

Enterprise AI Development: Obstacles & Opportunities

 JANUARY 2025

Methodology

This survey was conducted October 31 to November 1, 2024, among a total sample of **1,063 Enterprise AI Developers** in the US. The interviews were conducted online, and the data is unweighted. Results from the full survey have a margin of error of +/- 3%.

To qualify as an Enterprise AI Developer survey respondents must meet the following requirements:

- ✓ Be employed (Full-time, Part-time, or Self-employed)
- ✓ Work in one of the following roles: Data Scientist, Application Developer, System Developer, AI Developer, ML Engineer, Software Engineer, Software Developer, AI Engineer, or IT Engineer
- ✓ Contribute at least occasionally to the development of enterprise AI applications in their current role

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AI skill gaps

Generative AI skill levels vary significantly among developers. **Most developers surveyed do not view themselves as experts**, despite being on the front lines of generative AI adoption.

- Less than one quarter (24%) of application developers surveyed ranked themselves as "experts" in generative AI.
- One third of respondents list the lack of a standardized AI development process as a top challenge.
- 99% of respondents are exploring or developing AI agents.



AI tool gaps

The most important tool qualities for building enterprise AI are also the rarest, **hampering the development process**. Meanwhile, developers must juggle a roster of tools.

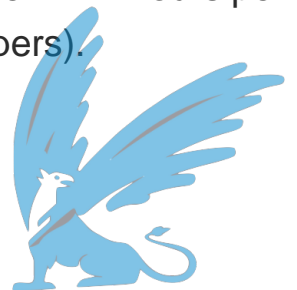
- Performance (42%), Flexibility (41%), Ease of Use (40%), and Integration (36%) are the most essential qualities in enterprise AI development tools, according to respondents. Yet over a third also said those very same traits are the rarest.
- A majority (72%) of respondents use between 5 and 15 tools to create an AI enterprise application.



Simplicity is the solution

Developers crave tools that are easy to master. And when it comes to developer productivity, **AI-powered coding solutions are incredibly popular**.

- Only one third of respondents are willing to invest more than two hours in learning a new AI development tool.
- 99% are using coding assistants in some capacity for AI development. And most commonly, developers said these tools saved them 1-2 hours per day (41% of developers).



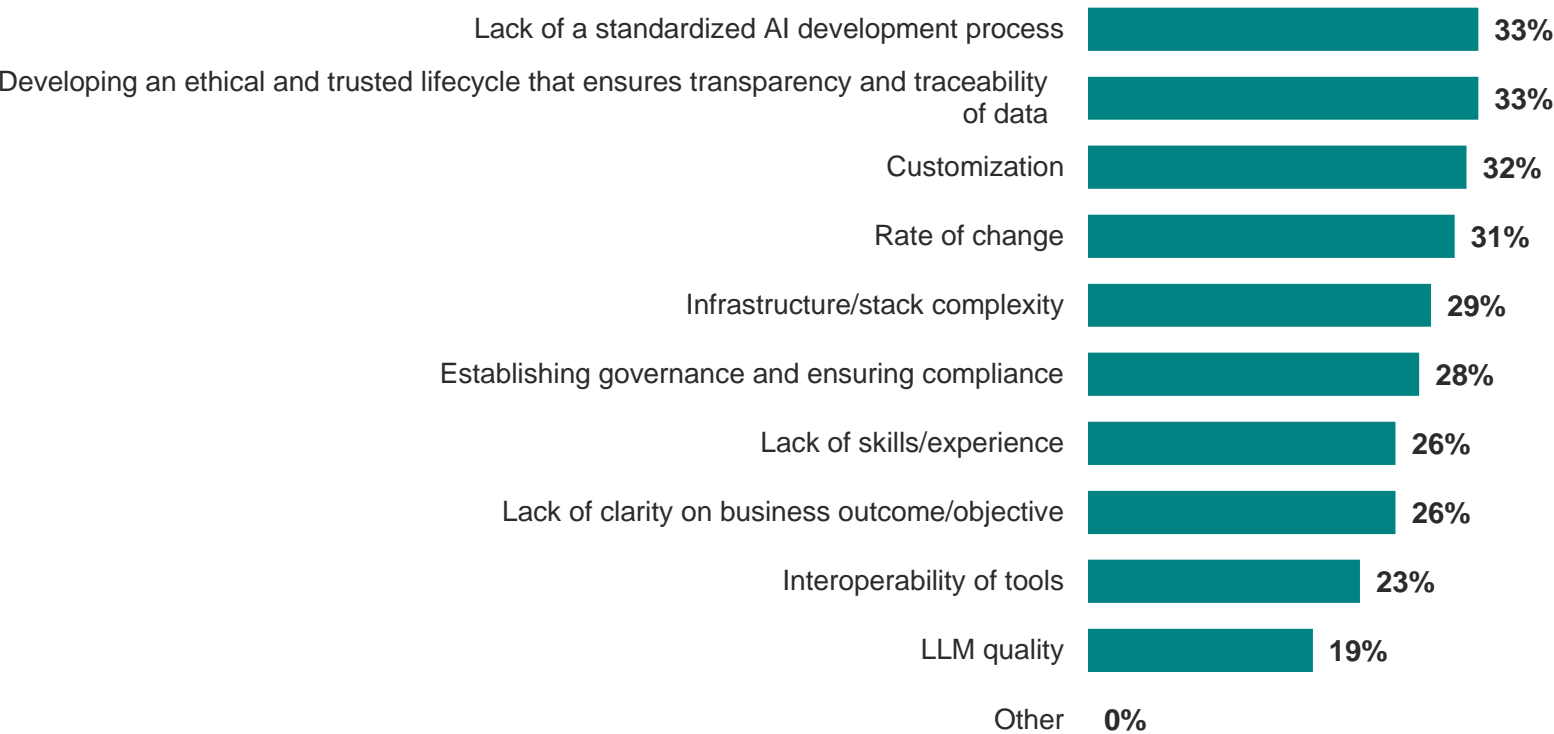
SECTION 1

AI Skills & Developer Challenges

A lack of standard processes and trust are inhibiting the development of generative AI applications for business

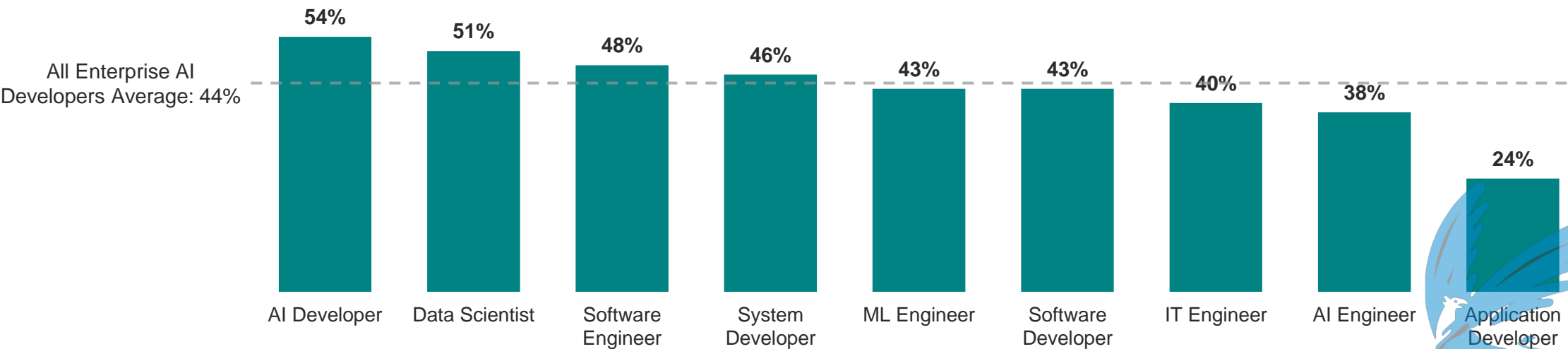
Top Challenges of Developing Gen AI at the Enterprise Level

All Enterprise AI Developers, Showing % selected

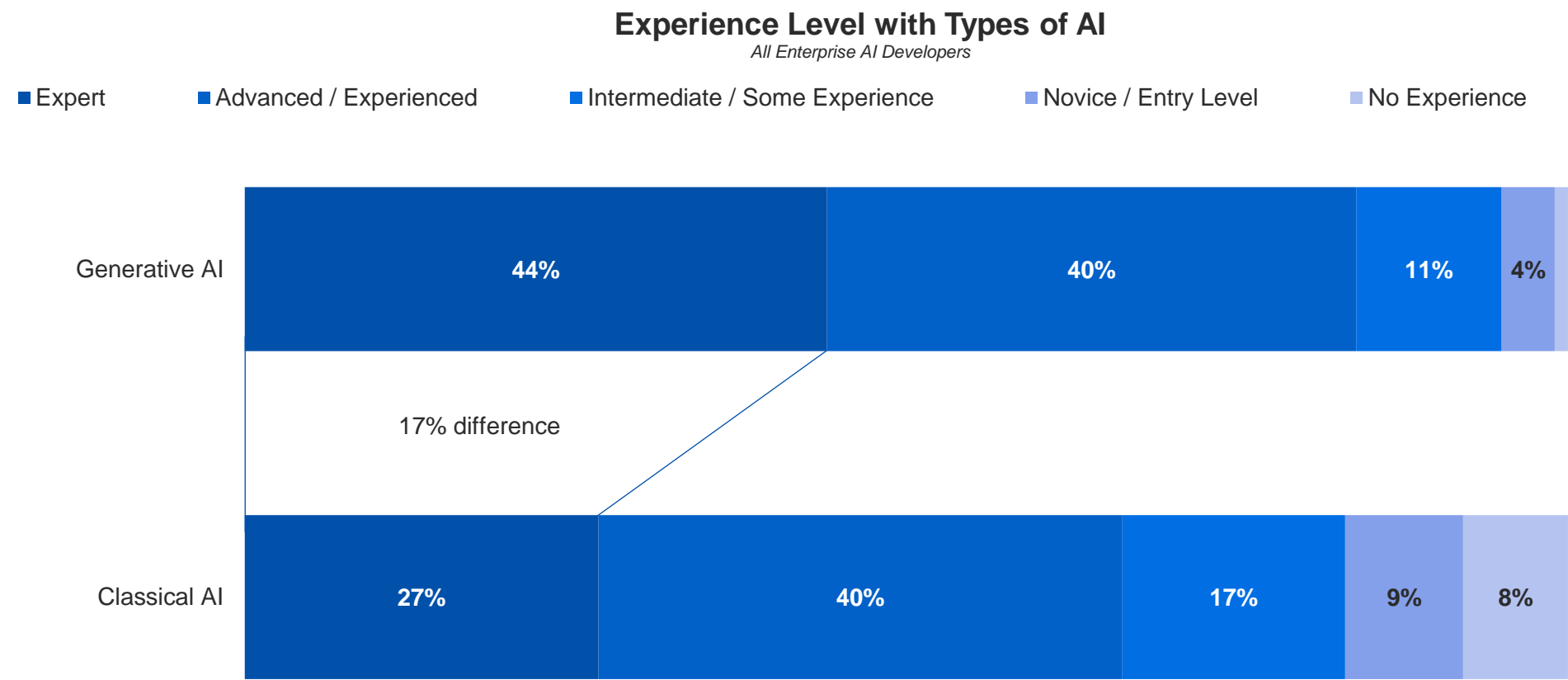


Expertise in generative AI varies greatly by developer role
Most application developers don't view themselves as experts in generative AI

Expert Experience Level with Generative AI
Enterprise AI Developers by Role, Showing % selected 'Expert'



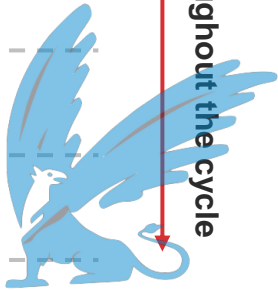
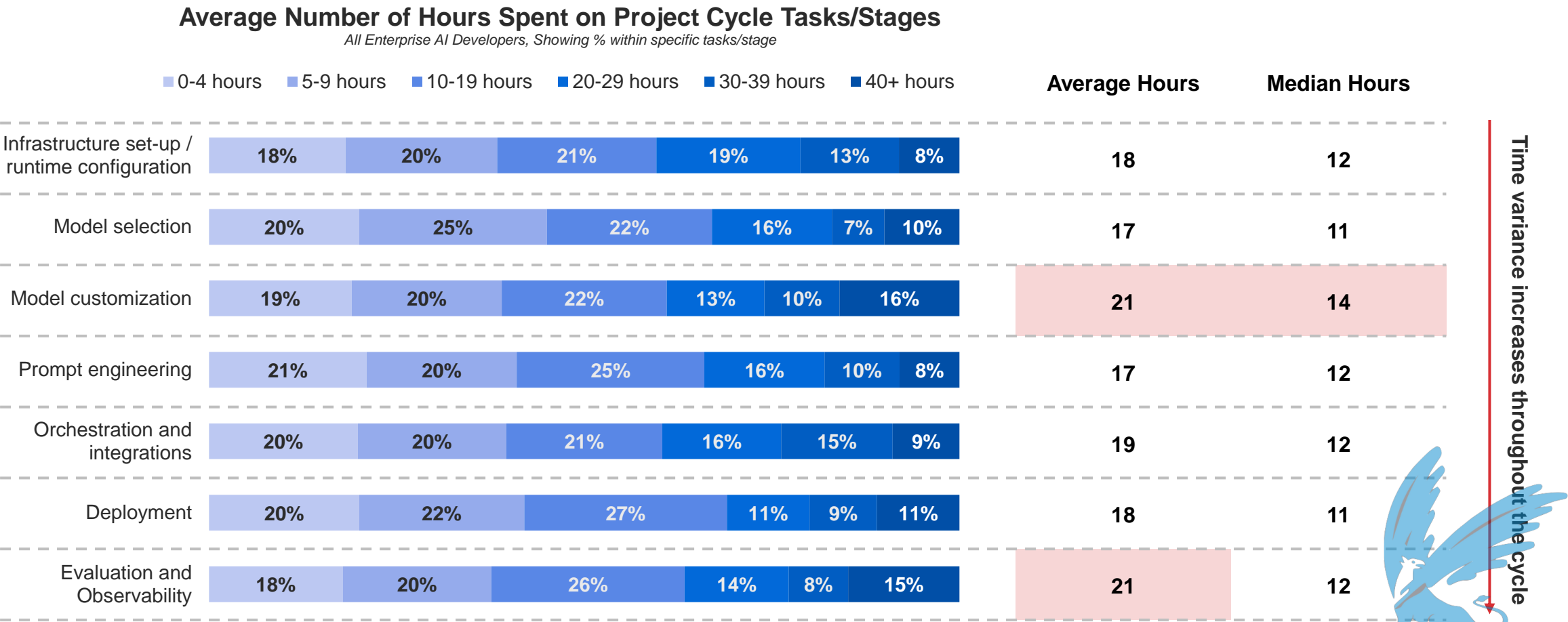
Developers feel more comfortable with Generative AI versus Classical AI



AI SKILLS & DEVELOPER CHALLENGES

Time spent on project phases

The number of hours developers spend on tasks becomes less predictable later in the project cycle



SECTION 2

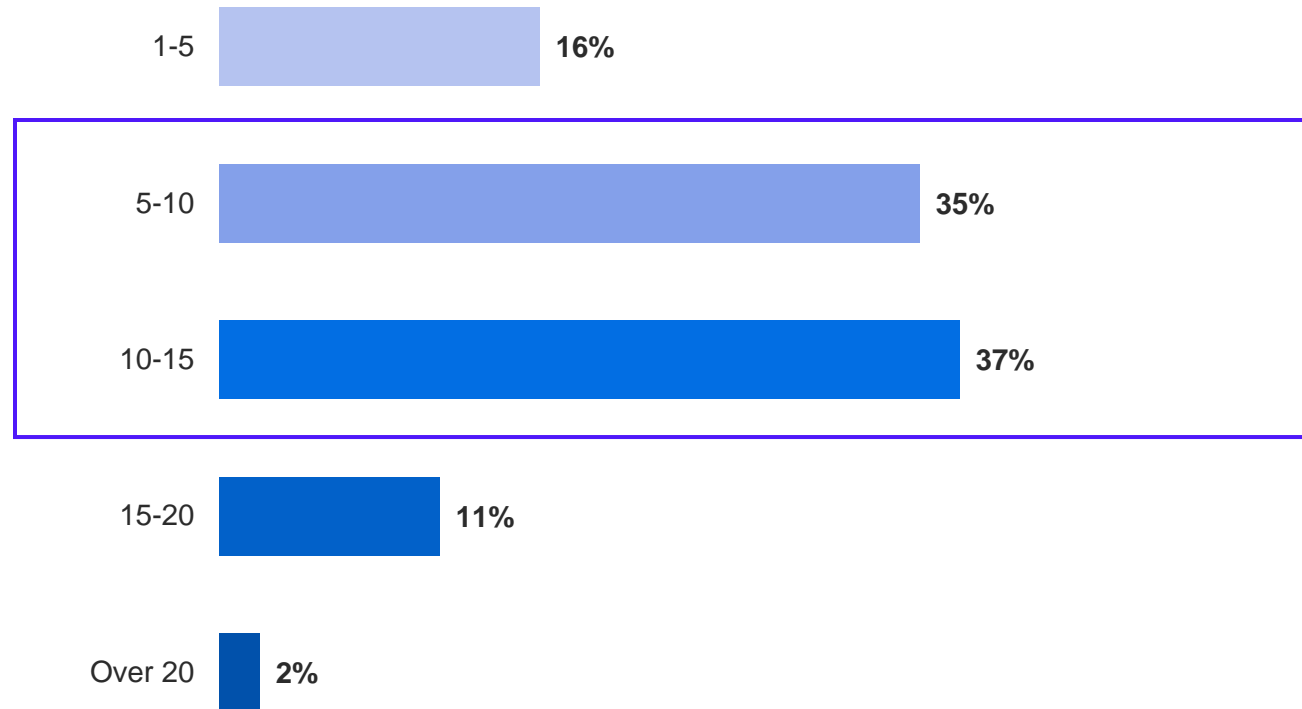
Technology Landscape | Developer Tools

Enterprise AI Developers face tool sprawl

*The majority of those surveyed use between 5 and 15 tools to create an AI enterprise application;
13% of developers are using 15 or more*

Average Number of Tools Used to Create an AI Enterprise Application

All Enterprise AI Developers, Showing % Selected



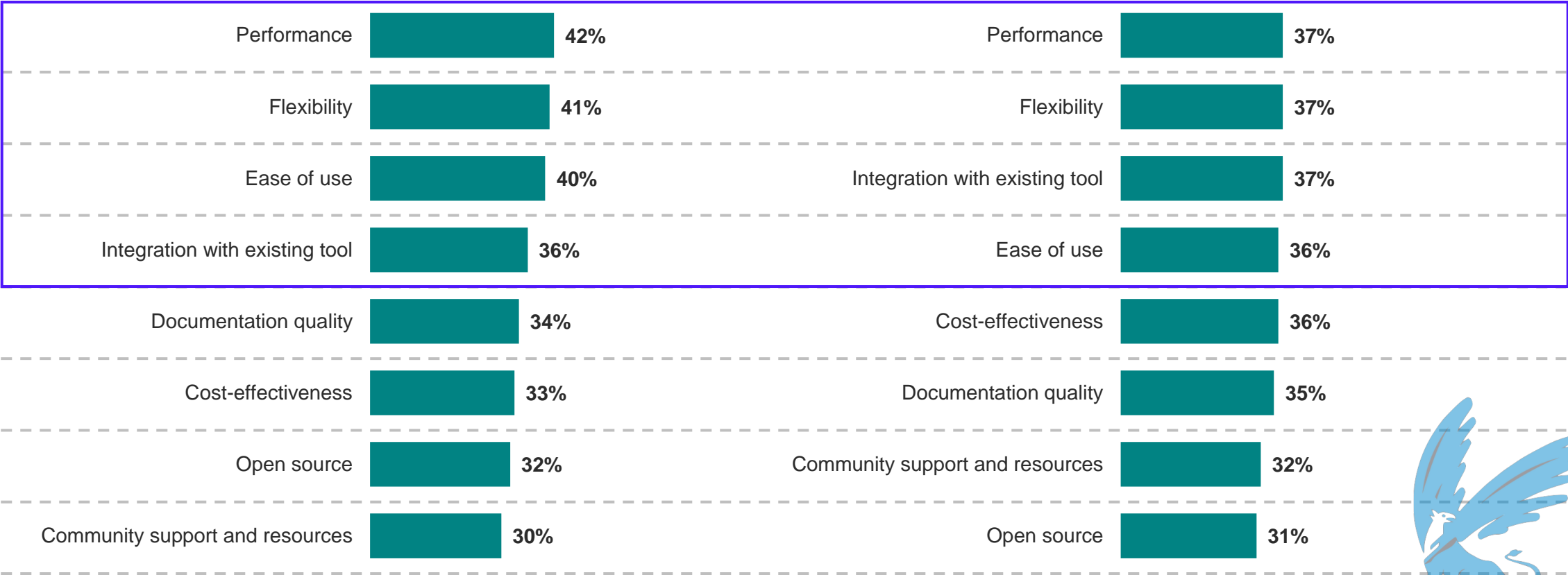
When it comes to tooling, the most critical tool qualities are also among the rarest

Most Essential Traits in Enterprise AI Development Tools

All Enterprise AI Developers, Showing % selected

Top Missing Traits in Enterprise AI Development Tools

All Enterprise AI Developers, Showing % selected

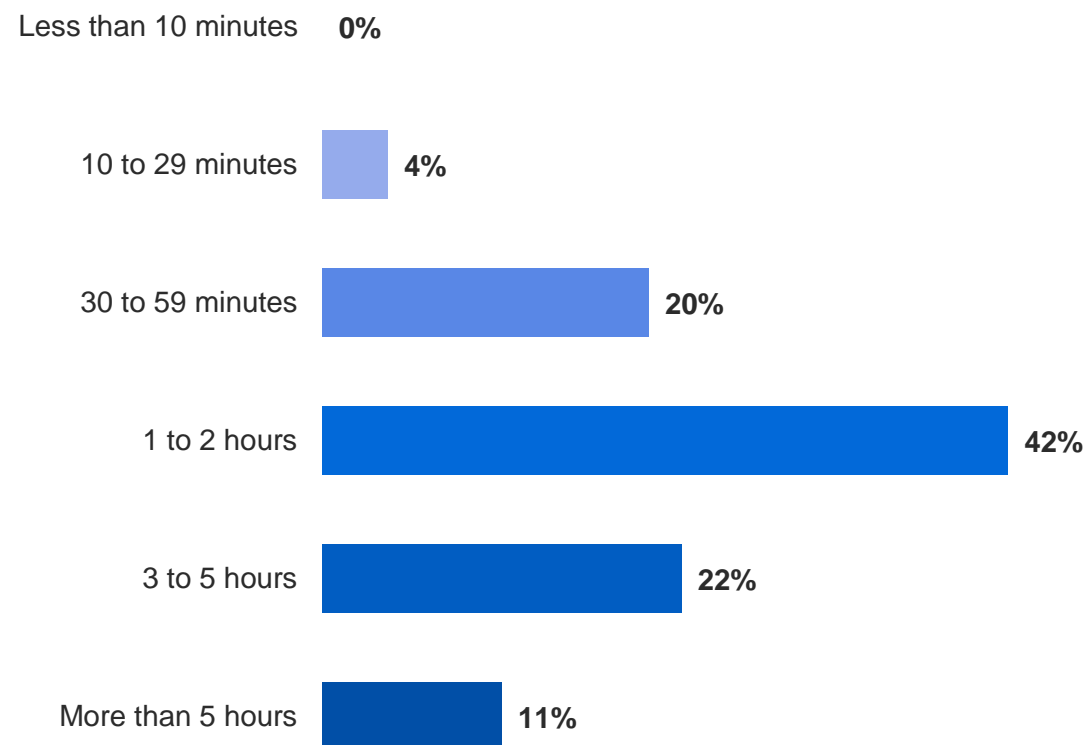


Enterprise AI Developers crave tools that are easy to master;

Only one third of those surveyed are willing to invest more than two hours in learning a new AI development tool

Time Willing to Invest in Learning New AI Tools

All Enterprise AI Developers, Showing % Selected



Developers are leaning into a variety of tools to streamline AI development

More than half are using no-code or low-code tools; 73% are leaning into pro-code tools

Types of Development Tools | Extent of Usage by Level

All Enterprise AI Developers, Showing T2B (Often + Very Often)



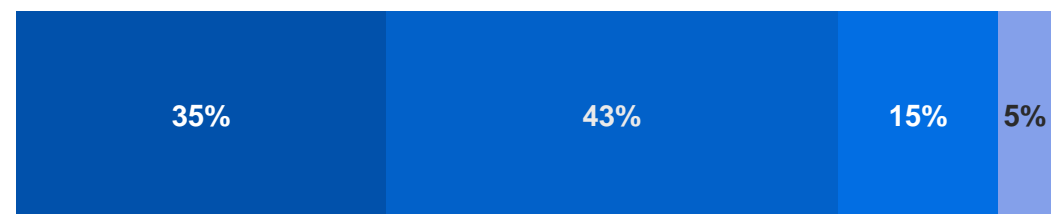
AI-powered Coding Assistants are saving developers significant amounts of time

41% of developers said these tools saved them 1-2 hours per day

Extent of Coding Assistant Usage for AI Development

All Enterprise AI Developers

■ Very often ■ Often ■ Occasionally ■ Rarely ■ Not at all



Nearly all enterprise AI developers are using coding assistants – and 78% are using them often or very often.

Time Saved [Per Day] Using AI-Assisted Coding Tools

All Enterprise AI Developers, Showing % Selected



Exploration of new AI development tools is limited, with nearly 80% only occasionally experimenting with new tools

Frequency of Experimenting with New AI Development Tools

All Enterprise AI Developers

■ Every month ■ Every 1 to 3 months ■ Every 3 to 6 months ■ Rarely or never



Enterprise AI Developers **experiment with ~6 new tools** on average during these time frames.



SECTION 3

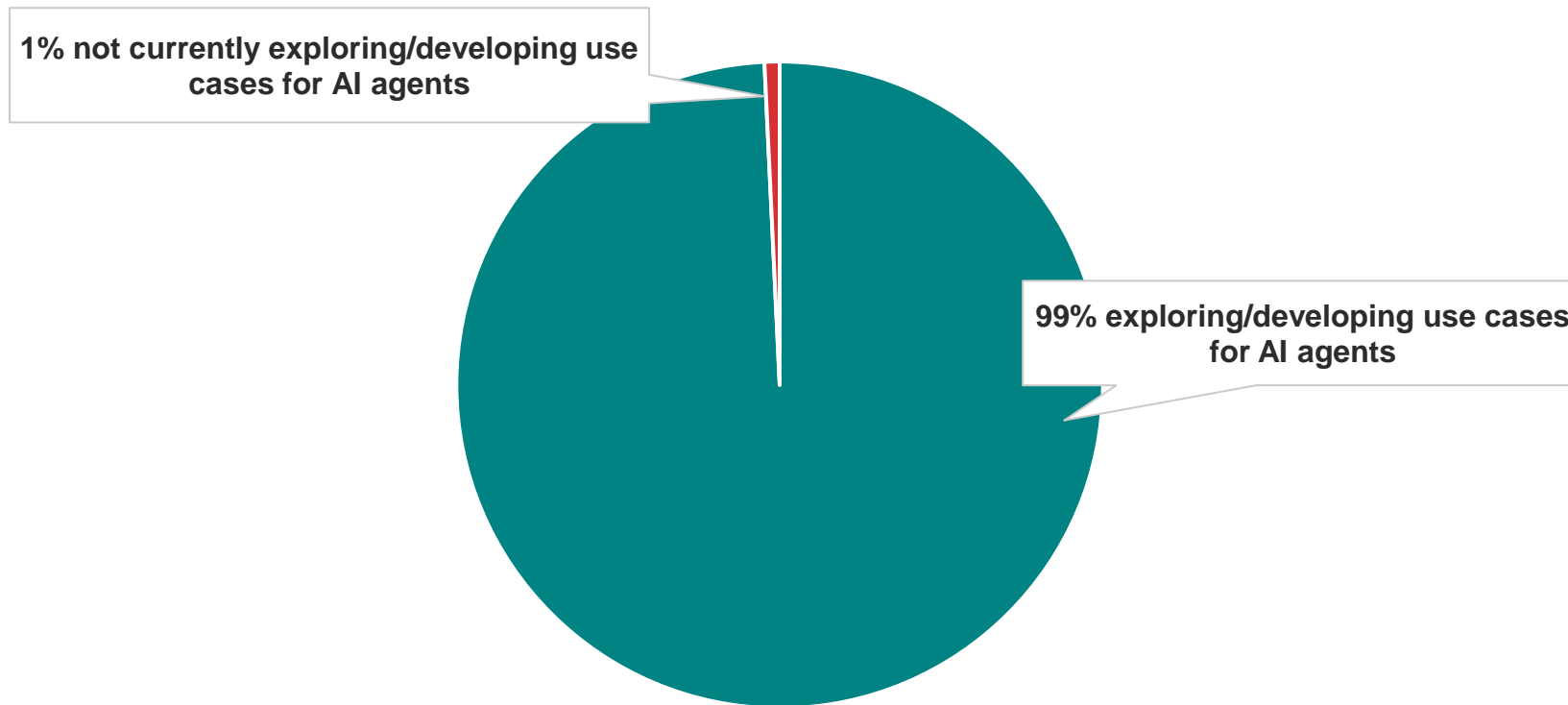
Agents

AGENTS

Just about everyone is exploring or developing AI agents

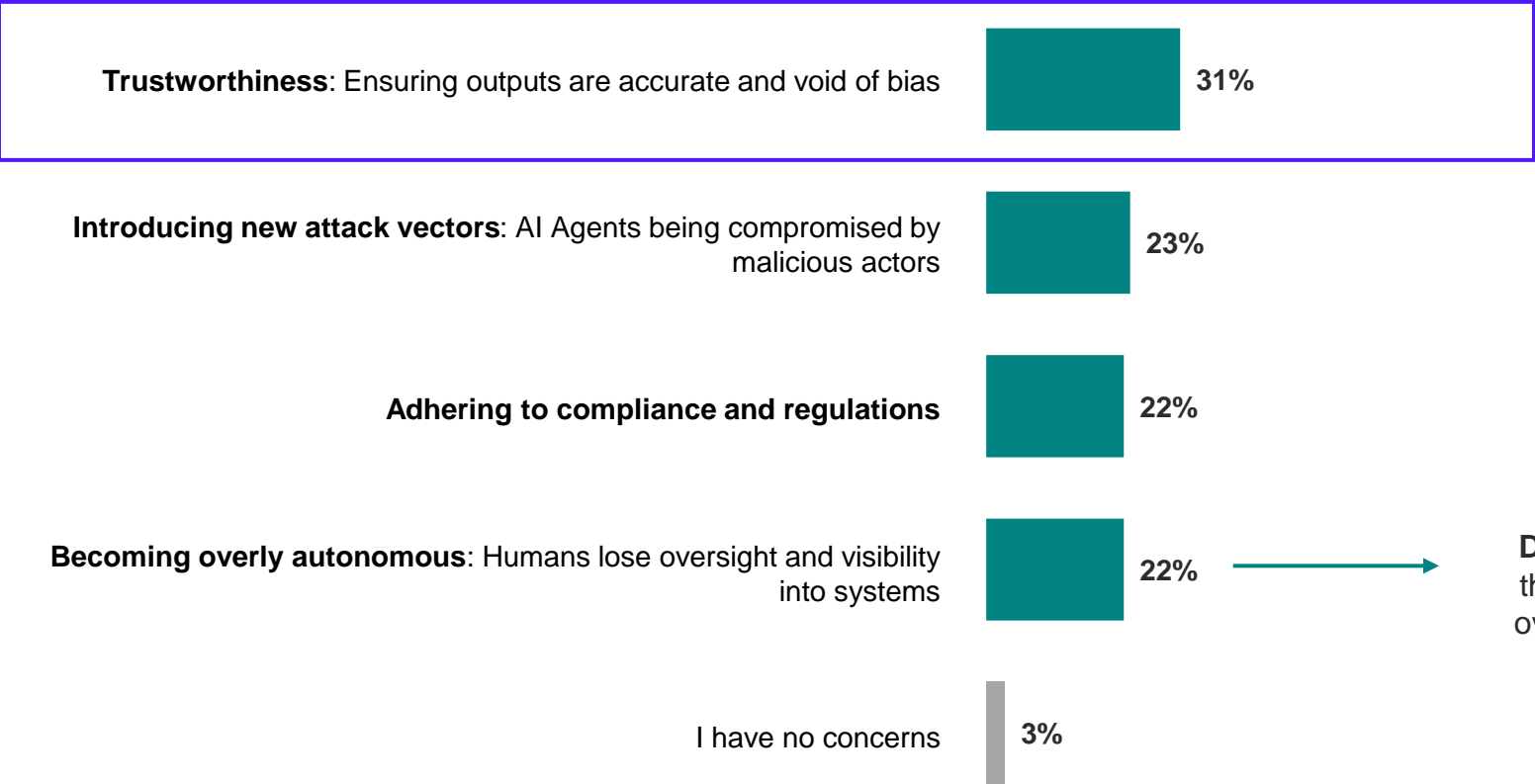
Exploration/Development of Use Cases for AI Agents

All Enterprise AI Developers



Trustworthiness emerges as the top concern when it comes to scaling agents

Top Concerns for Scaling AI Agents in Enterprise
All Enterprise AI Developers, Showing % selected

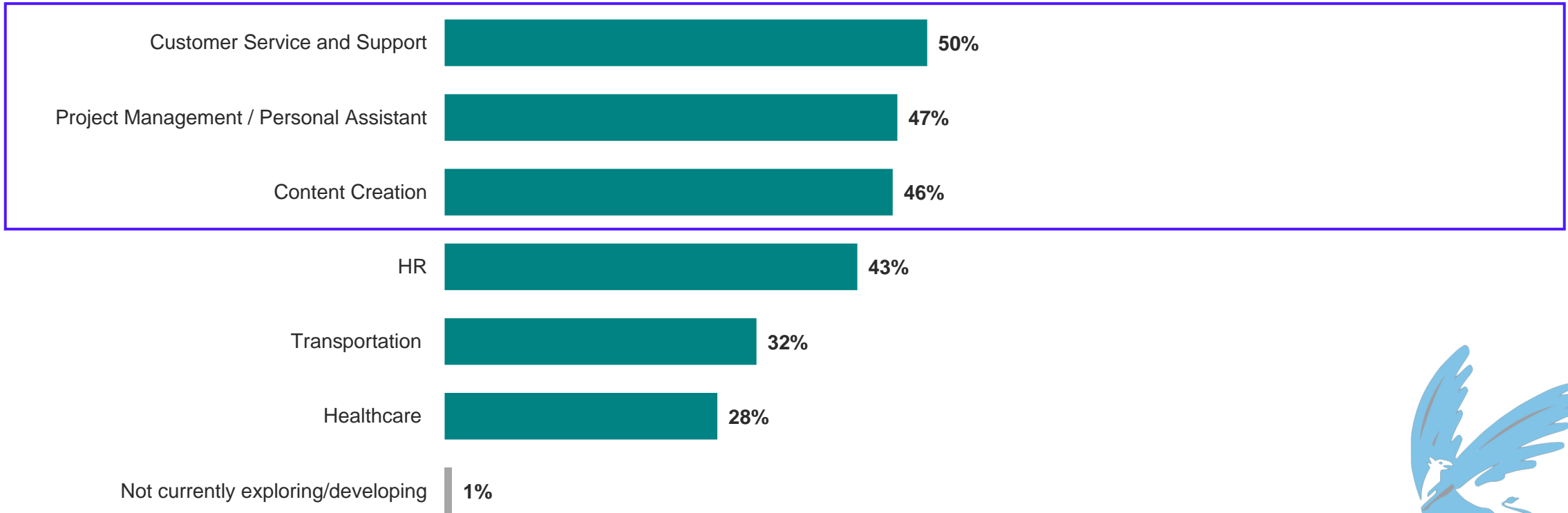


Rogue AI agents aren't keeping Developers up at night. Only 22% of those surveyed said agents becoming overly autonomous was a top concern.

AGENTS

Customer service, project management, and content creation are top use-cases currently being explored for agents

AI Agent Use Cases Being Explored
All Enterprise AI Developers, Showing % selected





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