

NEXYAN TECHNOLOGIES

Specialized Machine Builder | Industrial Automation



NEXYAN
Technologies

Company Briefing

Most complex industrial machinery is delivered through experience. We deliver it through systems engineering — and the result is fewer surprises, earlier visibility, and equipment that performs as a system because it was designed as such.

This is the conclusion of this briefing. The pages that follow explain why it matters for your project, what it costs you not to have it, and how NEXYAN delivers it. We invite you to read further only if the conclusion above is one you would like to test.

THE INDUSTRY'S STANDARD APPROACH

Experience-based integration works — until it doesn't

The traditional machine integrator approaches every project from accumulated experience. A proven build methodology, a trusted set of suppliers, and a sequencing pattern refined over many projects. For a well-bounded machine in a familiar configuration, this approach is efficient and usually delivers.

But industrial machinery rarely stays well-bounded. Production requirements evolve. Safety regulations tighten. Multiple regulatory frames — IEC, ISO, ANSI — apply simultaneously. Integration complexity grows non-linearly with the number of subsystems. And the moment any of these conditions appears, the experience-based approach begins to defer risk rather than absorb it.

Requirements gaps surface at runoff. Disciplines work in sequence. Knowledge lives in people, not systems. Change orders disrupt schedule unpredictably.

— The four structural symptoms of experience-based integration

None of these are failures of skill. They are structural consequences of starting from “how we have always built” rather than from “what this specific system must do, for whom, under what constraints.” The most expensive moment in any project — physical commissioning — becomes the moment when the most consequential discoveries are made.

THE QUESTION THIS BRIEFING ANSWERS

How can a buyer get complex machinery delivered — or recovered — with less risk, earlier visibility, and fewer late surprises?

THREE PILLARS THAT DEFINE NEXYAN

We replace improvisation with architecture, structure, and judgment

NEXYAN's answer is not a single capability. It is three mutually reinforcing pillars that together transform how a project is conceived, executed, and delivered. Each pillar absorbs risk where traditional integration defers it.

1

We see the whole system before it is built

Every NEXYAN engagement begins with a system model. Use cases, concept of operations, and structured requirements define what the work must accomplish and for whom — before any discipline begins detailed design. Mechanical, electrical, and controls engineering then advance concurrently against shared interface definitions, with requirements traced bidirectionally so every change has a known blast radius before fabrication commits.

How: Model-Based Systems Engineering in Enterprise Architect | V-model with concurrent disciplines | SCRUM sprint cadence | Formal customer stage gates

2

We control every link of the execution chain

Engineering tools alone do not deliver a machine. NEXYAN operates a coherent, revision-controlled pipeline from system model to commissioned line — and complements it with in-house fabrication that compresses the critical path at every prototype and small-batch step. Custom components are made to the exact design, not adapted to what vendors will produce at minimum order quantity.

How: Inventor + Vault PLM | EPLAN ProPanel | TwinCAT3 / Beckhoff | MATLAB/Simulink | CNC mill, lathe, router; TIG and laser welding; 3D printing; panel assembly — in-house

3

Our judgment is built on doing the work for 37 years

Methodology and toolchain can be acquired. The judgment to apply them under real project pressure — supplier failures, scope changes, safety conflicts, international deployments — comes from running hard things at scale. NEXYAN's founder has been on both sides of the integration table: as the manufacturer who lived with what was delivered, and as the engineer who delivers it.

How: MIT Systems Engineering | MBA | CMSE® — TÜV NORD | Lean Six Sigma Black Belt | Founder of a 3-plant, 140-person precision manufacturer serving US and European OEMs

HOW NEXYAN DEPLOYS THIS CAPABILITY

One capability platform — three ways to put it to work

The three pillars described above are not bound to a single type of engagement. They apply equally whether the project is a new system, a rebuild of installed equipment, or a targeted safety and digitalization upgrade. The right offering depends on what is already in place — and what needs to change.

01 Design & Build

New purpose-built manufacturing systems

When production needs exceed the limits of existing equipment, manufacturers need a complete system designed to deliver capability, throughput, quality, and reliable performance. NEXYAN designs, builds, and commissions new manufacturing systems — from concept of operations through machine, controls, interfaces, operating sequence, and the practical needs of startup and use. The result is a production asset built to perform, to be easily maintained, and to support the business without unnecessary complexity or avoidable rework.

Includes: Concept of Operations • System architecture • Mechanical design • Controls and safety architecture • Software and HMI • Assembly and commissioning • Operator training and documentation

02 Rebuild & Upgrade

Recover value from installed assets

Many manufacturers carry useful equipment that has become constrained — by obsolete controls, changed product requirements, or new compliance demands. Replacement is not always the best first move. NEXYAN rebuilds and upgrades existing assets so they continue to deliver value: controls modernization, mechanical rebuilds, and functionality upgrades aligned with current operating needs. The objective is to extend useful life while being financially efficient, preserving capital while improving what is already on the floor.

Includes: Controls platform migration • Drive and motor upgrades • HMI/SCADA modernization • Mechanical refurbishment • Safety retrofit • Functionality expansion

03 Safety & Industry 4.0

Compliance and operational visibility

When equipment has safety gaps, limited visibility, or weak operational feedback, manufacturers face both compliance risk and avoidable performance loss. NEXYAN improves machinery safety through risk-reduction upgrades and structured safety controls work — and adds practical digital monitoring that makes operations easier to see and manage. The result is safer equipment, clearer operating insight, and a stronger foundation for continuous improvement without unnecessary disruption.

Includes: Risk assessment to IEC 62061 / ISO 12100 / ANSI B11 • Safety controls architecture • CMSE® certification support • Edge data collection • OEE and condition monitoring • Integration with existing MES/ERP

These principles produced this result

What follows is a representative outcome from the first of NEXYAN's three offerings — a Design & Build engagement delivered in 2025. The same capability platform delivers Rebuild & Upgrade and Safety & Industry 4.0 engagements; representative outcomes for those offerings are available on request.

In 2025, NEXYAN engineered, built, and commissioned a 14-station water filter assembly line for a major water treatment OEM. The line replaced a manual operation that produced 200 pieces per 8-hour shift with seven operators. The new line produces 550 pieces per shift with three operators. The 20 process technologies on the line — pumps, vision, sealing, leak testing, marking, and others — operate as one coordinated system on a pallet-loop architecture, not as chained components.

PROOF OF DELIVERY | DESIGN & BUILD

14-station water filter assembly line

Major Water Treatment OEM | Monterrey, Mexico | 2025

200 → 550

pieces per shift

7 → 3

operators required

20

technologies integrated

Designed around a pallet-loop architecture. Engineered, built, and commissioned by NEXYAN — from first requirement to operator handoff.

This outcome is not extraordinary because the technology is exotic. It is extraordinary because every one of the 20 technologies was integrated to a single architecture, with traced requirements, formal stage gate reviews, and a delivered documentation set that the customer continues to use for line modifications, safety reassessments, and audit support.

NEXYAN provides a lot of value by conceiving systems that others cannot see.

Others only see separate portions of it, and tend to solve for the needs at stake by chaining separate components.

— Engineering Leadership, Major Water Treatment OEM

CLIENTS SERVED

Honeywell • BorgWarner Turbo Systems • Culligan • Spyderco • U.S. Defense Logistics Agency

LEADERSHIP

Honor Brandao — Founder & President

The case for NEXYAN rests substantially on the judgment of its founder. The credentials below are not decorative. Each one was earned in the discipline it represents, and each one shapes a specific way in which NEXYAN approaches the work.

BS — Industrial Engineering	41 years of Industrial Engineering thinking and practice
MIT — Systems Engineering	Formal MBSE methodology applied from first requirement to final acceptance — not improvised from experience
MBA	Every design decision weighed against business viability and ROI — engineering elegance is necessary but never sufficient
CMSE® — TÜV NORD	Certified Machinery Safety Expert: IEC 62061, ISO 12100, ANSI B11 built in from day one — not retrofitted at acceptance
Lean Six Sigma Black Belt	Variation reduction and process capability embedded in machine design — not added after the fact
TriStar Precision — Founder	Ran turbocharger compressor wheel manufacturing across 3 plants and 140 people — NEXYAN has lived on both sides of the integration table
5 Languages / 30+ Countries	Direct engagement with global teams, regulators, and suppliers — no translation layer, no cultural distance

This combination — formal industrial and systems engineering education, operational experience running a manufacturing business at scale, certified machinery safety competence, and direct global engagement — is uncommon. It is what makes NEXYAN's integration of methodology and execution credible rather than aspirational. Honor Brandao leads from the work, not above it. Every engagement benefits from this directly.

If the answer on page one is one you would like to test

Begin a conversation with NEXYAN

Every engagement begins with a structured discovery conversation. We review your situation — new system, installed asset, or compliance pressure — and tell you honestly whether a systems engineering approach adds value for your specific circumstance.

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