20TH ANNIVERSARY EDITION

WSO2CON ASIA

PLATFORMLESS MODERNIZATION

Vertical AI – Industry Innovation in an AI Age

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What is Vertical AI?

General Purpose AI

VS

Vertical AI

Healthcare

Legal

Finance

Why is it important?

The need for Vertical AI

- Consumers (mainly B2B) want solutions made specifically to solve their exact business problems.
- In an environment where we are inundated with different AI solutions, narrow and specific is well positioned versus broad and generalized.
- The concept is not new: Even the largest horizontal tech companies verticalize their sales organizations and product features.
- We as the solutions team at WSO2 also provide vertical solutions on top of WSO2 products (Open Healthcare, Open Banking, etc.).

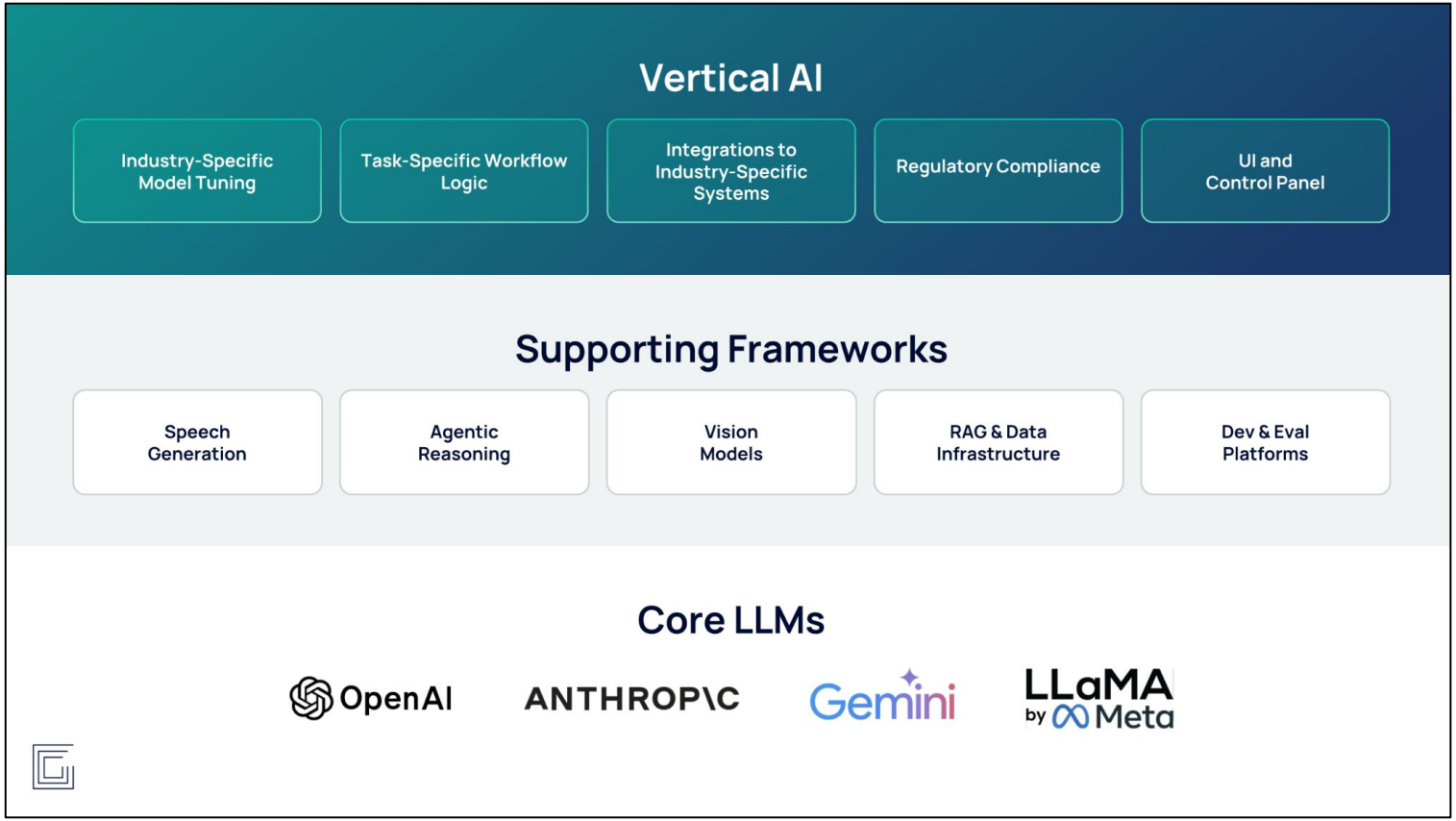
Advantages of Vertical AI

- **Domain Expertise:** Delivers precision and relevance in critical applications.
- **Regulatory Alignment:** Easier to ensure compliance in sensitive fields. The smaller the domain, the easier it is to regulate and govern.
- **Business Impact:** Drives automation and insights tailored to specific verticals.
- **Competitive Advantage:** Specialized tools offer differentiated value over horizontal solutions.

The potential

- By automating tasks that traditionally require human expertise, Vertical AI can boost productivity and efficiency, freeing employees to focus on high-impact work.
- Prime candidates for Vertical AI automation include
  - Repetitive, industry-specific tasks, particularly administrative roles where optimization is a priority.
  - Routine processes that involve regulatory compliance, making them ideal for AI-driven efficiencies and will benefit from AI's consistency and precision.
  - Eg.Claims processing, medical billing, documentation, and customer support

How does it work?



Source: https://www.greenfield-growth.com/blog-posts/vertical-ai-is-here-how-to-capture-the-opportunity-and-win-big

Example : Healthcare customer support

- At the base layer, foundational language models (LLMs) from companies like OpenAI provide the general-purpose language capabilities needed to understand and generate human-like responses.
- Built on top of these foundational models, companies like Sierra and Decagon add horizontal customer-support frameworks and conversation management, creating adaptable tools that can handle customer interactions across multiple industries.

Example : Healthcare customer support

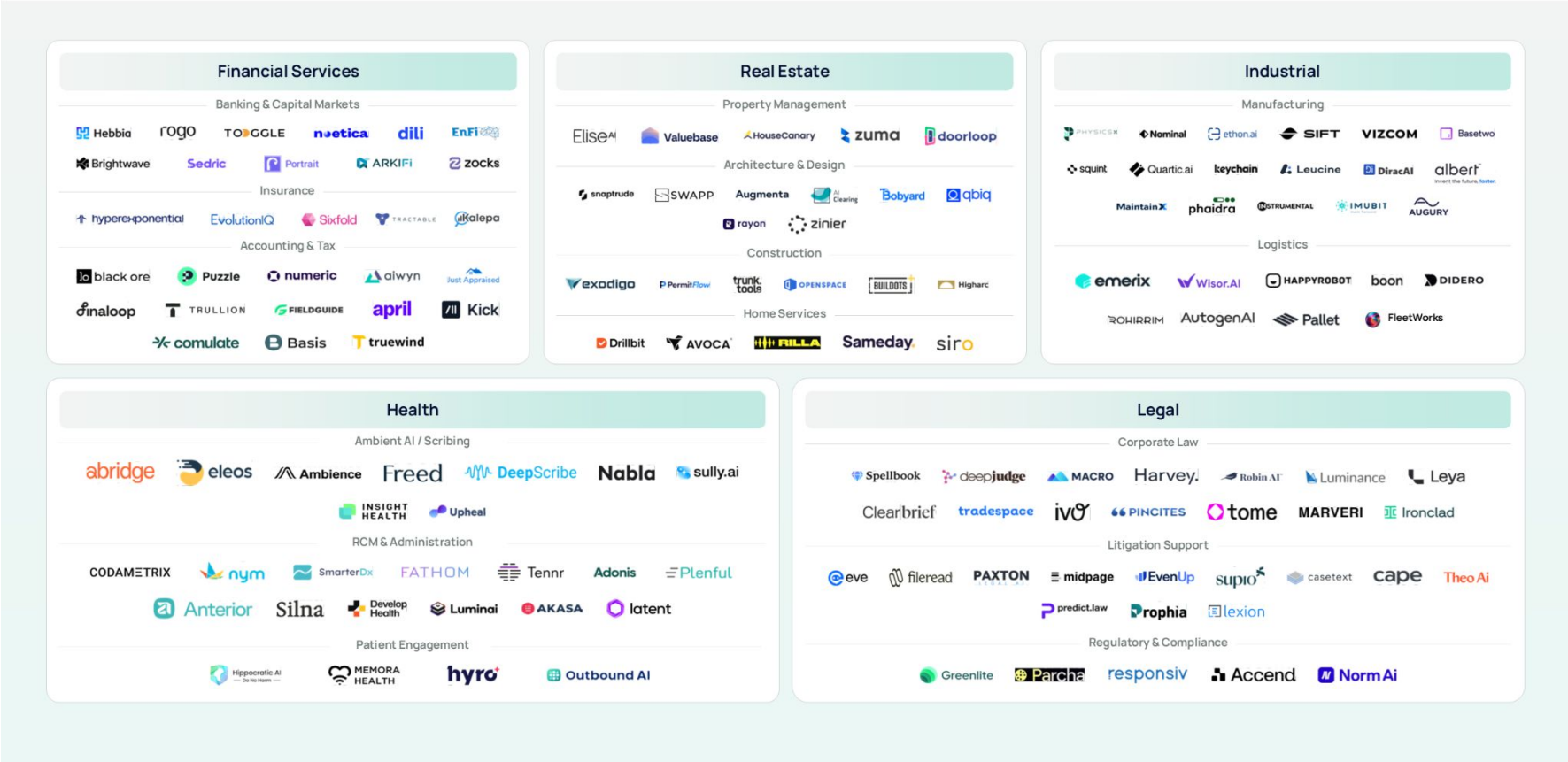
- To make AI truly effective in customer support for healthcare, a final vertical-specific layer is essential. This layer brings in
  - Clinical expertise
  - Compliance with healthcare regulations
  - Integrations with electronic health records (EHRs), etc.

- Without this tailored vertical layer, this AI solution will not have the necessary understanding of healthcare nuances and regulatory constraints, making it impractical to deploy in real-world healthcare settings.

Value addition of the Vertical-AI layer

- **Industry-Specific Model Adaptation**
  - Specialized knowledge and terminology, enhancing their relevance and accuracy
  - Built leveraging unique and proprietary data.
- **Task-Specific Logic**:
  - Incorporating industry-specific workflows and decision-making logic that align with established processes,
  - Ensures that the AI solution can seamlessly support complex, role-specific tasks.
- **Integration into Industry-specific Systems**
- **Regulatory Compliance**:
  - Building AI products that adhere to strict industry regulations,
  - Especially in heavily regulated fields like healthcare, finance, and legal, where compliance is non-negotiable.

Vertical AI Landscape



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Our Vertical AI initiatives

AI with WSO2

AI for code

Supercharge developer productivity across the software development lifecycle.

Code for AI

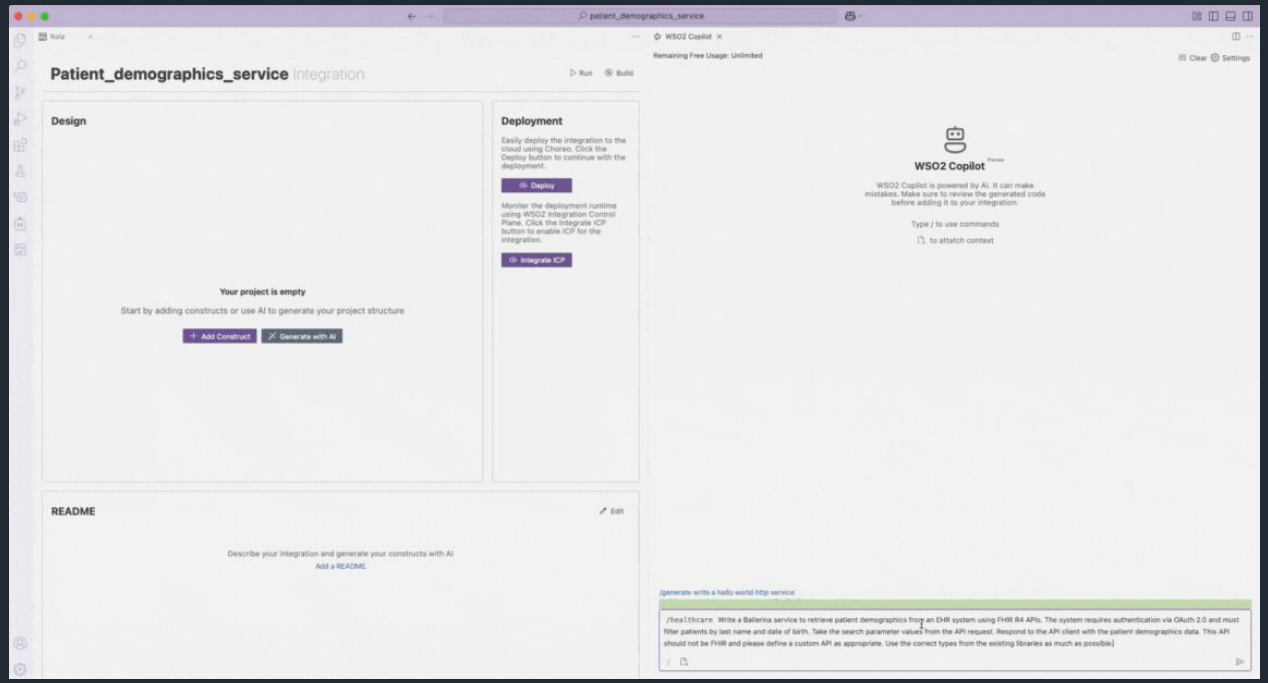
Build AI-native applications through emerging programming abstractions and building blocks

AI for Code

Vertical Development Tools

- WSO2 Integration Solutions provides vertical-specific libraries for integration services.
  - For Healthcare support for **FHIR, HL7 v2/v3, X12, CDA, DICOM** messages and prebuilt translations for **HL7 → FHIR, X12 → FHIR, CCDA → FHIR**.
  - For Banking, **ISO 8583, ISO 20022 (MX), SWIFT MT** messages and prebuilt translations for **SWIFT MT<->MX**
- WSO2 Integrator Co-pilot is made vertical aware so that it will know about the vertical-specific use-cases of developers and how our libraries fit in.

Healthcare Co-Pilot



Sample Prompt

Write a service to retrieve patient demographics from an EHR system using FHIR R4 APIs. The system requires authentication via OAuth 2.0 and must filter patients by last name and date of birth. Take the search parameter values from the API request. Respond to the API client with the patient demographics data. This API should not be FHIR and please define a custom API as appropriate

Code for AI

Any FHIR server as a MCP server

- Securely expose your EHRs/FHIR servers as MCP servers.
- Makes patient health records accessible to the healthcare agents.
- MCP server is secured using the FHIR server's authorization server.

Vertical AI Agent Use Cases

User present (Chat agents)

Use case:

Sarah wants to reschedule her cardiology appointment

Current Flow: Manual Rescheduling

1. Sarah calls hospital to reschedule appointment
2. Call is transferred to Cardiology department
3. Staff verifies Sarah's identity and concern
4. Staff manually searches for available slots
5. Sarah waits and then selects a new time
6. Staff manually updates the system and sends sms

Challenges

- **Time-consuming** – Sarah must stay on the call through multiple steps
- **Human dependency** – Slower if staff are unavailable or busy
- **Redundant information sharing** – Patient needs to repeat details
- **Manual effort** – Staff manually updates records and confirms
- **Frustrating** – Especially during high call volumes or off-hours

How It Works with an AI Agent

🗣️ *Sarah:* "What are my upcoming appointments?"

🧠 ***AI Agent:***

"You have:

- Cardiology – June 18, 11:00 AM
- Lab Test – June 27, 9:00 AM

Would you like to reschedule any?"

🗣️ *Sarah:* "Yes, can I move my cardiology appointment to next week?"

🧠 ***AI Agent:*** → Agent understands reschedule intent and target appointment

🧠 ***AI Agent:*** Returns 3 options:

✅ Tue, June 25 – 10:30 AM
✅ Wed, June 26 – 1:00 PM
✅ Fri, June 28 – 9:00 AM

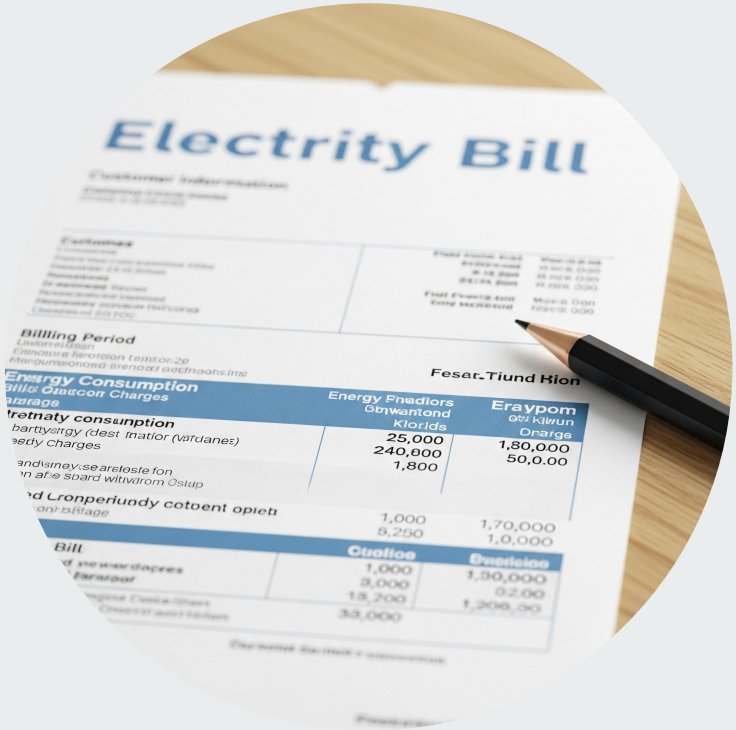
📲 Sarah selects a time

🧠 ***AI Agent:*** → Agent books new slot
→ Updates EHR
→ Sends SMS confirmation

🧠 ***AI Agent:***

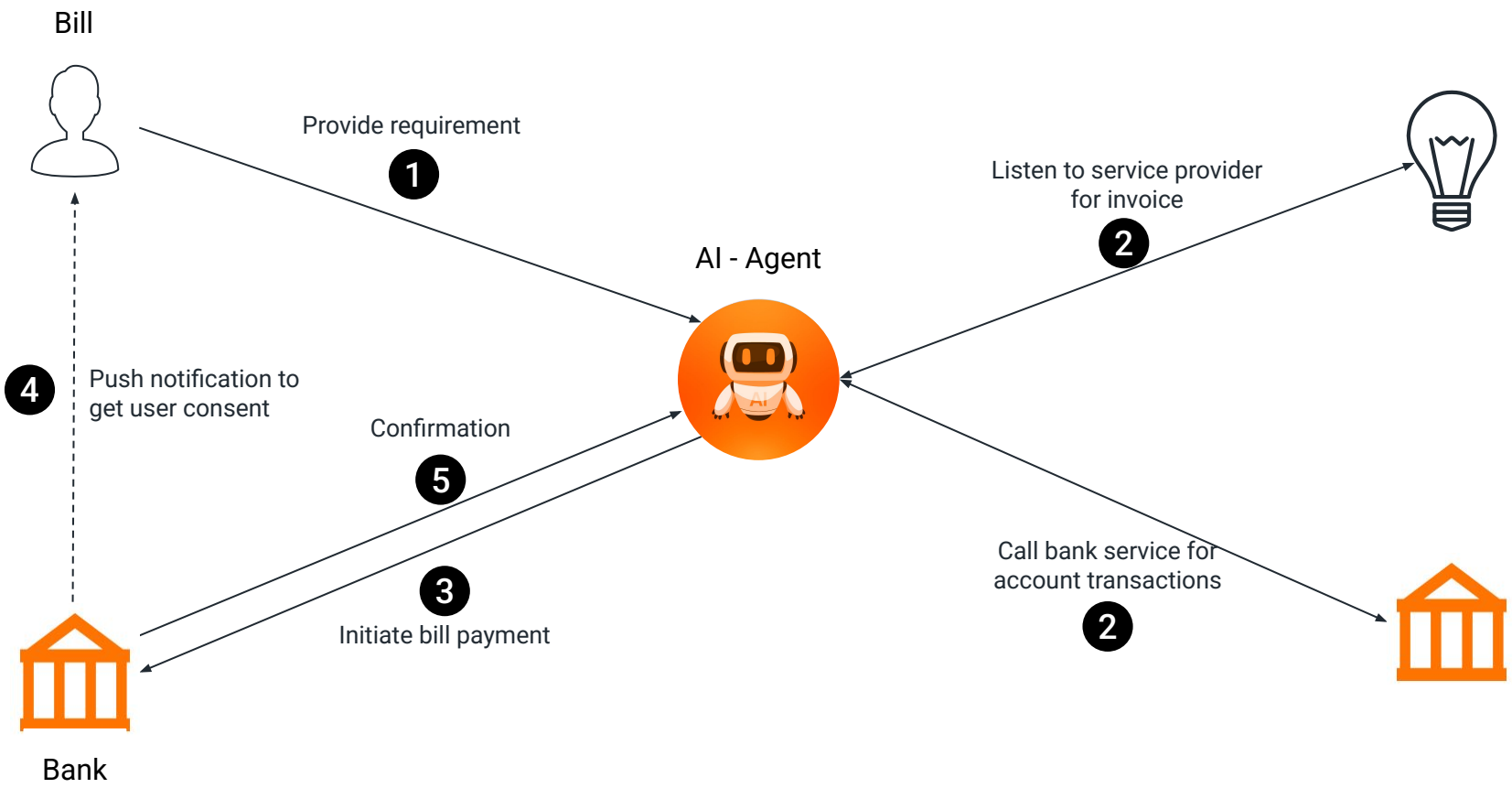
"You're confirmed for June 26 at 1:00 PM.
Please fast for 12 hours and bring your ID & insurance card."

User absent (Ambient Agents)



Use case:

Bill wants an AI agent to pay his electricity bill when it’s ready and his salary is remitted.


Bill
Provide requirement
1
Listen to service provider
for invoice
2
AI - Agent
4
Push notification to
get user consent
Confirmation
5
3
Initiate bill payment
Call bank service for
account transactions
2
Bank

The possibilities are endless! And we can help you build it

Innovation is the ability to see change as an opportunity – not a threat.

– Steve Jobs –

Question Time!

Thank you!

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