

Dear CIO

John Willis

@botchagalupe



Autonomous AI in the Enterprise: A Fictional Case Study

Key Players: CEO, CIO, CISO, CFO, CTO, CAIO, Director of Platform & SRE

Central Challenge: Balancing rapid AI adoption with managing technical debt and security risks

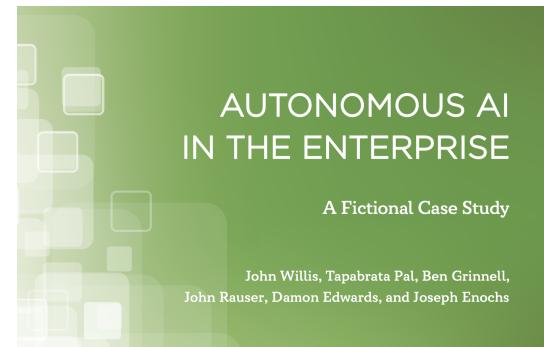
Key Strategies:

- Establish centralized AI governance committee
- Create secure, scalable infrastructure for AI experimentation and production
- Implement data management best practices
- Regular assessment and mitigation of technical debt
- Foster cross-functional collaboration
- Prioritize security in all AI decisions

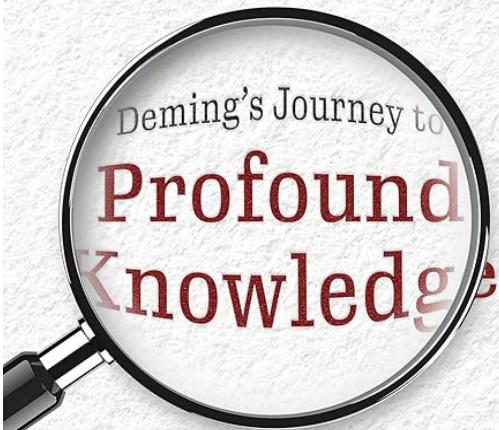
Main Concerns: Shadow AI, hidden technical debt, security vulnerabilities

Goal: Build a stable foundation for GenAI to pave the way for future autonomous AI

Note: This case study is fictional but provides insights for companies embarking on AI adoption journeys.



How Deming Helped Win a War,
Altered the Face of Industry,
and Holds the Key to Our Future



JOHN WILLIS
with Derek Lewis
Foreword by Mark Hinkle

"Read [Deming's Journey to Profound Knowledge] and you will understand like never before the wisdom and sound advice of Dr. Deming."
—Jeffrey K. Liker, author of *The Toyota Way*

Profound Stories

A Companion to
Deming's Journey to Profound Knowledge

JOHN WILLIS and DEREK LEWIS

**ATTENTION
IS ALL YOU
NEED**

JOHN WILLIS and DEREK LEWIS

“Dear CIO, Learn From the Past”

- **1980's**
 - **Automated Operations**
- **1990's**
 - **Systems Automation**
- **2000's**
 - **Infrastructure as Code**
- **2010's**
 - **Composable Infrastructure**
- **2020's**
 - **Agentic Infrastructure**



“Dear CIO, Learn From the Past”

- **L** - Language Model Orchestration (LLM/SLM)
- **O** - Observability
- **R** - Retrieval Augmentation Generation
- **M** - Model Providers
- **A** - Autonomous Agent Management

“Dear CIO, Prepare for the Tsunami”



“Dear CIO, Don’t be Another Air Canada”



“Dear CIO, Here’s the Numbers”

AI at Work Is Here. Now Comes the Hard Part



Finding 1

Employees want AI at work—and won’t wait for companies to catch up

They’re bringing their own tools even as leaders face AI inertia.

• **75%** of knowledge workers around the world use generative AI at work.

• **78%** of AI users are bringing their own AI to work (BYOAI).

• While **79%** of leaders believe their company needs to adopt AI to stay competitive, **60%** of leaders worry their organization’s leadership lacks a plan and vision to implement it.



Finding 2

For employees, AI raises the bar and breaks the career ceiling

Some are itching for a career change, and there is a massive opportunity for those willing to skill up on AI.

• **66%** of leaders say they would not hire someone without AI skills.

• **71%** say they’d rather hire a less experienced candidate with AI skills than a more experienced candidate without.

• There was a **142x** increase in skills like Copilot and ChatGPT added to LinkedIn profiles last year.



Finding 3

The rise of the AI power user—and what they reveal about the future

Power users use AI at least several times per week. They say it saves them more than 30 minutes per day.

• Frequently experimenting with AI is the **#1** predictor of an AI power user.

• Power users say AI boosts their creativity (**92%**) and helps them focus on the most important work (**93%**).

• AI also helps them feel more motivated (**91%**) and enjoy work more (**91%**).

“Dear CIO,
This is an
Infrastructure
Opportunity”

Wiz Research finds architecture risks that may compromise AI-as-a-Service providers and consequently risk customer data; works with Hugging Face on mitigations

Wiz researchers discovered architecture risks that may compromise AI-as-a-Service providers and put customer data at risk. Wiz and Hugging Face worked together to mitigate the issue.



Shir Tamari, Sagi Tzadik

April 4, 2024

12 minutes read



“Dear CIO, Google Warned US in 2015”

Hidden Technical Debt in Machine Learning Systems

D. Sculley, Gary Holt, Daniel Golovin, Eugene Davydov, Todd Phillips
{dsculley, gholt, dgg, edavydov, toddphillips}@google.com
Google, Inc.

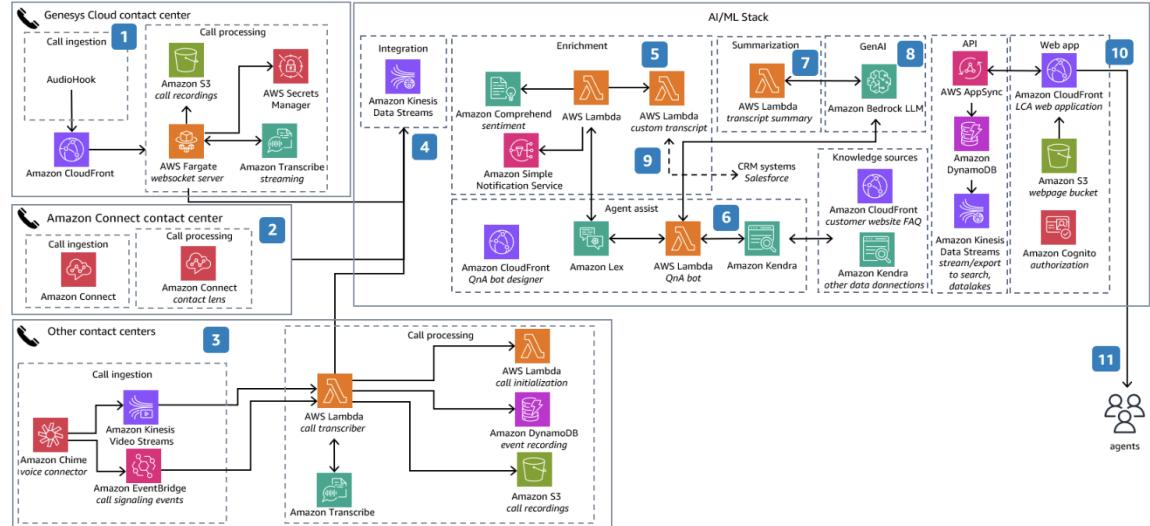
Dietmar Ebner, Vinay Chaudhary, Michael Young, Jean-François Crespo, Dan Dennison
{ebner, vchaudhary, mwyong, jfcrespo, dennison}@google.com
Google, Inc.

Abstract

Machine learning offers a fantastically powerful toolkit for building useful complex prediction systems quickly. This paper argues it is dangerous to think of these quick wins as coming for free. Using the software engineering framework of *technical debt*, we find it is common to incur massive ongoing maintenance costs in real-world ML systems. We explore several ML-specific risk factors to account for in system design. These include boundary erosion, entanglement, hidden feedback loops, undeclared consumers, data dependencies, configuration issues, changes in the external world, and a variety of system-level anti-patterns.

**“Dear CIO,
You Run It,
You Own It.”**

Powering Multiple Contact Centers with GenAI Using Amazon Bedrock Diagram



“Dear CIO, Threats of Not Implementing GenAI”

- Competitive Disadvantage
- Market Perception
- Innovation Stagnation
- Operational Inefficiencies
- Inefficient Allocation of Human Resources

“Dear CIO, Threats of Implementing GenAI”

- Immaturity of OVAL, STIX, CVE, and CWE
- New Malware Opportunities
- Malicious Pickle-Serialized Model
- Zero-Day Embeddings Vulnerabilities
- Phishing Schemes
- Reverse Engineering
- Innovating Hacking Techniques
- Deep Fakes

The CAIO Dilemma Weighing the Pros and Cons of Appointing a CAIO

Key Points:

- **Strategic Decision:** Organizations face a critical choice in appointing a Chief AI Officer (CAIO) as AI becomes integral to business strategy.
- **Purpose:** Explore the benefits and challenges of introducing a CAIO role, backed by research and case study insights.
- **Focus:** Understanding the impact of a CAIO on strategic alignment, risk management, and organizational change.

Quote:

"AI isn't just a series of disconnected projects; it needs a cohesive vision."

- Alex Hanover, fictional CAIO, Enterprise Technology Leadership Journal

The CAIO Dilemma: The Case For a CAIO

- 1. Strategic AI Implementation:** Unifies and focuses AI strategy.
- 2. Reducing AI Fragmentation:** Centralizes efforts and fosters innovation.
- 3. Managing AI Risks:** Ensures compliance and ethical AI usage.
- 4. Driving Transformational Change:** Partners with leadership to drive innovation.

Conclusion:

Organizations must weigh the benefits of a CAIO against the risks, focusing on collaboration and alignment with broader business goals.

The CAIO Dilemma: The Case Against a CAIO

- 1. Potential for Conflict:** Overlaps with existing C-suite roles.
- 2. Risk of Overemphasis on AI:** May prioritize AI over more cost-effective solutions.
- 3. Additional Costs:** Significant financial implications.
- 4. Potential for Shadow AI:** Encourages siloed AI projects.

Conclusion:

Organizations must weigh the benefits of a CAIO against the risks, focusing on collaboration and alignment with broader business goals.

“Dear CIO, Here’s Some Suggestions”

- Legacy Migration Assessment
- Security and Privacy Training for GenAI
- Platform Engineering for GenAI
- Service Reliability Engineering for GenAI
- Secure Supply Chain for GenAI
- Automated Governance for GenAI

“Dear CIO, We Can Help”

To exit full screen, press **esc**

2 DAY WORKSHOP

Patrick Debois & John Willis



GenAI for DevOps engineers

www.jedi.be



Austin Texas, USA
12-13 September 2024

“Dear CIO, I Need Help”

- Agentic DevOps
- SWE-Bench (tools)
 - Copilot Workspaces
 - OpenDevin
 - Ader
- Real Enterprise Code (Banking, Retail, ...)

“Dear CIO, So Long and Thanks for All The Fish”

