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# Market Analysis of Competitor Performance, Business Models and Offerings in AGVs and AMRs

Recommendations for Marketing AGVs and AMRs in the Intra-logistics Market

Metropolia University of Applied Sciences

Master's Degree

Degree Programme in Business Informatics

Master's Thesis

28 November 2025

Data collection and analysis have always been a passion for me and the thesis came out to be a wonderful opportunity to put my skills into work. This thesis marks the insightful journey combining academic learning, professional collaboration, and personal growth. The study involved a dive deep into theoretical concepts to derive practical solutions. When I started this study, I came in with huge interest and excitement. Now, as I finalize my work, I take lot of new learnings and insights, I feel incredibly grateful for the whole journey.

First, I wish to express my gratitude to the case company, GIM Robotics, particularly Jussi Suomela and José Peralta for trusting me and providing me with such an opportunity that made this study possible. My heartfelt thanks to all the interviewees who took their time and shared their knowledge and valuable feedback throughout the entire process. The information gained not only increased my knowledge but also deepened my understanding of the logistics market.

Next, I want to thank my instructors, Misa and Zinaida for their invaluable advice and guidance. Your mentorship provided me with the tools and understanding needed throughout this process. I also want to thank Usman for his specific guidance and direction as I navigated this journey. Furthermore, I am thankful to my peers, whose collaboration and camaraderie made this entire experience enjoyable and productive.

Finally, I owe my deepest gratitude to my family. The biggest thanks go to my husband, Tousif, who kept me going throughout my studies and writing journey. I truly appreciate all the patience, support, motivation, and the delicious food that gave me strength during challenging times.

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Espoo

November 28, 2025

## Abstract

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Title: Market Analysis of Competitor Performance, Business Models and Offerings in AGVs and AMRs: Recommendations for Marketing AGVs and AMRs in the Intra-logistics Market

Number of Pages: 84 pages + 1 appendix

Date: 28 November 2025

Degree: Master of Engineering  
Degree  
Programme: Business Informatics

Instructor: Misa Bakajic, Senior Lecturer

The objective of this thesis was to develop a report and recommendations for marketing AGVs and AMRs in the intra-logistics market. The company faces challenges to break through the mature intra-logistics market due to low visibility and limited customer awareness about the solutions. This created a need to strengthen its market readiness, clarify its position and improve its ability to communicate value to customers and partners with sustainable growth opportunities.

The study was done using the applied action research, integrating internal data, document analysis, and expert interviews to ensure understanding of the company's challenges. The study consisted of current state, followed by the construction of a conceptual framework based on literature review and best industrial practices, and creation of report and recommendations based on feedback from the stakeholders.

The thesis combines both theoretical and practical dimensions. The theoretical part draws from the literature on product differentiation, business intelligence for marketing analysis, competitor analysis, and business models and offerings. Established frameworks such as Porter's five forces for competitor analysis, Kotler and Keller's marketing management for market orientation and Teece's dynamic capability framework for organizational adaptability were used to form the conceptual framework and the base for the report. These models were complemented by data analysis, expert's opinion about the organizational business approach and the stakeholder's feedback for developing the report.

The outcome of the study is a report and recommendations that should help the company to move from technology-driven organization to a market-oriented organization and improve visibility, scalability, and brand awareness. The measurable KPIs are proposed to measure sales, inbound leads, and visibility. The report and recommendations should help to improve the visibility, commercialization and marketing effectiveness of a robotics company specializing in turnkey automation solutions for the logistics industry.

Keywords AGV, AMR, BI, Business model, Intra-logistics, Marketing, Robotics, Turnkey solutions

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## 1 Introduction

Imagine a logistics network where pallets move effortlessly between factory buildings, goods glide autonomously from indoor warehouses to waiting trucks, and outdoor weather no longer limits automation. This is no longer a futuristic vision — it is the new frontier of intra-logistics. For decades, the world inside warehouses and factories has benefited from the steady rise of automation, with Autonomous Mobile Robots and Automated Guided Vehicles (transforming internal goods movement into a highly efficient, precision-driven process. But just beyond the warehouse walls lies a space still dominated by manual labor and inefficiencies: the outdoor logistics zone. The intra-logistics industry is at a pivotal turning point where jobs are managed very easily with minimal effort from human beings.

This thesis focuses on GIM Robotics, a Finnish technological company specializing in the field of autonomous navigation and automation for logistics. The thesis will explore how the company can adopt its market strategy to strengthen its market position by studying the intra-logistics market dynamics and detecting growth opportunities.

### 1.1 Business Context

GIM Robotics is positioned within the broader industry ecosystem of automated material handling and smart logistics. The business environment the company runs in is ruled by growing demand for flexible, scalable, and intelligent transportation solutions across different sectors such as manufacturing, warehousing, logistics, and retail. In this context, AGVs and AMRs are emerging as game-changing technologies, offering unprecedented levels of automation, precision, and adaptability.

GIM operates at the intersection of robotics, automation, and smart logistics, offering advanced software solutions for Autonomous Guided Vehicles (AGVs) (Grand View Research, 2025, Industry Report) and Autonomous Mobile Robots (AMRs) (Grand View Research, 2025, Industry Report). GIM faces a strategic challenge: breaking into a mature, highly competitive intra-logistics market dominated by well-established players. The company is trying to traverse through obstacles against the established companies in this area as it is in the initial phase of operations.

GIM's value proposition lies in its ability to deliver navigation capabilities that work seamlessly across outdoor environments — a unique offering in an otherwise segmented market. GIM's robotics product line includes software licensing for AGV/AMR systems, enabling integration with customer operations through features like fleet control, real-time monitoring, and adaptive navigation.

## 1.2 Business Challenge, Objective and Outcome

Time is a crucial factor as the case company currently holds a competitive edge in the outdoor market with its key solution, which is still in the preliminary stages with limited customer adoption. To maintain relevance and drive growth, the company wants to actively monitor the market trends and development. Understanding how competitors and similar companies perform will help the company to identify opportunities and threats early. This insight will guide strategic decisions and necessary pivots. Staying agile and informed is key to long-term success in this emerging space.

Therefore, the Objective of this thesis is to evaluate the intra-logistics market, focusing on AGVs and AMRs, by analyzing competitor performance, business models, and market trends over the past 5 years, to understand geographic and developmental dynamics. Also, to provide strategic recommendations to improve its marketing and market positioning.

The Outcome of the thesis is to develop a report that evaluates the intra-logistics market, focusing on AGVs and AMRs, by analyzing competitor performance, business models, and market trends over the past five years and a set of recommendations. The outcome of the thesis should support the company's marketing team by increasing their understanding of the current market of intra-logistics products and services.

## 1.3 Thesis Outline

The thesis outcome is intended for the marketing department which deals with the planning and sales of AGV/AMR vehicle software. The thesis focuses on competitor companies mostly from Europe and a very few from the United States.

The study is based on market competition in the intra-logistics sector, where the competitors were identified by thorough and intensive analysis conducted based on

openly available data. The study is conducted through research, market analysis and benchmarking of selected customers.

This thesis is divided into 7 sections. Section 1 talks about the company and explains GIM Robotics' business problems and sets the thesis objective. Section 2 shows the research design, including the methodology and data sources used in the thesis. Section 3 reports on the results from the current state analysis highlighting GIM's market positioning, competitive landscape, and internal challenges in gaining control within the intra-logistics sector. Section 4 discusses literature and outlines the best practices guiding the thesis research. Section 5 presents the preliminary proposal. Section 6 details the outcomes of initial testing and validation, incorporating feedback from the stakeholders to refine the proposal. Finally, Section 7 ends the thesis with a summary of all the findings and strategic recommendations aimed at helping GIM position itself for scalable growth.

## 2 Method and Material

This section discusses the research approach adapted to tackle GIM Robotics' business challenge with detailed research design, analytical methods and data collection methods that are utilized. The section has a detailed overview of how the insights were gathered which involved interviews from the key stakeholders, including the Sales Director and the CTO along with internal documents. This helps to align the strategy and tailor it to GIM's business vision.

### 2.1 Research Approach

Research can be categorized into different research families. A fundamental difference lies between basic and applied research. Basic research deals with theoretical exploration and focuses on expanding knowledge set, with least or no focus on practical exploration. The aim of basic research is to expand the understanding of a process and contribute to scientific and general knowledge (Creswell and Creswell, 2018: 4). On the other hand, applied research is conducted on real world problems to produce some applicable outcomes. The focus is not only on increasing knowledge but also on applying it to solve practical issues that improve processes (Saunders et al. 2019: 12-13).

The other difference lies between research methods. Qualitative method deals with solving a complex problem with the help of non-numerical data like interviews, discussions, and findings to traverse the problem. Its advantage is that it captures complexity, reveals insights, and finds theories and does not test them (Creswell and Creswell, 2018: 3). Quantitative methods are fundamentally different, as they involve working with measurable numerical data. Its strength lies in the ability to generalize findings and provide evidence that supports the process of decision making (Saunders et al. 2019: 175). It helps in making concrete decisions using tools that identify patterns and refine the focus of the research. A mixed method has both qualitative and quantitative elements.

Last but not the least, research can be desk study or field study. Desk study deals with handling secondary data whereas field study deals with collection of primary data and modelling it accordingly. Each research method offers its own advantages and strength based on the objective, available data, and requirement of the research (Saunders et al.

2019). There are also several ways in which the research methods can be conducted. In the applied research, the research techniques include interviews, surveys, document analysis, and observations.

Finally, a research strategy can also be selected appropriately. In applied research, the most frequent choice is between action research and case studies. A more narrow application of action research is the relatively young research strategy called applied action research (in the sense of Kananen 2013). This strategy helps to address practical business challenges within an organization. In this method, there is less emphasis on the evaluation of the whole change process, placing more importance on developing and implementing the required solution that will bring out a noticeable improvement. According to Kananen (Kananen, 2013: 13), the method arises when “there is a phenomenon, process or situation that one wants to be improved after development of change.” It often involves only one development cycle, with the goal of achieving a practical solution (Kananen, 2013: 20). In this method, research and development activities are both integrated to improve operational functions.

In this thesis, the selected research method is the Applied Action Research (AAR) strategy. This approach allows to work closely with stakeholders, analyze real world data and implement actionable approaches that are required to tackle the ongoing problem. The AAR research method was selected because GIM Robotics wanted to know its market positioning and increase customer acquisition over the time in the intra-logistics market with separate software solutions for AGV/AMR vehicles. The goal is also to support GIM to make informed and strategic decisions that lead to noticeable business outcomes. Since the stakeholders are involved in the process, the AAR research method allowed stakeholders to refine strategies and implement them when required. The research process is based on using quantitative data to dig deep into company specific details to gain in-depth insights regarding the business challenge.

## 2.2 Research Design

The research design for this thesis is structured in a way to address and tackle the challenge faced by GIM Robotics in the intra-logistics sector, while meeting the

requirements of a research study. The company wants to enter a well-established market and gain traction in an area where they deal with software related to AGV/AMR vehicles. The research design is shown in Figure 1.

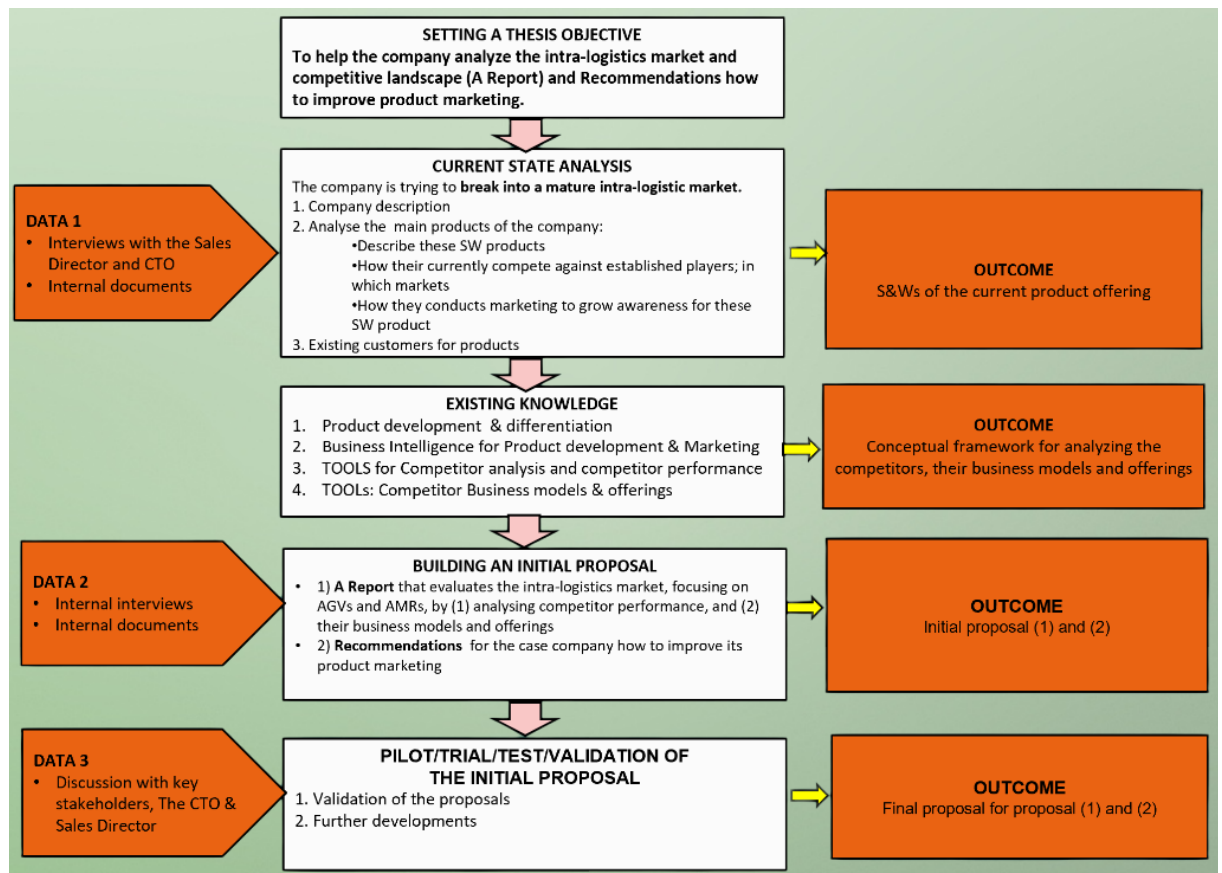


Figure 1. Research design of this thesis.

Figure 1 shows the approach that is adapted to conduct this study. The study is divided into various phases and starts with Step 1 which deals with setting the objective of the thesis. It lays the foundation for building a solution that would meet the company's needs.

Step 2 is the Current State Analysis (CSA) that deals with the investigation of the company's current state. This is supported by interviews with the stakeholders, CTO and Sales Director and some prior data from the company's database.

This leads to Step 3, which deals with gathering the existing knowledge and industry practice on the topics of product development and differentiation, as well as the tools for competitor analysis.

Step 4 focuses on the creation of a report and a set of recommendations by having discussions with the stakeholders, interviews, and going through internal documents and internal data. This also involved discussing the gathered knowledge of the entire intra-logistics market from external sources, which leads to proposing an initial market report for the relevant AGV/AMR market. It is based on targeting niche use cases such as airports or industrial areas where indoor-outdoor logistics are important. The Initial proposal development is supported by interviews with the Sales Director and the CTO of the company. The proposal emphasizes strategic partnerships with the OEMs, technology providers, and integrators.

Finally, Step 5 is the validation of the report and recommendations into the Final proposal. Here discussions are held with the stakeholders, including the CTO and Sales Director, to evaluate the relevance and feasibility of the proposal and its alignment with the business needs. The final feedback is used for refining and finalizing the proposal, which should help enabling the company to establish its presence in the intra-logistics market.

### 2.3 Data Collection and Analysis

Data collection and analysis form the foundation for the thesis. Data 1-3 was collected in multiple stages which has led to refinement of the research findings and proposals.

Table 1. Details of data collections 1-3 used in this study.

	Participants / role	Data type	Topic, description	Date, length	Documented as
<b>Data 1, for the Current state analysis (Section 3 or 4)</b>					
1	Sales Director	Face to face interview	<ul style="list-style-type: none"> <li>In depth problem discussion</li> <li>Current situation of the target market.</li> <li>Initial expectation of the company</li> </ul>	20.12.20204 1 Hour	Field notes
2	CTO	Face to face Interview	<ul style="list-style-type: none"> <li>Document sharing and discussion</li> <li>Discussion of the targeted customers</li> </ul>	23.12.2025 45 Minutes	Field notes and recording
3	Sales Director	Online Interview	<ul style="list-style-type: none"> <li>Geographic issue discussion</li> <li>Availability of public data</li> </ul>	17.02.2025 1 Hour	Field notes and recording

			<ul style="list-style-type: none"> <li>Issues concerned with the Central European companies</li> </ul>		
4	CTO, Sales Director	Face to face Interview	<ul style="list-style-type: none"> <li>Availability and authenticity of publicly available data</li> <li>Usage and comparison of data</li> </ul>	13.03.2025 45 minutes	Field notes and recording
<b>Data 2, for Proposal building (Section 5)</b>					
5	Sales Director, CTO	Face to face meeting	Proposal building	29.07.2025 1 Hour	Field notes
<b>Data 3, from Validation (Section 6)</b>					
6	Sales Director	Group interview, Presentation	Validation, evaluation of the Proposal	07.08.2025 30 minutes	Field notes and recording
7	CTO, Sales Director, Stakeholders	Final Presentation	Approval of the proposal	28.08.2025 1 hour	Field notes and recording

Table 1 demonstrates how the data was collected. The data collection process was carried out in three rounds and used Thematic analysis.

The first round, Data 1 was collected from people who are deeply involved with the Intra-logistics project in the case company. The investigation was conducted based on the internal documents and company data followed by few intensive interviews with the Sales Director and the CTO. Combining these two data sources gave an idea of where the company is currently standing in the market and what their future vision is.

Following the literature review, the analysis was conducted of the intra-logistics market, where the company is trying to compete with a few public and private companies. The data was available with the public companies. The private companies were a bit difficult to deal with as there were many inconsistencies with data. So, to gather the data for competitor analysis, a meeting was held with the key stakeholders, and it was decided to use the data that was available with trusted sites like growjo. After the data collection and analysis of the company data, it was time to build a proposal.

The Proposal building phase comprised of the interviews with the stakeholders and project leads (Data 2).

After the proposal building, Data 3 was gathered from the validation discussions on the Initial proposal for the case company on how to strategically place its foot in an already mature intra-logistics market. The step had a series of presentations based on the feedback provided from every previous meeting.

Additionally, to support triangulation of data sources, the study ensured that a wide range of documents was also used via the document analysis.

Table 2. Internal documents used in the current state analysis (Data 1).

	Name of the document	Number of pages/other content	Description
A	STIQ 2024 AGV AMR Robotics Report v1	97 pages	Mobile robots in factory, production & warehouse environments
B	Product handbook	13 pages	Elaborate list of Products
C	Market analysis logistics	11 pages	Giants in the logistics market
D	Case company's competitor list	2 pages	List of competitors
E	3D Normal Distributions Transform Occupancy Maps: An Efficient Representation for Mapping in Dynamic Environments (Saarinen <i>et al.</i> , 2013)	24 pages	Technology behind the software and how it works
F	Localization in highly dynamic environments using dual-timescale NDT-MCL (Valencia <i>et al.</i> , 2014)	7 pages	Technology behind the software and how it works

Table 2 shows the internal documents used for the analysis to understand the market condition of the intra-logistics sector and the position of the case company. With the knowledge gained from the documents and the interviews, the study built a picture of the main players in the field, the market size, the geographic locations, and the business models that the companies have used.

Summing up, in this study, the preliminary data collection methods included internal document analysis and semi-structured interviews. Internal company documents such as strategic plans, company products and presentations were reviewed for understanding of the current state of the case company. This document review was

supported by a series of interviews with the key experts that included the CTO and the Sales Director. The interviews were carried out in a manner that encouraged honest and transparent responses. Most of the meetings were face-to-face and field notes were taken and documented. These findings are elaborated in Section 3 i.e., the current state analysis.

### **3 Current State Analysis of the Intra-Logistics Market Development**

This section of the thesis presents the current state analysis of the case company's intra-logistics market development.

#### **3.1 Overview of the Current State Analysis**

The objective of the current state analysis was to assess the present condition of the case company's position in the intra-logistics market, particularly regarding its AGV/AMR software offerings. The goal was to assess the company's readiness to enter a competitive market, identify the challenges and opportunities, and establish a foundation for a strategic marketing proposal. The analysis focused on the case company's current position, the gap in the current strategy and how it can sell its products in the current market. The CSA was conducted in steps which represents a series of internal understanding to external application.

In the first step, the goal was to analyze the case company's strategic orientation that includes its existing market strategy and future vision. For this, all the internal documents available were collected and four meetings were held with the CTO and the Sales Director. It was essential as it helped to understand the company's products, their competitors, marketing strategy and the current customers.

In the second step, data was collected from the group meetings and the internal documents. Analyzing the collected data helped to map out the entire process of where the company is and what they want to achieve. Currently the company's expertise lies in 3D mapping and localization products in the intra-logistics sector. This data threw light onto the difficulties in increasing the sales revenue in this sector. These are discussed in detail in sections 3.3 and 3.4.

For the third step, the analysis focused on the competitive market environment and dynamics which are rapidly changing with technological innovations. In this step the established players in the AGV/AMR segment were identified. Along with them the competitors were also marked who are in their initial phase in the market. This included identifying the business and revenue models and comparing them with that of the case company's situation. A meeting was scheduled with the CTO and the Sales Director to

discuss these findings. This step helped to assess the position of the case company to compete in the well-established intra-logistics sector.

In the fourth step, the analysis was revolving around the case company's current challenges as how to expand the sales of the product and growth constraints in areas concerned with customer attraction and acquisition, product awareness and market fit. This step was important as it provided a clear and concise picture of the company's expectations, assumptions and the actual scenario. It also allowed to explore the current market scenario and the knowledge gap of the case company. Lastly, the outcomes from all the steps were combined as to where the company is lagging in the intra-logistics sector and a focus point was decided for the thesis. It was decided on two meetings with the CTO, the Sales Director including the stakeholders involved.

### 3.2 Description of Intra-Logistics Market Development

Intra-logistics sector is subject to changes over time and is evolving every day with every new technology. The sector has drawn demand for automation, flexible material handling and operational efficiency. The traditional method of operation involving a large workforce for the movement of goods faced considerable number of challenges. To overcome these challenges and to support the growing global competitions, the adoption of AGVs and AMRs were accelerated for higher throughput. Various companies that have set foot in the intra-logistics market have been working on different business models, one of which I will be analyzing in the later section 3.2.

For the case company, the intra-logistics market development represents both an opportunity and a challenge. Being a mature sector, it is very hard for a small company to break into it. On one hand, the case company has figured out the solutions for the outdoor intra-logistics market, covering environments like ports, airports, construction sites, and large industrial campuses, but is in the initial phase. On the other hand, the company is trying to figure out solutions for the indoor intra-logistics market, facing strong challenges in terms of highly priced hardware components.

The case company offers niche technical expertise in 3D mapping, localization and situational awareness and seamless outdoor navigation. It tends to offer unique customized solutions to its customers based on their needs. The case company is trying

to focus more on indoor-outdoor solutions to meet the increasing demand for end-to-end logistics automation.

Market development also depends on customer education and awareness. While building up and developing products is one side of a coin, raising customer awareness regarding that is the other side. Gaining potential customers is one of the most important aspects of marketing. Demonstrating reliability through pilot projects, building partnerships with OEMs and system integrators, and creating industry-specific case studies are the most crucial steps for the case company to enter the sector.

### 3.2.1 Market Growth Trends

The AGV market is steadily growing with an approximate value of USD 5.34 billion in 2024. This is expected to reach USD 9.18 billion by 2030 (Market growth reports, 2025, AGV AMR in logistics market). This indicates a constant growth in the demand for automated solutions in the intra-logistics sector. The Autonomous Mobile Robot (AMR) market, according to Mordor Intelligence, is growing much faster and is projected to reach USD 9.26 billion in 2030 from USD 4.49 billion in 2025 (Mordor Intelligence, 2025, Industry reports). Combining both within the logistics market, the growth trajectory becomes even more attractive. The global market was valued at USD 10.23 billion and is estimated to reach USD 32.78 billion by 2033, at a CAGR of 15.66% (Market growth reports, 2025, AGV AMR in logistics market).

There are various forecasts for future market growth. The above numbers were an approximate picture of where the market is supposed to be in the future coming years. It highlights the explosive potential of mobile robots offering flexibility and autonomy.

### 3.2.2 Competitive landscape and Industry Players

Being very dynamic, the intra-logistics market is subject to technological changes very often. The competitive environment is shaped by mixed multinational companies, mid-sized technology providers and fast-paced start-ups. The intra-logistics market is dominated by large, diverse equipment manufacturers that have expanded into digital services and automation. These companies are quite self-sufficient and have their respective Unique Selling Point.

The Giant players like Toyota material handling, Linde Material Handling (KION Group), Jungheinrich AG, Hyster–Yale Group, Inc. are very well established in the intra-logistics Market. These companies are present world-wide, and they dominate through scale and well-established dealer network. They offer end-to-end products for their customers and have a very large customer base.

On the contrary, these companies focus primarily on indoor environment, and their cycles revolve around improving existing products and large-scale deployments. This leaves a huge space for niche specialization. Here comes the medium and small sized companies that specialize in hybrid indoor-outdoor logistics. For small companies like the case company, this void offers a strategic window. With niche specialization in 3D mapping, localization and seamless indoor-outdoor navigation, the company is trying to target market by focusing on environments like airports, ports and industrial campuses. This will avoid direct competition with the established giants.

### 3.2.3 Regional Market Development

The adoption of technology in the intra-logistics market varies depending on the region. The market is historically led by Europe and North America with the latest technologies and fast paced automation, strong industrial base and high labor cost. For the Asia-Pacific region, China is emerging as a hub for both technological innovation and increased rate of production. There is also a rapid-industrialization, e-commerce expansion and government investment in the intra-logistics sector for many Asian countries.

In Europe, the rapid growth of e-commerce has reshaped the intra-logistics industry with Germany, France and UK leading the way for all the innovations and developments. There is a lot of investment and fund raising for start-ups that are working on robotic picking systems, warehouse management systems and AMRs to make the free flow of goods from warehouse to outside and vice versa. At the same time, EU's Green deal and the Sustainability Regulations are making the companies to adapt more sustainable way of automating the process by using less energy, leaving less carbon footprint behind and adapting an eco-friendly environment. These factors are placing Europe in a position where it is emerging as a technological innovation hub and an example of driving the intra-logistics market development globally.

### 3.2.4 Market Dynamics and Influencing Factors

The intra-logistics market is influenced by a lot of factors like labor shortages and need for automation, increasing demand for efficiency and speed, cost reduction, sustainable and energy-efficient practices, global disruptions like geopolitical tensions being few of them. This emphasizes adopting an agile method where there is no shortage of supply flow when the demand goes high.

### 3.2.5 Brand Awareness

Not only manufacturing market-fit products are essential but also having a proper strategy to increase brand awareness, which is important to penetrate the market and maintain a steady position. Being a mature sector, the giants like Jungheinrich, JBT and more are already having a big customer base and a very profitable business due to their strong brand recognition. For customers, a well-recognized brand often increases their reliability and confidence in the integration process, product quality and after sales support.

Brand awareness is important for the medium and small sized companies who are trying to gain control over the market. Few of the companies are niche players offering innovative solutions, particularly in robotics and artificial intelligence. These companies often choose their visibility at trade fairs for people to notice their work. As the intra-logistics market is very huge, brand awareness is a very important aspect for customer trust, market penetration and long-term competitive positioning.

## 3.3 Analysis of the Intra-Logistics Market Development and company products

### 3.3.1 Customer Order Processing Structure

The case company specializes in developing software solutions for 3D mapping, localization and situational awareness for the AGV and AMR vehicles.

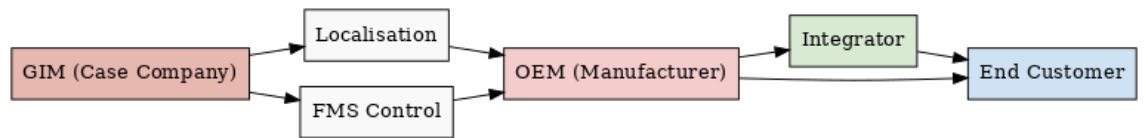


Figure 2. End-to-End Delivery Chain.

Figure 2 above shows the end-to-end delivery chain in an intra-logistics market. The case company has expertise with technical software products that help with platform control, localization, situational awareness and FMS (Fleet Management System) control. Before handling the solutions to the OEMs, two-value added services occur. Platform control allows the control of actuators of different types of logistic vehicles. First, Localization and situational awareness solutions provided by the case company are adapted to specific regions, terrains, markets and customer requirements. Second, FMS Control deals with integrating a Fleet Management System, which enables monitoring, coordination and optimization of various fleet operations that include vehicles, machines or assets. Then comes the OEMs (Original Equipment Manufacturer). These are the companies that specialize in the production of AGV or AMR vehicles. The case company has agreement with the OEMs where they supply the software required for the vehicles to operate. The OEMs incorporate platform control, localization and the FMS control features into their own products. The OEMs essentially act as the packer and distributor, combining the case company's solutions with its products and supplying the whole as a product to its end customers. The Integrator is an optional step where in some cases, they help customize the end product by ensuring proper configuration, smooth installation and alignment with the customer requirements.

### 3.3.2 Technological Advancements

3D mapping, Artificial Intelligence and Computer Vision are leading the way of intra-logistics sector to undergo rapid technological transformation. The case company's expertise lies in advanced 3D mapping and localization. The company also has a very strong reputation for considerable work in the field of AI. As per the company, combination of all these technologies helps the case company deliver high-precision navigation across very complex sites. Along with this, the company also has interoperable fleet management system software that makes it very compatible with the OEMs and the integrators in the consolidating market.

In comparison with its competitors, the case company's strength lies in its expertise in seamless navigation across difficult areas. The company is trying to gain control over airports, ports and other industrial sites for significant growth and is trying to make its products much more suitable for both indoor and outdoor environments.

### 3.3.3 Products

The case company has its in-house products that it focuses on to increase customer awareness and sales. The products are described in the following sub-sections exactly as demonstrated by the company (GIM Robotics, 2025, Homepage).

#### 3.3.3.1 1<sup>st</sup> product: Paikka

Paikka is a real-time 3D positioning software stack that is designed for indoor-outdoor autonomous mobile machinery. It can deliver precise positions across all environments, combining data from multiple sensors. The software provides accurate pose estimation, ensuring reliability, safety, efficiency and accuracy of autonomous machine operations (GIM Robotics, 2025, PAIKKA (ex-Locator)).

The key features include high accuracy with real time 3D pose estimation including position, orientation and velocity; features enabled for natural environment navigation; strong performance in challenging weather and environmental conditions in both indoor and outdoor situation; supports seamless transition between indoor and outdoor environments and includes a pose quality indicator (GIM Robotics, 2025, PAIKKA (ex-Locator)).

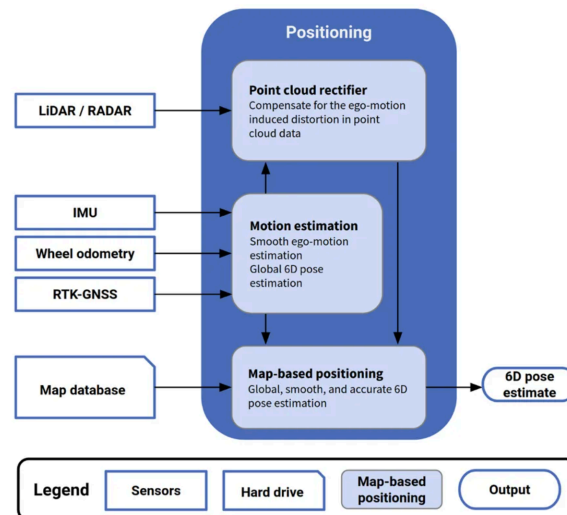


Figure 3. Paikka Diagram (GIM Robotics, 2025, PAIKKA (ex-Locator)).

### 3.3.3.2 2<sup>nd</sup> product: Tarkka

Tarkka is a perception software platform created for obstacle detection and tracking in unpredictable environments. It is specially designed for heavy vehicles and machinery operating for long periods. Tarkka is designed for reliability and robustness, especially in harsh outdoor conditions. It delivers detection, classification and tracking capabilities for industries like intralogistics, container terminals, construction and mining (GIM Robotics, 2025, TARKKA (ex-Situational awareness)).

The key features highlights free space detection that calculates the minimum space required for a vehicle of specific size to move in a planned path; object detection which identifies objects in the path with detecting pedestrians up to 50 m and vehicles up to 100m; object classification which detects objects and the models can be customized as per customer needs; object tracking which assign IDs to tracked objects, measure their velocity and predicts short-term movements for dynamic speed adjustments (GIM Robotics, 2025, TARKKA (ex-Situational awareness)).

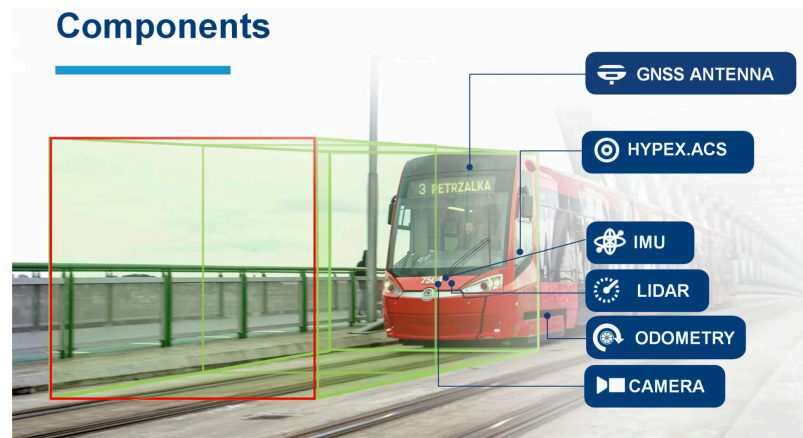


Figure 4. Tarkka Components (GIM Robotics, 2025, TARKKA (ex-Situational awareness)).

### 3.3.3.3 3<sup>rd</sup> product: Kilpi

According to the company, Kilpi is a simple yet effective obstacle detection system that operates independently and does not require any data from Paikka to perform. It does not rely on localization data and uses input as vehicle velocity and steering angle to assess the immediate surroundings of an autonomous mobile machine. It acts as a soft stop before actual safety mechanism comes to play (GIM Robotics, 2025, KILPI).

Kilpi has two safety zones around the robot. One is stopping zone which is a restricted area with no obstacles present. If any object is detected inside the zone, the vehicle stops moving (GIM Robotics, 2025, KILPI). It resumes its operation once the obstacle is removed. The other is slow-down zone where the machine starts to slow its speed once an obstacle is detected (GIM Robotics, 2025, KILPI).

Lidar point counts determine the presence of obstacles in each zone. If these exceed a predefined threshold, the zone is marked as occupied. The system then gives an output as a multiplier that adjusts the vehicle speed dynamically (GIM Robotics, 2025, KILPI).

### 3.3.3.4 4<sup>th</sup> product: Kaikki

Kaikki is a comprehensive, infrastructure-free software solution specially designed for indoor-outdoor intra-logistics use, done in collaboration with Navitec systems. It is capable of operating in any kind of weather and in all kinds of vehicles, be it 500 kg or

500 tons. It can be used to operate any drive system or fleet size. Kaikki delivers high-accuracy performance at high speed in large areas and in all-weather conditions (GIM Robotics, 2025, KAIKKI).

Kaikki offers a two-phase deployment process. The first phase starts with a drive-by-wire-enabled machine converting to an autonomous field robot or vehicle. If the machine already has all the needed sensors, calibration is done using GIM's tool Mitta. Else, with the help of a feasibility study performed to define the Operational Design Domain (ODD), suitable sensors are selected, installed and calibrated. In the second phase, Navitec systems' Navitrol software is configured with respect to ODD and GIM's Paikka and Tarkka software are installed, tested and validated. Once the machine is ready, the machine is deployed in the field, and the operating environment is mapped using GIM's Kartta tool. Finally, Navitec's Navithor software manages routing and fleet operations (GIM Robotics, 2025, KAIKKI). This whole process is useful for the clients who need all of the software in one system. Figure 5 below shows the whole process diagrammatically.

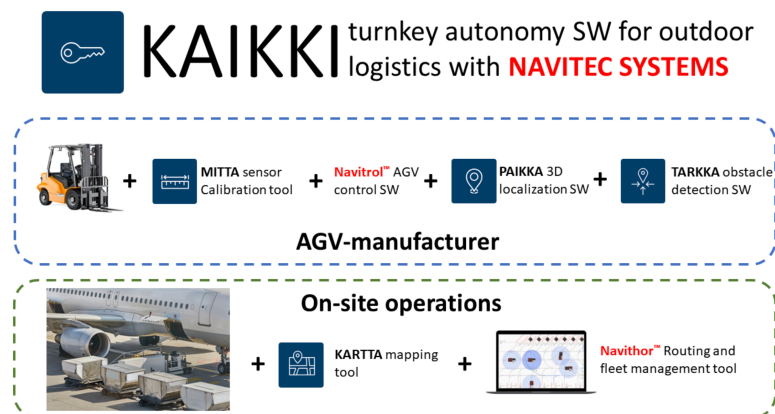


Figure 5. Kaikki diagram (GIM Robotics, 2025, KAIKKI).

### 3.3.3.5 5<sup>th</sup> product: Mitta

Mitta is a web-based platform for calibrating 3D sensors that are on mobile machines. It supports both manual and data-driven calibration processes and features intuitive 3D visualization tools for validating calibration parameters (GIM Robotics, 2025, MITTA (ex-

Calibration)). It determines extrinsic calibration parameters and temporal offsets among sensors such as IMU, GNSS and 3D lidars. Figure 6 below shows the two main components, the front-end and back-end of the web-based tool. Large calibration files are managed through Google cloud (GIM Robotics, 2025, MITTA (ex-Calibration)).

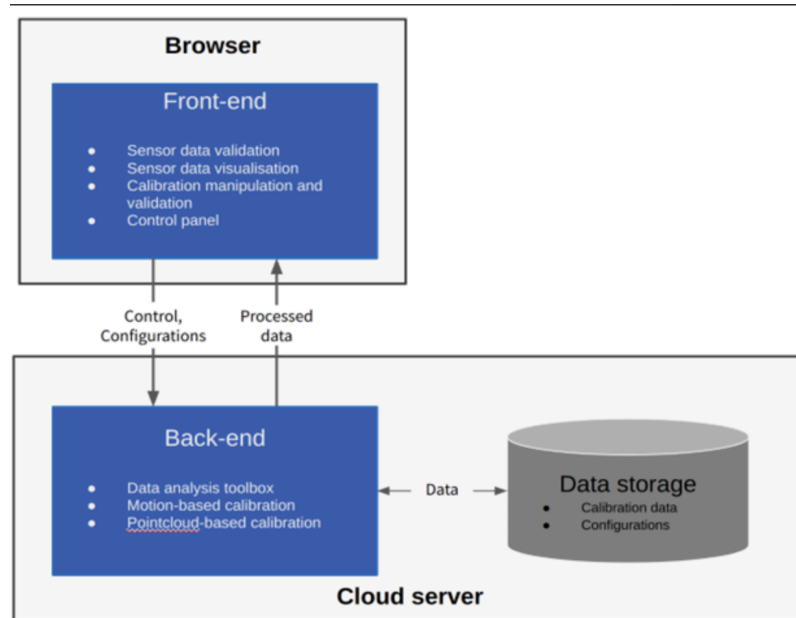


Figure 6. Mitta diagram (GIM Robotics, 2025, MITTA (ex-Calibration)).

### 3.3.3.1 6<sup>th</sup> product: Kartta

Kartta basically serves as the mapping tool. It is a web-based tool for creating and managing 3D maps used by Paikka positioning software. It provides a full-featured, platform-independent interface for environmental mapping and modelling (GIM Robotics, 2025, KARTTA (ex-Environmental modeling)). It creates maps with the help of advanced graph-SLAM algorithms and helps validate mapping data (GIM Robotics, 2025, KARTTA (ex-Environmental modeling)).

The backend refers to the KARTTA part that is running on a cloud server. It handles most of the heavy computation related to mapping. The front-end handles controls and data visualizations. Data processing is done on front-end part. The mapping files are managed by google cloud as they are large (GIM Robotics, 2025, KARTTA (ex-Environmental modeling)).

The first four products are software products, and the last two products are the tools that are used to install the software products to the customer vehicles or robots.

### 3.3.4 Partner and Customers

The case company specializes in design, research, development and integration of smart robotics systems. With the help of its software, clients can rely on their machines to be more efficient and precise. Navitec Systems is one of the partners of the case company. As per the company, automation solutions from Navitec along with the software of the case company helps make the efficiency of the intra-logistics application much better and more reliable (GIM Robotics, 2025, Partners).

The company also has customers. It contributes to the development program for its customers with professional services and support as and when required. Few of the public references are mentioned below in Figure 7 (GIM Robotics, 2025, Partners).

## Customer references



Figure 7. Customers (GIM Robotics, 2025, Partners).

Figure 7 shows the partnership references of GIM robotics. These public references help the company to build trust and attract customers further.

### 3.3.5 Competitors

GIM Robotics faces competition from several tech innovators in the areas of automation, perception and navigation systems. Below are few of the listed competitors in the intra-logistics sector.

Company	Offerings	Size	Revenue(M\$)	Source	Business Model	Revenue Model
Kudan	SLAM software for robotics/AR/VR	Small	3.6	<a href="https://stockanalysis.com/https://tracxn.com/d/company">https://stockanalysis.com/https://tracxn.com/d/company</a>	SLAM software for robotics/AR/VR	Licensing, SaaS
Node Robotics	Autonomy OS for AGVs/AMRs	Small	7.7	<a href="https://node-14.1.M">https://node-14.1.M</a>	Autonomous navigation software	Licensing, SaaS, Integration
Slamcore	Vision-based SLAM for robotics/AR/VR	Medium	5.3	<a href="https://growjo.com/company/5-25.M">https://growjo.com/company/5-25.M</a>	SLAM software development	Tiered Licensing, SDK SaaS
Bluebotics	Autonomous navigation for industrial vehicles	Medium	5.4	<a href="https://www.owler.com/company/5-25.M">https://www.owler.com/company/5-25.M</a>	Navigation systems for industrial vehicles	Hardware Sales, Licensing
OXTS	GNSS/INS positioning hardware	Medium	25.7	<a href="https://www.owler.com/company/5-25.M">https://www.owler.com/company/5-25.M</a>	Positioning hardware and services	Hardware Sales, Support Services
Fixposition	Precise positioning systems	Small	2.9	<a href="https://growjo.com/company/fixposition-AG">https://growjo.com/company/fixposition-AG</a>	Positioning systems	Hardware + SaaS
Thirdwave Automation	Automation platform for forklifts	Small	8.3	<a href="https://getlatka.com/company/thirdwave.ai">https://getlatka.com/company/thirdwave.ai</a>	Forklift automation solutions	SaaS, Licensing, Tele-op
Easymile	Autonomous shuttles and logistics vehicles	Medium	55.1	<a href="https://growjo.com/company/easymile">https://growjo.com/company/easymile</a>	Autonomous vehicle manufacturing	Hardware Sales, Fleet SaaS
Gaussin	Electric/autonomous industrial vehicles	Large	31.4	<a href="https://www.alphaspread.com/security/par/algau/financials/28.4M">https://www.alphaspread.com/security/par/algau/financials/28.4M</a>	Industrial vehicle manufacturing	Hardware Sales, Leasing, Services
Fernride	Tele-operated & autonomous yard trucking	Small	19.9	<a href="https://growjo.com/company/">https://growjo.com/company/</a>	Autonomous and tele-operated trucking	SaaS, Tele-ops per-mile fees

Figure 8. Competitor Details (Part 1).

Company	Geography	Business Size	USP	year established
Kudan	Japan	50	Commercial-grade SLAM (visual & LiDAR) for robotics, mapping, and digital twins; indoor-outdoor localization; partner-ready SDKs.	2011
Node Robotics	Germany	30	NODE.OS autonomy stack (localization, navigation, fleet) for OEMs; Live SLAM; vendor-agnostic integration.	2020
Slamcore	UK	100	Visual SLAM & spatial intelligence software for robots and drones; commercial-grade perception.	2016
Bluebotics	Switzerland	150	ANT® natural feature navigation and ANT server fleet manager; 150+ ANT-driven models; 6,000+ vehicles.	2001
OXTS	UK	150	High-precision GNSS/INS for automotive testing, ADAS validation, surveying; gx/ix™ tight coupling.	1998
Fixposition	Switzerland	40	Vision-RTK 2: deep fusion of GNSS, IMU, and vision for precise positioning in GNSS-challenged environments.	2017
Thirdwave Automation	USA	50	Shared Autonomy high-reach forklifts (TWA Reach) with 4 operation modes; dynamic fleet management.	2018
Easymile	France	200	Autonomous shuttles (EZ10) and TractEasy tow tractors; 400+ deployments in 30+ countries.	2014
Gaussin	France	500	Electric & hydrogen terminal tractors and yard automation; battery swapping; autonomous yard solutions.	1880
Fernride	Germany	40	Human-assisted autonomy for terminal tractors; first TÜV SÜD certified autonomous terminal tractor in EU; driverless operations underway.	2019

Figure 9. Competitor Details (Part 2).

Figure 8 & 9 shows findings of the competitors that are relevant to the case company. Both the above tables contain data that talks about the offerings, size, business model, business revenue that will help the case company to compare its own data with that of the competitors. Since GIM Robotics is still in its initial phase in the intra-logistics sector, the above data will help the company to evaluate its own level in the current market. Collectively, these companies show different solutions advancing autonomy in intra-

logistics in different segments like robot navigation, positioning precision and outdoor autonomy. The detailed analysis is discussed in a report in section 5.

### 3.3.6 Current Marketing Practices

The case company's marketing strategy is technology-oriented and focuses on strengthening clients by demonstrating technical superiority rather than promoting the brand.

The company follows the following marketing strategy:

First target is B2B sales and networking: The company focuses on niche technical marketing and most of the customers come from professional networks. Demonstrating the products in trade fairs and research consortiums helps the company to acquire public funding and attract more customers. Also, direct demonstration and customization of the products based on customer needs helps the company to stand out of the crowd.

Second is product-centric website, content and public relations: The website focuses on the products and demonstrates the features very widely. Also, it talks about the research and development going on. Public references and ecosystems are also mentioned on the website.

Third is digital presence: The company shares new innovations, project updates and success stories through social media platform, which supports brand visibility.

The current marketing approach supports research collaborations and attracts technical customers but limits scalability and awareness among non-technical customers.

## 3.4 Key Findings from the Intra-Logistics sector of the case company

This section is a summary of the results from the Current State Analysis. It focuses on the development areas in the thesis while pointing out the strengths and weaknesses of the case company in the intra-logistics sector.

### 3.4.1 Competitor Analysis

Based on the competitor list provided in Figure 7 & 8, the business model landscape can be divided into two parts when analyzing for the case company. Companies such as Kudan, Slamcore, Node Robotics and BlueBotics are software and autonomy stack providers. They have their business model close to GIM Robotics which is Saas, and it centers around selling mapping, navigation and fleet management software to the OEMs. Revenue is mainly generated by providing Saas business and support to the OEMs. This model relies on building strong partnerships with the OEMs. They compete on accuracy and ease of integration, which are most critical factors for the operating vehicle.

The other side of the coin are the vehicle and machine providers which are Easymile, Gaussin, Thirdwave Automation and Fernride. These are supported by hardware manufacturers like OxTS and Fixposition. Their success factor revolves around selling or leasing autonomous vehicles which can or cannot be bundled with autonomy and fleet management software. This model reduces the initial big investment for the customers by allowing them to lease vehicles based on the performance and in return generates high value revenue for the above-mentioned companies. More detailed analysis of the competitors will be presented in the form of a report in section 5.

```
import pandas as pd
from tabulate import tabulate

# Load the Excel file
file_path = '~/Downloads/Size-Revenue data.xlsx'
df = pd.read_excel(file_path)

# Remove duplicates and sort company names
company_list = sorted(df['Company'].dropna().unique())

# Function to search and display company details
def get_company_details(company_name):
    matches = df[df['Company'].str.lower() == company_name.lower()]
    if matches.empty:
        print(f"\n No results found for '{company_name}'.")
    else:
        print(f"\n Details for '{company_name}':\n")
        print(tabulate(matches, headers='keys', tablefmt='fancy_grid', showindex=False))

# Function to show all data
def show_all_companies():
    print("\n Full Table:\n")
    print(tabulate(df, headers='keys', tablefmt='fancy_grid', showindex=False))

# Show list of companies
print("\n Available Companies:\n")
for i, name in enumerate(company_list, 1):
    print(f"{i}. {name}")

# Ask user for input
selected = input("\n Enter a company name or number from the list above, or type 'all' to show all companies: ").strip()

# Decide based on input
if selected.lower() == "all":
    show_all_companies()
elif selected.isdigit() and 1 <= int(selected) <= len(company_list):
    company_name = company_list[int(selected) - 1]
    get_company_details(company_name)
else:
    get_company_details(selected)
|
```

Figure 10. Python code for fetching the company from a list.

Figure 10 shows a python code that is used for fetching the company details from a long file. Since there are multiple competitors in the field, it is difficult to go and search all the company data one by one. This code takes the file named "Size-Revenue data" (Figure 8 & 9 can be considered as the company data) as the input, analyses it and gives the required company details that the user has asked for. It will return the company name with all the details if it exists in the file or else it will return null if the company name does not exist.

### 3.4.2 Strengths and Weaknesses of GIM's Products

The company's products have their own strengths and weaknesses that are shown in Figure 11 below:

#### Strengths vs. Weaknesses

Characteristic	Localization Accuracy	Perception	Infrastructure Needs	Design	Operational Environment
<b>Strengths</b>	High-Accuracy	Strong	Infrastructure-Free, Hardware-Agnostic, Flexible	Research & Innovation Driven, Modular Software	Effective in Complex Conditions
<b>Weaknesses</b>	N/A	N/A	Complex Integration, High Dependency	Maintenance Overhead	Reliance on Partnerships, Limited Market Penetration

Figure 11. Strengths and Weaknesses of the company's products.

Figure 11 clearly shows the strengths and weaknesses of the company's products. The company specializes in 3D perception and localization that the products demonstrate very well. The products offer high accuracy localization and strong perception. The product is platform dependent and can be paired with any mobile vehicle with other companies' products. It has very modular software that is updated with ongoing research. The key advantage of the products is that they can operate in any complex climate and terrain.

Along with the strengths comes the weaknesses. They are complex to install and depend on the installation tools that the company provides. The products have limited market reach and not many customers know about them.

### 3.4.3 Strengths and Weaknesses in Marketing practices of the products

The strengths and the weakness in marketing practices of the company are listed below in Figure 12:

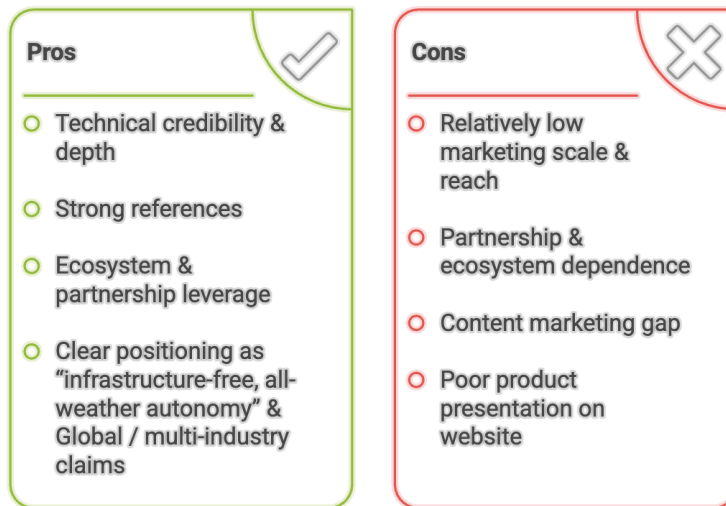


Figure 12. Strengths and Weaknesses of marketing practices of the products.

Figure 12 demonstrates that coming to the pros of marketing of the case company, the website is technically detailed and holds strong references from the customers. The company believes that an ecosystem makes them stronger together, helping them to promote their products more efficiently. Also, partnerships with the big OEMs help the other competitors to recognize their products. A marketing strategy is to present the product as infrastructure and platform free and that they work in all kinds of weather and terrain. This helps the company to differentiate their products from others.

The drawbacks of this process are that there is a high dependency on partnerships and ecosystems, and the marketing scale is quite low. There are few commercial-scale customer references, and such reactive marketing approach focuses more on relationships between the company and its customers. Also, the description of the product on the website is very technical, which is difficult for a non-technical person to understand.

#### 3.4.4 Selected Area of Focus

Based on the findings in the CSA, two focus areas were selected for further development. First, to build a detailed report based on the analysis of the competitors. This will help to understand the offerings of the other companies in the same sector. Second, building recommendations for enhancing the marketing approach of the company. This will help to target the weakness that is addressed in CSA and stand strong on that.

The focus area is more elaborately explained in the upcoming sections based on the knowledge gathered and the best practices described.

## **4 Available Knowledge and Best Practice on Enhancing Product Sales in the Intra-Logistics Market**

This section discusses the available knowledge and practices on how companies in the Intra-Logistics Market, especially the ones providing solutions for automated AGV/AMR, can increase product sales. The topics discussed below from the Conceptual framework of the thesis reflect the critical ideas from the CSA combined with the objective of how the case company can create value and outstand itself in the intra-logistics market. The topics in the section show the focus areas discussed in Section 3.

### **4.1 Product Development and Differentiation**

Product development and differentiation is a very important aspect in the competitive market where technology-driven organizations are involved. In today's rapidly evolving market, innovation cycles are rapid, and product lifetimes are short. Steve Blank introduced the 'Build-Measure-Learn' feedback loop, which proves that improvement is a continuous cycle, where the next step is influenced by the previous one (Blank and Dorf, 2012). Creating customer value through innovation is something that the technology-based firms determine with the help of product development and differentiation. Innovation and differentiation are two very important aspects of sustainable competition. By improving quality, the time wasted by workers and machines is redirected towards producing products and service. According to this, innovation should be useful, and customer driven. It is a discipline that combines the creativity and methods of designers to bridge human needs, business strategies and technological capabilities, turning them into market opportunities and valuable customer solutions (Brown, 2008: 87). For the tech companies, design thinking should target the pain points of the customers and should be human-centric. Ensuring quality in every step is very important and it should be a continuous step. He emphasizes focusing on designing and manufacturing products, so that the quality is inherent, removing the dependency on inspections to detect defects.

The Stage-Gate model by Cooper is a popular framework used by technological firms to manage innovations. The Stage-Gate system serves as a conceptual framework and an operational process for managing the process involved in a new product project from initial idea to product launch (Cooper, 2017). This model provides a structural approach to deal with innovations. Also, according to Cooper "(...) each stage consists of a set of

prescribed, cross-functional, and parallel activities that must be undertaken before moving to the next stage.” (Cooper, 2017). In this method, different steps marked as gates are used, that ensures cross-functional gate reviews. This method helps the firms to ensure that every step is taken under proper managerial discipline. “Successful new-product development requires systematic effort, disciplined planning, and periodic review of progress against predefined milestones.” (Kotler and Keller, 2016: 351). Implementing the gate model would ensure that minimum resources are going into vain and the maximum are being used to make some customer-centric innovations. “The gatekeepers’ job is to ensure quality of execution, business rationale, and alignment with strategy.” (Cooper, 2017).

R&D driven innovation would help technical firms to ensure strategic differentiation with their products that will give them an edge in this competitive market. Together these tools and frameworks point towards an integrated innovation logic where agility brings speed, and differentiation helps build relevance and long-term relationships. This demonstrates that modern products emerge at the combination of technical excellence and customer-driven insights.

#### 4.2 Business Intelligence for Identifying Marketing Strategy

Business Intelligence (BI) is one of the most important pillars when it comes to conquering a particular segment. It deals with data collection based on market research and analysis to make well-informed business decisions. In technology driven industry, making informative decisions based on data is very important for commercialization.

According to Provost and Fawcett “Data science is about extracting useful knowledge from data to solve business problems; the goal is to improve decision-making, not merely to describe data.” (Provost and Fawcett, 2013: 4). The amount of data collected is not important, but deriving important actionable items brings the difference. “It is not the data themselves that are valuable; it is the ability to extract and apply knowledge from the data that makes the difference.” (Provost and Fawcett, 2013: 5). For a company, transforming technical information into market insights leveraging systematic data interpreters gives the company an advantage. A continuously operating network of people, procedures and equipment together to collect, organize and analyze information, ensuring that marketing managers receive accurate and timely insights for decision-

making (Kotler and Keller, 2016: 89). Also, "(...) a good MIS balances the information users would like to have against what they really need and what is feasible to obtain." (Kotler and Keller, 2016: 90).

Marketing strategy as described by Kotler and Keller (2016) "(...) the logic by which a company hopes to achieve profitable customers (...)". They have key elements comprising segmentation, targeting, positioning, value proposition and marketing mix. BI strengthens each of these elements. Through segmentation analytics, BI recognizes most valued customer groups; through predictive modelling, it ranks among the most reachable segments; through behavioral data, it enhances positioning accuracy and through interactive dashboards, it optimizes market mix. Data backed market strategy optimization results in achieving the target easily and BI is now the engine that drives it.

Kotler and Pfoertsch argues that now-a-days, B2B organizations are more inclined towards analytics-driven brand programs and consider them as a core organizational capability for increasing brand value and gain insights of brand equity with the help of data (Kotler and Waldemar Pfoertsch, 2025). They give importance to continuous data integration for managing brand presence through data integration. From the recent studies we can see that, integration of business intelligence and customer orientation has increased a lot in the digital marketing environment. According to Kotler and Keller, market orientation can be tied to marketing concepts. A company that follows the marketing concept should be organized enough to recognize, meet and satisfy individual customer needs while ensuring profitability (Kotler and Keller, 2016: 106). According to them, the firms with the above mindset "have built customer value into their culture and systems rather than treating marketing as a separate department." (Kotler and Keller, 2016: 107).

According to Gupta et al., BI can be considered an important element in purpose driven innovation (Gupta et al. 2024). They say that successful ventures have continuous sensing mechanisms in their ecosystem that link partners, suppliers and customers through shared data intelligence (Gupta et al. 2024). This ecosystem method not only ensures high profit return but also helps with mission alignment and collaborative growth (Gupta et al. 2024).

"Not all customers are created equal. The long-term value of a customer depends on the stream of profits generated during the relationship." (Lehmann et al.2005: 3). Business

intelligence plays a crucial role in quantifying and managing long-term customer relationships based on the outcome. Customer Lifetime Value can be defined as the current value of a customer's projected future profits (Lehmann et al.2005: 45). In this method, marketing is more concerned with strategic asset management.

“The ultimate goal of data-driven decision-making is organizational learning — building a culture that tests hypotheses, measures outcomes, and adjusts behavior accordingly.” (Provost and Fawcett, 2013: 7). It puts emphasis on the managerial routines for data initiatives to succeed. Also, “(...) marketing decisions are best made with a blend of experience, intuition, and systematic analysis.” (Kotler and Keller, 2016: 96). Therefore, BI systems and managerial assistance should go together to gain success in the required sector.

Data-driven business intelligence serves as the backbone of any technical organization. It helps to connect financial, technical and market data and draw conclusions by integrating them into a single strategic view. It not only supports operational efficiency but also strategic adaptability and brand coherence.

### 4.3 Competitor Analysis

The idea of strategy formulation lies in effectively managing and responding accordingly to the competitive forces (Porter, 1980: 3). For a company to enter and maintain its position in a mature market, understanding the competitors is not any useful but also allows them to exist in the same sector.

#### 4.3.1 Porter's Five Forces Framework

Porter in 1980 introduced the Five Forces model that laid the foundation for industry analysis. The combined influence of five forces, namely 'threat of new entrants, threat of substitutes, bargaining power of buyers, bargaining power of suppliers, and rivalry among existing competitors' defines the overall profit potential within an industry (Porter, 1980: 6).

In any mature industry, there are very strong chances of rivalry. Intensive rivalry typically arises in industries with numerous or equally strong competitors, limited growth

opportunities and high barriers to exit (Porter, 1980: 17). Also, Porter argues that a firm should position itself in such a way where the competition pressure is minimal or can be influenced to their advantage (Porter, 1980: 35).

Whenever a new firm tries to enter a mature sector, it faces a lot of resistance and barriers in terms of investment, technological standards and customer base. When new players enter an industry, they add capacity, strive to secure market position and share and frequently bring significant resources with them (Porter, 1980: 10). Furthermore, entry barriers such as economies of scale, product differentiation and strong brand identity can reduce the likelihood of new competitors entering the market (Porter, 1980: 11).

According to Porter, substitutes can be defined as “(...) products that perform the same or a similar function as the industry’s product by a different means.” (Porter, 1980: 15). Porter gives a warning by saying “Powerful buyers capture more of the value for themselves by forcing down prices, demanding better quality or service, and generally playing competitors against each other.” (Porter, 1980: 24).

“The key to growth and profitability is to cope with the forces that shape competition, not to ignore them.” (Porter, 1980: 41). These five forces allow a company to strategically plan their marketing decisions. Figure 13 below is a representation of the Porter’s five forces that are discussed in the above paragraphs.

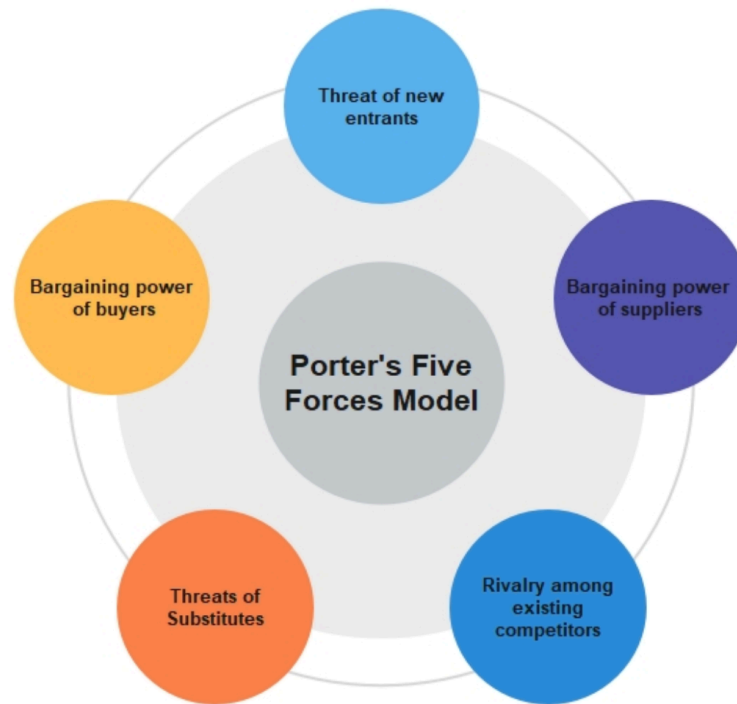


Figure 13. Porter's five forces (EdrawMind, 2020).

Figure 13 above shows the visual representation of Porter's five forces providing a structured framework for analyzing the competitiveness and attractiveness of an industry.

#### 4.3.2 Benchmarking and Best Practices

Camp's Benchmarking Model provides a mechanism for gaining learnings from competitors. "The search for industry best practices that lead to superior performance." (Camp, 1989: 12). According to him, it is a continuous process of learning and not replicating. Benchmarking is the continuous process of evaluating products, services and practices against the strongest competitors or leading organizations within the same industry (Camp, 1989: 15). Planning, analysis, integration, action and maturity are the five steps to learn according to Camp.

Kotler and Keller have linked benchmarking to marketing intelligence by saying that "Benchmarking provides the company with realistic standards of excellence and exposes performance gaps that may not be visible from internal data alone." (Kotler and Keller, 2016: 135). But a firm must cautiously establish partnerships by maintaining confidentiality of company resources and allowing knowledge flow at the same time.

### 4.3.3 Strategic Group mapping

Porter's strategic group analysis is a framework that identifies clusters of competitors with similar strategies. "Strategic groups are firms within an industry that are similar in key dimensions such as technology, vertical integration, and marketing approach." (Porter, 1980: 129).

Mapping these groups helps the firms to target the factors that make it difficult for them to change positions in such markets. Kotler and Keller tell that "(...) market leaders, challengers, followers, and niches each adopt distinct strategies." (Kotler and Keller, 2016: 268). For companies dealing with niche technologies and skillsets, "(...) focusing on serving small segments ignored by major competitors, building strong relationships, and pursuing high margins rather than high volumes." (Kotler and Keller, 2016: 269). This helps a small company to enter a highly competitive market.

Digital transformation incorporates both qualitative and quantitative intelligence through real-time analytics and strategic partnership, that allows the organizations to count on emerging trends and reach accordingly.

## 4.4 Business Models and Offerings

A proper working business model lays the foundation for innovative technology to position itself in the competitive market. It forms a basic plan of how a company will create value, deliver and satisfy its targeted customers to generate profit. A business model can be defined as a system comprising of independent activities that create and deliver value to the target customers and gain profit from that (Johnson et al. 2008: 52). According to them, the elements 'Customer Value Proposition (CVP), Profit Formula, Key Resources and Key Processes' (Johnson et al. 2008: 53) must complement one another for a model to succeed commercially. At times, there are high chances that a model might not work, not just because of the delivery model but also due to the lack of satisfying customer interest.

### 4.4.1 The Business Model Canvas

The Business Model Canvas helps to design the a business model and is the most widely used tool for this purpose. There are different business modelling approaches that can

be used to create a business model depending on the business type. Osterwalder describes it as a visual framework consisting of nine elements that guide a company's approach to 'customer segments, value propositions, distribution channels, customer relationships, revenue streams, key resources, key partnerships, and cost structure' (Osterwalder and Pigneur, 2010: 44). According to them, "A business model can be considered as the logic by which an enterprise sustains itself financially." (Osterwalder and Pigneur, 2010: 47). Figure 14 represents the Business model canvas by Osterwalder.

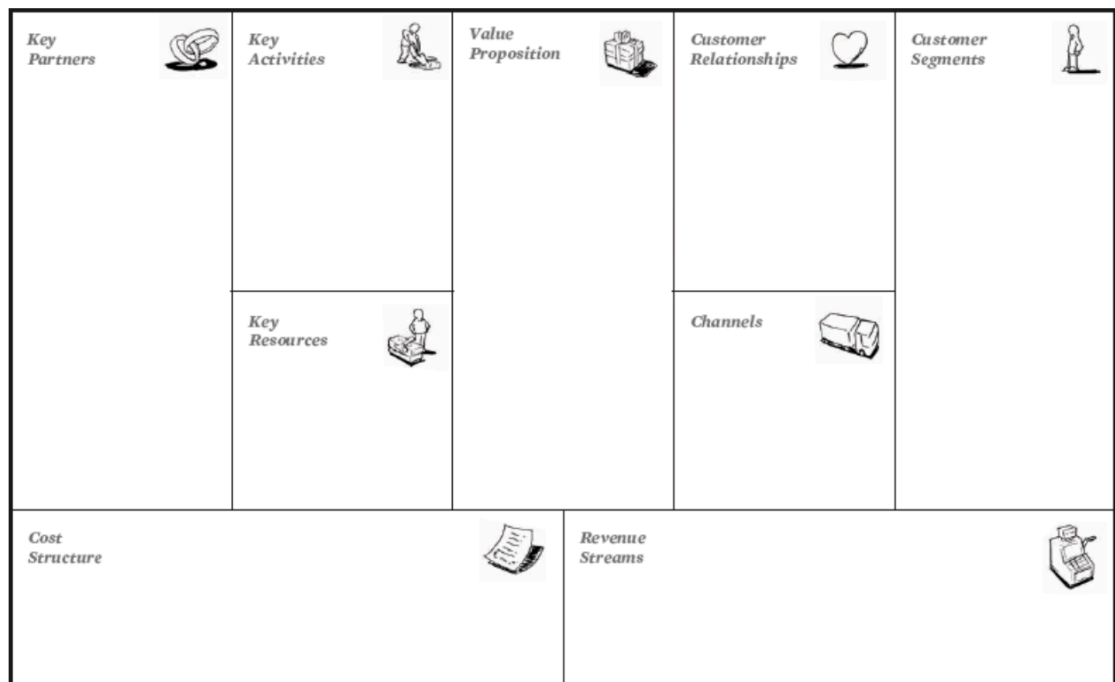


Figure 14. Business model canvas by Osterwalder (Osterwalder and Pigneur, 2010).

Figure 14 shows the Business model canvas by Osterwalder. "The canvas has nine boxes: customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure." (Osterwalder and Pigneur, 2010: 16-17). The building blocks of business model are shown in Figures 15 & 16 below (Osterwalder and Pigneur, 2010).

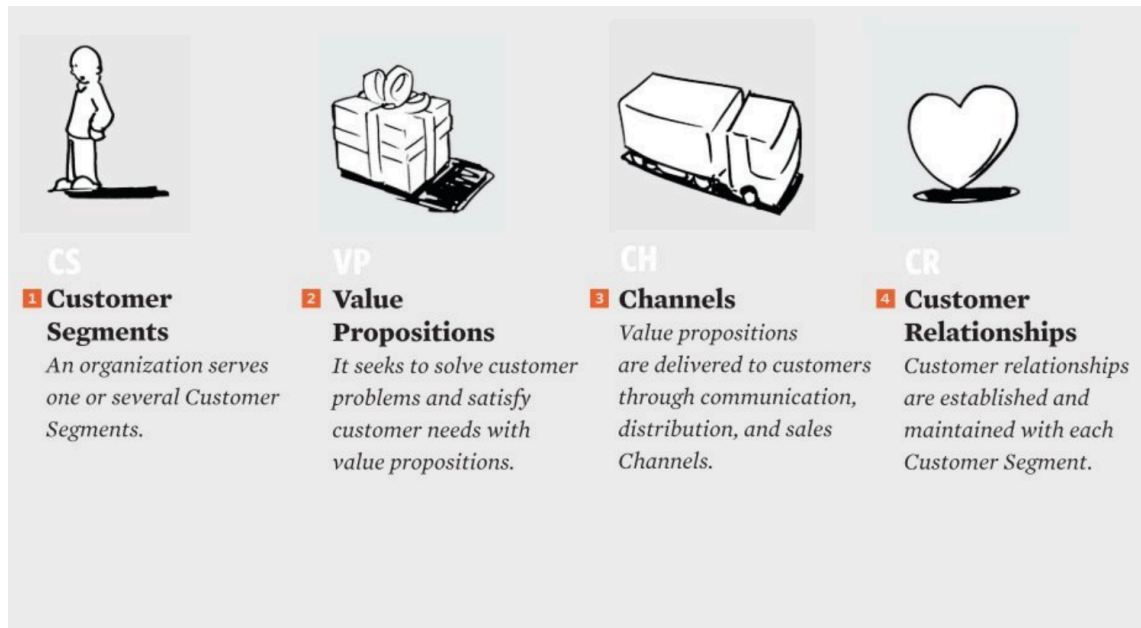


Figure 15. Segments of the business canvas model (Part 1) (Osterwalder and Pigneur, 2010).

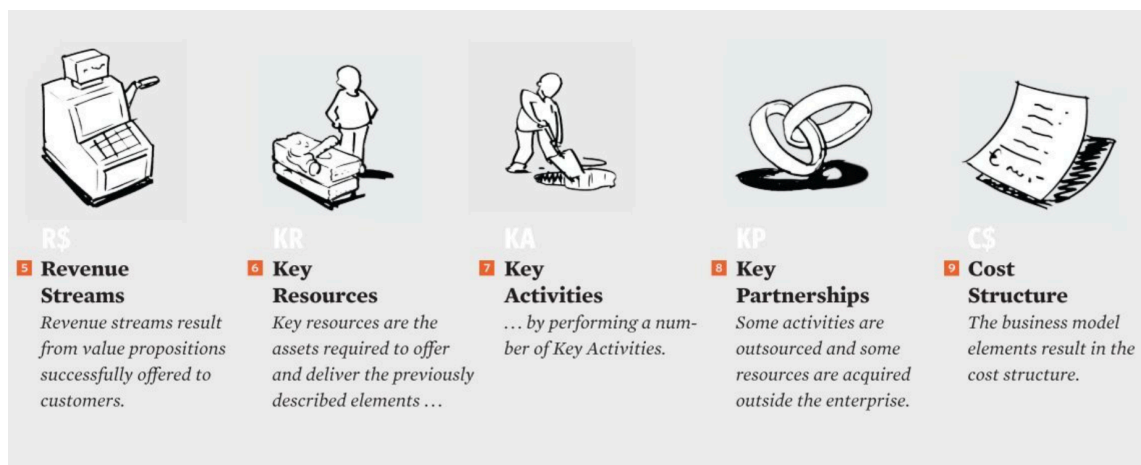


Figure 16. Segments of the business canvas model (Part 2) (Osterwalder and Pigneur, 2010).

The business model should be designed, tested and improved in a continuous loop. It should be prepared keeping the market conditions in mind. The market is very dynamic and so should be the business model. It is very wrong to assume that once a business model is designed, it will sustain indefinitely. "It is dangerous to assume a business model will remain viable indefinitely." (Osterwalder and Pigneur, 2010: 256). Remaining agile and up to date is the key to succeed in a dynamic market.

#### 4.4.2 Pillars of Business Model

There are four pillars of business model design. These pillars are interconnected, and all the pillars should complement one another for a business model to succeed. The pillars are discussed below in the table as per (Johnson et al.2008: 52-53).

Table 3. Four pillars of business model design (Johnson et al. 2008).

PILLARS	DEFINITION
Customer Value Proposition (CVP)	“A precise description of how the company solves an important customer problem”
Profit Formula	“How the company creates value for itself while providing value to its customers”
Key Resources	“The assets needed to deliver the CVP”
Key Processes	“Operational and managerial activities enabling value delivery”.

Table 3 shows the elements of a business model. “Weakness in any one element can undermine the performance of the entire business model.” (Johnson et al. 2008: 52-53). Most of the firms working with niche technical expertise involve intensive research and development. Business model lays the foundation and serves as the backbone for innovation driven organizations. Business aims to create and retain customers and gain profit from that (Kotler and Keller, 2016: 31). When simplified, innovation with monetization helps build a profitable business.

Both Osterwalder (2014) and Ojasalo and Ojasalo (2015) argue that for a business model to succeed, one should start with studying the customers and their needs. “Customers do not care about your product. They care about solving their problems.” (Osterwalder et al. 2014: 20). Getting a holistic view of the customers’ needs will provide a better understanding of their jobs, pains and gains. Osterwalder (2014), in his value proposition canvas, discusses how to identify the needs of the customers. The value proposition canvas has two parts: the value map and the customer profile, as shown below.

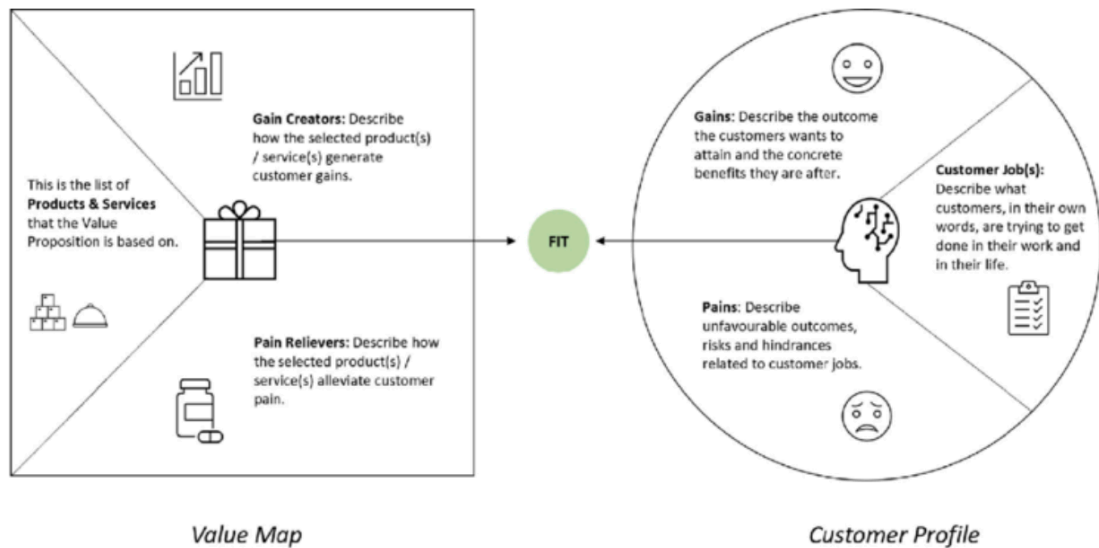


Figure 17. The value proposition canvas (Osterwalder et al., 2014).

Figure 17 above shows the value proposition canvas which shows the reason for customers turning towards a product or solution. The customer profile has jobs, pains and gains which show the concerns of the customers. According to Osterwalder, jobs are list of tasks that can be functional, social or emotional (Osterwalder et al. 2014). Pains are the difficulties that the customers are facing, and the gains are the solutions or the achievements that they are looking for to get their jobs done. The value map contains the products/ services which forms the foundation of the value proposition. The gain creators and the pain relievers are the things that aim to serve the customer's needs. A Fit is gained when the products/ services in the value map aligns with the customer jobs (Osterwalder et al. 2014). When the value proposition canvas is combined with Johnson's business model (Johnson et al. 2008), the first pillar of Johnson's business model, the Customer value Proposition, aligns with the first four blocks of Osterwalder's Business Model Canvas.

#### 4.4.3 Dynamic Capabilities

Dynamic capabilities can be defined as "The firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments." (Teece, 2020). It defines how different organizations remain competitive and try to hold their position under uncertain and dynamic market conditions. "In fast moving business environments, competitive advantage cannot be sustained by resource advantages alone." (Teece, 2020). The author puts an argument that Resource Based

View (RBV) cannot explain the competitive survival of industries affected by technological disruption. “RBV pays insufficient attention to the mechanisms by which firms can create, extend and modify their resource base.” (Teece, 2020). To cope with the dynamic changes, the organizations need to reconfigure, integrate and build their competencies.

Sensing, seizing and transforming are the three core processes forming the foundation of dynamic capability theory. Sensing involves understanding customer needs, detecting technological shifts and grabbing market opportunities to remain competitive in a dynamic environment. This requires a firm to remain updated by constantly tracking and learning the current market situation. Seizing involves a firm to grab an opportunity as early as possible and allocate resources to exploit it. The author says that seizing requires business model adaptation at times. “New business models may be required to fully realize the potential of technological opportunities.” (Teece, 2020). Transforming refers to restructuring the existing model to adapt the new changes in the dynamic environment. Agility helps a firm to adapt easily to the changes in the market condition without getting harmed.

#### 4.5 Conceptual Framework of This Thesis

The conceptual framework points to the Key elements of the Market analysis, as discussed in the available knowledge and best practices above.

Figure 18 shows the Key elements of the Market analysis. The first area relates to Product Development and Differentiation; it outlines how products can be differentiated to stand out among a lot of other products. The second area is Marketing Strategies; it points out how strategically a customer and market segment can be targeted and conquered. The third area is Competitor analysis; it gives frameworks to analyze other companies in a competitive market and the forces that affect their dynamic environment. The fourth area relates to Business models and offerings; it describes the elements of business models and offerings. These pillars typically describe organizations and thus can be helpful in conducting the Market analysis.

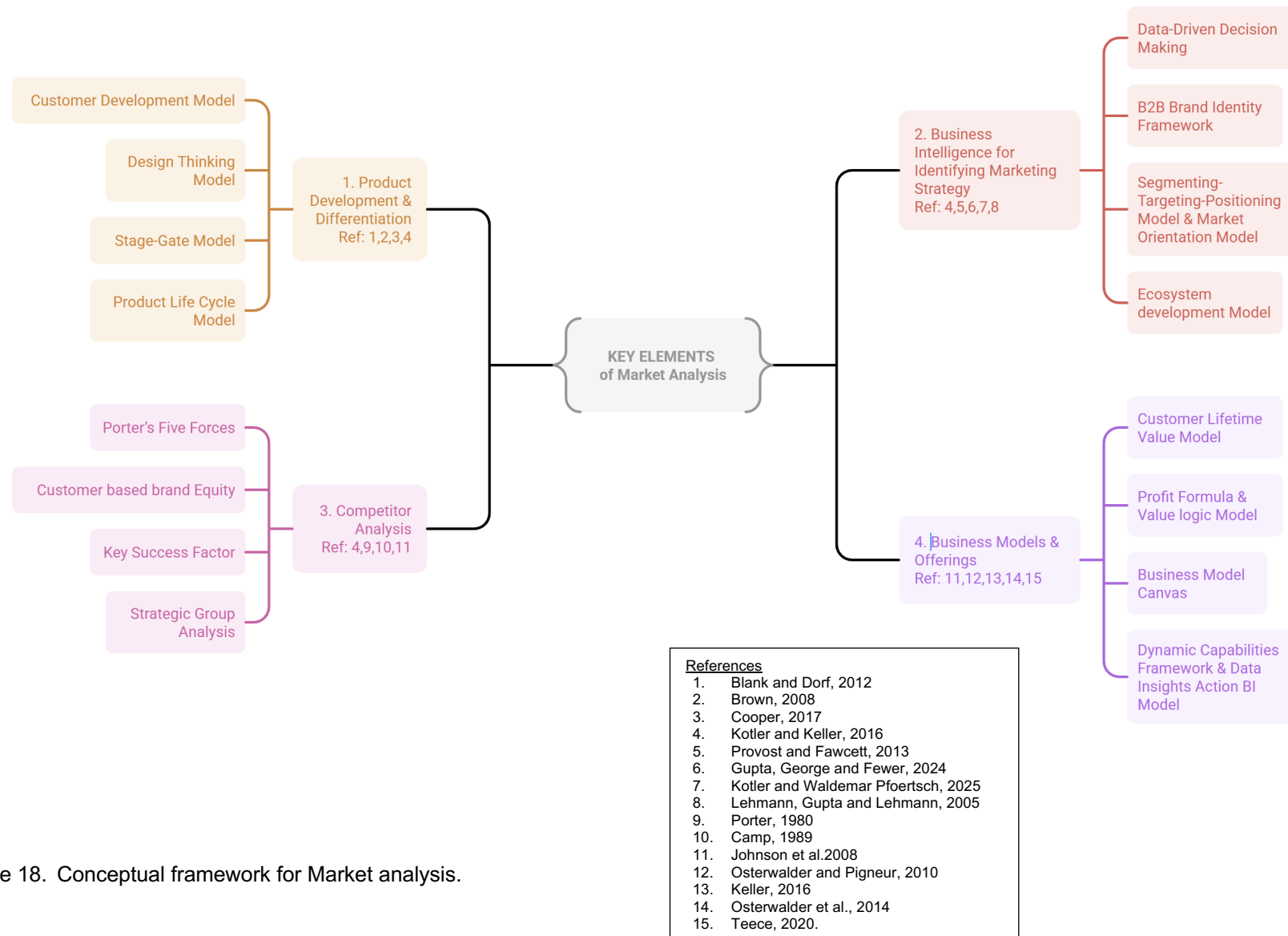


Figure 18. Conceptual framework for Market analysis.

The key elements also imply specific tools that come in relation to the frameworks and approaches discussed in Section 4. These tools, framework and approaches are listed in Table 4 below.

Table 4. Tools and framework that contribute to the Key elements of the Market analysis (based on the literature review above).

SL. No.	Framework	Knowledge contributed	Concrete tools	KPIs according to the literature review
<b>AREA 1</b>				
1.	Blank and Dorf, 2012 – Customer development Model	Build-Measure-Learn loops	Problem/ solution- fit tests	Experiment success rate, Cycle time (idea à learning)
2.	Brown, 2008 – Design thinking Model	Human centered differentiation via iteration	Journey maps	Task success rates
3.	Cooper, 2017 – Stage- Gate Model	Speed matters with Discipline	Gate scorecards and risk matrix	Gate pass rate, Time-to-Pilot
4.	Kotler and Keller, 2016 – Product Life-Cycle Model	Market positioning and intelligence	Positioning statements, segmentation tables	Awareness, Win rate by segment, Consideration
<b>AREA 2</b>				
5.	Provost and Fawcett, 2013 – Business Intelligence	Data insights; Predictive targeting	Data Insights; Success models	Forecast accuracy; market ROI
6.	Gupta et al., 2024 – Ecosystem development Model	Purpose aligned scaling	Partnership maps; Ecosystem maps	Partner generated percentage; Retention in partner accounts
7.	Kotler and Waldemar Pfoertsch, 2025 – B2B Brand Identity Framework	B2B brand management and industrial positioning	Brand message and architecture; Leadership plan	Brand awareness and preference; PR reach
8.	Lehmann et al.2005 - Customer lifetime value	Customer lifetime value (CLV)	CLV calculator; Retention models	Net revenue retention; CLV
<b>AREA 3</b>				
9.	Porter, 1980 – Five forces Model	Industry structure like price, margin, entry logic	Five forces worksheet	Market share; Gross margin stability
10.	Camp, 1989 – Benchmarking Model	Offerings comparison; Best in class gap recognition	Benchmark scorecards	Feature parity index; time to implement in comparison with the competitors

11.	Johnson et al.2008 – Profit formula & Value logic model	Business model logic; Value proposition	Revenue logic and how to reinvent the business model	Gross margin per model
AREA 4				
12.	Osterwalder and Pigneur, 2010- The Business Model Canvas	Operating logic	Business model canvas	Partner contribution; Ket resource utilization; Channel payback
13.	Keller, 2016 – STP Model	Brand equity ladder	Brand pyramid	Brand and associations strength; Willingness to pay
14.	Osterwalder et al., 2014 – Value proposition canvas	Value proposition design; Fit between pains/ gains	Value proposition canvas	Problem/ solution fit score; Feature adoption
15.	Teece, 2020 _ Dynamic Capabilities framework	Dynamic capabilities; Adaptive strategy	Transformation roadmap	Percentage revenue from new offers; Agility index

Table 4 lists the tools and relevant framework such as - journey maps, positioning and segmentation, brand messages, business models and value propositions, etc. as the essential elements for Market analysis. The table lists all the frameworks, tools, KPIs according to the literature review used in the thesis.

These tools and approaches from the available knowledge and best practice have laid the foundation for the Proposal building in the next Section 5.

## **5 Conducting Market Analysis for the Company**

This section presents the proposal for enhancing marketing techniques. This section draws conclusion by combining the current state analysis and the conceptual framework with valuable comments from the stakeholders.

### **5.1 Overview of This Stage (How the Report Was Built)**

The main goal of this section is to develop a competitor report using the four dimensions of the conceptual framework and to recommend actions that address the weaknesses identified in the current state analysis. The conceptual framework was built using the best literature practices concerned with gathering and analyzing important customer concerns and their point of attraction and concepts considered as the core of a working business model. The conceptual framework along with the data collected from the interviews were used to analyze the strengths and weaknesses of the products and marketing strategies and the gaps in the relevant areas.

The weaknesses that were discovered in the current state analysis guided the literature and best practices, which along with the data collected from the interviews helped form the proposal in four steps. First, the interview notes from data 1 and initial suggestions from the stakeholders were taken into consideration. Second, a list of competitors was formed, and a thorough analysis was conducted on them. A report was created in this step which compared the competitors' data based on the four elements of the conceptual framework. This helped in comparing the products and the company's ways of marketing them.

Third, the analysis from the report and the data from the second phase of the interviews were considered together. This helped in understanding the current business model and the changes that were needed to attract more customers and increase sales. Fourth, suggestions from data 2 along with the findings from the current state analysis and best practices were combined and changes were suggested regarding the key marketing practices that will be discussed further. The stakeholders wanted to make sure that the report analysis and findings align with the company's strategic direction.

## 5.2 Findings from Data 2

Data 2 focuses on identifying suggestions from the key stakeholders. The selected focus area as discovered from the current state analysis and the best practices from the literature in the form of conceptual framework form the basis of structuring these suggestions.

Table 5. Key stakeholder suggestions (findings of Data 2) for Proposal building in relation to findings from the CSA (Data 1) and the Conceptual framework.

	Key focus areas from CSA (from Data 1)	Inputs from literature (CF)	Suggestions from stakeholders for the Proposal, summary (from Data 2)	Descriptions of their suggestions (in detail)
1	<p>MARKET ANALYSIS to address:</p> <ul style="list-style-type: none"> <li>- weak market visibility</li> </ul> <p>and</p> <ul style="list-style-type: none"> <li>- lack of clear product differentiation.</li> </ul>	<p>AREA 1. Product Differentiation</p> <p>AREA 2. Business Intelligence for identifying Marketing Strategy</p> <p>AREA 3. Competitor Analysis</p> <p>AREA 4. Business Models &amp; Offerings</p>	<p>The products' indoor – outdoor capability should be highlighted more.</p> <p>Clear value propositions, strong messaging and demonstration of proof points are very important for gaining customer trust.</p>	<p>All stakeholders suggested that a USP should be defined around indoor-outdoor navigation. The products should be presented in a way that both technical and non-technical customers can understand it. Focus more on the positives of the product and constant improvement of the products should be continued.</p> <p>According to their suggestions, the branding should focus on the hybrid environment suitability and reliability. More case demonstrations should be published.</p>
2	<p>RECOMMENDATIONS to address:</p> <ul style="list-style-type: none"> <li>- limited market penetration in logistics segment.</li> </ul>	<p>Targeting industry outreach, improving community engagement and improving visibility in logistics forums to build trust.</p>	<p>Visibility should be increased in logistics forums and various international fairs.</p> <p>The offerings should be properly described, putting more focus on what the products are and what they can do.</p>	<p>All the stakeholders suggested that attending trade fairs, conducting webinars, publishing articles on new developments and presenting at technical forums will attract the attention of more customers.</p> <p>The stakeholders agreed that the website should be improved consistently and with</p>

			<p>Making the website much more customer friendly.</p> <p>Clear product demonstrations</p>	<p>customer-oriented marketing messages that focus on the benefits of the offerings</p>
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As seen from Table 3, the stakeholders suggested inputs to address the weaknesses that were discovered in the current state analysis of the products and marketing. One major focus is increasing the visibility of the products to the customers, which can be done by more public demonstrations so that they can confide their trust in the products and offerings. Another key focus point was to penetrate the very mature logistics market. The logistics market is very slow in adopting new changes. The stakeholders were consistent with the fact that product visibility and differentiation should be clearly highlighted in the Report on the Intra-logistics Market.

### 5.3 Report on Intra-logistics Market for AGVs and AMRs

#### **COMPANY 1, Kudan**

Headquarters: Japan

Size: Small

Year established: 2011

Revenue (M\$) (approx. as of 2024): 3.6 (Stock Analysis, 2024, Kudan revenue).

Figure 19 shows the geographical presence of Kudan.

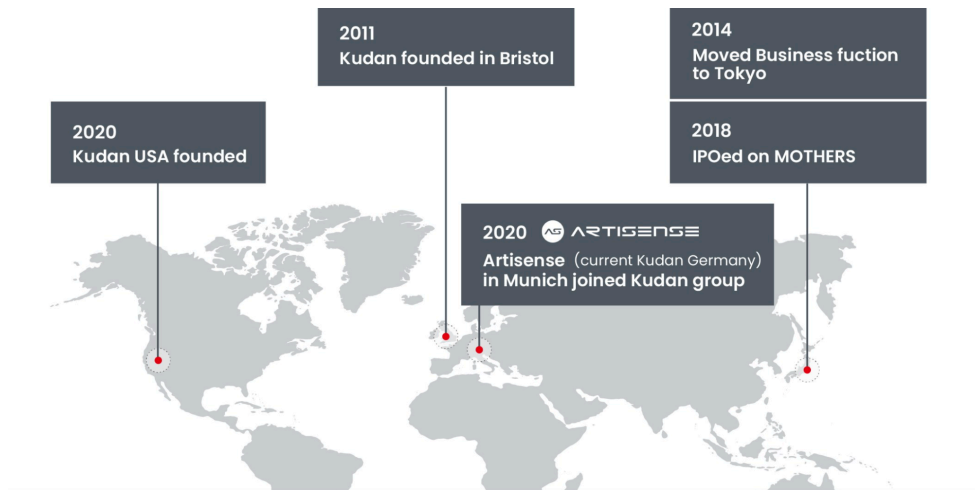


Figure 19. Geographical presence of Kudan (Kudan Global, 2020, About & Visions of the future).

## AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION

Kudan provides proprietary SLAM-based Artificial Perception technologies that power high-impact things like autonomous vehicles, robotics, AR/VR and smart city innovations. (Kudan Global, 2020, About & Visions of the future). GrandSLAM is the main software that Kudan markets and sells. “GrandSLAM, our localization and mapping software, has commercial grade performance and can exploit the full potential of a large number of sensors to bring value no-matter your configuration or use case.” (Kudan, 2025, SLAM Software). The company positions SLAM as the sensory nerve to the brain of the machine. There are a wide variety of use cases listed on the application page which includes AMR “(...) indoor, outdoor, indoor-outdoor mix”. (Kudan, 2019, Home).

## AREA 2. MARKETING STRATEGIES

Kudan maintains a well-informed web page consisting of a technical blog and news stream that informs the customers about the pilots and platform initiatives (Kudan, 2019, Home). It has a well-maintained English Investor Relations (IR) portal (Kudan, 2018, Kudan Investor Relations) that shows transparency and a huge amount of knowledge regarding the customers, the technology, the well-defined use cases and the target domains (Kudan, 2019, Home).

## AREA 4. BUSINESS MODEL AND OFFERINGS

As a part of its business model and offerings, the company primarily focuses on software or Intellectual Property (IP) licensing and integration support across multiple verticals (Kudan Global, 2020, About & Visions of the future) (Kudan, 2025, SLAM Software).

## Kudan GrandSLAM

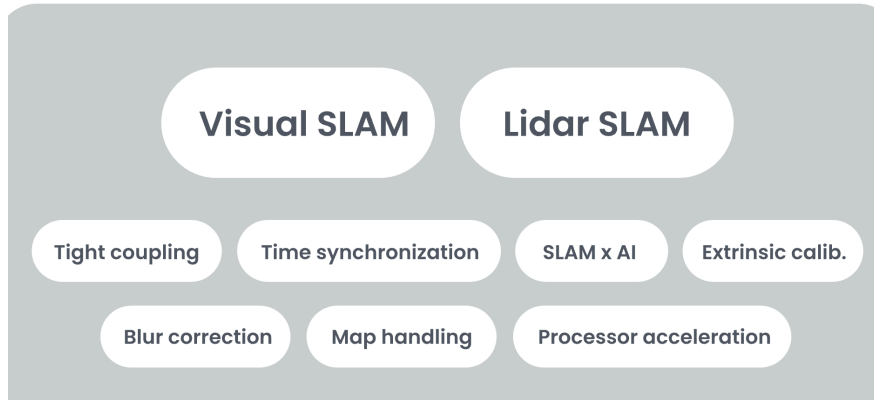


Figure 20. Kudan grandSLAM (Kudan, 2025, SLAM Software).

Figure 20 shows the GlandSLAM software offered by Kudan. The company focuses on research and development and markets its products well. It emphasizes technical leadership and demonstrates multi-vertical applications through various use cases. “Kudan has already been demonstrating outstanding capability in important use cases.” (Kudan Global, 2020, Solutions). Currently, the company is focused on integrating SLAM with AI and uses a consistent AI perception narrative throughout, as shown in Figure 21.

## SLAM X AI

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### **Artisense’s GN-net relocalization: AI-enabled (re)localization that is incredibly robust to scenery changes**

- Overcomes the challenge of localization, and mapping a vehicle or machine when the scenery or conditions change over time.
- Uses “deep features” identified by AI for matching correct locations even when their appearance is different.
- SLAM mapping can update automatically to include any changes that are detected.

Figure 21. SLAM X AI (KudanSLAM, 2025, Commercial-grade SLAM Software for the future).

Figure 21 shows this new feature; but does not share much detail. However, the company also has a very detailed list of its offerings and with other contents on their website, which can be quite attractive to technical and non-technical audience (Kudan Global, 2024, Offerings).

## **COMPANY 2. NODE Robotics**

Headquarters: Germany

Size: Small

Year established: 2020

Revenue (M\$) (approx. as of 2024): 7.7 (NODE Robotics, 2025, Company Profile & Team)

### **AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION**

“Reliable, Robust and Scalable mobile robot software” (Node Robotics, 2025, The Autonomy OS for Mobile Robots) is what the company claims as a part of its offerings. “NODE.OS is a modular software platform developed by NODE Robotics to power autonomous mobile robots (AMRs) and automated guided vehicles (AGVs) in industrial environments. Designed for use in sectors such as manufacturing, logistics, and healthcare, it enables scalable and reliable robot operations across a wide range of applications.” (Node Robotics, 2025, The Autonomy OS for Mobile Robots). The company emphasizes on high modularity and highlights “Plug & Perform” for easy configuration across various platforms (Node Robotics, 2025, Company). “Our software platform, NODE.OS, is designed to make robotics operations more streamlined, efficient and productive.” (Node Robotics, 2025, Company). According to the company “We make mobile robots easy to use.” (Node Robotics, 2025, Company). The company claims that over 1500 robots run on NODE.OS globally (Node Robotics, 2025, Company).

The company markets its products very strategically. They use “Plug & Perform”, “Proven Reliability”, “High Modularity” and “Zero hardware Modifications” as the main feature that highlight their software product (Node Robotics, 2025, Products). “Avoid hardware-dependent black boxes. Harness adaptable, future-proof technologies are designed specifically for your needs. Achieve independence, unlock unmatched flexibility, cut costs, and elevate your solution to new heights — all at once.” (Node Robotics, 2025,

Products). Figure 22 shows the most attractive components on NODE.OS that differentiate the company from the others.

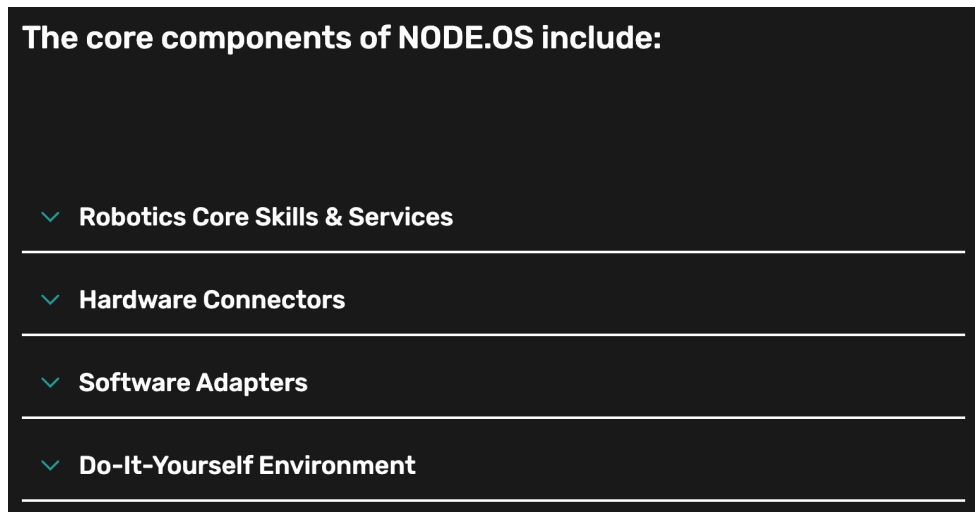


Figure 22. NODE.OS components (Node Robotics, 2025, Products).

According to the company's information, these are the most attractive components on NODE.OS that differentiate it from the others. They provide localization, navigation and fleet management technology for AGVs and AMRs and their OEM-friendly easy integration makes them a tough competitor to the software-only companies.

## AREA 2. MARKETING STRATEGIES

The company's customers are the big OEMs that can use their software. It depends on capability explainers and performance proof points to gain the trust of the OEMs. Figure 23 shows an example of the performance proof points that that company uses to attract its customers' attention. As a part of their marketing strategy, the company also uses the statements of their customers from the top OEMs to gain trust, which is shown in Figure 24 (Node Robotics, 2025). LinkedIn marketing and case studies are their essential source of outreach. Its marketing concept concerns B2B technical audience and emphasizes proof-of-concept demos. B2B partnership ecosystem building is a cornerstone of NODE's marketing, which focuses on turning their products into collaborative successes. NODE Robotics demonstrates how a small German company can achieve exceptional results in the robotics software space through focused marketing aimed at working with partners, established metrics, and modular innovation. By marketing NODE.OS and other products such as NODE.move as designates of

frictionless autonomy, the company not only addresses OEMs' integration issues, but it also builds quality together with a network. As the pace of warehouse automation in intralogistics increases NODE's intentional acts, transparency, and interoperability stands up to future expansion and collaboration.

#### AREA 4. BUSINESS MODEL AND OFFERINGS

Software licensing and services backs the most important part of their revenue generation. A differentiating feature is the Do-It-Yourself (DIY) Environment, an environment for OEMs to develop skills and foster innovation without platform lock-in. NODE's business model consists of software that provides autonomous navigation and can be used in a modular platform with legacy and new hardware without modification (Node Robotics, 2025, Products).

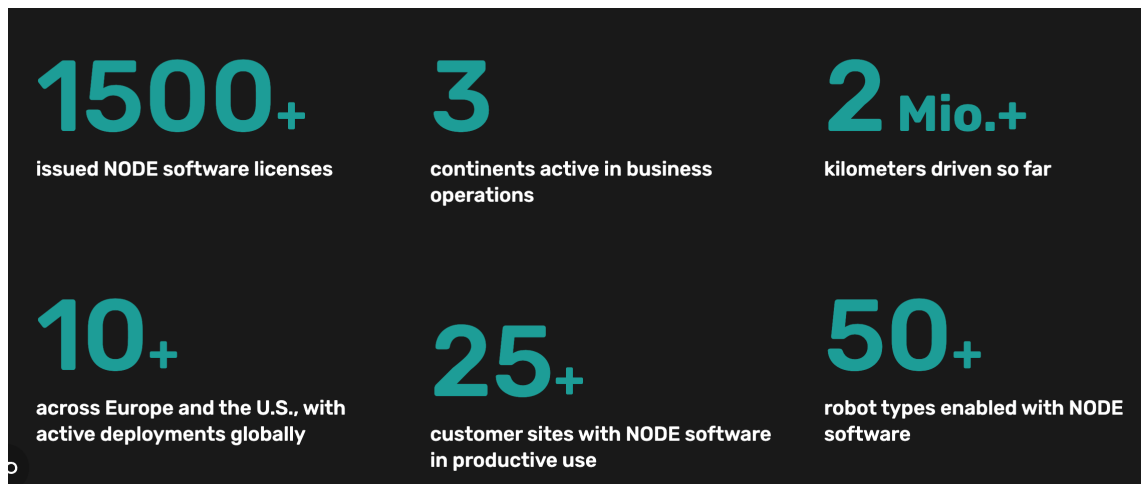


Figure 23. Performance proof points (Node Robotics, 2025, Products).

Figure 23 shows the performance proof points of the company with the actual Figures over the years. It serves as proof of achievement, making a gateway to welcome more customers.

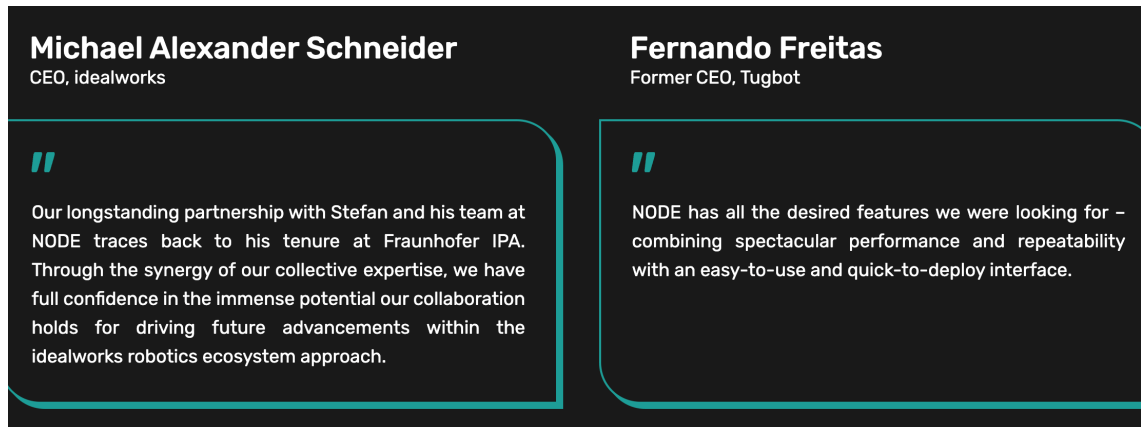


Figure 24. Customer statements (Node Robotics, 2025, Products).

Figure 24 shows the achievements of Node Robotics backed by successful customer stories.

### COMPANY 3. Slamcore

Headquarters: United Kingdom

Size: Medium

Year established: 2016

Revenue (M\$) (approx. as of 2024): 5.3 (Growjo, 2019, Slamcore revenue)

#### AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION

Slamcore is a medium-sized company that specializes in products powered by spatial intelligence (Slamcore, 2025, Products). “Powered by vision-based AI. Improve safety, eliminate deadhead travel, reduce wait times and bottlenecks. No beacons required.” (Slamcore, 2025, Vision). They have Slamcore Aware (vision-based RTLS), Slamcore Alert (perception) and Slamcore Hub (data), which is totally based on semantic AI perception and accurate SLAM positioning (Slamcore, 2025, Products). “Slamcore Aware retrofits to any forklift or manual material handling vehicle, streaming the positions of vehicles and nearby objects in real-time to your dashboards or our partner apps.” (Slamcore, 2025, Aware). “Slamcore Alert, for Slamcore Aware, keeps operators vigilant with real-time, location-based alerts that help prevent accidents.” (Slamcore, 2025, Alert).

“At Slamcore, we transform material handling equipment into intelligent, connected assets, giving operators and managers the insights they need to cut delays, reduce risks, and boost efficiency across complex facilities.” (Slamcore, 2025, Vision). Their whole idea is to stress on transforming material-handling equipment into intelligent assets. They do it with the help of AI which makes them stand out from the crowd. Their target is mainly the warehouses and factories where the forklifts do heavy duty work. Slamcore creates software that uses data from multiple sensors to help products understand and navigate the complex environment around them (Slamcore, 2025, About).

## AREA 2. MARKETING STRATEGIES

The website is technically oriented, and the products are explained in a detailed manner. The products are well documented that can be understood from Figure 25, while the technology used is very well described on their website which is shown in Figure 26. They maintain a blog mentioning how they tackle the challenging 10%, that has information on the challenges they are facing and the market context. This blog shows their thorough leadership. Their funding announcements are publicly available on their website (Slamcore, 2025, Funding). They are also associated with branding agencies that can help them uplift their brand name and position. They also have a dedicated page on their website that shows the partnership ecosystem (Slamcore, 2025, Our Partners).

## AREA 4. BUSINESS MODEL AND OFFERINGS

The company’s business model revolves around software development kit licensing. Customers pay for using Slamcore’s software in their own systems. Slamcore Aware can be installed on intralogistics vehicles, which provides models that integrated both hardware and software. They have retrofit solutions that allow the company to enter existing infrastructure easily (Slamcore, 2025, About).



Figure 25. Slamcore products (Slamcore, 2025, Products).



Figure 26. Technology used in Slamcore products (Slamcore, 2025, Technology).

Figure 25 and 26 show the products and the technologies that Slamcore uses. These form the core of the company's offerings.

#### COMPANY 4. Bluebotics

Headquarters: Switzerland

Size: Medium

Year established: 2001

Revenue (M\$) (approx. as of 2024): 5-25 (Owler, 2025, Bluebotics revenue)

#### AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION

Bluebotics is a company that provides "AUTONOMOUS NAVIGATION FOR AGVs, FORKLIFTS & MOBILE ROBOTS" (BlueBotics, 2020, About). The company's ANT (Autonomous Navigation Technology) is a natural feature navigation technology stack

that works for AGVs, automated forklift and mobile robots. (BlueBotics, 2020, ANT). As per the company, “ANT navigation technology is an accurate, robust and flexible solution that meets the evolving needs of vehicle producers and operators. Based on 22 years of industry experience, ANT is simple to use and cost-effective to install and modify. All BlueBotics products are FCC/CE certified.” (BlueBotics, 2020, ANT).



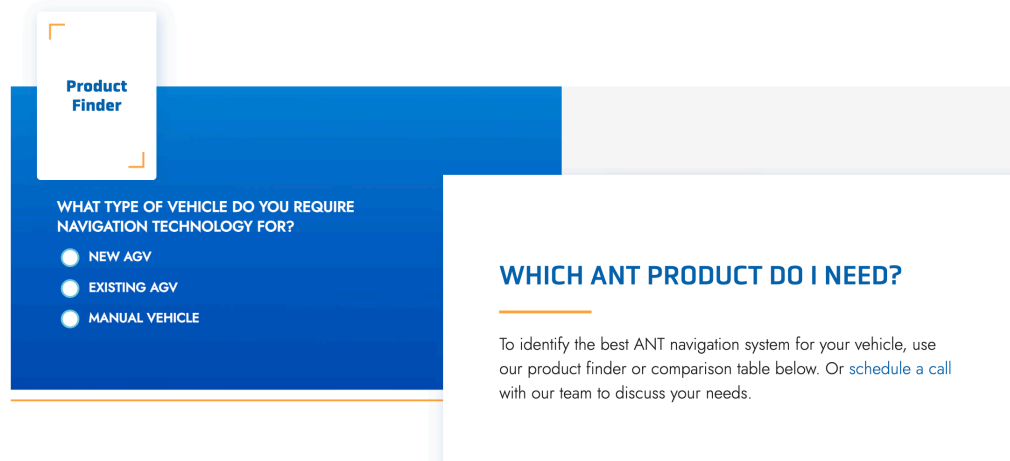
Figure 27. Bluebotics technological claims (BlueBotics, 2020, ANT).

Figure 27 shows how the company markets its products as quick, accurate, flexible, easy to install and modify. The pros of the technology are “Quick & simple to install/modify, Minimal infrastructure changes (possibly reflective stickers), Accurate & robust to environmental change, Advanced fleet management (incl. multi-brand)” (BlueBotics, 2020, ANT). Bluebotics also offers ANT server for mission and fleet management and helps with the installation as they have installation packages showing rapid deployments (Bluebotics, 2020, Control Positioning System).

The company claims that with the help of ANT navigation, an autonomous vehicle can be driven over 10 million kilometers. The company has well established partnership and an extensive OEM ecosystem. The company was recently acquired by the ZAPI group, which boasts a huge global presence. The acquisition is a key strategic move that will strengthen the position of Bluebotics in the global market.

## AREA 2. MARKETING STRATEGIES

The company's website is very well designed with proper explanation of all the services provided, products available and technical stacks worked on. The website is very attractive for technical as well as non-technical users with easy explanations available for everything. The ANT technological stack is well demonstrated with all the features available. The ANT server also explains all the features available for the customers. Figure 28 shows a very strategic move demonstrated by the company, which helps the customers if the ANT is suitable for them and if it is, then which one is the suitable one.



The image shows a web interface for a 'Product Finder'. On the left, there is a blue sidebar with the title 'Product Finder' at the top. Below the title, it asks 'WHAT TYPE OF VEHICLE DO YOU REQUIRE NAVIGATION TECHNOLOGY FOR?' and provides three radio button options: 'NEW AGV', 'EXISTING AGV', and 'MANUAL VEHICLE'. The 'NEW AGV' option is selected. To the right of the sidebar, there is a white content area with the heading 'WHICH ANT PRODUCT DO I NEED?'. Below the heading, there is a short paragraph: 'To identify the best ANT navigation system for your vehicle, use our product finder or comparison table below. Or [schedule a call](#) with our team to discuss your needs.'

Figure 28. Product finder for customers (BlueBotics, 2020, ANT).

The Figure 28 above demonstrates the company's strategic move to attract the attention of their customers towards their products.

Figure 29 shows how the company explains the tech stack of ANT.

	ANT LITE+	ANT LOCALIZATION+	ANT LOCALIZATION
Localization	✓	✓	✓
Control	✓	✗	✗
Emulation of line following	✗	✓	✗
Mission Management	✓	✗	✗
Fleet Management	✓ (with ANT server)	✗	✗
Outdoor operation	✓ (with ANT everywhere)	✓ (with ANT everywhere)	✓ (with ANT everywhere)
	— MORE	— MORE	— MORE

Figure 29. ANT products comparison (BlueBotics, 2020, ANT).

The information shown in Figure 29 guides a customer to understand the requirements and the stack that they need. They have proper installation guides and available technical expertise needed. The website marks the milestones that they have reached with performance milestones and case-led stories. The company has a significant digital presence through LinkedIn and other social media platforms which marks an expert content-led marketing (Bluebotics, 2025, Events). They also maintain blogs describing why their products are the best in what they do and promote that with success stories. It shows how the company has managed to gain the trust of the established OEMs and integrators and how it manages itself in a fast-growing industry.

#### AREA 4. BUSINESS MODEL AND OFFERINGS

Bluebotics' business model revolves around licensing of ANT technological stack, components and ANT server. It also offers integration and installation packages. (BlueBotics, 2020, ANT).

## COMPANY 5. OxTS (Oxford technical Solutions)

Headquarters: UK

Size: Medium

Year established: 1998

Revenue (M\$) (approx. as of 2024): 25.7 (Growjo, 2019, OxTS Revenue).

### AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION

OxTS claims itself as the global leader in GNSS/INS solutions for autonomous vehicles (OxTS, 2025, INS Solutions). “At OxTS, we understand that you need GNSS/INS localization solutions that work every time, in any environment, without being too complicated.” (OxTS, 2025, INS Solutions). They claim to provide precision positioning in any environment and weather conditions. They have a range of products including hardware, software, accessories, tools and other utilities (OxTS, 2025, INS). Their NAVsuite toolkit is an all-rounder consisting of various applications as shown in Figure 30, helps to configure devices, monitor data in real time and supports post-processing and visualization as shown in Figure 31 (OxTS, 2025, NAVsuite). The company provides services as well.

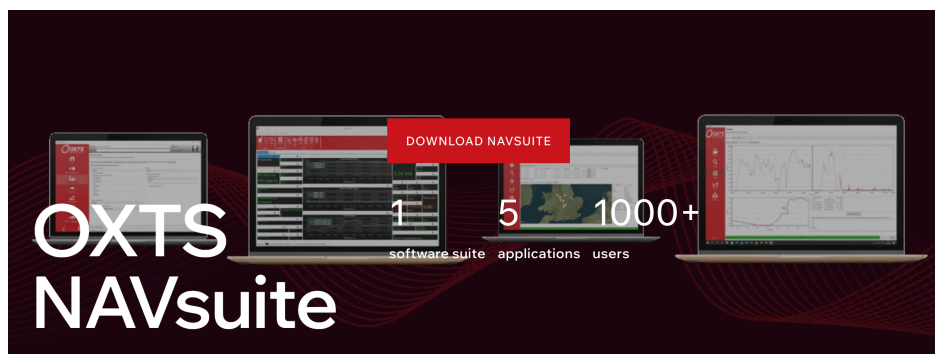


Figure 30. NAVsuite (OxTS, 2025, NAVsuite).

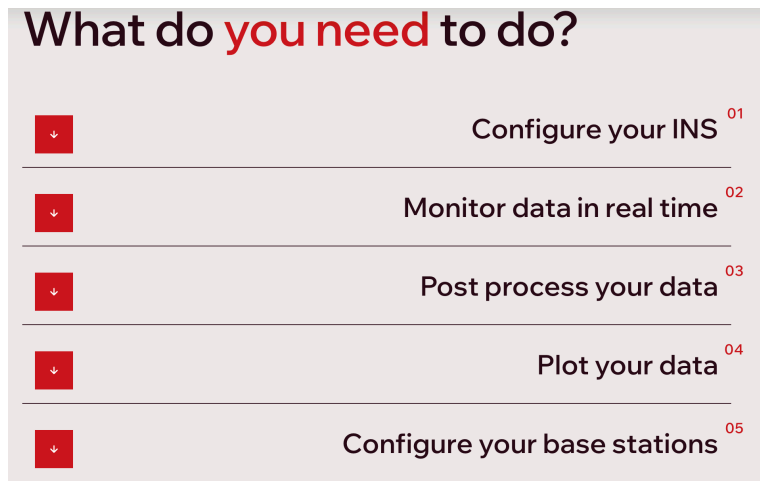


Figure 31. Step by step guide of NAVsuite (OXTS, 2025, NAVsuite).

## AREA 2. BUSINESS INTELLIGENCE FOR MARKETING STRATEGIES

As a part of their business intelligence, frequent release notes show an active product roadmap. “Latest NAVsuite 3.11 and RT-Range releases usability and GNSS-denied navigation capability” (OXTS, 2025, Latest Technology). The company believes in engineering-first maturity and is heavily involved in research and development of their products. They have competitors from high-integrity inertial localization, overlapping with other INS/GNSS providers.

## AREA 4. BUSINESS MODEL AND OFFERINGS

As a part of their business model and offerings, they provide both hardware and software solutions with services. Over the years, they have successfully established strategic partnerships with leading technological companies and have a well-connected ecosystem (OXTS, 2025, Technology Partners). The company was started in 1998 and has marketed itself very strategically since then. The company has social media presence and is generally spotted at big technical events. They have social media presence and share their success stories via social media platforms. They market themselves as the “Inertial and GNSS leaders” overall. Their website demonstrates their products very well and has a separate page dedicated to success stories. They also share their technological success via blogs where they demonstrate their technological expertise and how they have unleashed the new potential in their domain. They share updates via news and conduct webinars for different technical communities related to the products.

## COMPANY 6. Fixposition

Headquarters: Switzerland

Size: Small

Year established: 2017

Revenue (M\$) (approx. as of 2024): 2.9 (Growjo, 2019, Fixposition Revenue).

### AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION

Fixposition AG is a Swiss technology company that started as a spin off from ETH Zurich in August 2017. The company's flagship product is Vision RTK 2 sensor which is software + hardware module and delivers real-time precise positioning via sensor fusion (Fixposition, 2022, Vision RTK2). They describe themselves as the world's first leading high-precision positioning sensor that combines vision and RTK-GNSS. They are designed for fast integration and deployment and claim to perform even in GNSS restricted or degraded areas (Fixposition, 2022, Vision RTK2). They have a starter-kit available on their website that bundles all the components required for quick trials (Fixposition, 2022, Starter Kit). They prove to be working in both indoor and outdoor environments by claiming to be in agriculture, landscaping and utility robots industry as shown in Figure 32.

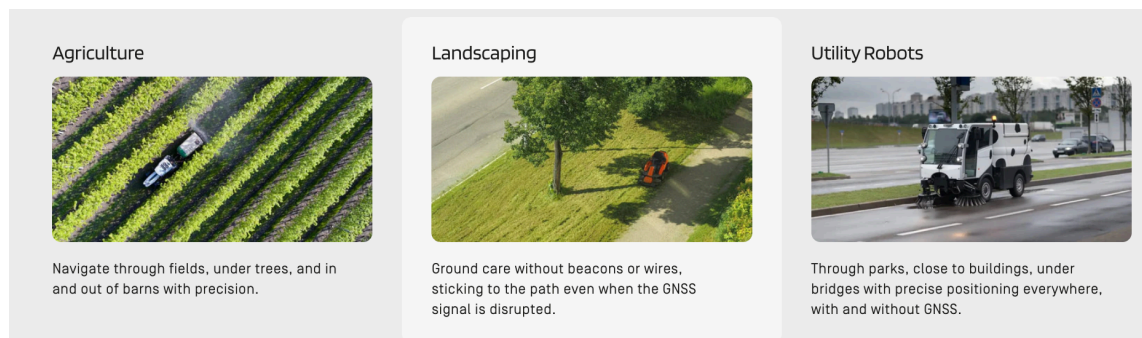


Figure 32. Industries (Fixposition, 2022, Vision RTK2).

They have proven customer testimonials that emphasize working well in GNSS challenging environment, which reinforces the use-case promise. This helps them to gain customer trust and build a strong relationship.

## AREA 2. MARKETING STRATEGIES

The company is relatively new and follows marketing strategies like live product demonstrations, hands-on demos and videos. This helps to attract more customers by providing one-to-one live product demonstration. They market themselves as “Precise positioning under all conditions (Fixposition, 2022, About). Figure 33 shows the videos they have on their website that serve as a proof to their claim of uniqueness.

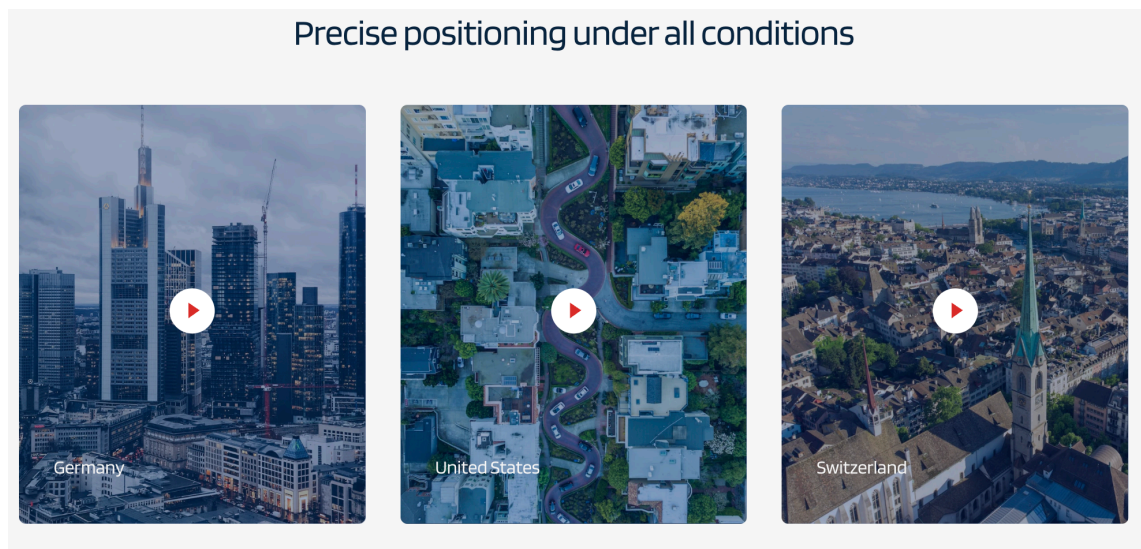


Figure 33. Videos to prove claims (Fixposition, 2022, About).

The unique thing that the company does is that their products are available for purchase online, which is shown in Figure 34. These are the starter packs that are perfect for trials on a small-scale project. The pricing of the products is decent, and this gives the customers a fair chance to try and check the products themselves. The company also has social media presence and shares proven user stories to gain customer trust.

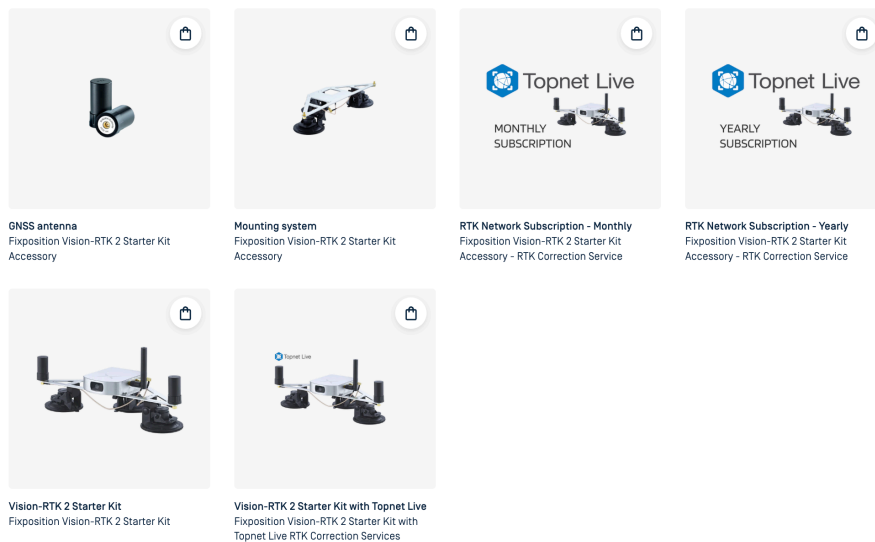


Figure 34. Online availability of products on the website (Fixposition, 2022, Collections).

Figure 34 shows the availability of the company's products online. This technique makes it easier for the customers to see and avail all the products on one platform.

#### AREA 4. BUSINESS MODEL AND OFFERINGS

Fixposition is a small company and offers hardware and firmware modules as OEM solutions and Vision RTK 2 serves as the main product. As a part of their offerings, the company supplies development kits and provides integration support. Their major revenue is generated from that. Figure 35 below shows the company's offerings.



Figure 35. Company Offerings (Fixposition, 2022, About).

Figure 35 demonstrates the technical offerings of the company, that contributes a major part of the revenue collection.

## COMPANY 7. Third Wave Automation

Headquarters: USA

Size: Small

Year established: 2018

Revenue (M\$) (approx. as of 2024): 8.3 (Latka, 2024, Third Wave Company Revenue).

### AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION

Third Wave Automation was founded in 2018 to “(...) alleviate increasing supply chain stress using intelligent automation products and services.” (Third Wave Automation, 2018, About). They claim to make AI do all the work and keep humans in the loop. “Leveraging machine learning and artificial intelligence to create its Shared Autonomy Platform, TWA brings people and automated systems together to improve throughput, efficiency, and safety beyond what either people or automation could achieve alone.” (Third Wave Automation, 2018, About). They believe in shared autonomy and offer a hybrid system of autonomous TWA Reach forklifts and an intelligent Fleet Management System (ArmadaFMS) with remote operations/ assistance (Third Wave Automation, 2025, Products). According to them, this reduces safety concern, human labor, cost and increases the productivity ten-fold. Figure 36 shows the benefits of such model. In the process of gaining trust, they have a SOC 2 certification that is displayed publicly and the website provides answers to lot of questions that genuinely seem to come up when working with such models.

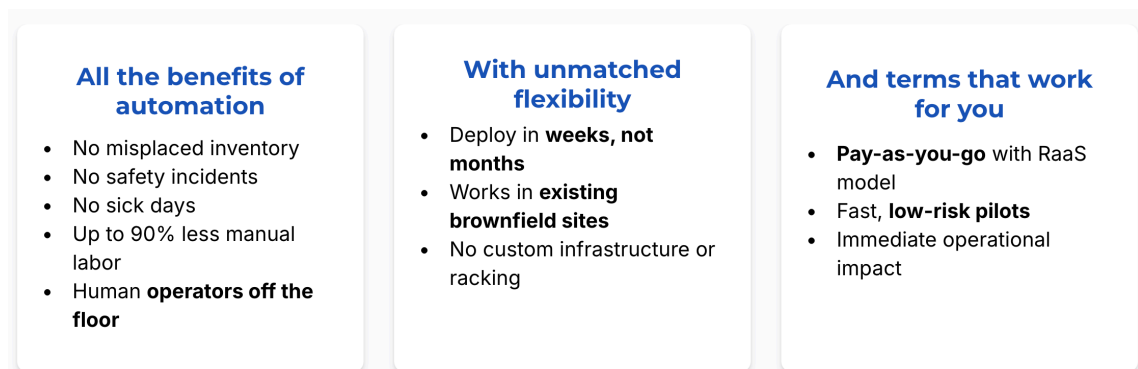


Figure 36. Product benefits (Third Wave Automation, 2025, Landing).

#### AREA 4. BUSINESS MODEL AND OFFERINGS

The company has Robot as a software (RaaS) model and has platform and equipment subscription with optional remote assistance if needed. The subscription is “pay as you go” and the customers are charged only for the options that they avail (Third Wave Automation, 2025, Landing). The company is still in its initial stage and has a social media presence. They also make sure of their presence at events where they can gather the attention of their targeted customers.

#### **COMPANY 8. EasyMile**

Headquarters: France

Size: Medium

Year established: 2014

Revenue (M\$) (approx. as of 2024): 55.1 (Growjo, 2019, EasyMile Revenue).

#### AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION

“EasyMile is a driverless technology leader whose software powers vehicle solutions for airports, logistic and industrial sites around the world.” (EasyMile, 2019, Solutions). The EZTow tow solution is a driverless electric tow tractor that enables autonomous material handling in both indoor and outdoor logistics. (EasyMile, 2020, EZ Tow). The software is available for airports, industrial sites and logistics hubs (EasyMile, 2020, EZ Tow). The product tends to solve the following pain points as demonstrated in Figure 37.

- High operational costs
- Indirect costs for losses (production parts/equipment) and damages (infrastructure)
- Safety concerns in regard to employee risk exposure during operations
- Labor shortage around the world for logistics operations especially qualified drivers
- Human Resource Management: time off, sick leave, training etc.

Figure 37. Pain points for manual labor in intra-logistics (EasyMile, 2020, EZ Tow).

In Figure 37, the company very well captures the pain points in the intra-logistics sectors and provides solutions to manage them for the customers.

## AREA 2. MARKETING STRATEGIES

They also have a very clean demonstration of all their products available on the website that is easily understandable by both technical and non-technical customers (EasyMile, 2025, Vehicle Solutions). They also circulate regular updates in the form of newsletter that customers can subscribe to. They are visible in events and have a social media presence on LinkedIn, X (previously Twitter), Facebook and others where they share their research and development stories.

## AREA 4. BUSINESS MODEL AND OFFERINGS

The company offers both hardware and software solutions. “We offer the EZTow autonomous tow tractor for industries and airports, the EZTug for ports and the EZ10 passenger shuttle for communities and private site.” (EasyMile, 2025, Vehicle Solutions). Their strong marketing strategies include public relations, strategic outreach and demonstration through story telling. Figure 38 is a snapshot of their proud demonstration of public relations.

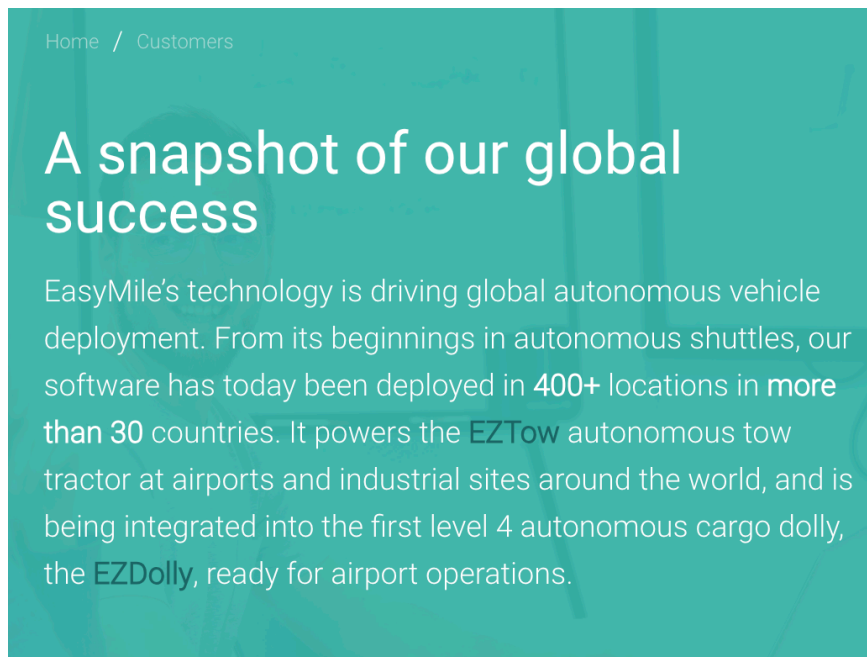


Figure 38. Snapshot of PR (EasyMile, 2022, Deployment).

Figure 38 captures the successful deployment of the company's technology, thus strengthening public relations.

## **COMPANY 9. Gaussin**

Headquarters: France

Size: Medium

Year established: 1880

Revenue (M\$) (approx. as of 2024): 31.4 (Alphaspread, 2023, Gaussin Revenue).

### **AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION**

Gaussin is a well-established technology company that "(...) designs, assembles and offers zero-emission, smart connected vehicles" to enhance mobility (Gaussin, 2023, Vehicles). The company specializes in logistics processes, autonomous technologies and emerging energy solutions (Gaussin, 2023, Vehicles). They serve six market segments including ports, airports, logistics, people mobility, underground works and road transportation (Gaussin, 2023, Vehicles). The company has strategically moved towards sustainability, focusing on zero-emission solutions that include fully electric and

hydrogen fuel cell approaches (JEC, 2021, Gaussin Achievements). They work on autonomous driving, fleet orchestration and provide turnkey solutions for the movement of trailers and semi-trailers between the equipment parking areas and loading docks (Gaussin, 2019, Automation).

## AREA 2. BUSINESS INTELLIGENCE FOR MARKETING STRATEGIES

Gaussin is a well-established brand that uses different marketing and strategic outreach techniques to generate business globally. They have a clear message with the brand name that emphasizes green, smart and connected hubs (Gaussin, 2023, Vehicles). The company strategically forms partnerships to accelerate regulatory trends. For example, the current partnership with Lhyfe that is aimed at accelerating the development of hydrogen mobility at port, logistic sites and airport (Florio, 2022, Strategic Partnership). The company has a well-connected network globally, where they create partners, subsidiaries and use licensing models to enable local production and distribution. Partnerships with big companies and brands tend to accelerate company growth by attracting more customers and providing marketing momentum. One of the biggest strategic moves is that they advertise big customer orders on their website as shown in Figure 39.

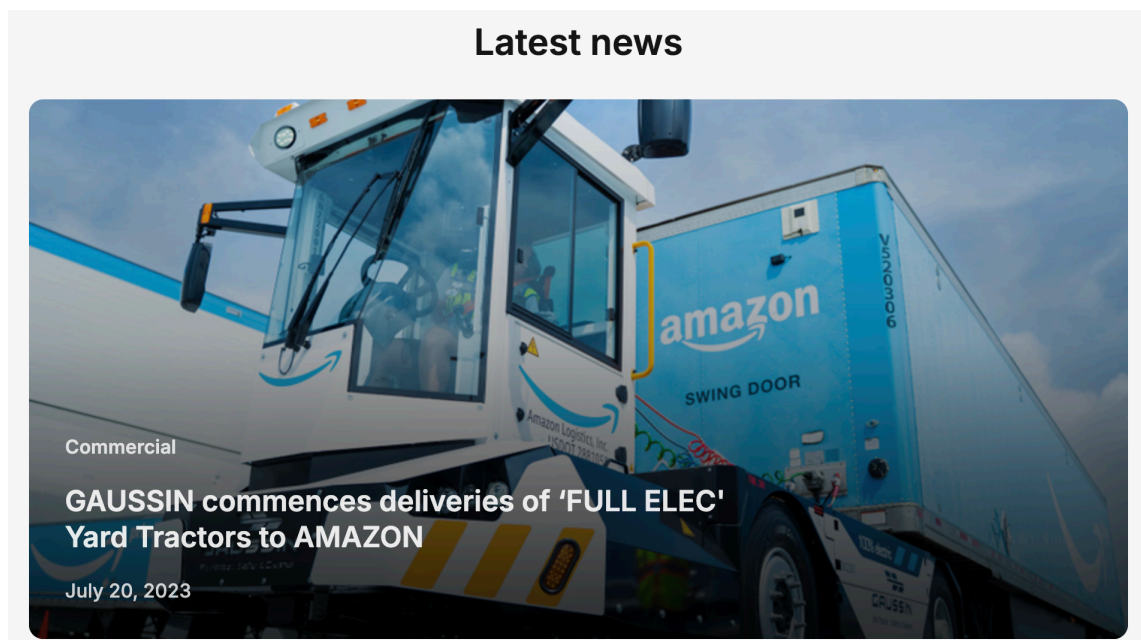


Figure 39. Major customer showcase (Gaussin, 2023, Vehicles).

The company has built a very strong and large ecosystem with logistic operators, infrastructure companies and hydrogen producers that helps the company to create end-to-end solutions and makes their market position much stronger beyond just providing vehicles. The list of investors provided on the website helps the company to gain more trust and attract more investors. The company has already created brand value and is very active on social media platforms with updates on new ventures, partnerships, investments and future approach towards sustainability.

#### AREA 4. BUSINESS MODEL AND OFFERINGS

The company is well established and faces competition from terminal vehicle OEMs and yard automation specialists. As a part of their offerings, the company specializes energy transitions, which means they use green energy and are a step ahead on the road of sustainability for autonomous vehicles shown in Figure 40 and provide autonomy-ready platforms. They also generate revenue by using the leasing and the licensing model.

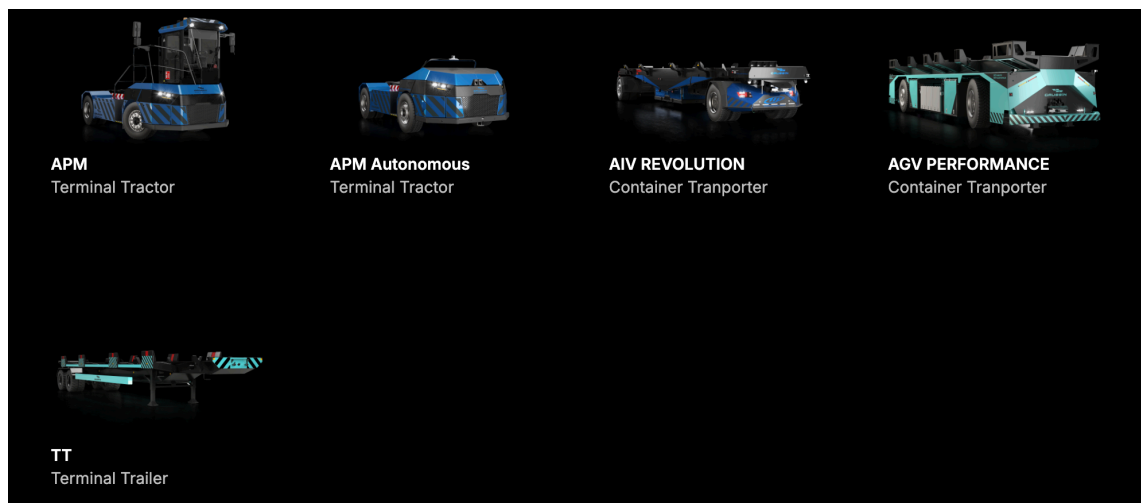


Figure 40. Vehicle offerings of Gaussin (Gaussin, 2023, Vehicles).

Figure 40 shows the vehicle offerings that the company provides, and all of the above offerings uses green energy, that put them a step ahead when the world is moving towards sustainability. Along with the big machines and hardware, the company also specializes in software solutions. “By combining our deep knowledge of complex yard and terminal operations with revolutionary robotics algorithms we provide effective solutions to reduce errors, improve safety and productivity.” (Gaussin, 2019, Automation).

**COMPANY 10. Fernride**

Headquarters: Germany

Size: Small

Year established: 2019

Revenue (M\$) (approx. as of 2024): 19.9 (Growjo, 2019, Fernride Revenue).

**AREA 1. PRODUCT DEVELOPMENT AND DIFFERENTIATION**

Fernride was founded in 2019 as a spinoff from Technical University of Munich (TUM), Germany. The company provides autonomous electric trucks that are designed to operate in closed logistics areas. The tele-operated yard trucking helps in automating cargo movements in closed facilities. According to the company The Yard 67 shunting solution by Fernride simplifies trailer and container management while boosting efficiency and cutting operational cost. When integrated with current processes, it allows logistics and supply chain professionals to operate more efficiently, lower costs, and improve safety within yard operations (Fernride, 2019, Automated Yard Operations). The company's main concern is safety and high product performance, and its main target is private logistics yard (Fernride, 2024, Safety Performance,). They provide a platform for human assisted autonomy where the trucks are equipped with sensors and software needed but a human can intervene remotely when needed (Fernride, 2019, Our Vision, Mission and Beliefs).

**AREA 2. MARKETING STRATEGIES**

According to the company, it has a great marketing strategy where it uses the concept of human + machine collaboration. This helps other logistics companies to trust and adapt to the newer technology slowly. It emphasizes dealing with big industry problems like labor shortages, sustainability, accuracy, efficiency and time management is logistics (Fernride, 2019, Automated Yard Operations). The company uses solution storytelling emphasizing on the big industry problems and the ways that it tackles them. It focuses on future use case narrative, engaging customers on the future update of research and development they are working on. It focuses on press release and funding announcements and makes it available on their website as shown in Figure 41 to attract more customers and gain their trust.



Figure 41. Fundings gained for the company (Fernride, 2019, Our Vision, Mission and Beliefs).

Figure 41 shows the overall funding received by the company and has also listed the venture capital firms that has joined hands with them to attract customer attention and gain trust. The company focuses on B2B enterprises and demonstrates work through strategic partnership and pilot projects.

#### AREA 4. BUSINESS MODEL AND OFFERINGS

When comes to business model, the company follows Autonomy as a Service model which is concerned with platform and operations. The company has operations in container terminals, defense and yard operations (Fernride, 2025, Flexible Ground Autonomy). Figure 42 shows the solutions that Fernride offers as a company. The company is also trying to move to open spaces with the help of open road trucking.

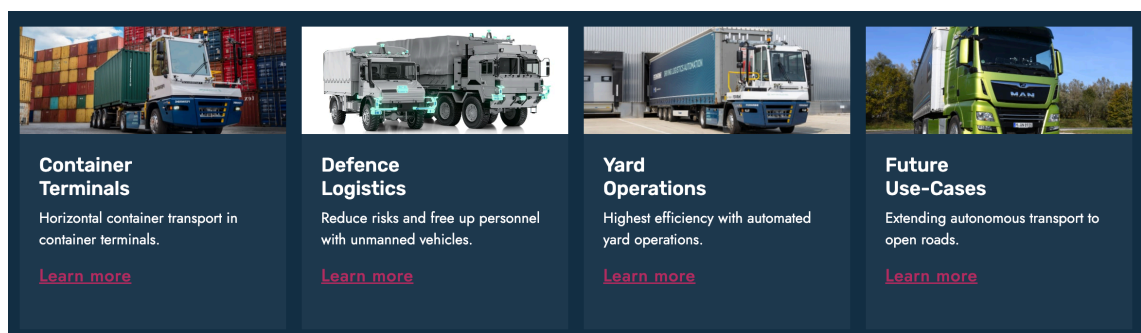


Figure 42. Fernride solutions (Fernride, 2025, Flexible Ground Autonomy).

Figure 42 shows the range of solutions provided by the company as a part of offerings. It includes solutions in container terminals, defense logistics and yard operations.

### 5.3.1 Summary of the Report

The detailed report has served as a very important tool for the company and helped the company with how the competitors perform in the same intra-logistics sector. By analyzing the competitors' products, pricing and positioning, the case company can clearly determine what makes them unique and the sales team can make a stronger value story by changing the key sales narrative to indoor-outdoor. The insights show how to increase product sales, that is not just focusing on the products and their benefits, but also by putting light on the deployment costs, safety and scalability. Structured feedback from each customer deployment is very valuable. The data reveals how they market their products. This helped the company to keep competitive pricing model and to introduce licensing-based model for the products in the intra-logistics sector.

### 5.4 Recommendations for Improving the Case Company's Product Marketing

This recommendation focuses on increasing the company's product marketing capabilities to increase its market visibility, communicate its value and improve customer acquisition. Despite having very strong technical competencies, the case company's marketing communication, customer awareness and commercial messaging remains underdeveloped. Due to this, there is a huge gap between the customer and company regarding product potential and business benefits.

The goal is to move to value driven product marketing, ensuring that the company's technological expertise is translated into understandable business value and scalable commercial materials, providing a position in the competitive market. Enhancing digital presence is a key to being noticed by the customers. This includes enhancing the website to be more product oriented and using proper technical keywords to implement search engine optimization to increase visibility. This will ensure more chances of the case company's products appear in the customer search. Direct contact with customers by personalized product demonstration can increase customer engagement. Publishing technical blogs, organizing webinars, presenting the products at international fairs, emails to target groups and more activity on LinkedIn and other social platforms are very much needed to draw more customer attention.

#### 5.4.1 Recommendation 1: Create Clear Product Differentiation

To strengthen the case company's position in the competitive intra-logistics market, the company should develop a distinct and properly communicated product differentiation strategy. As per the company, it should clearly position itself as the leading provider of continuous and seamless navigation across indoor and outdoor environments, combining robust, weather-proof performance, OEM friendly engineering and safety certified engineering. Also, they offer data-driven navigation, which ensures reliability and predictability in real industrial environments. This feature makes them stand out from the crowd.

#### 5.4.2 Recommendation 2: Improve Product Marketing

This recommendation focuses on increasing the company's product marketing capabilities to increase its market visibility, communicate its value and improve customer acquisition. Despite having very strong technical competencies, the case company's marketing communication, customer awareness and commercial messaging remains underdeveloped. Due to this, there is a huge gap between the customer and company regarding product potential and business benefits.

The objective is to move to value-driven product marketing, ensuring that the company's technological expertise is translated into understandable business value and scalable commercial materials, providing a position in the competitive market. Enhancing digital presence is a key to being noticed by the customers. This includes enhancing the website to be more product oriented and using proper technical keywords to implement search engine optimization to increase visibility. This will ensure more chances of the case company's products appear in the customer search. Direct contact with customers by personalized product demonstration can increase customer engagement. Publishing technical blogs, organizing webinars, presenting the products at international fairs, emails to target groups and more activity on LinkedIn and other social platforms are very much needed to draw more customer attention.

### 5.4.3 Recommendation 3: Build Partnership and Ecosystem

With a turnkey solution, the stakeholders were consistent with the fact that a channel strategy is a very important aspect of marketing as it helps in determining the long-term competitiveness and market access. They agreed that partnership programs with integrators, OEMs and technical firms can be used to expand global reach. These collaborations will help the company to build customer trust and enable faster adoption of the products. Co-marketing programs can be very useful in building partner relationships, which will also help in the continuous improvements of the products and increase customer satisfaction. For these collaborations, deployment guides, sales kits and demo videos are very important assets as they can serve as partner toolkit.

Next, Section 6 evaluates the Report and Recommendations with the key stakeholders and identifies areas for further development.

## 6 Validation and Final Outcomes

This section reports on the results of the validation stage and points to further developments to the initial outcomes. The development of the proposal was based on feedback from the stakeholders and was validated through review sessions and iterative discussions. The section starts with the validation process and continues with the developments in the validation and ends with the final proposal.

### 6.1 Overview of the Validation Stage

The necessity of the validation phase was to check the feasibility and practicality of the initial proposal. The validation aimed at confirming the initial report and recommendations were well aligned with the company's business objective and can address the identified gaps.

The validation was done in three steps; in the first step, the preliminary report and recommendations were presented to the stakeholders beforehand, along with the insights from the current state assessment and the best practices in the industry obtained from the literature review.

Second step involved discussing the elements with the stakeholders to evaluate the components of the report and recommendations. The final enhancements were agreed upon after the CTO and the Sales Director, who were the experts involved in this matter, assessed the feasibility, risks, benefits and adjusted the proposal accordingly. They approved of the report, but slight add-ons were made to the recommendations.

In the third step, all the inputs were collected and mapped together, and adjustments were made after an overall discussion with the stakeholders. This approach ensured that the initial proposal was validated properly and risks and benefits were assessed from all aspects.

The results of the validation are presented below along with the adjustments made to the final proposal.

## 6.2 Developments to Initial Outcomes

During the validation, the key stakeholders discussed the Report and suggested that it should remain unchanged. Findings from Data 3 comprise the feedback and adjustments made to the initial outcome. Table 6 below contains the summarized expert input to each element of the initial outcome, followed by improvements made to the initial proposal.

Table 6. Expert suggestions (findings of Data 3) for the Initial outcome (Recommendations).

	RECOMMENDATIONS	Parts commented in Validation	Description of the comment/feedback (DATA 3) by experts (in detail)	Development to the Initial proposal
1	RECOMMENDATION 1. Create clear product differentiation	Product tier structure	Tiering is ok but clear technical boundaries with competitive edge features ownership is needed.	Tier definition update with correct scope, feature list and differentiating quality.
		Deployment templates	Real-world cases and solutions to problems should be highlighted.	Deployment playbooks should include real cases, risks and benefits and troubleshooting flowcharts.
		Feedback process implementation	A proper feedback loop should be implemented and tied to product roadmap.	A formal feedback loop, where the future mistakes can be avoided by learning from the past one and the same should be linked to the product roadmap.
2	RECOMMENDATION 2. Product marketing	Customer Value Proposition and messaging	“Focus on reliability and the use of 3D Lidar in indoor environments. Emphasize on 3D navigation and reliability.”	Clear, concise message with a single narrative should be used and each message must emphasize products’ value & outcomes & benefits over the features.

		Marketing channels	“More focus should be put on logistics specific events and partner channels.”	Marketing plans should prioritize logistics focused webinars and emails to targeted logistics groups. Everything should be focused on logistics and not broad robotics marketing.
		KPIs to monitor: Increase in sales; Inbound Leads and Visibility	“Standard KPIs should be tracked, and the success should be measured as per the outcome”	KPIs should be the indicator of how successful the new strategy is.
3	RECOMMENDATION 3. Partner and ecosystem development	Promise to fixed price	“A fixed price should not be agreed upon to the customer before.”	Changes to how price deals are made with the customers should be changed as there can be unseen costs coming up later.
		Partner collaboration and toolkit	More collaborations should be made with integrators or OEMs and Toolkits should have demo scripts and API guides.	Increased technical collaborations can attract more customers. Toolkits should have API guides, demo scripts and technical support stuffs

As seen from Table 6, the experts were in favor of the initial recommendations, while emphasizing more clarity to the logistics segment. The feedback reinforced the importance of clear documentation and phased implementations. The experts emphasized maintaining technical integrity while keeping market communication and ecosystem development on a priority list.

### 6.2.1 Developments to Recommendation 1: Clear product differentiation

Clear product differentiation proposal was maintained but slight improvements to the proposal were made in terms defined technical scope showing the outcomes, risks, benefits and not just features of the products. Real cases and the solutions should be highlighted more as operational examples and troubleshooting guidance. A proper feedback loop should be implemented leading to clear documentation and measurable commercial outcomes.

## 6.2.2 Developments to Recommendation 2: Product marketing

A customer value proposition is very important in a highly competing market. The enhancements made included sharper value-driven messages emphasizing the products' technical and problem-solving capability. Lead capture mechanisms should be introduced, for example demo videos, newsletter signups and white paper downloads should be embedded. KPIs should be measured based on these terms.

## 6.2.3 Follow-up for Recommendation 2 (New): Measurable KPIs

The stakeholders wanted to implement the measurable KPIs to track the rate of growth and progress. The KPI set represents a shared understanding of what must be monitored to guide further strategic development.

### 6.2.3.1 Increase in sales

The revenue collected at the end of a financial year is a very important indicator of how the company is performing. The forecast done on the financial data of GIM Robotics is based on previous years data, assumptions about future market conditions, technology stack and customer ramp up.

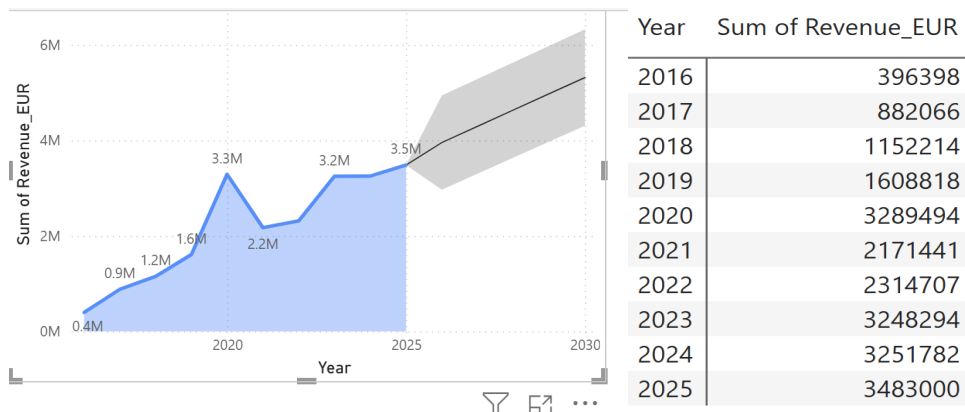


Figure 43. Forecast of revenue generated by GIM Robotics for the next 5 years.

Figure 43 shows the graph of revenue generated in Euros with time for the case company. From the early years, the graph shows a steady peak from 0.4M to 1.6M followed by a sharp rise in 2020. There were few ups and downs till the year 2025. The shaded blue area represents the historical data of the case company, and the grey

area shows the forecast for the future in terms of revenue generated. The forecast shows an expected upward trend with the revenue expected to grow from 3.5 million in 2025 to 5-6 million in 2030. The wide grey band shows the uncertainty in the prediction with upper bounds and lower bounds. The chart reflects a very strong growth in history followed by positive outlook for continued revenue growth in the future.

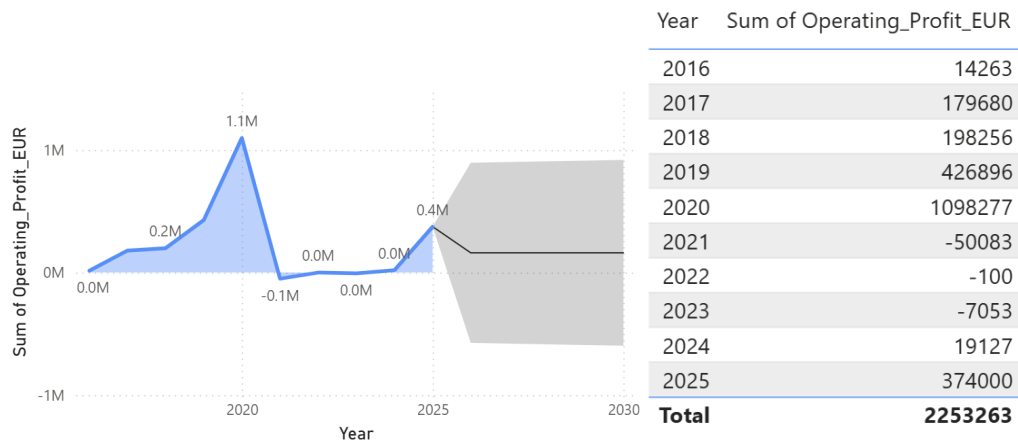


Figure 44. Forecast of operating profit by GIM Robotics for the next 5 years.

Figure 44 shows the operating profit for the case company. In the initial years, the operating profit for the case company showed an increase from nearly 0M to 1.1M around 2020. But it was then followed by a declining path. However, by 2025, the operating profit showed an improvement, reaching around 0.4M. The blue shaded area shows the historical profit, and the grey area shows the future prediction. The forecast shows a stable profit in the future through wide bands that also shows uncertainty in the prediction. The chart overall reflects a volatile profit pattern showing signs to invest cautiously in future projects.

### 6.2.3.2 Inbounds leads

Inbound leads refer to potential customers proactively engaging with the company through marketing channels. Tracking inbound activity helps the company to measure how improved product marketing leads to customer engagement and increased sales income. It operationalizes the qualitative improvements suggested in the proposal into measurable business outcomes. Success will be measured in terms of the number of customers attracted and contacting the company to get their work done. A consistent increase in the number of customers and sales number is clear evidence that the

marketing efforts are supporting growth and competitiveness in the mature logistics market.

#### 6.2.3.3 Visibility

Visibility refers to which extent the company's products and expertise are recognized in professional logistics network. Visibility as a KPI acts as a quantitative measure of how the new strategy has raised awareness and credibility of the case company in the market. This can be measured in terms of digital engagement rate (digital impressions leading to user actions like clicks, downloads, shares, inquiries), industry presence (number of trades, conferences or consortiums where the company's presence is marked) and brand search growth (growth in searches for the company's name or product keywords and the number of people visiting the company's website). Increased visibility refers to stronger brand recognition, higher digital engagement and industry presence. It provides a path for tracking the reach in marketing activities and validating the success of the proposed marketing transformation.

#### 6.2.4 Developments to Recommendation 3: Partner and ecosystem development

The partner strategy was validated and improved by shedding light on the fact that a fixed price should not be promised beforehand. All the corners should be mapped and then something should be committed to the partners. Direct product marketing should be implemented and standardized partner enablement toolkit should have demo videos and technical guides. Increased technical collaborations results in partnership formation and help to build brand trust among the customers. One successful collaboration is a key to the next one.

### 6.3 Final Outcomes

The final proposal is made combining the stakeholders' feedback and the initial proposal given. It consists of the three core pillars as shown in table 7.

Table 7. Final Outcomes.

Final Outcome	Description
REPORT on Intra-logistics Market for AGVs and AMRs	(Stays unchanged)
RECOMMENDATION 1: Product differentiation (to produce predictable quality and scalable delivery)	Integrated differentiation statement showing the stand-out features of the products. Tiered offerings, deployment playbooks and structured feedback.
RECOMMENDATION 2: Strengthened product marketing (to improve brand credibility and number in terms of product sales).	Value-driven messaging focuses on the values, outcomes and benefits rather than just the product features. Consistent visual branding is recommended to draw more attention.
	Designing the website in a well-structured manner by customer segments (OEMs, integrator) and solution area (intra-logistics) that is well understood by both technical and non-technical customers.
	More encouragement towards direct engagement where trust and technical value drive purchasing. Personalized demo sessions are also encouraged.
	Search Engine Optimization should be used to LinkedIn marketing and use of keywords are encouraged to increase visibility
RECOMMENDATION 3: Partner and ecosystem (to collaborate with integrators or OEMs helps to increase brand recognition and helps build trust among the customers).	More collaborations and partnerships to establish long-term, trust-based relationships and increase brand recognition.

Summing up, the validation of the final report and recommendations confirmed that the report serves well as a business intelligence tool for the company and the recommendations are feasible and aligned with the company's business objective of establishing its position in the mature intra-logistics market. However, to maintain its position in the market, the company should be agile and ensure continuous improvements. Maintaining a product roadmap and a structured feedback process will transform the entire product development process into a systematic data-driven process that can be scalable, consistent and can undergo continuous improvements.

The second recommendation concerns the company's marketing analytics and visibility management. A unified analytics dashboard and continuous monitoring of the mentioned KPIs will reveal which channels generate the highest engagement and lead quality, ensuring the marketing investment is directly leading to desired sales performance. Enhancing digital visibility through webinars, case studies and industry events will further attract more customer attention and strengthen company's position in the indoor-outdoor automation segment.

The third area dealing with partner and ecosystem development should encourage the company to move forward from transactional partnership to long-term co-creational partnership with the integrators and OEMs through technical programs and shared incentive models.

Thus, implementing the suggestions would enhance the current position of the company in the intra-logistics sector and give it a push to break through the mature market. The recommendations built on the final proposal aim to transform it from just a strategical plan into a sustainable strategic framework. With the help of data-driven marketing and a concrete and strong ecosystem, the company can maintain its position and competitive edge. Continuous KPI monitoring and cross-functional learning will ensure measurable, customer-centric and will help in adapting on-going market trends easily in the rapidly advancing intra-logistics sector.

## 7 Conclusion

Section 7 concludes the research study by summarizing the thesis from its initial objectives to its outcome. This section reflects the overall contribution of the study.

### 7.1 Executive Summary

The objective of the thesis was to develop a report and provide recommendations for commercial readiness and improving the market performance of the case company. The case company is a robotics firm, which offers a turnkey automation solution for the intra-logistics sector. The company was facing challenges in terms of its limited market visibility and limited penetration in the mature logistics market, dominated by established players. The topic deals with a strategic approach applied for the case company from becoming a research-oriented technology provider to a market-recognized solution supplier.

The applied research process followed a structured approach combining qualitative data, stakeholders' insights, and literature knowledge. The research design consists of the current state analysis, literature review, a report, set of recommendations and validation of the recommendations for an outcome. The data collection step involved thorough analysis and structured interviews of stakeholders in the company.

The current state analysis identified three primary weaknesses including unclear product differentiations, low visibility and poor product marketing, and underdeveloped partner ecosystem. Literature review helped to find the best practices in the industry and a conceptual framework was created built on the findings.

The development of the report and recommendations were based on the outcome of the current state analysis, the conceptual framework, which was guided by the literature review and several rounds of stakeholder feedback. The report was constructed with the help of knowledge obtained from literature review. The initial recommendations consisted of three parts: product differentiation and standardization, product marketing and partnership, and ecosystem development. The stakeholders validated the report and adjusted the initial recommendations with few minor adjustments, but the whole foundation remained the same.

The validation stage involved combining the parts mentioned above into a final proposal. The stakeholders were very particular about the logistics industry and to highlight the product differentiations while marketing them. Validation feedback confirmed that the final recommendations were both practically feasible and align with the company's business strategy. The stakeholders emphasized gradual implementation which is underway already. Refinements in the initial recommendations focused more on specific KPIs for measuring the success of the new strategy.

The overall study has provided a validated, research-based sustainable framework that will allow the company to gradually break through the mature logistics market, to move from a technology-focused to market-oriented business model. The strategy addresses the company's pain points, which are lower visibility and unstructured commercialization by providing scalable solutions and measurable performance indicators. Implementing the recommendations along with data-driven marketing strategy will enable the company to increase its visibility, strengthen its brand and product marketing, attract new leads and achieve sustainable growth in the intra-logistics market.

## 7.2 Thesis Evaluation

The objective of this thesis was to develop a report by studying logistics market development and develop a set of recommendations to enhance the company's commercialization and marketing performance. The methodology used in the thesis combined internal data revealed from the current state analysis, conceptual model and best industrial practices from the literature review and stakeholders' input. The thesis involved collaborative efforts and the alignment between theory and actual industrial practices supported by the feasibility of the implementation. Due to the fast-evolving nature of the logistics industry, it is exceedingly difficult to predict correctly what the scenario will be 5 years down the line.

In the end, the thesis offers valuable insights into the intersection of robotics innovation, logistics industry, and commercialization of products. The overall process of collecting and analyzing datasets while recovering valuable information from them was extremely motivating.

### 7.3 Closing Words

This thesis highlights the importance of adopting systematic and structured approaches for small and mid-sized companies to commercialize their products effectively. The findings underscore the necessity of aligning technological capabilities with market needs, growing sustainably while continuously learning from data, and leveraging strategic partnerships for accelerated growth.

The most challenging phase of this research involved sourcing reliable data from companies in Central Europe. Understanding the complexity of the entire market and collecting data that was not easily accessible proved to be a time-consuming process. In hindsight, I wish I had identified earlier which data collection tasks would be most fruitful. This would have allowed me to utilize the remaining time for deeper analysis and clearer explanation of the findings to the stakeholders, thereby providing them with superior insights.

However, a critical and honest review reveals that while product differentiation and standardization need more dedicated investigation, the remaining proposals are currently in the process of implementation.

In closing, this thesis serves both as a reflection on the evolving nature of the industrial automation market and as a roadmap for the case company's sustainable growth within that market. It is important to move forward by thoughtfully implementing the proposals, which will ultimately strengthen the company's market position in the intra-logistics sector.

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## Appendix 1. Statement of the use of AI for writing this thesis

### WRITTEN STATEMENT

on the use of AI-based tools in this thesis

by Mehnaz Parveen, the student of BI Master's Degree Programme

Thesis title: Market Analysis of Competitor Performance, Business Models and Offerings in AGVs and AMRs : Recommendations for Marketing AGVs and AMRs in the Intra-logistics Market

According to the "Guidance for addressing the use of AI-based tools in studies at Metropolia Business School (for written submissions)" from August 2023, I make this statement on the use of AI-based tools in my submitted Master's thesis.

- 1) Which AI-based large language models or other AI-based tools I used: Chat-GPT
- 2) In which parts of the thesis which tools were used, and for which tasks: Not in any particular part
- 3) What portion of the text was helped with these tools, for each use: Not in any particular part
- 4) Which prompts were asked, exactly (*please indicate the page number in the text where used*):  
"How can I structure a paragraph to emphasize on the most important part?"  
"Give me the synonym for..."  
"Which books and papers should I consider for my research?"
- 5) Here, I describe what continues an ethical and reliable use of AI-based tools that I used (*use, for example, the recommended documents from "MBS Guidance" referred to above*):  
Using for finding proper words, synonyms and the recommended documents from "MBS Guidance" referred to above
- 6) Here, I describe how ethically and reliably I used the AI-based tools in my thesis submission"  
AI has very minimal usage in the whole thesis and it was mostly used for finding recommendations of books and papers for study purposes. AI was used for taking suggestions mostly to avoid repetitions of words, for finding their synonyms. AI was not used to generate the text of the thesis.

This written statement makes part of my thesis and is done to help in evaluation and assessment.

\_\_\_\_\_28.11.25, Espoo\_\_\_\_\_

*(Data and place)*

\_\_\_\_\_Mehnaz Parveen\_\_\_\_\_

*(Signature)*