



AI Agents and BPMN

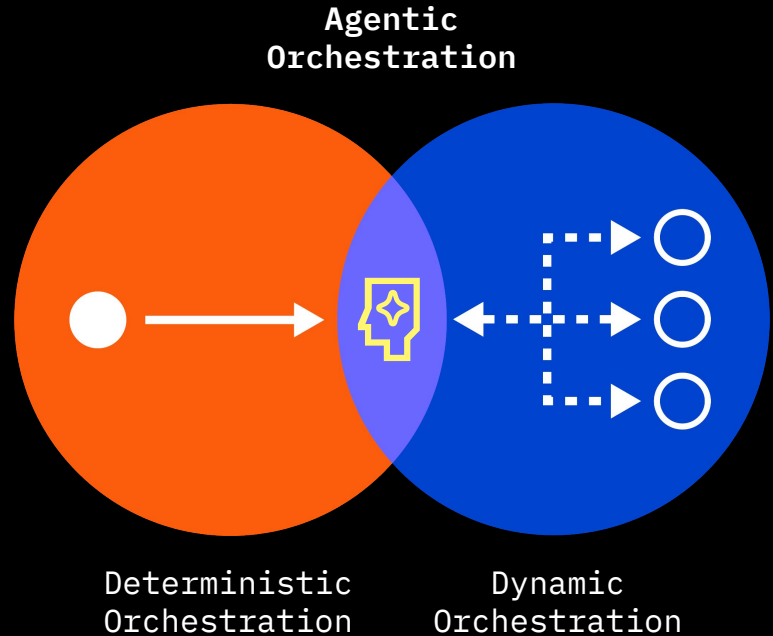
Orchestrating the Predictable and the
Unpredictable

Bastian Körber, VP Product Management, Camunda



Agentic Orchestration

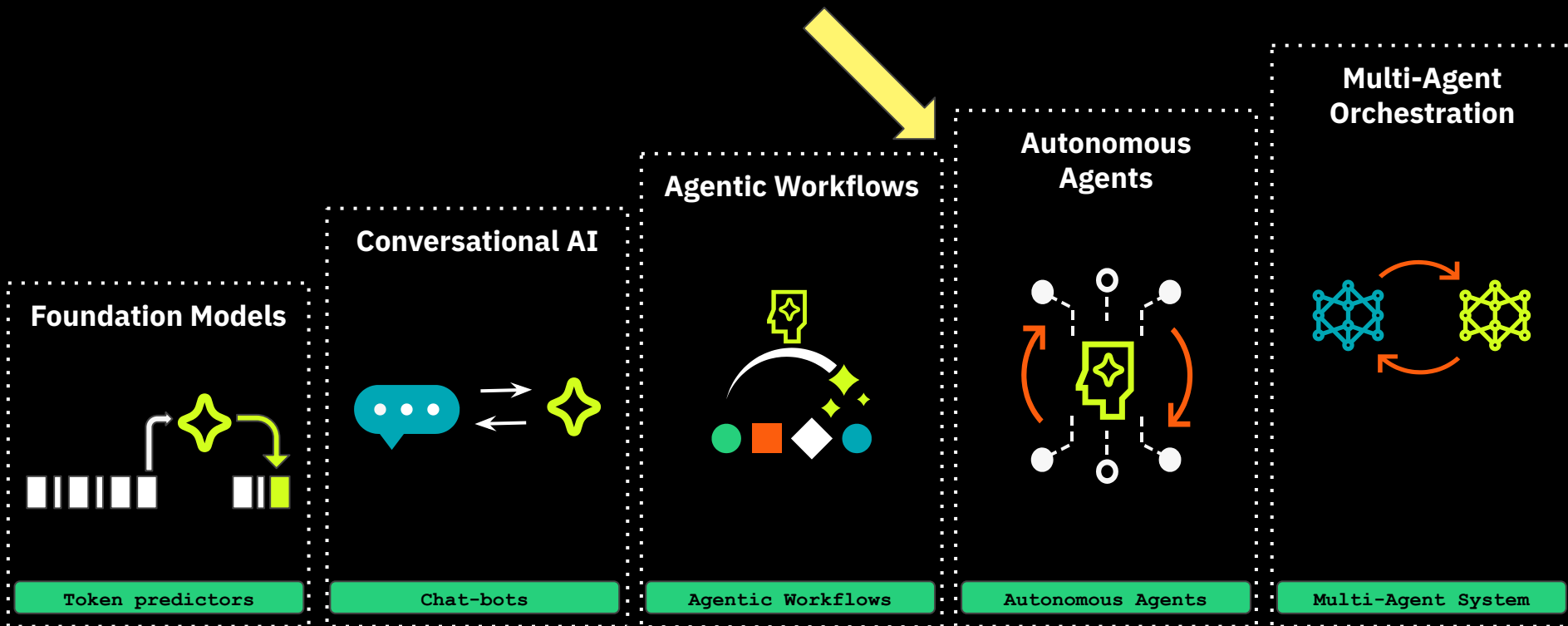
- Blends deterministic and dynamic (AI-driven) process orchestration.
- Dramatically increases the scope of process automation, to handle work that traditionally required human case management, and to provide a much higher level of flexibility for straight-through processing (STP).



Why?



We're moving from simple chatbots to agents that can reason, plan, act – and eventually collaborate.



The world is Changing



Brian O'Kelley · 2nd
Co-Founder and CEO at Scope3
6d · 🌐

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Rumors are that [OpenAI](#) is integrating [Shopify](#) directly into ChatGPT.

Which makes all the sense in the world from a user experience perspective, but reminds me - unfortunately - of the 90s, when you'd log onto America Online (AOL!) with your dial-up modem and you were completely captive inside of their experience. It also reminds me of how Microsoft used the power of their Windows install base to make Internet Explorer the default browser.

What excites everyone about MCP (Model Context Protocol) is the idea that these chatbots will be open to innovation and collaboration, to fuel the open internet that has empowered billions to participate in a global conversation (and the global economy).

How open will consumer-facing AI products be? Does [Amazon](#) buy [Anthropic](#) to protect their e-commerce business? Would that pass anti-trust muster? What's the equivalent of a hyperlink for AI that helps a human - or agent - connect to MCP services? Is "Chat Commerce" the next big shopping category? I HAVE SO MANY QUESTIONS!

(h/t [Roni Hiranand](#))



159

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We're entering a world where **commerce, support, and process execution** increasingly **happen in conversations.**

“The future is not a forecasting exercise, it is a design exercise.

We have to design the future we want rather than waiting around for it to happen or predicting what it will be.”

Prof. David Autor, MIT
(attributes quote to Josh
Cohen, [source](#))

What is needed when?



Agentic Orchestration

Deterministic

- Clear, predictable paths
- Repeatable, rules-based decisions
- Fast, efficient execution
- Regulation dictates execution sequence

Enabled by

Advanced workflow patterns
Business/IT alignment on process and decision logic

Dynamic

- Flexible, context-aware choices
- AI-driven task planning
- Unstructured cases: classification, triage, or investigation
- Adaptable to data and conditions

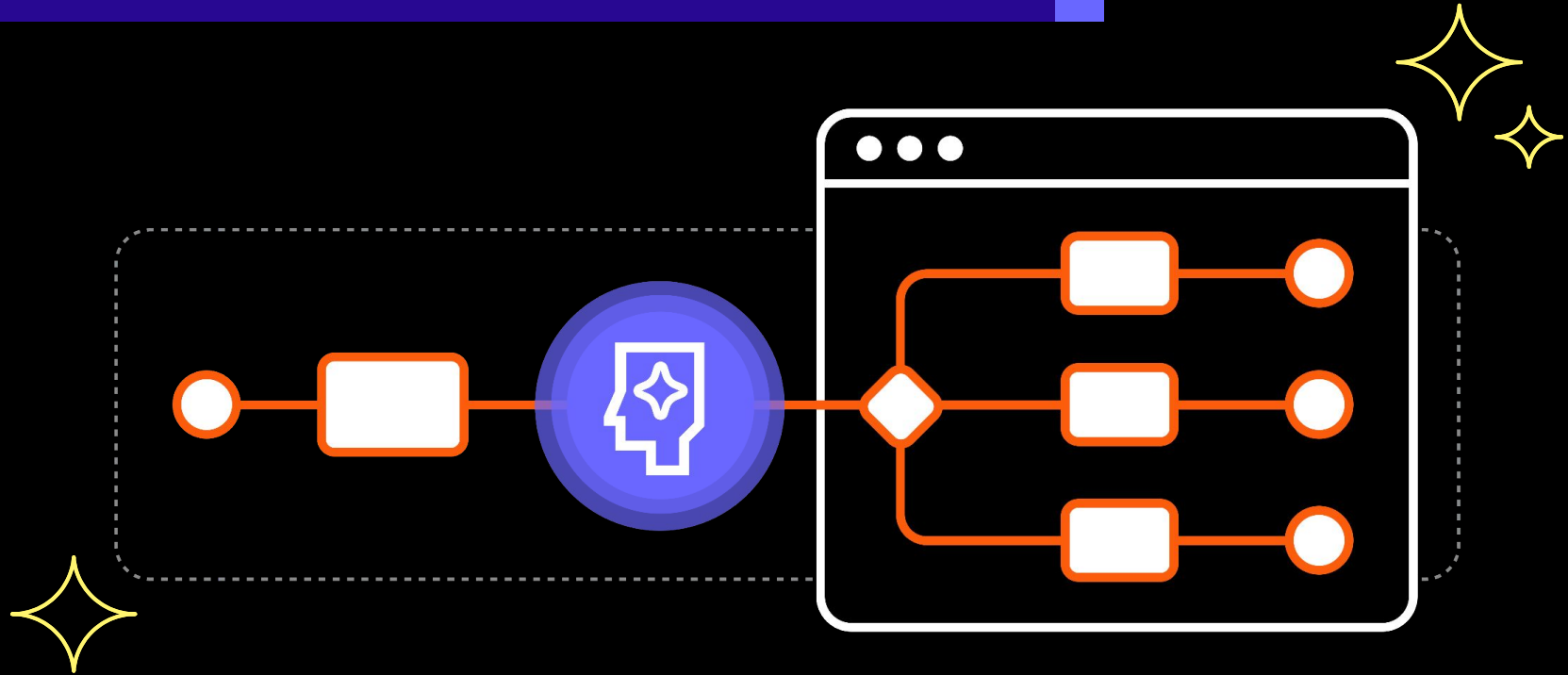
Enabled by

Dynamic task scheduling and tracking,
AI<>Human collaboration

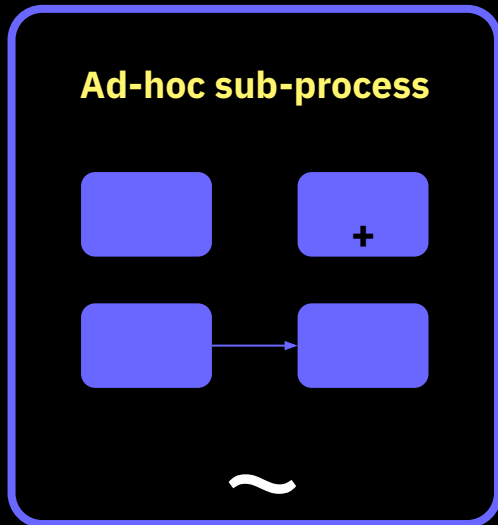
Real-world Process Automation
requires both

How?

AI Agents thrive in BPMN, not as stand-alone apps



Ad-hoc sub-process



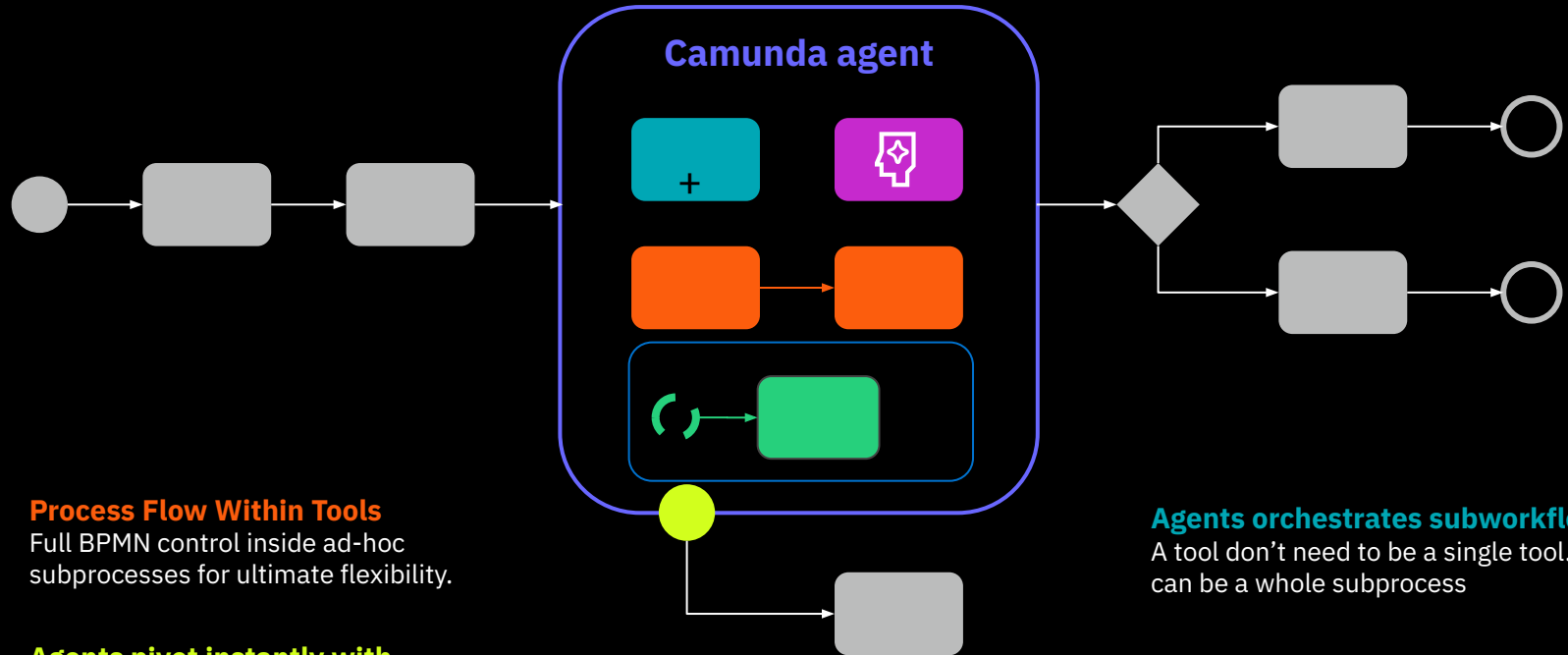
Capabilities

- Exposes a palette of tasks without prescribing sequence or which task must run.
- Agent (human or AI) decides at runtime which tasks to execute and in what order.
- Can contain nested subprocesses (ad-hoc or event-based)
→ enables multi-agent planning and real-time reactions.
- Persists state and progress in Zeebe
→ safe for long-running, interruptible work.

Use Cases:

- Human case-management
- AI task- or case-agents

Mixing Agents with Workflow patterns



Process Flow Within Tools

Full BPMN control inside ad-hoc subprocesses for ultimate flexibility.

Agents pivot instantly with external messages and timers.

During execution, agents can be influenced by events like external messages or timers, enabling on-the-fly adjustments.

Event-Driven Agent Reconfiguration

Subworkflows handle new data, guiding the next AI steps.

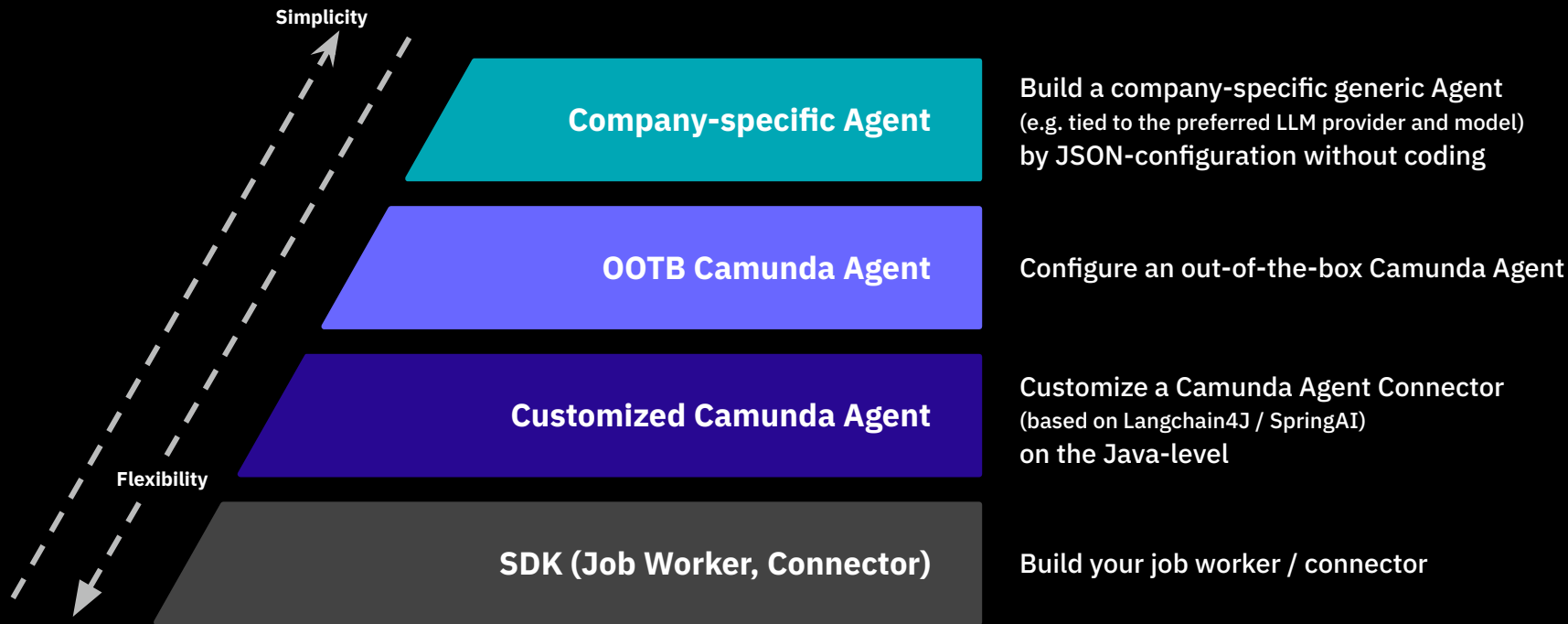
Agents orchestrates subworkflow

A tool don't need to be a single tool. It can be a whole subprocess

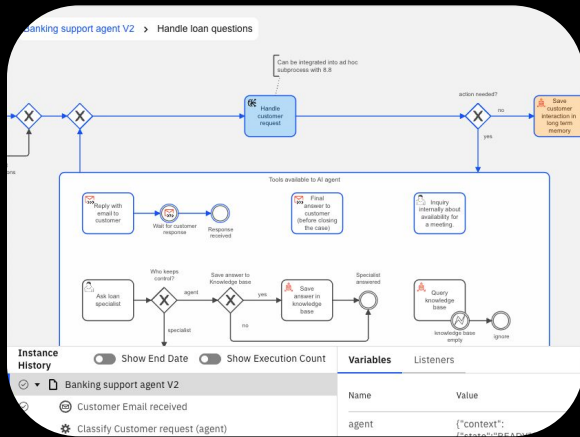
Multi-Agent Orchestration

Agents orchestrate other agents for streamlined, scalable solutions.

Agent Multi Layer Coding Experience



Observability is key



Operate

- **End-to-end trace tree** – main flow plus agent-driven ad-hoc subprocesses rendered as one collapsible hierarchy for instant root-cause drill-down
- **Zero-downtime fixes** – retry, set variables, move token or swap model directly in the running instance; no suspend or redeploy required
- **Single-pane context** – prompt, model ID/version, I/O variables, execution log and live cost metrics shown together; all actions logged

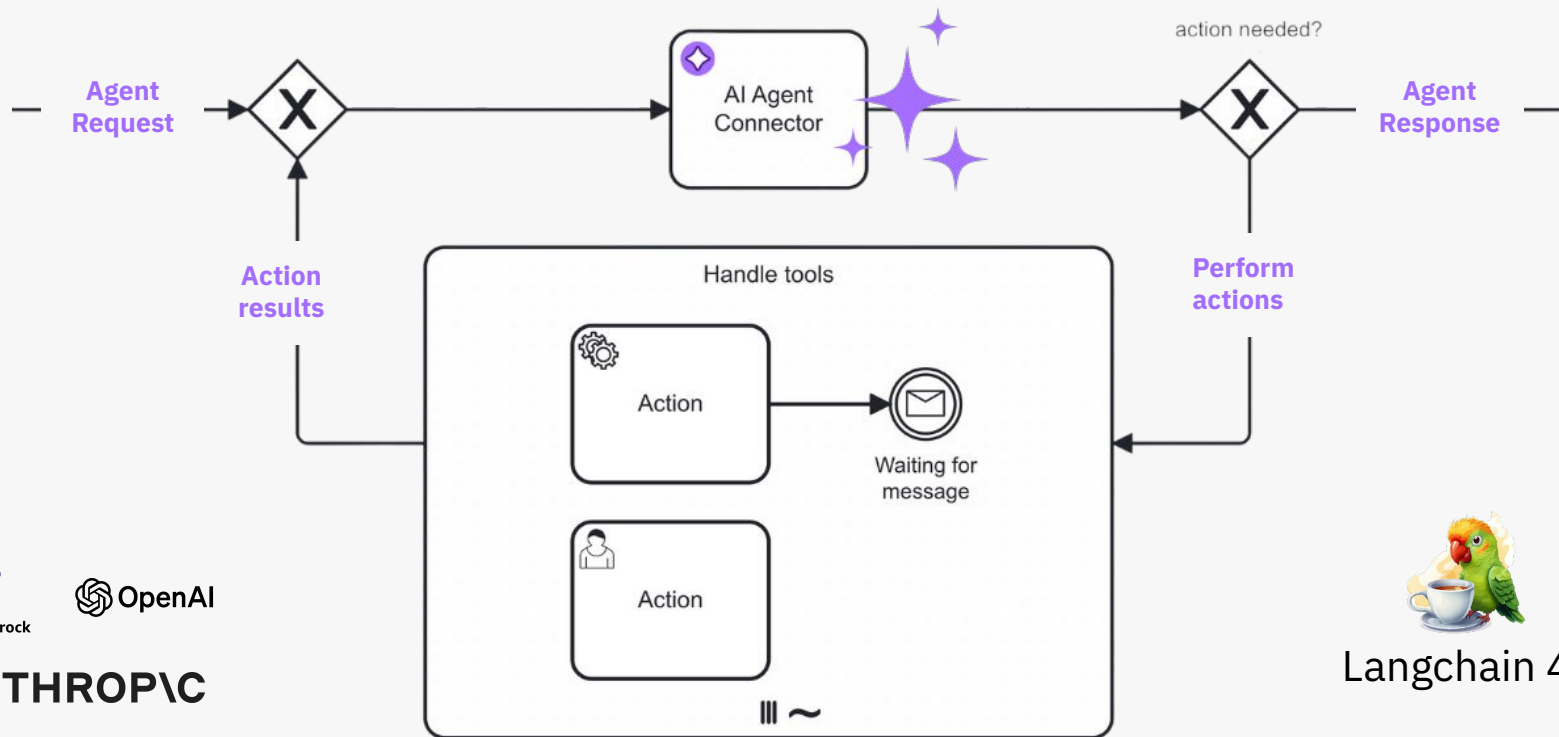


Optimize

- **Dashboards** - exposing cycle-time, throughput, and SLA drift
- **Cost-aware analytics** – turns raw token counts from each agent + tool call into €/£/\$ per instance and per variant, so ROI is visible at a glance
- **Bottleneck & variant finder** – automatically highlights the slow-or-expensive path segments (including ad-hoc agent branches) that drive SLA drift

What can you use now?

Brand new AI Agent connector



Amazon Bedrock



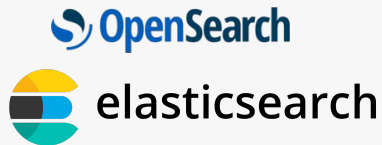
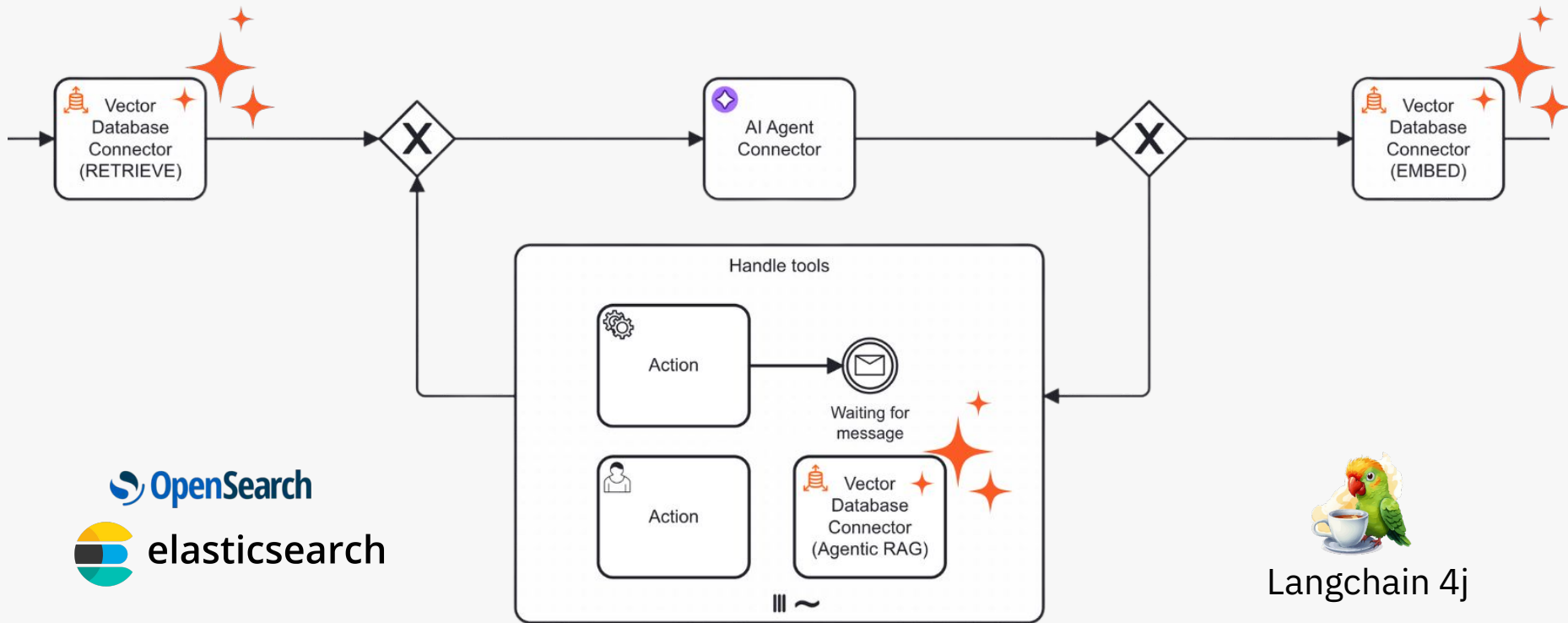
OpenAI

ANTHROPIC



Langchain 4j

Brand new Vector database connector



Langchain 4j

Try AI Agents now



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AI Email Support Agent

End-to-end email orchestration with AI

Creator: [Camunda](#) / [Bastian Körber](#)

[For SAAS](#)

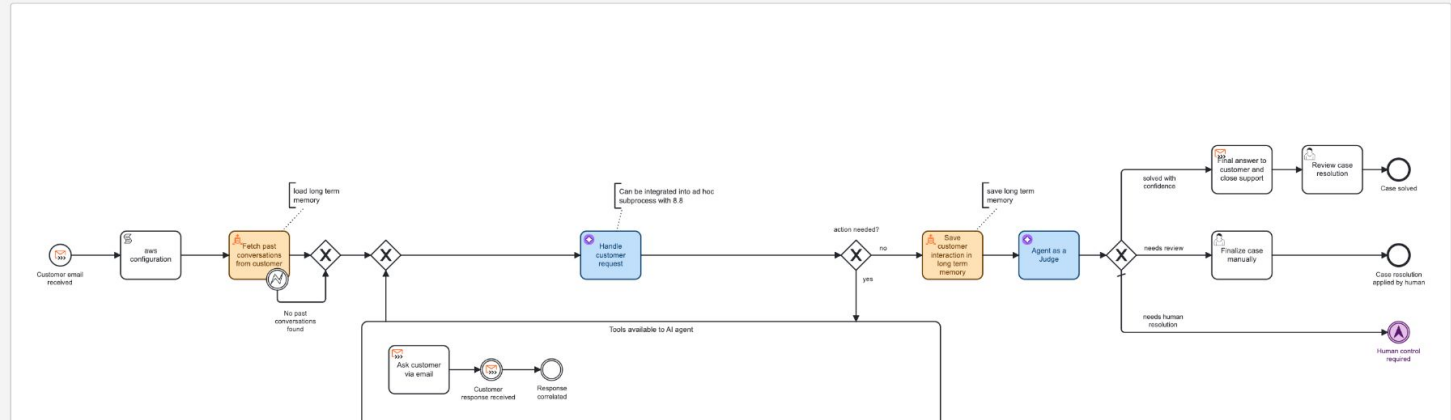
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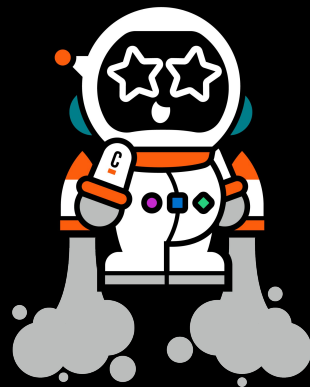
AI $\neq$ Magic

Orchestrate responsibly

PRINCIPLES — THINK FIRST, CODE LATER



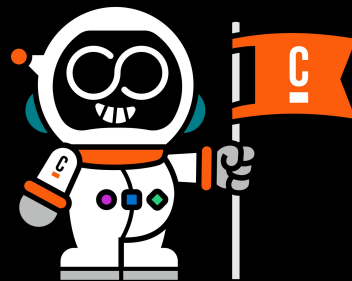
- ★ **Problem → Agent, not Agent → Problem**
- ★ **Agents are spices, not the entrée**
- ★ **Architect for composability**
- ★ **Observability is non-negotiable**



DESIGN & ARCHITECTURE



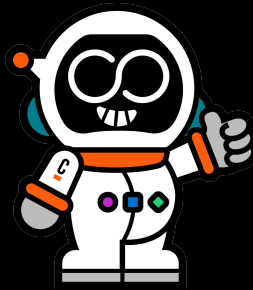
- ★ **Guardrail Sandwich (deterministic task → agent → deterministic validation)**
- ★ **Context Packing vs. Retrieval Augmentation**
- ★ **Human-in-the-Loop Escalation Paths**
- ★ **Version every prompt**



IMPLEMENTATION BEST PRACTICES

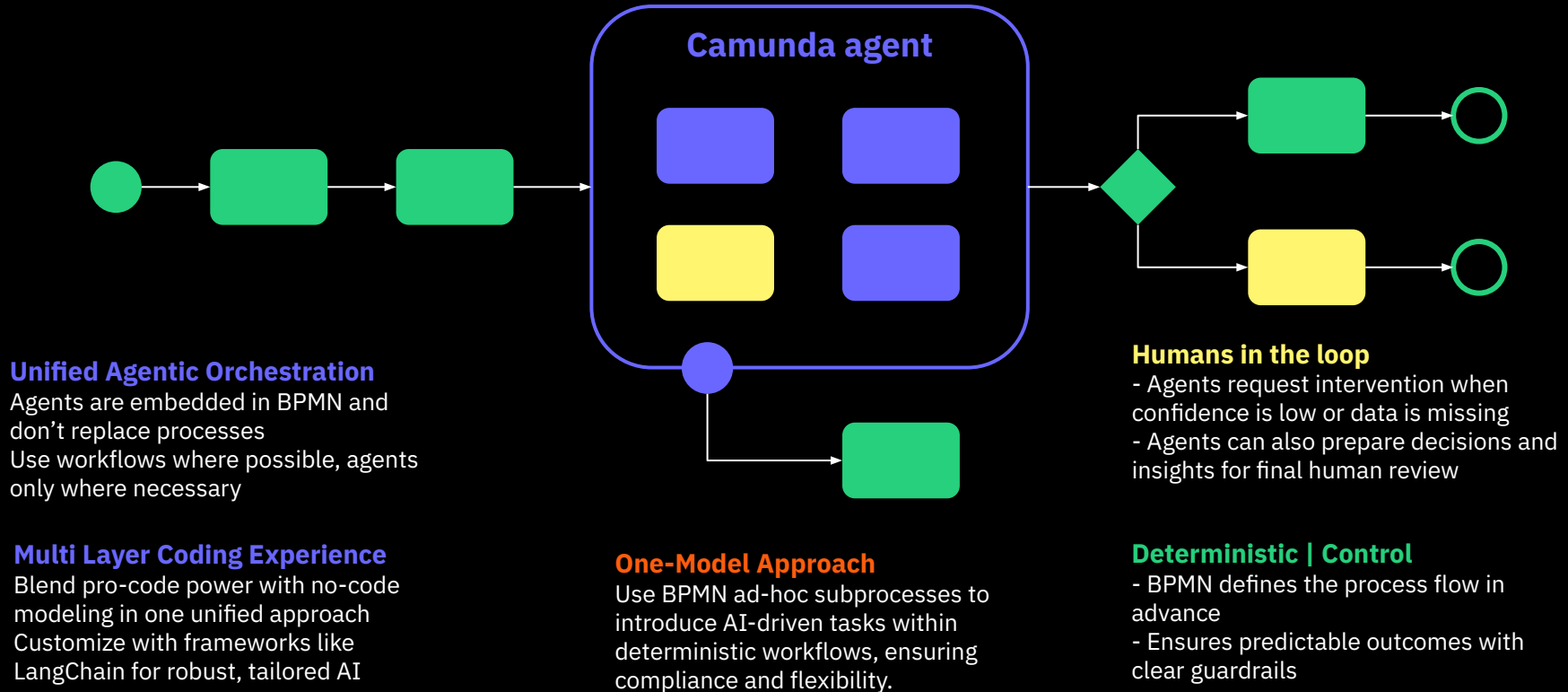


- ★ **Toolboxing beats monoliths**
- ★ **Temperature discipline**
- ★ **Latency budgets**



Our Approach to Agentic Orchestration

Blend deterministic and non-deterministic process execution to balance control with flexibility



How Camunda Enables Agentic Orchestration



Agentic Orchestration

Deterministic and dynamic orchestration
High volume STP and flexible Case Management
Agents that plan, adapt and decide



Enabling Capabilities

Integration

Pro-code to no-code
framework
>100 ootb integrations

Task Automation

Native support for HITL,
Task Agents, DMN, RPA
and IDP, integrate with
any 3rd party automation

Orchestration

Highly-scalable,
Resilient, cloud native
workflow engine
(Zeebe)

Embedded AI

Pluggable
AI integration,
safe and governed



Unique Foundation

Open, Collaborative, Scalable, Composable, Intelligent

Thank You



bastian.koerber@camunda.com



camunda.com

