

The Four Types of LLM-Driven Apps in ALM and the user experience

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In the last article of the **AI Future LLM Series**, we introduced the groundbreaking concept of **ALM (Apps LM)**—a model designed to redefine how software integrates large language models (LLMs). We explored how ALM goes beyond the limitations of standalone AI agents and prompt-based tools, offering a more adaptable and transformative framework for generative AI integration.

Now, we take a deeper dive into one of ALM's most powerful features: its **four distinct types of apps**. These app types represent the different ways LLMs can be utilized in software, from enhancing existing tools to creating entirely new solutions. Each type is tailored to meet unique user needs, industry demands, and workflow complexities, making ALM a truly versatile model.

In this article, we'll break down the **four types of LLM-driven apps within ALM**:

1. **Standalone AI Agent Apps**
2. **Blended ALM Apps (Hybrid Models)**
3. **Integrated ALM Apps (Fully Embedded AI)**
4. **Robotics-Based ALM Apps**

We'll explore the defining features of each type, their practical applications, and how they address the challenges of integrating generative AI into professional-grade software. Whether for healthcare, design, marketing, or engineering, these four types demonstrate how ALM unlocks the full potential of LLMs while delivering precision, adaptability, and user-centric innovation.

This follow-up article builds on the foundation we laid previously and highlights why ALM is not just a model—it's the future of LLM-driven software.

User Experience in the Era of Generative AI: A Critical Factor

User experience (UX) has always been a cornerstone of software design. It's the invisible thread that ties together how users interact with software—encompassing everything from the interface to the flow, functionality, and ease of use. Whether it's a mobile app, a platform like Windows, or tools such as MS Office, ERP systems, and CRM solutions, UX defines how users engage with and trust software.

In the age of generative AI and LLMs, a new dimension has been added to the UX equation: **the generative AI experience**. The rise of tools like ChatGPT has popularized conversational AI interfaces, sparking a trend where users can interact with software by “talking” to it as if it were human. This has captured the public's imagination and created significant buzz, but it raises an important question: **Is this the best user experience for professional software?**

As generative AI continues to transform the software landscape, UX must remain a priority. The ALM model provides a roadmap for integrating LLM capabilities into software while respecting the principles of good design: simplicity, ease of use, and user empowerment. By focusing on **multi-dimensional user experiences**, ALM ensures that generative AI becomes a tool that enhances productivity, creativity, and innovation—not just a passing trend.

Rethinking the Generative AI Trend

While conversational AI has undeniable appeal for general use, the reality is different for professional software:

1. **Structured UX vs. Conversational AI:**

Users have grown accustomed to structured interfaces with menus, workflows, and clear navigation in software like MS Office or ERP systems. These interfaces are built for efficiency, precision, and familiarity—traits that conversational AI cannot always replicate.

2. **Temporary Trend or Sustainable Change?**

Prompt-based interactions feel exciting because they simulate human communication. However, as generative AI becomes more integrated into professional workflows, users will demand software that goes beyond novelty and provides **practical, seamless, and intuitive UX**.

3. **The Role of ALM in Shaping UX:**

This is where ALM comes in. The **four types of ALM apps** provide a framework to merge the generative AI experience with traditional human-centric UX design, creating software that is not only innovative but also user-friendly and purpose-driven.

Four Types, Four UX Dimensions

The ALM model focuses on delivering **multi-dimensional user experiences** through its four types of apps, each tailored to different software needs and user expectations:

1. **Standalone AI Agent Apps:**

- Focused on conversational and prompting-based UX, offering a familiar AI interaction model for users who require flexible, standalone assistance.
- **UX Advantage:** Simple to use, ideal for general-purpose tasks or creative brainstorming.

2. **Blended ALM Apps (Hybrid Models):**

- Combines conversational AI with traditional structured menus and workflows for maximum control and familiarity.
- **UX Advantage:** Balances AI innovation with user control, catering to industries requiring precision and compliance.

3. Integrated ALM Apps (Fully Embedded AI):

- Embeds LLM capabilities directly into software to create **dynamic and automated UX** without the need for prompting or external AI agents.
- **UX Advantage:** Seamlessly aligns with professional workflows, making AI invisible but indispensable.

4. Robotics-Based ALM Apps:

- Offers expert-level guidance through robotic companions, enabling intuitive interaction through voice, visuals, and contextual assistance.
- **UX Advantage:** Human-like interaction enhances user confidence and simplifies complex workflows.

A Framework for Multi-UX Software

The key strength of ALM is its **flexibility**. Developers and software producers can use one or a combination of these app types to create user experiences that align with their software's purpose and audience.

- **Merging UX Types:** A single application can combine conversational AI for ideation, embedded workflows for automation, and robotics-based guidance for onboarding and training.
- **Evolving UX with AI:** As user needs evolve, ALM apps can adapt by blending or transitioning between different UX types.

The Expected Trend for Existing Apps

As generative AI continues to shape the future of technology, existing software platforms like **MS Office, ERP systems, CRM tools, and design software** will face increasing pressure to integrate LLM capabilities. However, for these platforms, the challenge isn't just about adopting generative AI—it's about doing so in a way that preserves their well-established **user experience** and **familiarity** while enhancing functionality with AI.

For these tools, the most expected trend lies in adopting **Type 2 (Blended ALM Apps)** and **Type 3 (Integrated ALM Apps)** of the ALM model. These types allow software to embed or integrate AI agents into their ecosystems seamlessly, ensuring users retain the workflows they know and trust while benefiting from AI-driven intelligence.

The future of existing software lies in finding the right balance between innovation and familiarity. By adopting **Blended ALM Apps (Type 2)** or **Integrated ALM Apps (Type 3)**, these platforms can integrate generative AI in ways that enhance functionality while preserving the UX their users know and love. Whether embedding AI agents into specific features or seamlessly integrating them across entire workflows, the trend points to a smarter, more adaptable software landscape that empowers users without overwhelming them.

Blended ALM Apps (Type 2): Enhancing Familiarity with AI

- **What to Expect:**

Blended ALM apps will combine the familiar structured interfaces of existing software (menus, buttons, workflows) with AI agents that assist users through prompts or context-aware suggestions.

- **Partial AI Integration:** Some features, such as data analysis or report generation, will be enhanced with AI capabilities, while the core user experience remains unchanged.
- **Hybrid Workflows:** Users can choose between traditional workflows and AI-assisted enhancements, offering flexibility without disrupting established practices.

- **Examples of Blended Integration:**

- **ERP Systems:** AI agents integrated into ERP software can analyze operational data and recommend optimizations while leaving standard workflows intact for users who prefer manual control.
- **MS Office:** AI-enhanced features like smart document editing or real-time formula suggestions in Excel provide value without altering the core interface.

Integrated ALM Apps (Type 3): Embedding AI into the Core

- **What to Expect:**

Integrated ALM apps take the evolution a step further by embedding LLM capabilities directly into the software's architecture. This allows AI to operate invisibly, providing real-time support, automation, and intelligence without the need for user prompts or external agents.

- **Seamless Automation:** AI will automate repetitive tasks and adapt workflows in real time, enabling users to focus on strategic activities.
- **Context-Aware AI:** The AI will understand user behavior and provide dynamic insights and suggestions tailored to specific tasks.

- **Examples of Embedded Integration:**

- **CRM Platforms:** AI embedded into CRM tools could analyze customer data and automatically suggest tailored marketing campaigns or sales strategies as users work within the system.
 - **Design Software:** Tools like AutoCAD could embed generative AI to optimize designs dynamically, ensuring compliance with industry standards while adapting to user inputs in real time.
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The Flexibility of Integration

Existing apps won't necessarily adopt a one-size-fits-all approach to AI integration. Instead, they will likely:

1. **Start Small:** Introduce AI capabilities in specific features, such as analytics or document generation, to test adoption and refine functionality.
2. **Gradually Expand:** Over time, embed AI across multiple features or workflows, depending on user feedback and demand.
3. **Focus on UX:** Ensure that AI integration enhances—not complicates—the user experience, aligning with the software's purpose and audience.