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#STechDay2021

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The era of AI and Cognitive Services

Envisioning Tomorrow:

How Microsoft approaches AI Innovation



ORGANIZATION

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@esterdenicolas

[linkedin.com/in/esterdenicolas/](https://www.linkedin.com/in/esterdenicolas/)

Ester de Nicolas Benito

Director of Innovation Marketing

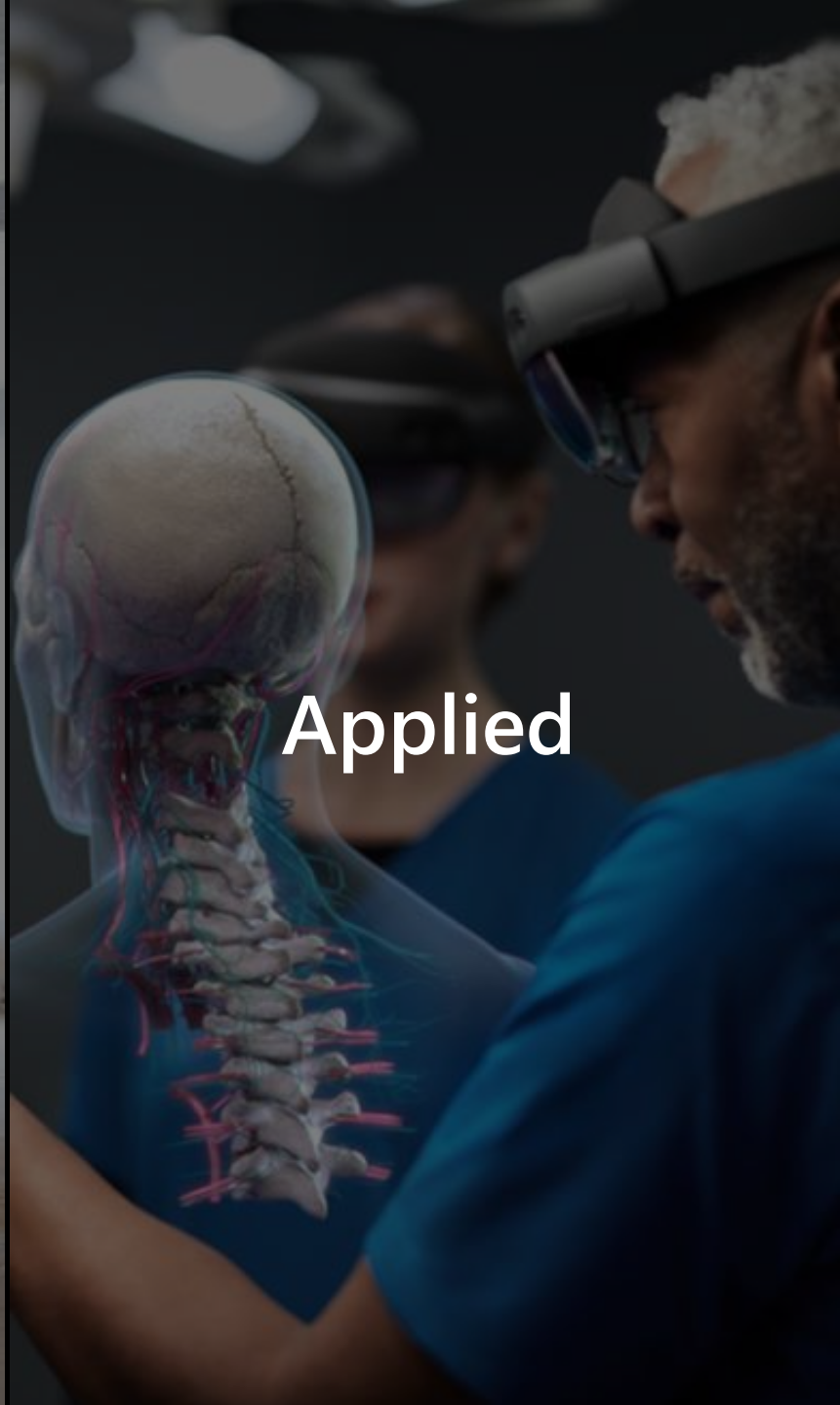
Ester de Nicolas is the global director of innovation marketing at Microsoft, where she defines storytelling and incubation strategies for long-term technologies collaborating across different research and engineering teams. She holds a master's degree in telecommunications engineering specialized in microelectronics and robotics and started her career as a researcher in medical technologies. She has performed different roles in areas such as High-Performance Computing, Open-Source Software, Cloud computing, and Artificial Intelligence both in HP and Microsoft for the last 16 years.

Innovation is
a journey...





Meaningful



Applied



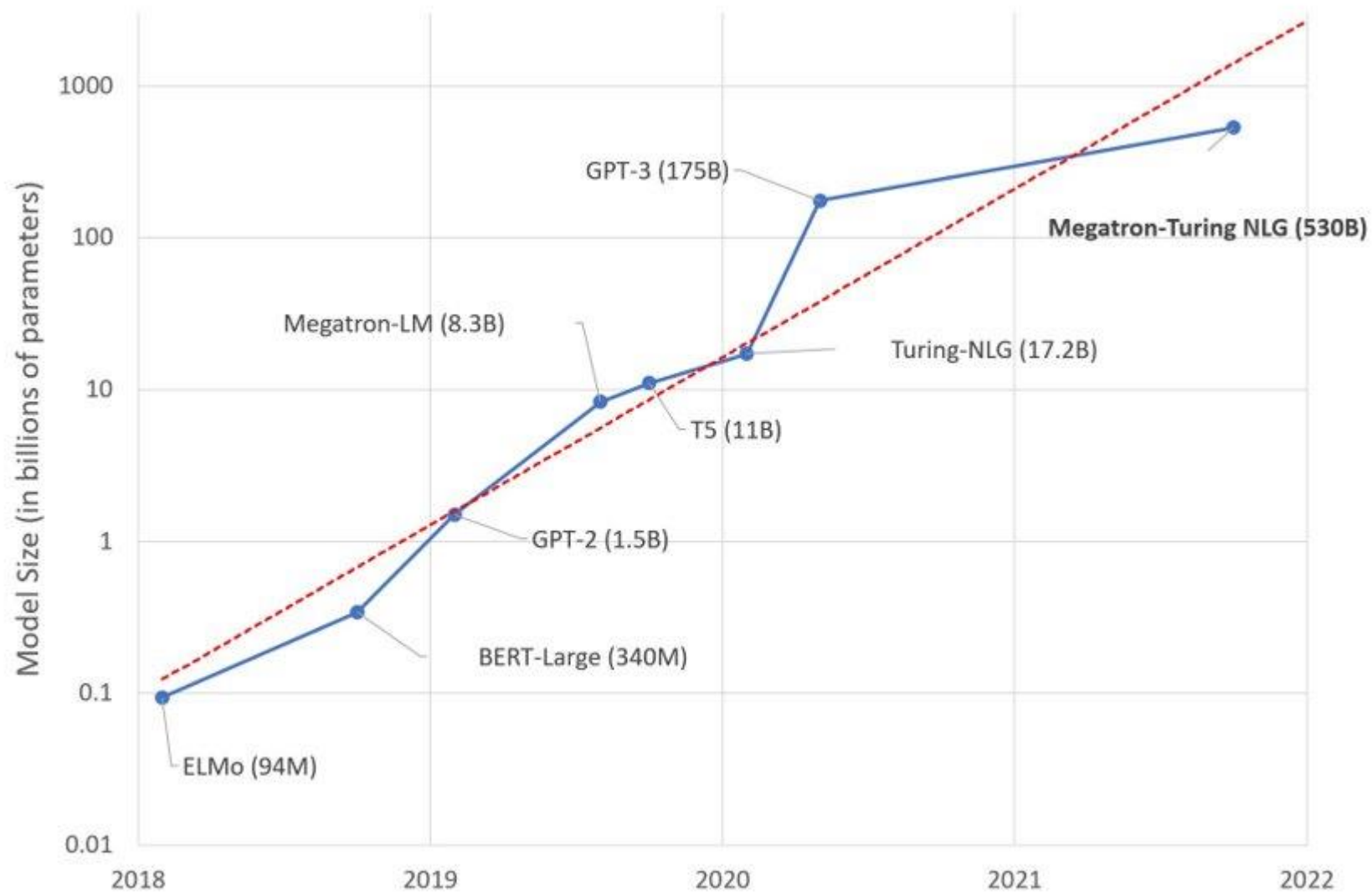
Responsible

Artificial Intelligence

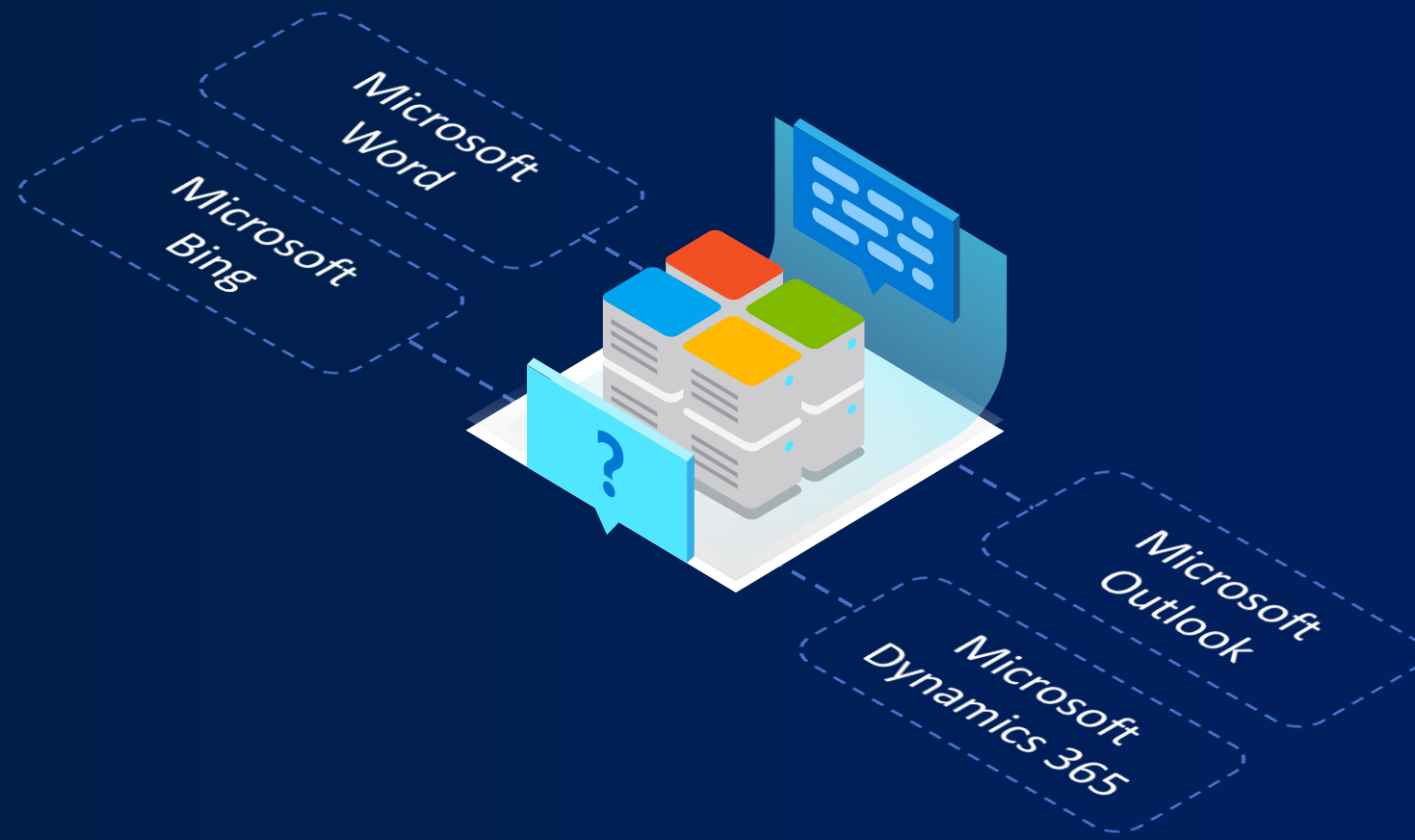
The evolution of massive AI models



Turing Model



How we use these models



How you can use these models, too



The background is a dark blue gradient. On the right side, a bright white point of light acts as a focal point, from which numerous thin, glowing blue lines radiate outwards across the frame. These lines have a soft, ethereal quality. On the left side, there are several horizontal, wavy bands of a slightly lighter blue color, creating a sense of depth and movement. The overall composition suggests a theme of technology, data, or convergence.

Convergence

From Language, to Image/Audio, to Multimodal

Modalities		Model	Tasks
Language +	Vision	Unicoder-VL (AAAI'20), M3P (CVPR'21), VLMO	Vision-Language tasks: caption, matching, ...
	Video	UniVL, CLIP4Clip, GODIVA/NUWA	Video-Language tasks: caption, matching, ...
	Code	CodeBERT (EMNLP'20), GraphCodeBERT (ICLR'21)	Code search, generation, ...
	Audio	UniSpeech (ICML'21)	Speech\ASR
	Layout	LayoutLM (KDD'20)	Document AI: key-value extraction, document VQA, ...
	Layout + Image	LayoutLMv2 (ACL'21), LayoutXLM	
	Markup	MarkupLM	Document understanding: NER, MRC/QA, matching, ...

VIDEO PLACEHOLDER

- Dan – Project PSI video placeholder
- [Tech Minutes: Platform for Situated Intelligence \(microsoft.com\)](#)
- From 0:08 to 4:46 - just after the CTA to the OSS repo of Project PSI) →
Total runtime 4:38

Artificial Intelligence

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Artificial Intelligence

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Computing

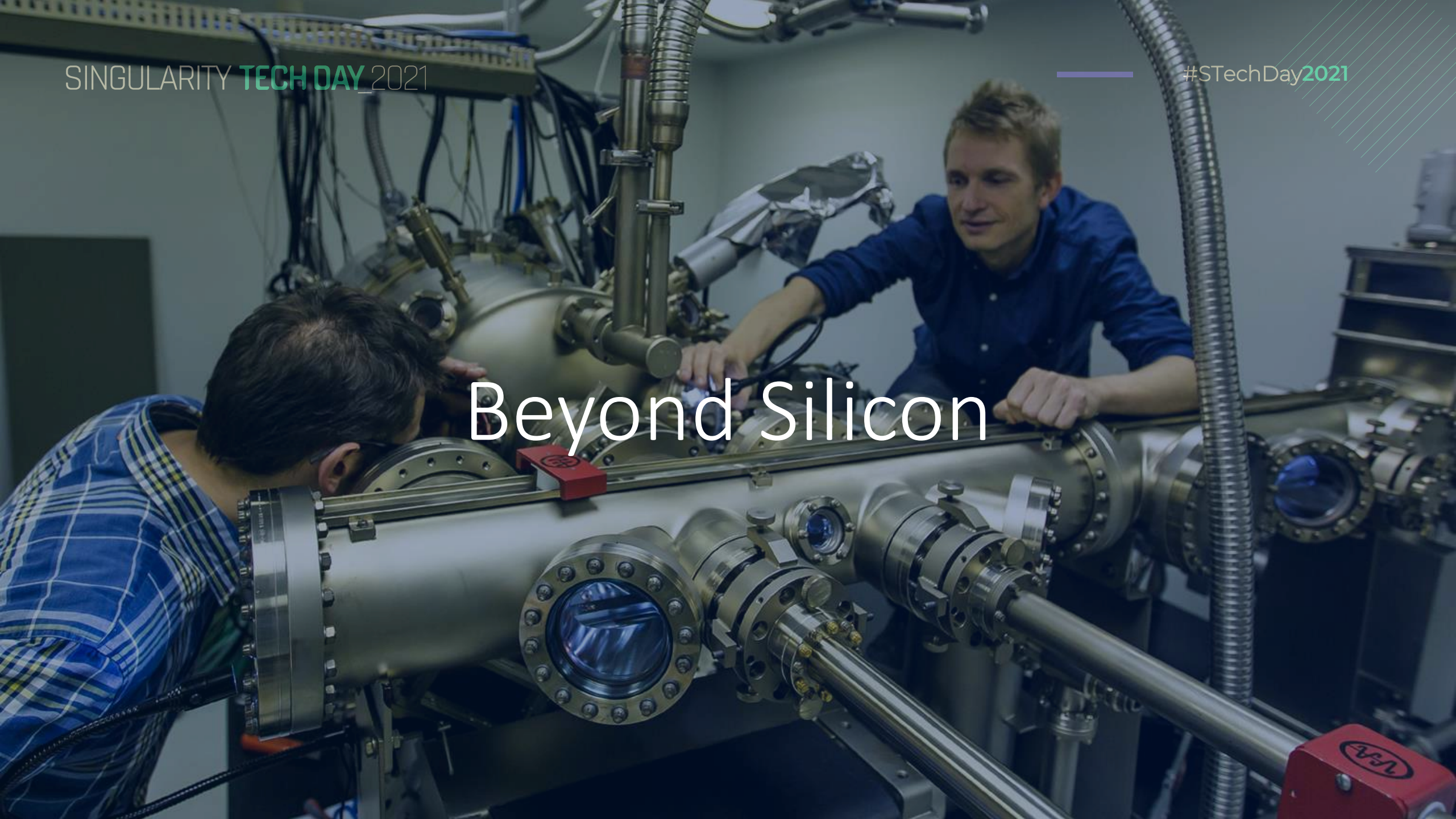
Sustainable







Beyond Silicon



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Artificial Intelligence

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Computing

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Artificial
Intelligence

Computing

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Human-Machine
Interaction

CH₄

H₂O

Natural user interfaces



Context-driven interactions

VIDEO PLACEHOLDER

- Katja – Project Paidia video placeholder
- [Tech Minutes: Project Paidia - Microsoft Innovation](#)
- From 0:15 to 4:43 → 4:28

Human connection



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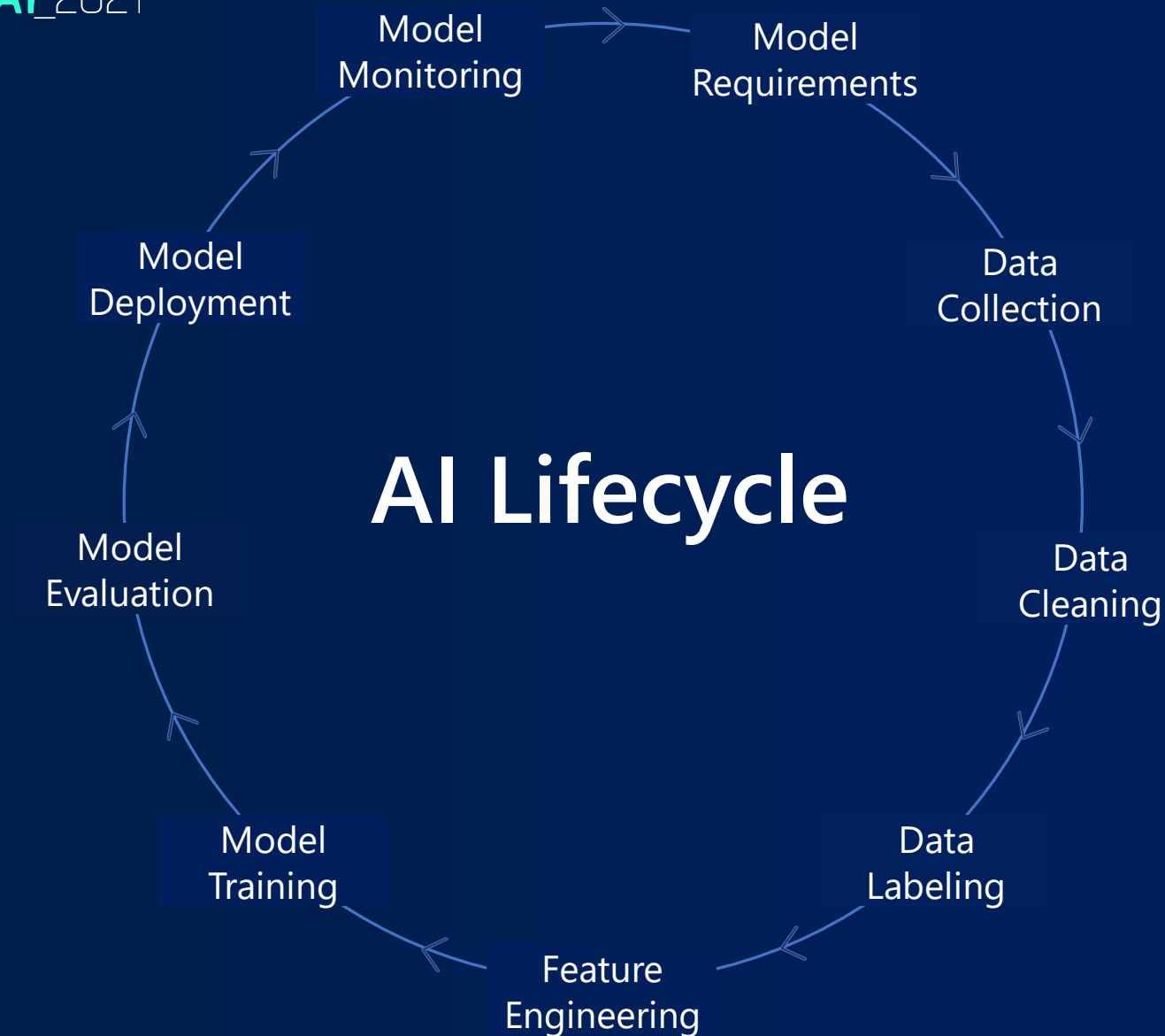
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Human-Machine
Interaction



Digital Responsibility



Empowering AI developers

Identify



Diagnose



Mitigate

Empowering AI developers

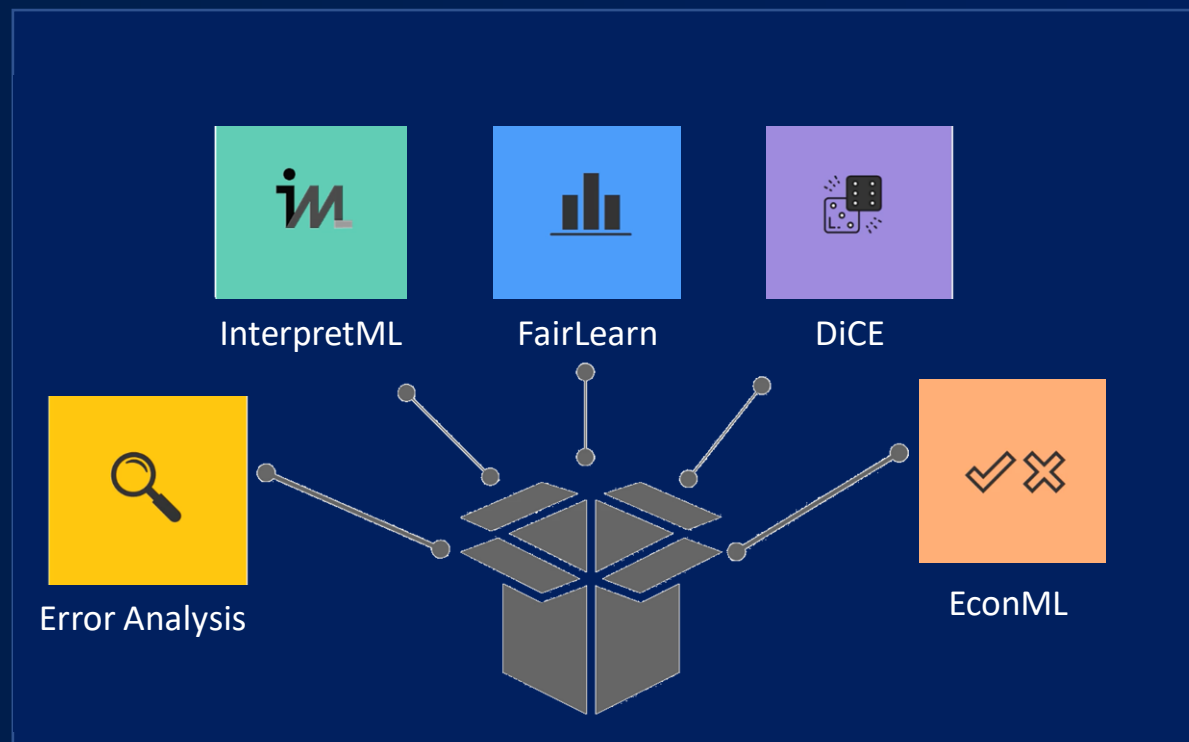
Identify



Diagnose

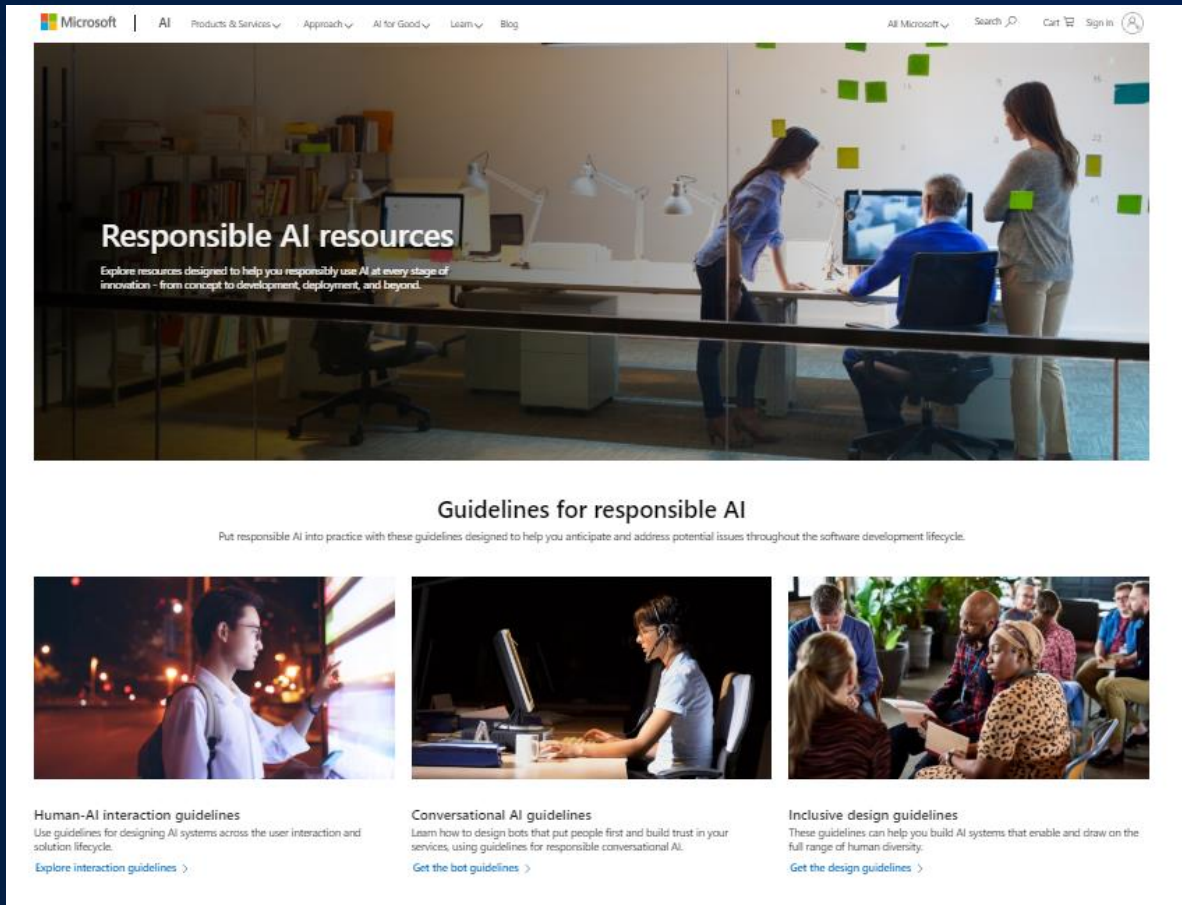


Mitigate



github.com/microsoft/responsible-ai-widgets

Responsible AI Resource Center




Microsoft | AI | Products & Services | Approach | AI for Good | Learn | Blog

Responsible AI resources

Explore resources designed to help you responsibly use AI at every stage of innovation - from concept to development, deployment, and beyond.

Guidelines for responsible AI


Put responsible AI into practice with these guidelines designed to help you anticipate and address potential issues throughout the software development lifecycle.



Human-AI interaction guidelines

Use guidelines for designing AI systems across the user interaction and solution lifecycle.


[Explore interaction guidelines >](#)



Conversational AI guidelines

Learn how to design bots that put people first and build trust in your services, using guidelines for responsible conversational AI.

[Get the bot guidelines >](#)



Inclusive design guidelines

These guidelines can help you build AI systems that enable and draw on the full range of human diversity.

[Get the design guidelines >](#)

aka.ms/rairesources

“Dream of things that never were and ask *why not?*”

John F. Kennedy

[Microsoft.com/innovation](https://microsoft.com/innovation)



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Thank you!

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