Advanced IT solutions

for production plants

explitia.com | we produce it

What we do and how we operate

We specialize in the digitalization of manufacturing plants. We work with companies worldwide, including those in the automotive, food, chemical, and household appliances industries, providing comprehensive support throughout the digital transformation process.

- We begin with a thorough analysis of the real needs and challenges of the specific plant.
- We identify the main areas for optimization.
- Together with the client, we develop a digitalization roadmap.
- We assist in extracting data from machines and equipment and supporting the client in preparation of the appropriate IT infrastructure.
- We design and implement IT systems that automate and optimize production processes.
- Following the implementation, we provide ongoing technical support and maintenance.

We are convinced that the right IT systems help manufacturing plants optimize their production processes, which ultimately enables them to: reduce costs, generate higher profits, better manage human resources, increase efficiency, and operate in a modern, more flexible, and sustainable way.

Read more

Initial collaboration steps

STEP 1 Discovery Call
A remote meeting where we get to know the business needs of your manufacturing plant.

STEP 2 Workshop
A free, one- or two-day on-site meeting where our team analyses and refines your needs, selects solutions, and creates an implementation roadmap.

STEP 3 Budget Proposal
We prepare a budget proposal based on the findings from the workshop.

STEP 4 Pre-implementation Audit
A detailed assessment of your needs, which can also serve as a basis for preparing a request for proposal (RFP) for the broader market.

STEP 5 Commertial Offer
A detailed offer outlining the scope of work and implementation costs, including a pilot project.

STEP 6 Pilot Project
We carry out a smaller-scale implementation to evaluate the system's performance and draw conclusions before deciding on full deployment.

Our **Product Lines**

Production Portal – A comprehensive and scalable MES (Manufacturing Execution System) solution that allows the implementation of one or several modules. The system supports the optimization of production processes, including production planning, continuous process control, product traceability, downtime detection, and automated reporting.

Logistics Platform – An advanced logistics management system that helps, among other things, in the optimal placement of goods in the warehouse and the efficient transport of materials from the warehouse to production lines, following the "just in time" method.

IT Services – We are technology advisors, combining programming skills with technological process expertise. We offer a wide range of services, including:

- Conducting pre-implementation analysis to identify the real challenges and needs of the manufacturing plant.
- Supporting the selection and implementation of MES and SCADA systems from global software providers (AVEVA, COPA-DATA, Siemens).
- Implementing fully customized IT solutions.
- Providing full technological and maintenance support.
- Preparing advanced reporting using Microsoft Power BI and Microsoft Reporting Services, as well as tools for storing and processing relational databases, including Microsoft SQL Server.

Read more

Production Portal

A scalable solution that goes beyond a **standard MES system**. It is a modular solution – **you can select and combine individual elements**.

Key Features

- Product **traceability**.
- Optimal production **planning**.
- Real-time production **efficiency** monitoring.
- **Downtime cause** detection.
- **Automatic** reporting.
- **Visualization and historical** data and metrics tracking.
- **Production genealogy** – from manual and automated workstations, focused on direct data collection from PLCs.
- Automatic production **accounting**.
- Elimination of paper-based **reporting**.
- Data collection regarding **component costs** for specific finished products.

A system that does not age

We aim for the implemented technologies to address the specific challenges of a particular machine park and, despite changing conditions and guidelines, continue to support optimal production. That is why we are constantly developing our solutions – you can implement part of the system and gradually expand its capabilities with additional functions. This allows you to test the practicality of the purchased tool and start reaping the benefits sooner. It is also an excellent way to manage change.

Data visualization and collection

An advanced IT tool designed to monitor, analyse, and manage production and operational data. It allows for the creation of any layout with ready-made elements placed on the dashboard.

The system is divided into three main functional modules:

1. Measurement/Parameter visualization from devices and machines

- **Real-time monitoring** – Displays current measurements and operational parameters from various devices and machines on the production line.
- **Historical data analysis** – Access to saved data with the ability to generate reports, charts, and trend analyses.
- **Alerts and notifications** – Automatic notifications sent to operators in case of detected anomalies or failures.

Main features

- Dashboards with interactive charts and indicators.
- Integration with ERP systems.

2. Production visualization

- **Production process tracking** – Visualization of production stages, work progress, and production line performance.
- **Resource management** – Monitoring the availability of raw materials, semi-finished products, and finished goods.
- **Process optimization** – Efficiency analysis and bottleneck identification

Main features

- Gantt charts for production planning and scheduling.
- Production reports and KPIs (Key Performance Indicators).
- Visualization of the plant layout

3. Operator panel (production control, forms, job order distribution)

- **Production process control** – Operators can directly control machines and devices, make adjustments, and settings, thanks to automation integration.
- **Forms and documentation** – Electronic forms for recording production data, reporting problems, and quality documentation.
- **Job order distribution** – Management of production orders, assignment of tasks to employees, and tracking order completion.

Main features

- Interactive control panels for operators.
- Task management system with priority assignment capability.
- Modules for creating and managing production documentation.

Read more

Production orders

This module is a crucial part of the production management system. It enables effective planning, scheduling, and digital distribution of orders. The solution is divided into two main segments:

1. Scheduling

- **Production order planning** – Establishing the production schedule based on customer orders, raw material availability, and production resources.
- **Resource optimization** – Allocating tasks to machines and employees in a way that maximizes efficiency and minimizes downtime.
- **Simulations and scenarios** – Creating simulations of different production scenarios to identify the most effective approaches..

Main features

- Interactive Gantt charts for visualizing the production schedule.
- Tools for analysing and workflow optimization.
- The ability to dynamically adjust schedules in response to changes in orders or resource availability.

2. Digital job order distribution

- **Automated job order distribution** – Orders are automatically sent to the appropriate departments and employees, eliminating the need for manual processing and minimizing errors.
- **Order execution monitoring** – The ability to track the status of orders in real-time, allowing for ongoing control of work progress and quick response when necessary.
- **Integration with other systems** – The possibility to integrate with ERP, MES, and other production management systems to ensure data and process consistency.

Main features

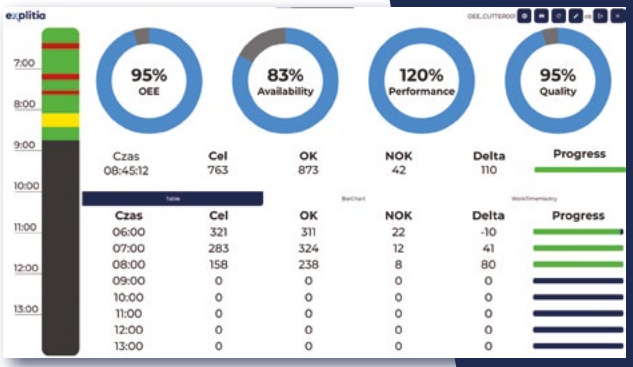
- Electronic job cards on operator panels with task assignment and tracking capabilities.
- Order status notifications and alerts.
- Centralised dashboard for overseeing and managing order fulfilment.

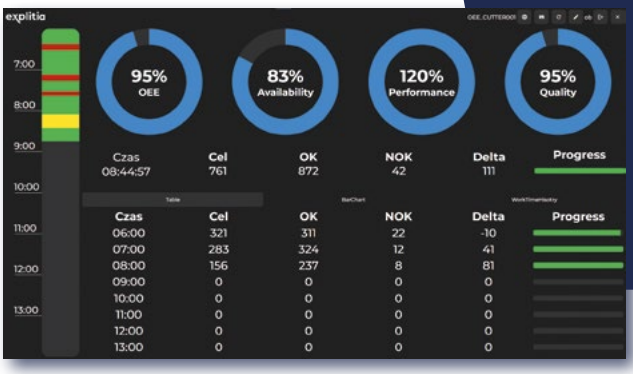
Operator instructions

An intuitive solution supporting operators' work at manual workstations, ensuring the repeatability of performed tasks. It is also a way to collect data from the production process at manual (hand-operated) or semi-automatic stations.

Production status visualization

The system continuously provides information on the current status of the production process, helping in making business decisions, such as process optimization or changes to the production plan. Constant access to efficiency indicators makes it easy to inform about the productivity level of the entire manufacturing process or individual workstations.





Examples of indicators and data available

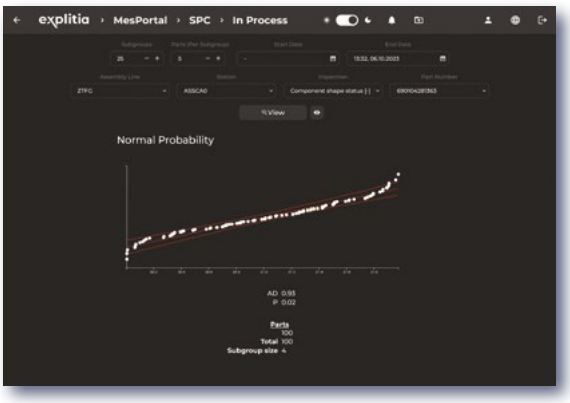
- Line efficiency (OEE).
- Status of lines and machines.
- The number of materials produced in relation to a given production order.
- Production cycle time.
- Alarm data.
- Downtime reasons.
- Information related to process quality

Statistical Process Control

This module is responsible for continuous data collection from production processes and their ongoing analysis using advanced statistical tools. It allows for detecting deviations, even before a real problem occurs, and quickly identifying the source of errors.

Key benefits

- Improved decision-making process.
- Reduction of NOK products.
- Increased efficiency.
- Improved product quality.
- Reduced manufacturing costs.



Traceability

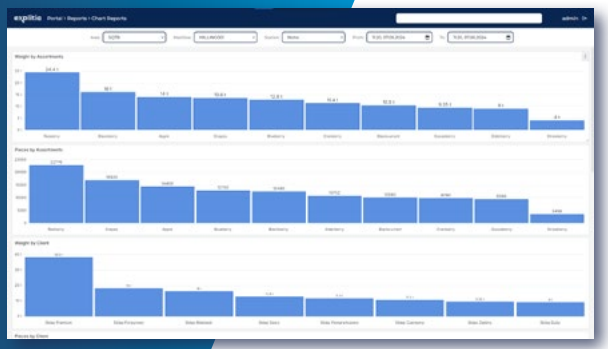
A scalable production genealogy system that collects and links data from multiple sources in real-time. Complete knowledge about the manufactured product positively impacts its quality, helps reduce costs, and increases production safety and flexibility.

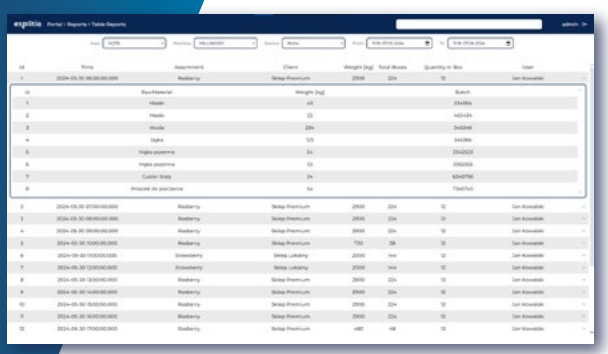
Example traceability information

- Components used in the product's manufacturing.
- Semi-finished goods incorporated into the final product.
- Suppliers and material batch details of the raw materials used.
- Machines and production conditions for component manufacturing.
- Location and timestamp of the product's manufacturing.
- Employees involved in the production process.
- Purchasers of the product or specific production batch.

Production reporting

Production reports contain a wealth of information presented in a visual and easy-to-analyse format, based on tools such as Microsoft Power BI or Microsoft SQL Server. However, it's not just the data but the relevant contexts relative to the machine, operator, and process that enable effective response. explitia reports range from the most important overview (daily production summary) to detailed data on a specific order, machine, and product. The most important indicators are calculated based on the data. This helps quickly identify areas for optimization, enhances safety, and supports investment and business decisions





Production Portal Modules

- Production orders
- Data collection and visualization
- Operator instructions
- Andon OEE
- Statistical Process Control
- Traceability
- Production reporting

IT Services

We specialize in guiding manufacturing plants through digitalization processes and implementing advanced technological solutions.

We combine programming skills with production technology expertise and act as independent technology advisors. We offer a broad range of services, including pre-implementation audits, digitalization roadmap development, support in establishing the appropriate infrastructure, and assistance in data extraction from machines.

Unique features of **explitia team**

Unique competences

The explitia team is characterized by a unique combination of competences in the field of production technology and programming. explitia specialists know perfectly well how to obtain data directly from machines and present it in appropriate contexts, important from a business perspective.

Technology consulting

Our hallmark is the combination of empathy, flexibility and cooperation. These three special values make us approach each project individually. We help leaders of production plants go through the entire path of developing the Industry 4.0 concept.

We also focus on designing and integrating systems from leading global suppliers (AVEVA, COPA-DATA, Siemens). We support technological changes in enterprises and provide full technical assistance. During cooperation, we actively help our clients fully utilize the potential of modern technologies in their facilities.

Read more

IT Services
examples of possibilities

Pre-implementation analysis

We work with clients in a consultative manner. We help people managing production plants to find specific areas for automation and development. Together, we conduct a detailed pre-implementation analysis and create a concept of the system's operation and a plan for the implementation and subsequent development of the new technology. A **pre-implementation audit** and a detailed **project manual** allow you to determine the **real needs** of a given machine park and **optimal IT solutions**.

Dedicated programming for production

Our offer of IT services includes both the implementation of explitia's own products and support in the selection and implementation of fully dedicated IT tools. Our team consists of programmers, application architects, automation specialists and project managers, so we always approach projects comprehensively. In addition, we offer solutions that respond to the real needs of a given production plant.

We provide services all over the world – our portfolio includes projects in Germany, the Netherlands, the USA, Great Britain, Mexico and more. We have created solutions for **various industries**, including: automotive, food, chemical and household appliances sectors.

MES and SCADA systems

We have extensive knowledge of production technology. We know the standards and communication protocols of controllers. We also have main function blocks for MES systems. We combine process knowledge with system programming. Thanks to this, in addition to the implementation of our own solutions, we also offer support in the selection, design and implementation of MES and SCADA systems from global software suppliers (including AVEVA, COPA-DATA, GE Digital, Mitsubishi Electric, Siemens.

Power BI report and relational databases

There are many benefits of reporting production processes! As experts in recording data from various sources and combining OT and IT, we offer reporting of all types of production data. For this purpose, we use tools including Microsoft Power BI and Microsoft Reporting Services. In addition, we offer our partners tools for storing and processing relational databases, including: Microsoft SQL Server.

Technical support

Choose technical support with the explitia team. We offer flexible service packages: 24/7, 16/5, and 8/5 – tailored to the needs of your manufacturing plant. Our service includes process optimization consultancy and access to a team of developers, with billing only for the actual time worked. Additionally, a dedicated phone number and the JIRA system allow for quick and effective problem resolution, while regular reports on completed tasks ensure transparency and help plan future work in the systems.

AVEVA

Example modules we work with

AVEVA System Platform

A central tool for application management, offering features for both industry and business. It enables the integration of business and operational processes and the efficient exchange of data from various sources such as programmable controllers, databases, and text files. The platform centralizes and controls the information flow within the system.

It is object-oriented, making component management easier and scalable, adapting the system to growing needs without losing efficiency. Its open code structure facilitates collaboration and project management.

Read more

AVEVA MES

A modern production management system that integrates key operational processes, providing full control and optimization in real-time. Thanks to its modular structure, the system can be tailored to the specific needs of any manufacturing plant.

Example modules:

- **AVEVA Performance** – Monitors and optimizes machine performance and production quality. With advanced analytical tools, it enables the identification and elimination of bottlenecks.
- **AVEVA Operation** – Specializes in tracking products at every stage of production. It allows for automatic quality monitoring, compliance with standards, and recording of all processes.

AVEVA Work Tasks

An advanced tool for managing workflows and business processes in MES systems. It enables the design of forms and data flows in accordance with established business logic.

- **Form Design** – An intuitive editor allows the creation of interactive forms with various controls. Forms can retrieve and send data from external sources, such as SQL databases and AVEVA System Platform.
- **Workflows** – AVEVA Work Tasks supports workflows created using a graphical diagram editor. Workflows allow for easy modelling and management of processes, processing input data, and providing outputs to various systems.

AVEVA InTouch

A tool for visualizing production data in a SCADA environment. It can be used as a standalone solution, allowing for the creation and display of advanced operator interfaces, execution of business logic, and communication with data sources. In combination with AVEVA System Platform, AVEVA InTouch is used for presenting graphics and user interfaces powered by real-time data. With a wide range of design tools, AVEVA InTouch enables intuitive and organized visualization.

AVEVA Enterprise Integration

A module enabling data integration between higher-level systems like ERP and the AVEVA System Platform. It ensures bidirectional exchange of key production data, such as bill of materials (BOM) and production orders, supporting process automation. The module is flexible and supports various protocols and data formats. It allows integration with a wide range of systems and devices in different industrial environments. With advanced data processing options, AVEVA Enterprise Integration supports full automation of information exchange, improving the operational efficiency of the enterprise.

AVEVA Historian

A solution for recording and managing process data, enabling the efficient collection and storage of substantial volumes of information with minimal disk space utilisation. Employing advanced compression techniques, this module optimises data storage, allowing for intuitive visualisation through charts and tables, significantly simplifying the analysis and diagnosis of industrial processes. AVEVA Historian also provides seamless integration with external applications via API, facilitating straightforward data management across different systems.

IT Services
selected competences

90%

Data visualization e.g. Microsoft Power BI and Microsoft Reporting Services.

Database including Microsoft SQL Server.

80%

Programming languages e.g. C#, C++, JavaScript, Python, TSQL/SQL, VBA.

75%

Web-backend e.g. ASP.NET, Entity framework core, WCF, Python (Django, Flask), Node.js (express.js).

65%

Communication standards and protocols including but not limited to OPC UA, Modbus, TCP/IP and UDP.

Web-frontend e.g. Bootstrap, Foundation, Tailwind CSS, .NET (Blazor, Razor pages).

IT Services
software

SIEMENS

AVEVA

Microsoft SQL Server

COPADATA

Power BI

OPC

aws

All the products and services we provide are fully compatible with both Microsoft Azure and AWS cloud infrastructures, as well as on-premise environments. This gives our clients the flexibility to choose the solution that best meets their requirements.

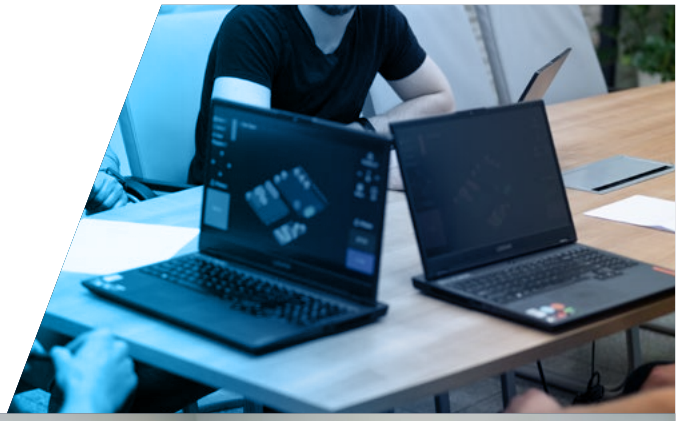
Logistics Platform

An extensive logistics management system inside the production plant. It consists of the solution supporting:

- management of production buffers in various areas of the production plant.
- transport of materials from the warehouse to production lines in accordance with the “Just in Time” method.

Logistics Platform – Benefits

- Better human resources management.
- Optimal use of materials.
- Reducing the number of downtimes and queues on the line.
- Lower logistics costs inside the production plant.
- Optimization of goods transport routes from the warehouse to production lines.
- Better use of space at the production station.
- Finding the assortment in stock faster.
- Monitoring the expiry date of products..



Advantages

1. Scalability of the solution – you can implement one or more modules.
2. Possibility of expanding the system in accordance with the actual needs of the enterprise.
3. Web applications – you can use the solutions regardless of place, time and device.
4. Possibility of integration with various external systems, e.g. ERP (including SAP), MES, WMS.

Implement with the explitia team

1. We have competences in integration with automation systems.
2. We have experience in implementing solutions for: the automotive and household appliances sectors as well as the food and chemical industries.

Read more

Management of production buffers

The solution enables efficient and effective management of production buffers in various areas of the production plant. It is a WMS class system. It is perfect for production plants where symbiosis between production and the warehouse is important.

Advantages

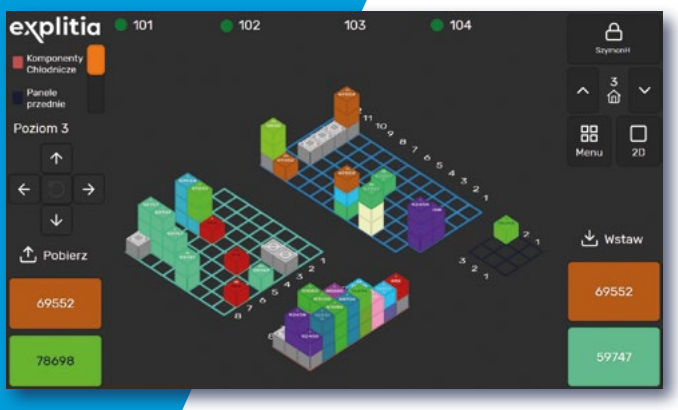
1. **Support in:**
   - optimal warehouse design and management of production buffers;
   - effective use of human resources;
   - efficient finding of assortment in stock;
   - maintaining the timeliness of components.

2. **High degree of scalability of the solution** – due to extensive configuration options you can tailor the application to the specific needs and strategy of your production plant.

3. **Possibility of integration with other solutions,** e.g. ERP.

4. **Intuitive to use**
   - Intuitive solution, with large and clear buttons.

5. **Web application**
   - Efficient and cost-optimal maintenance of the application in the client – server architecture.



Delivery of materials from the warehouse to production lines according to the “Just in Time” method

The system helps to deliver components to production lines based on calculated (real-time) demand, in accordance with the **Lean Manufacturing** concept. It is perfect for plants with organized and planned production at assembly stations.

How the system works

The solution calculates the demand for parts so that the material is delivered at the right time. It is based on the data coming directly from automation systems, including:

- production counters;
- current states of components on the lines;
- production plan.

The expected material demand is presented on tablets placed on trolleys working in warehouses and delivering components to production lines.

Advantages

- Reducing the costs associated with delivering materials between the warehouse and production.
- Better use of human resources.
- Increased efficiency by better management of employee’s time and elimination of queues.
- Optimization of travel time and route.
- Supporting production continuity.
- Reduction of inventories on production lines.
- Scalable solution.
- Possibility of integration with external ones ERP systems (including SAP), WMS, MES.

Mission

Our mission is to create a safer world by providing dedicated IT solutions for manufacturing plants. With our tools and IT systems, manufacturing companies can streamline their processes, increase efficiency, and raise product safety standards.

Values

We focus on three key values:
flexibility, empathy and collaboration.

Read more

Flexibility

This encompasses our approach to client relationships, agile methodologies in the purchasing process, and adapting IT solutions. We strive to be technology advisors who understand the specific challenges of manufacturing plants. Instead of pushing one solution, we tailor the best tool for the client from a wide range of available options. Our offering includes both the systems we develop and the implementation of software from leading providers such as AVEVA, COPA-DATA, or Siemens. This way, we can offer systems that truly support our clients' businesses.

Empathy

Currently, changes in new technologies occur much faster than companies can adapt. As a result, businesses are often unaware that there are solutions on the market that can support them in optimizing and growing their business. They also do not know how to optimally go through the purchasing process for new technologies. We understand this well. After all, technological expertise often is not the core business of a company looking to buy, for example, a traceability system. That is why we approach cooperation with clients with understanding and empathy.

Empathy at explitia is also evident in internal relationships. We support new employees and younger colleagues through numerous training sessions and an onboarding process that facilitates the start in a new role and provides a safe space for growth. We regularly organize internships in collaboration with technical universities, enabling young talents to gain valuable experience alongside our specialists.

Collabo-ration

In collaboration with clients, we aim to go through the important steps of purchasing and implementing the system together – we discuss needs, identify areas that will have the greatest impact on the plant's challenges according to the Pareto principle, develop the best solutions for the client from many different options, support the company in managing technological change, e.g., by organizing training and workshops for employees, help choose the right infrastructure, and offer full service support. We understand the client, their needs and doubts, and strive to be their support in the digitalization process.

In numbers

3 PRODUCT LINES

13+ INTEGRATED PRODUCTS

30+ OFFERED SOLUTIONS

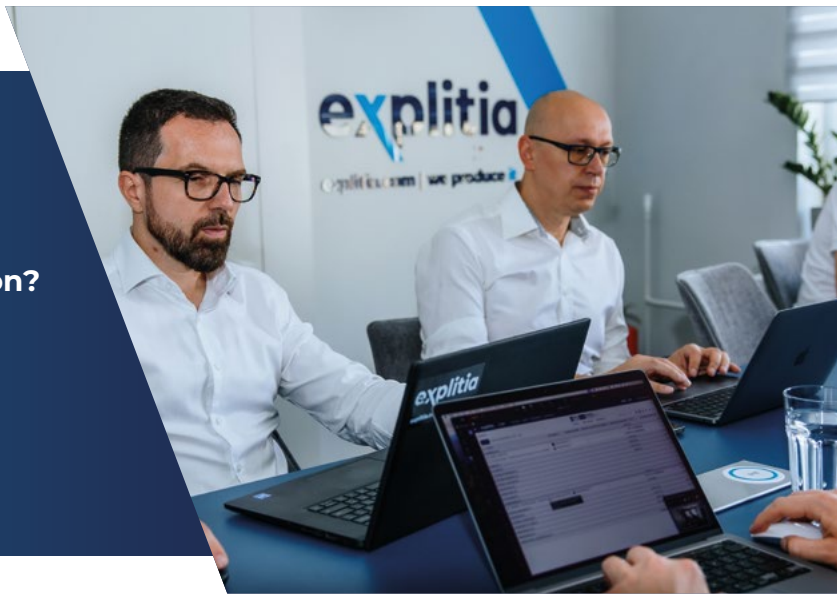
50+ SPECIALISTS – PROGRAMMERS, AUTOMATION ENGINEERS, PROJECT MANAGERS, APPLICATION ARCHITECTS

400+ ACTIVE APPLICATIONS

Looking for IT systems for your manufacturing plant?
Want to digitalize your machine park?
Have questions about industrial digitalization?

Contact us!

contact@explitia.com
+48 794 795 745



Gain knowledge with us

Read our blog
explitia.com/news/

Follow us on
LinkedIn

Follow our
Facebook profile

Sign up to
explitia's newsletter

Listen to our podcast
Digitalizuj.pl

7 Unique features of **explitia**

We combine programming skills and knowledge in the field of production technology.

We know how to extract data directly from machines and devices.

We support leaders – we present data from productionprocesses in appropriate contexts, important from a business perspective.

We are independent technology advisors offering a wide range of solutions and tools in a specific, specialized field. We select the best solutions to the specific challenges of a given production plant.

We assist in the entire implementation process of the new technology – from determining the actual need and creating a detailed plan, through implementing the solution, to servicing the working tools.

We implement projects in a consultative and agile manner – our clients can count on professional knowledge, and our flexible approach in the purchasing process and the implemented solution.

We give you the opportunity to develop – all our systems are scalable. They enable the development and efficient implementation of subsequent elements.

explitia

Office:
Bytomska 88
41-940 Piekary Śląskie

Headquarters:
Pod Lipami 29
41-940 Piekary Śląskie
NIP: 498-02-75-942

+48 794 795 745
contact@explitia.com
explitia.com