



HARNS
Technologies

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**THE FUTURE
OF PRINT**


PRINT

4.0



TRANSFORMING PRINTING, POWERED BY INDUSTRY 4.0.





OVERVIEW

THE PARADIGM SHIFT

The printing industry is experiencing a formidable wave of change, increased production costs, intricate workforce management, and, high sustainability standards are some factors driving the paradigm shift. While navigating this transformation may present its challenges, it also represents a compelling opportunity. Amid a rapidly evolving technological landscape, the printing industry is on the brink of a profound transformation.

YOUR MACHINES' TALKING DATA. ARE YOU HARNESSING ITS FULL POTENTIAL?

An abundance of valuable data is generated by the machines and holds the potential to unlock a wealth of insights, both on the business and technical fronts. With meticulous monitoring and processing, this data can catalyze a profound transformation in the operations of your print production unit.

Overlooking the potential of this invaluable data, businesses bleed from high downtimes, excessive maintenance and repair costs, restricted visibility and control over the production process, and lack of transparency.

Harness the potential within your machines' data and chart the course for the future of your business with Print4.0. Print 4.0 seamlessly consolidates all your data into a unified, centralized system, aligning with the core principles of Industry 4.0, which emphasize centralizing all system data within a singular platform.

This tailor-made solution is designed to address current challenges, elevate print production units into intelligent factories, and, most crucially, forecast future opportunities.



THE FUTURE

**UNLOCKING
A NEW DIMENSION
WITH PRINT 4.0**

**PREDICTIVE MAINTENANCE
SMART INVENTORY
INCREASED UPTIME
PRINT PREDICT
INTERLOCK AI
VIEW 360
INT SCHEDULE
SMART TRAINER
WORKFORCE OPTIMIZATION**

PREDICTIVE MAINTENANCE

DETERIORATING MACHINE EFFICIENCY AND INCREASED DOWNTIME AFFECTING HIGH-PRODUCTION

Machine servicing and maintenance may seem like routine tasks with a direct impact on machine efficiency and lifespan, but their significance extends far beyond that. They wield a substantial influence over the entire manufacturing process and, by extension, the overall revenue of your business.



WITH OUR
BEST-IN-CLASS
PREVENTIVE
MAINTENANCE:

One missed service or inability to detect faults on time leads to huge repair costs. Beyond the substantial repair costs, it triggers a domino effect through your operations resulting in lost time, workforce resources, production delays, and ultimately, a significant dent in your revenue.

Monitoring a machine's health and efficiency and scheduling maintenance routines demand meticulous planning and attention. Traditional maintenance approaches often fall short in providing data-driven insights, a challenge that frequently troubles maintenance executives.

The definitive solution to address this persistent challenge is predictive maintenance. With data analytics, sensors, and advanced algorithms it monitors the machine's condition, forecasts when equipment is prone to failure, and strategically prescribes the optimal window for maintenance.



Reduce unplanned downtime



Significantly reduce, repair & maintenance expenditures



Enhance spare parts inventory management through precise ordering



Eliminate delays in production delivery



Streamline resource allocation



Simplify the complex maintenance planning

SMART INVENTORY

OBSTRUCTED INVENTORY MANAGEMENT DUE TO INACCURATE DEMAND FORECASTS, HIGH HOLDING COSTS, DATA GAPS, AND MANUAL PROCESSES.

Inventory management serves as a pivotal and intricate facet within the print production ecosystem. Striking the right balance, precise forecasting, and meticulous execution are paramount. Overstocking leads to high holding costs, while understocking causes production delays. Moreover, manual efforts in tracking inventory introduce the potential for errors and gaps in control.



REVOLUTIONIZE INVENTORY MANAGEMENT WITH PRINT 4.0

Print 4.0 recognizes the challenges and revolutionizes inventory management by providing real-time tracking, precise demand forecasting, and quality control. Automation streamlines processes, reduces holding costs and ensures timely reordering. It's a holistic approach that optimizes processes, lowers expenses, and enhances efficiency, empowering your business to thrive in the industry.

- Demand forecasting
- Prevent understocking and stockouts
- Data-driven decisions on inventory
- Quality control mechanism : detect defects early
- Reduced holding costs
- Streamlined reordering processes

WORKFORCE OPTIMIZATION

SUBOPTIMAL WORKFORCE UTILIZATION RESULTING IN A LOSS OF PRODUCTIVITY HOURS, EXTENDED DOWNTIMES, AND PRODUCTION DELAYS?

Intricate workforce management is one of the factors driving the paradigm shift in the printing industry. The need for diverse skill sets, reliance on a skilled workforce, the integration of emerging technologies, and the imperative task of nurturing new talents are significant challenges.

The workforce constitutes the backbone of any production unit, as they are the driving force behind its operations. Consequently, it is imperative to manage and optimize the workforce with the utmost efficiency.



Print 4.0 acknowledges the unique expertise of each individual and conducts a thorough assessment of the production unit to align skills and requirements, thus achieving optimal resource allocation. Through the innovative resource optimization module, seasoned professionals can be strategically assigned to critical areas within the production unit.

This approach not only provides transparent insights into workforce performance but also facilitates targeted training on emerging integrated technologies, ensuring the workforce remains at the cutting edge of industry advancements.

WITH PRINT 4.0 OPTIMAL WORKFORCE MANAGEMENT



Optimize Resource Allocation



Proactive Workforce Planning



Reduce Manual Work



Increase Workforce Efficiency



Attract New Talents



Train the Workforce

INCREASED UPTIME

MONEY AND PRECIOUS HOURS GONE ON HIGH PRODUCTION DOWNTIMES.

Downtime in production is a formidable challenge, one that significantly disrupts production, incurs huge costs, jeopardizes workforce safety, and even exposes to potential data breaches. Production downtime stands as a paramount concern, demanding to be tackled on a daily basis.

Print4.0 empowers your business to proactively minimize downtime and conserve valuable resources. Downtime, often triggered by a multitude of factors such as insufficient maintenance, hardware failures, material delays, and human errors, can have a substantial impact on your operations.



PRINT 4.0, ADOPTING A COMPREHENSIVE STRATEGY, METICULOUSLY TACKLES THESE ISSUES, LEADING TO SUBSTANTIAL REDUCTIONS IN DOWNTIME.



Predictive Maintenance



Condition Monitoring and Correction



Anomaly Detection



Reduced Mean Time to Repair (MTTR)



Optimal capacity utilization

INTERLOCK AI

SEAMLESS SYNC AND PRECISION

Enhance operational efficiency, and productivity by leveraging AI to optimize the interlocking system.

PRESENT CONTEXT	FUTURE WITH INTERLOCK AI
<ul style="list-style-type: none">Escalated wastage and time consumption due to human errors.Challenges in determining optimal equipment shutdown timings based on practical usage, resulting in energy inefficiencies.Cumbersome manual operation of machines as per predefined schedules.Reliance on specialized technical expertise for system management.	<ul style="list-style-type: none">Enhanced machine operation efficiency through effective management strategies.Precise work timeline predictions, utilizing historical and real-time data.Augmented coordination and visibility between press management and the editorial department.

PRINT PREDICT

PREVENTIVE CARE AT ITS BEST

Proactively monitor and predict equipment failures, optimize maintenance schedules, and enhance operational efficiency.

MAINTENANCE TODAY	MAINTENANCE WITH PRINT PREDICT
<ul style="list-style-type: none">Elevated repair costs, straining the budget.Surge in equipment downtime, affecting operational continuity.Disruption in production schedules, leading to inefficiencies.Compromised print quality, potentially impacting brand reputation.	<ul style="list-style-type: none">Predictive maintenance indicators directly overlaid on the machineEarly issue detection and real-time alerts for proactive problem resolution.Streamlined and efficient maintenance scheduling to optimize resource allocation.Prevention of unexpected breakdowns, safeguarding operational continuity and productivity.

VIEW 360

360 PERSPECTIVE

Workflow visualization in an immersive 360-perspective view

WORKFLOW VISUALIZATION TODAY	WORKFLOW VISUALIZATION WITHVIEW
<ul style="list-style-type: none">• Limited visibility into the complete workflow.• Overwhelming data volumes from multiple sources.• Lack of real-time insights in traditional workflows.	<ul style="list-style-type: none">• Interactive real-time and predictive visualization powered by AI and ML technologies.• Comprehensive Departmental View: 360-degree perspective across all departments, including R&D, Editorial, Pre-Press, and Printing.• In-depth comprehension of the intricately interconnected workflow within the organization.• Enhanced workflow efficiency through data-driven insights from historical data.• Optimized allocation of resources, ensuring resource efficiency and cost-effectiveness.

INT SCHEDULE

AN INTELLIGENT SCHEDULER FOR PRODUCTION PLANNING

PRINT SCHEDULING TODAY	PRINT SCHEDULING WITHINT SCHEDULING
<ul style="list-style-type: none">• Disruption in schedule due to shifting priorities.• Errors due to manual scheduling.• Inefficiency resulting in longer lead times.	<ul style="list-style-type: none">• Production planning enhanced with intelligent optimization algorithms for precision.• Efficient utilization of capacity.• Thorough analysis of workload, capacity availability, and overall equipment efficiency.• Optimization of the production job sequence.• Elevated production efficiency.

SMART TRAINER

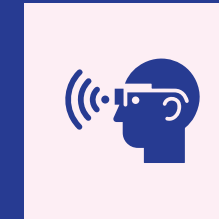
ENHANCING TRAINING EFFICIENCY WITH AR

Take training and knowledge transfers a notch up with AR.

TRAININGS TODAY	TRAINING WITH SMART TRAINER
<ul style="list-style-type: none">• Dependence on specific technical expertise can create bottlenecks.• New technologies and processes steeping the learning curves.• Knowledge transfer from experienced to new resources can be challenging.	<ul style="list-style-type: none">• Streamlined training through task-based instructions and simplified learning processes.• Facilitated knowledge transfer from experienced to new resources, promoting continuity.• Guided training experiences via AR headsets aligned with standardized operating procedures (SOPs).• Enhanced cost efficiency in employee training, optimizing resource utilization.

PRINT PREDICT

VISUALIZE DATA IN THE PHYSICAL WORLD



Printing process optimization through real-time guidance and AR-based instructions.



Data visualization seamlessly integrated into the physical world, directly overlaying critical data onto machines.



Enabling remote assistance and collaboration between on-site technicians and off-site experts.



Implementation of remote auditing and inspection capabilities, ensuring quality control and compliance.



Contact US Now

We are here to assist you every step of the way.



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