

Paradigm Shift in Entrepreneurship Education

STVP, the Stanford Engineering Entrepreneurship Center

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April 26, 2024



Presentation Overview

- Introductions
- Why Are We Here?
- Implications for Entrepreneurship Center Directors
- Paradigm Shift in E-ship Education
- Ethical Dilemmas: GenAI Code of Conduct?
- Q&A

Why Are We Here?

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Lifelong Learning to Stay Relevant and Sharpen the Saw

Generative AI will be as ubiquitous as the internet and laptop



- Chefs refine their cooking methods with new ingredients and equipment
- Doctors need to learn about new medications, treatment techniques, and operating tools
- Construction workers need to learn about new building codes, materials, and structural systems

How should E-ship Center Leaders also incorporate new methods and tools?

What is Generative AI (GenAI) and what's the hoopla about?

GenAI as a new tool to advance entrepreneurship education and centers

A **generative artificial intelligence** or **generative AI / (GenAI)** is a type of **AI** system capable of generating text, images, or other media in response to **prompts**. Generative AI systems use **generative models** such as **large language models** to produce data based on the **training data set** that was used to create them.



“Artificial intelligence is the future, not only for Russia, but for all humankind. It comes with colossal opportunities, but also threats that are difficult to predict. Whoever becomes the leader in this sphere will become the ruler of the world”

– Vladimir Putin

Top 5 Technologies that will Change the World

– Shikhar Ghosh

Professor of Management Practice
in the Entrepreneurial Management
Unit



**Harvard
Business
School**

- Ubiquitous networks:
- **AI and Deep Learning Algorithms:**

In 2020. Sundar Pichai, CEO of Google, predicted that AI would be **as consequential to human development as fire and the wheel**. Why?

These technologies predict behavior and increasingly create behavior. They learn and improve relentlessly. **They make better decisions than humans in an increasing number of contexts. They are unconstrained by moral boundaries.**

- Neuroscience and the Human Operating System:
- Gene Editing
- Blockchain based technologies

Have you used ChatGPT and/or other GenAI Tools?

Open Question: How have you used ChatGPT?



ChatGPT: What is it? <https://chat.openai.com/>

ChatGPT 4 ▾



How can I help you today?

Make up a story

about Sharky, a tooth-brushing shark superhero

Help me pick

an outfit that will look good on camera

Suggest some names

for my cafe-by-day, bar-by-night business

Come up with concepts

for a retro-style arcade game



Message ChatGPT...



ChatGPT can make mistakes. Consider checking important information.

Text Responses

ChatGPT 4 ▾



You

What are five ways executive directors of entrepreneurship centers at universities help their faculty incorporate more generative ai in entrepreneurship education?



ChatGPT

Executive directors of entrepreneurship centers at universities play a pivotal role in shaping the curriculum and fostering an environment that encourages innovative teaching methods. Here are five ways they can help their faculty incorporate more Generative AI in entrepreneurship education:

1. **Training and Workshops:** Executive directors can organize training sessions and workshops for faculty to familiarize them with Generative AI technologies. These sessions can cover the basics of AI, how it can be used in entrepreneurship education, and hands-on training with AI tools. Bringing in external experts or partnering with technology companies for these workshops can provide faculty with cutting-edge knowledge and skills.
2. **Curriculum Development Support:** They can support faculty in integrating Generative AI into the curriculum by providing resources or guidelines on how to incorporate AI tools into teaching strategies. This might involve revising course objectives, content, and assessment methods to include AI-based projects, case studies, or simulations. Executive directors can facilitate interdisciplinary collaboration, encouraging courses that combine entrepreneurship with computer science or data analytics, enriching the learning experience with technical and practical applications.



Message ChatGPT...



ChatGPT can make mistakes. Consider checking important information.

Image Responses



You

create an image of an entrepreneurship center with several types of creative activities and small groups of students working as well as teaching and administrative work happening. make it lively.



ChatGPT



Here's another image showcasing a lively entrepreneurship center with students engaged in various creative activities, workshops, and administrative tasks, all within an inspiring and

Implications for E-ship Center Directors

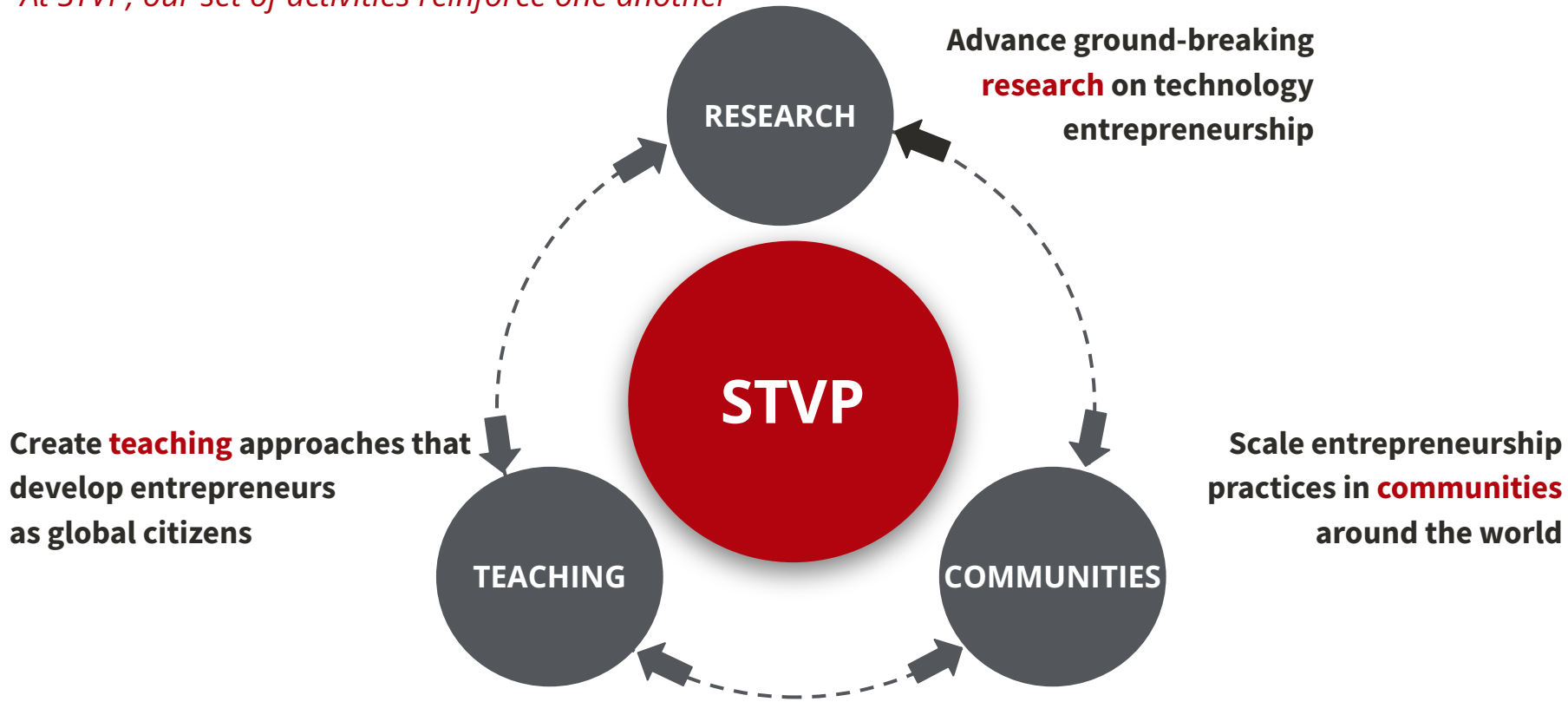


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What are Our Roles as E-ship Center Directors?

At STVP, our set of activities reinforce one another



White Collar Professionals Will be Impacted the Most by Generative AI Solutions



Tinkering With ChatGPT, Workers Wonder: Will This Take My Job?

Artificial intelligence is confronting white-collar professionals more directly than ever. It could make them more productive — or obsolete.

The Cognitive Revolution is Coming

By 2030, tasks that represent up to 30% of all hours currently worked in the U.S. could be automated by AI

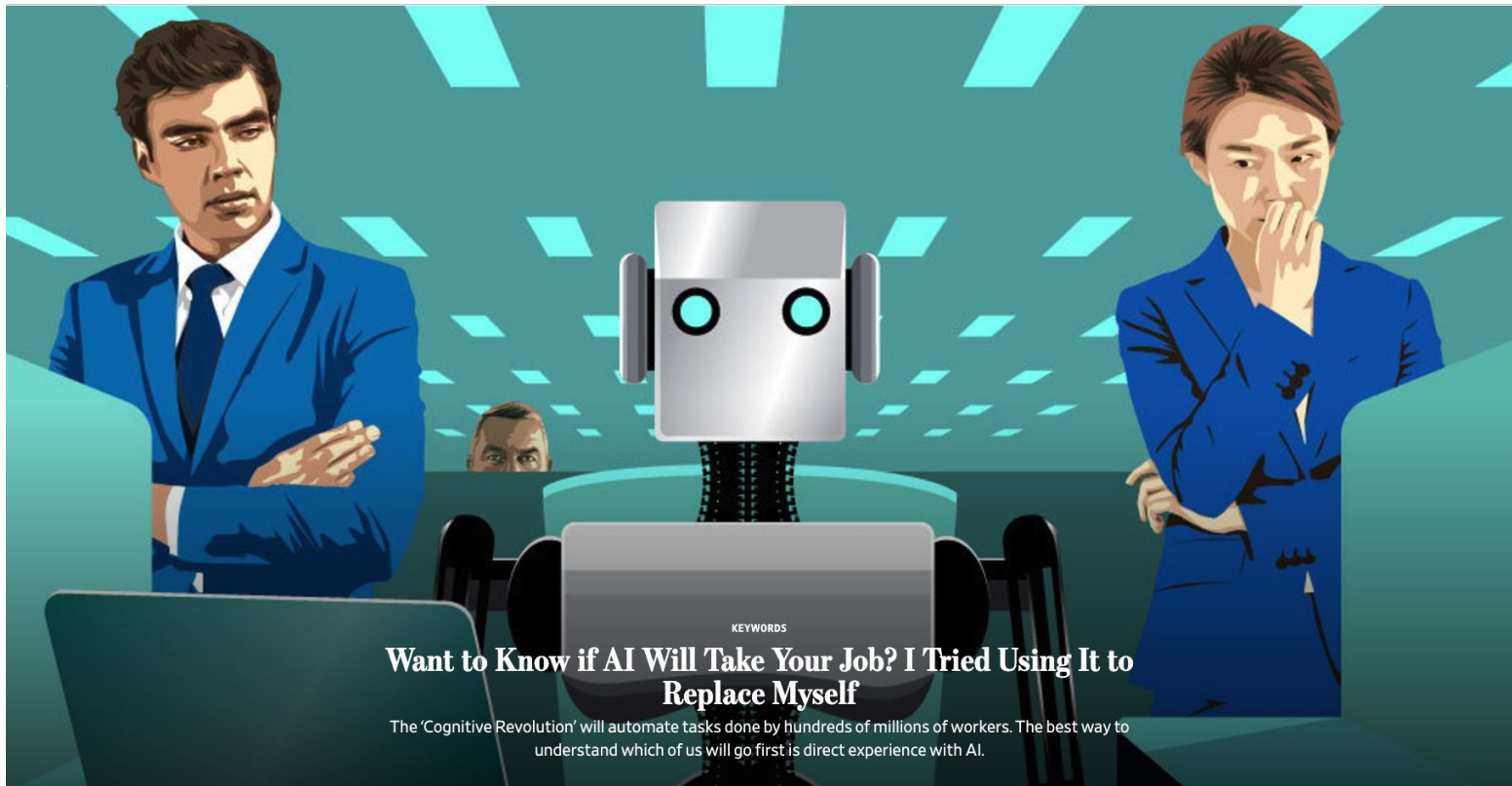
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Mo-Yun Fong

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KEYWORDS

Want to Know if AI Will Take Your Job? I Tried Using It to Replace Myself

The 'Cognitive Revolution' will automate tasks done by hundreds of millions of workers. The best way to understand which of us will go first is direct experience with AI.

Implications for our roles as Entrepreneurship Center Directors?

Poll: Will GenAI Replace Entrepreneurship Center Directors?

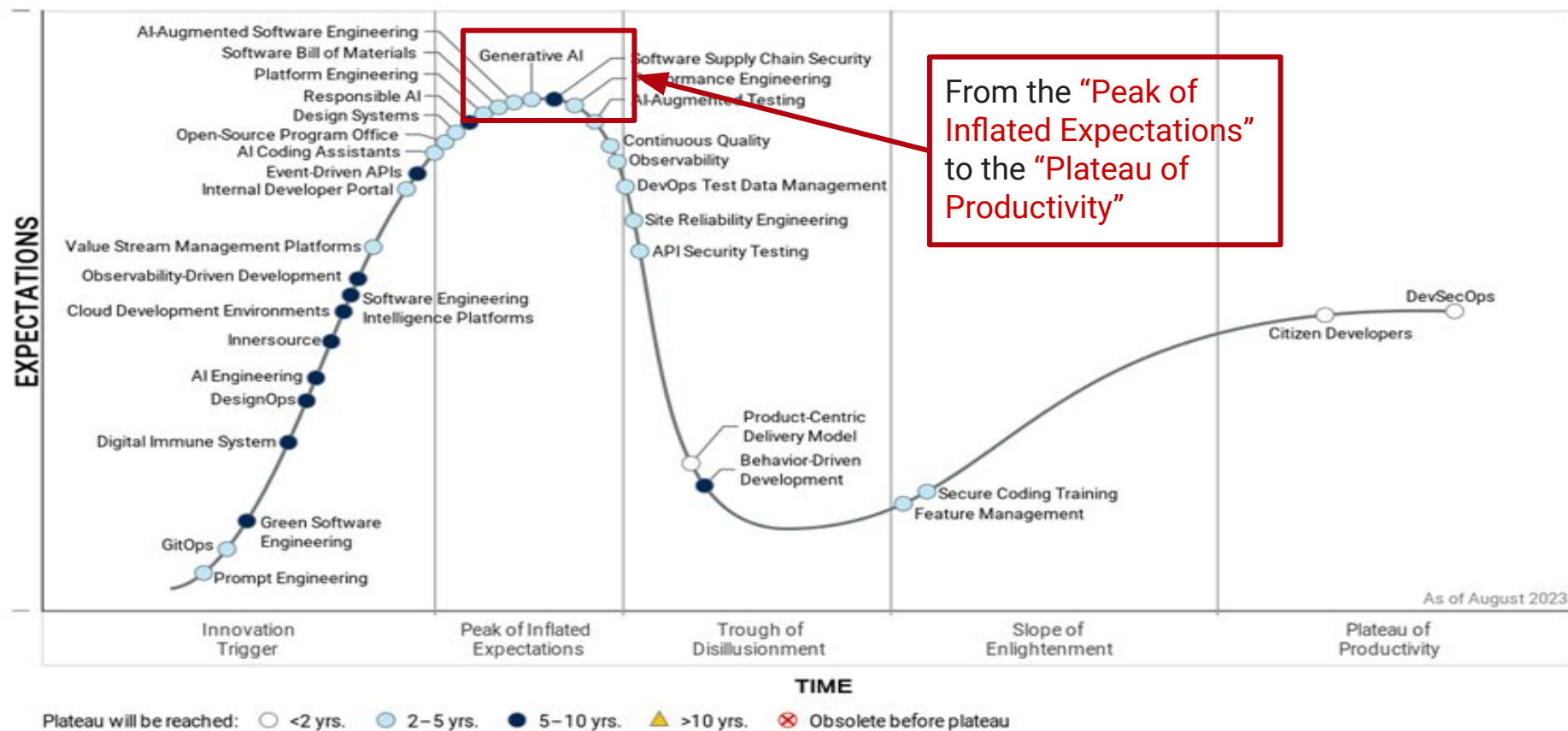
- ☐ Yes
- ☐ No
- ☐ Partially



Poll: Have you changed the way you work as a result of GenAI?

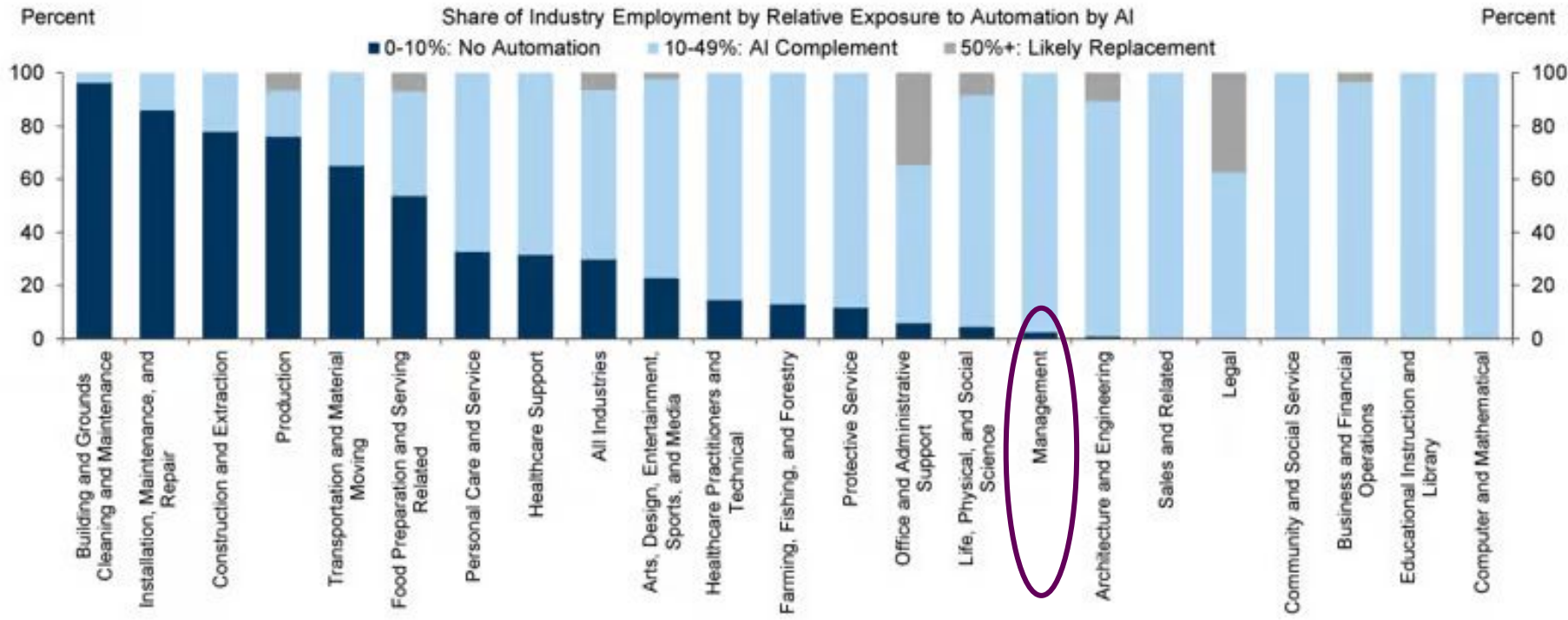
- ☐ Yes
- ☐ No
- ☐ Partially

GenAI is the PEAK of Inflated Expectations but Plateau will be Reached in 2-5 years

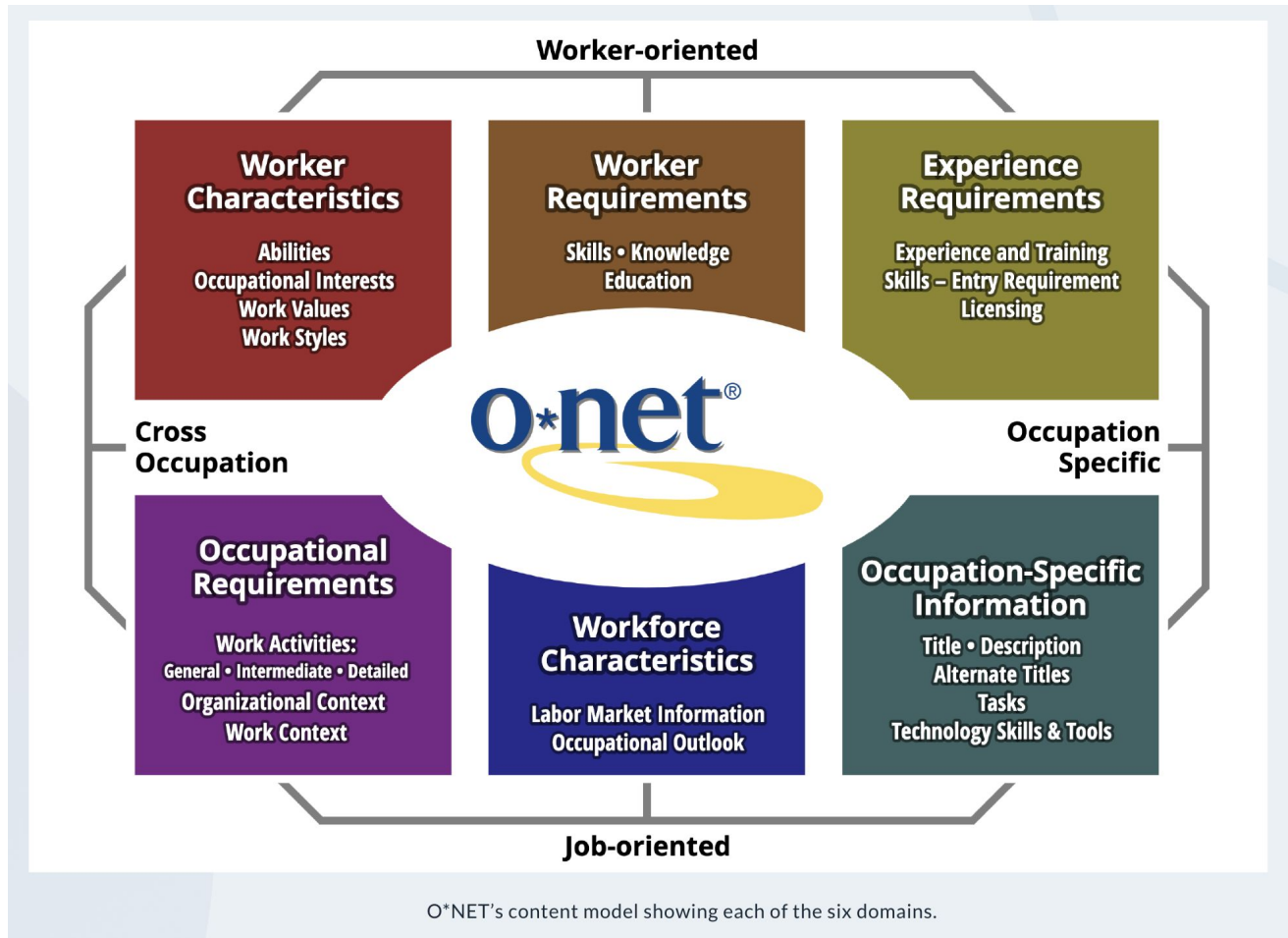


GenAI may replace certain jobs faster than others

Exhibit 8: Replacement in Legal and Administrative Fields, Little Effect in Manual and Outdoor Jobs, and Productivity-Enhancement Everywhere Else



O*Net OnLine breaks down jobs by work activities into six domains



Work activities that are exposed to AI for replacement and/or augmentation



O*NET OnLine

Help ▾ Find Occupations ▾ Advanced Searches ▾ O*NET Data ▾ Crosswalks ▾

Browse by Work Activities

Work activities are general types of job behaviors occurring on multiple jobs. Open and explore the following information. Ratings on occupations are available at the most detailed level.

Hide descriptions Expand all Collapse all

- Information Input
Where and how are the information and data gained that are needed to perform this job?
- Interacting With Others
What interactions with other persons or supervisory activities occur while performing this job?
- Mental Processes
What processing, planning, problem-solving, decision-making, and innovating activities are performed with job?
- Work Output
What physical activities are performed, what equipment and vehicles are operated/controlled, and what complex

Work activities with high exposure to AI

Activity ID	Activity
4.A.1.a.1	Getting information
4.A.1.a.2	Monitoring processes, materials, or surroundings
4.A.2.a.2	Processing information
4.A.2.a.3	Evaluating information to determine compliance with standards
4.A.2.a.4	Analyzing data or information
4.A.2.b.1	Making decisions and solving problems
4.A.2.b.2	Thinking creatively
4.A.2.b.5	Scheduling work and activities
4.A.3.a.3	Controlling machines and processes
4.A.3.a.4	Operating vehicles, mechanized devices, or equipment
4.A.3.b.1	Working with computers
4.A.3.b.2	Drafting, laying out, and specifying technical devices, parts, and equipment
4.A.3.b.6	Documenting/recording information
4.A.4.a.8	Performing for or working directly with the public
4.A.4.c.1	Performing administrative activities
4.A.4.c.3	Monitoring and controlling resources

Note: The activity ID is the identifier for a work activity as listed in the O*NET data. Source: Pew Research Center analysis of O*NET (Version 27.3). "Which U.S. Workers Are More Exposed to AI on Their Jobs?"

PEW RESEARCH CENTER

GenAI will NOT replace our jobs. It will replace certain tasks

Work activities with medium exposure to AI

Activity ID	Activity
4.A.1.b.1	Identifying objects, actions, and events
4.A.1.b.2	Inspecting equipment, structures, or materials
4.A.1.b.3	Estimating the quantifiable characteristics of products, events, or information
4.A.2.a.1	Judging the qualities of objects, services, or people
4.A.2.b.3	Updating and using relevant knowledge
4.A.2.b.4	Developing objectives and strategies
4.A.2.b.6	Organizing, planning, and prioritizing work
4.A.4.a.1	Interpreting the meaning of information for others
4.A.4.a.2	Communicating with supervisors, peers, or subordinates
4.A.4.a.3	Communicating with people outside the organization
4.A.4.a.6	Selling or influencing others
4.A.4.b.1	Coordinating the work and activities of others
4.A.4.b.3	Training and teaching others
4.A.4.b.4	Guiding, directing, and motivating subordinates
4.A.4.b.6	Providing consultation and advice to others
4.A.4.c.2	Staffing organizational units

Note: The activity ID is the identifier for a work activity as listed in the O*NET data.
Source: Pew Research Center analysis of O*NET (Version 27.3).
“Which U.S. Workers Are More Exposed to AI on Their Jobs?”

PEW RESEARCH CENTER

Work activities with low exposure to AI

Activity ID	Activity
4.A.3.a.1	Performing general physical activities
4.A.3.a.2	Handling and moving objects
4.A.3.b.4	Repairing and maintaining mechanical equipment
4.A.3.b.5	Repairing and maintaining electronic equipment
4.A.4.a.4	Establishing and maintaining interpersonal relationships
4.A.4.a.5	Assisting and caring for others
4.A.4.a.7	Resolving conflicts and negotiating with others
4.A.4.b.2	Developing and building teams
4.A.4.b.5	Coaching and developing others

Note: The activity ID is the identifier for a work activity as listed in the O*NET data.
Source: Pew Research Center analysis of O*NET (Version 27.3).
“Which U.S. Workers Are More Exposed to AI on Their Jobs?”

PEW RESEARCH CENTER

What is a challenge that is facing you and/or your entrepreneurship center today?

Paradigm Shift in E-Ship Education

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Entrepreneurship Education at the Dawn of GenAI

There is a paradigm shift in Entrepreneurship Education and Pedagogy (EE&P)

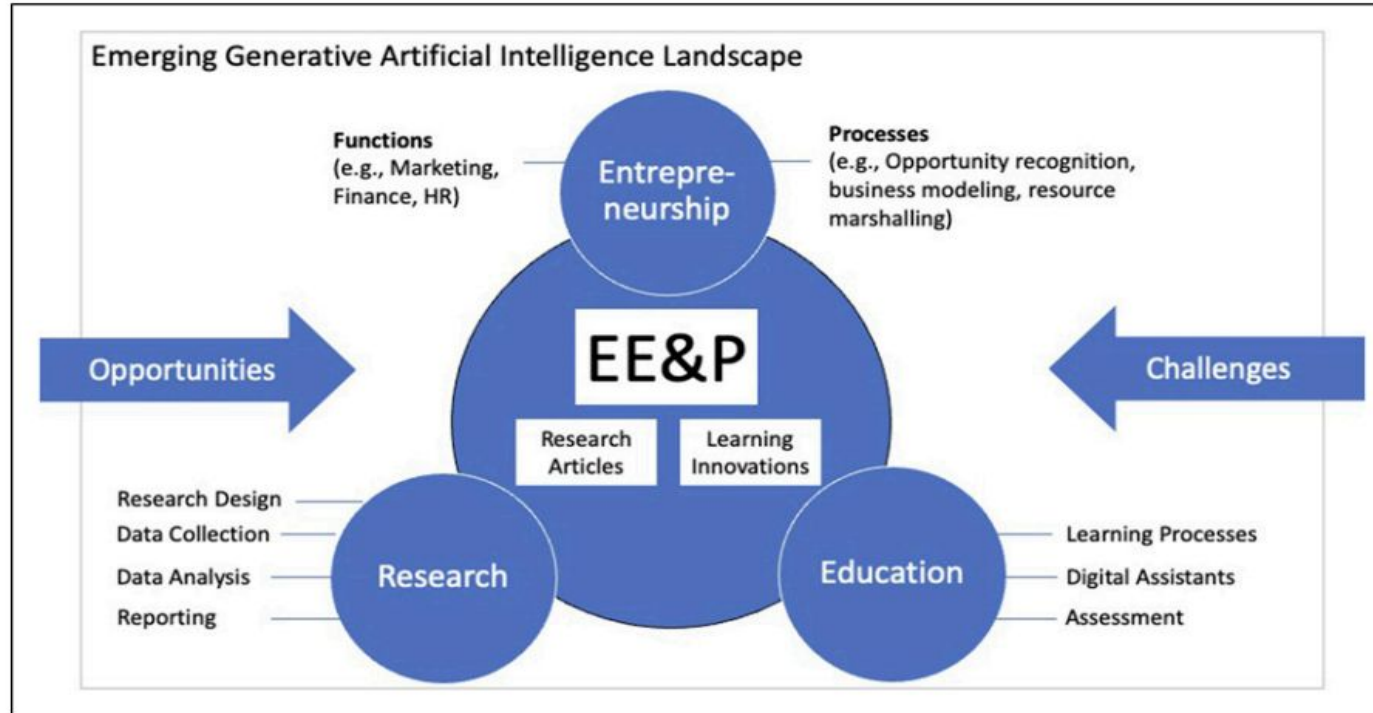


Figure 1. Context of generative AI in entrepreneurship education.

Paradigm Shift in Entrepreneurship Education

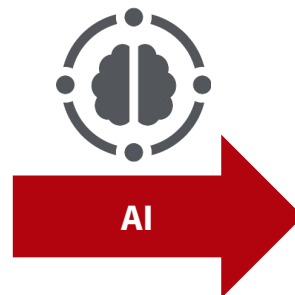
Because of AI, the way we teach entrepreneurship to founders needs to change.



Business Plan
In the Classroom



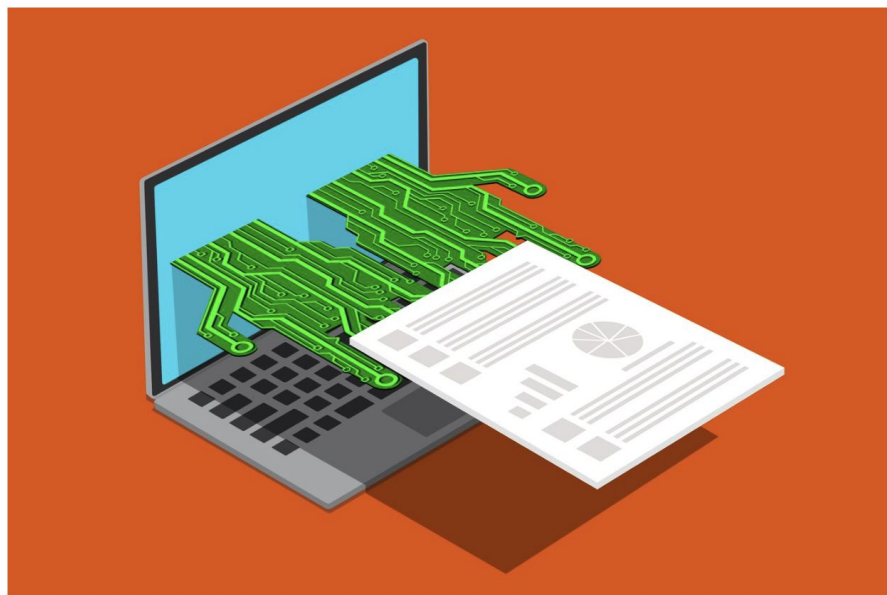
Business Model Canvas
In the Field



How have you seen your faculty incorporate GenAI into their classrooms?

We Asked AI to Draft a Business Plan. Here's What We Got.

Well, let's just say artificial intelligence wouldn't be a bad place for an entrepreneur to start. But it's hardly ready for prime time.



AI did show some creativity in producing a business plan, but only up to a point. ILLUSTRATION: KIERSTEN ESSENPREIS

AI's strengths

- 1. Structure and logic*
- 2. Filling in some details*
- 3. Creativity (up to a point)*
- 4. Highlighting key elements*

AI's weaknesses

- 1. Lack of detail and analysis*
- 2. Repetition*
- 3. Occasional inaccuracies*
- 4. Lack of personalization*

Future Ideas for Incorporating GenAI into the Classroom

**Integrated AI-driven Projects
Across the Curriculum**

**Creative and Ethical Use of AI
in Marketing and Product
Design**

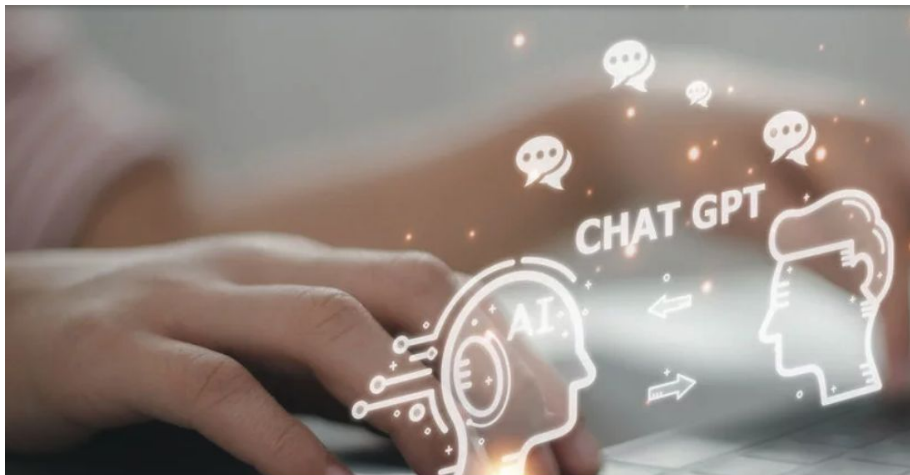
**Innovative Solutions through
AI-driven Analysis and
Problem-Solving**



**Personalized Learning and
AI-enhanced Mentorship**

**AI Governance, Regulatory
Compliance, and
Entrepreneurial Ethics**

**Team Formation and Creating
a Culture based on Values and
Principles**



Generative AI Policy Guidance

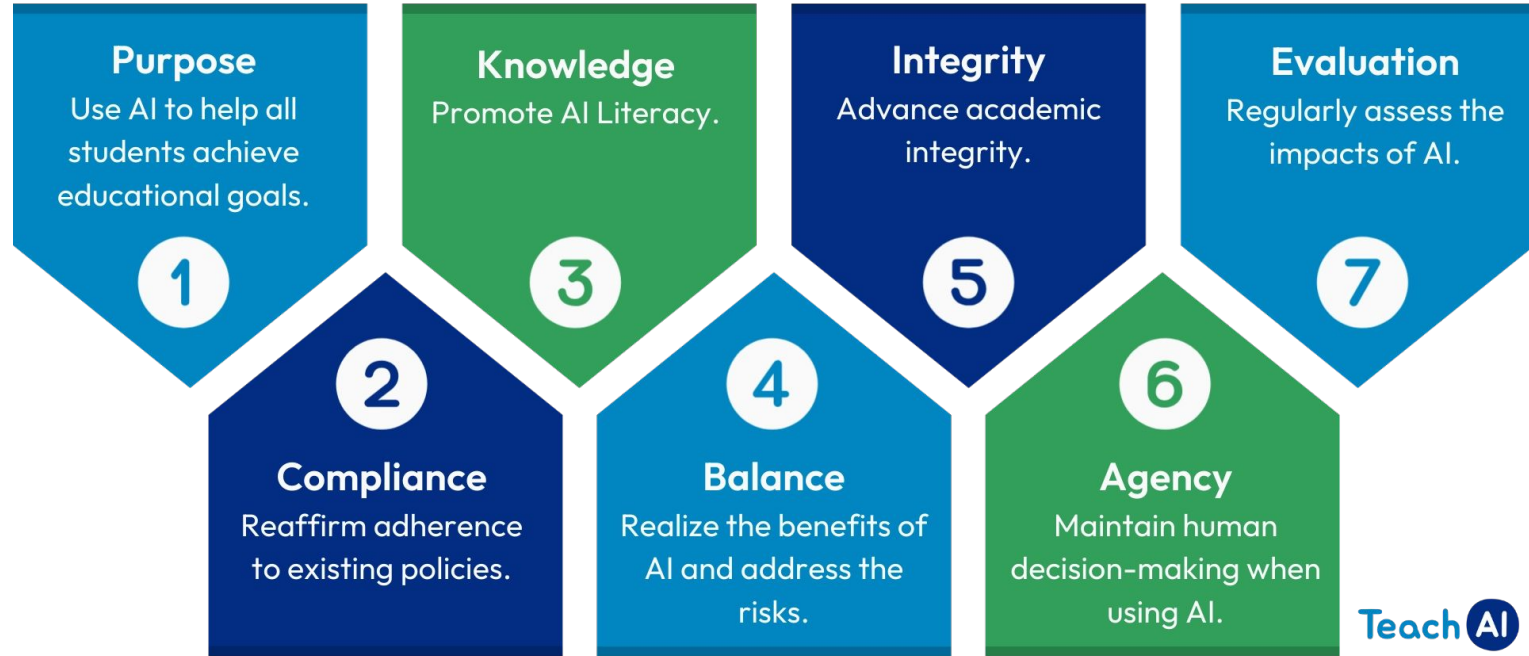
Guidance adopted on February 16, 2023

*Absent a clear statement from a course instructor, use of or consultation with generative AI shall be treated analogously to assistance from another person. In particular, **using generative AI tools to substantially complete an assignment or exam (e.g. by entering exam or assignment questions) is not permitted.** Students should acknowledge the use of generative AI (other than incidental use) and default to disclosing such assistance when in doubt.*

Individual course instructors are free to set their own policies regulating the use of generative AI tools in their courses ...

K-12 Education Policies on AI as a Policy Leading Indicator

Seven Principles for AI in (K-12) Education. Seven states have published guidance as of Feb 2024



Black Nazis? A woman pope? That's just the start of Google's AI problem.

The Gemini image generator isn't just suffering from a technical problem, but from a philosophical one.

By Sigal Samuel | Feb 28, 2024, 7:30am EST



End Wokeness ✓
@EndWokeness · Follow

America's Founding Fathers, Vikings, and the Pope according to Google AI:

Certainly! Here is a portrait of a Founding Father of America:



Sure, here is an image of a Viking:



Sure, here is an image of a pope:



4:29 AM · Feb 21, 2024

THE WHITE HOUSE



Administration Priorities The Record Briefing Room

OCTOBER 30, 2023

Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

 BRIEFING ROOM PRESIDENTIAL ACTIONS



United Nations

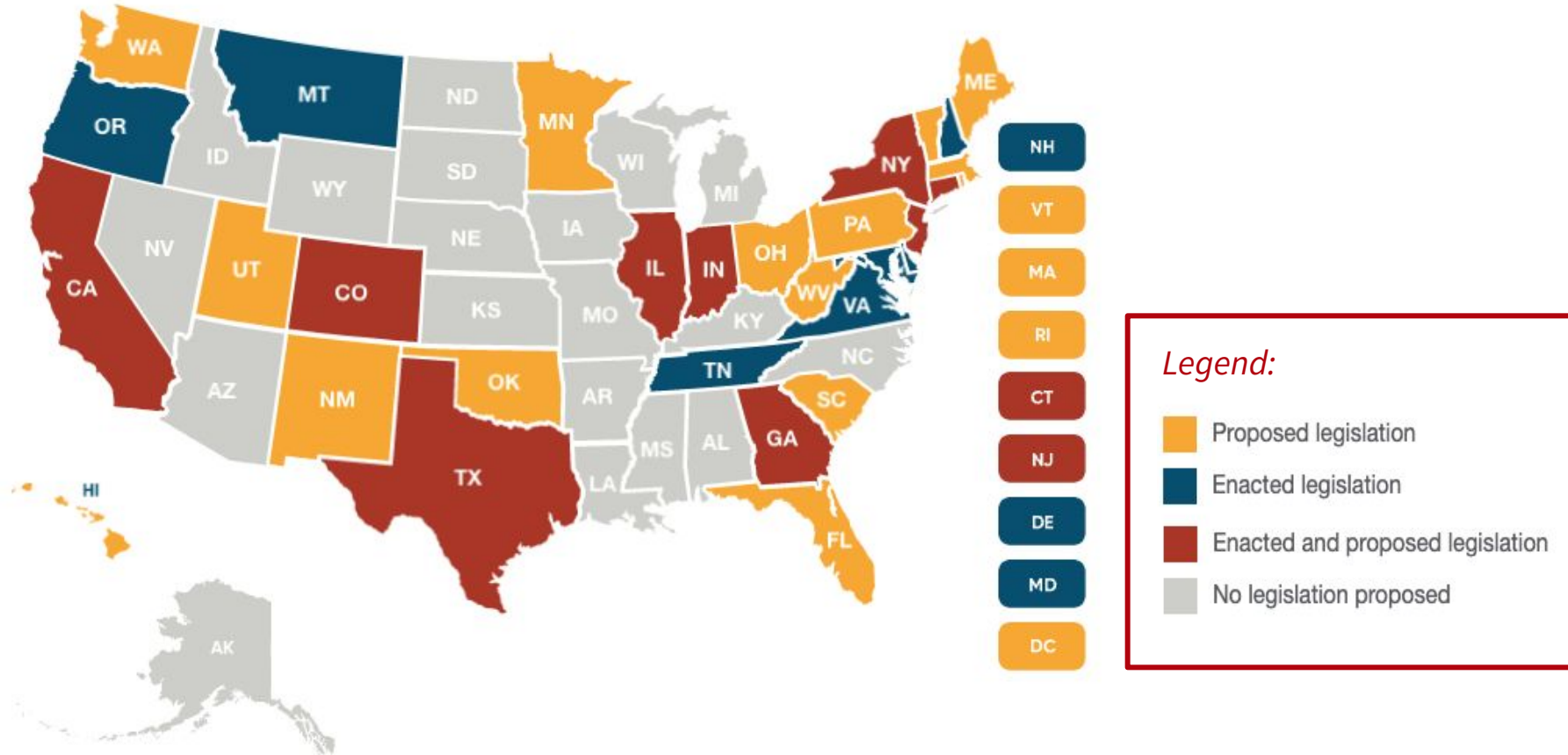
UN News
Global perspective Human stories

General Assembly adopts landmark resolution on artificial intelligence



In the US, Policies are established State by State

US State-by-State AI Legislation Snapshot as of February 12, 2024





Any problem is an
opportunity. The bigger
the problem, the bigger
the opportunity.

Vinod Khosla

PICTUREQUOTES.COM



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**What are the
opportunities of
GenAI to enhance the
activities of your
entrepreneurship
center?**

Q&A

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