Engineering Fuels Enterprise AI Adoption

AI works brilliantly for individuals using ChatGPT, Gemini, and Claude - saving countless hours daily. But enterprise adoption tells a different story.

Dilip Krishna

Global CTO for Sustainability,

Deloitte
dkrishna@deloitte.com

- Lifelong Engineer and Technologist
- Over a decade of experience in Enterprise AI

The Current Reality Check

Individual Success, Enterprise Struggle

Individual Success

Personal AI tools deliver massive time savings for everyday users

Complex Tasks are Challenging

Great for prototypes, but makes embarrassing mistakes in enterprise software

Enterprise Struggles

Large companies face mixed results despite massive interest

Yet billions flow into AI - must be a "there" there!

History Repeats

AI's VisiCalc Moment is Coming

Today's AI adoption mirrors early PC adoption.

Remember VisiCalc? It was the **first "killer app" that sold nearly a million copies**, transforming personal computers from "cool to have" toys into "must-have" business accessories.

Conceived by Dan Bricklin at Harvard Business School while watching a professor manually recalculate financial models on a blackboard, VisiCalc cost just $100.

It quickly established the Apple II as a serious business tool, **driving the widespread adoption of personal computers in offices** and **paving the way for broad infrastructure and enterprise technology understanding** that was initially missing.

Sound familiar?

A Hint of Potential

The Personal AI Explosion

800M

ChatGPT Users

Weekly active users as of 10/25

40%

Productivity Gain

MIT/Harvard study shows significant task completion improvement

39%

Widespread Usage

Adults using Personal AI assistants

Personal AI assistants deliver proven results, but real transformation requires process re-imagination.

The Inflection Point

Exponential Acceleration Ahead

1

Infrastructure Builds

Like MS-DOS and Windows 3.1 created PC standards

2

Adoption Accelerates

Enterprise understanding develops rapidly

3

Exponential Growth

History shows technology adoption curves go vertical

Beyond the Tool

Unlocking Value through Process Reimagination

Unlocking truly transformative enterprise value requires a deeper dive: **Process Reimagination**.

Beyond Personal Gains

Real enterprise transformation comes from systemic changes, not just personal AI tools.

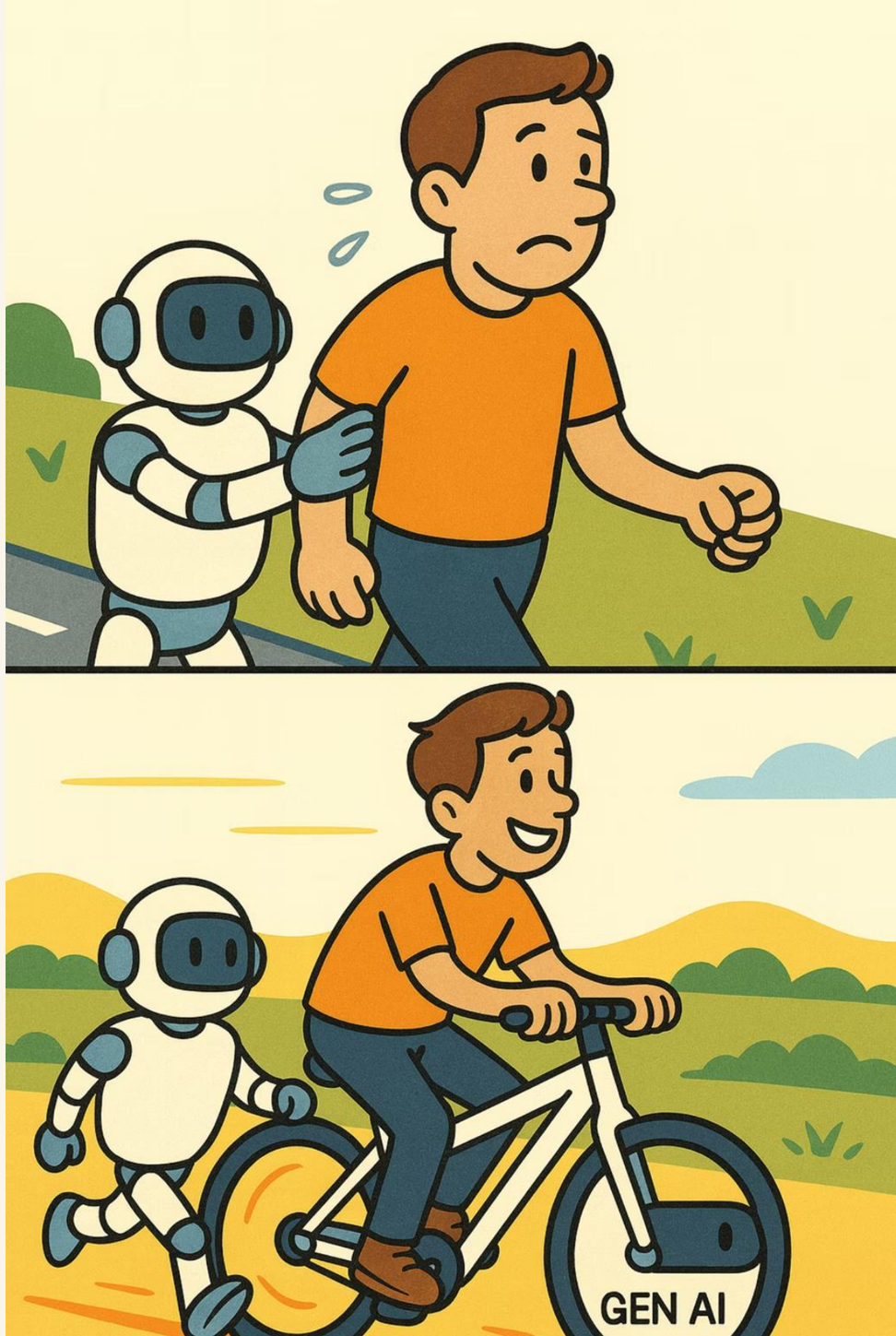
Integrated Workflows

AI must integrate seamlessly with data and human interfaces for true outcomes.

Maximizing Output

Reimagined processes can boost efficiency by **60% or more**, revolutionizing work.

Hardening these solutions for the enterprise demands core engineering skills



'Cheaper Software' Means More Engineers

> *"Increasing the efficiency with which a resource is used tends to increase the total consumption of that resource."*
> — Jevons' Paradox

Reduced Development Costs

AI dramatically cuts software creation expenses

Increased Demand

Cheaper software means more projects get approved

Enterprise-grade solutions require serious engineering.

The Enterprise AI Challenge

Data, Security, and Scale

Data Complexity & Volume

Enterprises manage vast datasets of varying types and complexities, requiring robust data integration and processing pipelines.

Strict Privacy & Security

Different data types have varying privacy needs (e.g., health records vs. public contact info), demanding granular access controls and strong encryption.

Legal & Compliance

Navigating complex legal agreements, copyright laws, and industry-specific regulations is crucial for responsible AI deployment.

Scale & Reliability

Solutions must support thousands of concurrent, global users, requiring high availability, fault tolerance, and consistent performance.

Examples include Banking, which demands highly regulated use of models and data, and Healthcare, with its critical data privacy concerns.

Example #1: Optimizing Software Development

Stage 1: AI Integration for Efficiency

Focused on automating repetitive tasks and improving data processing, yielding a **15% efficiency improvement**.

Stage 2: AI-Driven Transformation

Fundamentally reorganized the development workflow around AI's strengths, leading to **50% production improvement and 40% cost savings**.

Engineering Enablers for advanced software development

Multi-Agentic System for User Stories

Generate comprehensive user stories, streamlining the initial planning phase and ensuring alignment with business objectives.

Automated UI Generation with MCP

Automatically generate user interfaces directly from UI specifications, accelerating front-end development and ensuring design fidelity.

Example #2: Using AI to for Corporate Strategy

Strategy development relies heavily on data collection and synthesis, as well as analysis and discussion

Stage 1: Using personal tools

Accelerate human processes with tools like LLMs for synthesizing and research, and presentation automation.

Stage 2: Agentic Integration for 60%+ reduction

Reimagine the process using agentic integration to enterprise systems, such as agents interacting with ERP systems and automated interviews.

Engineering Enablers for Strategy Automation

Voice Agents

Automating conducting and transcription of stakeholder interviews to efficiently gather stakeholder insights.

Multi-Agentic Systems

AI agents for comprehensive research, initial strategy formulation, and identifying critical gaps in business objectives.

Data-Driven Strategy Iteration

Connect to reputable data-sources both within and outside the enterpriseto generate and iterate through strategy development.

Hot-Take

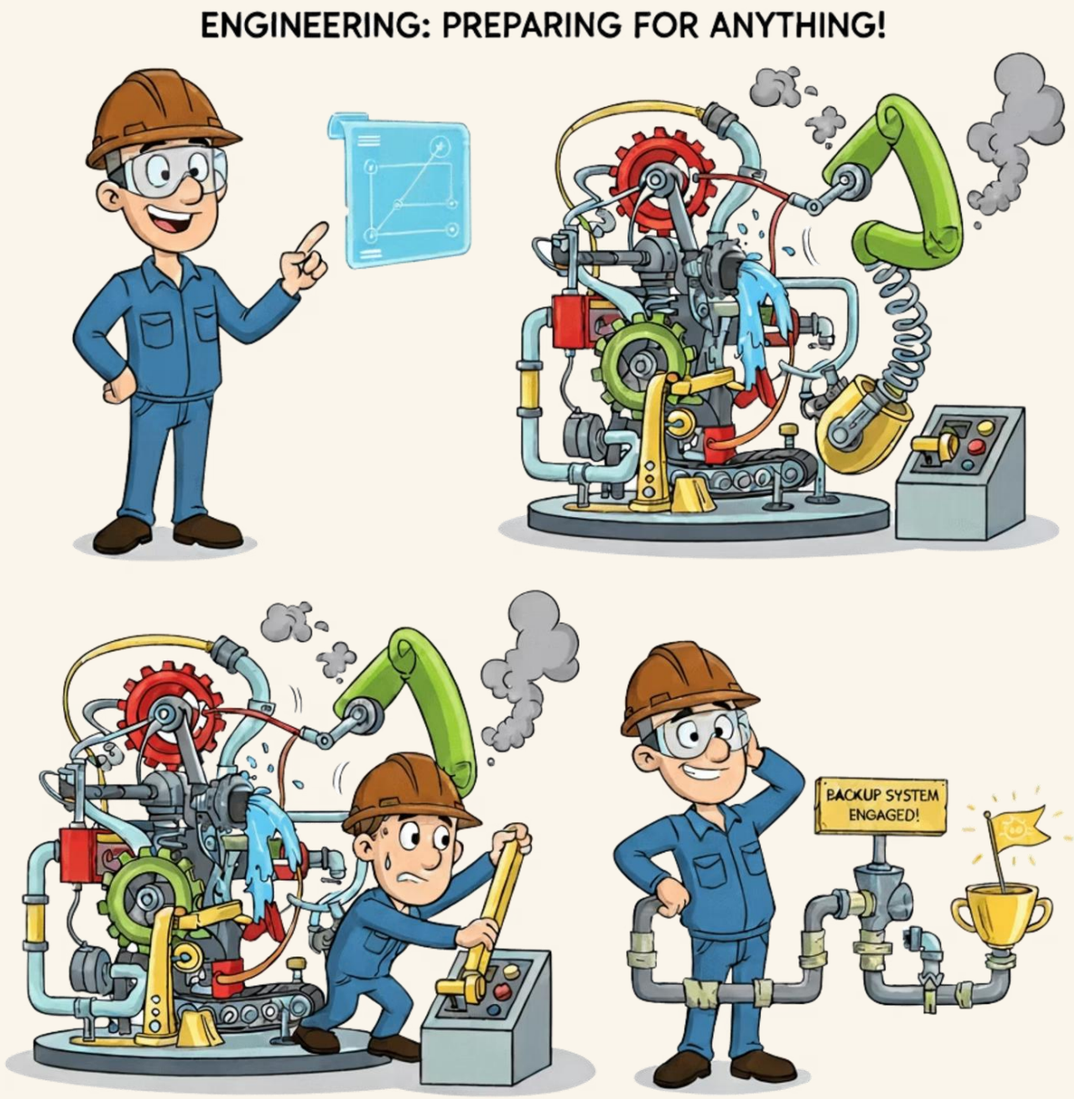
We need *more* engineers!

Engineering ensures systems work when things go wrong.

Enterprise AI requires the ***bulletproof reliability*** that only skilled engineers - not business users - can deliver.

The demand is certain.

Are *you* the engineer companies will need?



Beyond Code

Architecture and Collaboration in the AI Systems

System Architecture

Design complete solutions, not just code fragments

Full Lifecycle

Planning through maintenance, beyond just building

Cross-team Communication

Bridge technical and business stakeholders

Scalable Performance

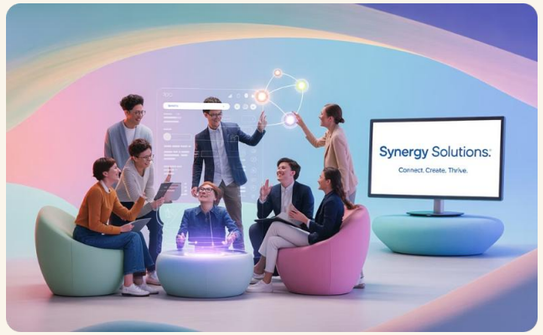
Apply algorithmic knowledge for enterprise scale

The Future Engineer's Mindset

Adaptability & Problem-Solving

Problem-Solving Foundation

Adaptability & Curiosity



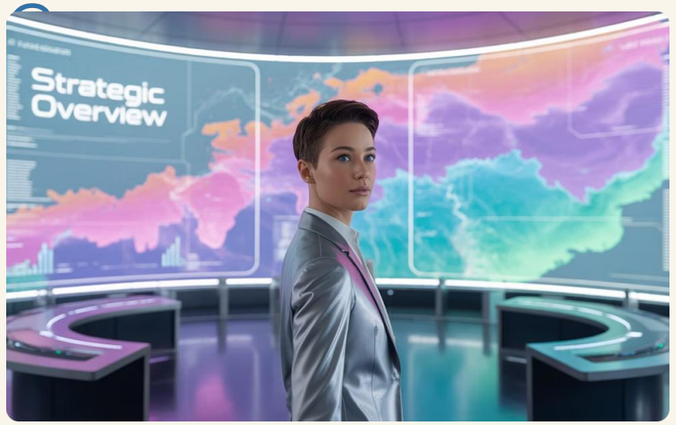
Strong Communication

Challenge Status Quo

Only engineers who ***understand AI's full capabilities and shortcomings*** can appreciate the true art of the possible.

Essential Characteristics of an AI Engineering Leader

Traditional leadership + AI literacy, Strategic Vision,



Strategic Visionary. Risk Navigator

Understands business impact, navigating opportunities and risks.

Champions ethical decision-making and data governance.

Cultural Catalyst. Empowerer

Fosters a culture of risk-taking and experimentation

Emphasizing AI's augmentation of human capabilities

Ensuring psychological safety.

Technical Bridge Builder

Translates complex AI into tangible business value.

Builds secure, scalable platforms, aligning technical solutions with strategic objectives.