



Organisation Development and Behaviour

ORGANISATIONAL DESIGN IN ACTION BDF DIGITAL: FROM ITALY TO THE US

A work by:

Ciss Cheikh Tidiane 2097343
Ceccato Silvia 2089212
Loiotila Claudio 2096039
Toffolo Maria Vittoria 2091179
Abdeldaiem Sarah



Section 1	3
1.1 Business issue	3
Section 2	4
2.1 Market expansion and entry modes	4
2.2 Addressing Coordination Challenges	6
2.3 Structure	8
2.4 National Culture	9
Section 3	10
3.1 Market Overview	10
3.2 Research by State	11
3.3 Competitive Positioning of BDF Digital in the US	12
3.3.1 PESTEL	12
3.3.2 Porter 5 Forces Framework	14
3.3.3 SWOT Analysis	15
3.4 Proposed solutions	16
3.4.1 Distributor	16
3.4.2 Methodology and Partners Proposal	17
3.4.3 Potential Partners: Joint Venture	19
3.4.4 Potential Partners: Distributors	20
3.5 Strategic Implications of the Joint Venture	22
Conclusion	24

Section 1

1.1 Business issue

BDF Digital is an Italian company, with headquarters in Vicenza, that operates in the industrial automation market. It combines two renewed brands TDE Macno and ECS which offer advanced solutions, ranging from Servo Drives to Computer Numerical Control (CNC). The company is specialised in the engineering and production of general purpose industrial technology. Its flexible and standard products can find applications in different sectors, including power electronics, industrial automation, numerical control and energy conversion storage.

Being already well established in Italy, BDF Digital aims at increasing its presence globally, in particular in the United States. There the company already serves the market through one customer, Noelco Inc., which is a system integrator that uses TDE Macno drives in its industrial machinery and equipment.

In spite of this, BDF Digital's presence in the USA is limited and the company does not have any facility nor staff in the United States. Thus, the business challenge that the company poses is exploring the US market to start a commercial collaboration there. This includes finding the most suitable modes for the company to enter the market and to enhance its brand recognition and visibility.

The company aims at creating strong partnerships with customers and manufacturers, by establishing a successful sales network and pursuing the philosophy of "local-for-local". This implies the following relevant aspects. First, the company should have a facility in the US with strategic partners that know the market and application. Second, there should be sales and technical people in the USA that know the brand and that can provide local assistance to customers, promoting the company's products. As an implication of this, the company should also find a place for storage, so that if orders are placed, the products will already be in the USA. Finally, geographical distance and different time zones should be managed.

To approach the business issue, it is first important to consider that the company does not find it feasible to move production to the USA. It is, indeed, threatened by the presence of big competitors, such as Siemens, ABB and Rockwell Automation to name a few, and it has capacity to fulfill the production line in Italy. Moreover, the company aims at entering the US market with one specific product line, the OPDEPlus family of servo drives. These are standard products, already certified for the United States, that present a high application potential in multiple sectors. However, it is also open to customize them or make tuning of the drives in specific sectors and applications.



Overall, BDF Digital aims to increase their turnover by entering the US market whilst creating a network, building brand awareness and keeping their production in Italy.

This paper aims at analyzing the main critical organizational aspects that BDF Digital should consider when entering the US market, and suggest managerial solutions that can address these issues. The thesis of this paper is that preemptively considering these organizational aspects, such as cross-cultural management, cooperation, and coordination, combined with strategic partnerships with local companies, can help BDF Digital enter successfully in the market and improve their long-term perspective.

Section 2

The process of internationalization can be a challenging and complex endeavor, especially for small and midsize companies. In fact, these companies do not possess the resources and expertise of larger global corporations. Therefore, it is essential to carefully consider a range of critical issues. This section aims to find the key critical aspects that should be taken into account when a small-sized Italian company – BDF Digital – wants to expand into the USA.

These critical aspects are based on a review of relevant literature on strategy and organizational development, as well as on practical considerations related to the specific context of doing business in the US. In particular, we will consider issues related to entry modes, selecting the right partner, selecting appropriate distribution channels, conducting market research, defining the competitive advantage, and cross-cultural management.

2.1 Market expansion and entry modes

Entering and competing in a new international market can be done in multiple ways that satisfy different needs.

First, a company could be looking for a new market that can absorb its excess capacity without requiring substantive initial investments. In that case, an export strategy would be ideal, albeit limited in many other ways. Secondly, a company could enter the market through a licensing or franchising strategy. This solution allows for a rapid expansion in many markets but entails losing control over proprietary know-how and branding. Third, to increase the level of commitment, a company can adopt a foreign subsidiary strategy or a greenfield strategy. These strategies require more time for planning and execution but present many advantages, namely a greater level of control, direct market knowledge, and greater learning opportunities. Lastly, strategic alliances enable companies to leverage the partner's knowledge of the local market while creating economies of scale through joint

operations. However, it is a strategy that requires a high level of cooperation and coordination (Gulati et al., 2012).

According to BDF Digital, an export strategy implemented through a local joint venture seems to fit their needs best. The strategy would allow the company to enter the American market fast by exporting its standardized products while leveraging the market knowledge of a local enterprise. An export strategy, although simple, needs to be carefully weighted. In fact, it will impact production in Italy, requiring the redesign of coordination mechanisms, and the revision of the priorities between clients and markets. The company needs also to consider the costs related to transportation, shipping, and tariffs. Furthermore, a pure direct export solution would be limiting and result in a lack of control, as well as information, over the market (Chabowski et al., 2018). Despite the advantages provided by joint ventures, it is crucial to consider its many implications:

Long-term commitment

In a joint venture partners' participation is high in terms of exchanges of tacit and explicit knowledge but also in terms of investment. Moreover, relationship-specific investments are key for effectively managing the relationship. Gulati et al. (2012) show that joint ventures can foster a higher level of commitment compared to other forms of collaboration, as the partners invest resources and efforts into the joint venture entity.

Partner selection and alliance formation

The partner should be chosen on a set of specific criteria that guarantee compatibility and commitment. Goals and objectives should be clearly defined in the negotiation phase, with the involvement of line functions as well.

Design and governance

Partners should define the structure of the new entity in line with its objective. The new entity should be guided by competent, experienced, and well connected managers, assisted by competent junior managers. The joint venture should be designed as self-contained, to reduce interdependencies with the parents and use more formal mechanisms, such as detailed contracts or hierarchical governance structures, to mitigate the dangers of holdup, shirking, misappropriation, and knowledge leakage (Gulati et al., 2012).

Establish a culture of cooperation

Cooperation allows partners to leverage each other's strengths and capabilities, leading to greater synergies. Moreover, through cooperation partners can foster the exchange of knowledge, ideas, and perspectives. This exchange can stimulate innovation, and learning



within the alliance. Finally, collaboration can help reduce the risk related to the alliance. By working together, partners can address eventual challenges thus increasing their resilience.

Trust

For the success of the venture, it is crucial to build interfirm trust. Cooperation is essential for building trust and strong relationships between alliance partners. By demonstrating a commitment to collaboration, partners can establish a foundation of trust, which is crucial for effective communication, decision-making, and conflict resolution.

More in general, Gulati et al. (2012) suggests that by combining cooperation and coordination, strategic alliances can achieve several benefits, namely efficiency, effectiveness, risk reduction, and competitive advantage. However, BDF Digital should be aware of the fact that as a result of integrating new operations in different geographical locations, managing intra-organizational and inter-organizational coordination will become more challenging.

2.2 Addressing Coordination Challenges

Coordination challenges are, indeed, at the order of the day for all strategic alliances and they may be exacerbated when a company possesses limited resources and experience in managing remote operations.

More specifically, these challenges may arise due to higher division of labor and to the fact that interdependencies across organizational units and among partners will become increasingly intense and mostly reciprocal. Strong resource interdependencies will arise both internally and externally, in terms of constant exchange of goods, components, but also of information, skills, competences and know-how. As a result of this, the output of each department may become an essential input for the others. However, it is important to consider that in a hierarchy of complexity reciprocal interdependencies are placed at the top, suggesting that they require higher efforts, in terms of time and money spent coordinating and integrating. Thus, in order to ensure company's responsiveness and to reduce asymmetric information, the risk of holdup and the transaction costs of having a partner, it is necessary for BDF Digital to enhance its organizational integration (Barki and Pinsonneault, 2005; Cuervo-Cazurra et al., 2007; Gulati et al., 2012).

In the context of an alliance, this implies a close collaboration. For example, deciding how critical information and knowledge will be transferred, how planning will be performed

and how decision-making authority will be distributed among partners.

All this should enable the efforts of each partner to be integrated, operations to run smoothly without delays or bottlenecks, and the company to be more responsive and sensitive to the needs of the local market. Implementing the coordinating mechanisms may be difficult and time- and money-consuming, especially as BDF Digital navigates the early stages of the alliance. However, over time, these will most likely become standardized procedures. As a result, the need for careful control and supervision will be lower (Gulati et al., 2012).

Approaching coordination from an internal perspective, the company should avoid treating organizational units as if they were independent or dependent from each other. It should instead promote bidirectional learning and mutual support among them, integrating the efforts of differentiated roles (Bartlett and Ghoshal, 1986). This could be done by implementing integrating mechanisms that are more suitable to the new needs required by internationalization, moving away from simple systems that mainly involve using hierarchy as a control mechanism to more complex ones, such as the introduction of teams, committees or even dedicated integrating roles. Moreover, to ensure that subunits do not work cross-purpose, the company should make sure that they unify their efforts under a common vision of the strategic objectives and values of the company. Finally, it should foster sense making by providing frequent feedback and giving subunits a meaning to what they are working for (Barki and Pinsonneault, 2005).

As a part of integration of efforts, BDF Digital should also consider the way in which it manages communication and information provision in the organization and across borders. It should make sure that all individuals within the organization and in the US location receive the information they need to perform their tasks, and that the critical information, competencies and know-how possessed by different locations is transferred in a clear and timely manner.

In order to succeed in doing so, effective communication channels should be developed to bridge the geographical distance. Bartlett and Ghoshal (1986) suggest implementing socialization processes, which may involve organizing meetings on a regular basis, and promoting the adoption of informal communication mechanisms. Modern technologies offer an opportunity to do this easily online. The authors also suggest transferring people frequently to the foreign location, which may result in higher costs, especially in terms of transportation, but it can benefit a company in terms of successful knowledge sharing, higher transparency, alignment of objectives and the creation of tighter contacts with the foreign partner.

Lastly, among the crucial aspects related to coordination that BDF Digital should consider is how it should design its organizational structure in terms of vertical differentiation. Gulati et al. (2012) suggest that there is a debate on whether, for a strategic alliance, a more mechanistic and hierarchical structure, should be preferred over an organic, and less vertical one, to guarantee better coordination. To negotiate which design to apply, partners should

consider that a more hierarchical structure can result in more effective control, standardization, and specialization. Conversely, it restricts innovation, being more rigid, and is more suitable to a stable and predictable environment. On the other hand, adopting an organic structure can limit specialization, but promotes flexibility and mutual adjustment, and works best when the environment is dynamic.

That being said, the company needs to create a good fit between the features of the organization and the ones of the environment, assuming also that the structure type might change as the partnership and the market evolve.

2.3 Structure

A potential critical issue arising from the expansion in the US was related to the structure of the company and how it could be affected by the different strategies applied. In fact the structure of BDF Digital could incur different changes but these were principally related to the specific plan of expansion. For example, changes would be different whether a geographic diversification were to be carried through a new plant or with an export strategy.

To narrow down the field, BDF Digital expressed the will to go to the US using their existing productive capacity, which was enough to cover another market. So, it meant that there was not the necessity to construct a new plant in the American territory or to fund new investments in their production process. For this reason any structural issue was strictly correlated with a general export strategy, involving different kinds of issues related to the specific type adopted.

Generally, the structure of a company is not much influenced by an export strategy based on the creation of a commercial relationship with a distributor. This type of strategy, indeed, is a way to enter in a market without changing the structure and production processes of the firm, but it involves a selling process outsourced to a specialized player. Issues occurring in this case are mostly related to inventory management and the development of the relationship, but not so much to the structure of the company.

On the other hand, other internationalization strategies involving, for example, the creation of a commercial office or a subsidiary or a strategic alliance, can heavily influence the structure and the role of the existing company in managing the business in a foreign country. In these cases, it is fundamental to analyze and understand the role of BDF and what kind of issues it could face. When an international strategy is applied, generally it starts a three-staged process of organizational reconfiguration, in which some organizational activities of the firm are disintegrated into sub processes (Disintegration), reallocated to the foreign host (Relocation) and then reintegrated in the foreign firm to reach a coordinate action (Reintegration). This process (Jensen et al., 2013) shows that organizational forms of the home company are relocated in the foreign one creating interdependencies between

both of them. So, according to these, BDF should be aware that expanding abroad leads to the creation of interdependencies with the foreign institution it would create.

To deal with these interdependencies, the firm should create autonomous units in the foreign country, which is effective in the case of a commercial office but for a Joint Venture is not an issue, being a completely new company. Also, managing the need for coordination between the two parties is an important key: the more coordination is reduced, the less interdependencies will be created. A key aspect for this issue is mainly the role of the HQ, the home country company. BDF Digital, in this case, should coordinate, control and monitor effectively the foreign party disposing of a set of standard rules, suitable communication channels to create mechanisms of fast feedback and mutual adjustments in order to prevent any possible problem.

In a Joint Venture, however, problems occur mostly relating the cooperation between the new company in the foreign market and the existing firm.

BDF, in this case, could deal with organizational issues related to potential rising conflicts with the partner of the joint venture related to how to set up the business operations to reach common objectives. In this case, the company should design a self-containing alliance but maintain a strong connection with the newborn company. This can be achieved, for example, selecting a few senior managers of the mother company to compose the board of directors of the joint venture and modifying the organization structure of BDF in order to manage the coordination in terms of strategies, production, selling and distribution.

2.4 National Culture

When an Italian company expands into the American market, it becomes crucial to understand and navigate national culture. Culture, which encompasses shared symbols shaping societal orientations, plays a significant role in international business. By applying Hofstede's Model of National Culture to this context, the company should consider dimensions such as power distance, individualism vs. collectivism, masculinity vs. femininity, uncertainty avoidance, and long-term vs. short-term orientation.

These dimensions provide insights into power dynamics, social values, gender roles, risk tolerance, and time perspectives that vary between Italy and the United States.

The cultural distance between Italy and the United States encompasses substantial differences in cultural values, beliefs, and business practices, which can significantly impact the expansion of BDF Digital. Several key points should be considered in this regard.

Firstly, there exists a noticeable disparity in power distance between the two countries. Italy tends to embrace a more pronounced hierarchy compared to the United States where less formal work environments are preferred. Secondly, the dimension of individualism versus collectivism is of significant importance. The United States is renowned



for its high degree of individualism, prioritizing individual autonomy and personal initiative. Conversely, Italy tends to lean more towards collectivism, placing a greater emphasis on family and community. Furthermore, the cultural dimension of masculinity versus femininity should be considered. The United States exhibits a high degree of masculinity, emphasizing competition, ambition, and individual success. In contrast, Italy places a greater emphasis on femininity, balancing work and personal life. Lastly, the dimension of uncertainty avoidance is relevant. Italy tends to have a high level of uncertainty avoidance, preferring rigid organizational structures and rules. On the other hand, the United States has a lower level of uncertainty avoidance and a more flexible entrepreneurial environment.

The cultural distance between these two countries can impact the company's entry strategy, operational effectiveness, and the transferability of core competencies.

Given the potential differences in values and beliefs, it is crucial to address potential frictions that may arise. To minimize such frictions, the company should focus on understanding the contextual conditions in the American market, and adapt organizational practices accordingly.

Section 3

Considering the above-analyzed critical aspects, to propose effective solutions for entering the American market, it was essential to conduct a preliminary analysis of the automation and servo drives market in the United States. Starting with a market overview, the focus was then narrowed down to a cluster of states in the Midwest region: Ohio, Michigan, Wisconsin, and Illinois, which were identified as being the most attractive areas for expansion.

3.1 Market Overview

According to recent market research, the global servo motors and drives market reached a value of US\$12.2 billion in 2022 with the American market accounting for approximately US\$ 4 billion of that total (IMARC Group, 2022).

Looking ahead, it is expected to reach US\$16.2 billion by 2028, exhibiting a compound annual growth rate (CAGR) of 4.7% during the period from 2023 to 2028 (GM Insights, 2023). Several factors are driving this growth, including the increasing application of servo motors and drives in renewable energy generation, the rising adoption of high-speed solutions, and the growing demand for reliability in various industries.

The rising utilization of servo motors and drives in renewable energy generation is one of the primary factors contributing to the market's growth. Solar and wind energy production have witnessed a surge in the adoption of servo motors and drives, which enable efficient energy generation. Furthermore, many countries' governments are actively



promoting renewable energy initiatives, creating favorable market conditions for servo motors and drives.

When analyzing the American market, it is essential to consider the competitive landscape, market structure, and market share of key players. The market is fragmented, with a significant number of global and regional players operating in the industry. However, the volume of new entrants is moderate due to factors such as low product differentiation and switching costs.

It is also important to understand the impact of the COVID-19 pandemic on the servo motors and drives industry. The outbreak caused severe disruptions, leading to temporary closures of manufacturing units, unavailability of raw materials, and labour shortages. Supply chains were disrupted, and international trade faced restrictions. However, with the reopening of lockdown measures, the market is expected to recover.

3.2 Research by State

The analysis involved examining various states across the United States, taking into account several key factors, such as specialization rate, establishment growth, and transportation infrastructure. The primary objective was to identify regions that offer favorable market conditions, industry support, and potential business opportunities.

Economic factors played a significant role in the evaluation process. Indicators such as GDP growth, employment rates, and overall business climate were carefully examined. States with stable and growing economies were given priority, as they provide an environment conducive to business growth and expansion. The presence of automation and servo drive companies within each state was another crucial aspect considered. States with a strong industrial base and a significant number of relevant companies indicated a high demand for automation solutions, making them attractive markets to target.

The availability of robust infrastructure, including transportation networks, logistics facilities, and access to key markets, was also a key consideration. States with well-developed infrastructure and excellent connectivity were deemed advantageous for efficient operations and market reach. The presence of a skilled and qualified workforce with expertise in automation and related industries was taken into account.

Based on this comprehensive research and considering that the manufacturing sector is concentrated in the Midwest, several states emerged as highly attractive for market entry in the automation and servo drives industry. Promising states include Michigan, Ohio, Illinois, and Wisconsin. This region boasts a long-standing industrial legacy, with cities like Detroit, Chicago, Cleveland, and Milwaukee historically recognized for their manufacturing prowess and their central role in crucial industries such as automobile production, chemicals, steel mills and other heavy industries.



Illinois, in particular, offers a highly attractive location for manufacturers. The Chicago metropolitan area, situated within the state, serves as a major manufacturing hub. It stands as one of the largest transportation and logistics centers in the United States, providing unparalleled access to domestic and international markets. The central location of the city, coupled with extensive rail and road networks, as well as proximity to waterways, make it an immensely desirable location for manufacturers seeking efficient distribution and connectivity. Importantly, the region provides opportunities within but also outside its borders. Indeed the local government strongly supports industry trade clusters, aimed at exporting to other states, thus highlighting both the role of local companies' cooperation and the opportunities presented by the state's central position and logistical infrastructure (CMAP, 2020).

3.3 Competitive Positioning of BDF Digital in the US

In order to understand the competitive position of BDF in the US market and to identify its potential competitive advantage relative to competitors, it was necessary to use the following analysis tools developed by the Positioning School.

First, a PESTEL analysis was conducted to have a general overview of the political, economic, social, technological, environmental and legal environment of the USA. Second, Porter's Five Forces Framework was used to assess the threats that BDF Digital might face from new entrants, suppliers, buyers and substitute products. Lastly, a SWOT Analysis was performed to identify the strengths, weaknesses, opportunities and threats to the company.

3.3.1 PESTEL

Political: the USA is characterized by political stability and maintains good international relations, especially with occidental European countries. There is a strong democratic setup and effective rule of laws. For this reason, several governments have tried to frame more friendly policies for the companies, to facilitate their integration in the country's law and economic system. However, some of these measures, such as tax regulations, mostly favor American companies, being the US a country in which the internal economy is pushed more and with less constraints than external firms. Indeed, similarly to countries like India and China, the US is experiencing a new wave of protectionist ideas. Since 2017, the American government has promoted the production of "made in America" products and has imposed high tariffs and peculiar laws on imported goods, which is surely an issue to take in consideration when expanding abroad.



Economical: the US is one of the most powerful countries in the world and it leads different economic sectors, even if recently it is losing positions in the confrontation with China. When examining the economic trends in the US, several key points emerge as crucial considerations. First, the expectation of a general recession starting around mid-2023. Second, about the market forecast, the collapse of Silicon Valley Bank has brought concerns to the investors but the general economy should remain stable. The manufacturing sector is now experiencing a general rise of consumption of goods especially regarding auto sales which has arisen in the last year. Lastly, inflation is another important factor to consider: the FED has applied a restrictive monetary policy during the last year to contain inflation. Despite this, it remains a key point of the US economy due to the fact it is still higher than expected and not transitory anymore as was announced by the president of FED. Energy prices, instead, are expected to fall around 10-15% this year.

Social: the USA is the world's third most populated country. However, it is facing an aging population, which is expected to impact future labor supply. It is also one of the most multi ethnic countries in the world, hence, understanding is required on how to manage relationships with stakeholders that present different sensitivities and background cultures.

Technological: the USA invests significantly in new technologies, in green transition programs and production capabilities, as shown by the development of the electric vehicle and the semiconductor industry. Moreover, the US is ranked second in the GII (Global Innovation Index), showing that innovation is one of the key drivers of development of the American economy. Investments are underpinned by high research output, expenditure on R&D, higher education level, and patent filing. The labor market in America is also noteworthy, as it is able to receive and implement new knowledge. For instance, high-tech manufacturing represents more than 40% of the industry, underscoring a great level of automation, which has grown steeply in the last two decades. In 2021, the United States, along with North America, represented the largest market in the industrial automation industry.

Environmental: in the last five years, the United States has been hit by the most damaging natural disasters in recent times and it is also the second largest emitter of greenhouse gasses after China. To counteract this, several targets are imposed at the U.S. government level. These include cutting emissions 50-52% below 2005 levels by 2030 (Nationally Determined Contribution, NDC) and reaching 80% renewable energy generation by 2030 with a further target of 100% carbon-free electricity five years later. Overall, there is a trend towards increasing end-use efficiency and shifting to lower and/or non-emitting sources of electricity generation.



Legal: foreign companies must comply with all relevant US laws and regulations.

They should comply with Intellectual Property (IP) protection, product liability laws, environmental laws, antitrust laws, import/export regulations and employment laws. Foreign companies should especially consider the fact that the US government has implemented import/export regulations and tariffs on a variety of products, including some electronic components and finished goods, as part of its ongoing trade disputes with other countries.

3.3.2 Porter 5 Forces Framework

Threat of new entrants: major threats may come from the automotive and heavy manufacturing industries, which are according to forecasts likely to surge the demand for automation solutions. Software is expected to be the leading segment in this market during the forecast period (2023-2030), servo drives are expected to hold the highest market share and servo motors are expected to grow with the highest CAGR during the forecast period. So, the threat that new companies will try to exploit these opportunities may be assessed as being quite high.

Power of suppliers: generally, the servo drives industry presents a huge concentration of suppliers of homogeneous components. This high competition leads prices not to be high, except for suppliers of large companies. Long-term contracts are generally preferred because of product similarity in prices and features and especially to avoid any future possible lack of raw material. This makes the incentive to change suppliers low. Overall, entering a new geographical market means finding a new supplier or increasing the volume in the locations already existing. The first option could be effortless thanks to the capacity of the market, but contract's clauses could be less favorable than the other competitors, due to established and consolidated relationships already built with the suppliers.

Power of buyers: the bargaining power of buyers can be significant, depending on factors such as the size and concentration of the buyer base, the importance of BDF's products to the buyer's operations, and the availability of alternative suppliers. In particular, if a small number of buyers accounts for a large portion of sales, they may use their purchasing volume to negotiate better prices or contract terms on BDF's products. Moreover, if buyers are highly price-sensitive, they may have more bargaining power. This could be the case if BDF's products are relatively undifferentiated from those of its competitors, and buyers have many alternatives to choose from as it happens in homogenous products markets.

Threat of substitutes: BDF digital operates in the automation industry and numerical control market (CNC). On the automation side it is able to provide its clients with standard drive solutions (GPT), whether it is AC, DC, SERVO, or custom ones. In the CNC market they provide new solutions as well as retrofitting services, all while running their proprietary software. Importantly, BDF offers full scale system solutions that can be whole with their software or can be sold to system integrators. With reference to the drives market, four substitutes can be found based on functionality, performance, and cost: electromagnetic Actuators, pneumatic actuators, hydraulic actuators, gearmotors.

Rivalry among existing firms: BDF digital has a high differentiation, operating in more sectors such as automation, power, energy and numerical control, which is a competitive advantage for its business. However, there is intense competition, especially from the international companies like Siemens, ABB, Schneider Electric which have many resources and big market share and more strong players such as Control techniques, Factory technologies, OSAI, Global spec, Xometry inc. However, there is a strong presence of many companies having similar size which compete in the market gaining relevant market shares. This means that the initial installation cost will be very high, the industry growth is slow and there is a need for continuous research and development activities to maintain differentiation, to be updated with new technology and to acquire competitive advantage.

3.3.3 SWOT Analysis

Strengths, that is internal factors that may provide BDF Digital with a competitive advantage, include the use of solid innovative technology, which enables the company to provide digital solutions and cutting-edge technology to its customers base; the reliance on a team of qualified people that possess a high level of expertise, experience and know-how; and, the strategic partnerships that the company has already formed in the past, which have enable it to increase its visibility and its network of contacts and to learn how to manage international relations.

Weaknesses may include the company's dependence on qualified human resources, which might become a problem especially in case the company has some difficulties in retaining and attracting qualified personnel, and its limited geographic presence in the USA. Another weakness might be BDF Digital's limited geographic presence in the USA, which, however, may not be a weakness anymore once the company successfully expands to the States.

Opportunities may derive from the increased adoption of automation in manufacturing, that enables drive manufacturers to integrate industrial systems with their



advanced solutions; and from the significant growth that the servo motors and drives market is experiencing.

Finally, **threats** are represented by the high concentration of players in the industry, that is the intense competition in the market, and rapid technological change, hence the introduction of alternative technological solutions that could offer performance improvements and/or cost savings.

3.4 Proposed solutions

Taking into account the several business issues related to an entry in the US market, the market research and the competitive positioning, we suggest a progressive entry and expansion through the combination of the following solutions.

3.4.1 Distributor

The first solution suggested for entering the American market is partnering with an industrial manufacturing distributor. This suggestion is based on many factors, mainly related to the role of distributors in the US and their relevance in the market.

The global industrial distribution market size was estimated at USD 7.72 trillion in 2022 and is projected to reach approximately USD 11.93 trillion by 2032, growing at a CAGR of 4.5% during the forecast period (Precedence Research, 2022). The manufacturing sector, especially, is seeking more distributors in order to increase its business to grow in the demand for faster services. This trend is observable also in the North American region, which is predicted to have the largest market share from 2022 to 2030, due to some leading factors such as an increase in spending on supply chain logistics and the investments made in transportation.

Importantly, American distributors are investing in enhancing their supply chains and inventory management in order to meet customer expectations, involving manufacturers in solid and long term relationships. Moreover, they are providing better platforms for business-to-business companies in order to maintain their market share and to attract new customers. Due to an increased utilization of order management systems, which help in providing an automated system for the regular tasks conducted, there will be a reduction in the errors made. The system is also expected to help in gathering information regarding the availability of the product and the location of delivery.

It is worth signaling the increasing use of artificial intelligence to collect data from the market, which will probably lead the industry in the future. Going deeply, the offline industrial distribution market is expected to grow consistently with the previous parameters especially

in North America. Indeed, the market presents both medium and small size players which can compete efficiently with global distributors thanks to the size of the market.

Due to the predicted continuing growth of the industrial distribution, it is expected an increase in the competition and entry of new market players will hamper the growth of already existing players. The main consequences could be the availability of different delivery options and competitive prices of the offered products.

All these elements related to the role of distributors in the US lead to believe that having an oversea distributor can answer three needs for BDF Digital:

- Entering in the market: a local distributor is the most efficient way to enter and then establish its own position in the market thanks to the access to the American network;
- Increasing brand awareness: by selling products into an enlarged market it increases the probability to being known from local manufacturers which can further build supplying relationships in the future;
- Having local staff able to promote the product: the technical assistance and expertise knowledge provided by a distributor could reduce rising problems related to BDF's products after the purchase, even if not entirely eliminating it.

3.4.2 Methodology and Partners Proposal

The company, BDF Digital, is looking for a partner to enter the US market with, ideally in the form of a joint venture. Indeed, integrating in the global value chain can have high fixed costs thus evidence shows how SMEs can participate best by cooperating with local firms (SelectUSA, 2020; SelectUSA, 2021).

Given the objective, the research was aimed at the single states, analysing the political, economic, and social aspects of doing business, other than the state of the market within. The end goal was finding local system integrators or electric drive manufacturers under the following criteria:

- Size, measured in terms of turnover. The target should have revenue in the range of \$10-80 million.
- Location. The target should be in a promising state with a strong manufacturing expertise. Additionally, it can be that it is in an outside state but with strategic positioning in the key states.
- Competencies. The target should have expertise in the integration of electric drives. Furthermore, it should have a deep understanding of the market sustained by a strong brand recognition among small-medium sized enterprises.



- Competitiveness. The target is competitive within its space, demonstrating ability to grow further alongside BDF.

We started our search for a potential partner by looking at electric motor manufacturers and system integrators in Illinois, Michigan, Wisconsin, and Ohio. In order to reduce the scope of the search we focused on companies that had expertise in the production or integration of AC, DC, and servo drives. Given the number of applications, we further narrowed the scope by focusing on companies specialised in continuous motion applications or whose products or systems find applications in line with BDF Digital's, such as in the plastic, textile, packaging industry, and excluding others, such as wood working. After the initial results, we decided to focus on the state of Illinois: desirable companies that fit our requirements are mostly found in this region.

According to ThomasNet.com¹, in the United States there are 252 companies providing electric servo drives, 42 of which located or servicing Illinois. This list includes manufacturers, custom manufacturers, distributors, service companies, representatives, and turnkey systems integrators. The data from ThomasNet.com was cross-checked with additional information from Automate.com² suppliers directory and Apollo.io database. Furthermore, we ran searches based on the following terms: "electric motor producers", "electric motor drives producers", and "system integrators". The "system integrators" query results in a list of 155 companies located in Illinois that provide industrial manufacturing integration services, therefore a category not limited to the supply of servo drives. These queries provided additional company names eligible for a potential partnership.

One of the demands of BDF Digital was understanding their product and business model. After achieving a better comprehension of the company, we were able to pull together the information from the different search queries, thus better analysing the single companies. We formed our opinions mostly based on the information provided by BDF Digital, the product specifications and application, and the information found on the potential partners website.

More in general, the companies found vary widely in terms of revenue and size, operating in many sectors in line with BDF Digital as well as others outside the scope of the research. In the analysis, we discarded a discrete number of companies because of a lack of product alignment, industry alignment or because not meeting the criteria. As an example, some of the companies found, system integrators in particular, were providing services in line with BDF Digital's expertise but their size – revenue – was either too big or too small, thus not allowing a joint growth path. Indeed, Gulati et al. (2012) note that a persistent misalignment of expectations among partners can lead to conflict, reduced commitment, and partnership failure. In other cases, the companies were satisfying the different criteria but by

¹ ThomasNet.com is the leading product sourcing and supplier discovery platform for business owners seeking trusted suppliers for their industrial, manufacturing, commercial and institutional businesses.

² Automation.com is the leading online publisher of automation-related content.

analysing their offerings it was not possible to identify a collaboration with BDF – i.e., they already had strong alliances with other manufacturers, especially big corporations such as Siemens. Many possible partners were discarded by evaluating the effective alignment of interests which is necessary, not sufficient though, for the establishment of a partnership (Gulati et al., 2012). Finally, we considered the critical aspects proposed by the reference theory³ and kept into account the role played by intangibles, such as the company history, values, and expectations attainable from online resources, given their importance in today's economy (Haskel & Westlake, 2018).

The company, BDF Digital, requested finding them a partner, ideally a system integrator or an electric motor producer, but the analysis, as well as the above research, points at also suggesting a commercial partnership with a local distributor. Rosson and Ford (1982) highlight the key role played by distributors in easing the entry in a new market. Further evidence is provided by the SelectUSA (2021) case study, where one of the companies benefited from partnering with a distributor – it allowed them to focus on working in the business rather than marketing the product.

The search for a potential distributor partner was conducted in a similar manner to the one for a partner. Information was pulled from the directories or databases of ThomasNet.com, Automation.com, and Apollo.io, and from there the analysis was conducted under the following criteria:

- Size, measured in terms of revenue. The distributor should have revenue not exceeding \$80 million.
- Location. The target should be in a promising state with a strong manufacturing expertise. Additionally, it can be that it is in an outside state but with offices in the key states.
- Competencies. The target should have expertise in selling and promoting electric drives. Furthermore, it should have a deep understanding of the market sustained by strong relationships with manufacturers and system integrators.
- Product offering. The target should have a limited offering of electric drives, signaling the need for BDF Digital products. The distributor shouldn't have a too wide offering to avoid the risk of a lack of focus. Furthermore, it is preferable to stock smaller independent electric drive producers, demonstrating experience in dealing with SMEs similar to BDF Digital.

3.4.3 Potential Partners: Joint Venture

From the analysis conducted with the above mentioned methodology, two companies emerged as potential partners that could provide a good fit with BDF Digital.

³ See section 2



A. Harmonic Drive LLC

- Established 1950
- Location Beverly, Massachusetts
- Revenues \$62.6M (Apollo.io)
- Employees ~100 (Apollo.io)

The company engineers and manufactures high precision strain wave gearing and motion control with the Harmonic Drive servo actuators, gearheads, and gear component set. These are products that interact with the electric, hence, with the electric drive.

BDF Digital could offer its products along with their gearheads. Although the company already has partnerships with producers Yaskawa and Mitsubishi, their drive specifications are different from the OPDEplus ones – e.g., their communication protocols, CANopen in particular, can result obsolete thus reducing the flexibility offered to customers. Therefore, there are unmet customer needs that could represent for BDF Digital and Harmonic Drive LLC a new opportunity.

Despite its location, Harmonic Drive LLC should be considered still given that it has offices in Chicago (IL). Furthermore, they have a clear understanding of the product and strong relationships with customers and distributors. Harmonic Drive LLC is a bigger company than BDF Digital with a recognisable brand. As a consequence, BDF Digital should consider that they might not be able to guarantee a majority stake in a potential joint venture.

Overall, Harmonic Drive LLC is an electric motor parts producer with a great brand, strong ties in the region in which it operates that would allow BDF Digital to enter a larger market with a strong backing.

B. Central Machines Inc.

- Established 1995
- Location Lincolnshire, Illinois
- Revenues \$5-10M (Thomasnet.com)
- Employees 10-49 (Thomasnet.com)

The company provides custom high-speed assembly machines for virtually any industry. In particular, they specialize in the design and construction of in-line, rotary, indexing, continuous motion, power/free, and contact insertion process equipment.

This system integrator represents a great partner for a potential joint venture. Central Machines Inc. has a proven experience in the integration of servo drives in turnkey solutions, as shown in their company case studies.⁴ They are located and focused on Illinois, providing *local for local* solutions to their customers, thus becoming true partners. BDF Digital, in partnering with this local system integrator, could enter the Illinois market fulfilling its vision of

⁴See <https://www.centralmachines.com/resources/case-studies/>.



a local for local approach, from sale to service. Furthermore, given their smaller size and the limited initial market, BDF Digital could potentially detain a majority stake in the joint venture.

Overall, Central Machines Inc. is a systems integrator with strong relationships within its region, and great capabilities that would allow BDF to enter the market right where the customer needs it.

3.4.4 Potential Partners: Distributors

From the analysis conducted with the above mentioned methodology, three companies emerged as potential partners that could provide a good fit with BDF Digital.

A. **Marshall Wolf Automation**

- Location: Algonquin, Illinois
- Revenue: ~\$20 M (Apollo.io)
- Employees: ~30 (Apollo.io)

Established in 1984, the company offers a wide range of products, including AC drives. Given its key location, we suggest offering BDF's products through its Illinois's relationships.

Pros:

- Technical sales team
- Experience with Italian brands – e.g., Pizzato, Bonfiglioli
- Limited drive offering
- Limited order volume

Cons:

- Discount rate
- Limited network

B. **Addison Electric**

- Location: Addison, Illinois
- Revenue: ~\$7M (Kona Equity)
- Employees: ~25 (Thomasnet.com)

Established in 1980, the company offers singular items but integration services as well. Located in Illinois, the company is able to offer a full service to its customers.

Pros:

- Expertise in automation
- True partners to customers
- Limited order volume

Cons:

- Discrete drives offering – e.g., Control Techniques, Hitachi, ABB
- Limited network

C. NEFF Automation

- Headquarters: Indianapolis, Indiana
- Revenue: ~\$65 Mil (Kona Equity)
- Employees: ~250 (company)

Established in 1926, the company offers a wide range of products, including servo drives. This distributor owns a discrete network across 15 states yet BDF could allocate its product competitively compared to with a larger distributor.

Pros:

- Expertise in automation
- BDF can join the offering – e.g., Kollmorgen, Trio Motion
- Extended network

Cons:

- No presence in Illinois
- Higher leverage

3.5 Strategic Implications of the Joint Venture

Technical Barriers

In order to overcome the technical barriers that might arise due to the partner's lack of knowledge about BDF Digital's products, the company should organize on-site training, especially in the initial phases of the joint venture. This will not only enable the transfer of specific product knowledge among parties, but it will also promote extra-organizational integration, as key competencies and know-how will be transferred allowing for more effective coordination.

Overdependence on the Partner

A possible overdependence arising is related to the sales network of the joint venture. In fact the foreign partner knows the market and the selling process, while BDF is in charge of the production and the exportation. The risk is being overdependent on the partner's knowledge of the market. A suitable solution, in this case, is splitting equally the shares of the newborn company (or even having more than 50%) in order to keep the same power over the decision-making process. Also, having people from BDF in the board of the joint venture and

in the operational processes of the company could be a profitable solution in order to directly understand the market and overcome a possible dependence from the partner.

Cultural Barriers

To address eventual points of attrition due to the cultural differences, both nationally and organizationally, BDF Digital and its joint venture partner should consider creating a series of corporate events - e.g. company visits - that foster the creation of shared values, norms and improve reciprocal understanding.

The partners should prioritize creating a culture of cooperation, where knowledge-sharing routines are sustained by inter-firm trust. The SelectUSA (2021) case study shows how creating interorganizational trust and a transnational team culture was crucial for one of the companies entering the US.

Local for Local

For what concerns the pursuit of the philosophy of “local-for-local”, the joint venture with one of the proposed partners would allow the company to have storage directly in the USA, so that orders can be fulfilled in a timely manner. Moreover, it would satisfy the company’s need of having a facility there with sales and technical people that know and can closely observe the US market. In addition, thanks to the above described provision of on-site training, partners will learn about the technicalities of BDF Digital’s products and they will be able to provide local assistance to customers, both post-sale and in case they face difficulties in their application. All this will enable the company to create a strong sales network.

Control

In order to guarantee control over the partner’s operation, an expat director should be sent to the USA to instill BDF Digital’s values and facilitate integration and coordination. This figure will be in charge of maintaining regular communication with the company’s headquarters in Italy, so that all relevant information about the market and the foreign operations can be transferred in a timely and quick manner. This requires the establishment of a clear reporting system and the arrangement of regular virtual meetings.

Integration

To promote both intra-organizational and inter-organizational integration, a new function should be added in BDF’s offices. The introduction of this more complex integrating mechanism would respond to the mounting reciprocal interdependencies - both among organizational units and across partners - resulting from the internationalization process. The new figure will be in charge of monitoring, communicating and coordinating with the American venture, as well as maintaining regular contacts with BDF Digital’s expat director



Finally, the new role will report under the commercial office and integrate it with the operation function.

Redesign of the Organizational Chart

A joint venture could lead to some changes to the structure of BDF and its organizational features.

In the suggested solution, the joint venture would be organized as a flat structure. The board of the company would be shared between the two allies with the presence of a director previously employed in BDF, who would lead the whole process of expansion in the USA. Connected directly to the board there would be three main functions. The first one would be a technical support function which will provide the technical assistance, customer service and the installation service of the products. The technical support head manager should have expertise and knowledge of BDF's products in order to grant the best possible service to customers. A suitable person for this role is a manager of BDF already dedicated to this task, so that they can understand customers' needs, interact constantly with the Italian company for potential adjustments to the products and, of course, better train local talents hired. The second function would have operations duties principally related to the logistics, especially of the exported products, and to the integration with the partner's products to be sold in the market. Even in this case, a profitable solution would be having people with training about both companies' products. Thirdly, the sales and marketing function would be in charge of the selling process and of the arrangement of possible deals with distributors and agents.

Furthermore, even BDF's structure has to face some changes to maintain direct control over the joint venture. The commercial office of BDF should add a new role who would be in charge of taking care of all the activities in the American market and of guaranteeing coordination across locations.

Conclusion

In conclusion, the solutions suggested in this paper are presented as two viable standalone strategies that can work best in combination. First, creating a commercial relationship with an overseas distributor would allow entering the market rapidly, simultaneously in multiple states. After having created a brand and gained information from the market, establishing a strategic alliance in the form of a joint venture with a feasible partner is a natural step.

The proposed solutions aim for a progressive expansion of BDF in the US in terms of volume of sales and brand awareness, solving the principal challenges and needs of the company.



References

- Barki, H., & Pinsonneault, A. (2005). A Model of Organizational Integration, Implementation Effort, and Performance. *Organization Science*, 16(2), 165–179.
- Bartlett, C. A., & Ghoshal, S. (1987). Managing across borders: New organizational responses. *Sloan Management Review* (1986-1998), 43.
- Cuervo-Cazurra, A., Maloney, M. M., & Manrakhan, S. (2007). Causes of the difficulties in internationalization. *Journal of International Business Studies*, 38(5), 709–725.
- GM Insights, Servo Motors and Drives Market, 2023 available at: <https://www.gminsights.com/industry-analysis/servo-motors-and-drives-market> [Accessed 30th May, 2023].
- Gulati, R., Wohlgezogen, F., & Zhelyazkov, P. (2012). The two facets of collaboration: Cooperation and coordination in strategic alliances. *Academy of Management Annals*, 6(1), 531-583.
- Haskel, J. and Westlake, S., (2017). *Capitalism without capital: the rise of the intangible economy*. Princeton University Press 2018.
- IMARC Group, Servo Motors and Drives Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028:, 2022, available at: <https://www.imarcgroup.com/servo-motors-drives-market> [Accessed 30th May, 2023].
- Industrial Distribution Market, Precedence Research, 2023 available at : <https://www.precedenceresearch.com/industrial-distribution-market> [Accessed 25th May, 2022].
- Jensen, P., Larsen, M., Pedersen, T. (2013). The organizational design of offshoring: taking stock and moving forward. *Journal of International Management* 19 (2013) 315-323.
- Metropolitan Chicago's Traded Industry Clusters Report, Chicago Metropolitan agency for planning, 2020, available at: <https://www.cmap.illinois.gov/programs/industry-clusters/traded-clusters>
- Rosson P., Ford D., (1982). Manufacturers-Overseas Distributor Relations and Export Performance. *Journal of International Business Studies*, Autumn, 1982, Vol. 13, No. 2, pp. 57-72.
- SelectUSA (2020), FDI from Small Businesses: Understanding the Behavior and Impact of Foreign-Owned SMEs in the U.S. Economy”, SelectUSA, US Department of Commerce.
- SelectUSA (2021), “Small but mighty: cases of small business foreign direct investment”, SelectUSA, US Department of Commerce.