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Driving manufacturing digitalisation with MES

Control over operation execution, capture of downtime, and tracking of deviation causes in discrete manufacturing

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Our team

Synaptik is a technology company specialising in the digitalisation of manufacturing enterprises

Since 2013, we have been helping production teams
gain real-time visibility into execution, downtime, and deviations without manual reporting

About us →

13+ years

working with manufacturing companies

>200 projects

in machinery, metalworking, food production, and more

45+

Software engineers in our team

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Our experts

Software engineers, business analysts, hardware engineers, and lean manufacturing experts with industry expertise in:

Instrumentation and measurement automation

- Quality control and calibration systems
- Automated data acquisition stations for equipment condition analysis

01

Mechanical engineering automation

- CNC machine control
- Assembly lines with robotic systems

02

Metallurgy and processing

- Furnace and rolling mill control
- Temperature and metal composition monitoring systems

03

Oil and gas industry

- Monitoring and control of drilling rigs
- Management of production process operations
- Product compliance with industry standards
- Prevention of emergency situations

04

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Target Customer Profile

- Mid-sized and large discrete manufacturing enterprises, including machinery manufacturing, metalworking, food processing, and similar industries
- Companies with annual revenue from 800M+ and staff of 100+ employees
- Businesses operating 1C-based systems (1C:UPP, 1C:ERP) while continuing to rely on Excel for operational accounting and planning

Owner / CEO

Focused on maximising profitability and ROI while reducing operating costs and business risk through greater production transparency, faster decision-making, and better control of shop-floor execution

Production Director

Focused on optimising production cycles and on-time execution through real-time visibility into shop-floor operations and rapid response to deviations

Shop Foreman

Focused on managing shift production assignments, monitoring execution across workstations, and responding quickly to shop-floor deviations during the shift

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Pain points

Control and Visibility

01.

Lack of visibility into the current order status: which operation it is at, who is working on it, and when it will actually be completed

02.

Issues are identified too late. By the time actual data reaches management, a significant part of the shift has already been lost

03.

Downtime occurs, but the reasons are described inconsistently. One person says the material was unavailable, another says the machine was underperforming, and a third says the setup technician never arrived. As a result, accountability is blurred, and the same issue recurs the next day

Quality and Rework

01.

The shift plan is set one way in the morning and changed again by midday. Just as the team gains momentum, priorities are urgently revised, triggering constant firefighting

02.

Lead times become unpredictable: one commitment is made, but a different outcome is delivered. As a result, pressure from sales and customers continues to build

03.

Kitting consumes too much time. Searching, waiting, reassembly, errors, and repeated delays all undermine delivery performance

Financial impact

01.

Semi-finished goods remain idle between operations, tying up working capital in work in progress. Lead times increase, and the production cycle becomes longer

02.

Different functions rely on different figures. The production area reports one view, planning another, and the warehouse a third. Management still has to make decisions — and ends up relying on intuition rather than consistent data

Key Capabilities

Production area shift assignment

To give the supervisor visibility into priorities and operation progress throughout the shift

Downtime and reasons

To eliminate disputes about why production stopped and provide visibility into recurring causes and lost time.

Order status / routing

To quickly understand where the order is in the process and what is affecting the delivery timeline

Shift results

To eliminate Excel-based reporting and ensure that the shop floor and management work with the same figures

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Outcomes and impact

The shift supervisor manages based on actual performance during the day rather than investigating in the evening why the plan was not delivered

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The Workflow

01

The system captures actual operation completion and material movement directly on the shop floor, consolidates the data in a single system, and provides management with a true picture of production

02

It shows what has been completed during the shift, where an order is delayed, and where time is being lost

03

The system works on top of the existing IT landscape and does not require production to stop during implementation

Behind The Tech:

01.

Shop-floor workstations: Android tablets / operator terminals for capturing actual operation execution, output, scrap, downtime, and reasons

02.

Interfaces: Web / Mobile

03.

Backend: Node.js / NestJS

04.

Integrations: PostgreSQL (+ Prisma ORM)

05.

Integrations: 1C (orders / plans / master data, bidirectional integration)

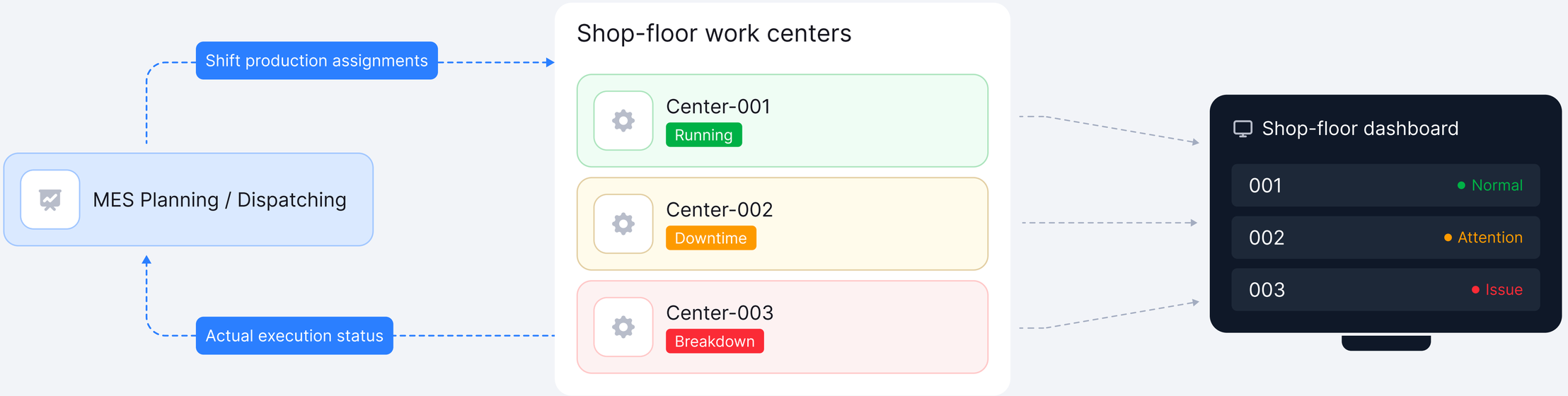
06.

Security: roles, access rights by shop / production area / function, action logging

07.

Deployment: phased rollout, scalable without redesigning the core system

How it works



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Top 5 Reasons to Choose Our AI Solution

We develop the system around the unique requirements of your enterprise

Every element of the system is tailored to your operations — including routings, operations, shifts, roles, and accounting rules

01

Real-time shift control

The system provides visibility into what has been completed, what is currently in progress, and where delays may occur. All actions are recorded together with the corresponding reason, eliminating disputes between shifts

02

Integration with all existing systems

We pull orders, plans, and master data from 1C, and send actual production data and confirmed shift results back into the system. This eliminates duplicate data entry and removes discrepancies between the shop floor and the office

03

Fast, visible impact — starting from the first production area or operation

We track the key metrics: plan attainment, downtime, accounting accuracy, scrap, and rework. This makes it possible to assess the impact quickly and scale the solution to other production areas

04

A system that evolves with your business

We support the solution, add new production areas, operations, and reports, and keep master data up to date. The system evolves flexibly with your business and remains relevant as the needs of your production grow

05

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Business Impact

Material accounting accuracy improved by 27% within 1–2 months after go-live at the production area

The improvement was driven by recording actual material issue and consumption and capturing deviation reasons.

Material losses were reduced by RUB 600–700 thousand per month within 1–2 months after go-live

This was driven by visibility into deviations such as material mix-ups, unrecorded write-offs, and overconsumption

Management response time was reduced from 24–48 hours to 2–4 hours within 2–4 weeks

This was enabled by online shop-floor actuals and transparent downtime reasons

Scrap and rework were reduced by 1–3 percentage points within 2–3 months

This was driven by tighter control over operation execution and confirmation discipline

Payback was achieved within 4–6 months for operations with 150–800 employees across 1–3 sites

This was based on typical loss areas, including downtime, rework, material losses, and manual consolidation of actual production data.

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Case Study: Improved Production Output Reporting and Material Consumption Control in the Shop Floor

Challenge

- Production output and material consumption reporting were unreliable due to Excel-based and manual data capture, with partial data loss
- Material losses and scrap events were not traced to operations or recorded causes
- Management lacked real-time visibility into shop-floor performance during the shift

Solution

- Set up shop-floor workstations for recording output, scrap, downtime, and causes
- Implemented production tracking by process stage with work-in-progress (WIP) monitoring
- Introduced structured scrap and downtime registers with mandatory reason capture
- Connected the solution with 1C to transfer validated end-of-shift data
- Provided management screens with visibility into plan vs. actual, deviations, downtime events, and recorded reasons

Benefits

- Achieved a 27% improvement in material accounting accuracy within 1–2 months
- Reduced material losses by RUB 600–700 thousand per month after stabilization of the accounting process
- Enabled online visibility of actual production performance, removing the need for manual reconciliation and evening consolidation
- Shifted decision-making from post-fact analysis to in-shift operational management

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Case Study: Operator Workstation Deployment Increased Production Area Efficiency by 20%

Challenge

- Shift production assignments were managed verbally or via paper-based instructions
- Output, scrap, and downtime data were not available in real time; operator and supervisor records were inconsistent
- Downtime reasons and scrap causes were not systematically recorded

Solution

- Deployed a tablet-based operator workstation with visibility of shift production assignments and entry of actual output, scrap, and downtime data
- Introduced Running / Down equipment status with mandatory reason capture
- Enabled operation in typical shop-floor network conditions: data is entered on site and uploaded automatically after connectivity is restored
- Provided supervisors with the ability to validate and correct production data within the shift

Benefits

- Near-real-time data capture improved production visibility and reduced data entry delay from end of shift to 5–10 minutes.
- Faster supervisor response to downtime enabled intervention within the shift rather than only after shift end.
- Structured capture of downtime and scrap reasons improved loss transparency, with 90–100% of events recorded with a reason.
- Reduced manual effort simplified routine shop-floor reporting: standard transactions are now completed in 2–3 actions instead of paper-based recording and rewriting.

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Let’s discuss your Operational Goals

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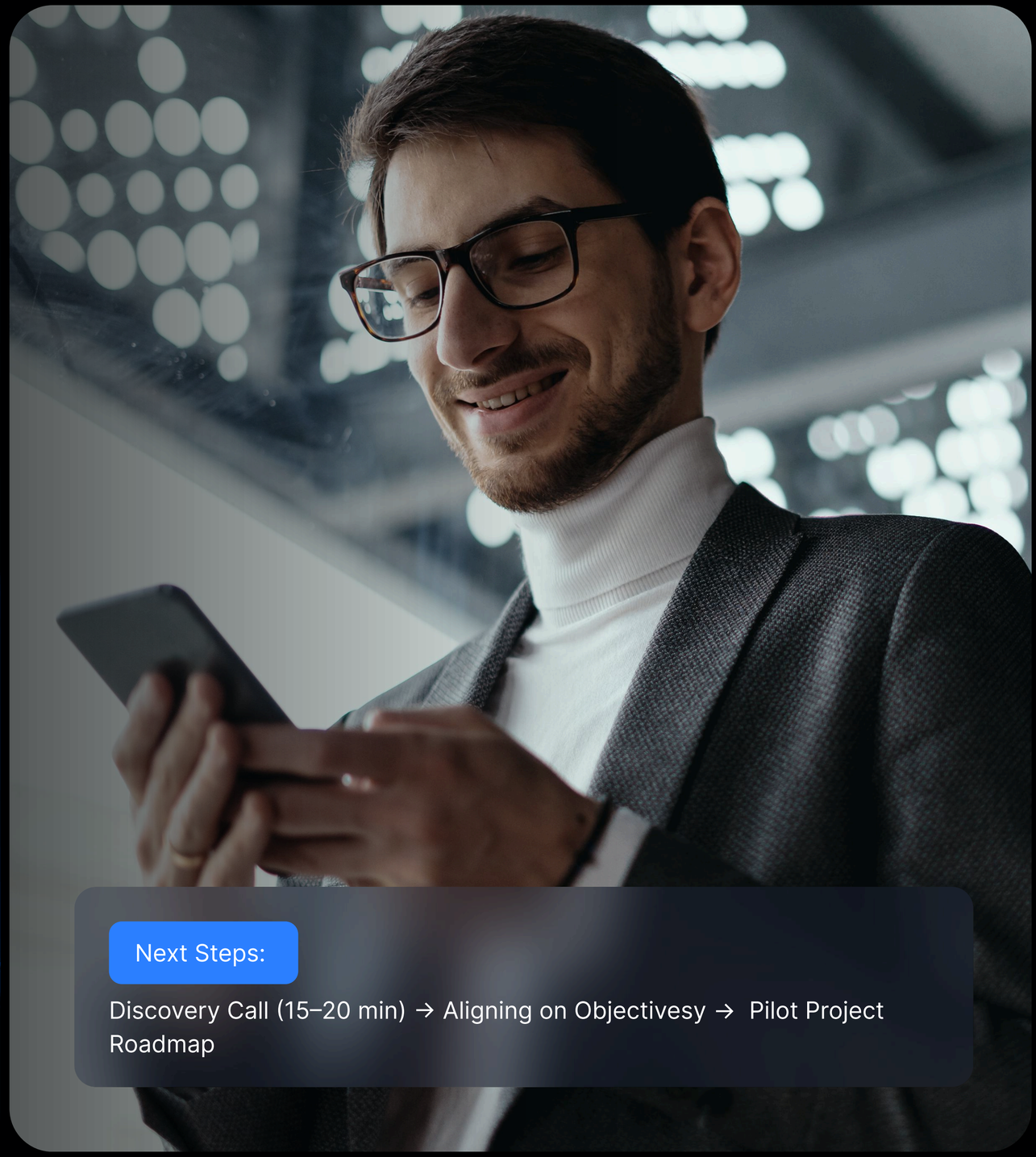

Next Steps:

Discovery Call (15–20 min) → Aligning on Objectivesy → Pilot Project Roadmap