

Seed Round - 500k - 2.5M Valuation

Investor Package

Management Summary

Cognivix is an innovative Italian startup set to transform the automation landscape for small and medium-sized enterprises (SMEs). Our pioneering AI-driven solution focuses on high mix low volume (HMLV) production processes, which have traditionally been left out of automation due to prohibitive deployment costs and limited adaptability. By offering an affordable, versatile, and reliable solution, Cognivix enables SMEs to automate their production processes and remain competitive in the global market.

Distinct from conventional computer vision automation solutions like Keyence and contemporary warehousing robotics firms such as Osaro and Right Hand Robotics, Cognivix stands out with its unique approach that merges state-of-the-art research and user-friendly tools. This strategy has already garnered attention and investment. With an estimated market size of 20-30 billion USD and a TRL 6 prototype, Cognivix has secured Smart & Start Italia (SSI) funds, raised 127k through crowdfunding, and attracted a 75k investment from Magic Spectrum, a Cassa Depositi e Prestiti accelerator.

Cognivix is presently seeking an additional investment of 150-250k to supplement SSI funds and cover R&D, market entry, and other expenses not eligible for public funding. Magic Spectrum has extended a soft commitment to match the cumulative investment within this range, indicating robust backing for the venture. By investing in Cognivix, you will contribute to a groundbreaking initiative that not only empowers SMEs to adopt automation but also reshapes the future of industrial production processes.

Investing in Cognivix allows you to seize a promising market opportunity while supporting a skilled team with extensive expertise in AI, robotics, and automation. Together, we can create a lasting impact on the industry and generate value for both SMEs and investors.

Challenges Faced by SMEs in Automation and Robotics

Small and medium-sized enterprises (SMEs) play a vital role in driving economic growth and employment worldwide. However, they often face distinct challenges when it comes to implementing automation and robotics in their production processes. These difficulties can hinder their ability to stay competitive in a rapidly evolving global market. The primary challenges faced by SMEs in the realm of automation and robotics include the following:

1. **High Deployment Costs:** SMEs often have limited financial resources compared to larger companies, making it difficult for them to invest in traditional automation solutions, which require significant capital investments for hardware, software, and system integration.
2. **Low Adaptability:** The production processes of SMEs frequently involve high mix low volume (HMLV) scenarios, which demand greater flexibility and adaptability than most traditional automation systems can provide. These existing solutions are typically designed for large-scale, standardized processes and are not suitable for the varied and dynamic needs of SMEs.
3. **Complex Integration:** Integrating automation and robotics into existing production processes can be a daunting task, as it requires specialized expertise and extensive customization. SMEs often lack the in-house knowledge and resources necessary to manage this integration effectively.
4. **Skill Gap:** The increasing prevalence of automation has led to a growing demand for skilled personnel with expertise in robotics, AI, and automation. SMEs may find it challenging to attract and retain the necessary talent to support their automation efforts, further complicating their ability to implement these technologies successfully.

By understanding and addressing these challenges, innovative automation solutions like Cognivix can unlock significant market potential and empower SMEs to embrace the benefits of automation and robotics in their businesses.

Investing in Cognivix presents a unique opportunity to capitalize on a market that is ripe for disruption and growth. By supporting an innovative solution that addresses the specific needs of SMEs, investors can contribute to reshaping the future of industrial production processes and benefit from the potential returns in this expanding market.

HMLV for Large Industries

The demand for high mix low volume (HMLV) automation solutions is not limited to small and medium-sized enterprises (SMEs). Large industries also face the need to adapt to ever-changing market demands and customer preferences, which often require frequent changes in production processes or the ability to provide a wider product selection. HMLV automation solutions can offer significant benefits to large corporations, further expanding the market potential for innovative technologies like Cognivix's AI-driven solution.

1. **Meeting Customer Expectations:** Today's customers expect a wide variety of options and customized products tailored to their unique preferences. By implementing HMLV automation solutions, large corporations can efficiently produce a diverse range of products, ensuring they meet customer expectations and maintain a strong competitive edge.
2. **Rapid Market Response:** Market trends and customer demands can change rapidly, requiring businesses to adapt quickly to maintain their market position. HMLV automation solutions enable large corporations to swiftly adjust their production processes to meet these changing demands, ensuring they remain agile and responsive in a dynamic market.

3. **Enhanced Flexibility:** Large corporations can benefit from the increased flexibility provided by HMLV automation solutions, allowing them to adapt their production lines to produce new or modified products with minimal disruption. This flexibility ensures they can capitalize on new opportunities and maintain their competitive advantage in the face of evolving customer needs and market conditions.
4. **Cost Optimization:** Implementing HMLV automation solutions can lead to more efficient production processes, resulting in reduced labor costs, improved resource utilization, and minimized waste. This cost optimization is crucial for large corporations looking to maintain profitability in competitive markets.
5. **Supply Chain Resilience:** With increased flexibility and adaptability, large corporations can build more resilient supply chains, enabling them to better manage risks and uncertainties, such as fluctuations in demand, supply disruptions, or global economic shifts.

By addressing the specific needs of large industries, innovative HMLV automation solutions like Cognivix's can tap into an even broader market potential. By providing large corporations with the flexibility, efficiency, and responsiveness they need to succeed in today's dynamic business environment, Cognivix's AI-driven solution can play a crucial role in transforming the future of industrial production processes for organizations of all sizes.

Market Size and Potential

The market opportunity for innovative automation solutions tailored to SMEs is substantial. SMEs account for more than 90% of businesses globally, playing a crucial role in driving economic growth and employment. Given the increasing need for cost-effective and adaptable automation solutions in the HMLV segment, the market is expected to grow significantly.

A conservative estimate of the total market size for automation in the HMLV segment is 20-30 billion USD. This figure represents the potential demand for automation technologies that cater specifically to the needs of SMEs, including affordability, adaptability, and ease of integration.

Cognivix's unique approach addresses these specific challenges, offering a solution that combines cutting-edge AI research with user-friendly tools to enable SMEs to automate their production processes. By providing a cost-effective and flexible alternative to traditional automation systems, Cognivix has the potential to capture a significant share of the market.

The growing need for automation solutions in various industries, such as manufacturing, logistics, and warehousing, further supports the market potential. As more SMEs recognize the benefits of automation, including increased efficiency, reduced labor costs, and improved product quality, the demand for innovative solutions like Cognivix's is expected to increase.

The Solution

Cognivix's innovative AI-driven solution is designed to address the unique challenges faced by SMEs in implementing automation and robotics. By focusing on high deployment costs and low adaptability, our approach offers a tailored solution that enables SMEs to automate their HMLV production processes effectively.

1. **Cost-effective Automation:** Cognivix's AI-driven technology streamlines the deployment process by minimizing the need for expensive hardware, software, and system integration. Our modular and reusable robotic interfaces help reduce costs and make automation more accessible for SMEs with limited financial resources.
2. **High Adaptability:** Our cutting-edge solution leverages PVN3D Yolo and sim2real technologies, enabling real-time adjustments and adaptability to a wide range of HMLV production processes. This flexibility allows SMEs to automate their dynamic and varied production lines with ease.
3. **User-friendly Tools:** Cognivix's patented automated data acquisition and labeling system simplifies the fine-tuning process for specific object manipulation. This user-friendly approach allows customers to customize the system to their needs without any prior AI knowledge, further reducing the barriers to automation adoption.
4. **Seamless Integration:** By offering a modular and reusable robotics interface, Cognivix's solution ensures easy integration with existing production processes, eliminating the need for extensive customization and specialized expertise.

Benefits for SMEs:

1. **Increased Efficiency:** By automating HMLV production processes, SMEs can significantly improve their production efficiency, leading to faster throughput and reduced production lead times.
2. **Cost Reduction:** Cognivix's cost-effective solution helps SMEs save on labor costs and other expenses associated with manual production processes.
3. **Improved Quality:** Automation reduces the risk of human error, leading to more consistent and higher-quality products, which can boost customer satisfaction and brand reputation.
4. **Enhanced Competitiveness:** By embracing Cognivix's innovative automation solution, SMEs can stay competitive in the global market, positioning themselves as forward-thinking and technologically advanced organizations.

Cognivix's AI-driven solution offers a unique opportunity for SMEs to overcome the barriers to automation adoption, enabling them to improve efficiency, reduce costs, and enhance their competitiveness in an ever-evolving global market.

Technology Overview

Cognivix's innovative computer vision (CV) pipeline combines the power of YOLOv4 and PVN3D to deliver a highly efficient and accurate 6D pose detection solution for automating

industrial processes. Our technology is designed to be accessible to non-ML specialists while maintaining the precision and performance required for advanced automation tasks.

1. YOLOv4 for 2D Object Detection: YOLOv4 (You Only Look Once) is a state-of-the-art real-time object detection algorithm that excels in identifying objects within 2D images¹. Cognivix utilizes YOLOv4 to quickly and accurately detect objects within a scene, laying the foundation for our subsequent 6D pose detection.
2. PVN3D for 6D Pose Detection: Once objects have been detected, our CV pipeline employs PVN3D, a cutting-edge 3D deep learning algorithm, to estimate their 6D poses (3D location and orientation) within the region of interest (ROI)². This combination of YOLOv4 and PVN3D enables our system to achieve high accuracy and robustness in complex industrial environments.
3. Sim2Real Pretraining: Cognivix's technology leverages sim2real pretraining, wherein the AI system is first trained on synthetic data before being fine-tuned with real-world data. This approach reduces the amount of real-world data required for training, accelerates the learning process, and enhances the system's adaptability to various scenarios³.
4. Real-time Inference: Our CV pipeline is optimized for real-time inference, ensuring that the system can rapidly process and analyze data in industrial settings. This predictable and efficient performance is crucial for applications where speed and accuracy are paramount.

Comparison to Currently Available Technology:

Traditional industry automation technologies often struggle with tasks that require high levels of adaptability and precision, such as bin picking of irregularly shaped parts, assembly of cosmetics like lipsticks or eyeliners, and onloading-offloading of CNC machines in HMLV settings. These processes cannot be easily automated using conventional pneumatic grippers and simple computer vision techniques.

Cognivix's advanced CV pipeline addresses these challenges by providing accurate 6D pose recognition, enabling automation for tasks that were previously considered too complex or unfeasible. Our technology's combination of real-time performance, high accuracy, and adaptability allows industries to automate a wider range of processes, enhancing productivity, efficiency, and competitiveness in the global market.

Business Model

Cognivix's vision is to become the leading provider of AI-driven automation solutions for the high mix low volume (HMLV) production segment, enabling small and medium-sized enterprises

¹ Bochkovskiy, A., Wang, C.-Y., & Liao, H.-Y. M. (2020). YOLOv4: Optimal Speed and Accuracy of Object Detection. arXiv preprint arXiv:2004.10934.

² He, Y., Rong, X., & Fan, H. (2020). PVN3D: A Deep Point-wise 3D Keypoints Voting Network for 6DoF Pose Estimation. arXiv preprint arXiv:1911.04231.

³ Tobin, J., Fong, R., Ray, A., Schneider, J., Zaremba, W., & Abbeel, P. (2017). Domain Randomization for Transferring Deep Neural Networks from Simulation to the Real World. arXiv preprint arXiv:1703.06907

(SMEs) to stay competitive in a rapidly evolving global market. To achieve this vision, Cognivix plans to remain a lean product company, leveraging large partners with proven sales and support infrastructure.

By partnering with industry leaders such as FANUC, Cognivix aims to enable large-scale adoption of its technology and establish a dominant market position. FANUC is a leading global supplier of industrial robots, with a broad customer base and established sales and support infrastructure. Cognivix's technology can integrate seamlessly with FANUC's existing product line, providing an opportunity for FANUC to sell more robots and increase customer value.

Cognivix also plans to leverage partnerships with system integrators to access the SME market. System integrators specialize in integrating automation and robotics into production processes, providing SMEs with expertise and support in this area. By partnering with system integrators, Cognivix can reach a wider range of customers and provide them with a complete automation solution that meets their specific needs.

Through these partnerships, Cognivix aims to establish a strong market position and capitalize on the growing demand for innovative automation solutions in the HMLV segment. By providing a unique, cost-effective, and adaptable solution that meets the specific needs of SMEs, Cognivix is well-positioned to disrupt the industry and capture a significant share of the market.

Revenue Model and Customer Lifetime Value

Cognivix's revenue model is based on an initial hardware sale of 2k euros per robot for the AI computation device and yearly software licenses. The base software license is priced at 10k euros per year, with an additional 2k euros per robot. For example, if a customer deploys 5 robots, they would pay 10k euros for the hardware and 20k euros per year for software licenses.

The slow churn rate in the industry means that customers are likely to keep the technology for several years, leading to a high customer lifetime value (CLV). Even a small customer can easily generate over 100k euros in revenue for Cognivix.

Furthermore, Cognivix's low cost of customer acquisition is a significant advantage. The company plans to leverage existing partner networks, such as FANUC, to reach potential customers. As a result, the cost of acquiring new customers will be relatively low compared to other companies in the industry.

Overall, Cognivix's revenue model, combined with the high CLV and low cost of customer acquisition, positions the company for success in the rapidly growing automation industry.

Financials

Completing the seed round would allow Cognivix to develop the product with a safe margin for delays. Adding up the capital available through Smart & Start Italia, the portion raised through crowdfunding, the investment from Magic Spectrum and from other seed investors Cognivix

would have an availability of about EUR 1.4M, which would ensure that we would be able to complete a solid product market fit and thus reach a round A with a stronger foundation and a higher valuation. This flywheel effect would have a beneficial long-term impact on the development of the firm and its competitiveness in the medium term due to speed compared to future competitors.

	2023	2024	2025	2026
Revenue	€13,625.00	€227,467.29	€2,025,516.73	€13,631,506.76
Cost of Production	€1,000.00	€20,500.00	€648,750.00	€3,206,800.00
Gross Profit	€12,625.00	€206,967.29	€1,376,766.73	€10,424,706.76
Operating Costs	€418,047.16	€584,618.49	€2,581,194.97	€6,202,180.47
EBITDA	-€405,422.16	-€377,651.19	-€1,204,428.25	€4,222,526.29
Interest Amortization and Provisions	-€8,480.00	-€20,070.00	-€43,530.00	-€1,324,868.74
Profit	-€413,902.16	-€397,721.19	-€1,247,958.25	€2,897,657.55
Taxes	€0.00	€0.00	€0.00	-€695,437.81
Accounts receivable	-€1,066.67	-€8,000.00	-€236,933.33	-€1,390,666.67
Investments	-€58,000.00	-€58,600.00	-€126,400.00	-€108,000.00
Operational Cashflow	-€464,488.83	-€444,251.19	-€1,567,761.58	€2,028,421.82
Equity Funding	€681,320.00	€0.00	€1,500,000.00	€0.00
Debt Financing (S&S Italy)	€299,096.00	€208,600.00	€0.00	-€72,528.00
Grant (S&S Italia)	€128,184.00	€89,400.00	€0.00	€0.00
Other debt financing	€0.00	€0.00	€123,000.00	€695,333.33
Cashflow Funding	€1,108,600.00	€298,000.00	€1,623,000.00	€622,805.33
Cashflow	€644,111.17	-€146,251.19	€55,238.42	€2,651,227.15

Management Team

The management team of Cognivix consists of three professionals with complementary skills and experiences covering research, development, marketing, sales, operations, and excellence.

Daniele Bernardini - Chief Executive Officer

Daniele has held various roles, including Senior Researcher at the Technical University of Munich, Administrator at Intranet Standard GmbH and Florence Technologies s.r.l., Manager at BearingPoint Inc, and Freelance Programmer and Systems Architect. He has worked on high-level projects such as creating a data warehouse for Siemens and a European medical information system for Daiichi Sankyo.

Francesco Scalise - VP of Sales

Francesco has extensive experience in sales and management. He is currently the General Manager of Aggity Italy, a subsidiary of the Aggity Group. Previously, he held positions such as Chief Sales Officer at Fleetmatica, General Manager at Vienna Lab Srl, and Sales Channel Manager at Encodata SpA. He has worked in various countries, including the USA, Spain, Italy, and Switzerland.

Giorgio Calapa - Chief Operating Officer

Giorgio has experience as an Analyst and Project Manager at various financial institutions, including CitiBank, Societe Generale, and Bank of America. He has worked on projects related to the implementation of MIFID II, EMIR, and transaction reporting. Giorgio has developed skills in change management, agile development methodology, and managing complex projects.

Advisory Team

The advisory team of Cognivix consists of two renowned experts in their respective fields. Prof Caccamo is a world expert in cyber-physical systems and has been awarded the prestigious Humboldt Prize. Dr. Tassini is an expert in optical sensors and laser systems, holding a Ph.D. in Optical Physics from the Technical University of Munich and having more than 15 years of experience in industrial research.

Their knowledge, expertise, and vision will enable Cognivix to maintain a long-term perspective and stay at the forefront of technological advancements in their industry.

Fundraising and Investment Opportunities

Cognivix has made significant strides in securing funding to develop and deploy its groundbreaking AI-driven automation solution for SMEs. Our fundraising achievements thus far include:

1. Smart & Start Italia (SSI) Funds: Cognivix has successfully secured funding from SSI, a prestigious public funding program designed to support innovative startups with high growth potential.
2. Crowdfunding: Our compelling vision and unique approach have resonated with the public, resulting in 127k raised through a successful crowdfunding campaign.
3. Magic Spectrum Investment: Demonstrating confidence in our venture, Magic Spectrum, a Cassa Depositi e Prestiti accelerator, has invested 75k in Cognivix.

Despite these accomplishments, we recognize the need for additional investment to cover expenses related to R&D, market access, and other costs not eligible for public funding. As such, we are seeking an additional 150-250k in investment to supplement the SSI funds and accelerate our growth.

Magic Spectrum has already offered a soft commitment to match the cumulative investment within the 150-250k range, signaling strong support for our venture. This is an excellent opportunity for investors to join an innovative project with the potential to revolutionize the automation industry and create substantial value for SMEs.

Call to Action

We invite you to become an integral part of Cognivix's success story by investing in our mission to empower SMEs and reshape the future of industrial production processes. By contributing to our fundraising efforts, you will not only seize a promising market opportunity but also support a talented team with extensive expertise in AI, robotics, and automation.

Together, we can create a lasting impact on the industry, drive innovation, and generate value for both SMEs and investors. Join us in making Cognivix a frontrunner in the automation landscape and contribute to the growth and success of small and medium-sized enterprises worldwide.

To learn more about investment opportunities with Cognivix, please contact our team at info@cognivix.com. We look forward to discussing how your investment can fuel our growth and help revolutionize the world of industrial automation.