

WORKFORCE • KNOWLEDGE CAPTURE

YOUR BEST TECHNICIAN JUST RETIRED.

Did their knowledge retire too? Decades of judgment walk out the door with every senior tech — and by the exit interview, it's already too late to capture it.



Dale Calder
Chief Executive Officer, InSkill

2.1M

manufacturing jobs could go unfilled by 2030 — driven not by a weak pipeline, but by the retirement of the generation the industry was built on.

A POTENTIAL \$1 TRILLION HIT TO THE U.S. ECONOMY

THE LAST DAY

NINETY SECONDS OF EXPERTISE, GONE ON A FISHING BOAT

FRIDAY, MARCH

A **38-year veteran** clocks out for the last time. Cake in the break room, a signed card, a quiet round of applause. No one registers that decades of hard-won judgment — the kind that never made it into a manual — are walking out the door with him.

TWO WEEKS LATER • 2 A.M.

The same line goes down with a fault the night crew has never seen. The new tech checks the SOP. **The SOP doesn't cover it.** The one person who'd have known the fix in ninety seconds is on a fishing boat in Florida — and he isn't answering his phone.

THE QUIET CRISIS

It isn't only that experienced people are leaving. **It's that their expertise leaves with them** — and by the exit interview, it's already too late to capture it.

SECTION 01 • THE CLIFF IS ALREADY HERE

THE RETIREMENT WAVE IS ARRIVING ON A SCHEDULE

25%

of the U.S. manufacturing workforce is already 55 or older

2.8M

workers projected to retire by 2033 — 70M+ years of combined experience

70%

of a plant's critical operational knowledge is tribal — undocumented, unsearchable

That last number is the one that should keep operators up at night. **Most of what keeps a plant running was never written down.** It lives in the people who know what a failing bearing sounds like before any sensor flags it — and they're leaving faster than they can be replaced.

SECTION 02 • WHY THE OLD PLAYBOOK FAILS

MORE SOPS WON'T SAVE YOU

Write more SOPs, build a wiki, stand up an LMS, shadow the seniors for six months. Each helps at the margin. None solves the actual problem — for three reasons.

1

DOCUMENTS CAPTURE THE WHAT, NOT THE WHY

An SOP tells you the steps. It doesn't tell you why a veteran skips step four on this machine, or what he checks first when the symptom doesn't match the book. That judgment is exactly the expertise that's disappearing.

2

TRIBAL KNOWLEDGE LIVES IN HALLWAYS, NOT FILES

It moves by apprenticeship and conversation. Traditional knowledge management assumes someone will stop, reflect, and write it all down. On a running line, nobody ever does — and an unplanned retirement gives you no runway to try.

3

EVEN CAPTURED KNOWLEDGE IS UNFINDABLE

A 200-page PDF on a shared drive is useless to a tech standing at a down machine at 2 a.m. with gloves on. Capture without instant, in-context retrieval is just a nicer archive of the same problem.

THE COST OF WALKING KNOWLEDGE

WHEN THE EXPERTS LEAVE, THE NUMBERS MOVE THE WRONG WAY

3–4×

longer repair times for complex issues

+40%

rise in repeat failures

8–12 mo

new-hire ramp, stretched from 3–4 months

SECTION 03 • CAPTURE BEFORE THE EXIT INTERVIEW

THE GOAL ISN'T AN ARCHIVE. IT'S A COPILOT.

Capture can't be a project you launch after someone gives notice — by then you're racing a clock you've already lost. It has to be a **byproduct of the work itself**, happening continuously while your experts are still on the floor.

AN ARCHIVE

WAITS TO BE READ

A static document on a shared drive. It holds the steps, but not the reasoning — and it goes stale the day it's printed.



A COPILOT

ANSWERS THE QUESTION

It responds the moment a tech asks — at the machine, on the night shift, across every site that runs the same equipment. Tacit knowledge becomes usable everywhere.

SECTION 04 • WHERE EXPERTISE COMES FROM

FIVE STREAMS AGENTIC AI CAPTURES IN THE FLOW OF WORK

You don't extract a 38-year career in a single sit-down. Expertise accumulates from many streams — and AI captures it from each, passively, so the expert never stops to document.

1

HISTORICAL PROBLEMS SOLVED

Every resolved ticket is a case study in expert judgment. AI mines the symptom, diagnosis, and fix to learn the patterns — turning decades of solved problems into searchable reasoning instead of a dead archive.

2

AI INTERVIEWS WHILE SOLVING

The copilot asks targeted questions while the expert works a live issue: "why did you check that first?" That captures the tacit *why* behind the decision — the part that never reaches an SOP.

3

FEEDBACK

When a tech corrects a suggested answer — "on this model you also have to bleed the line" — that correction is expertise. The system folds it back in, sharpening every time a human touches it.

4

ESCALATIONS

The moment a junior tech escalates to a senior is exactly where the knowledge gap lives. Capturing the resolution turns each escalation into a permanent lesson — so no one has to escalate the same thing twice.

5

VIDEO RECORDINGS

Some expertise is physical: how a part seats, what a worn component looks like. Recorded walkthroughs let the copilot capture the hands-on knowledge that words alone can't convey.

SECTION 05 • WHAT "GOOD" LOOKS LIKE

KNOWLEDGE THAT COMPOUNDS INSTEAD OF ERODES

WEEKS, NOT MONTHS

FASTER RAMP

New-hire ramp compresses from months toward weeks when answers live at the point of work.

ONE QUESTION AWAY

LESS DOWNTIME

The fix is one question to the copilot — not one phone call to a retiree who may never pick up.

BUILT-IN RESILIENCE

NO SINGLE POINT OF FAILURE

An unplanned retirement stops being a crisis. Every ticket, correction, and escalation makes the system sharper.

Picture the 2 a.m. fault again. This time the night tech describes the symptom to the copilot, gets the veteran's actual diagnostic path, and has the line running again in **twenty minutes** — without waking anyone, and without a boat in Florida being the single point of failure.

THE WINDOW IS NOW — NOT AT NOTICE

CAPTURE EXPERTISE BEFORE IT WALKS OUT THE DOOR

Turn your team's hard-won knowledge into AI copilots that answer technician questions in the flow of work.

REQUEST A DEMO →