

EXECUTIVE WEBINAR

STATE OF TECHNICAL DEBT

Insights. Strategies. Action.

How Leaders Can Turn Technical Debt into a Competitive Advantage with AI

AUGUST 5, 2026 | 12:00 PM (CDT) | ONLINE


CODE
State of
Technical Debt
Presenter: Markus Egger



AI has fundamentally changed how we deal with “technical debt”

Markus Egger

- **Founder & CEO - CODE Group**
- **Publisher – CODE Magazine**
- International author and speaker
- Microsoft RD (Regional Director)
- Microsoft MVP
- Email: markus@codegroup.io







30+ years of

"Helping People Build Better Software"

Today's Agenda and Goals…

- What exactly is "Technical Debt"?
- Why do you have it and how can you "pay it off"?
- How does AI improve the situation?
- Where do you start?
- Why this is such an important area for us



What Exactly is “Technical Debt”?

Which System Should Worry You More?

- A) **30 Years Old**
  - Stable mainframe
  - Known behavior
  - Experienced operators
  - Recovery regularly tested
- B) **6 Months Old**
  - AI-built application
  - No tests
  - Unclear ownership
  - Dozens of unverified dependencies



Age is a poor proxy for risk!

Legacy is a Condition – Not an Age

A system becomes dangerous when the organization can no longer confidently…

UNDERSTAND

what it contains and why

OPERATE

and recover it

CHANGE

without unacceptable surprise

PROVE

its behavior and controls

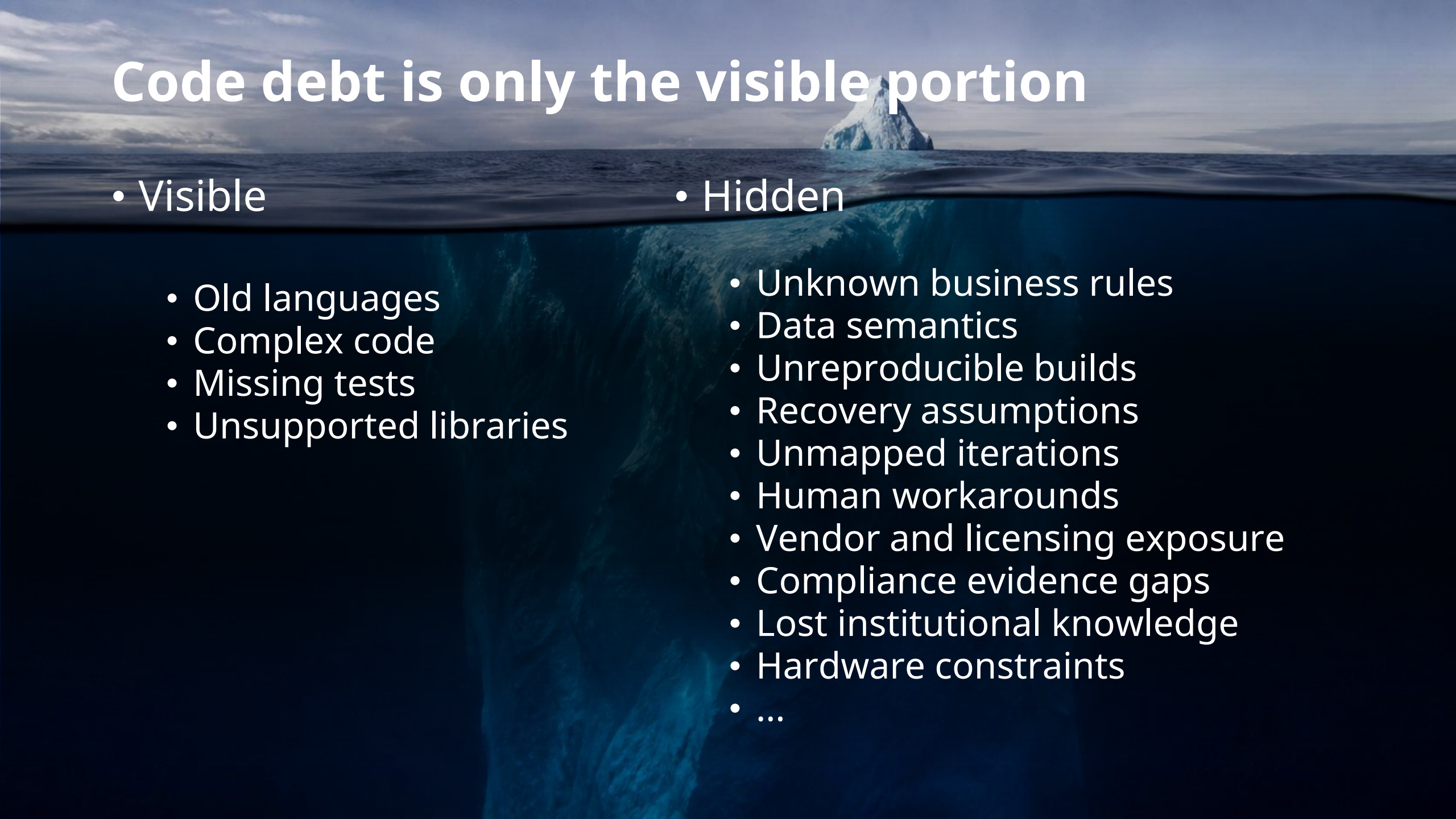


The opposite of “legacy” is *not* “modern”.

It is "understood, supported, maintainable, and safely changeable”.


The Technical Debt Iceberg

Code debt is only the visible portion



- Visible
  - Old languages
  - Complex code
  - Missing tests
  - Unsupported libraries
- Hidden
  - Unknown business rules
  - Data semantics
  - Unreproducible builds
  - Recovery assumptions
  - Unmapped iterations
  - Human workarounds
  - Vendor and licensing exposure
  - Compliance evidence gaps
  - Lost institutional knowledge
  - Hardware constraints
  - …


Knowledge debt, integration debt,
talent debt, and operational debt
often carry the largest business risk.

Why Leaders Should Care

- Technical debt is a business-continuity issue
- Any threat to business-continuity is terrifying





Technical debt charges interest whenever the business must change, audit, secure, or recover a system.



AI is a Game Changer for Technical Debt

What is Different Now

- AI changes the economics of understanding
- AI can correlate more evidence than any individual can hold in working memory
- AI can work through far more far faster
- Having existing systems as the basis to work from is a best-case scenario for AI-assisted coding.



With AI: Technical Debt Just Got Cheaper to Fix

Understanding Systems



Introducing LORE



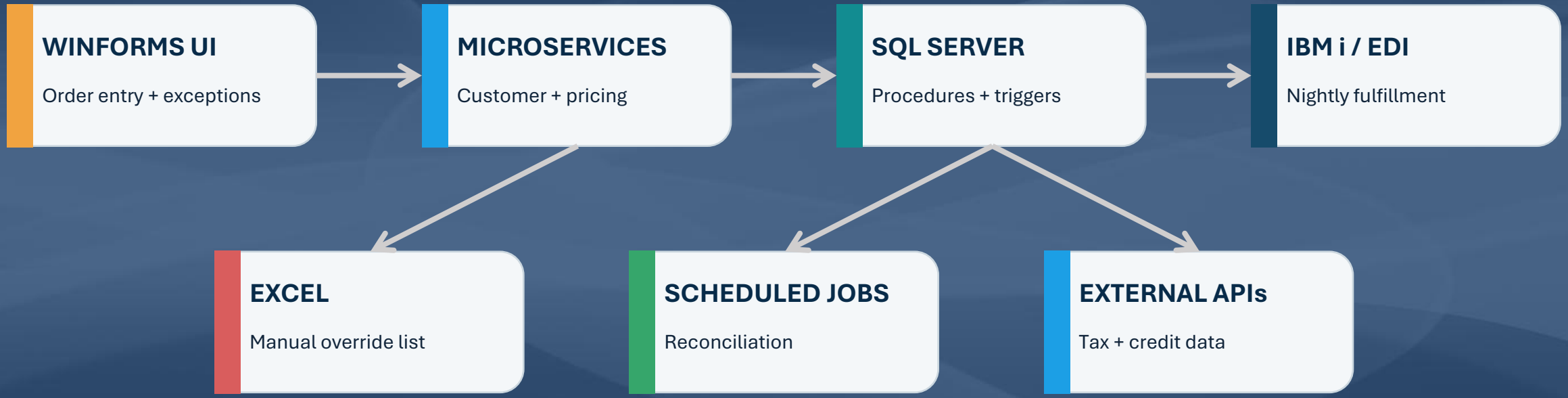


- LORE is an AI-powered dynamic knowledge system that manages and preserves institutional knowledge for IT systems
- LORE is an agentic tool that aids in actively working on modernization and maintenance efforts


CODE:LORE
• We are currently looking for early-access partners
• Contact us for details: info@codegroup.io

Meet the system nobody wants to touch

Order Management | 20+ years of accumulated behavior



Original architect retired | Partial documentation | Stable production | Unknown Workarounds | No trusted change map

Example Question



What breaks if we change the credit-limit rule?

Reconstruct the Answer from Converging Evidence

CODE

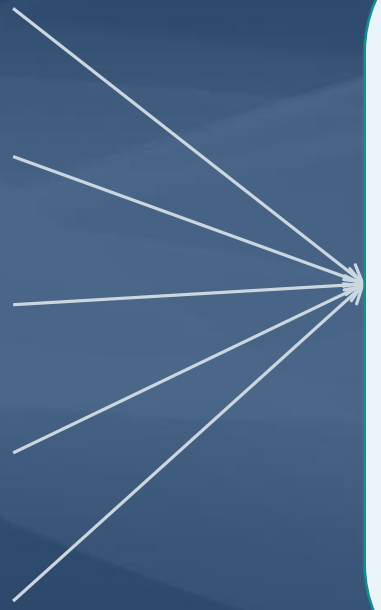
CODE — Calls usp_CalcCredit

DATA — Override table

TICKET — Wholesale exception

INTERVIEW — Operator workaround

TRACE — Path used in production



EVIDENCE-BACKED EXPLANATION

Credit limits are calculated in SQL, then re-applied by a nightly process for two customer classes. A manual override exists for contract customers.

CONFIDENCE: HIGH

Contradiction: old design document says the batch was retired.

An Evidence-First Modernization Sequence



UNDERSTAND

Inventory capability, code, data, dependencies, people

PROVE

Baseline behavior, recovery, and controls

DECIDE

Choose treatment per business capability

CHANGE

Work incrementally with observation and rollback

REMEMBER

Keep knowledge current as the estate changes

Never begin with "rewrite." Begin with evidence.

The Other Side of AI

- Your newest software may already be technical debt
- AI can create software faster than organizations create understanding.

CODE VOLUME

More than teams can meaningfully review

DEPENDENCY SPRAWL

Packages selected without verification

UNCLEAR OWNERSHIP

"The AI wrote it" is not accountability

WEAK EVIDENCE

Tests reproduce the generated assumptions

DESIGN DRIFT

Contradictory patterns and duplicated logic

CONTEXT EXPOSURE

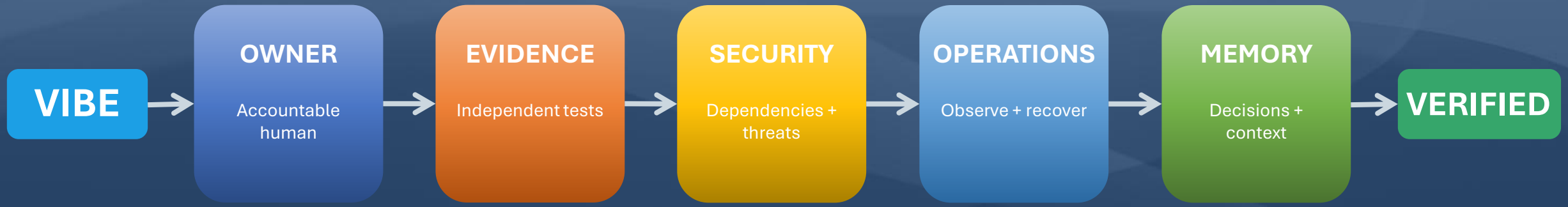
Sensitive code, data, logs, and prompts



Technical Debt has no minimum age!

Move Deliberately from Vibe to Verified

- Code generation made implementation cheaper.
- It did not make accountability cheaper.
- Use stronger review for agents that modify build pipelines, infrastructure, permissions, or dependencies.





We are creating Technical Debt faster than ever!

Begin with a System Confidence Assessment

CAPABILITY + DEPENDENCY MAP

What the business relies on

KNOWLEDGE-CONCENTRATION MAP

Where expertise can disappear

RISK RADAR

Technical, operational, security, compliance

BEHAVIORAL-BASELINE PLAN

What must be proven before change

TREATMENT OPTIONS

Retain, contain, refactor, replace, retire

90-DAY FIRST MOVES

Sequence the safest risk reduction

One critical system. A bounded investigation. An evidence-based decision.

Modernization needs a living system memory



Static documentation is not enough

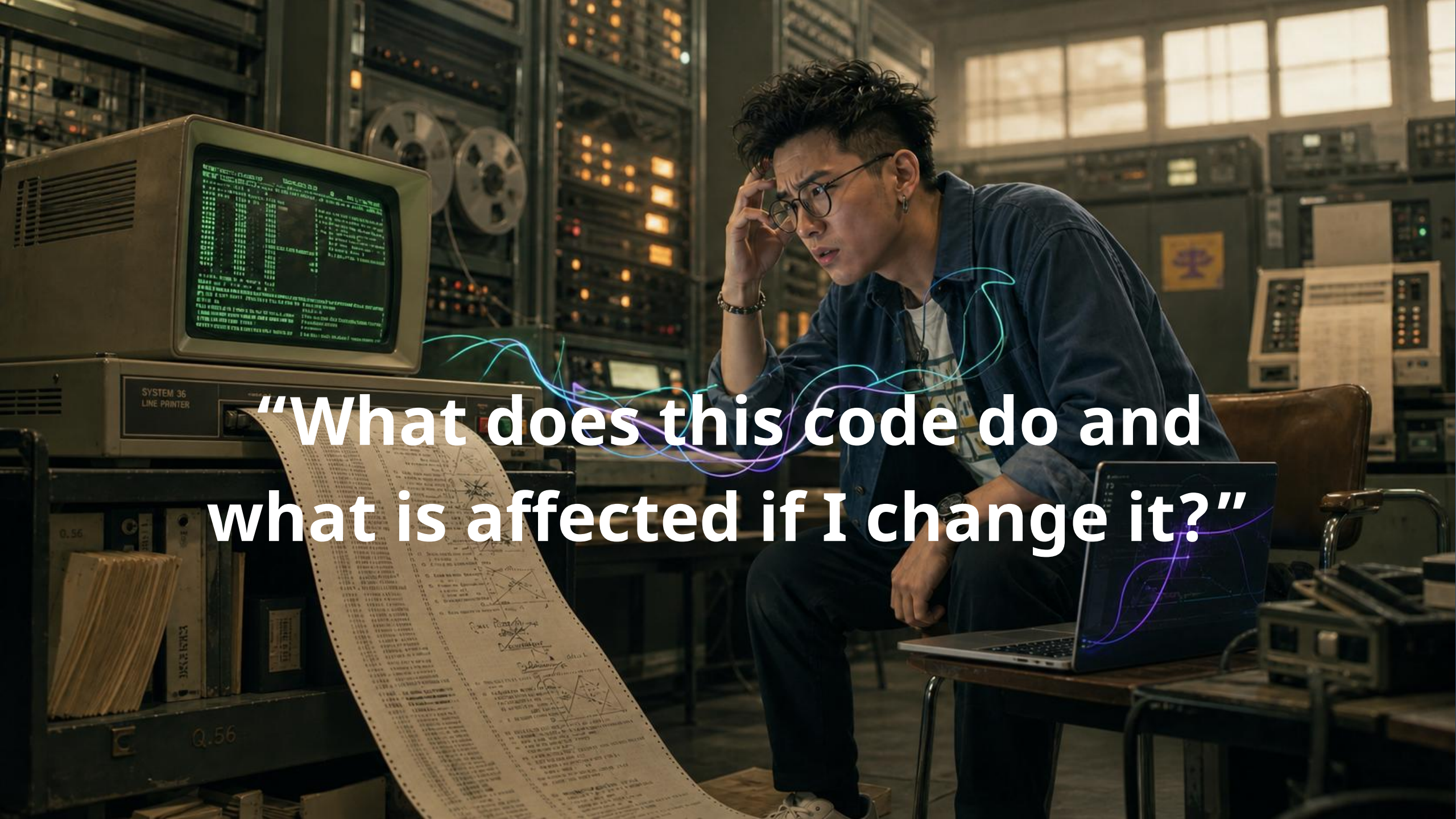


Do not begin with a rewrite!

Begin by discovering what you have, what the business depends on, and what you can prove.

Note: The Human Factor

- Human developers may not be familiar with the legacy systems they are asked to work on, or may simply not understand the code or other details
- Examples:
  - Unfamiliar languages
  - Incomprehensible complexity



“What does this code do and what is affected if I change it?”


Let’s Do It!

AI Helps with Modernization

- One of the key elements of AI-assisted coding is the definition of the tasks at hand
- When modernizing systems, the requirements are generally well understood
  - From existing systems…
  - …as well as other sources of information about what's desirable
- Therefore: "brown field" projects make AI shine!



AI can help “make the grass greener”

AI can:

- Write specs and work items
- Write missing unit tests
- Improve existing systems
- Modernize/replace
- Fix bad decisions
- Verify what has been done
- …



About Paradigm Shifts

- Modernizing between technologies that represent paradigm shifts has always been the most difficult
- Example: xBase to Client/Server
- Now: AI can handle different paradigms both for analysis and rewrites/modernizations

AI @ Runtime

- AI can also be added to existing systems to improve modernization and maintainability
- Example: AI can perform (ongoing?) data cleanup
- Example: Telemetry



Brown field systems may be the most fertile ground for AI-assisted development



How We Can Help



Call to Action:

Bring us the system your organization is afraid to touch!

Let’s Continue the Conversation

Executive Strategy Session

Build a roadmap for your modernization journey

bit.ly/modernization-consult

Explore Lore

Become an Early Launch Partner and stay connected

bit.ly/lore-modernization

Upcoming Technical Debt Events

💻 AI-Assisted Software Developer Labs

Hands-on, in-person training for developers building with AI



bit.ly/ai-software-labs

🎯 Executive Workshops

Interactive sessions for technology leaders driving modernization



bit.ly/tech-debt-series

AI Executive Briefings

CODE CONSULTING

We can help with your AI needs

What does AI mean for you?

Customized for your organization!



codemag.com/AI
codemag.com/ExecutiveBriefing

CODE Consulting

CODE CONSULTING

- **Legacy** app modernization & maintenance
- **Consulting** (development, process,…)
- **AI**: Copilots, (Azure) OpenAI, Anthropic, Hugging Face, Machine Learning, local models, Semantic Bench, and more…
- **Data:** Microsoft Fabric, Snowflake,…
- **Low-Code:** Microsoft Power Platform,…
- **Custom Software Development:** (Cloud, Web, Mobile, Desktop,…)
- **Project rescue** (Cloud, Data, AI, Web, Mobile, …)

Microsoft

eog resources

Gulfstream
A GENERAL DYNAMICS COMPANY

BRIDGESTONE

wisetech global

Solera

BLUE BELL ICE CREAM EST 1907

AI Services

CODE CONSULTING

Executive Briefing

High-level sessions designed to address your executive team’s specific needs, providing insights into strategic alignment and decision-making in the AI landscape.

Strategic Roadmap Development

Guidance on where to start, how to scale, and what to prioritize in an AI adoption journey — including ROI and risk analysis.

AI Implementation Advisory

Ongoing support during tool setup, policy drafting, prompt design, and integration into real workflows to ensure AI gets used in practice.

AI Training

Tailored sessions to help finance and operational teams understand how AI applies to their day-to-day work and build confidence in using it.

Interactive Workshops

Hands-on group sessions designed to identify high-impact AI use cases and uncover internal champions.

AI Audit & Readiness Assessment

A structured review of data, tools, workflows, and team capability to evaluate how ready a company is to adopt AI safely and effectively.

CODE Staffing

Talent as a Service (TaaS)

Giving our customers the ability to have staff on par with Silicon Valley companies ...

... and our employees a work environment in a bleeding-edge tech company with the **industry leading benefits!**

codestaffing.com



CODE Training

- **Custom training for the task at hand!**
- If you invest in AI, make sure your users know how to make the most of it!
- We also run standard classes, webinars, live events,...

- codemag.com/training

CODE Magazine

- The only independent developer magazine!
- 25-years and counting!
- Free subscription for your developers and technical staff

bit.ly/SOTD0826Subscribe



Event Survey



Q&A

Contact us with questions!

CODE Group Contact

codegroup.io
info@codegroup.io
facebook.com/codemag
X.com/codemagazine

Presenter Contact

markus@codegroup.io