Lantern's Pioneering AI Solutions: Building Future-Ready Industries with Microsoft

In the Era of AI, technology is not just transforming; it is revolutionizing every facet of our lives and businesses. The power of artificial intelligence (AI) is enabling organizations to transcend traditional boundaries—automating mundane tasks, optimizing workflows, and unlocking invaluable insights from data.

But how can organizations utilize AI to become digital leaders?

Digital leadership comes from developing digital capabilities that enable a traditional organization to be a top performer in the era of AI. By building AI-enabled digital capabilities across three areas (customer experiences, employee experiences, and operations efficiency) Lantern, a dedicated Microsoft consultancy, is steering organizations through this digital revolution.

By infusing Microsoft AI into applications and processes, Lantern has worked across key industries, including Media/Entertainment and Healthcare, helping clients expand markets and optimize their operations through innovative AI solutions to become digital leaders.

Revolutionizing Media Accessibility: The Development of EMF's AI-Powered Translation and Synthesis Platform

In 2023, Lantern and the Educational Media Foundation (EMF), the United States' second-largest radio network, embarked on a transformative project to globalize EMF's podcast reach through innovative AI technologies. This initiative was born from the challenge of making EMF's rich, diverse content universally accessible, transcending the barriers of language and geography that often restrict media's global impact.

Levering Microsoft Azure Cognitive Services, Lantern developed an AI-Enabled Media Translation and Audio Synthesis solution for EMF. This solution was designed to automate the translation, transcription, and synthesis of text and audio content across a wide array of languages.

The objective was clear: to extend the reach of EMF's podcasts well beyond English-speaking audiences, making them available and relatable to listeners worldwide.
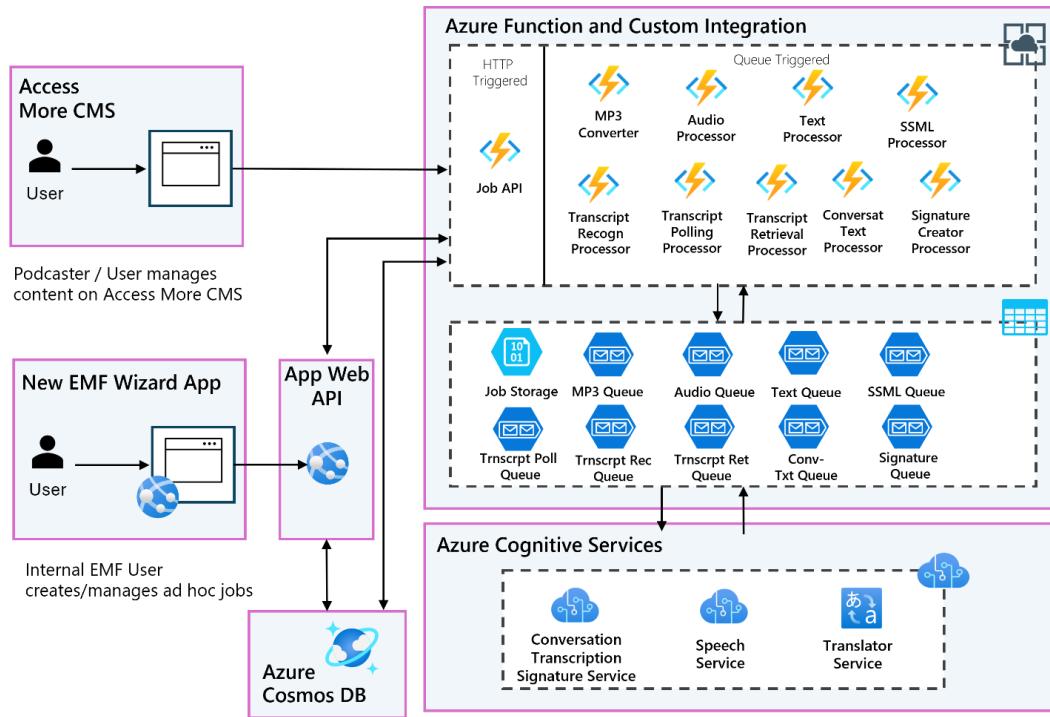
Figure 1: EMF Architecture

Central to this project's success was the strategic use of REST APIs, which facilitated the seamless transcribing of spoken content, translation of textual and spoken content into multiple languages, and synthesis of audio from Speech Synthesis Markup Language (SSML) inputs. This latter capability was crucial for tuning audio outputs — enabling the addition of multiple voices, adjusting pitch, and pausing to mimic natural speech patterns as closely as possible.

The Cloud Adoption Framework's concept of Reach significantly influenced the solution's architecture, ensuring that EMF's content could globalize its audience. The goal was ambitious but attainable: to connect with 30 million people globally. Special emphasis was placed on Spanish and Mandarin translations, positioning these offerings at the forefront of EMF's global strategy for localization and accessibility.

Through this collaboration, Lantern and EMF showcased the pragmatic fusion of AI technology with media, illustrating a scalable, impactful model for digital content globalization. With the industry (valued at $25.6B in 2022) poised for significant growth, estimated to expand at a CAGR of 13.5% from 2023 to 2030, the EMF solution demonstrates the untapped potential of AI to foster operational efficiencies and unlock new growth opportunities through enhanced localization and accessibility.

Innovating Healthcare with AI: UCSF's Journey to Modernize Patient Care through the VERSA Platform

In 2023, Lantern and the University of California San Francisco (UCSF) partnered to set the stage for a major leap in healthcare through the integration of AI. UCSF, with its esteemed reputation in

health and life sciences, sought to pioneer an AI-enabled future in medical research and patient care, aiming to position itself as the leading AI-driven academic life sciences university.

Bringing UCSF's AI Vision to Life with Azure OpenAI

UCSF and Lantern, leveraging its expertise in Microsoft AI technologies, created the Versatile AI Infrastructure Platform (VERSA). This platform was architected to serve the entire UCSF ecosystem, supporting a wide range of applications from chat and API interfaces to advanced capabilities in information extraction, knowledge management, writing, coding assistance, and decision support.

The foundation of VERSA was built on Azure OpenAI, augmented by OCR, AI Search, Document Intelligence, and other Microsoft technologies to enable generative AI at scale. The integration of the Lantern Loader (Lantern IP that enables users to bring their own data within VERSA's framework) was crucial in tailoring the platform to meet the specific needs of UCSF's clinicians, administrators, and researchers, empowering them with data previously beyond reach.
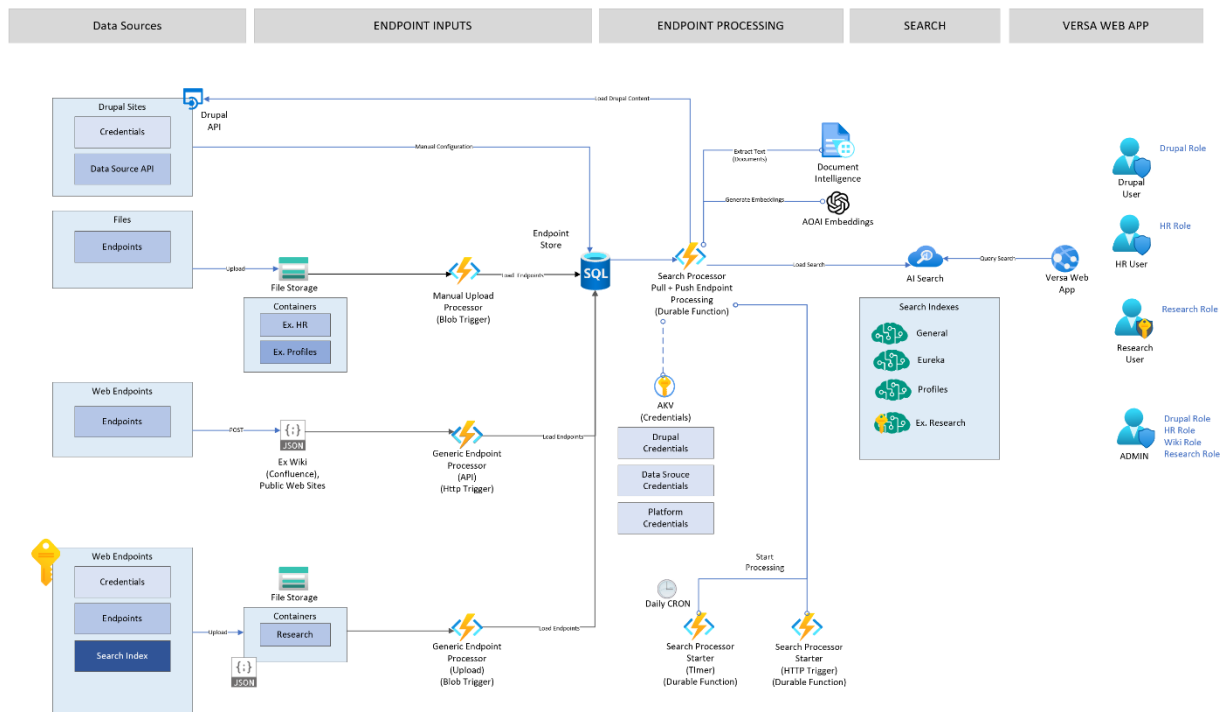

Figure 2: UCSF Architecture

Data privacy, security and HIPPA compliance were the main concerns for the UCSF team, as they needed their prompts, data sources and responses to remain secure. The design adheres to Microsoft's Responsible AI Principles, ensuring the University's commitment to ethical and impactful use of AI.

VERSA allows our clinicians, administrators, and researchers to access large language models while keeping the model prompts, or the questions that we're asking, and the data itself in a secure enterprise cloud." - Dr. Hawgood (Chancellor, UCSF)

Revolutionizing Medical Research and Healthcare Analytics

VERSA's initial workloads aided in patient risk identification, workflow optimization, and nurse-patient matching. One of the main use cases for VERSA moving forward is to support medical research, which is a large and growing market.

Clinical trials and healthcare analytics markets, both rooted in medical research, have a combined TAM of $123.8B. Solutions like VERSA represent substantial opportunity for repeatability within the broader medical research landscape, as well as other industries that require secure access to large language models.

VERSA's Rapid Growth and Widespread Adoption

VERSA experienced rapid growth and widespread adoption among UCSF's users, who were eager to be part of the pilot program. Transitioning from an initial pilot with 50 daily active users, to a production-level service catering to over 35,000 provisioned users, the rapid growth underscores the demand for such innovative solutions.

Reflecting on this partnership, UCSF and Lantern have set a benchmark for how AI can transform healthcare delivery and research. Through VERSA, they have not only envisioned a future where AI and human intelligence converge to tackle healthcare's most pressing challenges but have also taken significant strides toward realizing it.

From Concept to Impact: Lantern's Role in Driving Industry Evolution through AI-Enhanced Applications

Leveraging the power of Microsoft AI, Lantern has powered significant transformations within EMF and UCSF, heralding a new era of operational efficiency and global outreach:

- EMF is reaching audiences worldwide by transcending language barriers with Lantern's innovative translation application, making diverse content universally accessible.
- UCSF has enhanced its healthcare delivery and research capabilities, leveraging advanced data analytics to improve patient care, foster scientific discovery, and expand its influence across academic domains.

Harnessing Microsoft AI's capabilities, Lantern has redefined the operational landscapes for EMF and UCSF. The solutions showcase the profound influence of AI in shaping the future of industries.