

Agentic Orchestration

Long-Running AI Agents in
Enterprise Architectures

Bernd Ruecker

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A fundamental transformation

CAMUNDA

“

“Agentic AI systems are poised to not only become the backbone of the knowledge economy but will completely redefine how organizations operate and compete.”

FORRESTER®

”

I am sorry...

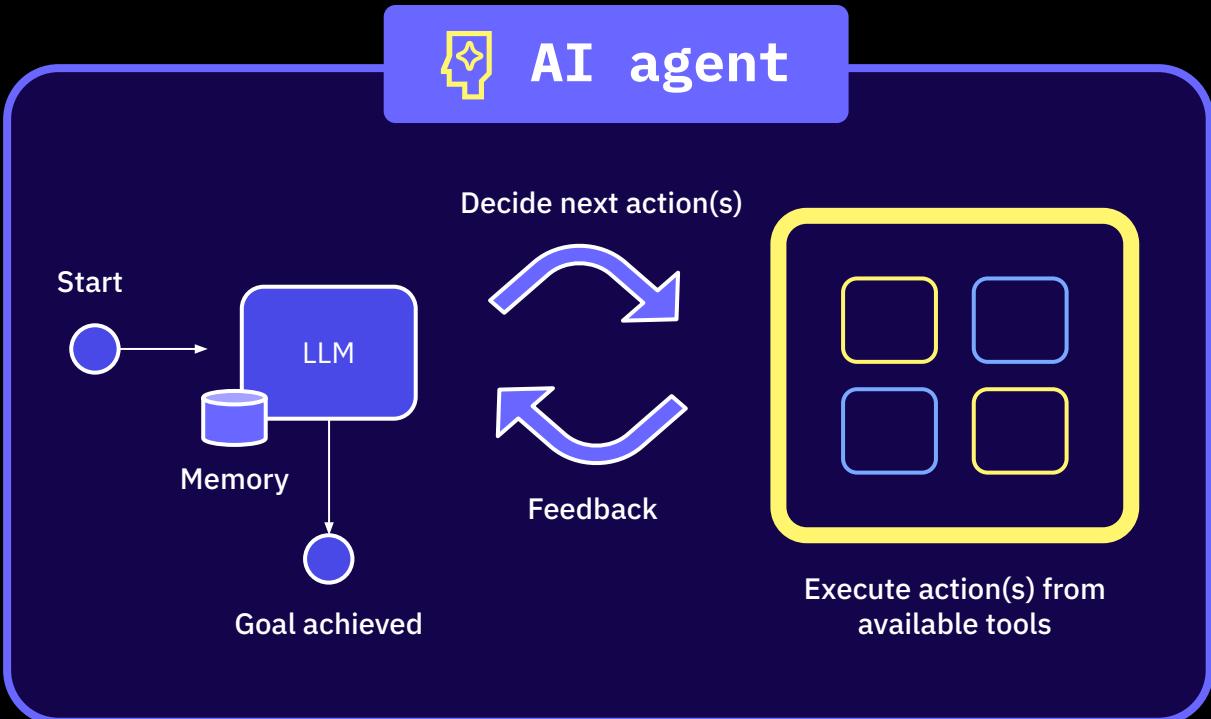


What is
Agentic AI?

AI Agents

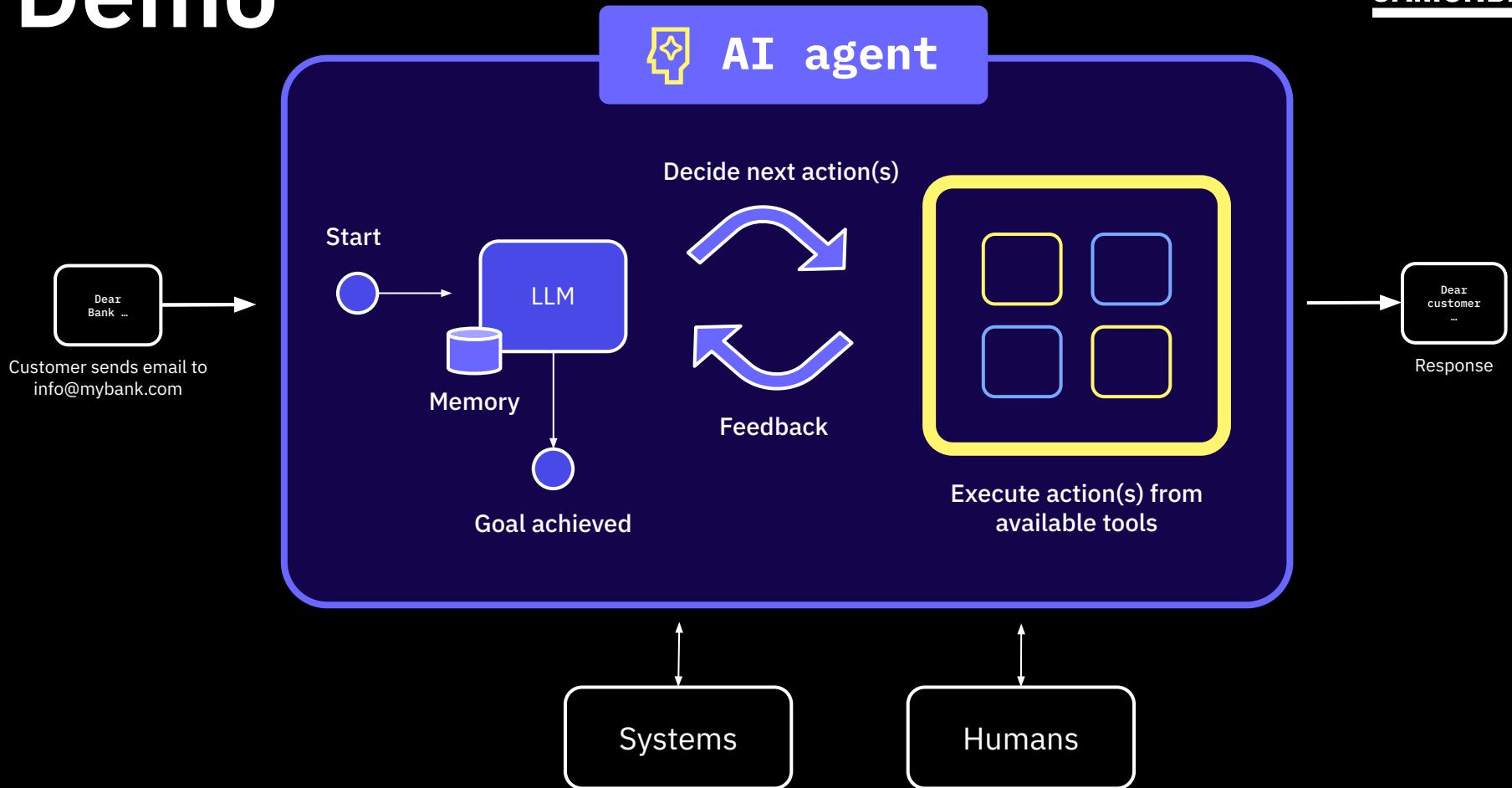


Perform
multiple steps
to achieve a
complex goal.
They
orchestrate!



Demo

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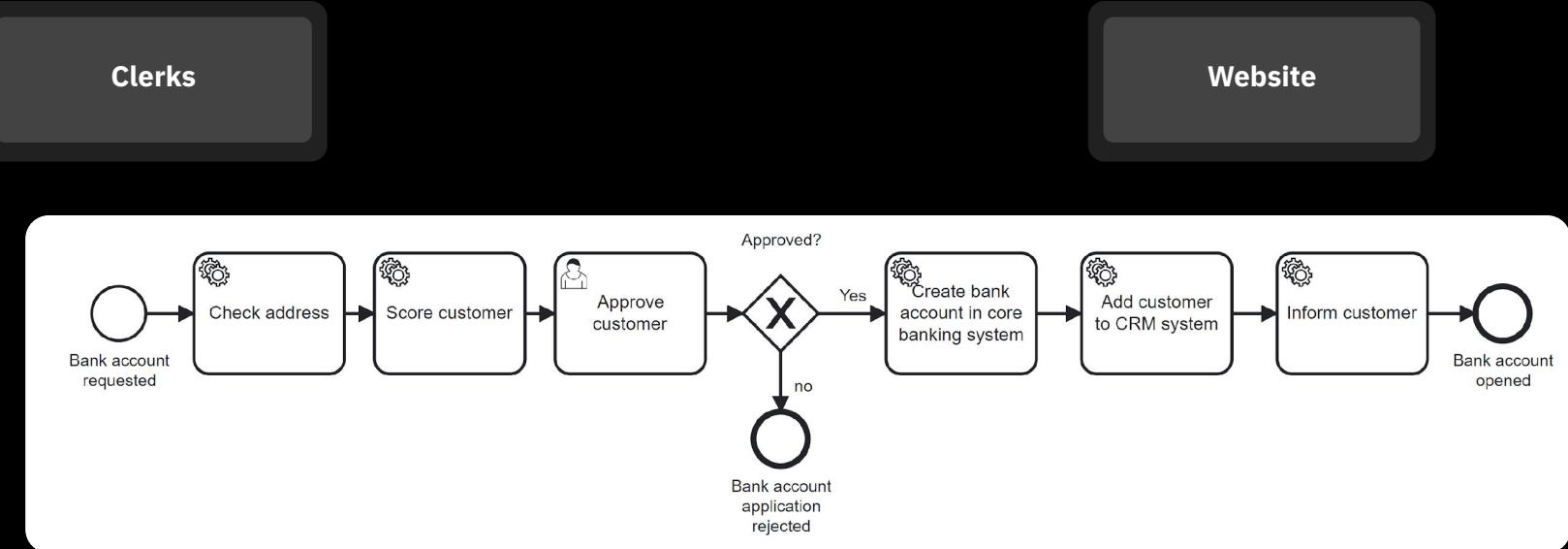


Live demo



Adding process orchestration

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Core Banking
System

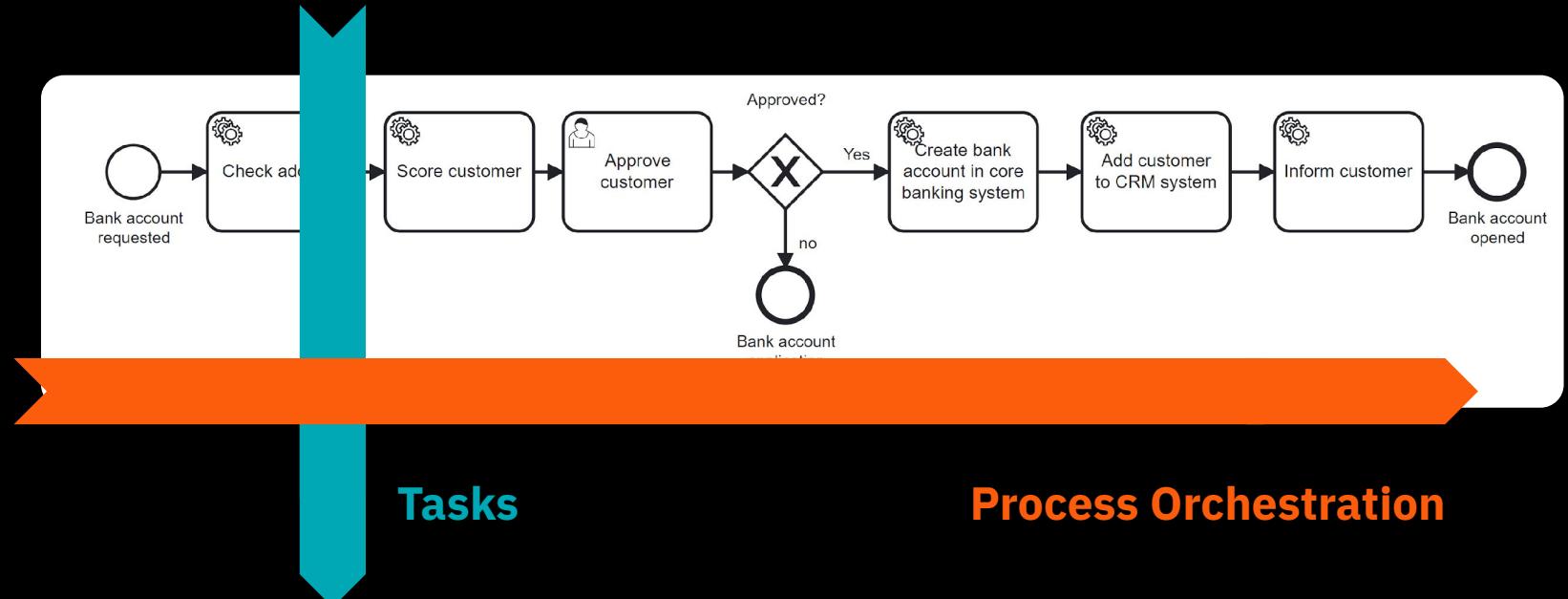
CRM System

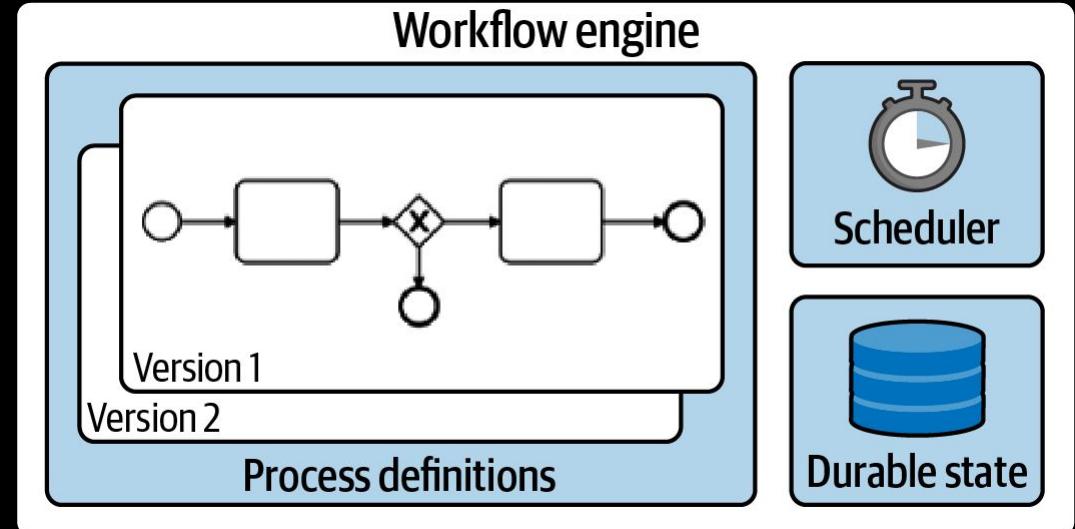
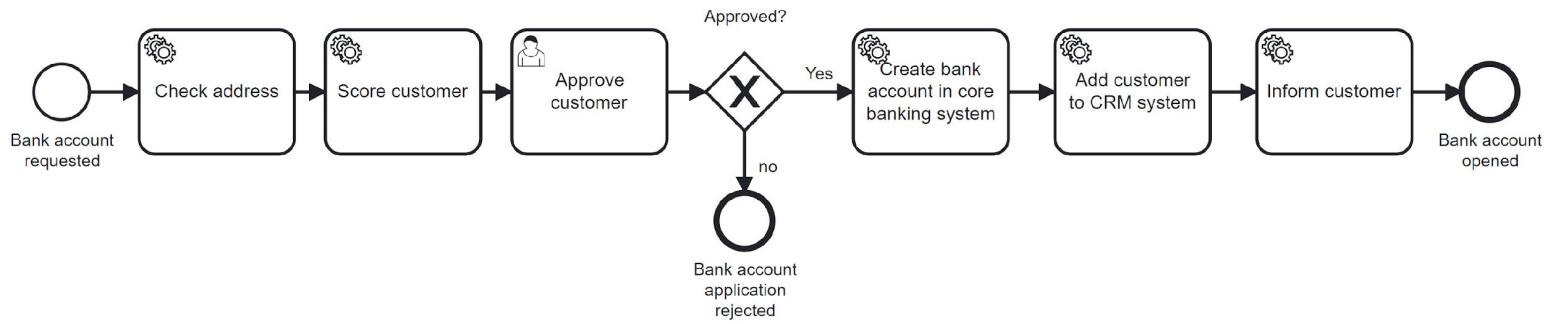
Scoring System

Address Check

Task vs. process automation

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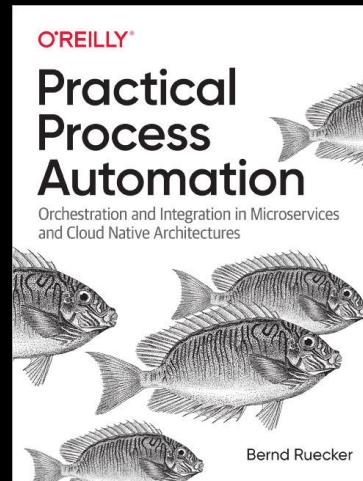
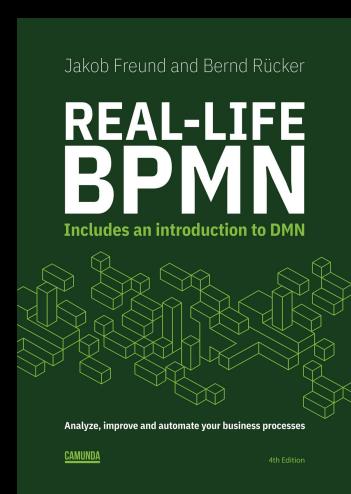
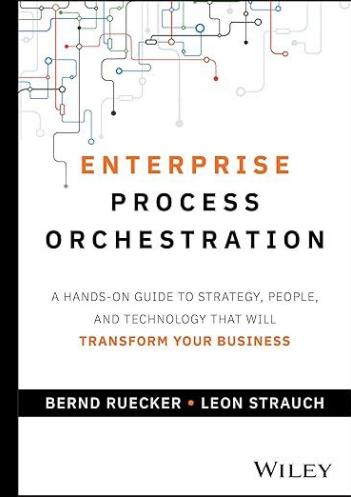
Bernd Ruecker

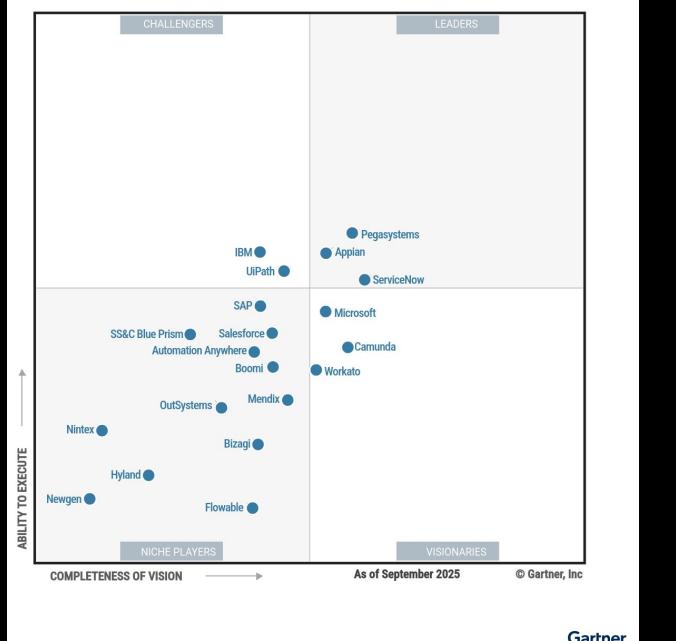
Co-founder and
Chief Technologist of
Camunda

bernd.ruecker@camunda.com

@berndruecker

<http://berndruecker.io/>

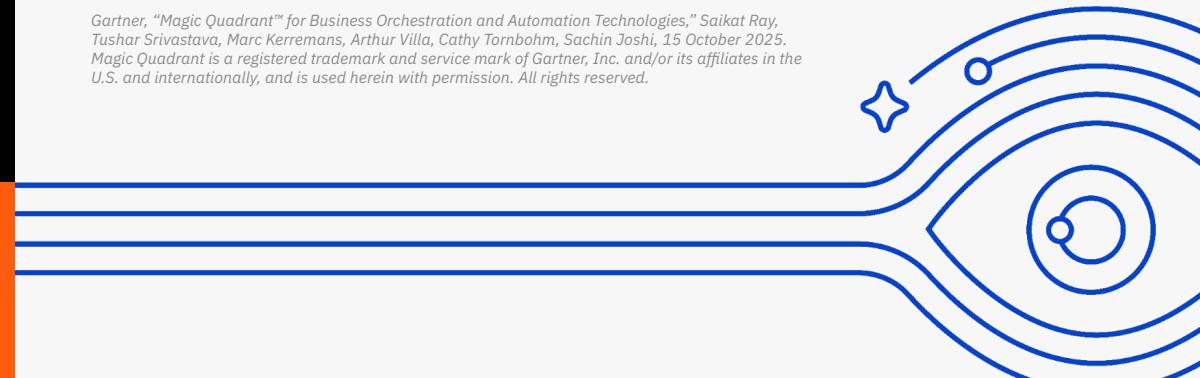




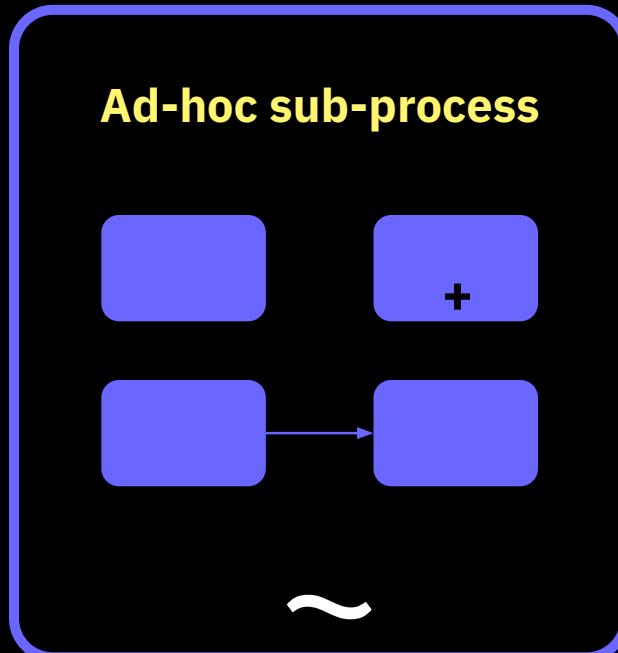
Camunda recognized as a **Visionary** in the Gartner® Business Orchestration and Automation Technologies (BOAT) Magic Quadrant™

Gartner, "Magic Quadrant" for Business Orchestration and Automation Technologies," Saikat Ray, Tushar Srivastava, Marc Kerremans, Arthur Villa, Cathy Tornbohm, Sachin Joshi, 15 October 2025. Magic Quadrant is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally, and is used herein with permission. All rights reserved.

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Ad-hoc sub-process – Why it's perfect for Agentic Orchestration



Capabilities

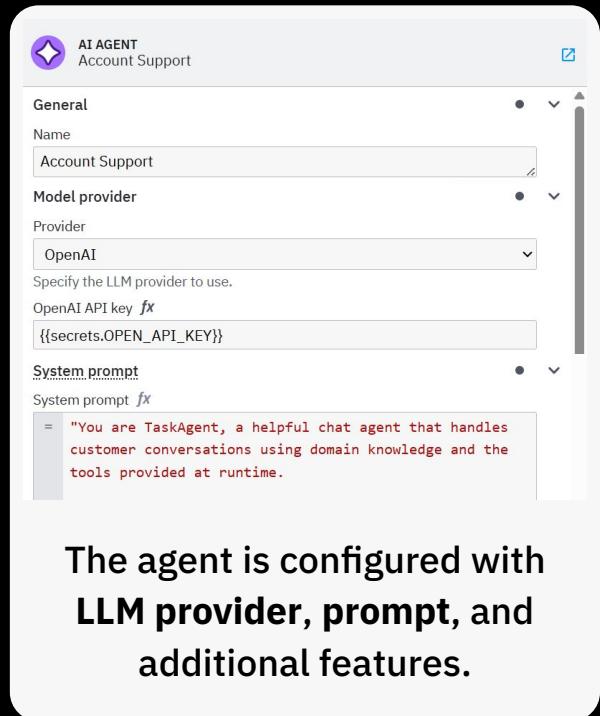
- Exposes a palette of tasks without prescribing sequence or which task must run.
- Agent (human or AI) decides at runtime which tasks to execute and in what order.
- Can contain nested subprocesses (ad-hoc or event-based)
→ enables multi-agent planning and real-time reactions.
- Persists state and progress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

Use Cases

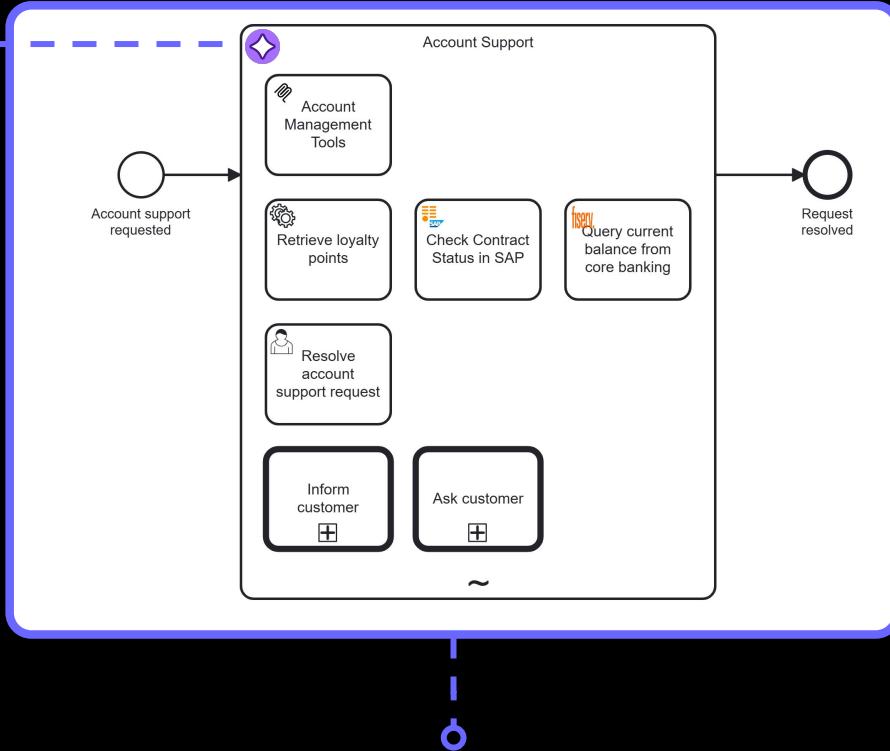
- Human case-management
- AI task- or case-agents

Building agents with BPMN

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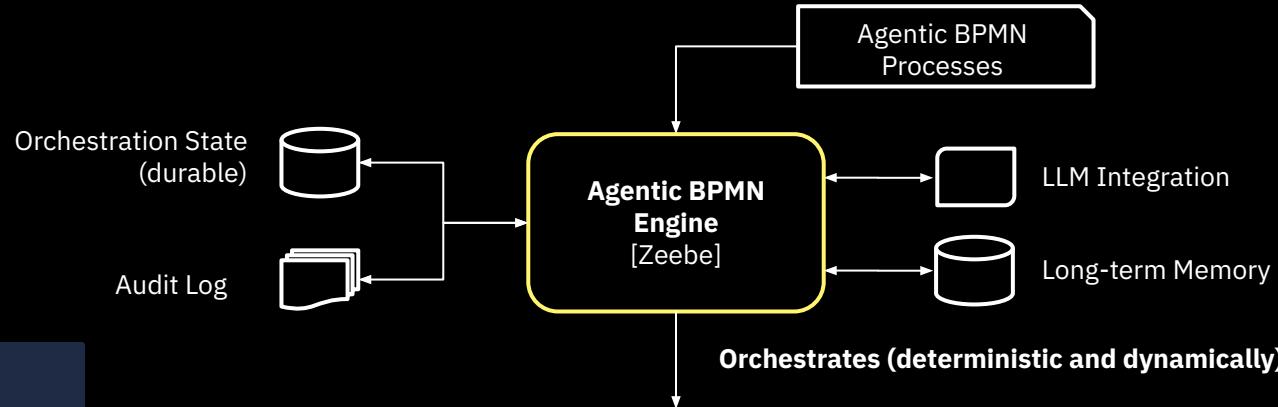
The agent is configured with
LLM provider, prompt, and
additional features.



Agents can be long running

Agentic BPMN Engine (Camunda 8.8)

CAMUNDA



tools

Humans in the Loop

AI-based Automation Patterns

Traditional Automation Patterns

(Supervisor or Task Worker)

Agents

AI computer use

...

RPA

Document Automation

Decision Automation

...

System Integrations (APIs, Events, Documents, Data)

REST

Messaging

MCP

A2A

SOAP

IMAP

SMTP

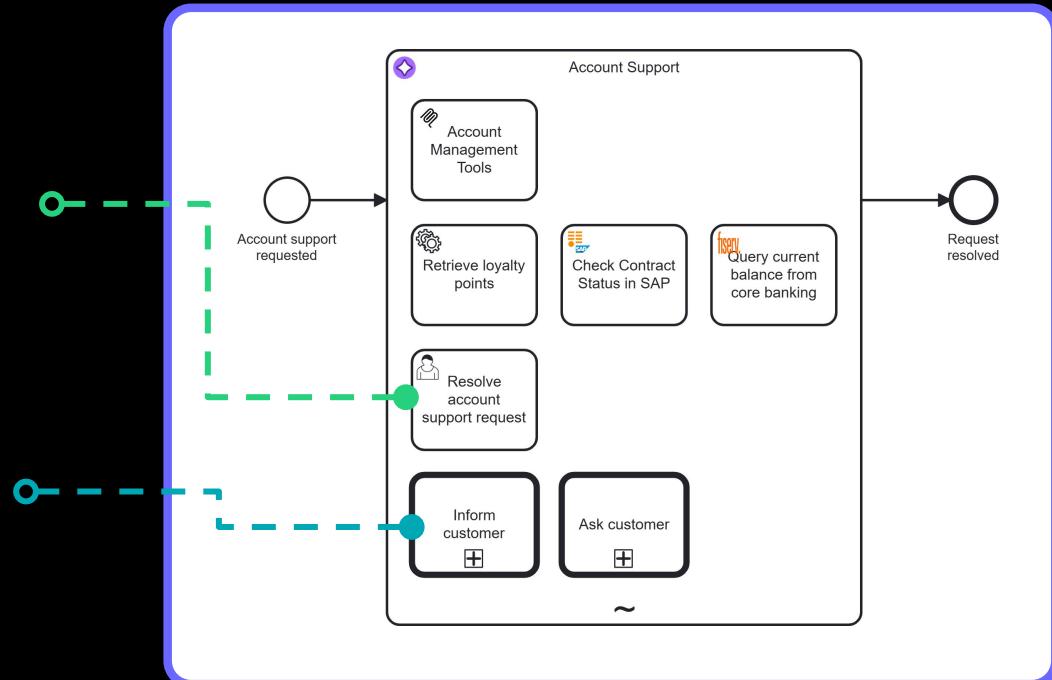
...

Building agents in BPMN

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Omnichannel employee engagement:
Agents can interact with the employees

Omnichannel customer engagement:
Agents can interact with the customer



Meet employees where they are

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Stay focused



Act fast



Collaborate in context



Improve efficiency

Examples

Camunda Tasklist

All open tasks

Loan underwriting
Loan Application

Task Process

Loan underwriting

Customer

- ID: 851098765
- Name: Brandon Case
- Email: brandon.case@gmail.com

Loan

- Amount: USD 50,000.00
- Terms: 48 months

Risk assessment

Risk class

Low

Risk assessment

MS Teams

Chat Home Tasks Processes Incidents

AI & Market Expansion

Loan underwriting
Loan Application

Loan underwriting

Customer

- ID: 851098765
- Name: Brandon Case
- Email: brandon.case@gmail.com

Loan

- Amount: USD 50,000.00
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Risk assessment

Risk class

Low

Risk assessment

Based on the applicant's credit history, income stability, and debt-to-income ratio, the overall risk assessment is Low.

SAP

Camunda SAP BTP Plugin

Loan underwriting

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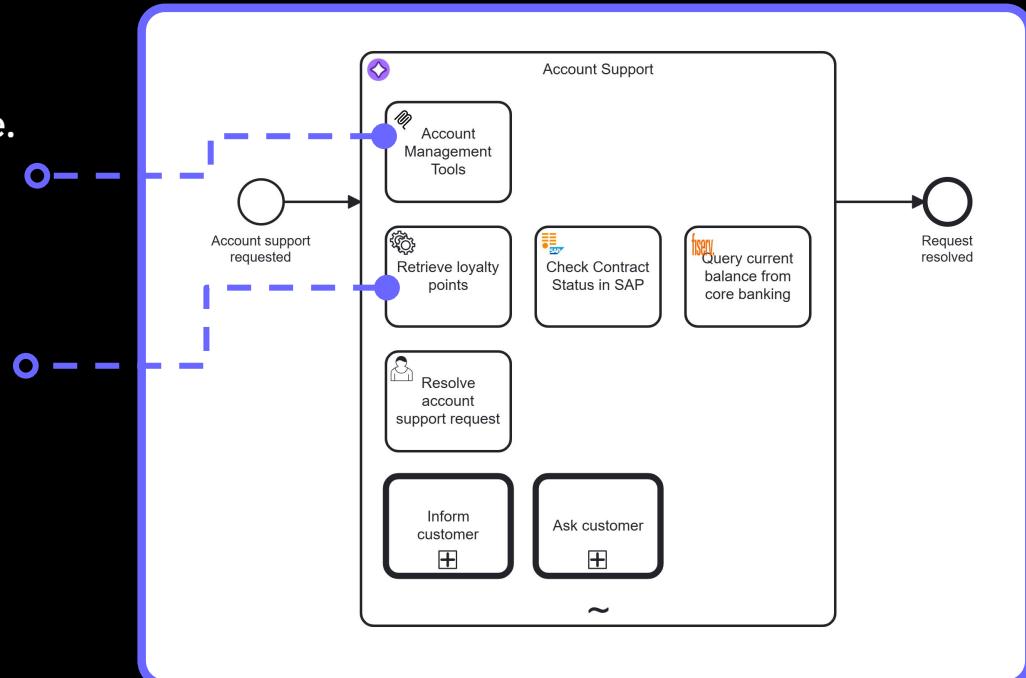
Building agents

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MCP can be used locally or remote.
Tools are discovered dynamically,
but can be governed.

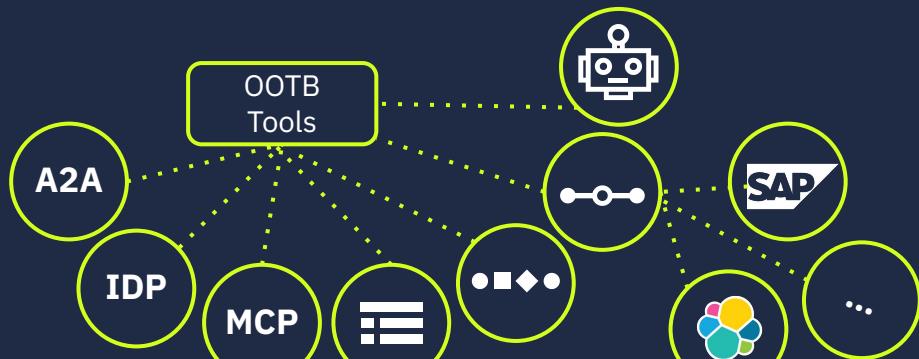
Everything available in BPMN
and Camunda can be a tool



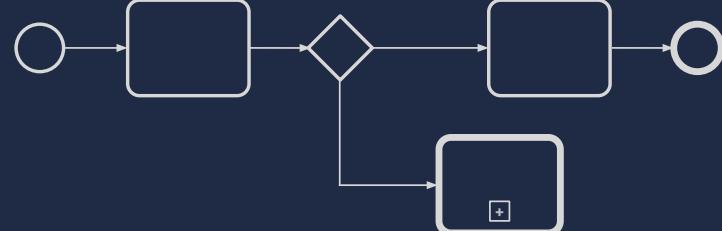
Everything can be a tool

CAMUNDA

Camunda OOTB Automations



BPMN Process as tool



Classic Protocols



Pro Code Job Worker as tools

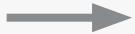


Multi Layer Coding Experience

Pro code



Protocol connector



Generic system connector

(requires JSON configuration
of REST connector)

Specific capability connector

(requires JSON configuration)

```
@JobWorker(type = "call-rest")
public Map executeRestCall(final ActivatedJob job
    HttpRequest request = HttpRequest.newBuilder()
        .uri(URI.create("https://someUrl.org/"))
        .GET()
        .build();

    HttpResponse<String> response = send(request)

    return newVariable("response", response);
}
```

R REST CONNECTOR
Make a request

General • >

Template Applied >

Authentication • ▾

Type None

Choose the authentication type. Select 'None' if no authentication is necessary

HTTP Endpoint • ▾

Method GET

URL ⓘ Must not be empty.

Query Parameters ⓘ

Map of query parameters to add to the request URL

HTTP Headers ⓘ

Map of HTTP headers to add to the request

Connect Timeout • ▾

Connection Timeout 20

TWILIO ServiceTask

General • >

Template >

Operation • ▾

Operation type

Send a SMS
Get message
List Messages
Authentication type

Response Mapping • ▾

Result Variable

Name of variable to store the response in. Details in the [documentation](#)

Result Expression ⓘ

Map of expression to map the response into process variables. Details in the [documentation](#)

Error Handling • ▾

Connection Timeout 20

Sets the timeout in seconds to establish a connection or 0 for an infinite timeout

Error Expression ⓘ

SEND SMS ServiceTask

General • >

Template >

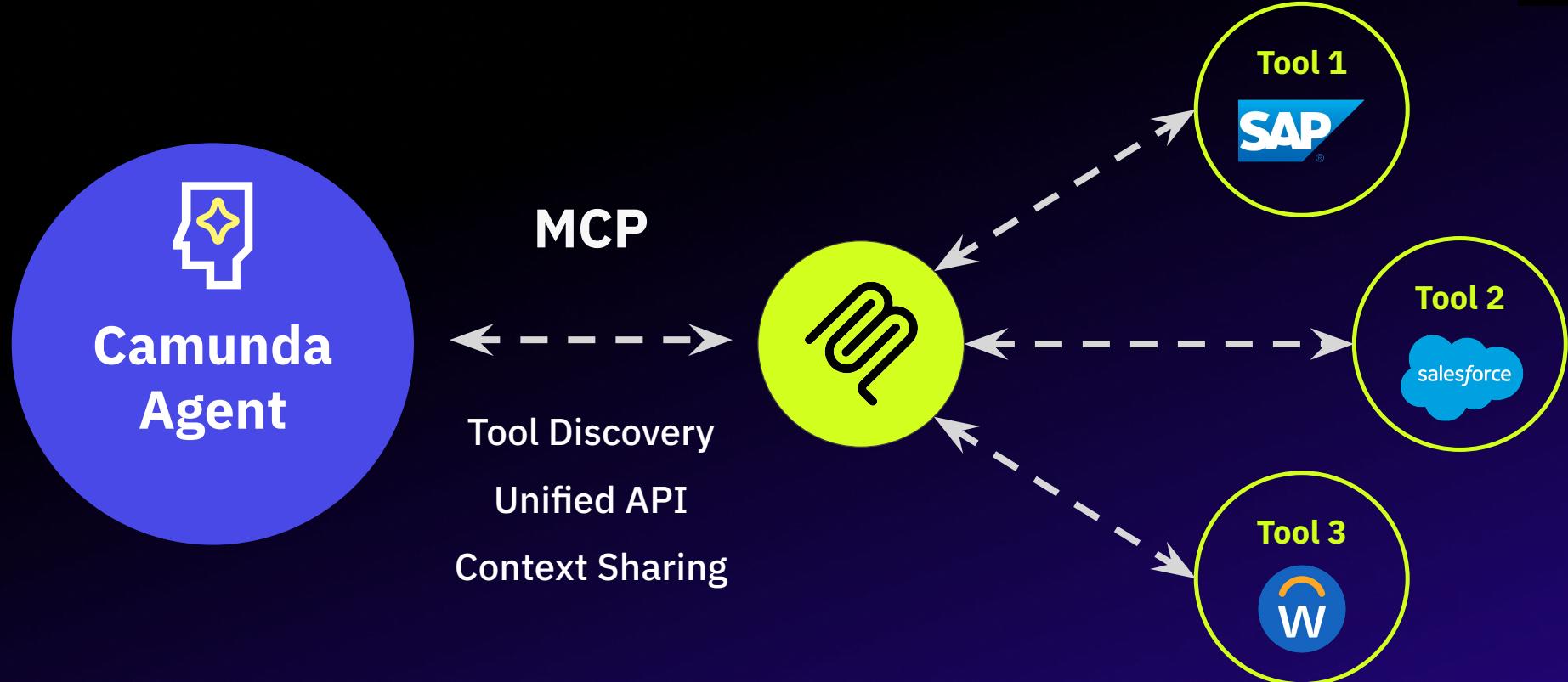
Input • ▾

Message Text ⓘ Must not be empty.
The content of the message that will be sent

To Number ⓘ Must not be empty.
The recipient's phone number

MCP Model Context Protocol

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A2A Agent to Agent

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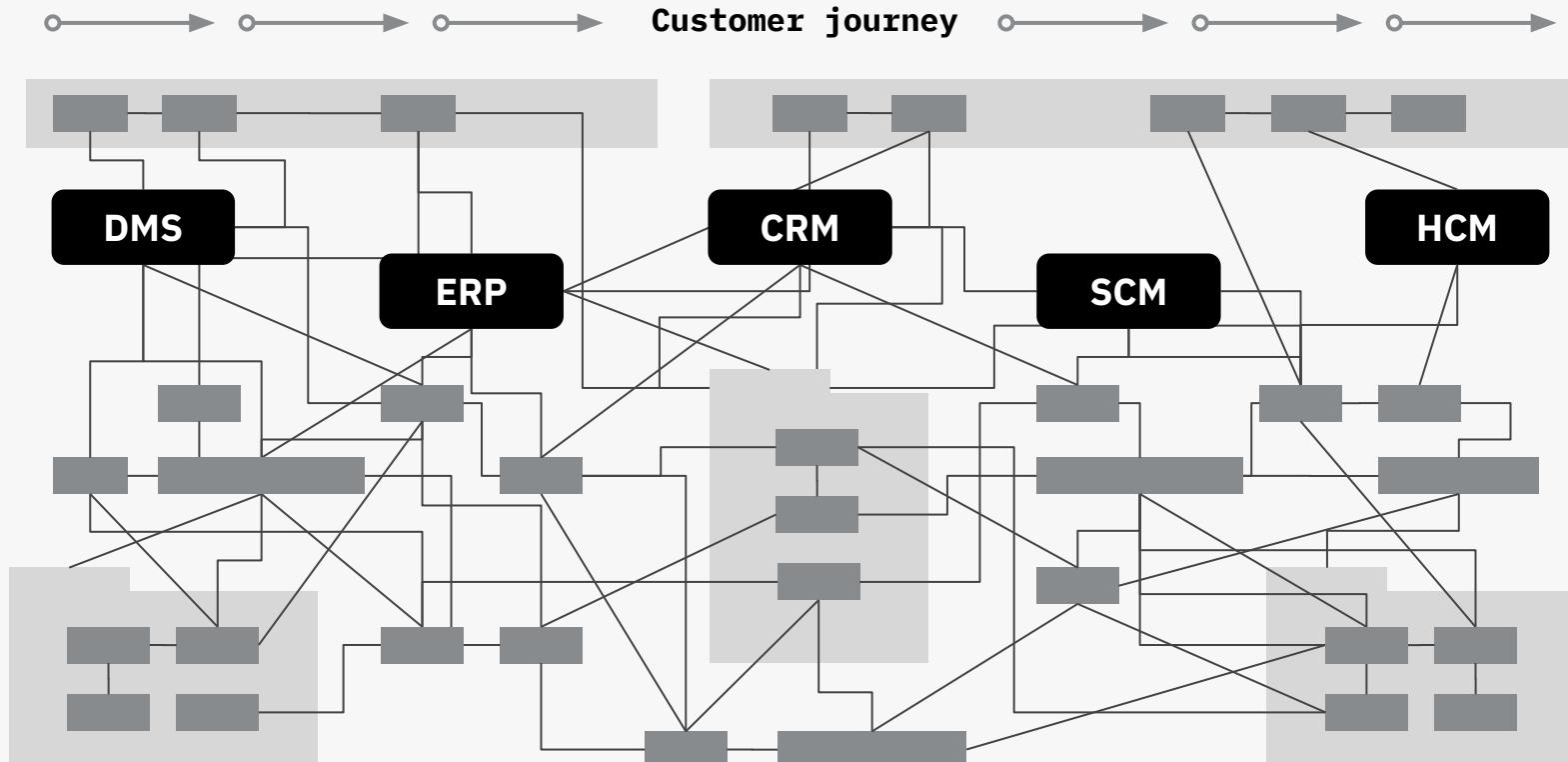


Scaling agents in the enterprise



Just throw in agents?

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Unleash the agents?

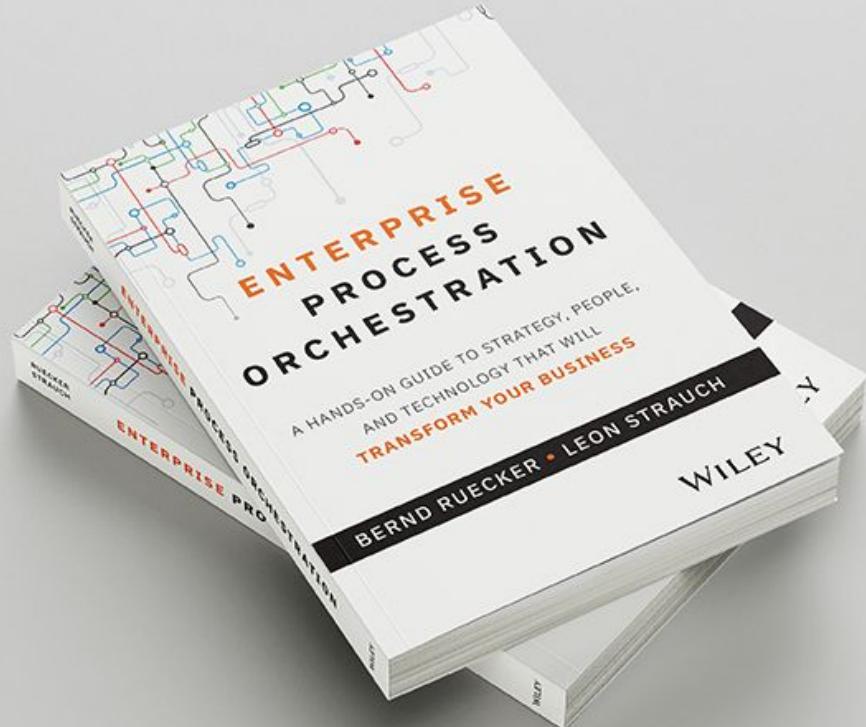


Learn from proven patterns:

Enterprise Process Orchestration

Topics include:

- Process orchestration as a centerpiece for IT strategies
- Enterprise architecture
- Business architecture
- Team topologies
- Platform play and adoption acceleration



Business architecture

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L3: Strategic
end-to-end
processes

Bank Support (Retail)

L4: Business
Capabilities

Sorted by
Domains

Shown in the
example

Customer & Account Servicing

Customer Data Management

Account Servicing & Maintenance

Card Servicing & Maintenance

Account Support

Card Support

Loan Servicing

Loan Offering

Loan Servicing

Loan Support

Financial
Transaction
Handling

L5: Integration
Capabilities/Tools

Card Management

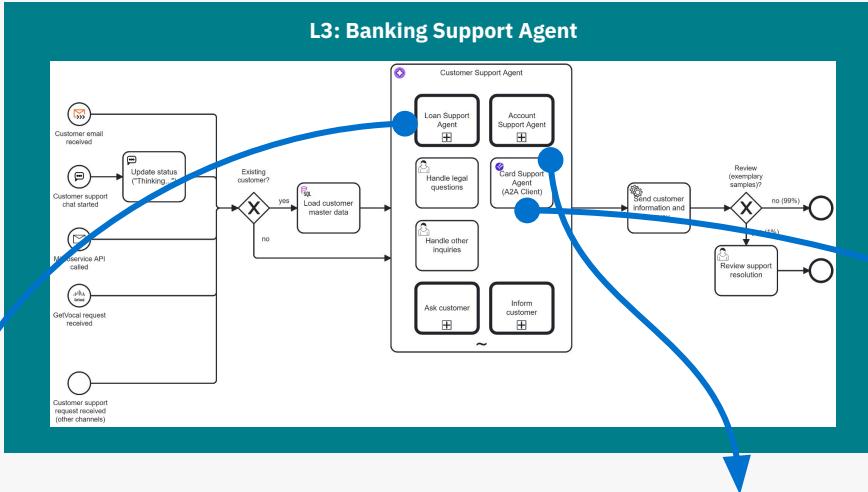
Account Tools

Loan Product Catalog

Loan Master Data
Management

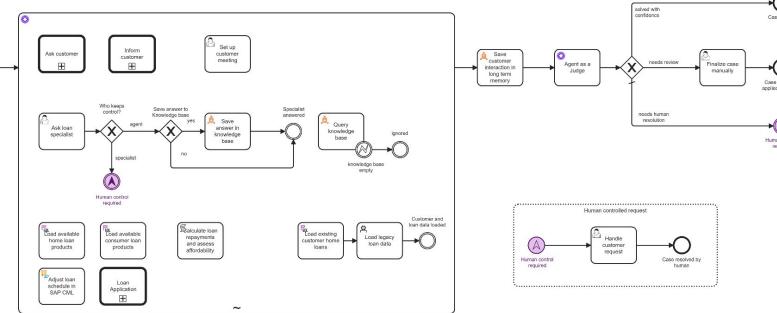
Demo

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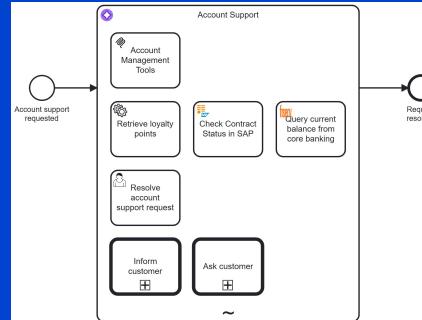


Invocations via
BPMN, API, A2A, ...

L4: Loan Support Agent



L4: Account Support Agent

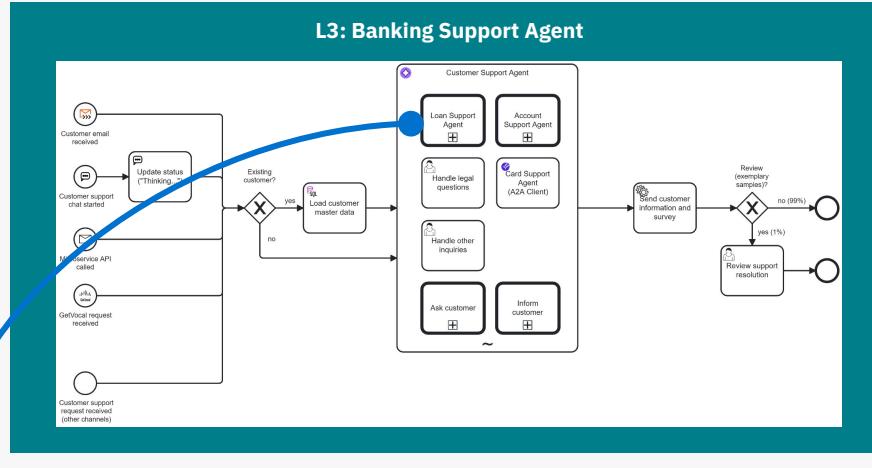


L4: Card Support Agent

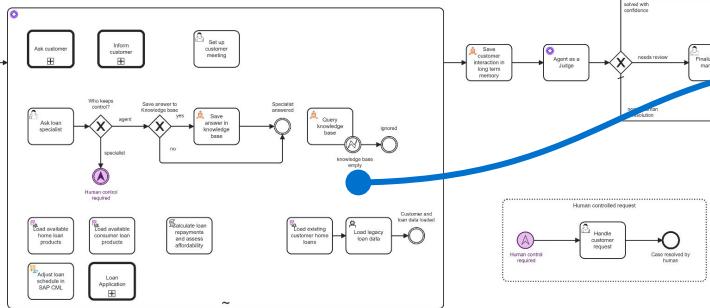


Demo

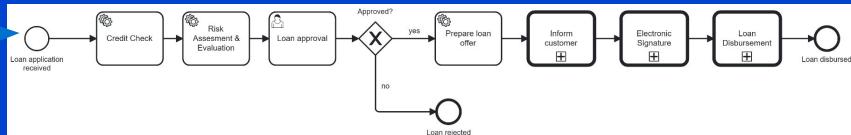
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L4: Loan Support Agent



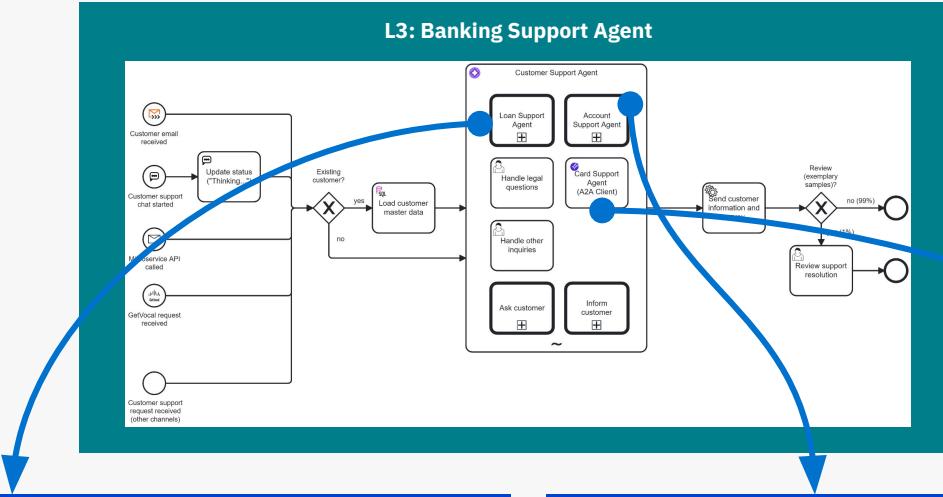
L4: Loan Application Process



Demo

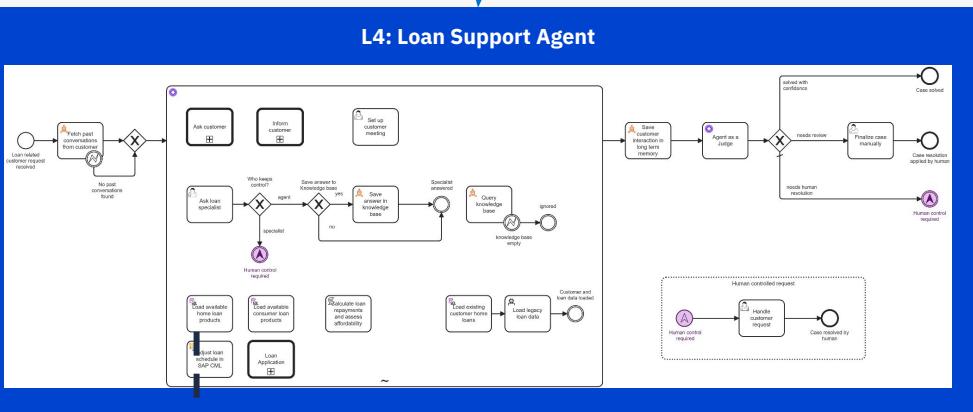
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L3: Banking Support Agent



Invocations via
BPMN, API, A2A, ...

L4: Loan Support Agent

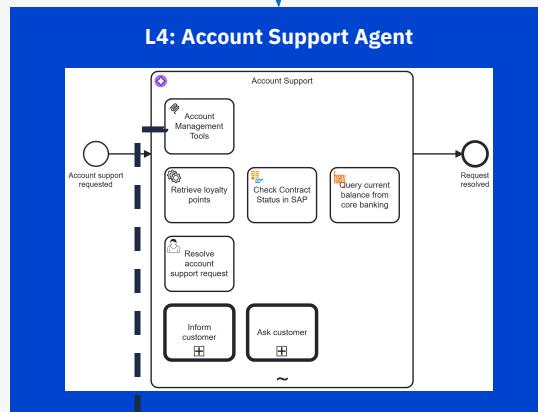


Via Camunda Connectors

Loan Product Catalog

...

L4: Account Support Agent



Via MCP server



L4: Card Support Agent

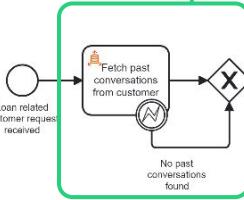
Live demo



The Loan Support Agent

CAMUNDA

Long term
memory



The agent

Could also be integrated into ad hoc subprocess itself

action needed?

no

yes

Save customer interaction in long term memory

Handle customer request

Decision X

Tools available to AI agent

Ask customer via email

Customer response received

Response correlated

Send final answer to customer (before case closing)

Set up customer meeting

Decision X

Who keeps control?

agent

specialist

Human control required

Save answer to Knowledge base

Decision X

Specialist answered

Save answer in knowledge base

Decision X

knowledge base empty

Ignored

Query knowledge base

Decision X

Customer and loan data loaded

Load legacy loan data

Load customer loans

Load customer master data

Adjust loan schedule in SAP CML

Calculate loan repayments and assess affordability

Load available loan products

Decision X

~

Long term
memory

Agent as a Judge

Decision X

solved with confidence

needs review

needs human resolution

Final answer to customer and close support

Review case resolution

Case solved

Finalize case manually

Case resolution applied by human

Human control required

Tools

Long term
memory

Human controlled request

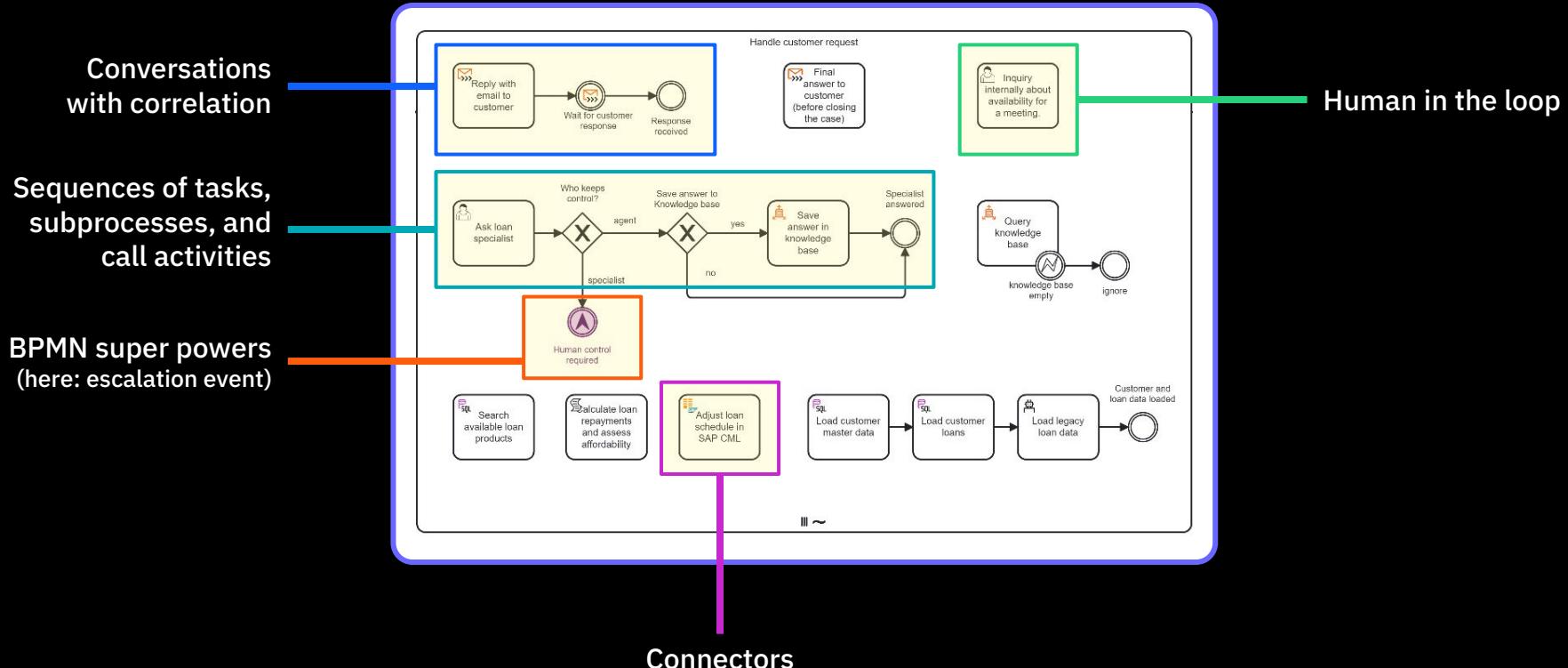
Handle customer request

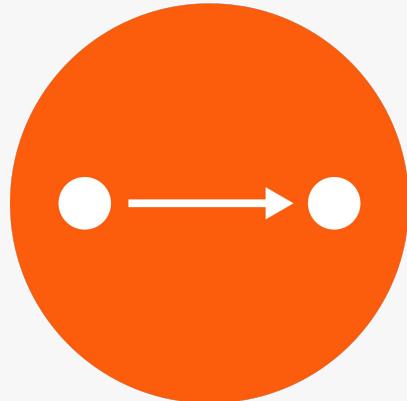
Human control required

Case resolved by human

The Loan Support Agent

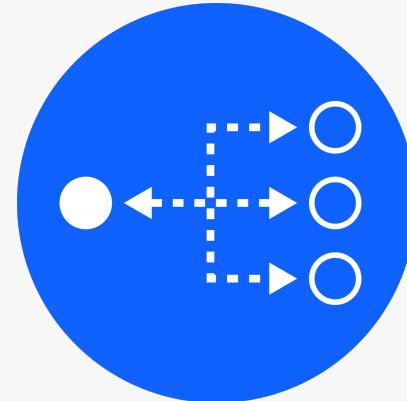
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Deterministic Orchestration

Manage
pre-defined
patterns



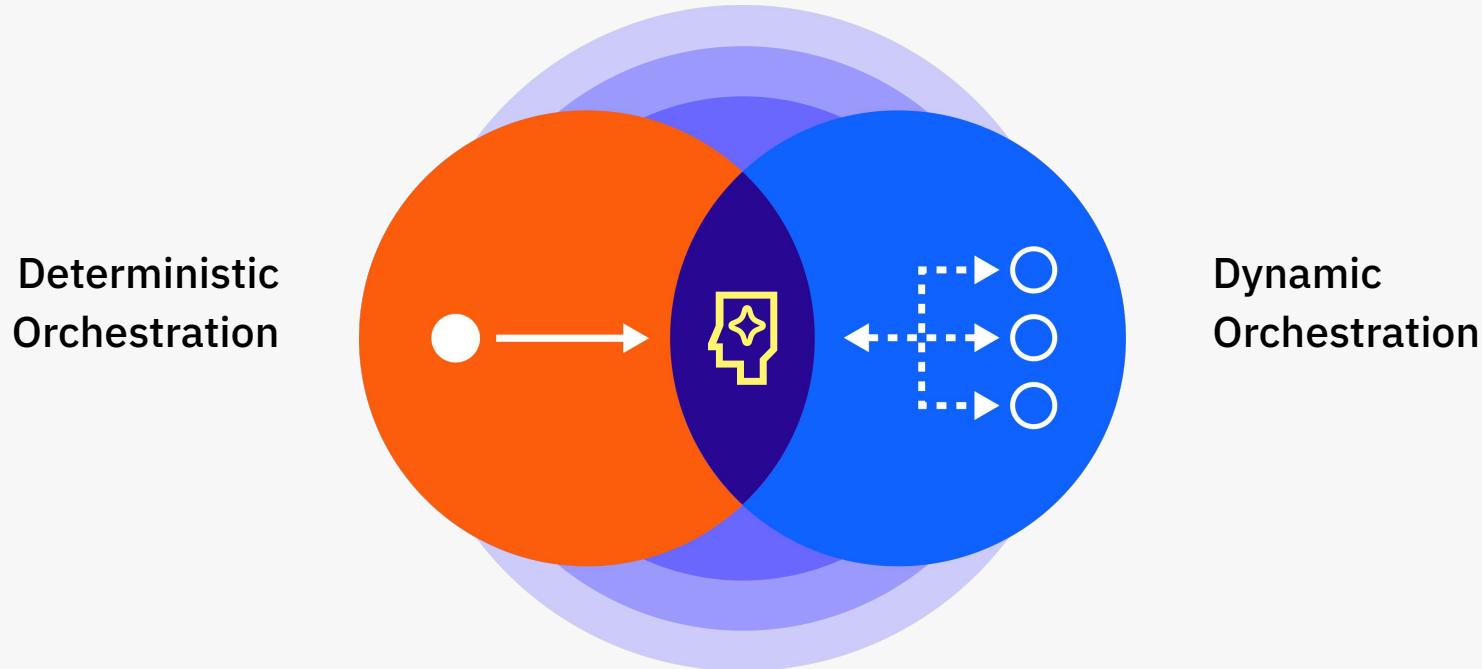
Dynamic Orchestration

Manage
the ad hoc and
unpredictable

Agentic Orchestration

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Design agents' behavior for both autonomy and trust

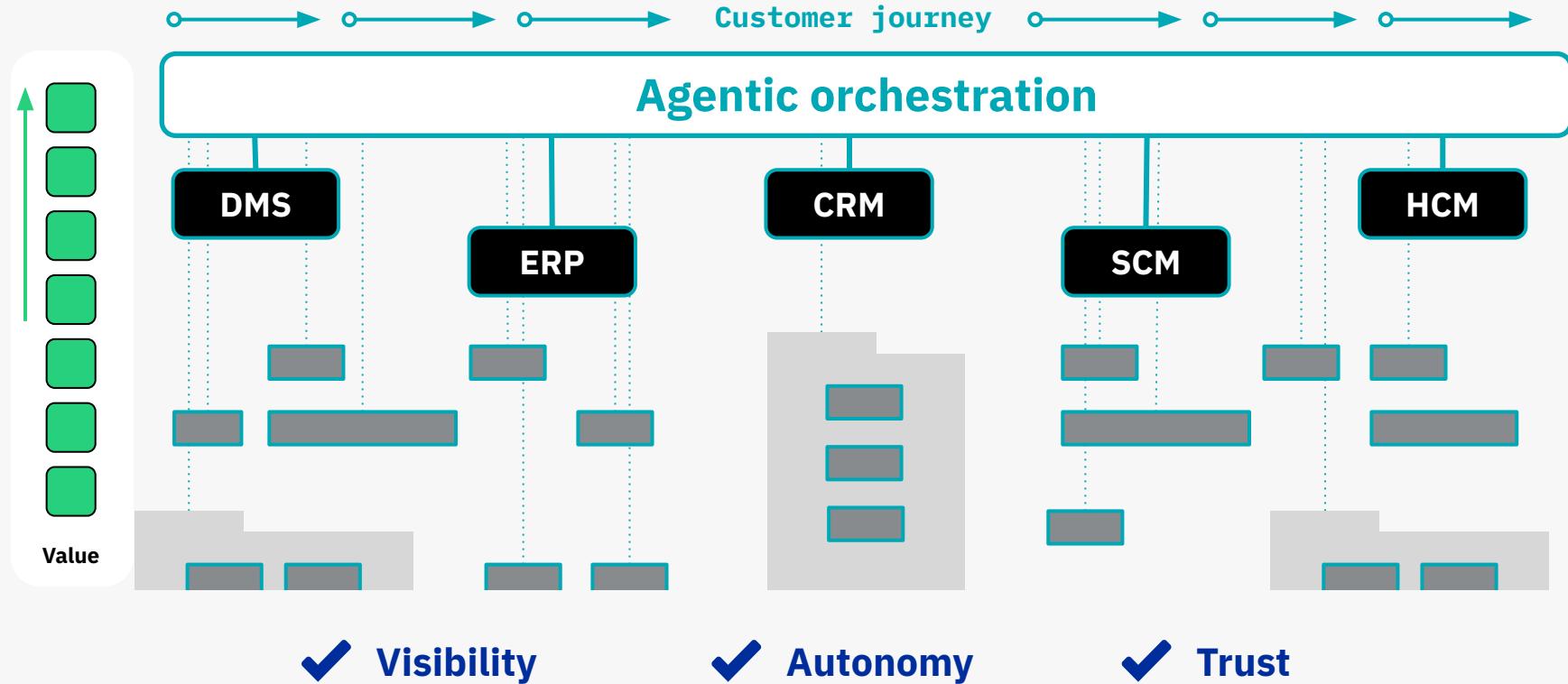


Dramatically increase the value of Agents with
strict guardrails + autonomous knowledge work.

The orchestration advantage

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Enterprise-ready agents sit in the orchestration layer of your enterprise architecture



Enterprise Agentic Automation

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Enabled by Camunda's unified Agentic Orchestration

Agentic Engagement
(Customers & Employees)

Multimodal, Omnichannel, Mobile

Digital Twin, Personalized, Proactive, Predictive, Relevant

Unified Agentic Orchestration Layer

- Agent
- Deterministic Process
- Human
- Decision
- Camunda (Agentic BPMN)
- 3rd Party implemented, Camunda orchestrated



Core Technology and Systems

Legacy Applications

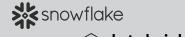
Systems of Record



Real-time Data



Data Warehouse

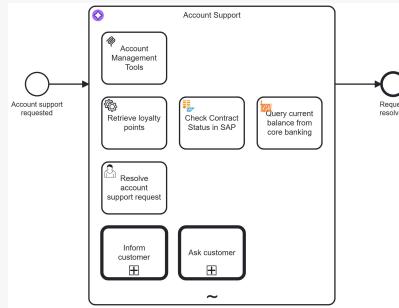


APIs & Microservices

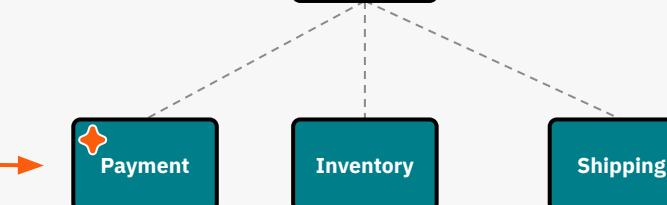
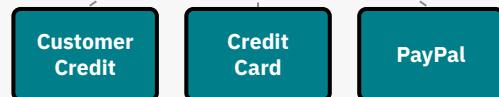
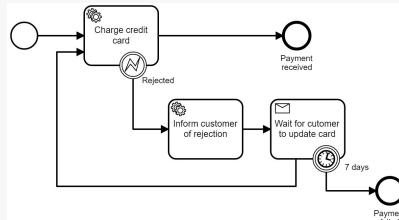
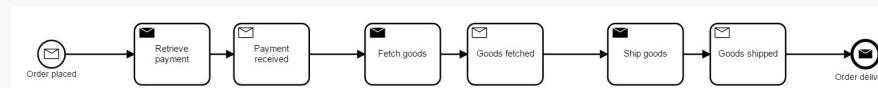


Microservices Compatible

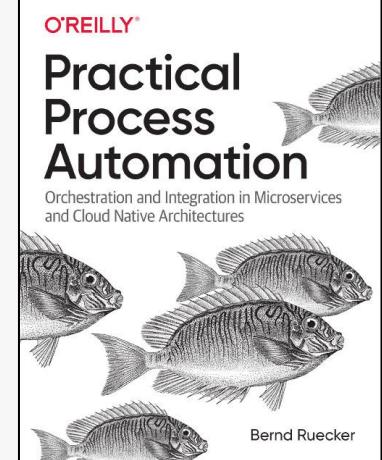
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Every Microservice might have BPMN processes / agentic behavior inside.
If required, it leverages Camunda as a technical capability
(like AWS Bedrock for LLMs).



Learn More



Requirements for Enterprise Agentic Automation

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**Seamless blend of
deterministic and
dynamic orchestration**



**Reliable and powerful
orchestration engine**



**Business and IT
work together**



**Granular control
and end-to-end
monitoring**

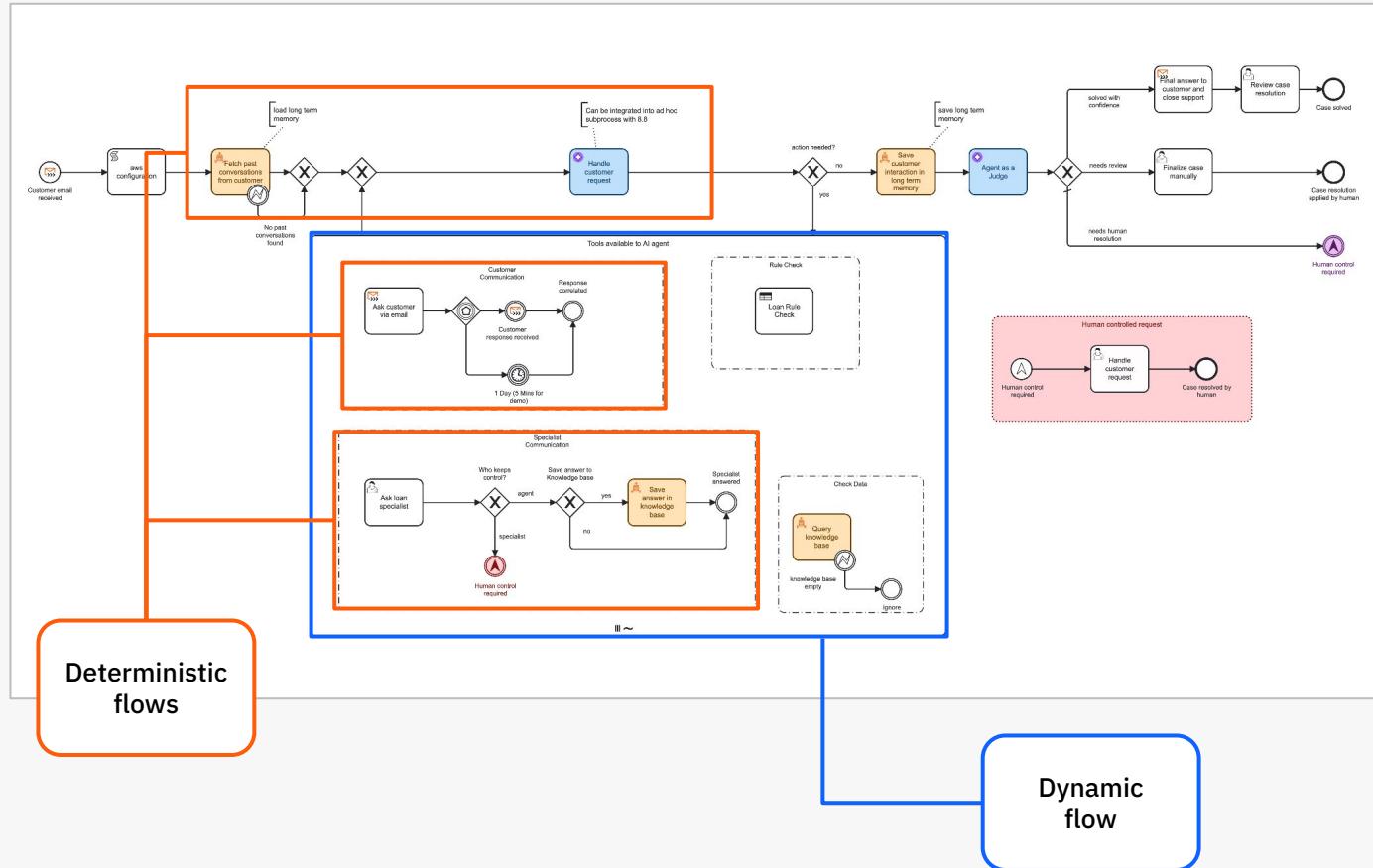


**Powerful
integration layer**



**Highly developer
friendly**

Seamless blend of deterministic and dynamic orchestration



Granular control and end-to-end monitoring

Operate | Dashboard | Processes | Decisions

Credit Card Application / Cross Sell AI Agent

Process Name: Cross Sell AI Agent | Process Instance Key: 2251799814621214 | Version: 2 | Start Date: 2025-08-29 11:49:02 | End Date: -- | Parent Process Instance Key: 2251799814620570 | Called Process Instances: None

Monitor AI agents and tools

Variables

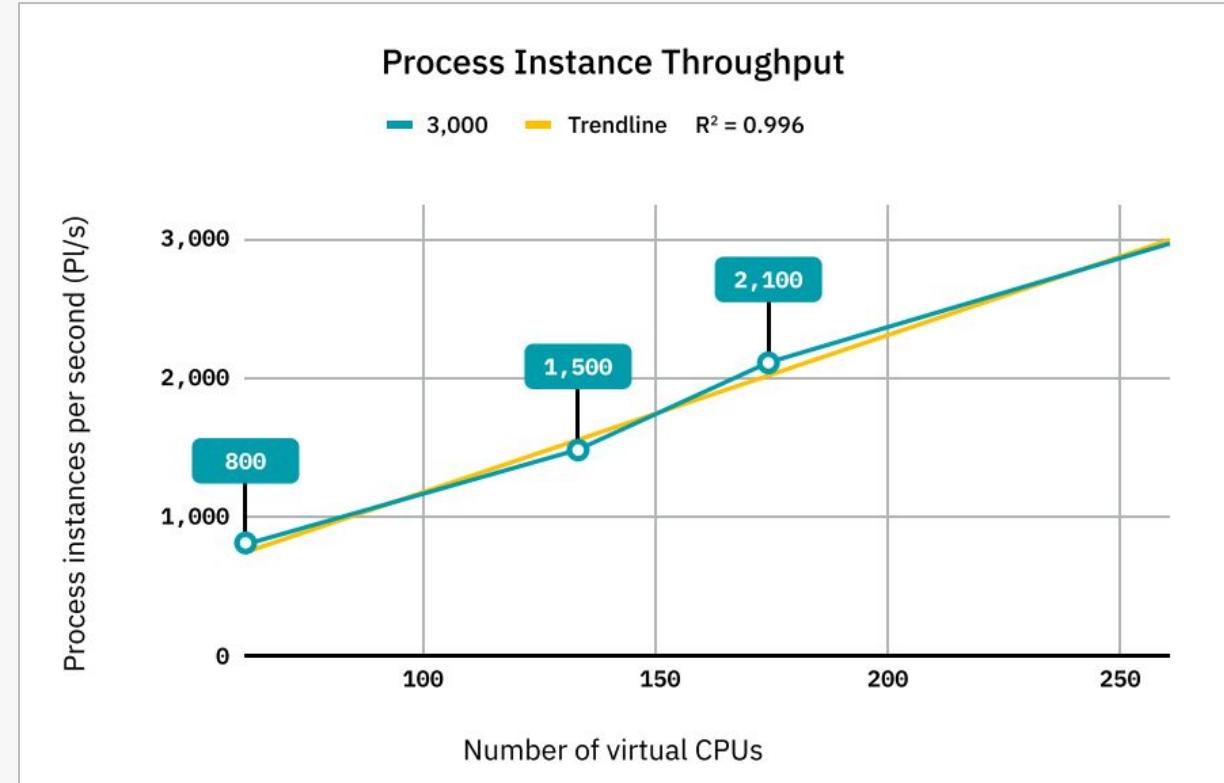
Name	Value
additionalRecommendations	null
agent	<pre> 2: "context": { 3: "memory": [4: { 5: "text": "I am reaching out to inquire about the house loan options available at t\\nCamunda Bank. I am interested in understanding the various loan products offered by your bank, and repayment options you offer.\\n\\nPlease let me know if you require any specific information from my side to\\nto proceed. I am looking forward to your response.\\n\\nI am also interested in an offer from your bank.\\n\\n\\nThank you for your assistance.\\n\\n\\nBest regards,\\n\\nBert Rueder" 6: } 7:], 8: "type": "TEXT" 9: }, 10: "contents": [11: { 12: "text": "I am reaching out to inquire about the house loan options available at t\\nCamunda Bank. I am interested in understanding the various loan products offered by your bank, and repayment options you offer.\\n\\nPlease let me know if you require any specific information from my side to\\nto proceed. I am looking forward to your response.\\n\\nI am also interested in an offer from your bank.\\n\\n\\nThank you for your assistance.\\n\\n\\nBest regards,\\n\\nBert Rueder" 13: } 14:], 15: "type": "USER" 16: }, 17: "text": "I am reaching out to inquire about the house loan options available at t\\nCamunda Bank. I am interested in understanding the various loan products offered by your bank, and repayment options you offer.\\n\\nPlease let me know if you require any specific information from my side to\\nto proceed. I am looking forward to your response.\\n\\nI am also interested in an offer from your bank.\\n\\n\\nThank you for your assistance.\\n\\n\\nBest regards,\\n\\nBert Rueder" 18:], 19: "type": "TEXT" 20: }, 21: "contents": [22: { 23: "text": "I am reaching out to inquire about the house loan options available at t\\nCamunda Bank. I am interested in understanding the various loan products offered by your bank, and repayment options you offer.\\n\\nPlease let me know if you require any specific information from my side to\\nto proceed. I am looking forward to your response.\\n\\nI am also interested in an offer from your bank.\\n\\n\\nThank you for your assistance.\\n\\n\\nBest regards,\\n\\nBert Rueder" 24: } 25:], 26: "type": "USER" 27: }, 28: "text": "I am reaching out to inquire about the house loan options available at t\\nCamunda Bank. I am interested in understanding the various loan products offered by your bank, and repayment options you offer.\\n\\nPlease let me know if you require any specific information from my side to\\nto proceed. I am looking forward to your response.\\n\\nI am also interested in an offer from your bank.\\n\\n\\nThank you for your assistance.\\n\\n\\nBest regards,\\n\\nBert Rueder" 29:], 30: "type": "TEXT" 31: } </pre>

Listeners

Track human escalations

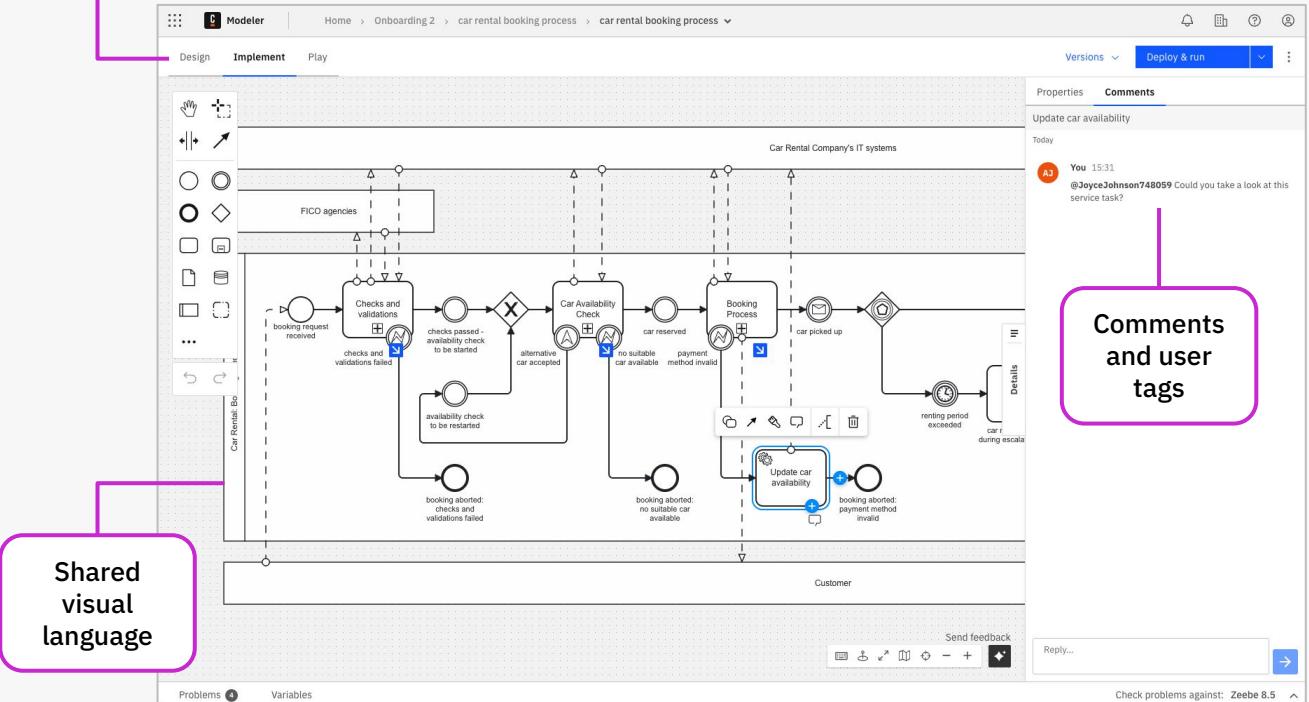
Access detailed chain of thought

Reliable and
powerful
orchestration
engine
(long running =
state handling!)



Business
and IT
work
together

Multiple
collaboration
modes



Powerful integration layer

CAMUNDA  Explore Connectors Discover Blueprints Contribute Idea Portal About Camunda

Sort By Newest

Connectors

Filters [Clear Filters](#)

Categories

- Connectors
 - Cloud Computing Services
 - Automation Services
 - External Data Services
 - Collaboration Tools
 - AI Services
 - Technical Protocols
 - Data & Analytics
 - Enterprise Applications
- Blueprints
- Partner Solutions

Use Case

- Agentic AI orchestration
- Microservices orchestration
- Human Task orchestration
- RPA bot orchestration
- Simplified case management

Industry

- Financial Services
- Insurance
- Media and Entertainment
- Technology



Apache Pulsar Connector
Publish real-time events to Apache Pulsar, driving seamless event-driven automation.

Sold By Charan Teja Choppavarapu



Glean Search Connector
Integrate Glean's AI-powered search into enterprise processes to make more informed decisions.

Sold By Camunda / Peter Bojtos



Eclipse Mosquitto Connector
Eclipse Mosquitto is a small, open-source MQTT broker designed for fast and efficient messaging between devices and...

Sold By Charan Teja Choppavarapu



Google Cloud Storage Connector
Connect Camunda processes to Google Cloud Storage to upload and download files easily. Ideal for cloud-based document...

Sold By Camunda



Azure Blob Storage Connector
Upload and download files in Camunda processes using Azure Blob Storage. Securely connect to Azure containers,...

Sold By Camunda

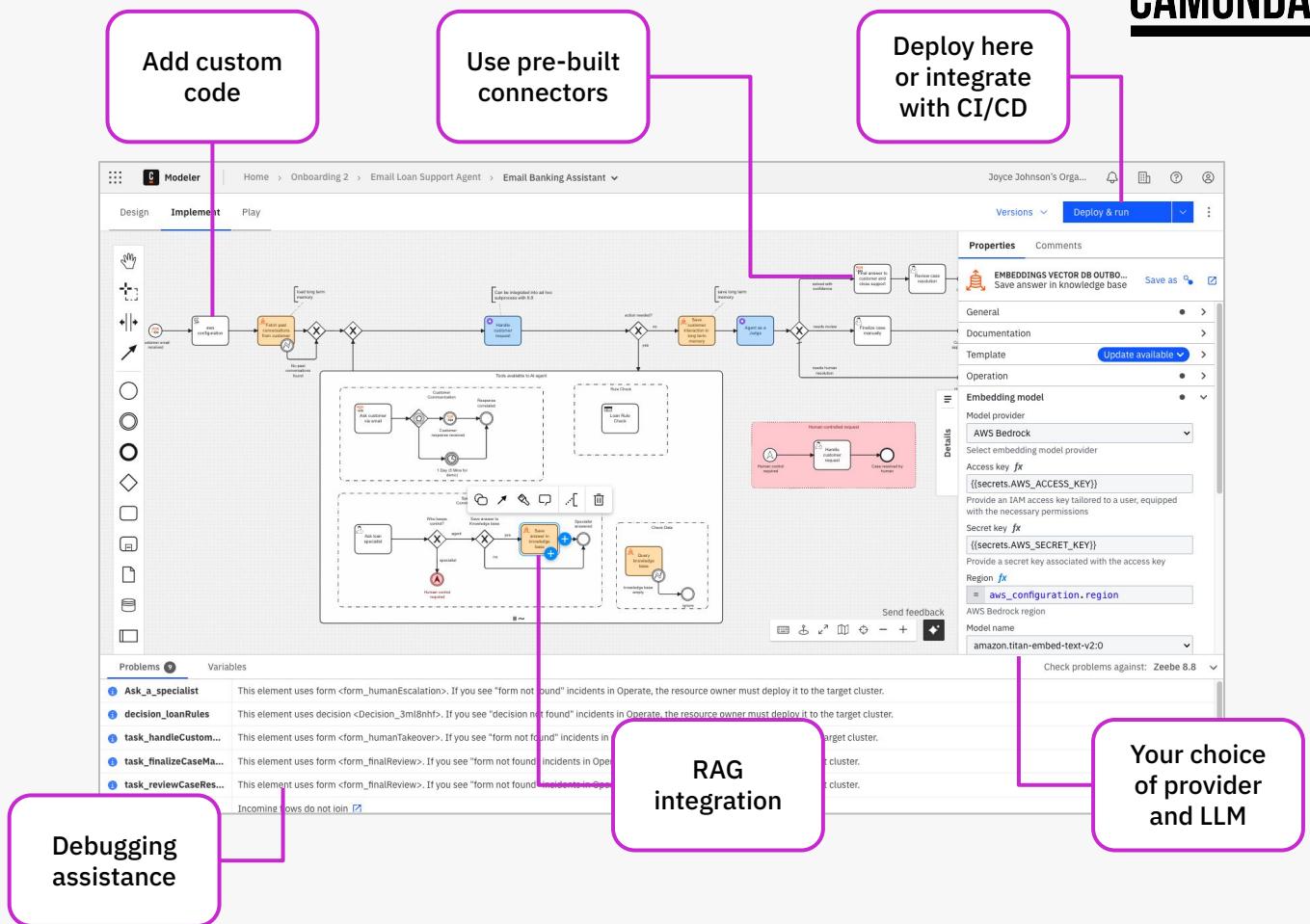


SOAP Connector
Interact with SOAP-based web services directly within BPMN-based processes, enabling integration with legacy systems a...

Sold By Camunda



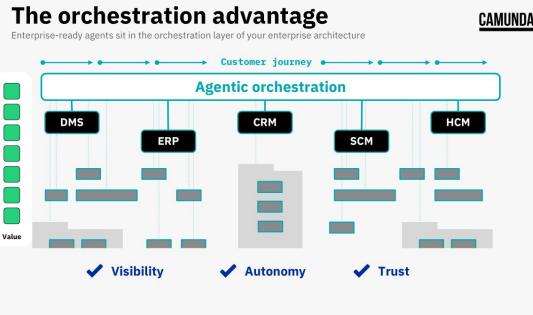
Highly developer friendly



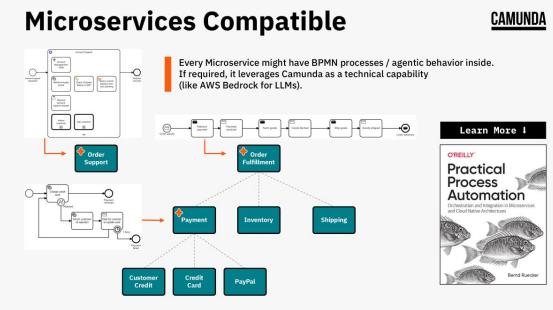
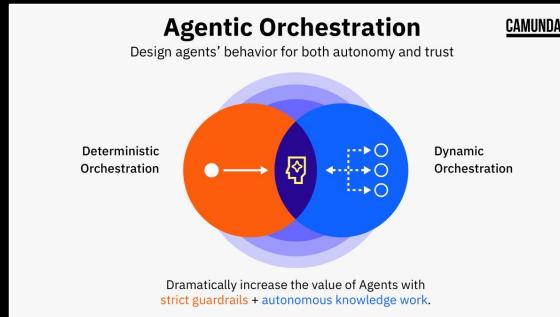
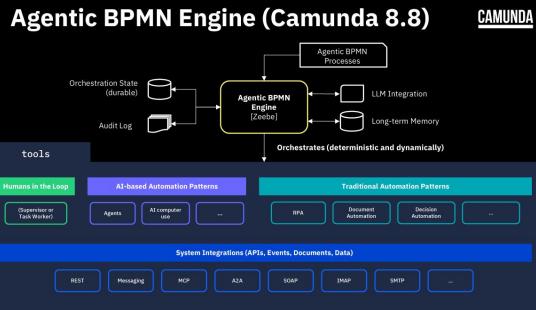
Summary

AI Agents

Perform multiple steps to achieve a *complex goal*. They orchestrate!

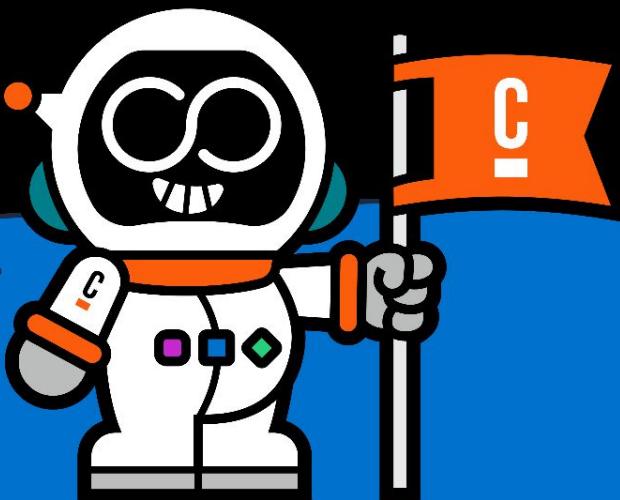


Business architecture



Let's build what's next: Together

CAMUNDA



Thank You



Bernd Ruecker

Co-Founder and Chief Technologist
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**Feedback for
this session:**

