

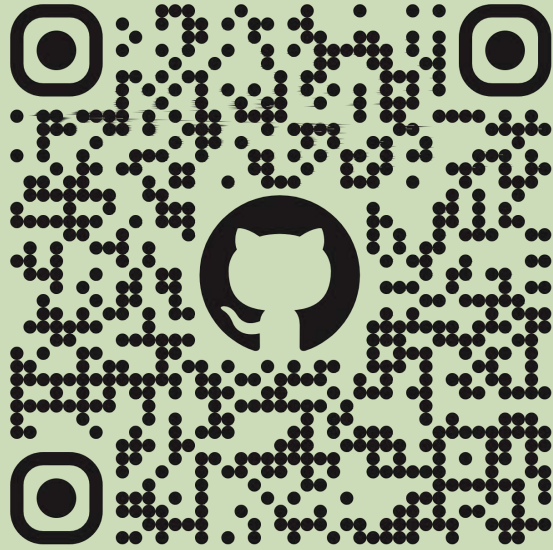
AI With a Conscience

**Sustainable Solutions for Growing
Startups and Small businesses**
Nebraska.Code 2025

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Link to Slides & Resources



Who am I?

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Williams**



- International Speaker & Thought Leader in Sustainability, Cloud, and DevOps
- Sustainable IT Manifesto Foundation Founder & CEO
- Green Computing Foundation Advisory Board Member
- Making Software Greener Founder & CEO
- Renaissance Person in Training

AI is Transforming Business -- But at What Cost?

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Introduction

- The AI Dilemma – A Crossroads for Business and Society

The Current State of AI Adoption in Business

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AI adoption is skyrocketing among businesses of all sizes.

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- 86% of executives say AI is mainstream in their companies
(source: McKinsey).
- AI is being used in retail, healthcare, finance, manufacturing, and professional services—not just tech.

Reactive AI implementation

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- They adopt AI solutions without assessing sustainability and ethical impact.
- AI decision-making is often opaque, making it hard to understand biases.
- Data-hungry AI models consume enormous amounts of energy, contributing to environmental impact.

The Elephant in the Corner:

**A missing critical factor
is *long-term responsibility*.**

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Most businesses see AI as a tool for growth and efficiency—but they're missing a critical factor: *long-term responsibility*.

What Could Be:

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AI as a Force for Sustainable and Ethical Growth

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- AI doesn't have to be wasteful or biased—it can be designed and used responsibly.
- Sustainable AI strategies can help businesses:
 - Reduce costs by using energy-efficient models.
 - Build trust with customers through transparency and fairness.
 - Enhance jobs instead of replacing them, leading to a stronger workforce.
 - With the right mindset, businesses can align AI adoption with sustainability goals instead of sacrificing them.



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We are at a crossroads.

- Businesses can continue adopting AI without oversight, risking harm to their reputation, workforce, and environment.
- OR
- They can choose to implement AI with a conscience—maximizing benefits while reducing harm.

The AI Genie is out of the bottle. There isn't really any going back.

But how we use it determines our long term fate.

AI's Hidden Environmental Footprint



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Most Businesses *overlook* or are *unaware*

AI Runs on Data

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- Data requires:
- Energy
- Water
- Infrastructure

Environmental Issues

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The Energy Problem

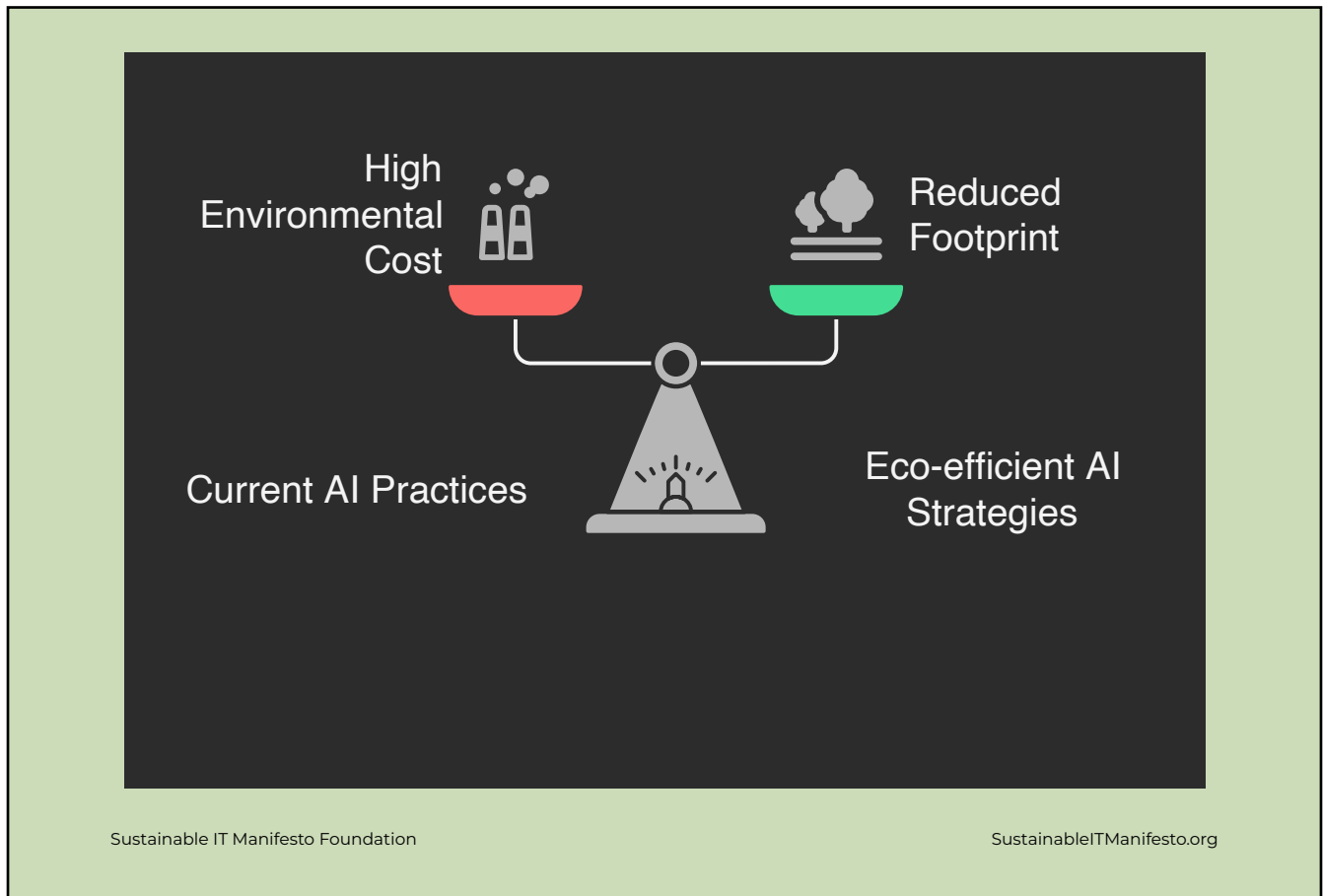
- AI training and inference require enormous computational power, often relying on power-hungry GPUs and cloud servers.
- A single large AI model (like GPT-4) can emit as much CO₂ as five cars over their entire lifetime (MIT Technology Review).
- Startups and SMBs often rely on cloud AI services—but not all cloud providers use clean energy.

Water & Resource Consumption

- Data centers consume massive amounts of water for cooling, straining local water supplies.
- Electronic waste (e-waste) from AI hardware upgrades creates another sustainability challenge.

AI Efficiency vs. Waste

- Not all AI models are optimized for efficiency—many businesses use overpowered models when a lightweight solution would suffice.
- Example: An AI-powered chatbot that runs 24/7 on highperformance servers instead of using serverless or low-energy computing.



The Reality for Businesses Today

What Is: Most businesses don't factor in AI's environmental cost when choosing AI solutions.

What Could Be: Businesses can adopt eco-efficient AI strategies to reduce their energy and resource footprint while still benefiting from AI.

Social & Ethical Risks

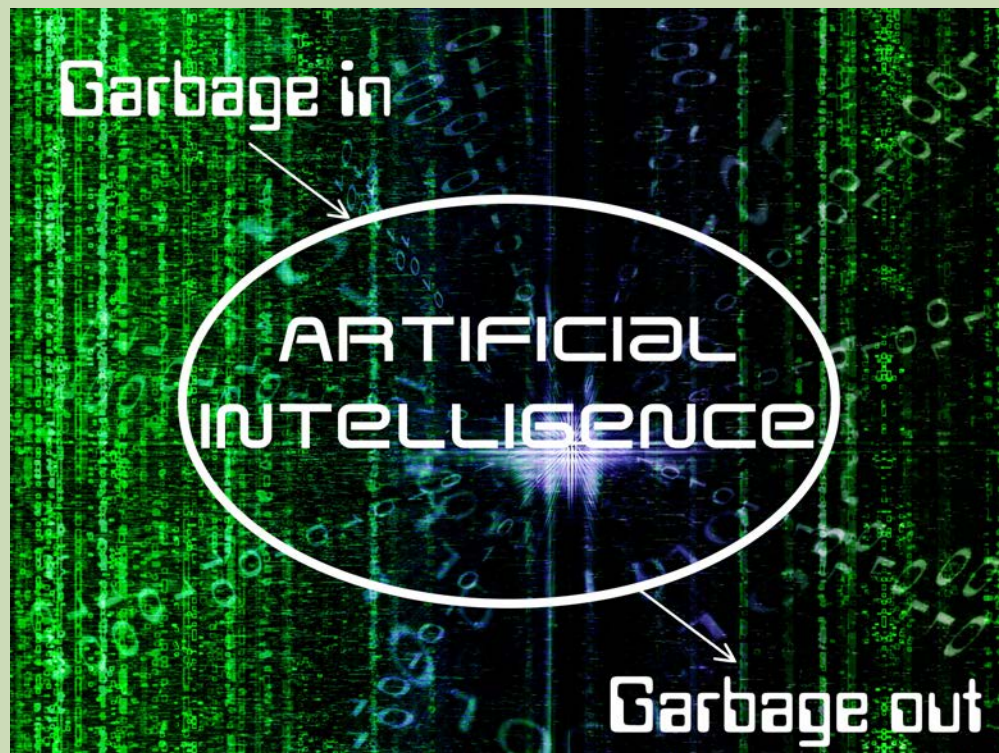
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Bias & Fairness Issues

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AI learns from historical data

- Hiring algorithms may reinforce biases against women and minorities.
- Credit scoring AI may disadvantage marginalized communities.
- Healthcare AI may misdiagnose patients from underrepresented demographics.

Example: Amazon scrapped an AI hiring tool when it was found

to downgrade resumes from women based on past hiring biases.



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Why This Matters for Startups & SMBs

- Small businesses don't have the resources to audit AI for bias— but they're just as vulnerable to legal and reputational risks.
- If customers perceive AI decisions as unfair or biased, they lose trust in the brand.

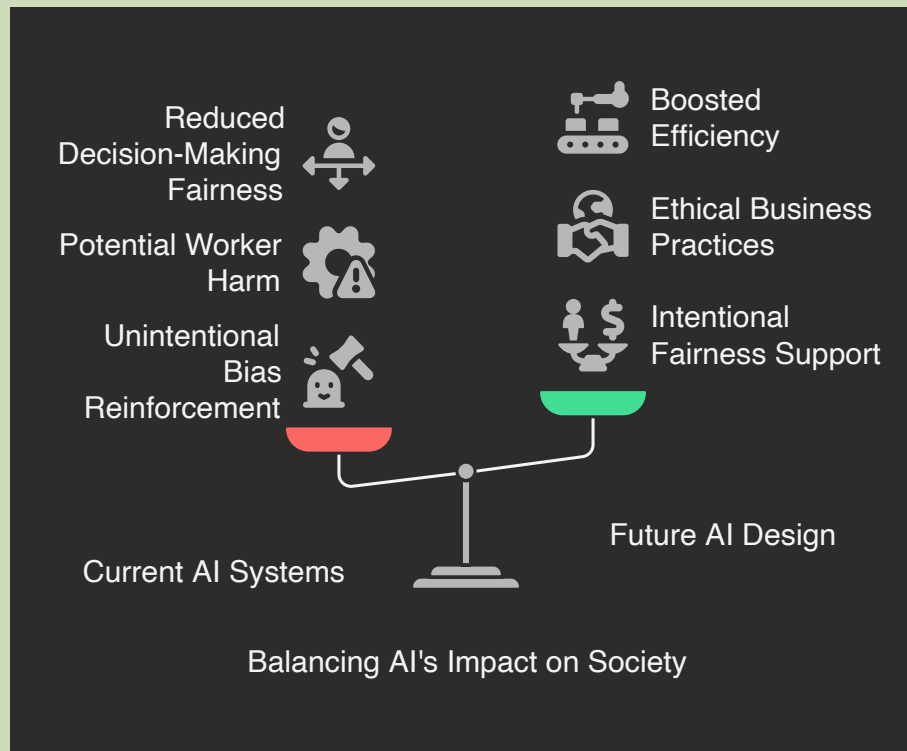
Job Displacement vs. Job Augmentation

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- AI automates repetitive tasks, but if misused, it can also eliminate jobs entirely.
- Startups often see AI as a way to cut costs, but they risk losing valuable human expertise.
- The Alternative? AI should augment jobs—automating low-value work while empowering employees to focus on creative, strategic, and interpersonal roles.

Example: A medical transcription startup implemented AI to assist human professionals rather than replace them—improving accuracy without eliminating jobs.



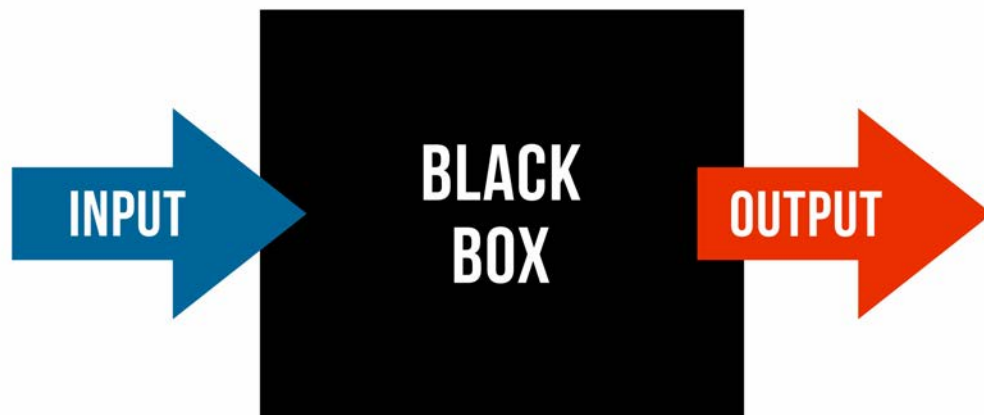
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The Reality for Businesses Today

What Is: AI systems can unintentionally reinforce bias, harm workers, and reduce fairness in decision-making.

What Could Be: AI can be designed for fairness, supporting ethical business practices while still boosting efficiency.



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Lack of Transparency & Control: The “Black Box” Problem

- AI as a “Black Box”
- AI models process massive amounts of data, but the logic behind their decisions isn’t always clear.
- Without transparency, businesses struggle to:
 - Explain AI decisions to customers, employees, and regulators.
 - Identify errors or unintended consequences.

AI Dependence Without Understanding

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- Many businesses adopt AI tools without deep technical knowledge—relying on off-the-shelf AI services without knowing how they work.
- If something goes wrong, they have little ability to fix or adjust the system.

Example: A retail company used AI to optimize pricing but

couldn't explain why prices fluctuated—
leading to customer

complaints and loss of trust.

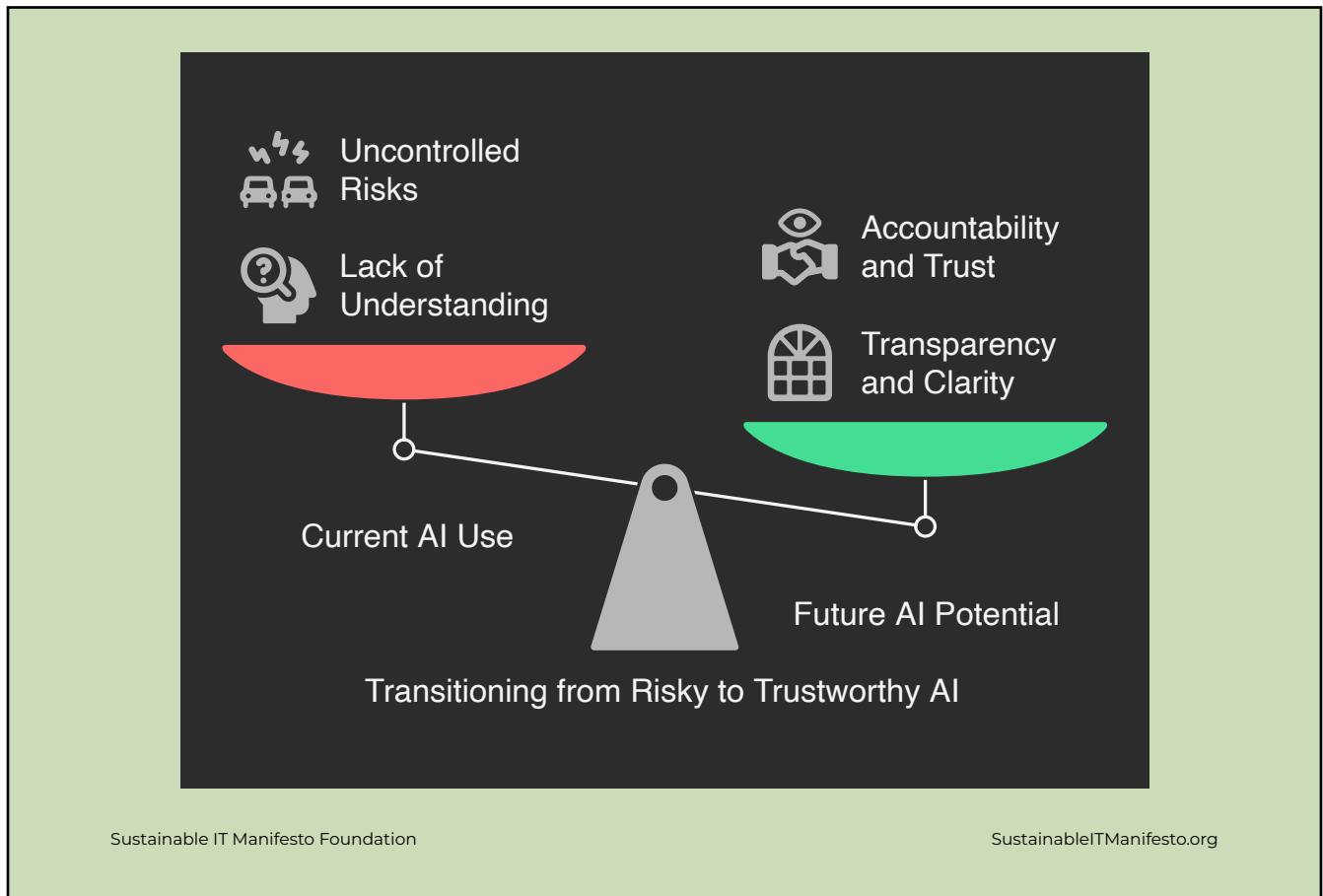


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The Need for AI Explainability & Control

- Businesses should demand transparency from AI vendors.
- AI decisions should be traceable and explainable—especially in sensitive areas like finance, healthcare, and hiring.
- Human oversight is essential—AI should never operate in isolation.



The Reality for Businesses Today

What Is: Many startups and small businesses use AI tools they don't fully understand, creating risks they can't control.

- What Could Be: AI can be transparent and explainable, helping businesses stay accountable, compliant, and trustworthy.

**What if
businesses
could use AI
in a way that
benefits
both their
bottom line
and society?**



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Reimagining AI for a Sustainable Future
Eco-Friendly AI Strategies: Reducing the
Environmental Impact

Choose Energy-Efficient AI Models

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Not all AI models are created equal. Some are bloated and overpowered for simple tasks.

- Solution: Use smaller, optimized models whenever possible:
- Instead of training a large AI model from scratch, use pre-trained lightweight models that require less computation.
- Example: Instead of using GPT-4 for basic chatbots, a startup can deploy a smaller open-source model like LLaMA or DistilBERT, which requires far less energy.

Sustainable Cloud AI Services

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Many startups and small businesses rely on cloud AI services,

but not all cloud providers are sustainable.

- Solution: Choose cloud providers that prioritize renewable energy.

Google Cloud, AWS, and Microsoft Azure have green energy commitments, but businesses should verify data center sustainability reports.

- Optimize server usage—run AI models on-demand instead of always-on processing.

Reduce Unnecessary AI Processing

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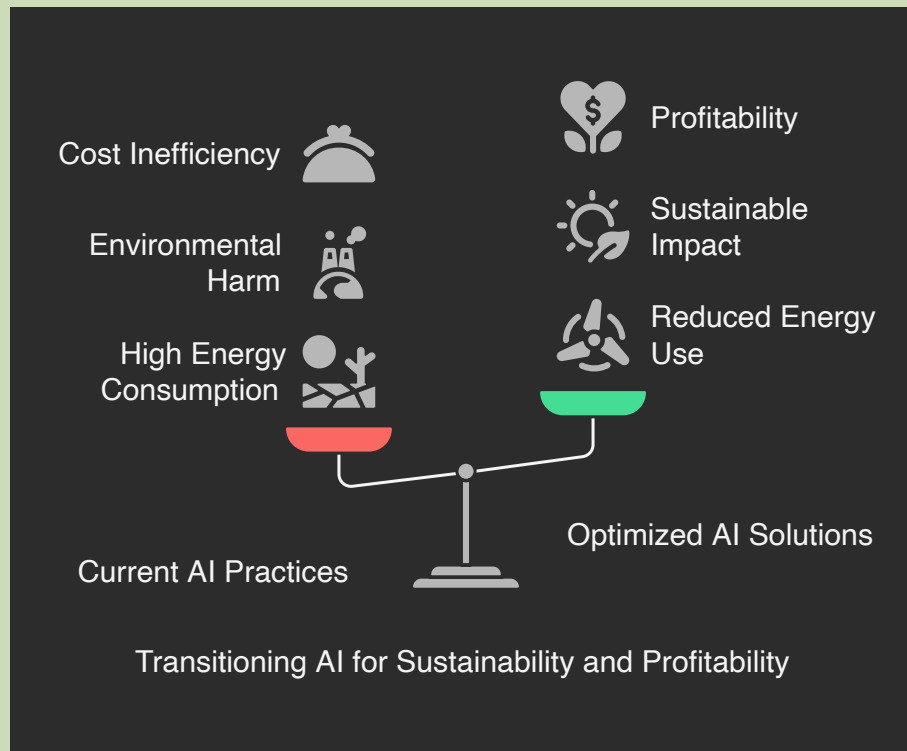
Many businesses overuse AI for tasks that don't need it.

Solution:

Batch processing instead of real-time AI: If a business only needs AI predictions once per day, running a model 24/7 is wasteful.

Use edge computing: Run AI on local devices instead of always sending data to the cloud (reduces energy use and speeds up processing).

Regularly retrain AI models to remove unnecessary complexity and improve efficiency.



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The Shift in Thinking

What Is: AI is often energy-hungry, inefficient, and blindly adopted.

What Could Be: AI can be optimized to reduce its carbon footprint, making it both profitable and sustainable.

Ethical AI Implementation: Fair, Responsible, and Human-Centered

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Ethical AI isn't just a nice-to-have—it's becoming a business

imperative. Startups and small businesses that prioritize fairness and responsibility build trust, credibility, and long-term success.

Audit training data to ensure it reflects diverse demographics and real-world fairness.

Bias detection tools (e.g., IBM AI Fairness 360, Google's What-If Tool) help businesses identify and mitigate bias.

Follow AI ethics guidelines: The EU and U.S. are developing AI regulations—getting ahead now helps businesses prepare.



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Human-AI Collaboration: Augment Jobs, Don't Replace Them

Many businesses replace employees with AI instead of enhancing human work.

Solution:

Use AI to support employees, not replace them:

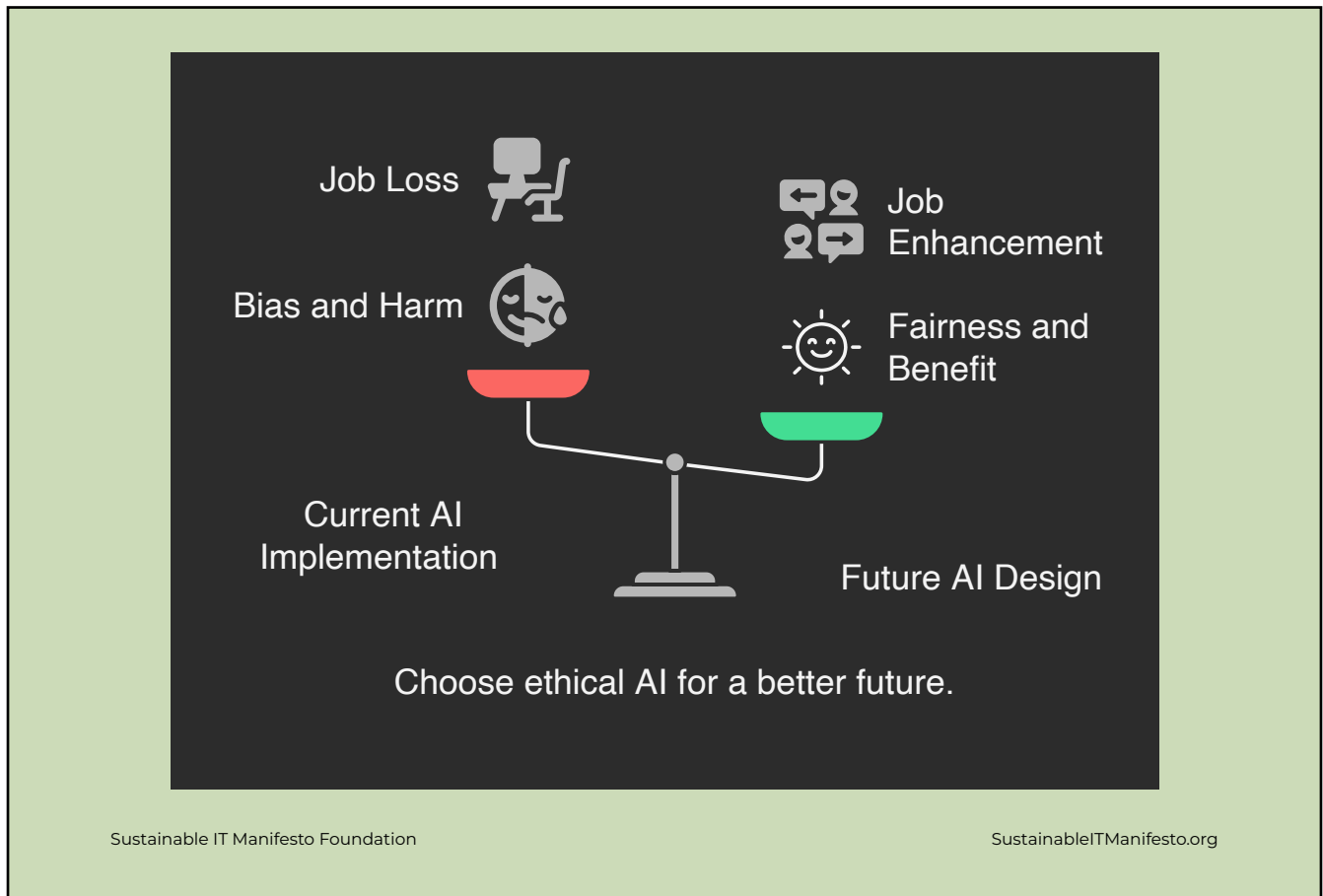
AI-powered customer service tools should assist human agents, not eliminate them.

Medical AI can help doctors analyze scans faster—but final decisions should remain human driven.

Re-skill employees for AI-assisted roles (e.g., training workers to use AI-driven tools instead of automating them out of jobs).

Case Study: The Human-AI Balance in Retail

- A small business in retail adopted AI-driven inventory management. Instead of cutting staff, they trained employees to use AI-powered forecasting to reduce overstock and waste—boosting profits while keeping jobs.



The Shift in Thinking

What Is: AI is often implemented without ethical oversight, leading to bias, harm, and job loss.

What Could Be: AI can be designed for fairness, enhance jobs, and create positive societal impact.

XAI: eXplainable AI



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A key issue with AI today is lack of transparency.

Businesses often don't understand how AI models make decisions, leading to risk, mistrust, and legal issues.

Explainable AI (XAI): Why It Matters

AI should not be a black box—especially in industries like finance, healthcare, and hiring.

Solution:

- Use AI models that provide clear explanations for their decisions.
- Enable user feedback: Customers should be able to challenge AI decisions (e.g., credit scores, job applications).

AI Governance: Who's Responsible?



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Businesses need a clear AI governance framework to prevent misuse.

Solution:

- Assign an AI ethics officer (or a small team) to oversee responsible AI use.
- Set up AI impact reviews—before deploying AI, evaluate its risks and unintended consequences.
- Follow ethical AI frameworks:
 - The EU AI Act is pushing for AI transparency.
 - The U.S. NIST AI Risk Management Framework provides guidelines for AI accountability.

Case Study: AI Transparency in Finance

- A fintech startup using AI for loan approvals faced backlash when customers were denied loans without explanation. By switching to an explainable AI model, they provided clear reasons for decisions, increasing customer trust and regulatory compliance.

**AI can assist
businesses without
fully replacing
human creativity
and oversight.**



Marketing

- Generate a product description using a local AI model vs. a cloud-based AI like ChatGPT.
- Highlight speed vs. quality vs. energy usage.

Rough Drafting & 80/20 Summarization

- Take a long article or report and generate a concise 80/20 summary.
- Compare a local LLaMA-based model vs. ChatGPT or Claude (sometimes faster, but more resource-intensive).

Code Generation:

- Show an AI writing a simple function.
- Local model vs. GitHub Copilot or cloud-based AI.
- Discuss how AI-generated code should always be reviewed for security and efficiency.



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Takeaway: "AI doesn't have to be all-or-nothing. The key is using the right AI tool for the right job—just like you wouldn't use a supercomputer for a simple Excel spreadsheet."

Every AI task doesn't need a high-powered, cloud-based model. By choosing the right tool for the job, businesses can reduce costs, improve efficiency, and lower their environmental footprint.

The Environmental & Business Impact of AI Choices

(Sustainability & Efficiency Contrast)

- Now that the audience has seen AI in action, contrast the energy and resource impact of different AI approaches.

Run a local, lightweight AI model on a laptop
or Raspberry Pi.

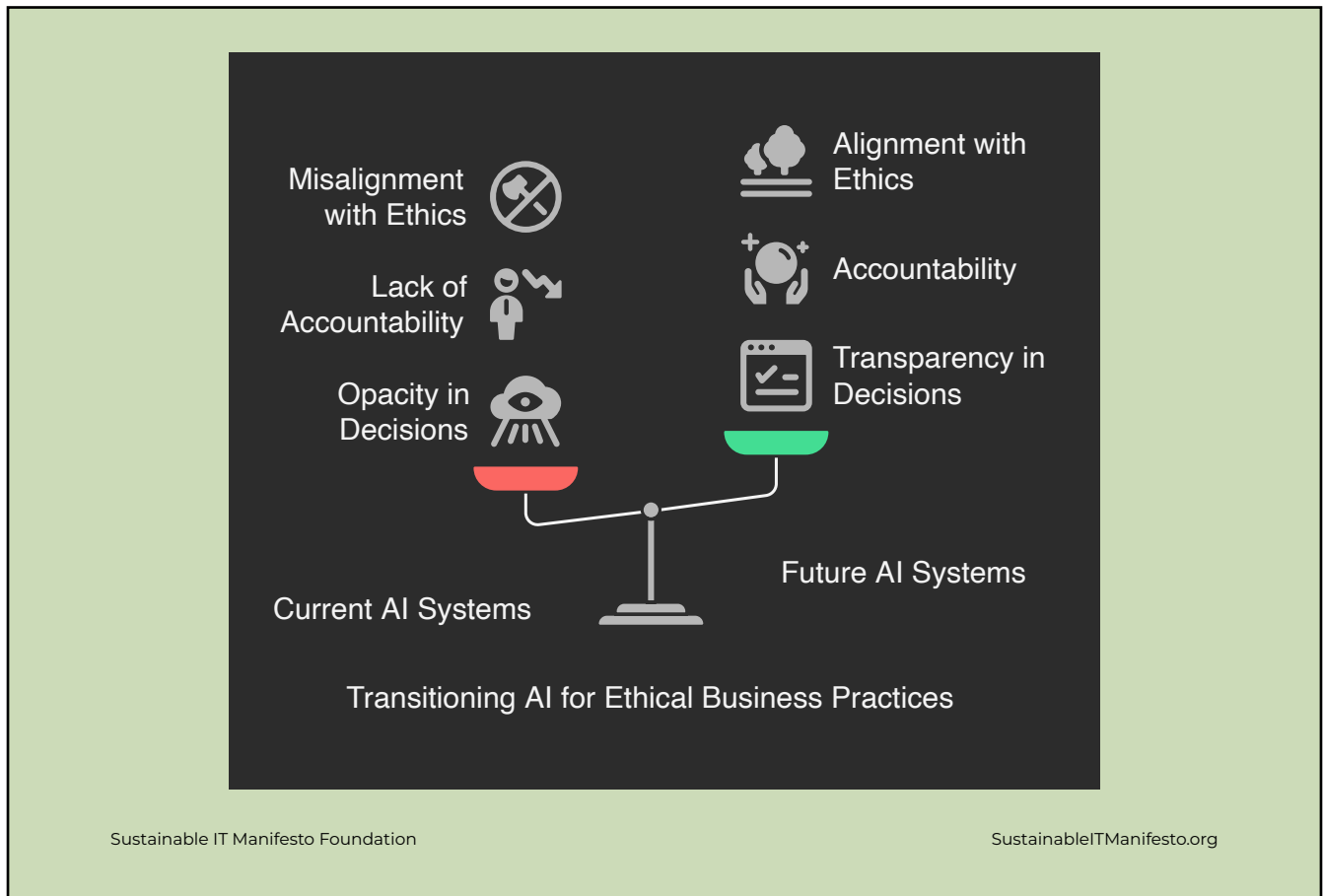
Pros: Low energy consumption, privacy, speed for simple tasks.

Cons: Limited processing power, not ideal for large-scale AI
workloads.

Compare it with a cloud-based, high-powered
model (e.g., ChatGPT-4 or Google Bard).

Pros: More powerful, better contextual understanding.

Cons: Higher energy use, less control over data privacy, requires
internet access.



The Shift in Thinking

What Is: AI decisions are often opaque and unaccountable, creating legal, ethical, and business risks.

What Could Be: AI can be transparent, accountable, and aligned with ethical business practices.

Practical Steps for Startups & Small Businesses

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to Implement Ethical & Sustainable AI

Assess Your AI Footprint: Where Are You Using AI?

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- Many businesses adopt AI without fully understanding its impact—both positive and negative. The first step is awareness.

Identify Where AI is Already Being Used

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- Most businesses already use AI without realizing it.
- Marketing: AI-driven ad targeting, email automation, SEO tools.
- Customer Service: Chatbots, AI-powered help desks.
- Operations: Supply chain automation, demand forecasting.
- HR & Hiring: AI-based resume screening, employee sentiment analysis.
- Finance: AI-powered fraud detection, credit risk analysis.

Action Item: Conduct an AI inventory—list all the AI-powered tools your business currently uses.

Evaluate AI's Environmental & Ethical Impact

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For each AI system:

- Does it consume excessive energy? (e.g., real-time AI when batch processing would suffice)
- Does it introduce bias? (e.g., AI hiring tools trained on biased data)
- Does it prioritize transparency? (e.g., AI decision-making that can't be explained)

Example: A small accounting firm using AI-powered expense categorization can check if its provider uses renewable-powered cloud servers and whether its model explains anomalies instead of making "mystery decisions."

Action Item: Assign Green Flags (Sustainable, Ethical AI) or Red Flags (Potentially Harmful AI) to each tool.

Choose AI Tools Wisely: Selecting Responsible AI Providers

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- Once you know where AI is used in your business, the next step is choosing sustainable and ethical AI tools.

Look for AI Providers Committed to Sustainability

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- Not all AI companies operate ethically or sustainably—some prioritize profit over responsibility.

Check for:

- AI models optimized for energy efficiency (e.g., running on less powerful GPUs).
- Cloud providers with 100% renewable energy commitments.
- Public sustainability reports or AI ethics statements.

Example: A startup using AI-based image recognition should check if the AI model is trained on low-power architectures and whether the provider offsets its carbon footprint.

Action Item: Research AI providers' sustainability policies before adopting new tools.

Prioritize Open-Source, Efficient AI Models

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- Many businesses default to Big Tech AI services—but smaller, open-source AI models can be just as powerful while consuming less energy.
- Use smaller, optimized AI models (e.g., LLaMA instead of GPT-4 for chatbots).
- Self-host AI models instead of running on energy-intensive cloud platforms.

Example: A business running AI-powered translations can use smaller, efficient models instead of always relying on cloud-based APIs.

Action Item: Choose the smallest, most efficient AI model that meets your business needs.

Implement AI Governance: Ethical Guardrails for AI Usage

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- Without proper governance, AI can lead to biased decisions, unethical data usage, and regulatory risks. Startups and SMBs don't need huge compliance teams—but they do need a simple AI governance framework.

Create a Basic AI Ethics Policy

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- Even a one-page document outlining responsible AI use helps businesses stay accountable and transparent.

What to Include:

- Guiding Principles: (e.g., “We prioritize AI fairness and sustainability.”)
- AI Impact Assessments: A quick checklist before adopting AI tools (e.g., “Does this tool introduce bias? How energy-intensive is it?”)
- Human Oversight Rules: Specify which AI decisions require human review.

Example: A legal firm using AI-based contract review can mandate that lawyers must review high-risk contracts flagged by AI.

Action Item: Draft a 1-page AI Ethics Policy for your company.

Establish an AI Accountability Role

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- Startups and small businesses can't afford an AI ethics team—but they can assign one AI Champion to oversee AI decisions.
- This could be the founder, CTO, or operations lead.
- Their role? Monitor AI impact, review decisions, and ensure responsible usage.

Example: A fintech startup using AI for loan approvals can appoint a team member to review loan denials flagged by AI to ensure no unintended discrimination.

Action Item: Assign one person as the company's AI Accountability Lead.

Educate & Involve Your Team: Create a Culture of AI Responsibility

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- Even with the best AI tools and policies, businesses still need human oversight. AI decisions should be interpretable, challengeable, and ethical.

Train Employees on Ethical AI Use

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- Employees interacting with AI need to understand its strengths and limitations.
- What to Cover in AI Training:
 - AI isn't always right—employees should challenge AI decisions when necessary.
 - Bias awareness—understanding how bias enters AI systems.
 - AI & job augmentation—using AI to enhance, not replace, human work.

Example: A marketing team using AI-powered content generation should verify AI-generated materials for bias, misinformation, and sustainability messaging.

Action Item: Host a 30-minute AI Awareness Training for employees.

Engage Customers in AI Transparency

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- Many customers don't know when they're interacting with AI—this erodes trust.

Be Transparent About AI Usage

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- Clearly label AI-powered services (“This response was generated by AI”).
- Offer human escalation options (“Talk to a human agent”).
- Provide explainability (e.g., “Here’s why our AI recommended this product.”).

Example: A small e-commerce business using AI for product recommendations should give users the option to see why a product was recommended (e.g., “Based on your past purchases and preferences”).

Add AI transparency disclosures in customer-facing AI systems.

The rush to automate can lead to job loss, increased bias, and decreased accountability.

AI isn't just about what it can do—it's about what we choose to do with it.

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- We don't have to accept AI as a black box that's out of our control. We can shape its impact.

Acting Now Matters

- Many businesses hesitate to implement sustainable and ethical AI because they assume it's:
 - Too expensive → Reality: AI efficiency reduces costs in the long run.
 - Too complex → Reality: Simple governance frameworks can mitigate risk.
- Only for big tech → Reality: Every business, no matter the size, can use AI responsibly.

The Risks of Inaction:

- * **Regulatory**
- * **Reputation**
- * **Competitive**

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Governments are introducing AI regulations—businesses that act now will stay ahead of compliance.

Consumers and investors care about ethical AI—businesses that ignore sustainability may lose trust.

Businesses that fail to optimize AI waste resources while competitors gain an edge through efficiency.

Businesses that implement AI responsibly will be the leaders of the future.

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The First Steps: What Can You Do Today?

Here's how you can start implementing AI with a conscience right now:

Quick Wins

- Audit your AI footprint → Identify where AI is used in your business.
- Check your AI providers → Are they using energy-efficient models and renewable energy?
- Set a simple AI governance framework → Define ethical guidelines for AI use.
- Educate your team → AI literacy reduces unintended misuse.
- Make AI decisions explainable → Ensure customers and employees can understand AI-driven decisions.

Medium-Term Goals

(Next 3-6 Months)

Optimize AI efficiency → Reduce unnecessary processing & use smaller AI models.

Bias audits & fairness checks → Regularly review AI-driven decisions for fairness.

Customer transparency initiatives → Clearly disclose AI use in business processes.

Small, consistent steps lead to meaningful change.

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"AI is powerful, but its real power lies in how we use it. By choosing AI with a conscience, we're not just building better businesses—we're building a better future.

3 Golden Rules for Sustainable AI

1. Be Intentional

2. Be Efficient

3. Be Transparent

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Adopt AI with clear goals and ethical oversight.

Reduce AI's energy footprint & optimize usage.

Make AI fair, explainable, and accountable.

What's ONE action you'll take today to implement AI responsibly in your business?

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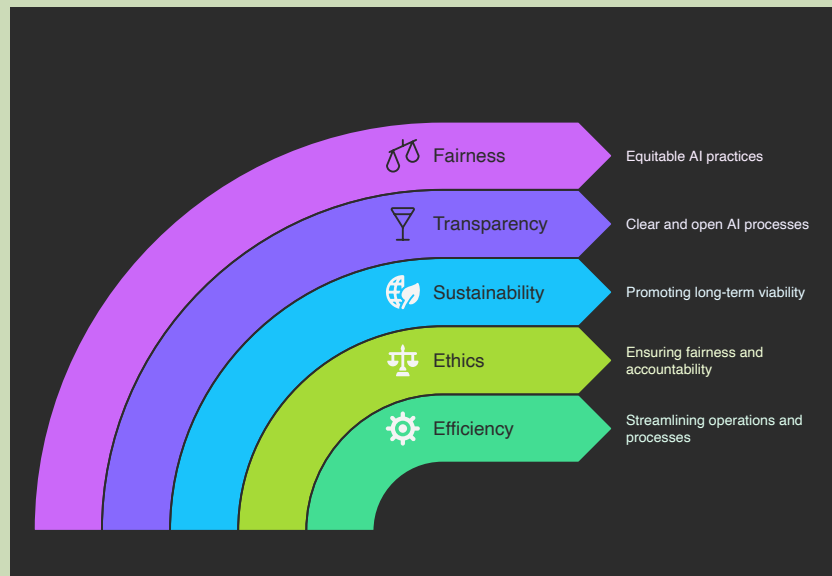
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Assess an AI tool you use.

Reduce unnecessary AI processing.

Advocate for AI transparency in your industry.

It Could Be.....



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Businesses can consciously implement AI in a way that balances efficiency, ethics, and sustainability.

AI can be transparent, fair, and accountable, helping businesses build trust and credibility. Instead of replacing people, AI can empower employees and enhance human decision-making.

"The best AI is one
that benefits
business, people,
and the planet."
-- ChatGPT

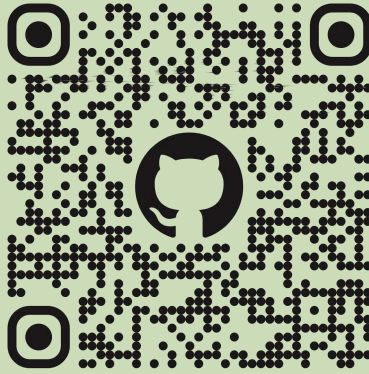




How to Change the World

- * **Aware**
- * **Conscious**
- * **Enabled**
- * **Empowered**

Link to Slides & Resources



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