marked and carefully packed. The next step would be transportation – usually intermodal, by land, air and sea. After transporting all the elements of the power plant, it has to be re-assembled and its operations resumed.

It is difficult to find reliable and verified information about the industrial relocation industry. Deficiency of information available on the market makes the entrepreneurs in need of this type of services confused as to how to plan the whole process, how much time is needed to implement such a project and what to do when choosing a relocation company. For this reason, being a company operating in this industry, Pol-Inowex decided to prepare a publication regarding the relocation industry. We invited our partners from various areas of the relocation market to cooperate on this project, as well as the global consulting and auditing company PwC, which is the substantive partner of this report.

The report is divided into three parts.

The first part of the report provides basic information about the relocation industry itself – its definition, what processes generate the demand for this type of services, what the whole process looks like and what activities are involved in project implementation. Theoretical information is supplemented in the form of interviews with industry experts who, based on their knowledge and experience, comment on the issues discussed in the report.

In the second part, there are several case studies presented to better showcase the industry. These are descriptions of projects executed by Pol-Inowex and our partners for clients from various industries and a multitude of countries around the globe. All projects presented in the report were carefully selected due to specific process conditions that required unique solutions. Companies often do not realize how labor- and capital-intensive it can be to move an industrial plant from one part of the world to another. The cases discussed in this section should help understand how complicated, e.g. in terms of logistics or operations, dismantling and relocation projects are, and they highlight the issues that may arise during their implementation.

The last part refers to trends and forecasts for the future. The partnering experts are trying to predict what the relocation industry may look like in the coming years, what destinations will be the most popular for relocation and what modern technological solutions will help optimize the processes accompanying relocation.

I believe that the following report will allow you to have a better understanding of the industrial relocation industry and will be helpful should you find yourselves in need to conduct a dismantling project or relocation within your organization.



Bartosz Świderek

Co-owner and Vice President,
Pol-Inowex

Author of the report:



Pol-Inowex is a global leader in industrial plants dismantling and relocation. The company was established by a Polish engineer and entrepreneur Jerzy Świderek in 1991 in Lublin.

Over almost 30 years, the company has completed over 400 projects on 6 continents for customers from more than 60 countries, specializing in different industries, including the energy sector, chemical or steel industries. Currently, the company employs over 200 people.

Pol-Inowex offers professional dismantling and relocation services to clients worldwide. Our services include, among others, planning, professional consulting, project management, 3D scanning, dismantling and cooperation with subcontractors.

Substantive partner:



At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 158 countries with more than 236,000 people who are committed to delivering quality in assurance, advisory and tax services. Find out more and tell us what matters to you by visiting us at www.pwc.com.

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Relocation industry

Relocation market

For the past few years, popularity and demand for industrial dismantling and relocation services has been steadily growing, for both single pieces of machinery and complex manufacturing lines or whole production plants. The largest companies on the market offering relocation services constantly introduce new improvements to operational processes in order to meet clients' increasing expectations, as well as to sustain time pressure and optimize budgets. Moreover, the growing professionalization of relocation service providers allows them to execute entire projects with a client's minimal organizational and operational involvement.

The term 'relocation' stands for the complex process of dismantling, site preparation, technical devices assembly and their ignition in the new, target destination. The complex service can be divided into two main stages: dismantling and the proper relocation service.

The relocation industry consists of two basic types of projects. The former and the most frequent one covers the dismantling of a single piece of machinery or production line, for instance, when the client wants to conduct a partial infrastructure replacement. The latter, a complex industrial plant relocation, production line or single device relocation, is less common, but it is incomparably more work consuming and requires complex planning and preparation stages in order to be carried out properly. An additional demand that makes the full relocation service more intricate is the client's requirement of shutting down the industrial plant for a time period that is as short as possible while the process of relocation is being conducted. Each day the systems are shut down translates into no revenue for the relocation service customer, that is why very often such projects are planned in a way that will interfere as little as possible with a plant's regular operations.

Industrial relocation is a natural investment component for global manufacturing companies to optimize and increase production efficiency. Increasingly often, this is a key factor that enables companies and production facilities to make use of the advantages of globalization and subsequently to move freely between chosen locations. A key role in relocation projects is played by full, complex and integrated project management. Managing a relocation project may be conducted by a company's internal team or it may be outsourced. A company's own team might not have the appropriate competences to carry out such a complex project. Therefore, choosing the right external contractor might be crucial to complete the relocation project efficiently. An important

decision-making factor when choosing an appropriate relocation company is its experience and list of successfully completed projects. It might also be sensible to check the references issued by previous clients of the company, or even contact them directly in order to discuss their customer experience related to the project carried out by a given company.

A contemporary business model strives primarily to optimize production processes, and the increasing price pressure forces companies to look for new locations to use as production sites that are effective for the company's budget. Therefore, industrial plants are usually built in places where production will be profitable and local political conditions will contribute to its development. Another factor that impacts significantly the decision to relocate the production facility is the lack of adequate space to expand the plant or the need to incur high expenditure on such an investment.

Furthermore, the demand for relocation services is also generated by merger and acquisition transactions (including those resulting from consolidation trends in many industries), which often result in the sale or relocation of non-current assets.

Relocation services are also often a result of business liquidation processes. Such a scenario usually results in the sale of company assets which may be bought by entities from any part of the world. Other factors that may influence the decision whether to transfer the production facility are, among others, following the demand and supply trends on the market, consolidation of production processes or the access to qualified workforce in the target location. Yet another category of factors are the environmental standards of a given country or location – production plants, even though they operate only for a limited amount of time, due to the technologies implemented and the amount of pollution emitted, often cannot operate in specific regions of Europe or the USA, which is why they are transferred to e.g. Asia where higher emission limits are acceptable.

An industrial relocation project is not a simple undertaking. Owing to the high level of complexity of the implemented processes, it requires a lot of commitment, resources, as well as a high level of professionalism and know-how on the part of the company conducting the relocation. If all these criteria are met, it is possible that the full process will run smoothly and according to the schedule.

Division of relocation services – dismantling and relocation

DISMANTLING

The dismantling service, i.e. disassembly of a device, production line or industrial plant for the purpose of sale, utilization or transport, consists of several successive stages.

1. Planning and project management: Each project begins with the preparation phase. The project is thoroughly analyzed in terms of relevant technical and organizational settings. At this stage, a project management plan and a detailed schedule are created, as well as a risk management assessment.

2. Match marking: This is an activity of key importance in dismantling and relocation projects. The proper marking of industrial facilities before the dismantling phase is necessary to successfully carry out the assembly process in the target location. Match marking is preceded by the planning phase in which all objects are divided into sectors and subsectors. Having completed the division, appropriate codes are matched to the relevant sectors. The coding of individual parts and devices is made using the most appropriate methods for a given device. Marking plays a key role in any relocation or dismantling process – any error or missing codification of a single part can result in significant difficulties during re-assembly.

3. Proper dismantling: Accurately conducted dismantling process ensures that re-assembly will be as seamless as possible. Professional dismantling services consists of, among other, mechanical, hydraulic and electrical phases of dismantling, cutting and disconnecting. Any mistake made during the planning, marking and dismantling phase may cause the reassembly to generate additional costs. In the worst case scenario, the reassembly may not be possible due to incorrectly performed activities during the dismantling process.

4. Crane services and transport preparation: Crane services are an important part of a dismantling project. The phase of lifting elements that require crane services calls for the determination of the appropriate method of carrying out this undertaking, i.e. a comparative

study, as well as a plan for the lifting phase. In those cases where cranes are not able to perform the task, whether due to physical limitations (e.g. limited space) or of economic nature (non-cost-effective method), hydraulic cranes are used. Planning crane services is associated with a large amount of conceptual work aimed at implementing the project in a safe, efficient and, most importantly, economically effective manner.

5. Packaging: The phase following the lifting stage with the use of gantries or crane services is packaging. Machines and devices subject to relocation usually have non-standard dimensions, which is why it is necessary to design and build special transport crates. Transporting the elements in appropriate conditions also translates into minimizing the risk of their damage.

6. Loading and transport: Loading and transport is the final part of the dismantling process and the penultimate phase of relocation services. The loading stage consists of the following activities:

- unloading empty containers from the trucks;
- loading the secured devices or machines into the containers;
- loading the containers onto the trucks;
- transportation of the containers to the target location.

Proper container loading process secures the transport and carries minimal risk of damaging the load, although the lower the amount of loaded containers, the higher the overall cost of transport. The loading phase is preceded by a detailed loading schedule planning stage, which aims to optimize the whole process and create the least obstacles on the loading site as possible: trucks arriving at the place of loading in large groups can effectively prevent maneuvering of cranes and hoists.

A reliable transportation partner, experienced in the so-called Cargo Projects will guarantee that the relocated devices will reach their destination not only on time, but more importantly in a safe manner and without the need to cover additional unexpected costs.

RELOCATION

The standard relocation service, in its initial phase, is conducted almost identically as the dismantling process, which is, in fact, entirely a part of the relocation service. Even though the relocation phases are initially identical as the dismantling stages (planning phase and project management, match marking, dismantling), in the further stages, it is enriched by a number of other activities.

7. Re-assembly: The re-assembly is the final part of the relocation project. Before the re-assembly stage of a plant or a production line, the construction works planning phase is conducted, together with a truck and container unloading plan. All shortcomings arising in any of the preceding phases will have a negative impact on the re-assembly phase, which is why it is crucial that, if possible, this stage be carried out by the same company that conducted the disassembly, match marking and loading. An increasing number of companies offering relocation services provide comprehensive and complex services, including disassembly, match marking and re-assembly.

ADDITIONAL SERVICES

The most specialized companies in the industry offer a number of additional activities that are complementary to the relocation process. Those include i.a. 3D scanning and dry ice cleaning:

3D scanning: 3D scanning is usually performed right after the match marking process and is aimed at improving the re-assembly process. Thanks to 3D scanning, high dimensional accuracy is achievable. The scanned 3D model can be used to create technical documentation, projections, create documentation and 2D plans, analyze deformations, create virtual walks of the facility, reverse engineer as well as for many other purposes.

Dry ice cleaning: The re-assembly of devices, a production line or a whole industrial plant is much more efficient and safe when the devices installed are free of soot, grease or rust. Cleaning with dry ice, in comparison to cleaning with water or sandblasting, means that there is no risk of corrosion or dusting on the cleaned device, which is particularly important in industries characterized by very strict cleaning standards. Cleaning with dry ice is also less time-consuming than traditional methods and does not require any specific protection of the work environment. The process itself is environmentally friendly and minimizes the risk of surface damage.





About the relocation market from the perspective of a relocation company

Before the 2008 economic crisis, the relocation industry operated according to a certain pattern – in simplified terms, capital-intensive production was relocated (that is, one that requires large workload, energy, logistics, and legal regulations adjustments, e.g. regarding environmental protection) from high-cost countries to developing countries. The financial crisis remodeled the relocation market. Companies began to pay more attention to investments' CAPEX. As a result, entities nowadays often decide to relocate their factories and facilities again, even though they had previously been transferred several years earlier, e.g. to Poland, where the headquarters of the company is located, in order to be closer to the customer and reduce transportation costs.

Decisions considering relocation are made after a detailed economic analysis, as they are in any other investment project. Presently, it is difficult to indicate a single most popular destination for industrial plant relocations – it may be a relocation of a production plant from the USA to Mexico, but also from Mexico to India.

It is worth mentioning the reasons that motivate enterprises to invest in a new or used factory. Currently, it is primarily simplified access to customers, i.e. the market. The second factor are the financial issues, and the third is time. The availability of cheap intermediates and raw materials is also important. Relocation gives the owners of industrial plants a faster, so called, time-to-market and gives the possibility of incurring lower expenses, thus, the investment may start to pay back much faster than in the case of building a new plant. In addition, an important aspect is the fact that new production facilities with the latest technologies require highly trained and qualified workforce, which may not be easily accessed in, for instance, developing countries. In case of the relocated plants, the employees are generally already available or can be trained quickly and inexpensively – there is no need to employ top-class engineers from abroad.

The most important stakeholder in relocation projects from our perspective are primarily the clients, who are a very diverse group in case of providing dismantling and relocation services. There are significant differences between each and every client, due to e.g. the reason for relocation, economic motivation, development plans of the company, and even cultural or religious background. Those differences have a diverse level of impact on the process of purchasing

the relocation service, as well as the implementation of the project itself. However, the clients can be divided into two main groups when it comes to the general approach to doing business and trusting their business partners. Transactional customers whom we often do not even see in person are the first one. With those clients, the whole purchasing process is conducted by phone or via email, and the first face-to-face contact occurs when signing a contract. Such clients are mainly found in Europe, the USA and Australia. The second group are the so called relationship clients. This is quite a specific segment in terms of doing business, because they require a large number of direct, in-person meetings. In order to acquire such a client, a lot of time needs to be invested. Such clients are common mainly in Africa and Asia, where committing many days or even weeks to business meetings and negotiations is a norm and standard.

Diversity and multiplicity of issues accompanying dismantling and relocation projects can confuse people who are not familiar with the topic. There are many aspects that require attention,; the industry in which the project will be carried out to begin with, geographical, political and legal considerations, infrastructure, and even matters related to culture. Therefore, the selection of suitable contractors for this type of services is extremely important from the perspective of not only economic effectiveness and timely implementation of the project, but also the lowest possible level of client involvement in the whole process.



Bartosz Świderek

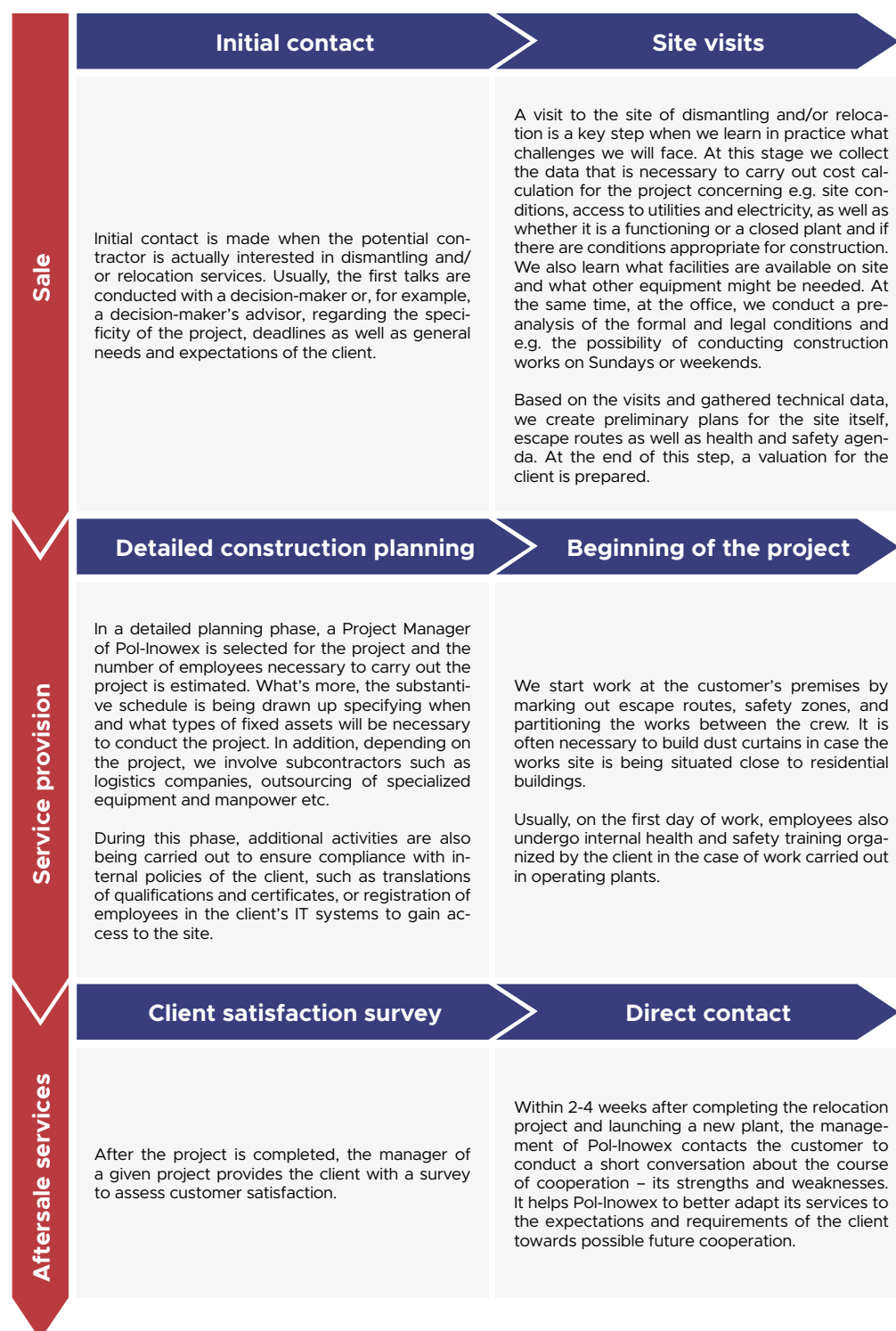
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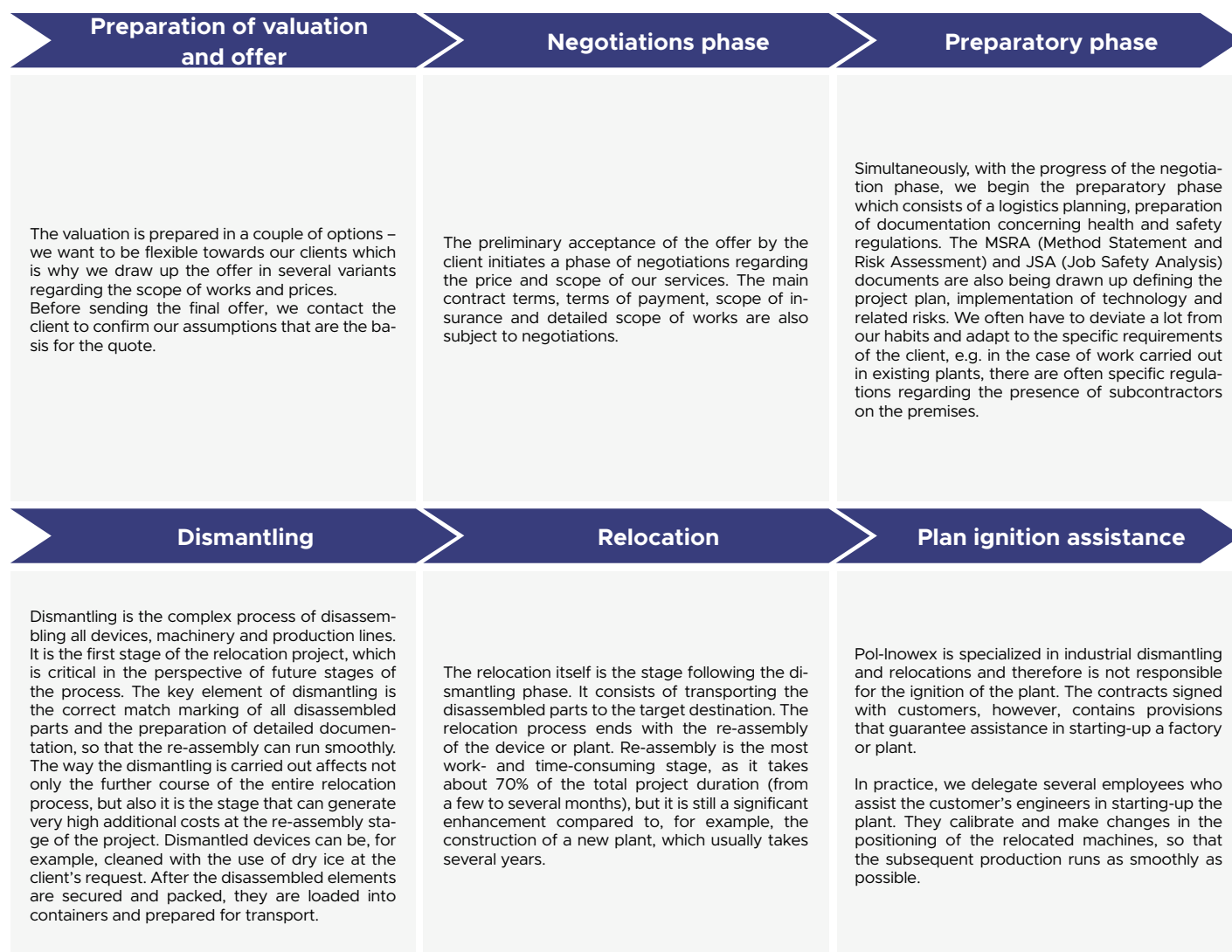


Piotr Rakowski

Managing Director,
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Despite all the enormity of dismantling and relocation projects and activities, these two actions are just single elements in the whole complex process of relocation projects, beginning with establishing customer contact with the relocation company, to launching the manufacturing plant and starting production in a new location. A detailed breakdown of individual elements of the process is presented in the following chart.





Stakeholders of the relocation process

Professional companies providing comprehensive relocation services cooperate with many different partners. Only a few entities have sufficient facilities (both in terms of employment and infrastructure) to independently implement all projects, or even several projects at the same time. Thus, even the largest providers of relocation services use subcontractors to increase the efficiency of their projects. Such cooperation takes place already at the stage of contract acquisition (agents, auction companies), but also when rendering the service itself (logistics partners, outsourcing of workforce and specialized equipment). Very often, the support from local partners who know the local conditions is necessary to carry out projects in various parts of the world. Please see below a brief example of various companies' profiles involved in the implementation of relocation projects.



Agents

Agents are not only companies specialized in deals considering used machinery and production lines, but also individual persons acting as intermediaries in the purchase/sale transactions of used infrastructure. Those are mostly international companies operating globally, most of which have foreign branches or representatives operating in specific regions. They also often have their own warehouses in various parts of the world, thanks to which they can be active on numerous markets.

The agent segment can be divided into two distinctive groups. The first one is composed of companies that buy devices on the market for trading purposes. This group is characterized by a visible specialization in a particular type of machinery, e.g. in numerically controlled machine tools (CNC), printers or steam boiler turbines. Usually, they focus on products manufactured by leading producers specializing in a given segment of machinery and production systems. Those companies often have extensive warehouses where potential customers can view the system before purchasing it.

The second group are the intermediaries between buyers and sellers, usually looking for a specific product on request. Those companies operate on the basis of intermediation, that is, they look for specific types of devices available on the market to order, both for sellers and customers. Their role is limited only to associating two business parties. It is worth noting that the activities of many companies in this sector are similar to the activities of auction partners (which are described below) due to the organization of online auctions. Those companies also offer, mainly on the US market, asset sale assistance services during company liquidation processes.



Logistic partners

Logistics partners are professional load-forwarding and transportation companies experienced in relocation projects that offer solutions tailored to the needs of individual clients. Such a specific, tailored service is for e.g. 'Foundation to foundation' transport, which allows relocation companies to save a lot of time and money. All companies in this segment operate internationally – most of them operate all around the world, others are limited to selected regions (e.g. Asian countries or CIS countries). The services include the full facilitation of logistic processes of the company, multimodal transportation services as well as implementation of relocation projects and transportation of loads. In addition to transportation services, those companies also offer packaging, storage, insurance and complex consulting facilities in the field of logistics.



Auction partners

Auction houses specialized in industrial equipment are another type of partners that play an important role in the process of obtaining new relocation project orders. Auction partners are usually entities that deal with the sale of fixed assets in the form of machinery and production lines, as well as the liquidation of company's assets. Auctions organized by these entities are also held online, which makes it easier to reach a larger potential group of customers. The organization of the auction is connected with the whole set of pre- and post-auction services, such as advertising of the auction and auctioned equipment, providing qualified personnel to service the auctions, cooperating with financial companies, or providing world-class auctioneers that compete for the highest price. Most companies offer the possibility of searching for specific machines or production systems upon request. These companies often specialize in the auctions of machines from a specific industry or producer.



Workforce outsourcing

Companies offering workforce outsourcing can be divided into two groups. The first group consists of specialized work agencies that associate skilled employees with companies that currently need qualified staff. Those companies, in addition to outsourcing employees, also offer comprehensive HR project support: payroll management, consulting services, and employment strategy development. Moreover, these companies often look for employees who come from countries such as Bangladesh and Nepal where labor costs are relatively low. Such a strategy results in a significant reduction of labor costs, however, it may also entail a risk of required skills mismatch, as well as high employee turnover. The second group is formed by companies offering specialized construction team outsourcing. The choice of such a partner is beneficial primarily due to the extensive experience in the implementation of construction projects. Furthermore, these companies guarantee certainty of their employees – most of them are proven and experienced specialists who have the necessary qualifications to perform all the work related to the relocation process.

The role of logistic partners in relocation

In relocation projects, the timeframe agreed between the seller and the buyer is very important. The timeframe directly translates into the meaningfulness of the project from the perspective of the interested entities – and stated deadlines are usually crucial due to the various external factors. In order to keep up with tight schedules, there always has to be an entity that transports things from one place to another. And this is where logistics play a crucial role. Often, the destination of these projects are developing countries that most commonly retain poorly developed infrastructure, or countries where there are serious problems with customs clearance. Such an inconvenience is a big obstacle, which is why relocation companies must have a reliable partner on site who is experienced in operating in such conditions.

There are many transport and logistics companies on the market that advertise themselves as companies experienced in industrial relocation. However, there are very few entities that really do specialize in such processes. To be more precise, they are approximately 20-30 companies around the world that can do such projects well.

Relocation projects are closely related to commodity prices and the global economy. The trend that has been particularly important in recent years is the processes of industry automation, which also has an impact on logistics processes. In terms of relocation, each project is different and unique. Automation can be subject to both small operations (e.g. scanning bar codes, documents etc.) as well as larger sequences of processes. However, projects cannot really be compared to each other and a single, repeated factor can affect two projects in a significantly different way – for example, when a given factor automates and optimizes processes in one project, the same factor can cause inefficiency in another one. Another development direction for logistics solutions, important from the point of view of the relocation industry, can be autonomous vehicles. According to Alexander Global Logistics, automation will affect aircraft and ships even faster than cars and trucks. Which will have a significant impact on the development of logistics solutions.

Trends in logistics solutions directly related to the relocation industry do not undergo major changes. Multimodal transport has been the most popular for many years, mainly in the truck-ship-truck sequence, due to the large volumes of cargo.

There are not many serious competitors on the dismantling and relocation market, there are plenty of cheap companies without expertise – it is not a challenge to dismantle a factory, but to do it in such a way that allows its subsequent reassembly. This problem is particularly obvious in countries where many construction companies advertise as relocation companies while not having accomplishments in this field. Potential relocation clients should therefore pay special attention to whether the company they plan to employ for such a project has any essential experience in this area, not only in terms of relocation itself, but also expertise in relocation considering a given industry.

The cooperation between a relocation company and a logistics partner is particularly important in case of projects where the client outsources the process of transportation. Lack of cooperation between those companies may cause serious problems, e.g. dismantling the machines by dividing them into parts that may be too big or too heavy for a local road truck or inefficient for sea transport. If all parties work separately, there is a risk of mutual transfer of responsibility for the situation. If the services relation to relocation and logistics are included in the same contract, then the entities conducting those services must work closely together and the client is much less involved in the whole process. This is the main reason why it is worth entrusting relocation to professionals. The combination of relocating and logistic services guarantees high quality work that is performed according to the schedule and without unnecessary surprises.



Jürgen Weyhausen

Project Director,
Alexander Global Logistics GmbH

Relocation from the perspective of auction companies

One of the groups of entities that, apart from the clients themselves, is the source of relocation projects, are auction companies focused on trading fixed assets. They usually establish long-term relationships with relocation companies and rarely decide to change their business partners. An example of such an auction house is Hilco Industrial Acquisitions B.V, which operates mainly in Europe, Australia, the USA and Southeast Asia.

The main activity of the company is the liquidation of factories, which must be shut down, e.g. due to financial problems. The assets of these companies are then sold – sometimes as single machines, and other times as complete production lines, or even entire facilities. Customers interested in buying the devices put up for auction come mainly from developing countries, as well as developed areas such as Germany or Italy. Most of the equipment is sold on the European market, and the remaining 10% goes to the markets of Australia, China, Korea and Indonesia. The company specializes in trading of assets from the metal and steel industries.

Usually, auction houses cooperate with the relocation companies, by recommending trusted relocation partners to the buyers of the auctioned assets. However, the customers often like to choose partners themselves, although that approach may generate certain difficulties, due to the discrepancies in quality of provided services. In Australia, for example, relocation services are very expensive despite relatively low professionalization. And the level of professionalization is one of the main factors differentiating individual regions. On the other

hand, it can be observed that Hilco customers rarely need a complex relocation service – they are usually interested in a specific service, for instance dismantling.

The relocation services sector is very specific – both the bad economic situation in a given sector and the period of prosperity are beneficial in terms of generating demand for such services. However, the business cycle for specific industries is not the same in all regions of the world and, for example, the decline in Europe may be correlated with the boom in Asia. There are no significant differences in terms of relocation services between the European and American markets, with the exception of services provided by professional entities. The differences are particularly visible in case of factory liquidation. Due to legal and social conditions, it is much easier to carry out such a process in the US than in Europe. It is only thanks to many years of experience that one can detect and interpret subtle signals from the market and, on their basis, manage one's business decisions.

From Hilco's perspective, the growing professionalization of dismantling and relocation processes can be observed in recent years. More and more companies offer sets of complex services, which is especially important for potential customers. Companies can tailor their services to their clients' needs and choose individual processes, such as dismantling alone or dismantling combined with transportation services.



Robert Bouland

Managing Partner,
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Assets traders in the relocation business

Important partners of relocation companies are the agents who sell used machines and factories. IPPE is an example of a company that trades in production assets and production facilities.

IPPE's activity is based on three main pillars. The first one consists of buying and selling production plants that went bankrupt (including chemical, pharmaceutical, oil and gas). As part of this activity, the company buys a complete factory (land, building, assets etc.) and tries to restart its operations. The second pillar of activity is the purchase of production plants for their relocation and assembly in a new location. The construction of a new plant takes up to 4-5 years, and the project of relocation of the used factory only 18-24 months, which is a significant time- and capital-saving solution. A well-preserved used factory will function without problems for a very long time. The last pillar of the company's activity is the purchase and sale of individual equipment, i.e. individual devices. It is worth noting that this type of projects sometimes involves different industries, because often equipment from one industry can be used in a completely different one.

Participants of the relocation process, such as agents, cooperate with diverse clients. In the case of IPPE, those are usually entities from developing countries or states

that have recently been recognized as developed. The assets that the company trades is sold in 80% to developing countries and the remaining 20% goes to developed countries.

Over the past few years, customer requirements and expectations have changed. They still want to be offered a high quality service at the lowest possible price, but increasingly often they pay attention to the complexity of the services they are being provided with, as this quality helps them save time and money.

Over the last few years, some purchasing trends can be observed among potential buyers of relocation services. Many orders are currently being implemented in China, as the Chinese market is much less sensitive to changes and is experiencing huge overcapacity. The Middle Eastern and Indian markets are also gaining popularity.

In the upcoming years, the key direction of relocation will be Southeast Asia, where labor costs are relatively low and the number of consumers is constantly growing. This is the region that should be perceived as the main focus for relocation companies and manufacturing assets traders.



Ronald Gale

President
at International Process Plants and Equipment Corp.



Ross Gale

Director of Acquisitions
at International Process Plants and Equipment Corp.

The role of qualified staff in the dismantling and relocation projects

The role of construction workers in relocation projects is extremely important. The average employee taking part in the project should have extensive experience and knowledge (including industry and international safety rules). What's more, such an employee must be able to adapt quickly to the changing conditions of the work environment in different geographical regions, such as culture, food or climate.

Sharma Fabricators and Erectors Ltd. (SFE) is a company with over 60 years of experience that employs many diverse workers. We choose the best people available for a given project, taking into account their particular qualities. At SFE, there are no general construction employees – only specialists in certain industries. Based on the 26 completed large relocation projects, our company knows how important it is to prepare employees to work in new conditions, which is why before each trip, we organize a very rigorous training for our employees and pay great importance to the issue of occupational safety.

When it comes to challenges in the relocation industry, it is difficult to talk about them in the context of traditional workforce if people are highly qualified and experienced, and the degree of their expertise is high. Challenges arise depending on the project, but they mainly concern climate, food and formal-legal issues. However, the differences between nations in the approach to work in difficult conditions can be observed as well. For example, it is more dangerous for certain nations to work in given regions than it is for the citizens of other countries.

An example of a particularly demanding country, where an SFE project was implemented, is Ghana where the conditions are very difficult for Europeans, both in terms of climate and access to infrastructure or labor standards. Employees from India, on the other hand, are able to cope with such conditions without any problems. However, this condition is not applicable to every situation – when the degree of danger is very high, for e.g. military operations are being carried out, there shouldn't be any relocation project proceeded in such a place, no matter where the employees are from.

The most difficult aspect occurring in relocation projects is the infrastructure and condition of the plant that is going to be dismantled and soon assembled. Typically, these old buildings that are usually dismantled come from the early 80's or even 70's, and obviously the industry standards have significantly changed since then. Currently, there are many systems that are better from the process point of view than those used 50 years ago. When relocating an old building, one should have those technological differences in mind, hence the knowledge and experience of the staff involved in the relocation project are so important.

When deciding on a relocation project, it is worth trusting an experienced company which knows what details to pay attention to and one that can provide good advice on various issues. A professional relocation company will likely pay attention to important technical details of the project that may have been omitted earlier. For example, in the area of energy networks – such networks between India and Europe differ significantly, because they have a different frequency and tension, which is why many things have to be thought over already in the preparatory stage.

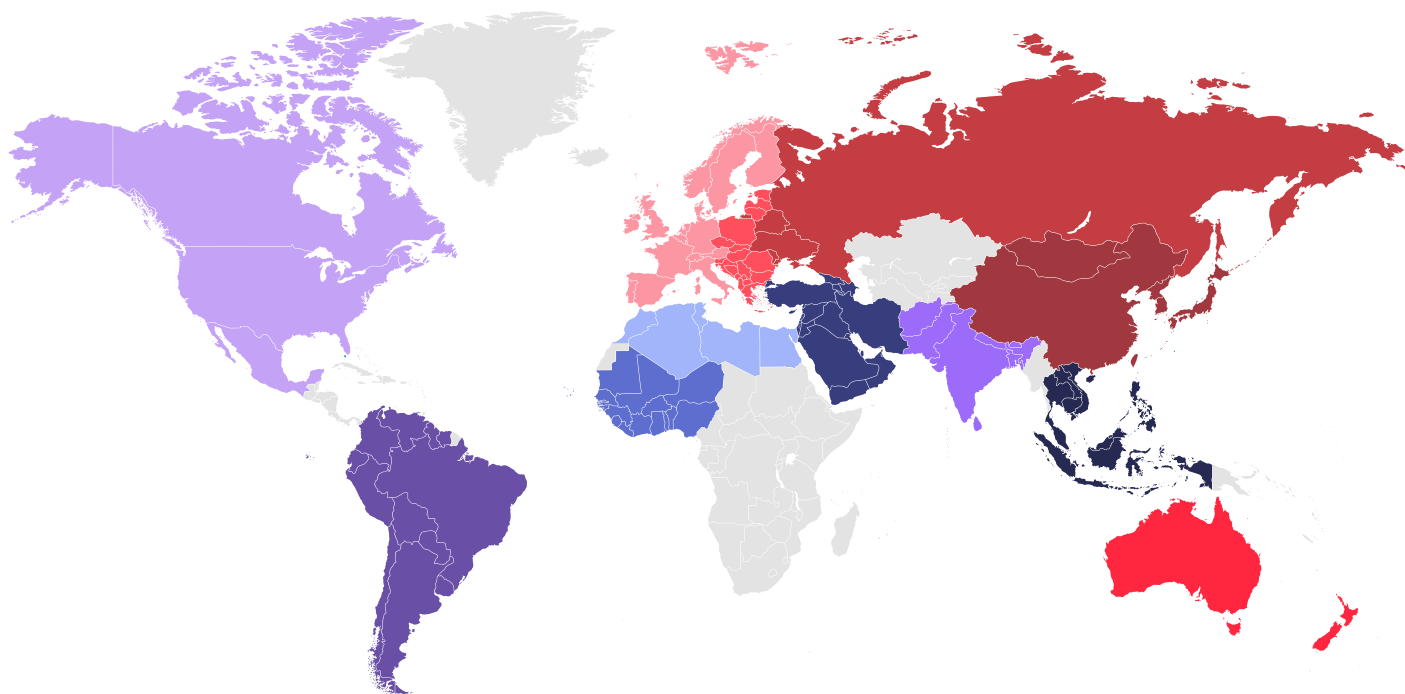


Vinod Sharma

Managing Director,
Sharma Fabricators and Erectors Ltd.



Case Studies



WESTERN EUROPE:

Germany
Luxembourg
Austria
Switzerland
Italy
France
Netherlands
Belgium

United Kingdom
Ireland
Spain
Portugal
Finland
Sweden
Norway
Denmark

CENTRAL EUROPE:

Estonia
Latvia
Lithuania
Poland
Czech Republic
Slovak Republic
Hungary
Slovenia
Romania
Bulgaria

Greece
North Macedonia
Kosovo
Serbia
Albania
Montenegro
Bosnia and Herzegovina
Croatia

EASTERN EUROPE:

Russian Federation
Belarus

Ukraine
Moldova

NORTHERN AMERICA:

United States
Mexico

Canada

SOUTHERN AMERICA:

Argentina
Bolivia
Brazil
Chile
Colombia
Ecuador

Guyana
Paraguay
Peru
Suriname
Uruguay
Venezuela

NORTHERN AFRICA:

Algeria
Egypt,
Arab Rep. Libya

Morocco
Tunisia

WESTERN AFRICA:

Benin
Burkina Faso
Cabo Verde
Cote d'Ivoire
Ghana
The Gambia
Guinea
Guinea-Bissau

Liberia
Mali
Mauritania
Niger
Nigeria
Senegal
Sierra Leone
Togo

EASTERN ASIA:

China
Japan
Mongolia
North Korea

South Korea
Taiwan
Hong Kong
Macao

WESTERN ASIA:

Armenia
Azerbaijan
Bahrain
Cyprus
Georgia
Iran
Iraq
Israel
Jordan
Kuwait
Lebanon

Oman
Qatar
Saudi Arabia
Syrian Arab Republic
Turkey
United Arab Emirates
Yemen, Rep.

SOUTHERN ASIA:

Afghanistan
Bangladesh
Bhutan
India

Maldives
Nepal
Pakistan
Sri Lanka

SOUTHEAST ASIA:

Brunei
Cambodia
East Timor
Indonesia
Laos
Malaysia

Myanmar
Philippines
Singapore
Thailand
Vietnam

AUSTRALIA

Australia

New Zealand

* Countries have been divided according to the methodology adopted by the UN.
The following data have been provided by the World Bank for the years 2007-2017,
as 2017 is the last year with comparable data available for all countries.

WESTERN EUROPE

GDP 2007	\$ 17 058 448 640 073
GDP 2017	\$ 16 723 177 251 371
GDP Change (2007-2017)	-1,97%
FDI Inflows (2007-2017 Average)	\$ 37 432 050 725
FDI Inflows (Total)	\$ 598 912 811 594
FDI Outflows (2007-2017 Average)	\$ 47 199 217 479
FDI Outflows (Total)	\$ 755 187 479 670
Industry as a % of GDP	22,26

The economy of Western Europe is responsible for over half of Europe's GDP and 16% of the global economy. In 2017, it attracted the most amount of investments from abroad. Germany and the Netherlands are two of the highest performers among the Western European countries. The economy of Germany grew by 2,1% in 2017, however in 2018 the GDP growth rate fell to 1,5%. It is still higher than the potential growth of 1,5%, which means that the economy of Germany is outperforming itself. In other words, the economy's recognized maximum capacity output is lower than the actual output managed by the country.

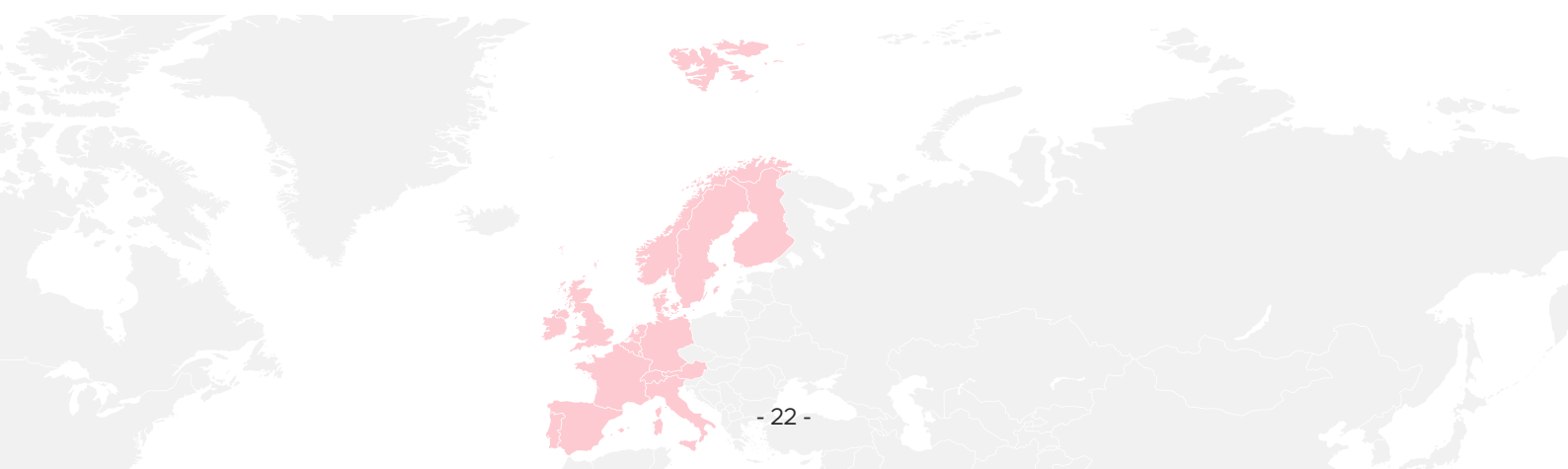
Apart from construction investments (4,3%) and exports (3,5%), also government (1,6%) and private (4,3%)

consumption spending increased in 2017. The industrial sector has been the best performing and dynamic sector since 2017. The unemployment rate in 2017 was at the all-time lowest at the level of 5,3%, which was the lowest unemployment rate since German reunification.

The inflow of the relocation project is much lower than the outflow in the region of Western Europe. It's mainly caused by the legislation changes regarding CO2 emissions and other laws protecting the environment. The majority of industrial factories leaving this region are heading to Asia, Eastern Europe, South Africa and the United States where the energy costs are considerably lower.

Main outgoing relocation destinations:

Asia || Eastern Europe & Central Europe || Africa || USA



Domestic relocation of a sugar silo within Germany



Location: Elsdorf-Lage
(approx. 280 km)

Execution time: 13 months

Number of trucks: 150

The project covered the relocation of the entire sugar silo between two locations in Germany, separated by over 280 km. The project lasted for half a year, from which ca. 4-5 months were intended for the dismantling process that took place in the period from July to December. The process included day-to-day work of over 20 specialized engineers that helped to secure the dismantling process of a large silo (that finally had to be cut into many smaller pieces – it was over 45 m high and 40 m wide). The assembly stage began in March the following year and lasted until September.

This stage included over 40 people working every day with 12 welders that have worked in 2-shifts scheme – welding over 16 hours a day. The biggest challenge in this project was the location of the silo. It was located relatively close to a residential area with houses and communal buildings. The dismantling process was associated with significant noise and dust that could be very annoying and uncomfortable for local residents. In order to mitigate the problem, special wall-screens were built to protect the local community against dust and noise.

We attend the first meetings with the client, often without knowing the basic information about the project. Clients tend to keep a lot of information to themselves, which they share usually only after the project's kick-off. Bearing that in mind, we, as contractors, lack knowledge about crucial challenges and specifications before the actual works start. In the initial phase, we only get formal documentation based on which we have to plan nearly every single aspect of the project – how many workers will be needed, how many cars, special equipment etc. If there are only 20 people needed, we can deal with it ourselves, but if project requires 150 workers, we will have to think about cooperating with external companies. Thus, experience often plays a vital role during the initial phases. At the beginning of the project, it is also important to work with the host in order to meet all local conditions and be able to start the works as intended. The conditions of working in different places are very diverse and that's why it is so important to be prepared for any unforeseen circumstances. Over the last 10-15 years, there have been major changes made in the attitude to relocation projects. Now there are many more formal requirements and the processes have become more labor-intensive and logistically complex. We have a lot of problems related to legal regulations, for example, the permitted weight of the car and axle pressure during transport. Infrastructure is also a problem. For example: in Vietnam, there are no roads where a truck weighing 60 tonnes could pass and some parts of the country are nearly cut off.



- Ryszard Solarczyk, Project Manager, Pol-Inowex

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

The transport of large structures is always problematic, because many obstacles need to be taken into consideration along the way, such as bridges, width of roads, street lamps, road signs, width of gates, roundabouts etc. In this project, the biggest problem was the assembly of a unique, circular-shaped construction that supported the conical roof. The structure consisted of 48 pieces of beams that could not be cut into smaller sections without affecting the strength of the structure. Therefore, it was necessary to transport the structure as one element, that had a diameter of over 8 meters! The whole operation took place during the night and to facilitate the transport, it was necessary to cut road signs on the greater part of the route, as well as the entire gate to the new plant (together with the fence). Of course, this involved the need to obtain the necessary permits. The removal of obstacles on public roads (e.g. signs) was carried out on an ongoing basis along with the progress of transport on the route, with assistance of the police and relevant services. This undertaking wouldn't be so special if not for the fact that this process lasted for over 280 kilometers which is a rather unusual situation on a public road.

CENTRAL EUROPE

GDP 2007	\$ 1 667 792 658 333
GDP 2017	\$ 1 755 444 829 150
GDP Change (2007-2017)	5,26%
FDI Inflows (2007-2017 Average)	\$ 2 036 822 242
FDI Inflows (Total)	\$ 36 662 800 349
FDI Outflows (2007-2017 Average)	\$ 87 649 263
FDI Outflows (Total)	\$ 1 577 686 732
Industry as a % of GDP	24,80

This subregion has been separated from the larger region according to the UN methodology of Eastern Europe.

Central Europe is the smallest among the European regions. Poland significantly stands out from the rest. The GDP per capita of Poland increased by 150% since 1989, more than any other country on the continent. The Czech Republic's income per capita increased only by three-quarters and in Hungary hardly by half. That shows that Poland has become the fastest growing economy in the world among countries with the same level of development, beating countries like South Korea, Singapore and Taiwan, believed to be the countries with the highest rate of development of economy.

Since 1989, Central Europe has been a region where the majority of industrial factories from different parts of the Western Europe were relocated to.

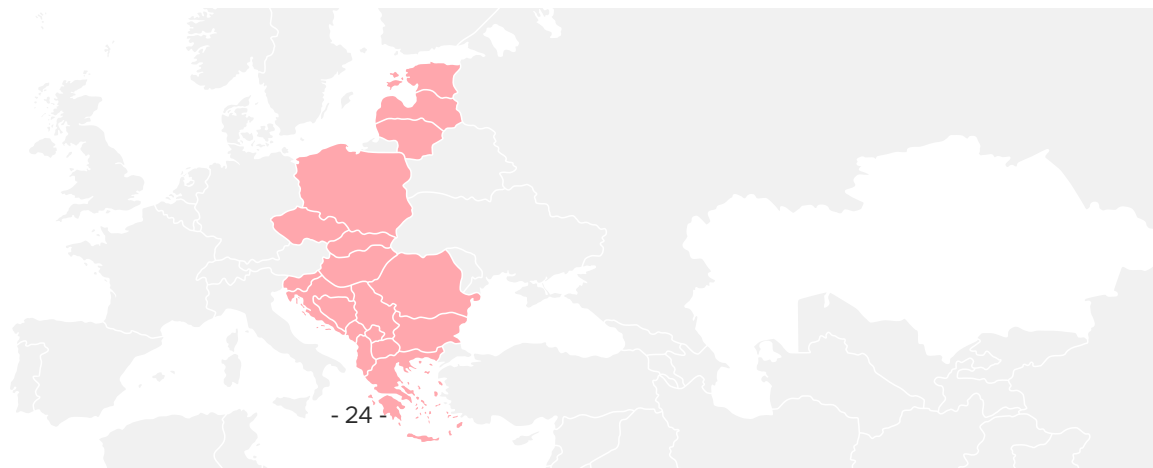
This inflow has now decreased due to the turbulent development of Western Europe. The reason why in the past, plants with simple mechanical work relocated to Central Europe, was the availability of cheap labor force. This cheaper workforce is no longer present.

Main outgoing relocation destinations:

Asia || Eastern Europe || Africa

Main sources of incoming relocation projects:

Western Europe



Relocation of a biomass power plant from Germany to Poland



Location: Germany-Poland
(approx. 820km)

Execution time: 18 months

Number of trucks: 120

Number of parts: 10,000

The project covered the relocation (disassembly) of pellet presses for the pellet production and heating devices, which included a turbine and a boiler. The company was also responsible for the transport, but it did not include hazardous substances (e.g. oil), which was entrusted to another specialist company.

The project lasted for one and a half year – at the beginning it was estimated for 12 months, but its implementation

was prolonged due to problems on the investor's side. There were approx. 35 people on the project, but during the most difficult tasks up to 60. The most important element of the whole construction was a 55-ton boiler, which had to be lifted by two different cranes and then transported horizontally.



The rules of work safety play a crucial role in relocation projects. Health and safety at work is changing, but such regulations are already present in all countries. In some cases, they are more standardized and rigorous, while in others they are less restrictive, but they set a certain minimum standard of work. It is also important for employees to behave in a way that is respectful of health and safety and that they have an internal conviction that the rules must be respected. This greatly simplifies work organization and improves safety conditions.

- Artur Hetmański, Project Manager, Pol-Inowex

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

The biggest challenge during the implementation of this project was the lack of adequate technical documentation. The company relied on photographic and dimensional documentation, which was made by the team, but did not receive the appropriate installation documentation from the client. What's more, the entire relocation was to be carried out 1:1, but it turned out that due to technical conditions it would not be possible. Therefore, the entire reassembly process had to be carried out again, including detailed setup design of the individual components.

EASTERN EUROPE

GDP 2007	\$ 1 491 963 922 727
GDP 2017	\$ 1 753 156 355 963
GDP Change (2007-2017)	17,51%
FDI Inflows (2007-2017 Average)	\$ 8 205 395 000
FDI Inflows (Total)	\$ 32 821 580 000
FDI Outflows (2007-2017 Average)	\$ 9 267 470 000
FDI Outflows (Total)	\$ 37 069 880 000
Industry as a % of GDP	21,65

The Eastern European countries included in this report are the Russian Federation, Belarus, Ukraine and Moldova. The economy of Russia makes up for 90% of Eastern Europe's GDP. In 2018 the Russian economy accelerated to 2,3% exceeding the assumed target. The GDP growth rate increase was caused mainly by strong global growth, increased oil prices, one-off construction projects and hosting FIFA World Cup.

It is expected that between 2019 and 2021, the GDP growth is going to stabilize at around 1,4-1,8%. The inflation

rate is forecasted to accelerate in 2019 as a result of increased tax rate and ruble depreciation. Nonetheless, a significant amount of Russian population lacks formal employment, causing many households to be close to the poverty line.

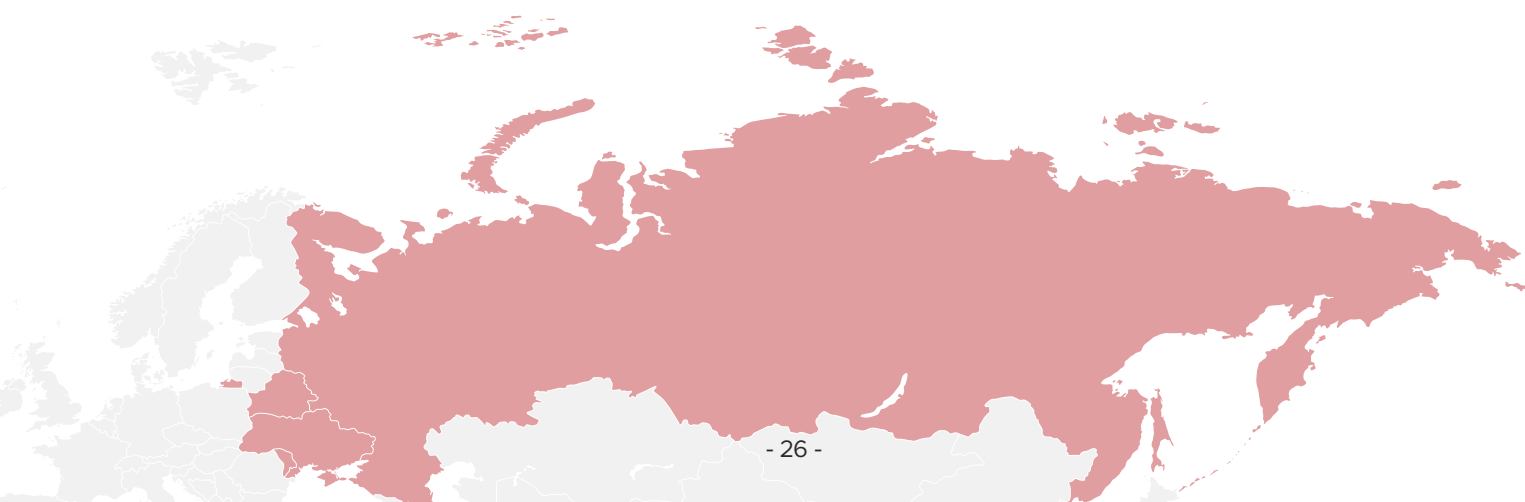
The majority (90%) of the relocations projects in Eastern Europe take place in Russia. Sectors like Pulp & Paper, Chemical, and Power are relocating to this region to modernize their old production facilities.

Main outgoing relocation destinations:

Asia || Africa

Main sources of incoming relocation projects:

Western Europe & Central Europe || USA



Relocation of a cement loading terminal from Iceland to Russia



Location: Iceland-Russia
(approx. 4,300 km)

Execution time: 14 weeks

The number of ships chartered: 1

The project covered the relocation of a cement loading terminal from Reyðarfjörður to Kaliningrad within the structures of one company. It included the dismantling of four silos with accompanying equipment. The silos were placed on four legs (15 m high) and each tank was about 25 m high and weighed 80 tons. The project was carried out in short series in order to maximize timing. It was initially planned for 20 weeks, but thanks to excellent work organization, experienced staff and good cooperation with the host, it was shortened by 4 weeks – disassembly lasted 6 weeks and reassembly another 8 weeks.

Due to the earlier completion of the disassembly and transport, a problem occurred in the port of Kaliningrad



– resulting from bad weather conditions, the ship could not enter the port and had to wait for the permission to enter for more than a week. Moreover, for the first time, the company used a floating crane with a lifting capacity of 150 tons to unload cargo. The crane was borrowed from the army.



During the project in Iceland, rapidly changing weather conditions were very challenging (the project started in February). The strong wind often made it difficult to work at heights, so the work had to be interrupted. In moments like these, the attitude of employees and the team spirit were also essential – despite unfavorable circumstances and unforeseen downtime, the team tried to look for positive sides and was able to properly organize their free time, e.g. sightseeing.

- Robert Obraniak, Project Manager, Pol-Inowex

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

Loading the disassembled parts was a significant challenge – there was no suitable crane in Iceland, so we used two imported cranes (tandem lifting). It was also a major problem to find a suitable ship that could transport such a large load. Eventually, the ship was brought in from Africa and the horizontal loading was abandoned in favor of vertical loading. Such placement of the silo, however, significantly reduced the visibility of the ship's captain – therefore, any maneuvering had to be done with great caution.



WESTERN ASIA

GDP 2007	\$ 2 365 280 591 813
GDP 2017	\$ 3 527 809 102 703
GDP Change (2007-2017)	49,15%
FDI Inflows (2007-2017 Average)	\$ 3 861 033 305
FDI Inflows (Total)	\$ 65 637 566 188
FDI Outflows (2007-2017 Average)	\$ 2 884 967 048
FDI Outflows (Total)	\$ 49 044 439 823
Industry as a % of GDP	35,86

The region of Western Asia is the second biggest economy in Asia, mainly due to the performance of Turkey and Saudi Arabia. Turkey's social and economic development achievements in the past 18 years has been remarkable. The economic progress lead to an increase in employment rate and income which allowed Turkey to become an upper-middle-income country.

The economic growth of Turkey in 2018 experienced a decrease to 2,7%. Over the last year, the economy encountered intense market volatility. At the end of 2018 the inflation rate increased and reached over 20%. The turbulent market tripled the policy interest rates to 24%.

It is expected that the economic growth in 2019 is going to fall to 1% although it will recover in 2020 by reaching an estimated 3% growth rate in 2021. The forecast shows that the inflation rate might fall to 10% at the end of 2019 but the overall fiscal deficit is going to increase in 2019.

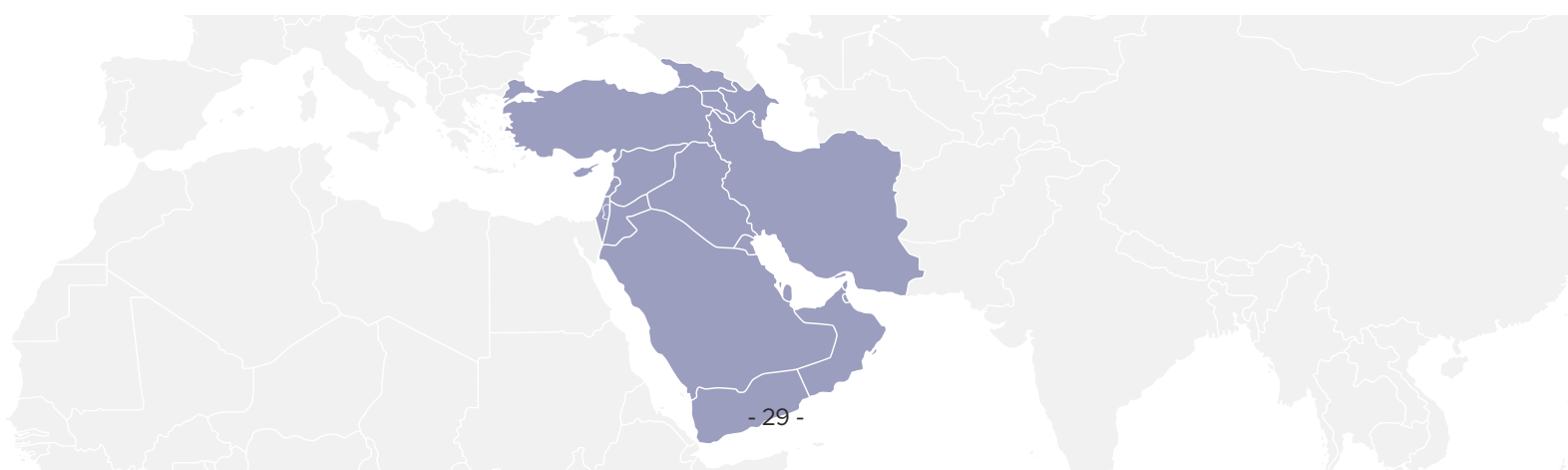
The main reason for industrial facilities being relocated to Western Asia is significantly lower energy price. For entities like metal smelters, the price of energy constitutes a major part of total production costs. Saudi Arabia, on the other hand, is the place which welcomes crude oil processing companies the most, owing to the country's industrial focus.

Main outgoing relocation destinations:

Southeastern Asia || Africa

Main sources of incoming relocation projects:

Western Europe || USA



Relocation of a power plant from Austria to Turkey



Location: Voitsberg Austria
– Canakale Turkey
(approx. 1,600 km)

Execution time: 16 months

Number of trucks: 694

Weight of dismantled devices:
12,000 t

Heaviest element: 270 t

The Voitsberg project consisted of dismantling and relocation of a coal power plant with a capacity of 320 MW, which was sold due to the reduction in demand for electricity after the crisis in 2008. It was one of the largest dismantling projects in Europe carried out in 2014. The scale of the project is impressive – the boiler house itself was over 100 meters high, which is over 1/3 height of the Eiffel Tower. The project was long and demanding – the contract was

signed in Q2 2014, the factory has been shut down in Q2/ Q3 2015 (over a year of formalities) and then the relocation process lasted over 16 months. The operation of the plant was resumed in June 2018. The relocation process included dismantling, transportation and re-assembly of highly specialized, advanced equipment such as steam boilers, steam turbine generators, a flue gas desulfurization unit and various kinds of electrostatic filters.





In case of the Voitsberg power plant relocation project, activities related to the preparation of documentation that allowed for the re-assembly of the plant were extremely important. It was the well-prepared documentation that played a crucial role in the delivery of the entire project.

- Michael Pichler, Dipl. Ing., Voitsberg relocation project supervisor on the seller's side

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

In case of this project, the client did not delegate any of his employees to observe and document the dismantling process. It was a big obstacle, because the internal support of the client's staff is invaluable, especially during the re-assembly process, when the contractor directly decides where the machines will stand and what the grounds for placing them that way are. Such responsibility shouldn't lay only on the contractor, as they are not the ones who are going to use the infrastructure later on. The client's employees are also helpful at the dismantling stage itself – they often have detailed knowledge about specialized equipment which allows to prepare simple documentation. In such a situation, the assembly process will no longer be a major challenge.

Furthermore, at the last stage of the works, it was necessary to dismantle the elevator – which meant that the time needed to climb to the very top of the plant took over 20 minutes!

SOUTHERN ASIA

GDP 2007	\$ 1 504 221 252 607
GDP 2017	\$ 3 344 576 020 008
GDP Change (2007-2017)	122,35%
FDI Inflows (2007-2017 Average)	\$ 5 882 243 170
FDI Inflows (Total)	\$ 47 057 945 358
FDI Outflows (2007-2017 Average)	\$ 2 272 119 336
FDI Outflows (Total)	\$ 11 360 596 680
Industry as a % of GDP	23,56

The region of South Asia is the world's fastest-growing region. The growth rate is expected to increase to 7% in 2019 and 7,1% in both 2020 and 2021. However, the export figures need to be increased in order to keep such a high growth rate. The growth rates of GDP for Afghanistan, India, and Sri Lanka are projected to slightly increase, whereas in Bhutan, Bangladesh, Maldives, Pakistan and Nepal the growth rates are expected to be moderate. The economy of India, which is the best performing country in this region, experienced a robust

average growth rate of 7.3% in 2018. It is forecasted that by the end of 2019 the economy of India will possibly become the fifth-largest economy in the world.

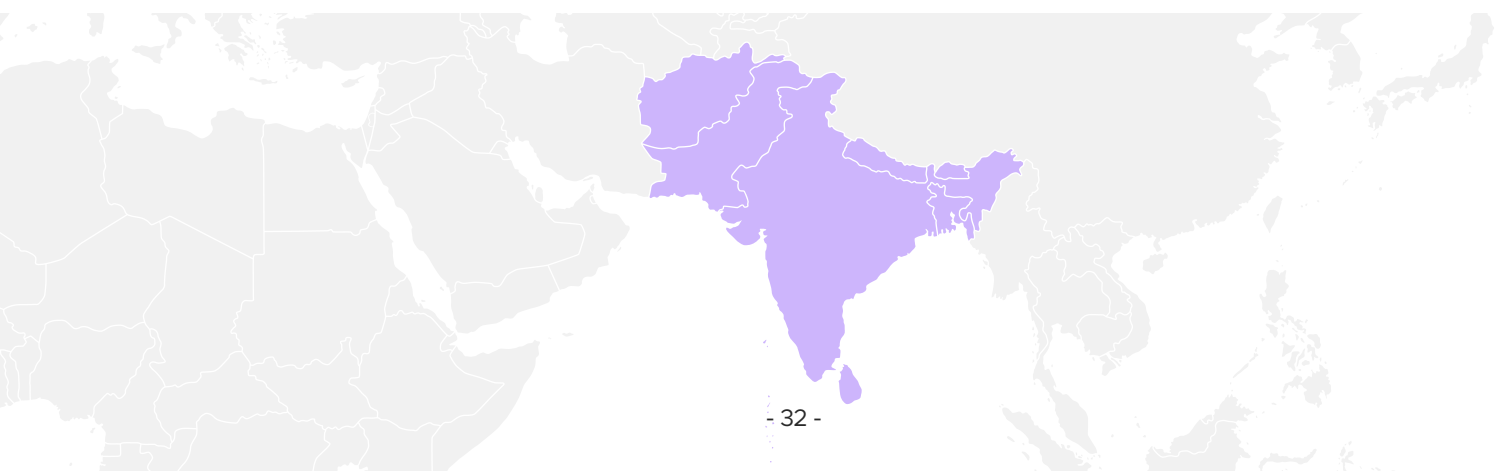
India is the undisputed leader in this region, but Pakistan and Bangladesh are also countries with more than 100 million inhabitants. Therefore, these are countries with a very large number of potential customers. As the region is not yet so prosperous, it is a place where relatively many different types of industrial plants are relocated.

Main outgoing relocation destinations:

Southeastern Asia || Africa

Main sources of incoming relocation projects:

Western Europe || USA || Japan



Relocation of a viscose fibre plant from Germany to India



Location: Germany-India
(approx. 7,800 km)

Execution time: 30 months

Number of containers: 300

Number of parts: 52,000

The relocation project, carried out within 13 months, involved the transfer of a textile plant from Elsterberg, Germany to India. Supervision over all works has been conducted by qualified engineers from Sharma Fabricators and Erectors Ltd. The whole process of relocation started with match marking and 3D scanning, which significantly facilitated understanding on how the whole textile plant is installed and integrated. Due to the complexity of the project and tight deadline, the whole plant has been divided into sections and each of them was assigned to a different project team. After dismantling all of the sections, each of them was sent separately to

India. The whole dismantling process lasted for three months and subsequent assembly in India was carried out within the next 11 months. After all the works had been conducted, a newly assembled plant in India needed only 2 months for calibration to start its operations. The project involved a total of 60 people during dismantling stage and 275 people at reassembly stage. The characteristics of human resources in this project display an important regularity in the process of relocation of large factories – assembly stage usually requires at least four times more work than dismantling stage, and that rule applies to the 90% of all the relocation projects.



We carried out 6 dismantling projects together with Pol-Inowex. As a company, we had no previous experience in the textile industry, but we managed to complete the project and acquire new skills. Overall, this relocation project was challenging mainly due to the very limited time that could be devoted to the dismantling stage and tight deadline for a whole relocation process.

Fortunately thanks to a thorough preparation stage and hands-on experience of our partners, we managed to carry out the project according to the schedule, without any major problems.

- Vinod Sharma, Managing Director, Sharma Fabricators and Erectors Ltd.

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

The biggest challenge was to dismantle very fragile textile-manufacturing machinery which required delicate handling and carriage. However, it wasn't the only problem related to the project – the re-assembly of transported equipment was intended to take place in newly built factory buildings, which not only had to be constructed from scratch by the local construction company, but also designed in a way that would support the efficiency of the whole installation. These potential problems, among others, affected the preparations stage before the project kick-off lasted for over 8 months.

SOUTHEAST ASIA

GDP 2007	\$ 1 343 636 215 099
GDP 2017	\$ 2 767 878 591 256
GDP Change (2007-2017)	106,00%
FDI Inflows (2007-2017 Average)	\$ 12 396 323 603
FDI Inflows (Total)	\$ 136 359 559 638
FDI Outflows (2007-2017 Average)	\$ 6 134 647 853
FDI Outflows (Total)	\$ 55 211 830 674
Industry as a % of GDP	32,55

South-Eastern Asia is the smallest economically region in Asia – it is only responsible for 10% of Asian GDP. The growth rate is forecasted to increase to 5,2% in 2019-2023, which is much higher compared to growth during 2012-2016. Even though the economies of Vietnam or the Philippines continue being outperformers in this region, the overall growth is going to be negatively impacted due to the precarious relationship with China caused by structural and tariffs changes. The economy of Vietnam continues demonstrating its significant strength by strong domestic demand and export-oriented manufacturing. It can boast with the achievement of declining the extreme poverty rate below 3%. The GDP growth in 2018 increased

to 7,1%, following 6,8% growth during the year 2017. It is expected that Vietnam's economy is going to stabilize in 2019 due to credit tightening, slower private consumption and weaker external demand. The growth rate is forecasted to stay around 6,5%.

The Southeast Asia region is similar to the West Asia region from a few years ago, when all industrial plants used to be moved to China. Nowadays, plants from Europe, U.S, as well as Japan, Korea and China are being relocated to this region because of the availability and very low labor costs. This region is developing dynamically.

Sources of incoming relocation projects:

Europe || Northern America || Eastern Asia || Australia || Japan





Relocation of a pulp mill factory from Norway to Vietnam



Location: Norway–Vietnam
(approx. 8,100 km)

Execution time: 12 months

Number of containers: 1,240

Weight of dismantled devices:
35,000 t

Number of ships chartered:
5 sea-going ships

As part of the project, a cellulose factory was relocated – a production plant that transforms woodchips into cellulose pulp later used for the production of fine paper. The entire relocation process took approx. 17 months. The dismantling and re-assembly process included, among others, relocation of a whole cellulose processing line, a huge regenerative boiler, production lines for drying

cellulose pulp and water evaporation. The biggest challenge of the project was the coordination of work related to shipping, crane works and delivery of raw materials, due to the fact that Norway is not in the European Union and every stage of works required numerous permits and certifications.





For over 18 years of work at Pol-Inowex, I have completed over 35 projects that I can define as mine. I have also participated in over 50 projects where I was delegated to perform various tasks as a supporting party (e.g. calculations or operations management). There are no two identical or even similar dismantling projects. Even the dismantling process of the same type of machinery in a company from the same industry, but in a different location, will automatically become a completely different experience (e.g. various technologies used owing to the climate specifics). Every project, no matter how similar to another, will entail specific conditions and needs that must be addressed in a very special and personalized way. Thus, in this industry there are no repeatable projects that can be easily copied – each case is unique in its own way. The location of the project itself often causes a lot of complications – there are situations where one screw of a given type is needed and the nearest hardware store is 2 hours away. At times like this, you simply have to wait and waste precious time. There are also various types of investors – some tend to prioritize machinery shipping, while others will look for savings everywhere and materials will be transported in the most economical way, usually much slower. Local residents also approach our work with various mindsets. In some regions, even in western Europe, a potentially peaceful, small village, where the relocated factory provides jobs for majority of the local population, our working site suddenly may become somehow a hostile environment, due to the perception of relocation, as taking away the local population's jobs. In such cases, hiring additional security is a must in order to keep the staff working on relocation project safe and avoid delays. Local people change their attitude towards us only when the previous owner of a plant declared to build another hi-tech facility at the same spot.



- Michał Makowski, Project Manager, Pol-Inowex

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

Size of the shipments was a big challenge – 1,400 sea containers were sent, on average 18 tonnes of equipment in each one of them. In order to illustrate the seriousness of such undertaking: if they were to be loaded onto trucks and put one behind the other, they would create an uninterrupted 23km long line of vehicles. During the work at Tofte in Norway, the same type of cranes as we used had a serious accident in Mecca in Saudi Arabia (on a different project of a different contractor). Therefore, the work had to be stopped for a few days to check its technical condition. Relocation projects are often carried out in many different countries and due to this fact, it is really important to respect local customs and traditions. Many long-term projects take place during holiday seasons and those are the crucial moments to pay respect to local habits and culture. A good example can be the project which took place during Christmas time and for that special moment an 80-meter crane was decorated with a big Christmas tree, which was an important symbol for the local community.

EASTERN ASIA

GDP 2007	\$ 9 424 298 833 376
GDP 2017	\$ 19 044 110 684 261
GDP Change (2007-2017)	102,07%
FDI Inflows (2007-2017 Average)	\$ 54 394 611 883
FDI Inflows (Total)	\$ 326 367 671 300
FDI Outflows (2007-2017 Average)	\$ 67 301 354 027
FDI Outflows (Total)	\$ 403 808 124 164
Industry as a % of GDP	20,30

The region of Eastern Asia is the biggest region on the Asian continent by the economy. Eastern Asia's GDP is responsible for 66% of Asia's GDP. The biggest performer in this region is the People's Republic of China which is the second biggest economy in the world, with the nominal GDP of \$12,01 trillion. China's economy managed to double in size over the last 10 years. It is expected that China's economy, despite sizeable challenges such as unfinished deleveraging campaign and trade tensions, will achieve an average growth of 5,9% in 2019-2023. The growth rate significantly slowed down since 2012 when the growth

rate was on average 7,3%. Government and investment expenses are likely to offset a considerable amount of deficiency in the trade sector.

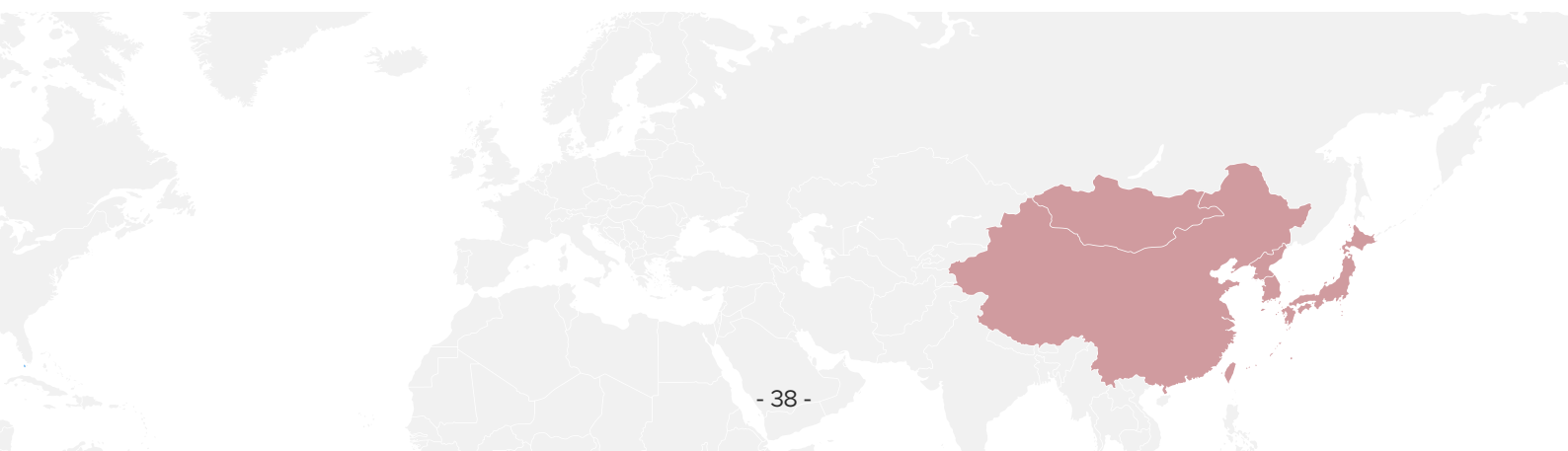
The region of East Asia is a region from which industrial plants are being removed because of the same reason that factories leave Central Europe, which is lack of cheap labour. A large number of industrial plants relocate to the cheaper region of South-Eastern Asia, mainly to Vietnam, Laos, Cambodia, Burma and even Bangladesh.

Main outgoing relocation destinations:

Southeastern Asia || Africa || Europe

Main sources of incoming relocation projects:

Western Europe & Central Europe || Southern America



Relocation of a paper manufacturing machine from England to China



Location: England-China
(approx. 10,650 km)

Execution time: 10 months

Number of parts: 15,000

Number of containers: 330

The project covered the disassembly and relocation of a paper manufacturing machine used for the production of newspapers' paper. The machine was relocated from England (South London) to China. The main contractor for the work was Valmet, who is a paper machine manufacturer, and Pol-Inowex was its subcontractor.

The main reason why the British company decided to sell its equipment was the change in market trends – fewer and fewer people in Europe read traditional newspapers, therefore the demand for such paper is declining. The situation in China varies as the country is in a slightly different development phase and the demand for the newspapers is stable.

The project lasted 20 weeks in total. About 90 employees participated in the project – 50 from Pol-Inowex and about



40 employees from other companies. Additionally, several employees from Valmet supervised the work. Furthermore, the project was also attended by a few representatives from the Chinese company, which bought the machine. These were highly qualified specialists, who carefully supervised the course of the project and constantly raised their comments or objections.



Discipline is quite a challenge when managing such a large project. It's important to make sure that, at all times, all employees working on the project are able to perform at the same level of quality throughout the project.

It is also essential to take care of the employees' work comfort by providing them with appropriate tools and taking care of their other needs.

- Bill Woodburn, Sales Manager, Valmet

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

The main challenge in this type of projects is accurate planning. Working with a Chinese company is very specific - the capital is strictly controlled there, thus the change in the budget and the re-estimation of a work scope can be quite problematic. Sometimes it turns out that something needs to be done additionally and as a result, the costs of work are rising. A Chinese company must obtain permission from the government to purchase foreign aftermarket equipment for a certain amount of money. Therefore it is not possible to change this amount in the course of the project. In China, there are very strict regulations regarding the purchase of second-hand equipment, which is why it must be checked by government representatives before it can be purchased. The purchased equipment must be as up-to-date as possible and in excellent technical condition.

NORTHERN AND WESTERN AFRICA

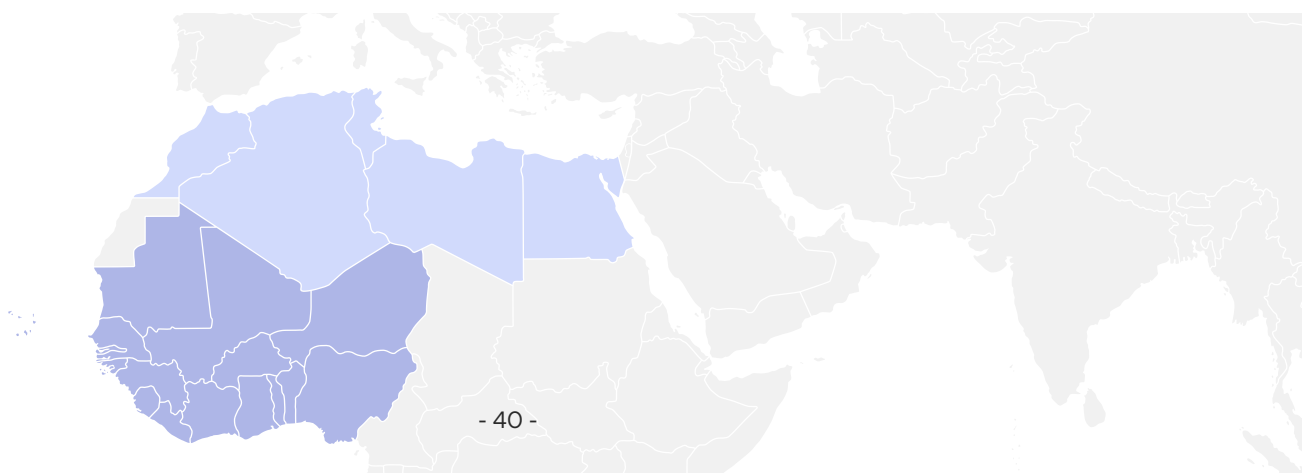
GDP 2007	\$ 829 951 705 801
GDP 2017	\$ 1 160 806 849 059
GDP Change (2007-2017)	39,86%
FDI Inflows (2007-2017 Average)	\$ 9 223 171 893
FDI Inflows (Total)	\$ 23 562 880 986
FDI Outflows (2007-2017 Average)	\$ 164 172 874
FDI Outflows (Total)	\$ 3 283 457 481
Industry as a % of GDP	20,54

According to the African Development Bank, the African economic performance continues to improve. The GDP in 2018 has reached the same ratio as in 2017 – approximately 3,5%. It is expected the GDP's growth is going to reach 4% in 2019 and 4,1% in 2020. While having the highest growth rate among all emerging and developing countries, Africa still faces issues with current and fiscal deficits as well as debt vulnerabilities. The GDP of Egypt, the biggest economy of Africa, grew by 5,3% in 2018, compared to an average 4.3% in past three years. The increase in the GDP growth rate has

been caused mainly by public investments, private consumption and exports of goods and services. The region of Northern Africa & Western Africa is a place of big opportunities with very rapid population growth. The increase in population has a positive impact on the demand for commodities, which could be produced locally, instead of being imported. However, due to political instability and energy uncertainty, or even the lack of qualified workers in factories, there are relatively few of these projects. For several years, Africa has been waiting for a breakthrough in the relocation of factories in this country. Unfortunately, this has not happened yet.

Sources of incoming relocation projects:

Western Europe (France) & Central Europe || USA || Asia



Chemical industry relocation project from Czechia to Egypt

The project involved dismantling and relocating a production line of urea from natural gas from the Czech Republic to Alexandria. The project lasted six months, with an average of 25 employees working on the site. The dismantled large elements of the structure were transported by barges to the nearby port from Litvinov to Dresden, and then to two ports, Rotterdam and Hamburg, from where they sailed by ship to Alexandria.

Safety considerations played an important role in this project. Two years earlier, a fire broke out in the factory and the companies suffered several hundred million euros in losses. Therefore, the workers had to comply with very strict health and safety rules and undergo specialist training. Moreover, employees also had to use electrostatic clothes (which are 4 times more expensive than standard working clothes) so that no electrostatic charge could jump over.



Location: Litvinov–Alexandria (approx. 4,650 km)

Execution time: 6 months

Number of containers: 80 containers, 4 of them oversized

Weight of dismantled devices: 1,300 t



I have successfully completed over 100 projects in the relocation industry. Over the last few years, we have seen a great influence of new technologies on the implementation of such projects.



Moreover, in the past, disassembly of a simple press took even 3 days, but the next such project could be done in 2 days - due to the experience gained, the work could be done much more efficiently. Also, it is always a big challenge to work with cranes, especially their proper setting, as well as transportation of cargo.

- Karol Kunc, Project Manager, Pol-Inowex

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

One of the biggest challenges in this project was the correct positioning of the cranes to lift the heaviest elements—especially the main reactor, which weighed 82t. Due to the limited space available in the vicinity of the plant, there was a risk that the positioning of the crane would affect the underground pipes, as there would be too much pressure. However, the right place was finally found and the dismantling was carried out without any major obstacles. Another issue was transport - the main reactor was about 30 m long and was placed horizontally on an oversized truck. The problem during transport were mainly bends - due to the fact that the reactor was very long, there was a risk of catching on to something and damaging the reactor.

Relocation of a power plant from Italy to Ghana



Location: Italy–Ghana (6,600 km)

Execution time: 4+15 months

Number of containers: 300,
36 of them oversized

Lifting capacity: in Italy – 800 t
in Ghana – 500 t

Heaviest element: 180 t

The project involved the relocation of two separate 50 megawatt power plants from various locations in Italy to Ghana. The whole undertaking was an ambitious project, as within the works conducted, two separate power plants had to be reassembled, integrated and calibrated as one, comprehensive power plant. The transport was divided into two stages. The first stage included transportation by road, while the second covered freight transport. The biggest challenge appeared in

Ghana due to insufficient road infrastructure, especially for oversize transport. Moreover, Ghana is a relatively dangerous country, especially during the night and thus it was crucial to not only secure the safety of the equipment, but first and foremost, of the staff. For this reason, over 30 local employees were employed who knew the specifics of the local region, without whom such an effective implementation of a project could hardly be possible.





The project was delayed due to the problems with construction of a new power plant's building in Ghana, constructed by a local construction company. Moreover, it was impossible to unload heavy elements (most of them weighted over 100 tons) directly to a new building without the storage on the way. Such a storage, needed for overweighed parts, caused additional costs, but was obligatory, because such elements can only be discharged on a stable, robust surface. This case shows how important the timely work on the client's side is. Building a new facility on time would allow the implementation of the classical Foundation to Foundation formula, which would speed up the execution time and reduce project costs.



- Vinod Sharma, Managing Director, Sharma Fabricators and Erectors Ltd.

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

The assembly process of 180 t boilers was possible only with the use of a heavy-lifting capacity crane, however, in Ghana there was only one such device. Thankfully, it was possible to transport it and make an extensive use of its capabilities. It was also the only crane that could be used due to limited space (no possibility to use multiple cranes at once). An additional difficulty was caused by the fact that it is not an easy job to buy lacking materials time-effectively in most African countries, such as cables or structural steel. Therefore, in a situation where one of the materials' stock was out (which is normal during the relocation process, as it is very hard to accurately plan the usage of single-use materials), it turned out necessary to order them from India.

NORTHERN AMERICA

GDP 2007	\$ 16 995 308 472 485
GDP 2017	\$ 22 283 401 998 853
GDP Change (2007-2017)	31,12%
FDI Inflows (2007-2017 Average)	\$ 138 160 162 319
FDI Inflows (Total)	\$ 414 480 486 956
FDI Outflows (2007-2017 Average)	\$ 154 601 641 177
FDI Outflows (Total)	\$ 463 804 923 532
Industry as a % of GDP	10,01

North America is one of the biggest economies in the world. The United States has the highest GDP among all countries and is responsible for 24,5% of world's GDP (nominal). The economy of the United States is in a perfect shape – it's a Goldilocks economy (sustains moderate economic growth and records low inflation rates allowing for market-friendly monetary policy). Economy of the United States has a growth rate of 2%-3%, as measured by GDP growth. The economy records also a slight increase in prices, which is measured by the core inflation rate. The target inflation rate was set at 2% by the Federal Reserve System.

United States has also the highest Foreign Direct Investment inflow in the world. In 2017 U.S. received USD 275,4 billion. By comparison, Canada received only USD 24,2 billion, and Mexico USD 29,7 billion. The high inflows of FDI's is directly responsible for around 12 million U.S. jobs. It is expected that in 2019 the U.S. GDP growth might slow down to 2,1% and in 2021 it will reach the level of 1,8%. Trade war, which is a key component of current economic policies, have a negative impact on the US

economy. The unemployment rate is going to increase over the next years, it is expected that in 2021 it will reach 3.9%, which is still lower than the Federal Reserve's target of 6,7%.

The relocation industry in North America shows resemblance to the region of Western Europe due to very similar economic conditions. The only difference between those two regions is the attitude towards the protection of the environment. The U.S. withdrew from the Paris Agreement concerning greenhouse-gas-emissions mitigation, adaptation and finance. Nonetheless, high consumer awareness is negatively impacting the demand for coal energy, even though that U.S. has the perfect conditions for such power plants fueled with coal.

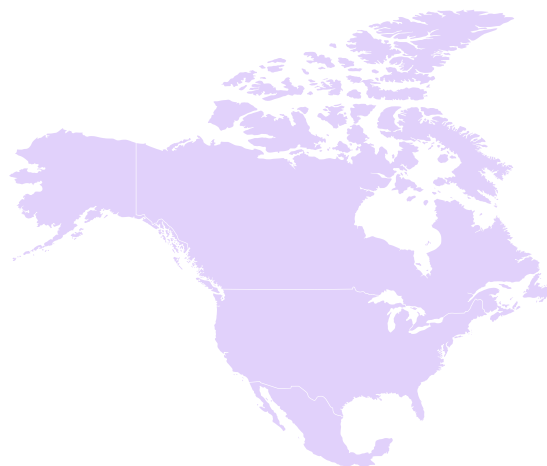
The decrease of energy costs in the U.S. is attracting energy-consuming industrial factories from Europe and other parts of the world. For instance, methanol factory from Chile was relocated to the U.S. due to the cheap gas energy, which is responsible for 50% of production costs.

Main outgoing relocation destinations:

Asia || Southeastern America
Europe || Africa

Sources of incoming relocation projects:

Western Europe & Central Europe



Dismantling, transport and re-assembly supervision project from France to the USA



Location: France–USA

Execution time: 18 months

Weight of dismantled devices: 3,000t

Number of ships chartered: 2

The aim of the project was to dismantle, transport and supervise the re-assembly of a chemical manufacturing plant from France to the United States.

Due to uncommon nature of the installation being dismantled, the whole plant needed to be transported in pieces as large as possible. The machinery was transported by land, sea and rivers. The target location for a plant was in Louisiana, which created convenient

transport opportunities – Mississippi river in the Gulf of Mexico region is so large and deep that regular sea ships can deliver transport far away into the land.

Originally, Pol-Inowex was hired to deliver only a small part of the project, however, the client was very satisfied with the services rendered that the scope has been extended.

For cleaning the residues which are potentially harmful for people, we do not only use anti-dust masks, but we often utilize water curtains to minimize the risk of dust dissemination. Moreover, owing to the severe noise caused by certain cleaning techniques, to make this process more comfortable for the nearby workers or the habitants, we also build special walls, which isolate the surroundings from the noise.



We value the health and safety of our workers and all people living and working near our construction sites and we understand that such labor and machine-intensive works are disturbing – that is why we try to make the whole process interfere with their lives as little as possible, and honestly, we are quite good at it.

- Robert Obraniak, Project Manager, Pol-Inowex

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

Cleaning with dry-ice is very frequently chosen technique for cleaning used machinery. In case of the relocation project from France to the USA, it has, however, been a totally different case. The manufacturing line has been covered with extremely thick layer of postproduction residue, which could not only affect the re-assembly process, but in the US it is forbidden by law to import machinery with post-production residue. Plenty of cleaning techniques has been used to prepare the assets for transportation and re-assembly, including water cleaning, dry-ice cleaning and sanding. The cleaning process was so demanding that it took nearly 30% of the whole dismantling time duration, while usually it takes up to 5-7% of dismantling time.

Another issue was caused by the weather conditions – owing to flooding, the re-assembly works needed to be rescheduled, but such random factors are impossible to oversee and counteract.

SOUTHERN AMERICA

GDP 2007	\$ 2 506 534 030 027
GDP 2017	\$ 3 882 034 777 989
GDP Change (2007-2017)	54,88%
FDI Inflows (2007-2017 Average)	\$ 9 223 171 893
FDI Inflows (Total)	\$ 110 678 062 716
FDI Outflows (2007-2017 Average)	\$ 1 591 367 660
FDI Outflows (Total)	\$ 19 096 411 918
Industry as a % of GDP	23,54

The region of Southern America is significantly smaller economically in comparison to Northern America. However, the GDP of Southern America almost doubled (54,88%) since 2007 compared to North America, which increased only by 31,12%. Brazil is the No. 1 performer in this region, being responsible for more than half (53%) of South America's GDP. It is expected that the economy of Brazil is going to increase by 2,1% in 2019 and 2,5% in 2020.

The forecast cultivates hope for Brazil's early economic recovery, since the growth rate is steadily increasing. Additionally, it is projected that low inflation, moderate wage growth, and decreasing unemployment rates are

going to strengthen the private consumption sector. This would impact positively the number of foreign investments inflowing to the country.

Southern America is similar to the region of Eastern Europe in terms of political, economic, and legal instability. Potentially, this region could be a significant market for relocation projects. Unfortunately, investors are looking for places which are stable and guarantee long-term operations, which the region of Southern America doesn't provide. Additionally, only the eastern coast of this region is suitable for relocation projects due to the Andes located on the western coast.

Main outgoing relocation destinations:

Southern America



Main sources of incoming relocation projects:

USA || Western Europe & Central Europe



Relocation of a biomass power plant from Italy to Uruguay



Location: Italy–Uruguay
(approx. 11,000 km)

Execution time: Italy – 3 months
Uruguay – 18 months

Number of containers: 175

Number of ships chartered: 2

The project covered the transfer of a biomass-fueled power plant bought by a Uruguayan company in Italy. Pol-Inowex was responsible for disassembly and relocation, and Sharma Fabricators and Erectors dealt with the reassembly on site. The project lasted for more than two years in total.

Dismantling took around 5 months, and the assembly lasted for almost 2 years. Initially, the reassembly was estimated at 12 months, but due to the delay on the part of the client (the need to build a new factory), it was significantly delayed. About 65 people worked on the project.



Companies decide to buy used equipment mainly to save money. Buying a used machine involves much lower investment expenditures. However, very often those kinds of companies don't know which partner to pick for the relocation project and how to assess them. They need to know what company they should choose and why. Therefore, customer education is so important. The relocation industry has changed a lot over the past 10-15 years. There is a big difference between disassembly for relocation purposes and reassembly and its disposal. In the past, companies did not distinguish between these two processes and the situation began to change when professional full-relocation companies appeared on the market.



- Saurabh Dubey, Sharma Fabricators and Erectors Ltd.

PROBLEMS ENCOUNTERED AND HOW THEY WERE SOLVED

The challenge was to dismantle all parts properly, perform accurate match-markings and prepare appropriate documentation to have no problems with the complicated re-assembly process. An important part of the process was also the process of packing and delivering all items in a flawless state by sea.

A novelty in this project was the laws in the new country where we worked. Quite a big problem was the lack of availability of specific parts and tools that we had to import from Europe or India. However, cooperation with the client, despite cultural differences and minor language problems, proceeded without major disruptions.



Trends

“ EVOLUTION IN LOGISTIC CHAINS – VALUE NETWORKS

The future of relocation will focus on the efficient use of tools and platforms. Traditional logistics chains are no longer relevant and have been replaced by value networks. They rely on the pattern in which at first you create an ad hoc company, then delegate employees to the project, and finally use a network of contacts and the Internet to form a virtual company and choose the right colleagues and partners. The management of such a team takes place on the spot, and after the completion of the project, the structure is created, but the relations remain. Conducting and obtaining new orders is based on the core of known contacts and relationships, and the selection of several new associates.

Professor Zbigniew Pastuszek Ph.D.

Dean of the Faculty of Economics
of the Maria Curie-Skłodowska University in Lublin



“ INNOVATIONS IN LOGISTICS PROCESSES – DISSEMINATED TRANSPORT NETWORK

An interesting and for many a bold logistics solution in relocation processes may be the so-called “disseminated transport network”, meaning focusing on local carriers who know their region perfectly and move around it with ease. A driver who relatively rarely drives in a given region doesn’t have the adequate knowledge and experience. So how does “disseminated transport network” work? The driver drives only on the route from point A to point B where the next driver takes over the load. The driver who left the load at point B takes the next one and returns to point A. Such a system allows to precisely calculate the costs and profitability of each route section. This system requires good planning and coordination of the entire process, but it gives incomparably better results and translates into an increase in transport profitability (compared to the traditional model). The “disseminated transport network” is an example of a transportation solution, which will become popular as a great way to mitigate the effects of unforeseen events and the way to reduce the risk in international transport.

Tomasz Sączek

Vice-Director at PwC,
Logistics and Transportation



Prosperous directions for relocation projects

“ CEE COUNTRIES AS NEW INVESTMENT DIRECTIONS

The opening and development of the Central and Eastern European region undoubtedly contributed to the increase in attractiveness of this area in investors' eyes. This region is not only perceived as much more stable than 20-30 years ago, but it is also much better communicated by road and air with the rest of Europe. The potential in available workforce was recognized as well. One of the main reasons behind “relocations” for companies are lower labor costs compared to developed countries, but for a long time these have no longer been the only reasons for choosing CEE countries. Investors decide to undertake such measures also (and sometimes above all) due to the greater availability of employees, well-known for expertise in production, knowledge of foreign languages and engineering. Moreover, the countries of this part of Europe are less and less distanced from Western Europe in terms of road infrastructure, thanks to which a slightly greater distance from the new location to suppliers or customers is not a source of problems. Much greater accessibility of investment areas than in most of Europe plays a crucial role as well. Those areas at the same time offer much better conditions for development and significantly lower prices.

Rafał Pulsakowski

Director at PwC,
Inward Investments



“ A SECURITY ISSUE IN DEVELOPING COUNTRIES

In the relocation industry, one can notice certain trends that have been taking shape over the past few years. More and more traffic can be observed in developing countries, in regions of North and West Africa, India, Pakistan, Bangladesh or Southeast Asia (Vietnam, Laos, Cambodia and Myanmar). These are interesting directions, however, they can be really challenging in terms of logistics, primarily due to the lack of infrastructure and an increased level of danger, including, for example, hijackers, or rebels who can take over trucks along with the transported cargo. On the other hand, lack of infrastructure can also make the transportation easier, as no buildings, street lights or road signs interfere with projects works.

Jürgen Weyhausen

Project Director,
Alexander Global Logistics GmbH



“ AFRICA AMONG THE KEY DESTINATIONS OF RELOCATION PROJECTS

In the coming years, Africa will most definitely gain in popularity, mainly in the energy and steel industries. Balkans will become more important as well, due to their recent openness to European Union and readiness to absorb new technologies. Highly developed countries will invest more in new machinery than they used to. However, time can play a big role – it can take several years to manufacture new devices, while on the other hand you can acquire second-hand devices in fair condition within a year or two.

Michał Makowski

Project Manager,
Pol-Inowex



“ INEXPERIENCED PLAYERS OPERATING IN THE RELOCATION INDUSTRY

From the on-going observations of the market over the last years, two rather negative trends have become visible and distinct. The first one is the position loss of reputable companies for the sake of popularization of “accidental” traders, who usually sell low quality machines, trying to fake the impression of experience and professionalism. Unfortunately, as a result of operations of such entities, investors are later convinced that used factories are expensive and undesirable investments. The second observation concerns the lack of professionalism among some companies dealing with dismantling and relocation. Many companies, owing to the fact that the market for this type of services is growing, try to beat the competition by offering inadequate prices and trying to execute projects for these prices, bypassing a significant number of services that should be included in the contract. Other entities offer their services at market prices without any experience, resulting in poor quality of work and a significant increase in unplanned costs at the re-assembly stage. As a consequence, customers buying a factory dismantled by non-professionals encounter severe problems with its re-assembly.

Experienced companies always dismantle in such a way that the production plant can later be assembled again. The project is not about dismantling per se, but to dismantle in a way that allows the re-assembly of the plant. If dismantling is cheap and executed unprofessionally, the costs of re-assembly can be up to twice or three times higher, which is particularly important in the context of the fact that re-assembly is the main factor determining the price of relocation services. Approximately 30% of a relocation project's value is constituted by dismantling, while the re-assembly stage accounts for 70% of its value. In recent years, a growing number of “accidental” relocation is observed – as Pol-Inowex, we want to educate our customers and therefore reduce unfair competition, however, we assume that the market itself will verify dishonest players. The clients often have very high requirements and unfortunately, even more often, they have neither experience nor knowledge about the relocation industry, as usually a given project is simply the first of its kind for them.

Therefore, it is worth delegating the entire relocation process to professionals. Companies specializing in relocation and dismantling services will certainly not only choose the optimal tools and processes for their operations, but they will also be able to suggest certain solutions affecting the optimization of the entire process as well. In Europe, Asia and in the USA, there are several experienced and reliable companies that have the knowhow necessary to approach the dismantling process or relocation services in a comprehensive and thorough way, ensuring their clients' satisfaction.

Bartosz Świderek

Co-owner and Vice President,
Pol-Inowex





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