

CASE STUDIES OF PARTNERSHIPS IN THE WIND INDUSTRY SUPPLY CHAIN January 2023

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INTRODUCTION OF CASE STUDIES

Danish companies operating in the Danish wind supply chain are facing a growing competition. It is essential that Danish companies ensure their future competitiveness, position in the supply chain, and manage to stay relevant to the Original Equipment Manufacturers (OEMs). Megavind recommends establishing more and closer partnerships as a mean to ensure Denmark's position as global wind energy hub. The report at hand takes it starting point in six case studies of partnerships with the aim of identifying the potential and barriers of a successful partnership.

EXECUTIVE SUMMARY

The case studies have shown significant benefits from entering a partnership both vertically and horizontally. A partnership brings many opportunities and benefits to the involved partners. The case study analysis has shown that barriers appear when working together, but that they do not need to be a barrier for the partnership itself. If partners trust and communicate openly with each other the foundation for a successful partnership is present. In the Danish wind industry supply chain, many suppliers are seeking to become an attractive partner for the OEM's. When entering horizontal supplier-supplier partnerships it does not only create value but increase the likelihood of being attractive for OEMs and the possibility of vertical partnerships as well.

CASE STUDIES OF PARTNERSHIPS IN THE WIND INDUSTRY SUPPLY CHAIN

There is no better approach to solving challenges than the famous saying "two heads are better than one." In today's fast-paced environment, collaboration is the best strategy for developing innovative and competitive solutions.

The focus on partnerships and cooperation in the Danish supply chain was decided as part of the Megavind Annual Research and Innovation Agenda in 2019. The work involved gathering a significant amount of new data through a threestep process: Introductory interviews, survey, deepdive interviews, cf. figur 1. The participating respondents were a representative selection of the supply chain and covered different perspectives and functions. The three-step process resulted in the report "Partnerships in the Danish Wind Industry Supply Chain" published in 2020. The report includes 17 recommendations and can be read at Megavinds webpage in the section "Publications". Starting from the report, the Megavind Strategic Committee for Partnerships in the wind industry supply chain dived deeper into two recommendations. Concretely:

RECOMMENDATION 12: OEMs and suppliers to further transition from transactional customer-supplier mindset to partnership mindset.

RECOMMENDATION 15: Suppliers should engage in more horizontal cooperation around combining product portfolios and product aggregation.

The strategic committee for Partnerships consists of a wide range of different suppliers and two OEMs and functions as a working group. It has enabled many different input and ensured a broad perspective and discussion on partnership mind-set and cooperation.

As a part of the work with recommendation 12 and 15, a common understanding of partnerships was needed to be defined. Specifying what a partnership is and is not, has been a long process with discussions back and forth where different point

FIGURE 1 WORK PROCESS

Recommendation 12 and 15 Recommendation 12 and 15 6 case studies

Recommendation at hand

of views were to be united. In the Megavind report from 2020, partnerships were defined as: "Any collaboration with two or more companies where additional value (organizational or economically) is created". This definition is broad, and a need to specify partnerships more detailed was therefore identified. Four different types of partnership were identified and defined:

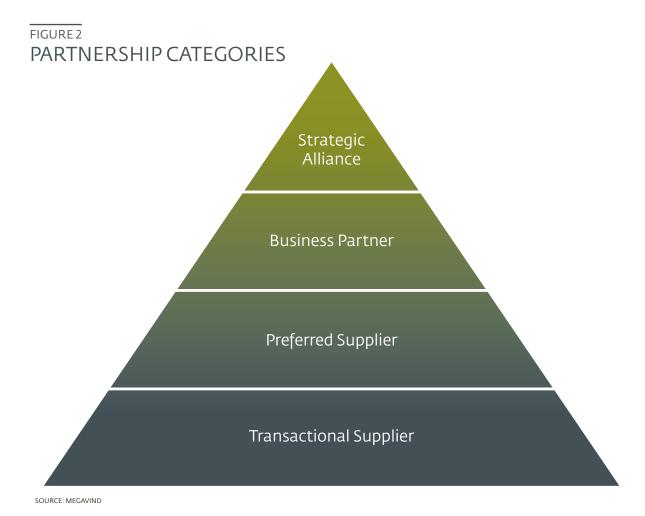
SOURCE: MEGAVIND

STRATEGIC ALLIANCE: A strategic alliance is a long-term relationship and considered an integrated part of the companies. The collaboration enables business growth for both parties. Co-investments are made, and the companies have joint organizational and operational model. The alliance can be a joint venture.

BUSINESS PARTNER: Business partnering is the development of long term, strategic relationships between customers and suppliers, based on achieving best practice and sustainable competitive advantage. In the Business-Partner Model, partners work closely with business leaders and line managers to achieve shared organizational objectives

PREFERRED SUPPLIER: A preferred supplier is defined as a supplier that has a continuing cooperation agreement to provide products or services including R&D, test, and demonstration. The cooperation often supports Levelized Cost of Energy (LCoE).

TRANSACTIONAL SUPPLIER: A transactional supplier is defined as a supplier which supplies standard components or components based on OEM's specification. Characterized with high competition on price and delivery time.



As **figure 2** indicates, *Transactional Supplier* partnerships are the most frequent type of partnerships whereas a *Strategic Alliance* is more exceptional since it requires an OEM to consider a supplier as equivalent or two suppliers to have a very trustful relationship.

HORIZONTAL VS. VERTICAL PARTNERSHIPS

When analysing partnerships it is also important to include the distinction horizontal and vertical partnerships. The distinction is based on the partners position in the supply chain. If partners are at the same level in the supply chain, the partnership is horizontal. If partners are not at the same level, the partnership is vertical.

RECOMMENDATION 15 from the report, recommend suppliers to engage more in horizontal partnerships. Horizontal partnerships are beneficial when OEMs are demanding more aggregated products, higher guarantee levels and more financial and operational power of the suppliers. By combining product portfolio and product aggregation, suppliers will stay relevant to the OEMs and remain competitive. Suppliers can leverage from horizontal partnerships or joint ventures as a way of becoming strategically equivalent to an OEM. This enables the possibility of entering a vertical partnership since suppliers will have a stronger footprint when working together. Entering a vertical partnership requires that the OEMs are willing to cooperate and enter into a partnership with a supplier. If a vertical partnership is successful it can lead to resilience to supply chain disruptions, enhance market power, and economies of scales for the involved partners. Based on the above, the tendency in the Danish wind supply chain is that the OEMs are demanding cooperation and partnerships more than ever. Thus, forging must be done while the iron is hot. Figure 3 and 4 illustrates the difference between a vertical and horizontal partnership.

"Suppliers can leverage from horizontal partnerships or joint ventures as a way of becoming strategically equivalent to an OEM."

FIGURE 3
VERTICAL PARTNERSHIP



FIGURE 4
HORIZONTAL PARTNERSHIP



SOURCE: MEGAVINE

CASE 5 DESIGN OF LIFTING, TRANSPORTATION, STORAGE, AND ACCESSORY EQUIPMENT

PARTNERS: DIS, LICengineering, MHI Vestas Offshore Wind, R&D, Semco Maritime and Siemens Gamesa Renewable Energy.

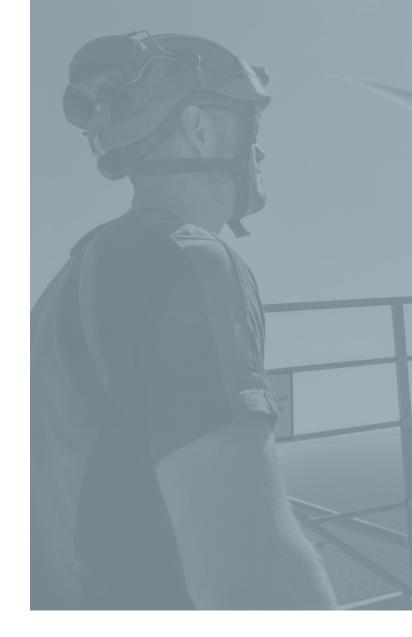
RESULT OF PARTNERSHIP: By combining knowledge and experiences, the partners defined a common Best Practice for design of lifting, transport, storage, and handling equipment in the offshore wind industry. Streamlining the practices entails time and cost reductions, increased safety and fewer defects and damage to equipment.

WORK PROCESS

The aim of the analysis has been to obtain a deeper understanding of partnerships in the Danish wind industry supply chain. To do so, six case studies were identified:

- 1. Design Case (Vertical)
- 2. China production collaboration (Vertical)
- 3. Partnership in Brazil (Vertical)
- 4. Two Danish sub-suppliers collaboration on system solution (Horizontal)
- 5. Design of lifting, transportation, storage, and accessory equipment (Vertical)
- 6. Offshore project; one OEM two sub-suppliers (Horizontal)

Case studies are advantageous since it provides detailed and concrete information and insights into actual partnerships. Diving into the six cases revealed the opportunities and barriers which a partnership entails. In the present report, examples, and most important learnings from the six cases will be revealed and discussed.





MINDSET AND PRACTICES FOR EFFECTIVE PARTNER-**SHIPS**

The wind supply chain is complex and consists of many different companies from those delivering raw materials to the companies which operate and maintain the wind turbines. The perception of what a partnership implies, depends on a the company's position in the supply chain. Often the perception starts in the top of the supply chain and manifests downward. If an OEM and a supplier enter a partnership and do not have the same perception of the partnership it will higher the risk of conflicts. Perception and assumptions will influence behaviour and thus it is important to have a partnership mindset before entering a partnership. A partnership mindset focuses on the benefits and advantages and consider barriers as something which can be overcome together in collaboration. One of the key practices when establishing an effective partnership is trust. It is important that the trust applies for all organizational levels in the organizations. Partners who trust each other spend less time and energy protecting themselves and this ensures that the right decisions can be made to achieve the goal of the partnership. Extensive lack of trust is a barrier for a partnership.

CRITICAL LEARNINGS

The analysis takes its staring point in six different cases and aims to identify critical learning points. The findings can be used to highlight successful partnerships and the advantages for the involved parts. Some of the cases were more successful than others, though there are important learnings from all.

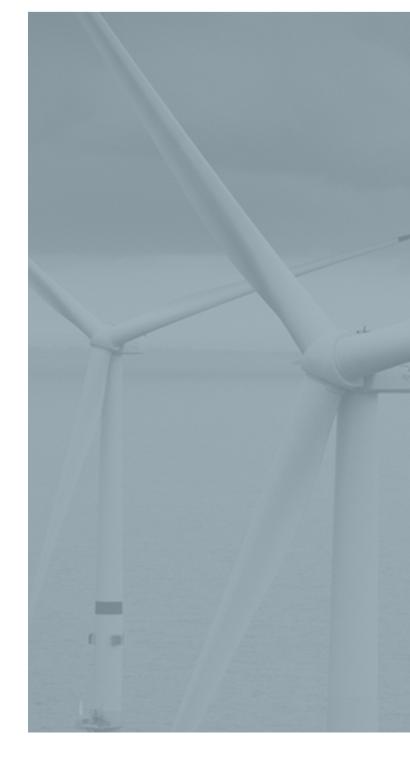
In the next two sections, prerequisites and barriers to a successful partnership will be presented.

PREREQUISITE FOR A SUCCESSFUL PARTNERSHIP

The following section will present the characteristics of a successful partnership which were identified in the six cases.

TRUST: Trust at all organizational levels was identified in the cases where the partnership was successful. E.g., in case 2, five suppliers, five suppliers and a couple of OEMs decided to collaborate about setting up facilities in China. The collaboration was successful due to trust between partners. This allowed the involved partners to share several fixed costs which lowered the risk and fixed cost for each individual partner.

TRANSPARENCY: If partners are transparent there is higher risk mitigation and synergies will be discovered. Transparency implies "playing with open cards" and honesty. In one of the cases, it was transparency on both financial and legal issues which lead to success. It ensured finding a fair cost-benefit split between the two partners.





CLEAR COMMUNICATION: Clear communication was identified as an important quality of a successful partnership in several of the cases. This entails an open dialogue in terms of challenges and possibilities. It also helps the partners to identify where the partnership is beneficial and productive for both. As a condition for the vertical partnership, the suppliers need to accept more complex communication channels in the OEM. On the other hand, it requires the OEM to be clear and consistent in their communication form to prevent miscommunication and misunderstandings.

SIGNIFICANT BARRIERS IDENTIFIED IN THE CASES

The following section will present the barriers preventing a successful partnership as identified in the six cases.

LEGAL RESTRICTIONS: In four out of six cases, legal restrictions were identified as a significant barrier. One of the cases found "local content" such as local import taxes as very complicated to fulfil and to get an overview. In another case, an OEM and tier 1 suppliers entered a partnership - here legal restrictions were to be handled to ensure that the OEM dared share enough information with the tier 1 suppliers.

OWNERSHIP AND RESPONSIBILITY: If partners are not able to hand over ownership and responsibility to the partnership, synergies, and cost savings for the involved partners are not realized. If there is a lack of willingness to share risk it may become a significant barrier. The willing-

CASE 2 CHINA PRODUCTION COLLABORATION

PARTNERS: Resolux, DAFA, Hydra Specma, CC.Jensen, Lund & Sørensen.

RESULT OF PARTNERSHIP:
Established shared production
and office facilities in China. As
a result, the start-up costs were
low since the risk and fixed costs
were shared between the partners. The involved partners could
also leverage from each other's
knowledge, increase production
flexibility and shortening delivery
time.



ness to take part in the risksharing must apply to all partners.

Suppliers have experienced a tendency that the OEM's have not been willing to take part in the risk. But if a partnership shall succeed, the willingness to share risk is essential.

MISTRUST: One of the six cases was not successful. Case 6 was not successfull and was characterized by mistrust and miscommunication between the OEM and the two sub-suppliers. This led to mistrust since the rules of communication were not followed. There was a mismatch between the said and agreed term, and the actual behaviour.

KEY PERFORMANCE INDICATOR (KPI):

Before entering a partnership or collaboration it is important to consider if the involved companies' core business objectives are measured with KPIs. KPIs measure performance on parameters which do not result in the optimal framework for a partnership. At the same time, internal KPIs

can be conflicting, the larger the organisation is. The partners must have a holistic view on the partnership instead of considering it for own gain and a way of achieving own KPI.

MISSING DIALOGUE: There must be a flow of information between the partners, otherwise it will result in an ineffective and mistrustful collaboration. In one of the cases, two suppliers were to enter a partnership, but the culture in the companies was not oriented towards being in a partnership. This created a barrier since each company focused on its own internal activities and not at collaborating.

BARRIERS CAN BE BEATEN

Figure 5 gives an overview of the six cases and which barriers were identified. Case 6 was the only case which was not successful. Even though the five other cases had several barriers, they were executed successfully.

FIGURE 5 OVERVIEW OF THE MOST SIGNIFICANT BARRIERS IN EACH CASE

ТНЕМЕ	SUBJECT	CASE 1 OEM Tier 1 Tier 1	CASE 2 OEM Tier 1 Tier 2	CASE 3 OEM Tier 1 Tier 1	CASE 4 Tier 1 Tier 1	CASE 5 OEM Tier 1 Tier 1	CASE 6 Tier 1 Tier 1
Legal restrictions	Ownership and Responsibility		X	X	X	X	X
Organizational	Procurement fronting					X	
	Silos and sub-optimization				X	X	X
	KPI driven organizations	X					
	Expectation to Technical organization	X		X			
	Prioritization of time				X		
	Internal activities prioritized over partnership		X		X		
Culture and mindset	Lack of trust due to cultural differences				X		X
	Settlement and agreements, e.g., IPR			X		X	
	Different perceptions of cooperation boundaries				X		
	New business models	X		X			
	Controlled growth				X		
Dialogue	Lack of transparency				X		
	Lack of open dialogue when dealing with difficult topics	X	X				X
Financial	Cost impacts from local content requirements			X			
	No firm business commitment	X					
Negotiations	Difficult to distribute investment costs	X					
	Finding a fair cost-benefit split	X	X				

OEM: Original Equipment manufacturer. Tier 1 suppliers: Direct suppliers of the final product. Tier 2 suppliers: Suppliers for tier 1 suppliers. SOURCE: MEGAVIND

RECOMMENDATIONS TO SUCCESS IN PARTNERSHIPS

The analysis has resulted in recommendations on how OEMs and suppliers can transition from transactional mindset to partnership mindset. The effect of engaging in a horizontal or vertical partnership has been studied by analysing six cases of both vertical and horizontal partnerships. Five out of six cases turned out successful, setting the partners better off than if they were operating alone. The five successful cases had a high level of trust as a common denominator, thus trust between partners is fundamental for a successful partnership.

CONNECTION, CLARITY AND CONSISTENCY

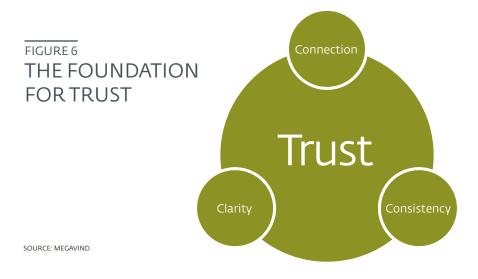
The central recommendations to a successful partnership can be summed up to the three Cs: connection, clarity and consistency, which together lay the foundation for developing trust, **cf. figure 6**.

CONNECTION: Trust takes time to develop. The first step is to meet and connect over a continuously time period to get to know each other well. By participating in networks, events, and fairs where the supply chain is present, new potential

partners can connect. A tangible recommendation is to work on establishing connection on a management level. If the management teams are not connected and have a common understanding on how to execute, the partnership is not likely to succeed. Another recommendation is to invite a small group of companies to a workshop to discuss and present what each partner can bring to the collaboration in order to align expectations if they decide to engage in a partnership. The experience is that the meeting should be in a relaxing atmosphere.

CLARITY: Clear and open communication is mandatory for developing trust. Clarity also implies an open dialogue about the desired gain and benefit from the partnership. This also includes how the risk should be shared.

CONSISTENCY: A part of developing trust is consistency. When displaying consistent behaviour, partners stay true to the partnership and are committed to solve potential challenges. Consistency implies not giving up and sticking to the plan and the agreement.



Trust is a process, which can take years to develop. Trust at a management level is something you earn by proving you can be trusted. Trust at management level is essential to the partnership's success as it will be transmitted downwards in the respective organizations.

REMEMBER THE ADVANTAGES

Being a part of a successful partnership creates value for the participating partners since they can leverage each other's strengths. This creates the opportunity to support each other's core businesses and add more value compared to operating alone. Partnership makes the scope bigger and develops new potential to collaborate with OEMs for participants in a horizontal partnership. A successful partnership also enables cost optimization through economies of scales, new sourcing strategy and higher delivery service and warranty. Thus, a successful horizontal partnership can add value for the OEM and the customers and is beneficial for the entire supply chain.

DO NOT FEAR DISAGREEMENT - FACE IT AS EARLY AS POSSIBLE

No matter how great the partnership is and how much trust there is between partners, the cost-discussion will be there. It is a premise, that needs to be accepted and considered a natural part of a partnership. Cost and risk are connected and the discussion which follows is an important part of achieving a successful partnership. It sets the framework for the collaboration and will ensure that the partners involved gain from the partnership. Based on the analysis it is recommended that the risk is shared between the partners who gain from the partnership.



companies enter into partnerships or strature the wind industry supply chain. Thus, Partnerships will be available for advice

If you want an individual meeting and more can contact Chair of Megavind Strate-

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