The *Now* and *Next* of AI Transformation in Higher Ed

Today's Presenters

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Chief Product & Technology Officer

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VP, Integrated Paid Media

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Today's Agenda

What does AI Transformation means for me and my institution?

Where would we start?

AI in Practice - The Evolution of Search in the World of AI

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What does AI Transformation *mean* for me and my institution?

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Will AI eventually *replace* us?

PODCASTS / THE GRAY AREA
Is ChatGPT killing higher education?
AI is creating a cheating utopia. Universities don't know how to respond.

April 08, 2024
The (AI) Counselor Is in
AI-powered college advising tools promise to free up time-strapped counselors and "democratize" admissions expertise for less-privileged high schoolers. Will they?

The 'death of creativity'? AI job fears stalk advertising industry

WPP and others roll out AI-generated campaigns as Facebook owner Meta plans to let firms create their own ads

UNI-D · Uni Dream · Aug 30, 2024 · 3 min read

Education Platform Plans to Use AI to Replace Human College Counselors

AI in Higher Ed: The Future of Enrollment Management

Why Higher Education Leaders Can No Longer Afford to Wait on AI Adoption

"AI is not going to replace humans,
but *humans with AI are going to replace
humans without AI.*"

Karim Lakhani

Forty years ago, people had to learn how to use computers
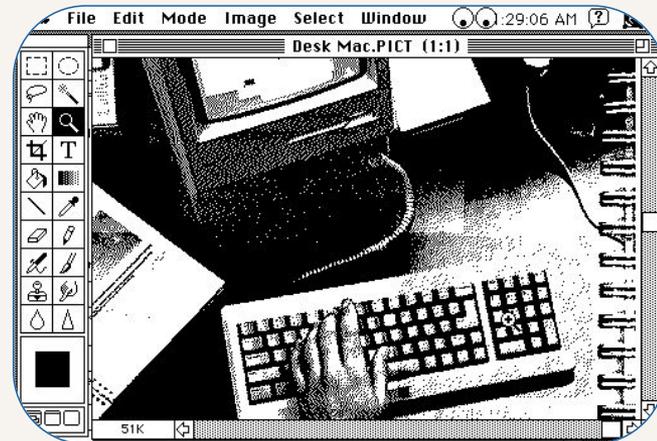
Most who didn't became irrelevant.

The man who designed Swiss money was too established (and lazy) to learn complex design software, so he stuck to PowerPoint. When you reach that level of prestige, the medium doesn't matter. Until then, however, you had better learn the new tools.

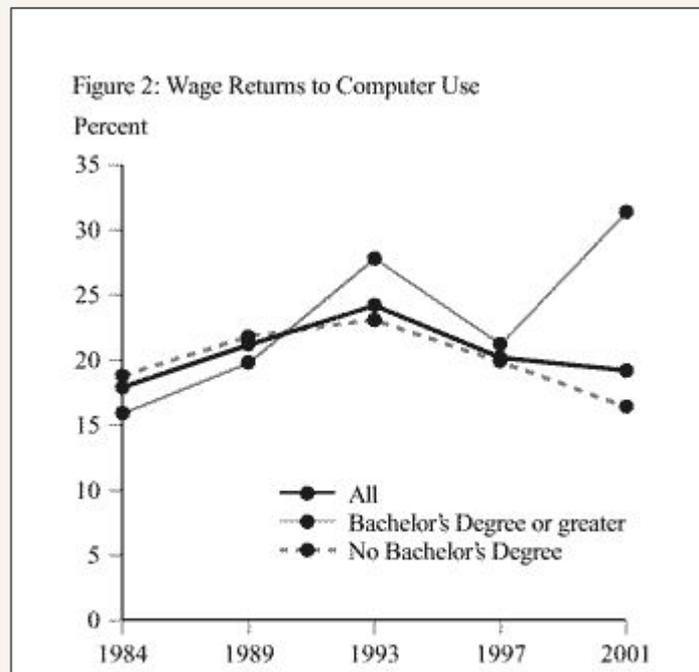Office of a designer who created IBM logo

Early Adobe Photoshop Interface

Jörg Zintzmeyer

Those who learned *new* technology did pretty well...
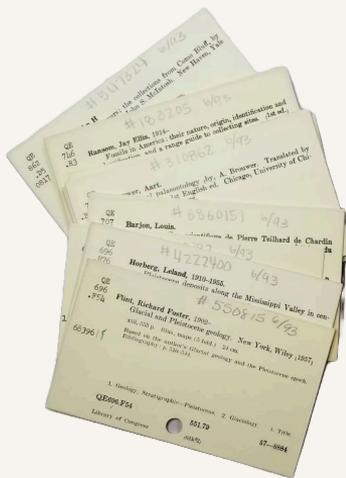

Figure 2: Wage Returns to Computer Use

Federal Reserve Bank of San Francisco

What Works in AI

Right Use Cases

Right Data

Right Delivery

Right Use Cases

What is the hardest thing to do for Human vs Classic Software vs AI?

+
Summarizing massive documents

+
Write 10,000 personalized versions of the same email

+
Explaining mathematical theories

+
Multiply 487 × 739

+
Count number of letters in the word

+
Counting the number of fingers on a hand in an image

+
Adapting text to different audiences or styles

+
Knowing that "I'm fine" actually means "I'm upset"

Right Data - the more the merrier?

The "Garbage In, Garbage Out" Problem
Imagine you're training a self-driving car.

Quantity: You give it 1 million hours of footage of people driving badly, crashing, and ignoring stop signs.

Result: The car becomes a terrible driver because it thinks "bad driving" is the standard. In AI, if you feed a model billions of pages of internet arguments and fake news, the AI doesn't get "smarter"—it just becomes a more confident liar.

Model Collapse: The Photocopy Effect
If you take a photo, print it, scan that print, and print it again 10 times, the final version will be a blurry mess.

When AI learns from AI, it loses the **"long tail"**—the rare, creative, and unique human ideas—and starts producing only "average" or repetitive results. This is called **Model Collapse**.

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Right Data - the more the merrier?

The "Lost in the Middle" Effect

When you paste 50 pages of text into a prompt and ask a question about a detail on page 25, the AI often misses it. Researchers call this the **U-Shaped Curve**: the AI is great at the beginning and the end of your data, but it gets "bored" or "confused" in the middle.

The "Needle in a Haystack" Problem

When you give an LLM too much data (the haystack), the actual answer (the needle) gets drowned out by **noise**. Even if the answer is technically there, the AI might get "distracted" by a similar-looking sentence 10 pages earlier and give you the wrong answer confidently.

"Context Clash" (The Brain Freeze)

If you give an AI a huge document where Page 5 says "The sky is blue" and Page 80 says "The sky is green," the AI doesn't always know which one is the "update." Instead of reasoning through it, the AI's "brain" might freeze or just pick whichever one it saw last. This is called **Context Clash**, and it leads to the AI making things up (hallucinating) just to try and make sense of the mess.

Right
Delivery

Change is and was
always hard

Mike Scott Memo • No More Typewriters • 01 February 1980

Inter Office Memo

YOU ALL BETTER READ THIS

Date: February 1, 1980

To: Purchasing and Everyone

From: Mike Scott

Subject: Typewriters

Effective Immediately!!   No more typewriters are to be purchased,
                          leased etc., etc.

Apple is an innovative company. We must believe and lead in all
areas. If word processing is so neat, then let's all use it!

Goal: By 1-1-81 No typewriters at Apple. (Ken, get rid of the
        DEC word processor ASAP)

Brownie Points: Typewriter users giving up their machines in
        favor of Apple II-Apple Writer Systems will get first
        priorty on new Apple high performance systems. Those
        who can justify direct typing capabilities and will
        turn in their typewriter will get first Qume with
        Keyboard/Apple installations.

We believe the typewriter is obsolete. Let's prove it inside
before we try and   convince our customers.

Right *Delivery*

+

Addressing a pain
relevant
to the user

+

Delivering
solution to where
users are

+

Rewarding users for the
inconvenience & risk

We believe the true power lies in equipping humans with AI—enabling individuals and institutions to scale their impact in ways that would otherwise be impossible. This happens when AI is applied to problems it is well suited to solve, right data is used, and when those problems are significant enough to matter.
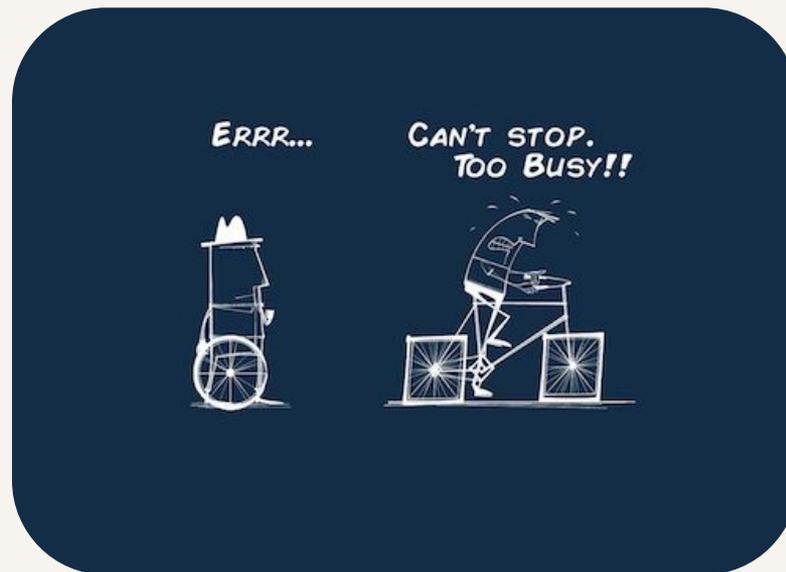
AI is a force *multiplier* for human potential

Where would we *start?*

The *Reality* is...

AI usage is relatively uneven across the breadth of services in colleges and universities

+

+

+

Historic disruption

AI represents one of the most transformative forces to reshape higher education in decades.

Gap between awareness and action

While colleges and universities are broadly aware of AI, they lack readiness, policies, training, and infrastructure for consistent adoption.

Strategic Myopia

Higher education is mostly focused on AI's implications for teaching and learning, but have a limited understanding of the breadth of opportunities and impact across its operations.

The AI-Empowered Cabinet

VP Student Affairs/Success
➔ Intelligent Advising systems
➔ Early Warning System
➔ Well being monitoring
➔ Chatbots for student services
➔ 24/7 chatbots triage issues
➔ Trend aggregation.

CIO/CTO (IT & Data)
➔ Secure AI infrastructure and cloud platforms
➔ Cybersecurity via AI threat monitoring
➔ Data governance, ethics, interoperability
➔ Scalable Infrastructure

VP Enrollment/CMO
➔ AI-driven marketing & communications personalization
➔ Predictive modeling for admissions & yield
➔ Chatbots for prospect engagement
➔ AI assisted strategic communications
➔ Hyper-personalized outreach

VP Marketing/Communications
➔ AI-assisted engagement & segmentation
➔ Personalized outreach
➔ Social listening & reputation management
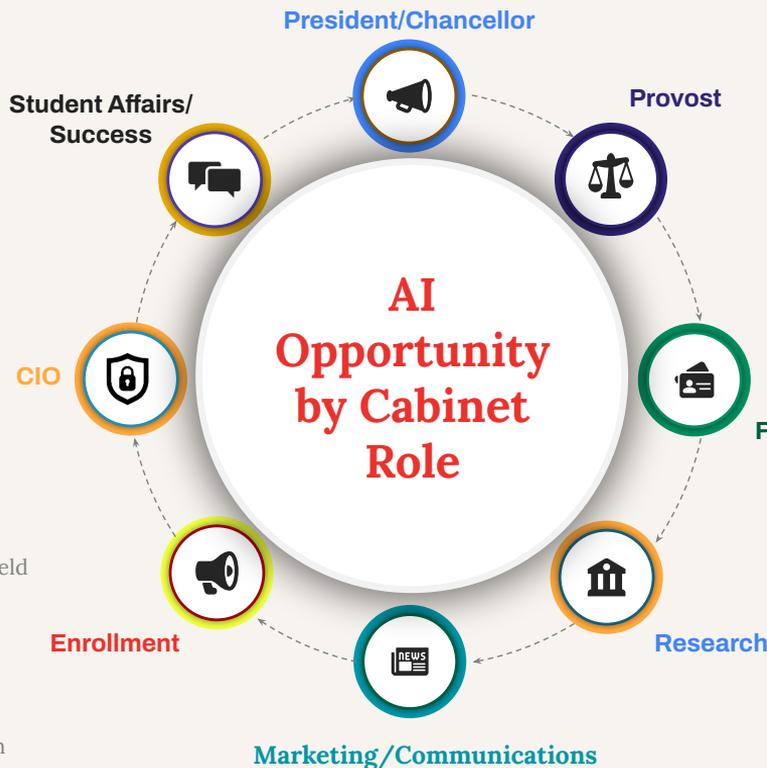
President/Chancellor
➔ AI scenario models and real-time planning for strategic foresight & scenario modeling
➔ Next level risk management & institutional resilience
➔ Automated and tailored board engagement & change governance

Provost/Chief Academic Officer
➔ Curriculum design and AI literacy integration
➔ Faculty support (grading, research tools)
➔ Academic policy and integrity standards
➔ Transcript processing and mapping
➔ LLM usage and plagiarism detection

CFO/COO (Finance & Operations)
➔ Process automation (payroll, invoicing, scheduling)
➔ Financial modeling and forecasting
➔ Smart campus operations (energy, maintenance) and space planning

VP Research
➔ AI enhanced research tools
➔ Ethical oversights and compliance
➔ AI driven Research
➔ Data reporting and institutional research

AI Opportunity by Cabinet Role

- President/Chancellor
- Provost
- Finance
- Research
- Marketing/Communications
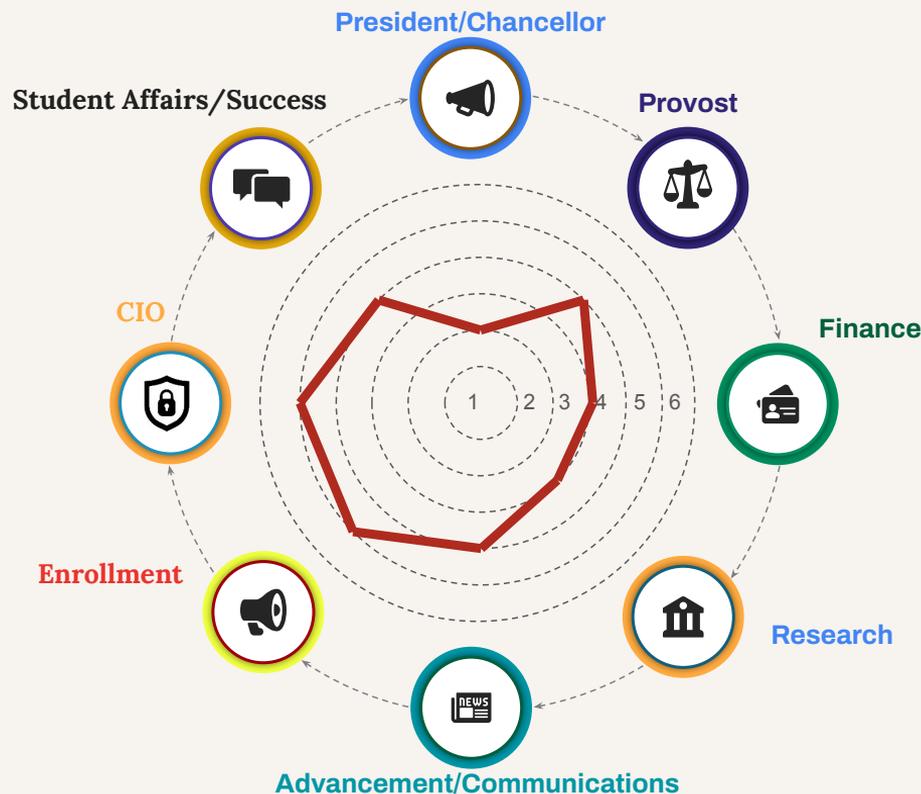- Enrollment
- CIO
- Student Affairs/Success

Practical map of AI Use cases in Higher Ed

Introducing
ai-map.carnegiehighered.com:

A research-based map of practical, real-world AI use cases across higher education presidential cabinets.
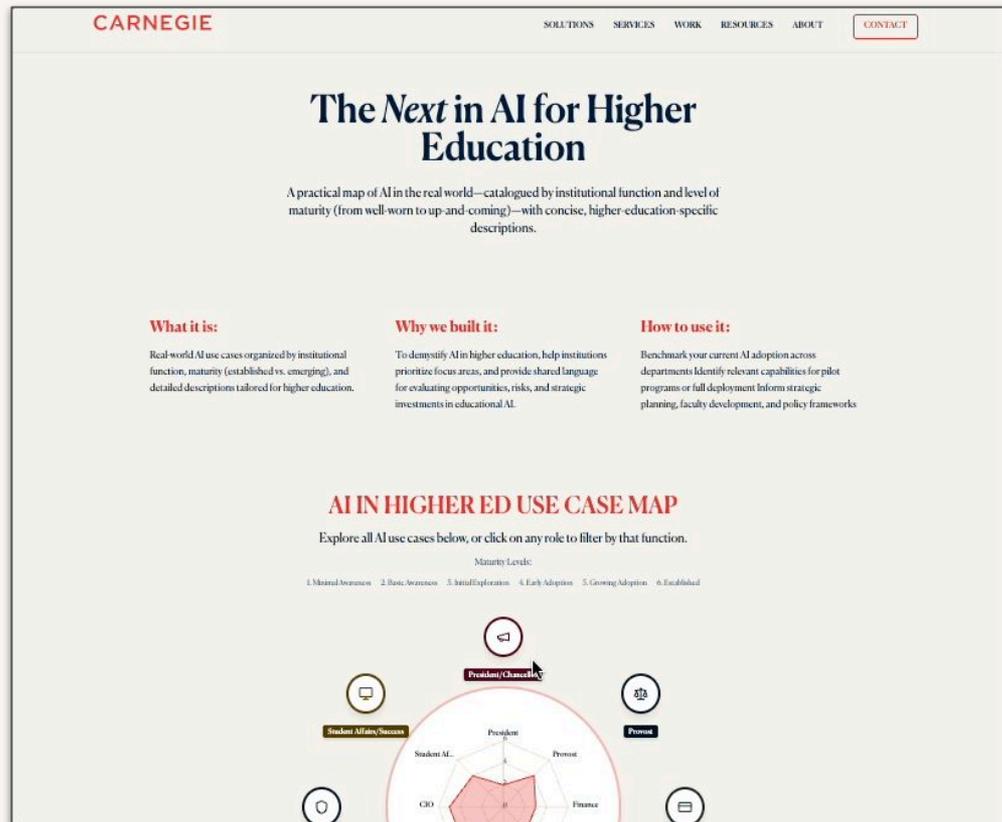
AI Adoption Across the Cabinet is uneven

1. **Minimal Awareness** – just starting to hear about it, very limited understanding.
2. **Basic Awareness** – knows what it is, may see relevance but no action yet.
3. **Initial Exploration** – small trials, pilots, or individual experiments.
4. **Early Adoption** – some consistent use in pockets, but still limited in scope.
5. **Growing Adoption** – broader uptake across teams, processes becoming more standardized.
6. **Established / Leading** – fully integrated into regular practice; optimized and innovating.

Sources: EDUCAUSE AI Landscape Study 2024 & 2025 ; Inside Higher Ed/Hanover Research CTO Survey 2025 ; Inside Higher Ed Survey of College Presidents 2024 ; Microsoft AI in Education Report 2025 ; UNESCO AI in Higher Education Survey 2025 ; WCET Institutional Practices & Policies Survey 2025 ; Center for Digital Education & Internet2 AI Report 2024 ; Stanford HAI AI Index Report 2025 ; L.E.K. Consulting Office of the CFO Survey 2025 ; Digital Education Council Global AI Student Survey 2024.

AI Readiness Assessment:
Do you have basics to get successful AI implementation?

A diagnostic built for HigherEd that measures maturity across eight critical dimensions:

Strategy & Leadership

External Partnerships & Ecosystem

Student Success & Engagement

Institutional Research & Analytics
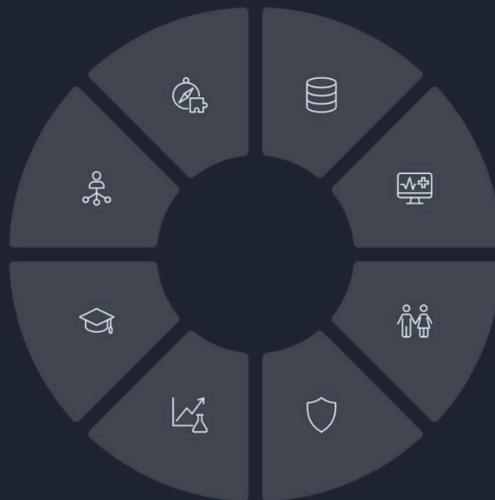
Data & Infrastructure

Technology & Tools

Talent, Skills & Culture

Responsible AI / Governance

AI Readiness Assessment: HigherEd Benchmarking
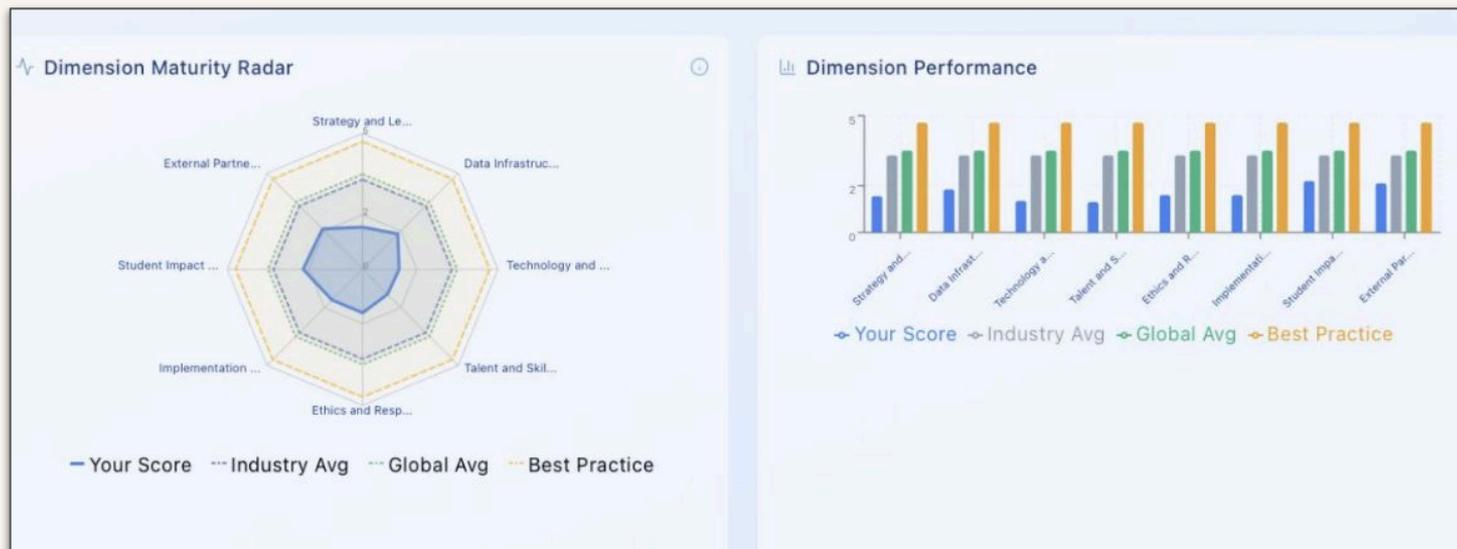
Benchmark Sources:
- Carnegie's network → peer benchmarks
- EDUCAUSE-inspired reference points
- Sector-specific cohorts
- Institution Types

- D2C institutions
- R1/R2 research universities
- Community colleges
- Adult/online-focused institutions

AI in Practice—
The Evolution of Search
in the World of AI

AI Is Rapidly Changing the Search Landscape

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For 20 years, information discovery has been a search bar, a query, a results page, and a click.

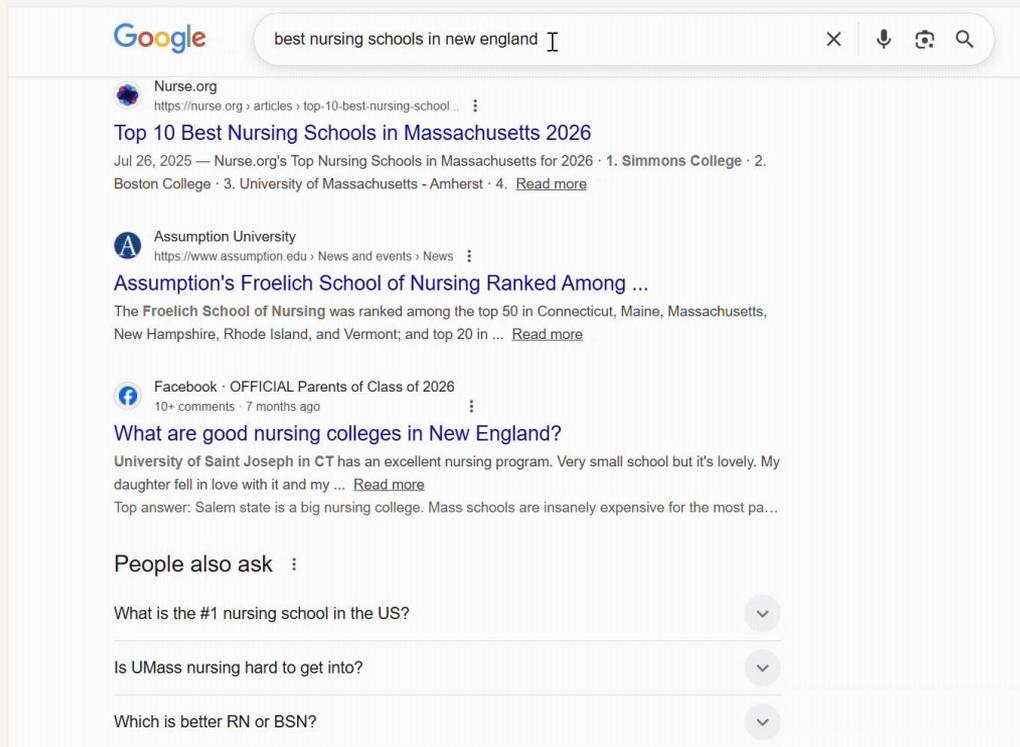*In 2022, information discovery
fundamentally changed.*

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Information about institutions is sourced from across the web, then summarized and synthesized into real-time answers.

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Students went from searches...

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To conversations...

Where should we begin?

I want to study nursing in New England at a university with a strong program, good financial aid and access to nearby hospitals. What schools should I consider?

+

Copilot

perplexity

AI Mode

Grok

Today, AI-powered conversational search experiences are everywhere.

Gemini

AI Overview
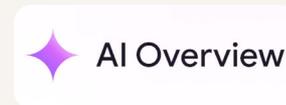
Search Is Moving From Keywords and Clicks to *Conversations*

$378.9 Billion
AI Search Engine Market Size

$230 Billion
Traditional Search Market

400

350

300

250

200

150

100

2020   2021   2022   2023   2024   2025   2026   2027   2028   2029   2030

Sources: Coherent, Fortune, Gartner Research, Grand View Research
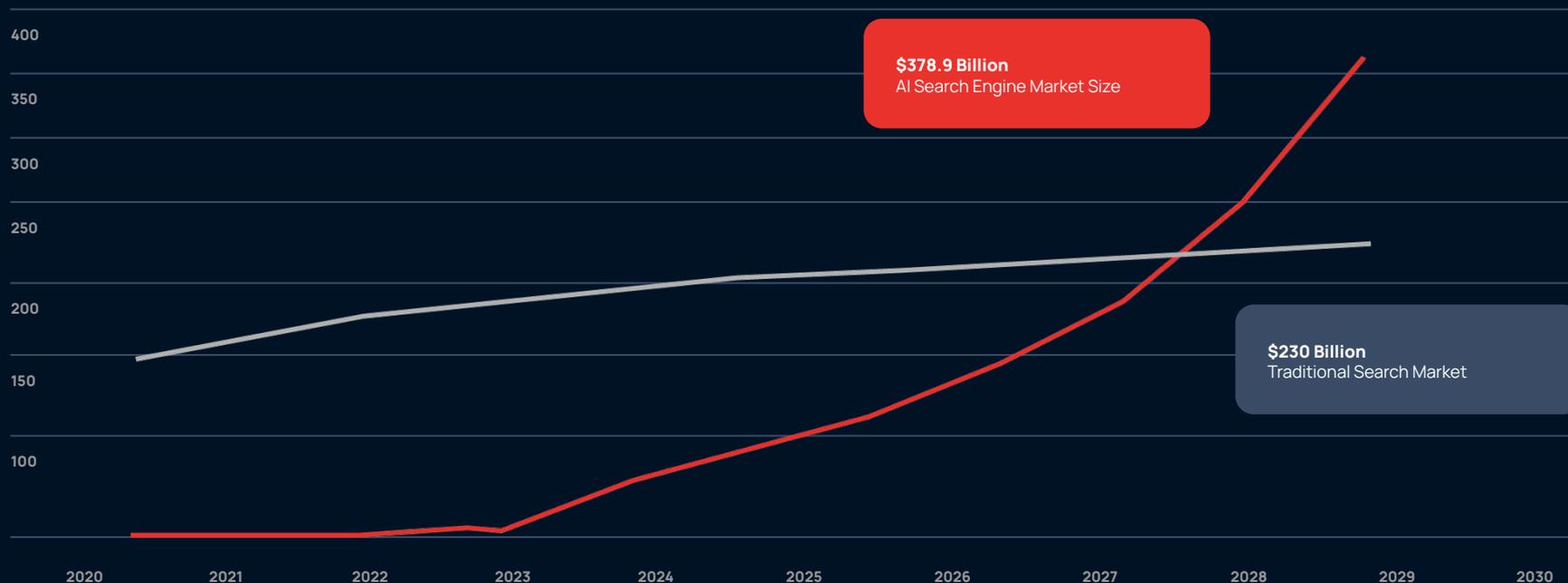
Old Behavior

New Behavior

Types specific query into the search bar

Uses natural, conversational language

Clicks through multiple websites to find answers

Relies on AI to surface the most relevant information and trusts it

Regularly visit a website to search for details

Visits the site only when seeking in-depth info or ready to take action

On your phone or laptop, go to an
AI-driven search experience such as:

ChatGPT
Perplexity
Gemini
Google (AI Overview or AI Mode)

Let's Do an
Experiment

Ask a question they might ask.

Pretend you're a *prospective student* in their college search

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Did your institution appear in the answer?

If yes, what did the AI say about your institution?

Note the
responses

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Higher Education
Is Navigating a Period of Change

65%

Of Gen Z and Gen Alpha start
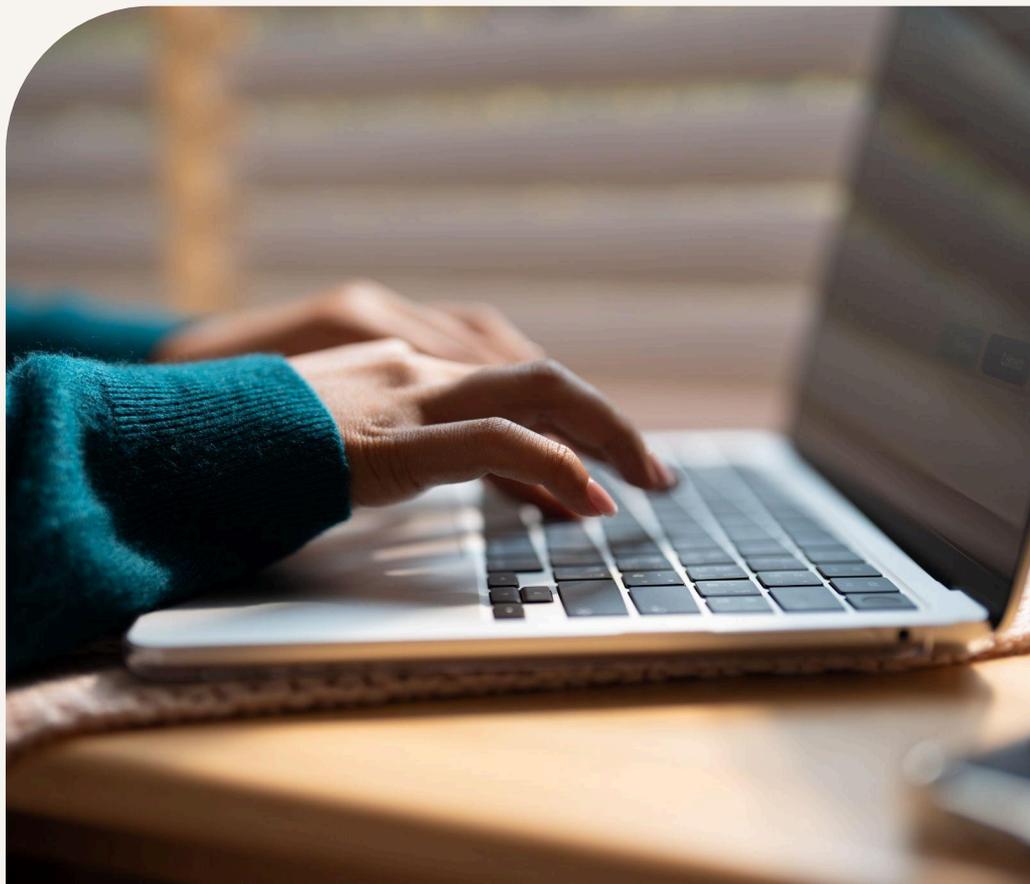their college search in LLMs[1]

20%

Of higher education content
has high AI visibility[2]

[1]Profound Student Search Analysis
[2]Profound: Institutional AI Score >30/100

In AI Search, if your content is hard to interpret, buried under marketing language, or unclear on key facts, you may be excluded from the results

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"More than half of searches in 2025 don't lead anywhere. People get answers from ChatGPT, Perplexity, Gemini, and others without clicking a single link. If you're not showing up in those responses, you're invisible to half the internet."

Neil Patel

Zero-Click
Reality

AEO: Answer Engine Optimization

There is *enormous opportunity* in AI Search

AEO is the practice of *structuring* and *optimizing* content so a brand, product, or service is accurately represented and easily surfaced in AI-generated responses across platforms like ChatGPT, Google AI Overviews & AI Mode, Perplexity, and others.

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Answer Engine Optimization
Helps Institutions

stay visible and accurate as students rely on AI-powered
tools to research, compare, and decide, by:

+

+

+

+

Increasing your
institution's visibility

Correcting gaps and
misinformation

Influencing brand
perception and
sentiment

Strengthening
competitive share
of voice

Ensures your brand is present in critical discovery moments within AI-powered search experiences.

Where should we begin?

I want to study nursing in New England at a university with a strong program, good financial aid and access to nearby hospitals. What schools should I consider?

+

Part 1:
Establish Your Baseline
with an *AEO Audit*

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Let's use an example

Imagine you're responsible for marketing an institution in Florida.

Your goal is to increase institutional awareness and drive enrollment.

Define the *prompts* and conversations you want your institution to appear in, based on your target audience, how students and families explore colleges in Florida, the strengths your institution offers, etc:

Which Florida colleges offer good value for the cost?

Which colleges in Florida are know for hands-on learning and internships?

Which colleges in Florida have a small campus feel?

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Measure *Visibility* Across Conversations

Understand how often your institution appears in AI-generated responses for the Florida college prompts you've defined.

15%

Examine How Your Institution Is *Represented*

Review where AI is sourcing information about your Florida college, whether details are accurate, and how reputation and sentiment are portrayed.

7%
Of responses cited owned-content from your website.

20%
Of the responses cited social media posts

30%
Of the responses contained outdated information

15%
Of the responses have a negative sentiment, highlighting high tuition and costs

65%
Of the responses have a positive sentiment, highlighting strong career outcomes and highly regarded programs

Evaluate Institutional *Share of Voice*

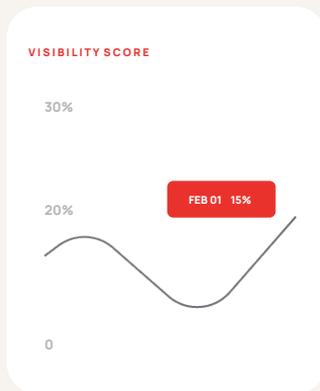Compare how frequently your institution appears in AI-generated answers relative to other Florida colleges.

30% — Comp. A
15% — You
8% — Comp. C
5% — Comp. D

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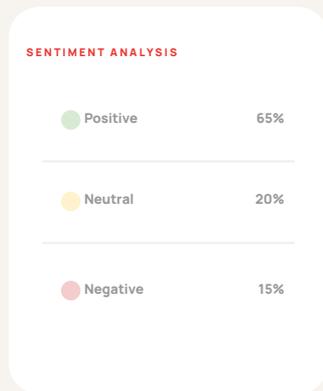
70%
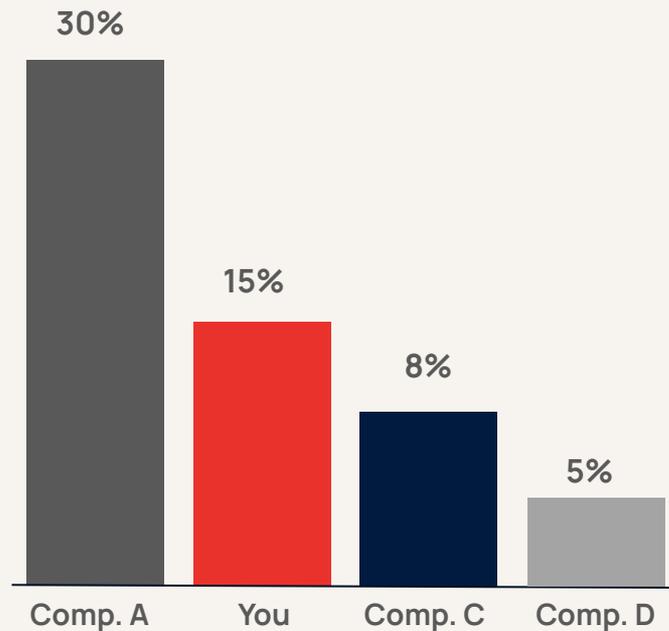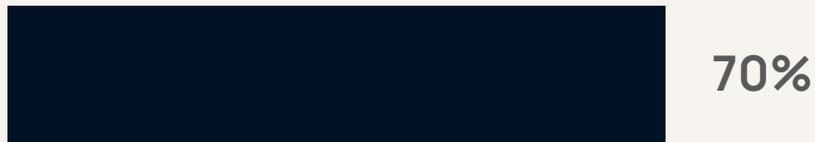
Technical Readiness

Assess *Technical Readiness* of Your Website

Determine whether your website is structured, fast, and accessible enough to support AI-driven discovery.
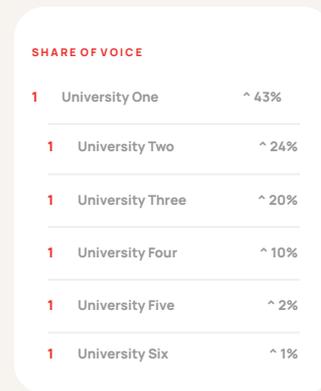
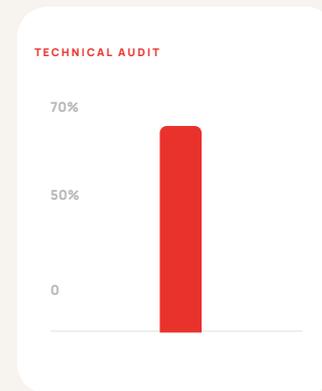# What the AEO Audit Helps You Understand

VISIBILITY SCORE

30%

FEB 01   15%

20%

0

AI Visibility Score

SENTIMENT ANALYSIS

- Positive — 65%
- Neutral — 20%
- Negative — 15%

Sentiment Analysis

CONTENT ACCURACY

ACCURATE

BSN

INACCURATE

Citation & Content Accuracy

SHARE OF VOICE

1	University One	^ 43%
1	University Two	^ 24%
1	University Three	^ 20%
1	University Four	^ 10%
1	University Five	^ 2%
1	University Six	^ 1%

Competitive Analysis & Share of Voice

TECHNICAL AUDIT

70%

50%

0

Technical Audit

Part 2:
Turn AEO Insights
into *Action*

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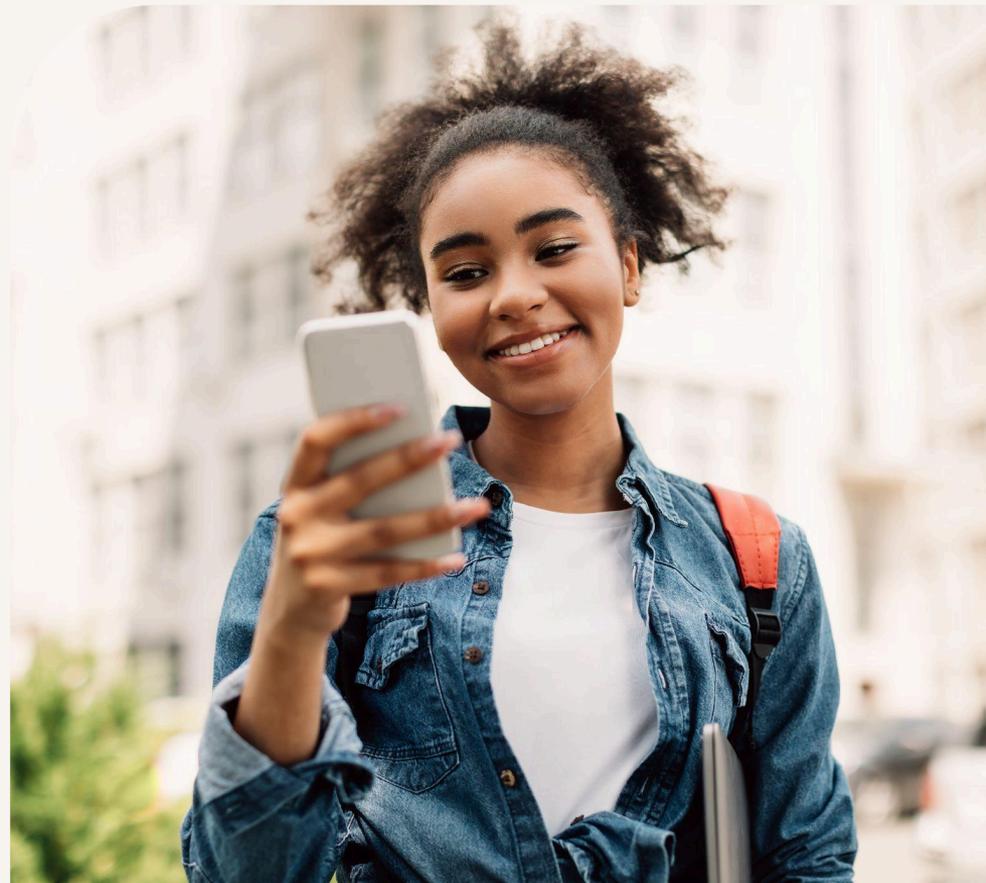# Your Website Content Should Answer Questions and Drive Conversations

AI search favors clear answers and deeper exploration.

+

Optimize What You Already Have

+

Build a Proactive, Expert-Led Content Strategy
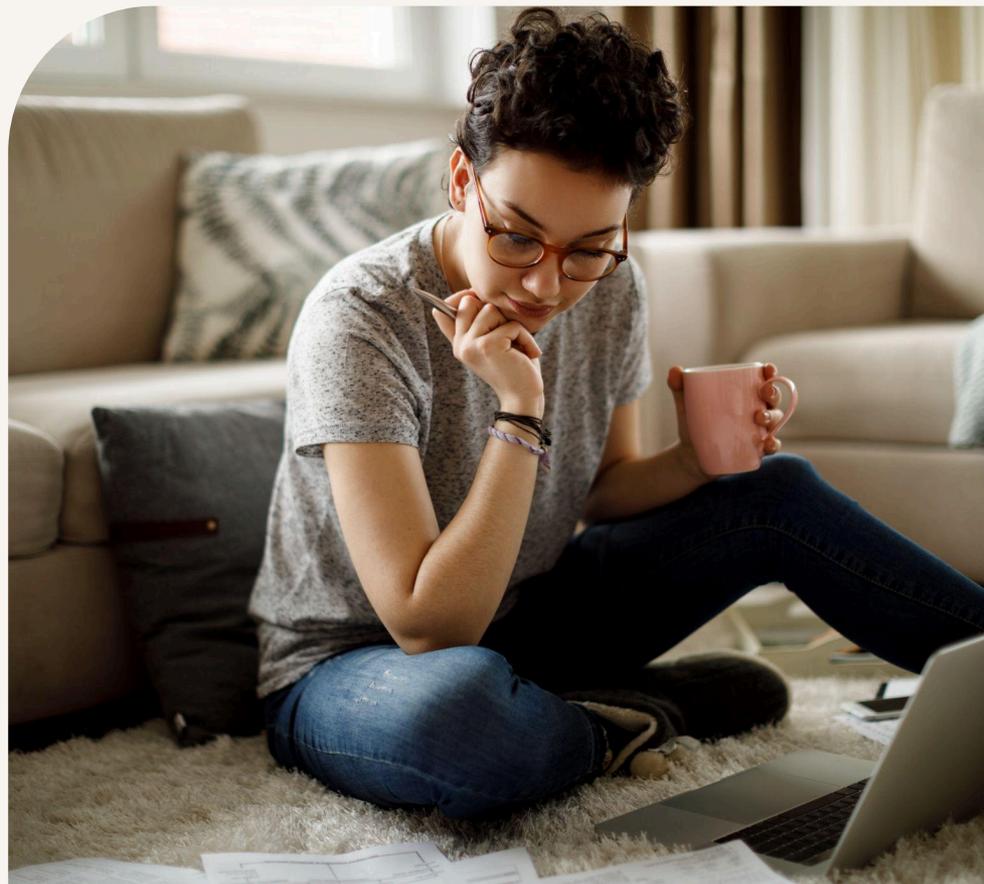
Keep Content Current, Accurate, and Relevant

Freshness and accuracy signal credibility to both users and AI systems.

\+

\+

Publish Ongoing Content

Keep Existing Content Updated

Use Media to Reinforce Authority

Visual and video signals strengthen credibility in AI-generated results.

+

Support Content with Visuals

+

Leverage Video for Expertise
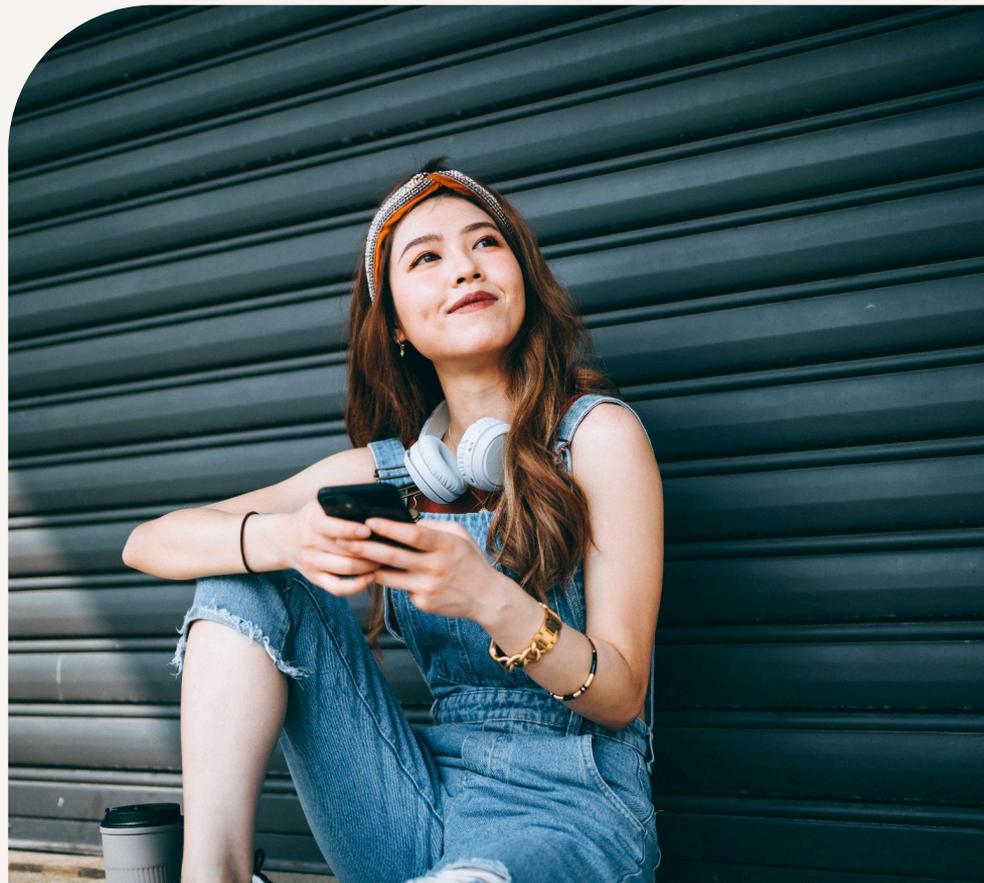
Build Trust Beyond Your Website

AI references content about you that lives outside your website.

+

+

Monitor and Correct Information

Shape External Conversations

Strengthen the Technical Foundation

Strong content only appears when AI systems can easily access and understand it.

+

+

Ensure Clear Site Structure

Prioritize Performance

AEO *in Action*

Focus on these areas to drive success in AI search.

+

Your Website Content Should Answer Questions and Drive Conversations

+

Keep Content Current, Accurate, and Relevant

+

Use Media to Reinforce Authority

+

Build Trust Beyond Your Website

+

Strengthen the Technical Foundation

Parting Thoughts

AI Is Rapidly Changing the Search Landscape and to Succeed Institutions Need to:

Show Up in Decision-Driving Moments

Be present when students ask real questions that influence consideration, confidence, and choice.

Actively Shape Your Narrative

Ensure institutional strengths, values, and programs are clearly understood by AI systems and not just inferred or assumed.

Be Represented Accurately and Completely

Provide clear, current, and credible information so AI-generated answers reflect reality, not partial or outdated signals.
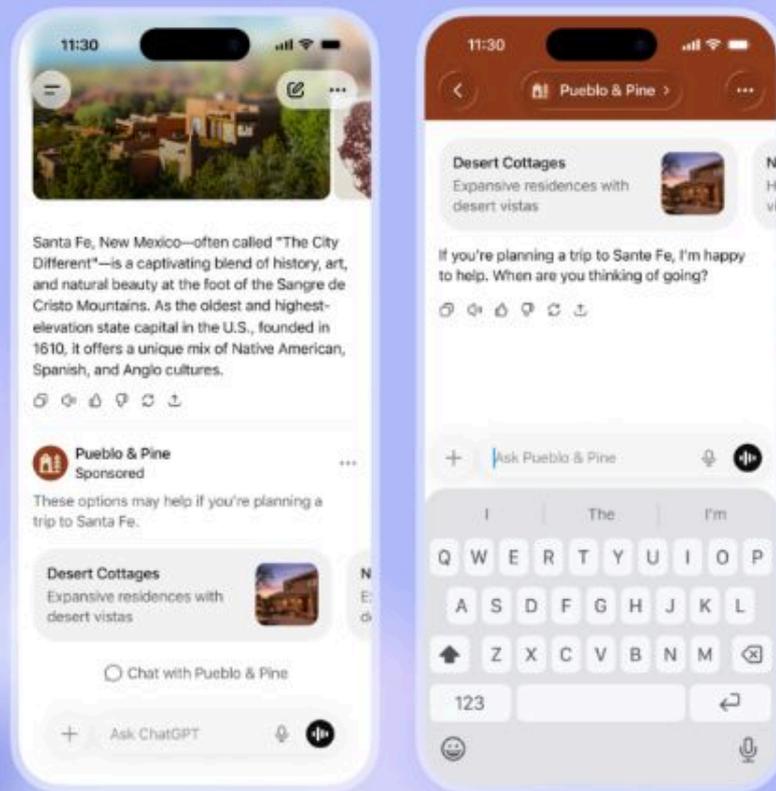
Breaking News

ChatGPT is officially testing ads, signaling two potential shifts in the future of AI search.

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An Integrated AEO and Paid Approach

+

Paid Search Evolving into Bidding on Audiences, Conversations, and Intent

Thank you.

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